

2001 TDM Annual Survey

Prepared For:

Regional Public Transportation Authority



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Appendix A – Questionnaire

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Executive Summary and Conclusions

This report presents the results of a telephone survey of adults age 16 and older in Maricopa County conducted by WestGroup Marketing Research, Inc. The purpose of the telephone survey was to assess participation in and reactions to the Trip Reduction, Regional Rideshare, and Clean Air Campaign programs for the Regional Public Transportation Authority. The study was conducted in partnership with the RPTA, Maricopa Association of Governments, Maricopa County, and the cities of Tempe, Scottsdale and Gilbert.

The interviewing began with the completion of 600 general market surveys. Additional surveys were conducted with residents living in Tempe, Scottsdale and Gilbert to provide those cities with samples large enough to compare to the main sample. . All three cities over sampled to 200 to 204 completed interviews. The over sample interviews are included in the total sample, but the sample has been weighted back to the proportion by city as found in the initial 600 interviews. The total weighted sample has a margin of error of $\pm 2.8\%$. The subgroup of employed respondents (n=653) has a margin of error of $\pm 4.0\%$.

Executive Summary

Most Important Issues Facing the Valley

- **Nearly two-thirds of Valley residents (63%) feel that air quality factors are some of the major issues facing the Valley in 2001**, with growth management being the issue receiving the highest number of mentions (28% of total mentions). There was a significant decrease in the percent of total mentions for air quality , transportation in general, and for public transportation/transit compared to last year.
- **Slightly more than half of residents (52%) rated the magnitude of the Valley's air pollution problem as "big" in 2001** which is down significantly from the 2000 rating (64%).
- More than two-thirds of all residents surveyed (68%) feel the Valley's traffic congestion problem is a "big problem." This is similar to last year's findings (69%) but down from 1999 (77%).
- **Encouraging employers to allow telecommuting was the most strongly supported solution presented to residents (65%, 50% "definitely would support + 15% "4" rating)**. However, support for increasing bus service, adding more freeway lanes, and building a new light rail system is also considerable (58%, 55% and 54% gave a rating of 4 or 5, respectively).

Clean Air Campaign

- **Currently 36% are “very” favorable toward the campaign and an additional 48% are “somewhat favorable.”**
- **Nearly three in five (55%) of those who had seen or heard something about the Clean Air Campaign, or ways to reduce air pollution, indicated that they have taken some action to try to reduce air pollution as a result of the information, down from 58% last year and 66% in 1999. The most common actions taken are carpool or drive less (24% and 17%, respectively).**
- **As in 2000, seven in eight Valley residents (88%) had seen or heard an ad for the Clear Air Campaign or a news story/PSA about ways to help reduce the Valley’s air pollution.**

Alternate Mode Usage – Percent of People

- **Total Alternate mode usage one or more days a week (i.e., when telecommuting and compressed schedules are included as alternate modes) decreased to the lowest level since 1993 (37% 2001, 40% 2000). The usage of traditional alternate modes (i.e., bus, bike, walk, or carpool) also decreased to one of the lowest levels in the past decade (28% of employed residents used one of these four alternate modes to travel one or more days a week to work).**
- **The percentage of people who exclusively use alternate modes including telecommuting and compressed work schedules (i.e., those who use only alternate modes to commute) is 12% (compared to 13% in 2000 and 9% in 1999).**
- **In 2001, the percent of people who drive alone to work at least one day a week once again climbed to 87% after decreasing in 2000 (83%).**

Alternate Mode Usage – Percent of Trips (average per day)

- **Despite a decrease in the percentage of people using traditional alternate modes this year, the percent of trips made using alternate modes remained the same (23%).** There was a decrease in the number of alternate mode trips for carpools and vanpools (17% down to 13%), however, the percent of trips made via the bus increased from 2% to 5%.
- **When telecommuting and compressed work schedules are included, the percent of trips or non trips related to alternate modes or schedules was up slightly at 28% (compared to 27% in 2000 and 25% in 1999).** The remaining 72% of all trips are SOV.

