



EXECUTIVE SUMMARY

"One-Less-Car" Demonstration Study

Results from the "One-Less-Car" Study what 86 households did in just 6-9 weeks!

- Households saved an average of \$70 per week.
- All households realized they could live with "one-less-car" and have the mobility they need.
- Reduced 41,463 miles of SOV trips, which is almost enough to drive around the earth twice!
- 8,003 fewer drive-alone car trips in Seattle neighborhoods.
- 30,198 pounds fewer CO₂ emissions - if you convert the pollution not emitted into a volume measure it can be visualized as 15 six-lane swimming pools full of pollution.
- 1 in 5 even sold their "extra" car after the study.
- Reduced SOV miles by 22%.*
- Increased transit use mileage use by 125%.*
- Increased walking mileage by 38% and biking mileage by 30%.
- Households recognized they could save an average of over \$4,000 per year if they didn't own their second car.
- All households commented that they will make more conscious transportation choices in the future.

* these figures from the Fall 2002 round of the study

Way to Go, Seattle! is an umbrella for the City of Seattle's innovative programs with multiple but simple objectives - improving personal mobility, reducing personal costs, and increasing productivity of the City's existing transportation system. These goals are achieved by showing people they can save money and have more livable communities by making more thoughtful choices about how they get where they want to go.

Way to Go, Seattle! strives to find creative ways to reduce the number of drive-alone car trips on the transportation system, a practice commonly referred to as Transportation Demand Management, or TDM.

What Is It?

One of the signature programs operating under the **Way to Go, Seattle!** umbrella has been the **"One-Less-Car" Demonstration Study**, which aimed to:

- 1) decrease trips and miles driven in single-occupant vehicles (SOVs),
- 2) raise household awareness about the true costs of owning and operating cars,
- 3) encourage more thoughtful transportation choices where citizens more effectively use

the full range of transportation modes and choices available, and

- 4) reduce and quantify vehicle miles traveled (VMT) and pounds of CO₂ emissions reduced during the project.

Building on the successes of previous energy and water conservation campaigns, the **"One-Less-Car" Demonstration Study** developed a new conservation model for transportation with the overall goal of supporting city residents in considering the impacts of the methods they use to get around. We encourage people to see transportation as a resource that should be conserved by behavior changes which can also save them money and make a big impact when made collectively.

Why Do It?

Because in the long run, fewer drive-alone car trips result in public benefits of cleaner air, less neighborhood traffic and 'wear and tear' on streets, less land devoted to parking that can then



Bobbie and her son are devoted bus riders since selling their second car as a result of the *Way to Go* project. "I think we're happier and healthier for it."

be available for more desirable uses, and better use of the transportation system (e.g. using the best mode or choice available for a particular trip instead of habitually jumping into the car). Driving is responsible for over 60% of the pollution in the Northwest which contributes to global warming in the form of carbon monoxide emissions. Travel surveys have shown that approximately 80% of all daily trips are for non-work related purposes, and it comes as no surprise that we are as frustrated by traffic on the weekends as we are during weekday peak commute hours. In some parts of the country, households spend more per month on the cost of transportation than on groceries, and the costs of owning one or more cars takes a disproportionate toll on a family's income, especially in lower-income households. The **"One-Less-Car" Demonstration Study** is a cost-effective test that determined how receptive Seattle residents are to making more thoughtful choices about how they get where they go.

How Does It Work?

The **"One-Less-Car" Demonstration Study** offered households information and financial incentives to help them reduce their car use and try other means of transportation, and to rethink the way they use their car for all their trips including commuting to work, running errands, and going to entertainment. We conducted a total of three rounds of the Study in Fall 2000, Spring 2001, and Fall 2002. Altogether a total of eighty-six households in Seattle agreed to stop using one of their cars for either six or nine weeks, and keep a diary of where they went and how they got around during that time. Many types of households from a wide range of Seattle's neighborhoods were represented: single people and couples - both with and without children, roommates and relatives, renters and homeowners, and young and old.



"The weekends were the hardest, with two kids and two soccer games to get to. But we just had to talk about where we needed to go and how we were going to accomplish the day's tasks."
- Sharon

Participating households received a weekly stipend to compensate them for the extensive data they recorded, the public resources they saved, and for their input and help in identifying barriers and incentives to automobile trip reduction, particularly non-work related trips. The stipend also served as an economic incentive which simulated the savings they would have in their pocket if they really did not own the car they parked. The stipend averaged \$85 a week (\$4,420 per year), the amount of money the average second car costs to own and operate (this figure includes all costs such as registration, insurance, maintenance, gas, and parking).

