

Philly Eco City

Think Globally - Act Locally

The environmental impact of PhillyCarShare and of CarSharing programs in North America

March 24, 2008 by [jayma19](#)

As part of the Green Affordable Philadelphia conference organized at Philadelphia University by Habitat for Humanity - Philadelphia, I attended a presentation by Stephanie Krueel from PhillyCareShare. I decided to compare **how PhillyCarShare members decided to change their mode of transportation** as uncovered by a PhillyCarShare membership survey, with data from a 2005 survey of the impact of 26 Car Sharing programs operating in North America.

PhillyCarShare (PCS) is a non-profit created in the Fall of 2002 that offers to its members the flexibility to rent cars distributed in 80 different neighborhoods and township centers of the Philadelphia region. Cars are rented by the hour or by smaller time increment to PhillyCarShare members via the PCS website. Membership to PhillyCarShare is free. The cost of the rental includes insurance and gas. Presently PhillyCarShare has 35,000 members and 400 vehicles. PhillyCarShare goal is to reach 100,000 members and 800 cars in the next three years and expand its service to the 5 counties of the Philadelphia region and parts of Southern New Jersey.

Car sharing has an impact on transportation, the environment, land use as well as on the well being of residents of the region serviced by the car sharing program:

1. Impact on Transportation:

- Car sharing reduces vehicle ownership. Studies and member surveys performed by Canadian car sharing systems in Toronto, Montreal, Quebec and Ottawa suggest that between 15 to 29% of car sharing participants sold a vehicle after joining a car sharing program, while 25 to 61% delayed or had forgone a vehicle purchase. U.S. studies and surveys indicate that between 11 to 26% of car sharing participants sold a personal vehicle, and between 12 to 68% postponed or entirely avoided a car purchase. Furthermore, U.S and Canadian data reveal that each car sharing vehicle removes between 6 to 23 cars from the roads

- 17% of PhillyCarShare members got rid of a car and 30% decided not to purchase a car after taking a membership to PCS. That means that 5,610 cars were sold and 7,200 were not purchased. A total of 12,810 fewer vehicles are on the road as a result of car sharing in the Philadelphia area

- A reduction in vehicle ownership, results in fewer vehicle miles or kilometers traveled, reduced traffic congestion and parking demand, and an increase in the use of public

transportation and other transport modes (such as biking and walking) instead of car travel. Car sharing results in an average reduction of 44% in vehicle miles traveled per car sharing user in North America.

- PhillyCarShare own study shows that its members have driven 42% fewer miles. PCS members drive 113 fewer miles per month after joining.

2. Environmental Impact:

- Reduced vehicle ownership and reduced vehicle miles traveled result in lower greenhouse gas emissions, as trips are shifted to transit, biking, and walking. In Europe, car sharing is estimated to reduce the average user's carbon dioxide emissions by 40 to 50%. In addition, many car sharing organizations include low-emission vehicles, such as gasoline-electric hybrid cars, in their fleets. Car sharing members also report a higher degree of environmental awareness after joining a car sharing program.

- 50% of PhillyCarShare vehicles are hybrids and 90% are low emissions vehicles. That translates in less pollution and less gas usage. PCS members reduced their auto emissions by 95% reduced by driving hybrids, driving less, and making fewer "cold starts" as the vehicle remains warm from a previous user.

- 40% of PhillyCarShare members walk more after joining, 34% take public transit more often, 18% use their bicycle more often and 13% take taxis more frequently.

3. Impact on Land use.

- Car sharing reduces the number of parking spaces needed. Specifically, PhillyCarShare computed that each car share pod in a residential community reduces the need for car parking by 25%. In other words, a parking design that balances Car Share pods and space for residents' cars enables to reclaim a quarter of the parking space to uses that better serve the community.

4. Social Impact:

- Finally, car sharing also shows evidence of beneficial social impacts. Households can gain or maintain vehicle access without bearing the full costs of car ownership. Depending on location and organization, the maximum mileage up to which car sharing is cost-effective in comparison to owning or leasing a personal vehicle lies between 7,000 to 10,000 miles. Low-income households and college students can also benefit from participating in car sharing since the hourly cost of car sharing includes gas and insurance.

- In 2007, The University of Pennsylvania signed a Partnership agreement with PhillyCarShare that offers special contract rates to Penn employees. The program also encourages faculty, staff and students to use car sharing in their everyday lives, giving \$25 in free credits to the first 1,000 people who set up personal accounts with the company. Also PhillyCarShare has agreed to set aside 1 percent of profits from the University partnership to the Penn Sustainability Fund, which will support environmentally sustainable projects. PhillyCarShare is targeting colleges because most other rental companies will not rent to anyone under 25 without charging a large insurance fee. PhillyCarShare has no fee and the minimum age to join is 18.

Overall, comparing the metrics collected by the 2005 survey of 26 car sharing programs in North America with those published by PhillyCarShare, the impact of PCS falls well within the boundaries of what the other car sharing programs in North America have reported. The success of car sharing in North America and Europe shows that car sharing is filling a need. Car sharing fills a niche that is not met by outright car ownership or by car rental companies or by taxi cabs or by public transportation. Lots of people do not drive enough to justify the \$6,169 annual cost of car ownership and at times, people do need their own wheels for a short while.

PhillyCarShare's success is also due to a number of innovative commercial initiatives such as: totally free membership, partnerships with the City of Philadelphia which enabled the municipal administration to get rid of 330 vehicles from its fleet, and with the University of Pennsylvania. PhillyCarShare continued expansion into the Philadelphia region will require more new ideas and partnerships to adapt to suburban transportation patterns.

Sources:

1. PhillyCarShare website - <http://www.phillycarshare.org> and profile sheet
2. "Car Sharing in North America": BY Shaheen, Cohen and Roberts.

Paper submitted to the Transportation Research Board. Nov 2005

<http://www.carsharing.net/library/UCD-ITS-RR-05-30.pdf>

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