Estimated Savings Due to Alternate Mode Usage

- **The number of non-home based employed people using alternate modes continues to increase at a faster rate than the population of employed persons as a whole (44% vs. 41%). The alternate modes to have made the most significant changes since 1993 are riding the bus (up 228%), walking (up 251%) and telecommuting (up 602%).**
- **The number of trips using alternate modes has increased significantly by 77% since 1993. In comparison, the total possible number of commute trips has only increased by 44%. Of the estimated 871,400 new commute trips being made daily in the Valley since 1993, 356,600 or 41% are being made by alternate modes or trip eliminations.**
- **Bus trips have increased 461%, walking by 204%, and telecommuting by 336%.**
- **In total, approximately 6.3 million vehicle miles (approximately 19% of the total possible commute miles) were saved or not driven daily in the spring of 2001 because employees used an alternate mode of transportation, worked at home, or had a compressed work schedule.**
- **These savings (above) mean that there was 224,800 fewer pounds (or 112 tons) of pollution released into the air each day; 1,192,500 fewer pounds (or 596 tons) released each week, or 31,000 tons of pollution released each year.**

TRP and Non-TRP Affected Employer Comparison

- **As in the overall sample of residents surveyed this year, total alternate mode usage (including telecommuting and compressed schedules) for *TRP-affected* organizations decreased to one of the lowest levels since 1993 (currently at 38%). However, the percentage of employees at TRP affected companies using the bus increased as well as the incidence of telecommuting. Alternate mode usage among employees at *non-TRP affected* organizations increased in 2001 due to an increase in the usage of telecommuting and compressed work schedules (36% vs. 30% in 2000).**
- **In *TRP affected organizations*, one-fourth (27%) of all work trips including telecommuting and compressed schedules were made (or not made) using alternate modes. The percent of alternate mode trips among *non-TRP affected* organizations was essentially the same as last year (26%).**

Alternate Mode Usage Among Students

- **Students are significantly more likely to use alternate modes of transportation to commute to work or school. Overall, 63% of students reported using an alternate mode of travel for their commute at least one day a week. Although the percentage of students using alternate modes stayed the same, the percent of alternate mode trips made by students decreased slightly from 56% in 2000 to 51% in 2001. The largest decreased in trips occurred was for carpooling (25% in 2000 compared to 15% in 2001).**

Reasons for Using Alternate Modes

- Overall, alternate mode users most often cite the following reasons for using an alternate mode at least once during a typical week: convenience (20%), saving money on gas (12%), and no other form of transportation (12%).

Telecommuting

- Seventeen percent (17%) of employed residents who do not typically telecommute report they have telecommuted in the past. They were most likely to say they telecommute(d) one to three times per month (34%) or on a project by project basis (26%).

Reduction of Drive Alone Trips

- Valley residents are most willing to keep their cars well tuned in an effort to preserve air quality (97% are “very” or “somewhat willing”). A majority of residents also say they would be willing to make fewer automobile trips and to fuel after 4:00 p.m. trips to help Valley air quality (87% and 84%, respectively). Residents are least likely to commit to a willingness to use the bus more often (42%).
- Residents say they would be most encouraged to consider using an alternate mode by messages about reducing air pollution and increasing resident health (22%) and helping to keep the sky blue (18%).
- Two in five (40%) employed residents and students who reported they do not typically use an alternate mode reported that they have done so in the past two years. They were most likely to report that they have driven or ridden with others to work with some regularity within the past two years (25%). An additional thirteen- percent (13%) say they worked at home in the past.
- Overall, nearly seven in ten (68%) respondents who used an alternate mode in the past to get to work or school reported they would be likely to consider using that method again. Those most likely to consider using the specific alternate mode they once used rode their bike in the past (75%). Those who walked in the past were the least likely to say they would consider doing it again (46%).
- Those who do not typically use an alternate mode to commute to school or work are most likely to say it is because their work schedule varies, there is no one to carpool with and/or because it is inconvenient (27%, 15%, and 12% respectively).
- Nearly three in five (57%) employed residents and students who do not typically use an alternate mode reported there are some circumstances that would enable them to use an alternate mode. Respondents were most likely to say better transit (21%) and/or a carpool partner (16%) would enable them to do so.