What Were the Results?

Although the sample size of eighty-six participant households is too small to be statistically significant, the data reveals intriguing trends. The collective behavior of the participant households changed. They reduced drive-alone car miles traveled and trips made while increasing the number of miles traveled and trips made using non-drive-alone car modes (such as busing, biking, carpooling, and walking). The Study identified a number of factors that helped people make the behavior change: people's

increased awareness about their actual car costs, education about the full variety of travel options available to them, and an immediately tangible economic incentive for not driving their "extra" car.

Many households were able to give up one of their cars with relative ease by biking, busing, carpooling, car-sharing, taking taxi rides, walking, and consolidating trips more often. In addition to the previously mentioned public benefits, participants also saved money, reduced their stress levels, increased their physical exercise, felt more connected to their community, shopped more at nearby neighborhood businesses, and enjoyed more quality time with family members.

Most households saved an average of \$70 per week getting around using non-drive-alone modes of transportation compared to the cost of owning and operating their "extra" car (that's over \$3,600 in a year). As a result of all three rounds of the Study, eighteen out of ninety households¹, or 20%, sold their "extra" car. They realized the economic savings that were possible along with the viability of getting where they needed to go using other modes. And two of those households went on to sell not just one but *two* of their "extra" cars!² The majority of participants understood, for the first time, just how much their car was costing them per week and per year. They were truly surprised by how much they were spending. All of the households said they will continue making more thoughtful choices about how they travel, and won't be so likely to hop into the car without thinking about whether there is another way to get where they need to go, especially seeing the numerous personal benefits of reduced car use to their quality of life.

Details of Results

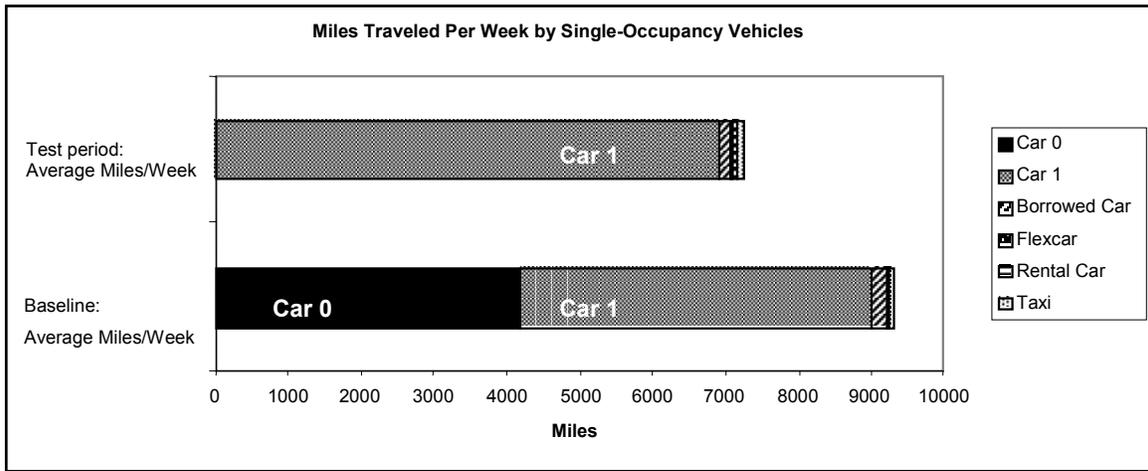


Figure 1*: Total Participant Miles Traveled Per Week by SOV, Baseline vs. Test Period, Fall 2002 Round³

As Figure 1 shows, total SOV use decreased significantly - by 22% - in the Test period compared to the Baseline period, primarily due to the removal of Car 0 (the car they parked). Figure 1 shows that Car 1 use increased dramatically in the Test period, partially compensating for the lack of Car 0. However, the increased use of Car 1 and other SOV modes in the Test period is still significantly less than all SOV modes – including Car 0 – in the Baseline, indicating a real reduction in SOV and car miles took place. It is also clear from Figure 1 that the usage of Cars 0 and 1 dwarfed that of the other modes of single-occupancy vehicle transportation (such as borrowed cars, Flexcar, rental cars, and taxis).

