

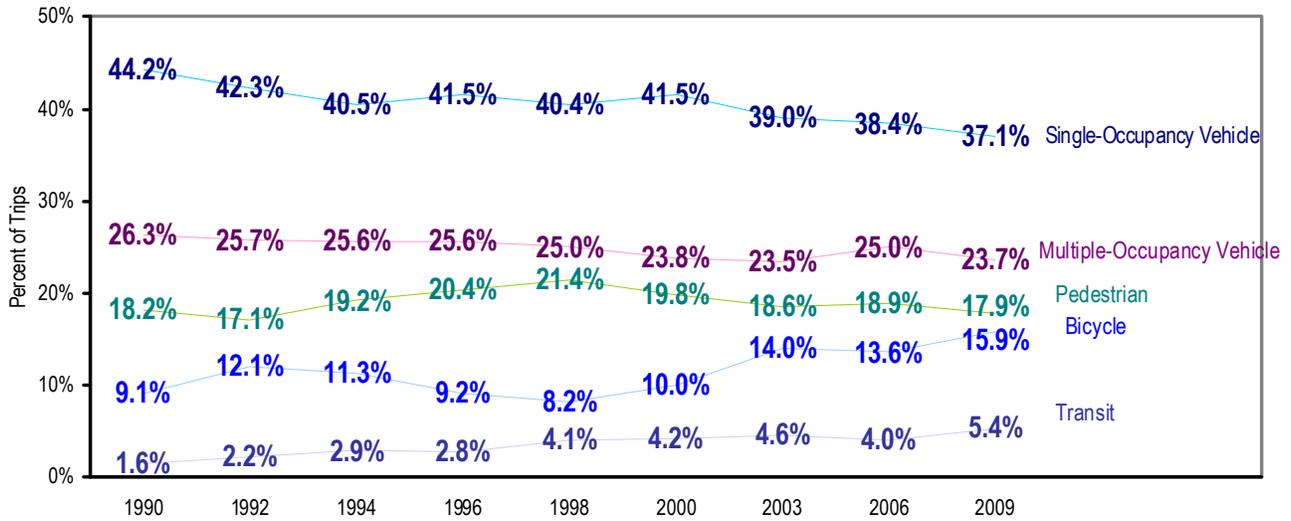
## Executive Summary

### Background

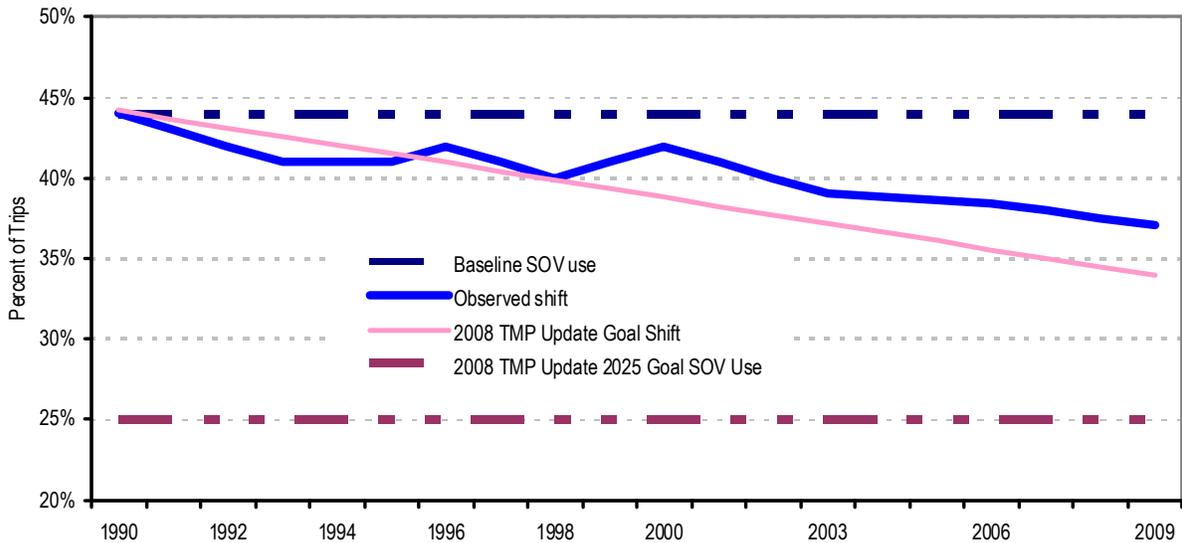
- The 2009 Travel Diary Study is the eighth replication of the survey since the 1990 baseline survey. This study is a periodic survey of Boulder Valley residents' travel patterns and mode selection, and is designed to provide feedback to City staff and Council members on the effectiveness of City programs aimed at reducing single-occupancy vehicle (SOV) travel, and to provide information on travel patterns useful for future transportation planning.
- The long trend line generated by the multiple implementations of the study is useful in measuring the City's progress towards the TMP objective to reduce the SOV modal share to 25% of all trips by the year 2025. Achieving an SOV modal share of 25% by the year 2025 would mean a 19% shift in the proportion of SOV trips made from 1990 to 2025, or a 0.54% shift per year.
- Participants in the Travel Diary Study are asked to keep a log or "diary" of their travel for one randomly assigned day during the third week of September (or a replacement week if necessary). For every trip made during the 24 hour period, respondents record the origin and destination of the travel, the travel mode used, the time of day, the number of people in the vehicle (if applicable), and the number of miles or blocks traversed during the 24 hour period. A trip is defined for participants as any "one-way travel from one point to another that takes you farther than one city block (about 200 yards) from the original location."
- The study members were also asked to complete a survey regarding their household characteristics such as number of vehicles and bicycles present in the household, receipt of deliveries, work location, and other general socioeconomic demographics.
- The 2009 Travel Diary Study results are based on approximately 1,200 Boulder Valley residents' records of their travel. With a sample size of 1,000 or more in each study year, the margin of error around the results is  $\pm 1.3\%$  per year. Thus, for a difference to be statistically significant between years there must be a shift of at least 2.6% (1.3% around each study year).