Bicycling Behavior

- One-third of Valley residents (34%) currently ride a bicycle for some purpose. A majority of Valley riders (68%) say they bicycle for exercise and/or do not have a specific destination; they ride “around the neighborhood.” An additional 27% say they bike to the grocery store (up from 14% last year). Nearly one five (18%) report biking to the park (down from 27% in 2000).
- If improvements such as more on-street or off-street bikeways were made, an additional 16% say they would ride to the grocery store. Improvements would prompt nearly one in ten to bike to work (8%) and/or ride for fun or exercise around the neighborhood (9%).
- Bike riders are more likely to increase the amount they bike ride if there are more *off-street* bikeways (53% rated “4” or “5”). In addition, 39% say more bike lanes *on the streets* would encourage them to ride more often.
- Bike riders are most likely to ride on residential streets (94%), however side-streets and paved bikeways are also quite popular (77% and 67%, respectively). Fewer ride on unpaved trails (39%) and busy major streets are the least popular (29%).
- On average, Valley bikers travel 4.4 miles on a typical bike ride. They are most likely to ride one to three miles (47%).

Valley Metro

- Greater than two-thirds (68%) of Valley residents have heard of the name “Valley Metro.” Residents who have heard of Valley Metro are most likely to indicate Valley Metro provides bus service and/or public transit (61% and 22%, respectively).

Health Problems Related to High Pollution Levels

- In 2001, 45% of Valley residents said that either they or someone in their household experiences health problems when pollution levels are high. This is down from 52% last year.

Internet Access, Usage and Impact

- In 2001, five in seven area residents (70%) reported having a personal computer in their homes. This percentage has increased more than 50% since 1994 (43%).
- Access to the Internet from home, work or school has increased nearly two and one-half times since 1997 (from 30% to 72% for all households). Internet access is even higher among employed residents with 86% reporting access to the Internet at home, school, or work.

- Forty-four percent (44%) of residents with Internet access feel making purchases over the Internet causes them to make fewer driving trips. This represents a significant increase over 2000 when 28% felt this way.
- Nearly three in ten employed residents (29%) with Internet access have access to their work computer from home (up significantly from 20% in 2000).
- Approximately one-third (34%) of Valley residents with Internet access have a high-speed line for their Internet connection at home (up slightly from 32% last year). One in four (26%) of those without a high-speed connection plan to purchase one in the future (up from 18% in 2000).

Conclusions

1. *Air quality and transit continue to be important issues for Valley residents. This is evident not only from the top of mind responses of the residents, but also from their selection of the most motivating messages for using alternate modes of transportation. **Advertising themes should focus on improving air quality and improving the health of Valley residents** (particularly since half of the residents have a family member with health affected by pollution).*
2. Although awareness of the Clean Air Campaign remains high, residents are reluctant to make large changes in their commute behavior that will help reduce air quality and traffic congestion. Residents are most willing to keep their cars tuned and/or to refuel after 4pm. *The **focus of the campaign not only needs to be on motivating people to take action and convincing them that their actions will make a difference in the air quality and health of its residents, but also on the fact that they can be apart of the solution by taking the simpler actions.***
3. The trend in alternate mode usage overall among employed residents has been essentially “flat” the past few years, however, **the percent of people and trips using the bus and/or telecommuting was up from last year.** Both increases are encouraging because they are in areas with great potential due to increased bus service from the Phoenix and Tempe taxes and increased computer ownership and Internet access from home.