¹ Eighty-six households took part in the study proper. There were four more households which decided to sell their second car before the study began based solely on realizing how much they would save by not owning it, which they discovered by filling out our Car Cost Worksheet during the study intake process.

² To be eligible, applicants could not have more cars than drivers (so that a 2-driver household would go from 2 cars to 1 car during the study, and so on). This is because giving up a car in a household with more cars than drivers is not that hard.

³ The third round in Fall 2002 had a total duration of 12 weeks: 3 Baseline weeks followed by 9 Test weeks.

*This chart is identical to Chart 13 in the 2002 "Report on Results" document.

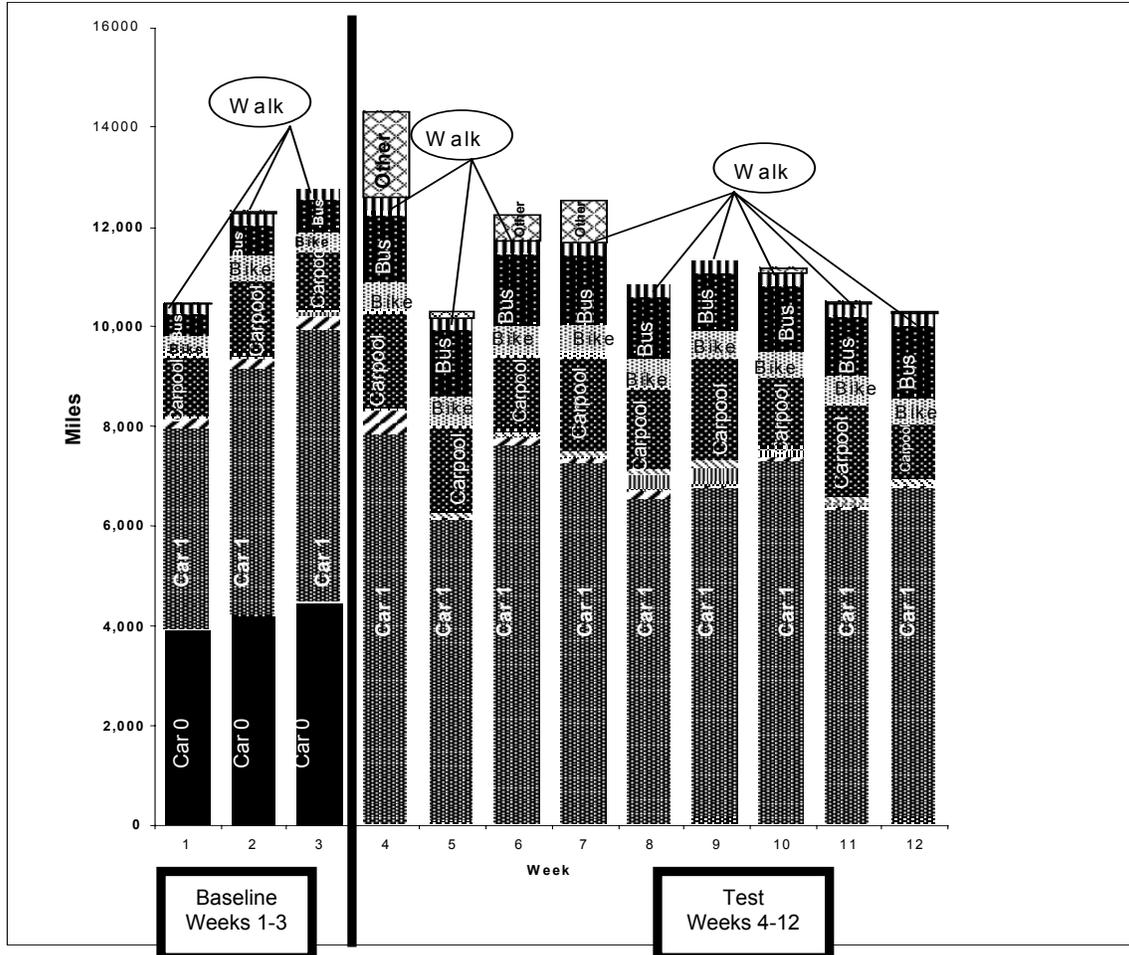


Figure 2*: Miles Traveled by All Modes - 2002 Round

As Figure 2 shows, participants are able to get where they needed to go much the same even when living with "one less car." Although the car they parked (Car 0⁴) is no longer used after week 3, total miles traveled by all modes do not decrease - in fact, the first week of the Test period (week 4) was the most heavily traveled week of the study.