### Modal Shift of All Trips

- "Modal split" or "modal share," can be defined as a method of dividing travel into all available transportation modes and determining the percent of trips made or miles traveled by each mode. For the Boulder Valley Travel Diary Study the transportation modes are classified as single-occupancy vehicle (SOV), multiple-occupancy vehicle (MOV), transit or high-occupancy vehicle, school bus, foot and bicycle. A comparison of the mode choices from 1990 to 2009 provides information on modal "shift," that is, the shift of trips or miles traveled from one mode to another. This "shift" was measured as the difference in the proportion of trips from 1990 to 2009 (change in percents).
- The figure below shows the modal split of all trips made by respondents in every study year. Compared to 1990, significant shift in trips was observed in three categories:
  - ◆ Single-Occupancy Vehicle, -7.1%
  - ◆ Multiple-Occupancy Vehicle, -2.6%
  - ◆ Transit, +3.8%
  - ◆ Bicycle, +6.8%



➤ The 2008 TMP includes an objective of achieving an SOV modal share of 25% by the year 2025; this would mean a 19% shift in the proportion of SOV trips made from 1990 to 2025, or an average annual shift of 0.54%, assuming equal progress throughout the thirty-five year span. In the figure below, the 2008 TMP target is plotted with the observed shift. As can be seen, the observed modal shift has not quite kept pace with the 2008 TMP objective in recent years.