Therefore it is important for the RPTA to encourage and assist employers in implementing these strategies for trip reduction.
4. The percent of people carpooling and/or vanpooling declined this year, yet this continues to be the most likely traditional alternate mode for residents to consider. ***Residents need to be reminded of the merits of sharing a ride and the associated savings and employers need to be encouraged to continue promoting and assisting Valley employees in finding convenient carpools.***
5. As in 2000, although the sample size is small, ***it does appear that improvements to or the addition of on and off-street bikeways will help reduce driving trips, particularly when residents are running short errands.***

I. Introduction

A. Background

This report presents the results of a telephone survey of adults age 16 and older in Maricopa County conducted by WestGroup Marketing Research, Inc. The purpose of the telephone survey was to assess participation in and reactions to the Trip Reduction, Regional Rideshare, and Clean Air Campaign programs for the Regional Public Transportation Authority. The study was conducted in partnership with the RPTA, Maricopa Association of Governments, Maricopa County, and the cities of Tempe and Scottsdale.

This phase of the research continues a series of telephone studies conducted since 1987 for the RPTA in cooperation with MAG, ADEQ and the Maricopa County Trip Reduction Program. This survey tracks changes in travel behavior, perceptions of air quality, and air pollution control. Whenever appropriate, the analysis examines the trends that have occurred from year to year.

The interviews were conducted in late March and early April 2001. Results are based on 1,248, 12-minute, telephone interviews conducted with 617 male and 632 female respondents living in Metro-Phoenix.

The interviewing began with the completion of 600 general market surveys. Additional surveys were conducted with residents living in Tempe, Scottsdale, and Gilbert to provide those cities with samples large enough to compare to the main sample. All three cities over sampled to 200 to 204 completed interviews. The over sample interviews are included in the total sample, but the sample has been weighted back to the proportion by city as found in the initial 600 interviews. The total weighted sample has a margin of error of $\pm 2.8\%$. The subgroup of employed respondents (n=653) has a margin of error of $\pm 4.0\%$.

Households were selected by means of random digit dialing. The methodology effectively includes all residential telephone numbers regardless of listing. Newcomer households and as many as 50% of some subgroups are not listed in published directories. The importance of the RDD methodology is in its ability to provide a true random sample of the population.

B. Report Organization

This report presents a detailed analysis of the results of the 2001 RPTA Clean Air Campaign and Trip Reduction Program Survey, focusing on major trends and findings. Analysis of the results for each question in the survey is included in this report. Important differences between significant population subgroups are discussed, as well as comparisons with the previous Spring-time post-campaign studies. The main text is organized as follows:

Section I provides the **background** for the research and sampling information and demographics for the total sample.

Section II presents the **perceptions of the major issues facing the Valley** as well as specific reactions to the perceived magnitude of the air quality and traffic congestion problem in the Valley.

Section III examines **public awareness** of the Clean Air Campaign and related activities as well as attitudes toward the campaign and its effectiveness and impact on behavior.

Section IV presents a comprehensive **examination of current commute behavior**. This includes a discussion of work and school-related trips. This section also includes a discussion of estimates of daily commuting mileage for each mode of transportation based on population estimates provided by DES, past alternate mode usage, and recent changes to commuting patterns.

Section V looks at the **likelihood residents will take various actions** to reduce the number of drive alone trips they make.

Section VI examines the **bicycling behavior of Valley residents**. Specifically, bicycle usage levels, destinations, surfaces and distances are discussed.

Section VII includes discussions of residents' **awareness of "Valley Metro" and its services, health problems related to high pollution levels, and Internet access, usage and impact**.

Section VIII provides a detailed description of the **characteristics of the total sample** as well as the characteristics of the employed population and the organizations represented. Section VIII also provides a comparison of the demographic profiles of people who drive alone and those who use alternate modes of transportation.

Appendix A contains an exact copy of the questionnaire with the percentage distribution of responses to the questions transcribed on the questionnaire.