Total miles driven by all single occupant vehicles (SOV) - such as Car 0 (the car they parked), Car 1 (their primary car), Other SOV (borrowed cars, Flexcars, rental cars, and taxis) - do decrease in the Test period compared to the Baseline. Figure 1 shows that although the participants shifted much of their Car 0 travel to Car 1, they still had an overall **decrease** in car trips and trips by all SOV modes. At the same time biking, busing, carpooling, and walking clearly **increased** in the Test period.

⁴ We chose to label the car they were "giving up" for the study as "Car 0", because it "disappeared" during the Test period of the study.

* This chart is identical to Chart 1 in the 2002 "Report on Results" document.

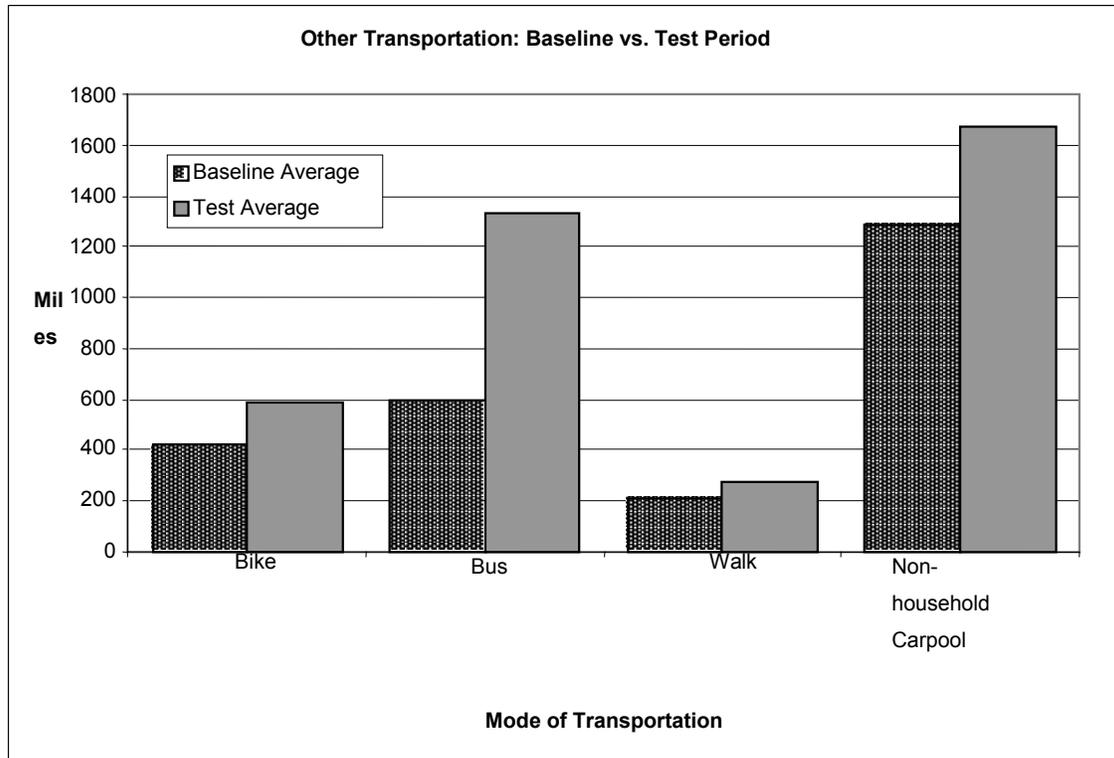


Figure 3*: Non-SOV Usage, Baseline vs. Test Period, Fall 2002 Round

*In Figure 3, usage of all non-SOV modes of transportation **increased** in the Test period, as participants shifted their travel choices to non-SOV modes after Car 0 was removed. Overall bicycling mileage increased by 38%, transit use (bus) mileage increased by 125%, carpooling mileage increased by 23%, and walking mileage increased by 30%!*

Results For Families with School Age Children

We analyzed the results for participant families with school-age children in the Spring 2001 round⁵ in an effort to identify unique changes in transportation habits for this group. The Spring 2001 round was the only one giving us a comparison between travel behavior during and after the school year. It ran from mid-May to the end of July including the end of the school year in mid-June. We were interested in how the end of the school year may have affected trips and miles traveled for those participants with school-age children.