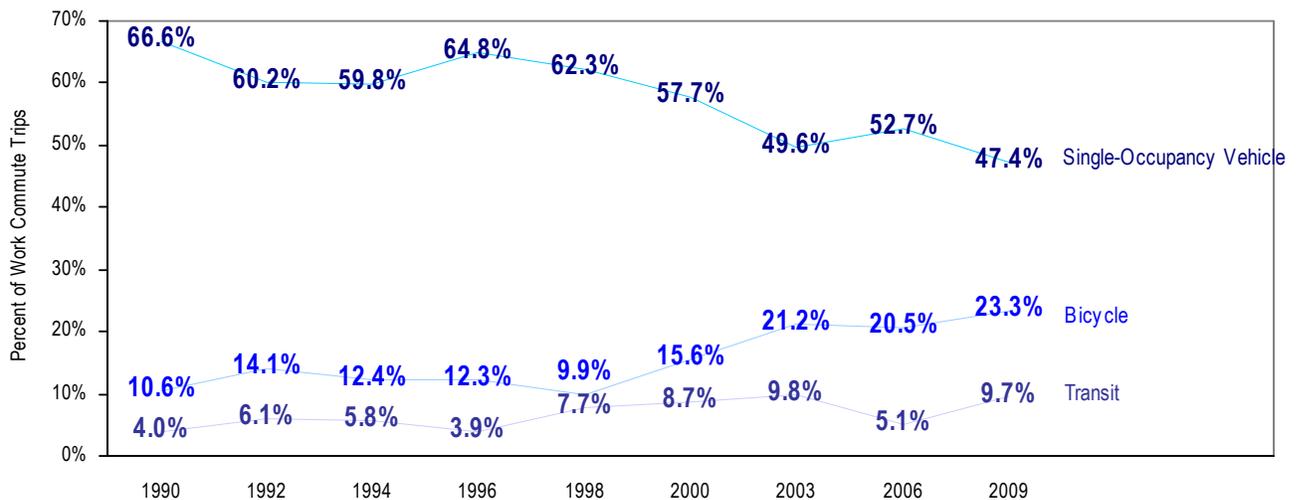


- Changes in Boulder citizens' travel behavior cannot be solely attributed to the City's interventions, as regional and national transportation trends also impact travel behavior.
  - ◆ Nationwide, there was a 0.6% shift away from trips made via private vehicles (87.6% in 1990, 87.0% in 2001) over an 11 year period, which translates to an average annual decrease of 0.05%. However, among Boulder Valley residents, there was a 9.7% shift observed (70.5% in 1990, 60.8% in 2009), an average annual decrease of 0.51%.
  - ◆ The proportion of trips made on transit remained virtually unchanged nationally, (2.0% in 1990; 1.7% in 2001) while in Boulder there was a 3.8% shift toward public transit (1.6% in 1990; 5.4% in 2009), representing an average annual increase of 0.2%.
  - ◆ When the modal split of miles traveled is examined, there was a 1.2% shift *towards* miles traveled via private vehicles nationally (95.3% in 1990, 96.5% in 2001), while in Boulder there was a 4.5% shift *away* from miles traveled via private vehicles (87.7% in 1990, 82.0% in 2009).
  - ◆ The proportion of miles traveled via transit stayed flat nationwide, 1.5% in 1990 to 1.2% in 1995, while in Boulder the percent of miles traveled via transit increased, from 4.1% in 1990 to 6.9% in 2009.

## Modal Split of the Work Commute

- The figure below shows the percent of work commute trips made by respondents via SOV, bicycle and transit in every study year. Little change was observed over the study period in multiple-occupancy vehicle trips (between 8% and 11%) or pedestrian trips (also between 8% and 11% of work commute trips). Compared to 1990, significant shift was observed in three categories:
  - ◆ Single-Occupancy Vehicle, -19.2%
  - ◆ Transit, +5.7%
  - ◆ Bicycle, +12.7%

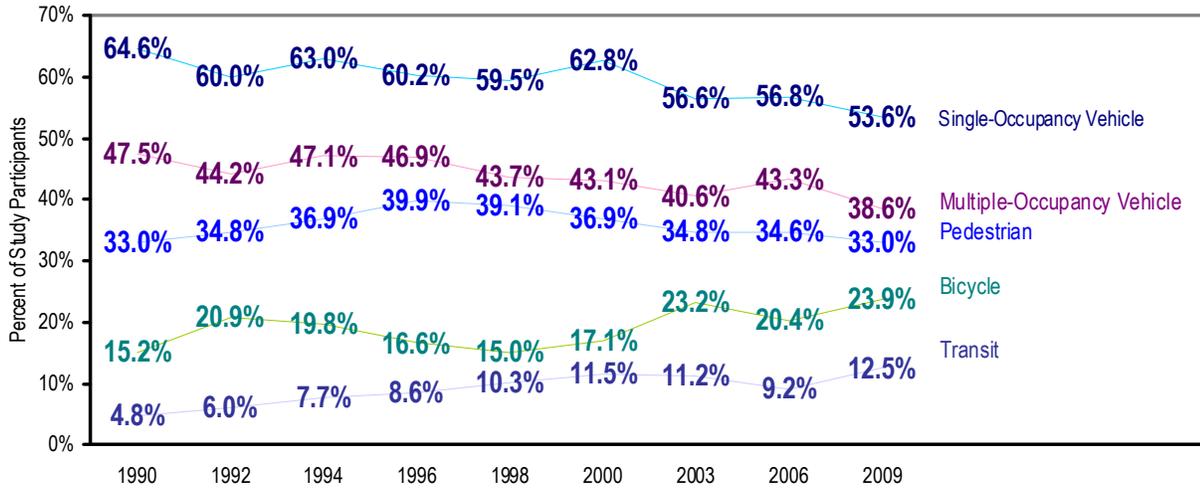
- Transit trips, which had been increasing in modal share of work commute trips, have remained relatively flat since 2003, with a decline in 2006 and a rebound in 2009 to 2003 levels.



- Use of a private vehicle for the work trips has remained constant across the U.S., as measured in trips and miles, while Boulder has experienced a decline in work trips made via private vehicles.

## Mode Use

- The proportion of people making at least one trip on the assigned travel day by each mode throughout the study period is shown below. Over the study period, the percent of participants making any trips by SOV or MOV has declined, while the proportion making any trips via transit or by bicycle has increased.



## Trip Characteristics

- The information recorded on the travel diary can be used to characterize the trip-making behavior of Boulder residents. Most trip characteristics have not changed much over the study period. In 2009:
  - ◆ The average number of trips per day per person was 5.1.
  - ◆ The average number of miles traveled per day per person was 24.7 miles.
  - ◆ The percent of people who did not leave the house on assigned travel day was 5.8%
  - ◆ The average estimated trip distance was 5.0 miles.
  - ◆ The average estimated trip duration in was 17.0 minutes.
- Compared to national data, Boulder residents make shorter trips (5.1 miles for Boulder residents compared to 9.9 miles in 2001 for U.S. residents). Trip duration is also shorter for Boulder residents (17.0 minutes) compared to U.S. residents in 2001 (18.7 minutes).
- The average work commute trip for Boulder residents in 2009 was 6.1 miles in distance and 17.1 minutes in duration. The average work commute for U.S. residents in 2001 was 14.6 miles and 24.8 minutes.