Due to the voluminous nature of the cross-tabulations for this survey, a complete set of cross-tabulations for each question from the survey is presented under separate cover and may not be included with all copies of the analytical report. Individual city reports are provided under separate cover.

C. Sample Sizes and Associated Sampling

There is a certain amount of sampling "error" that occurs with survey research because of the variability that is present whenever a portion of a population is examined to provide insight into the attitudes, opinions, and behaviors of the total population. This "error" does not imply an "error" on the part of the researcher, but reflects the likelihood that the estimates derived from interviewing a sample of the population differ from the numbers that would be obtained if the entire population were interviewed using the identical questions.

The amount of sampling error is determined almost entirely by the size of the subgroup of the sample and not by the size of the total sample interviewed. In other words, the sampling error associated with male respondents is dictated by the size of the male subgroup in the sample (n=616) and not the size of the sample overall (n=1,248). Based on a sample size of 1,248, **the sampling error** (at the conventional 95% confidence level) **is $\pm 2.8\%$** . This means that the probability is 95% that our estimates are within 2.8% of the numbers we would have obtained had we interviewed every qualified resident in Metro-Phoenix. The margin error for the sub-group of males is $\pm 4\%$. If a response differs from the overall response of the sample by more than this percentage, the difference is said to be "statistically significant"

The table below presents the sampling error for the total sample and various subgroup sizes.

Sampling Error at 95% Confidence Interval

Sample Size	Margin of Error
100	$\pm 10.0\%$
AMU (241)	$\pm 6.4\%$
300	$\pm 5.8\%$
Drive alone (423)	$\pm 4.9\%$
500	$\pm 4.5\%$
Males (616)	$\pm 4.0\%$
Females (631)	$\pm 3.9\%$
Employed (652)	$\pm 3.9\%$
1000	$\pm 3.2\%$
Total Sample (1248)	$\pm 2.8\%$

The discussion presented in this report will not highlight every statistically significant difference present in the data, but rather will present only those differences that are meaningful and provide insight into patterns or trends within the data.

D. Summary of Demographic Characteristics of the Sample

The average age of the sample respondents is 48 years. Respondents reported an average household income of \$52,400 annually and an average of 14 years of education. More than half of the respondents are married (56%) and 51% are female.

Those who drive alone to work or school and carpoolers are younger than the total sample. Carpoolers are significantly younger than the sample as a whole (36 years vs. 48 years). In addition, carpoolers have slightly lower household incomes and less education than drive alones. Drive alones are significantly more likely to be males and carpoolers are split almost evenly between males and females.

Table 1: 2001 Demographic Characteristics

Characteristic	Total (1248)	Drive Alone (581)	Carpool (133)
Age			
16 to 25 years	13%	16%	29%
26 to 35 years	16	23	30
36 to 45 years	18	24	26
46 to 55 years	18	25	18
56 to 65 years	12	8	2
66 to 75 years	13	2	3
Over 75	8	-	-
Average (in yrs)	47.6	39.5	35.5
Median age	46	40	36
Household Income			
Less than \$15,000	6%	3%	5%
\$15,000 to \$24,999	9	9	6
\$25,000 to \$39,999	14	13	16
\$40,000 to \$49,999	12	14	13
\$50,000 to \$75,000	18	20	19
Over \$75,000	20	26	19
Average (in '000's)	\$52.4	\$56.9	\$53.0
Education			
Less than high school	9%	7%	15%
High school graduate	18	14	15
Some college	36	40	35
Bachelor's degree	21	21	19
Post-graduate	14	17	11
Average (in yrs)	14.3	14.6	13.9
Marital Status			
Married	56%	55%	50%
Single	36	41	45
Other/Refused	8	4	5
Gender			
Male	49%	57%	49%
Female	51	43	51

II. Perceptions of Valley’s Air Pollution

This section presents the perceptions of Valley residents regarding the “most important issues facing the Valley in 2001” and then their specific perceptions as to the magnitude of the air quality and traffic congestion issues. Comparisons to previous years’ data are made when appropriate.