Results reveal curious trends. The number of miles traveled dropped over 100 miles per week from the baseline period to the first three weeks of the Test period (up to the end of school), but the number of trips stayed much the same. Once the school year ended (weeks four to six of the Test period), the number of trips for these households with school-age children dropped nearly 20%, while the number of miles traveled fell even more, this time to an average of roughly 27% less than during the baseline period.

This suggests that these families traveled fewer miles while making the same number of trips while their children were in school, possibly choosing **different** or **closer**, destinations. Or perhaps they made **quicker** or **shorter** trips because more drivers were sharing the same car.

⁵ The second round in Spring 2001 had a total duration of 9 weeks: 3 Baseline weeks followed by 6 Test weeks.

* This chart is identical to Chart 20 in the 2002 "Report on Results" document.

Summary of Combined Results from All Rounds

Simply said, while participants did reduce auto trips and mileage, they still had the mobility they desired and got around using non-SOV modes instead. Combining the results of all three rounds of the Study together, the eighty-six participant households reduced a total of:

- 41,463 miles driven⁶ - which is almost enough to drive around the earth twice, or
- an average of 1,974 miles not driven per week, or
- 482 miles saved per household⁷.

Likewise, participants made a total of:

- 8,003 fewer car trips⁸, or
- an average of 381 fewer car trips per week, or
- 93 fewer trips per household.

Finally, the eighty-six households reduced total CO₂ emissions by:

- 30,198 pounds⁹ - comparable to 15 six-lane swimming pools of pollution, or
- an average of 1,438 pounds per week, or
- 351 pounds per household.

A majority of participant households were able to reduce SOV (drive-alone) trip mileage by using other modes (biking, busing, carpooling, and walking) or by consolidating and linking trips. When compared against their baseline travel behavior in the test period¹⁰, there was:

- a 27% **decrease** in overall SOV (drive-alone) vehicle miles, and
- a 30% **decrease** in overall number of SOV (drive-alone) trips per week.

At the same time there was:

- a 30% **increase** in overall miles traveled using non-drive-alone modes, and
- a 53% **increase** in overall number of trips made using non-drive-alone modes per week.

For example, in the 2002 round Test period:

- bicycling mileage increased by 38%,
- transit use (bus) mileage increased by 125%,
- carpooling mileage increased by 23%,
- and walking mileage by 30%!

What's Next?

The "**One-Less-Car**" Demonstration Study forms the basis of a public education campaign urging citizens to make wise transportation choices – including selling their second cars. A small pilot version of this "transportation conservation" campaign was launched in Fall 2003 as the

⁶ The Test period in the first and second rounds of the Study was 6 weeks long, and was 9 weeks long in the third round. In the first round, 22 households saved 8,100 miles in the just 6 weeks. In the second round, 23 households saved 7,600 miles in just 6 weeks. In the third round, 41 households saved 25,763 miles in only 9 weeks. This totals 41,43 miles.

⁷ Figure is the average total miles saved per household.

⁸ In the first round, 22 households saved 1,700 trips in the just 6 weeks. In the second round, 23 households saved 1,200 trips in just 6 weeks. In the third round, 41 households saved 5,103 trips in only 9 weeks.

⁹ In the first round, 22 households saved 6,500 lbs. of CO₂ in the just 6 weeks. In the second round, 23 households saved 6,100 lbs. of CO₂ in just 6 weeks. In the third round, 41 households saved 17,598 lbs. of CO₂ in only 9 weeks.

¹⁰ These percentages are derived from the combined results for the 2001 and 2002 rounds - we did not fund this level of analysis for the first round in 2000.

“One Less Car Challenge.” Participants will learn that making more thoughtful transportation choices - and in some cases that owning fewer cars - reduces stress and saves money. The campaign promotes drive-alone trip reduction through increased use of biking, busing, car-sharing (such as the Flexcar club), and walking by educating about all available travel modes and providing incentives to drive less.

Recycling . . . waste reduction . . . energy conservation . . . water conservation . . . Seattle led the way serving as a model for other cities around the country. Could reducing city traffic and air pollution be next?

Details and products may be found on the project web site at www.seattle.gov/waytogo or by contacting waytogo@seattle.gov or **(206) 615-1550**.