A. Major Issues Facing the Valley

Nearly two-thirds of Valley residents (63%) feel that air quality, growth and transportation factors combined are some of the major issues facing the Valley in 2001, with growth management being the issue receiving the highest number of mentions (28% of total mentions). Air quality factors include transportation and public transit, air quality, growth management, and traffic congestion.

There was a significant decrease in the percent of total mentions for air quality (22% down from 31% last year), transportation in general (15% down from 27%) and for public transportation/transit (5% down from 10%). These percentages are similar to those measured in 1999. It appears the heightened awareness created by the transit tax vote for the City of Phoenix elevated the level of concern over these issues during 2000 and now concern is returning to previous levels. Interestingly, significantly fewer residents mentioned taxes, healthcare, family values, and housing as problems facing the Valley. Again, awareness for these issues may have been raised because of the local and national elections in 2000, and now they have dropped from top of mind awareness.

Major Issues Facing the Valley

(Total Mentions)

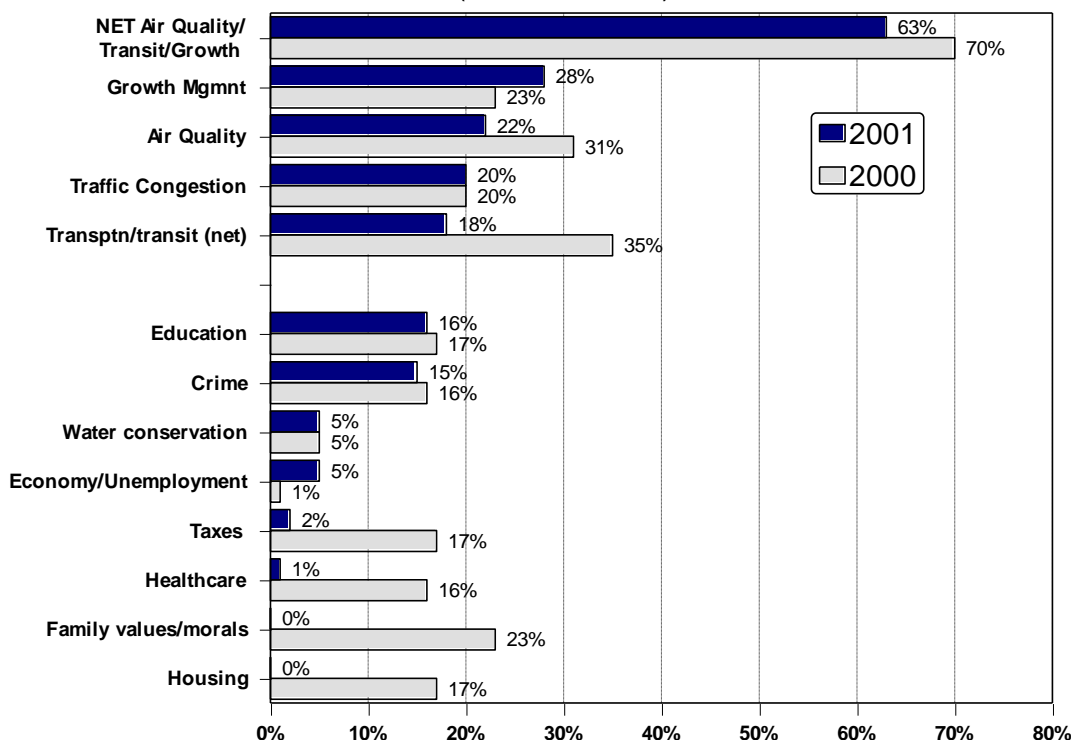


Table 2a: Issues Facing the Valley: First Mentions

Issues	1996	1997	1998	1999	2000	2001
Growth management	13%	5%	8%	17%	11%	16%
Air quality	23%	26%	20%	12%	17%	12%
Traffic congestion	9%	9%	9%	14%	12%	12%
Transportation	6%	8%	8%	7%	17%	11%
Public transp/mass transit	6%	2%	3%	2%	4%	2%
<i>All air quality / traffic / transit / growth mentions</i>	51%	47%	48%	51%	60%	52%
Crime and violence	24%	15%	14%	14%	8%	7%
Education	4%	7%	11%	7%	8%	15%
Water conservation	-	-	-	2%	2%	2%
Drugs/Alcohol abuse	1%	2%	2%	1%	1%	1%
Environment	-	-	-	-	1%	1%
Politics/government	5%	3%	3%	-	1%	1%
Economy/unemployment	4%	2%	2%	1%	na	1%
Other ¹	14%	14%	11%	9%	7%	12%

3-1: What do you think are the most important issues facing the Valley in 2001?

¹ Includes all responses $\leq 1\%$.

Table 2b: Issues Facing the Valley: Total Mentions

Issues	1996	1997	1998	1999	2000	2001
Growth management	24%	12%	16%	28%	23%	28%
Air quality	37%	44%	35%	24%	31%	22%
Traffic congestion	20%	18%	19%	28%	20%	20%
Transportation	12%	18%	15%	15%	27%	15%
Public transp/mass transit	12%	8%	9%	4%	10%	5%
<i>All air quality / traffic / transit / growth mentions</i>	66%	65%	63%	66%	70%	63%
Education	10%	18%	18%	18%	17%	16%
Crime and violence	36%	36%	31%	30%	16%	15%
Water conservation	na	na	3%	4%	5%	5%
Economy/unemployment	9%	8%	5%	2%	1%	5%
Environment	na	na	3%	2%	4%	3%
Politics/government	10%	12%	10%	2%	2%	3%
Taxes	na	na	na	18%	17%	2%
Drugs/Alcohol abuse	2%	7%	6%	4%	3%	2%
Shortage of electricity	-	-	-	-	-	2%
Building a football stadium	na	na	na	2%	1%	2%
Illegal aliens/immigrants	-	-	-	-	-	1%
Homeless	na	na	na	2%	na	1%
Healthcare	na	na	na	30%	16%	1%
Family values/morals	na	na	na	28%	23%	-
Housing	na	na	na	20%	17%	-
Bank One Ballpark	na	na	na	4%	10%	-
Teen Pregnancy	na	na	na	4%	3%	-
Prison system	na	na	na	na	2%	-
Other ²	23%	17%	28%	27%	18%	17%

4-1: What do you think are the most important issues facing the Valley in 2001? Any others? (Total Mentions)

² Includes all responses ≤1%.

B. Perceptions of the Valley's Air Pollution Problem

A separate sample of 400 residents were asked about the magnitude of the Valley's air pollution problem. It was felt that including the question in the annual survey, in any position other than the first question of the survey, would increase the likelihood that respondents would answer in a more "politically" correct answer than if they did not know the purpose of the questionnaire. We also had concern, however, that if we asked about air quality at the beginning of the survey, the responses to all other questions may be biased. To circumvent the possibility of response bias, this question was added to WestGroup's monthly tracking study – The WestTrack Market Monitor.

Slightly more than half of residents (52%) rated the magnitude of the Valley's air pollution problem as "big" in 2001 which is down significantly from the 2000 rating (64%). In fact, this is the lowest percentage to feel this way over the life of the study. Overall, the percentage of residents who feel the air pollution problem is "big" or "moderate" dropped only slightly (89% vs. 94% in 2000, however it is also the lowest percentage over the life of the study). In general, women continue to be more likely than men to consider air quality to be a "big" problem in the Valley (59% consider it a big problem compared to 47% of men). Residents 30 and older are significantly more likely than younger residents to feel air quality is a "big" problem (54% vs. 38%, respectively).

Percent of Residents Who Perceive Air Quality as "Big" Problem

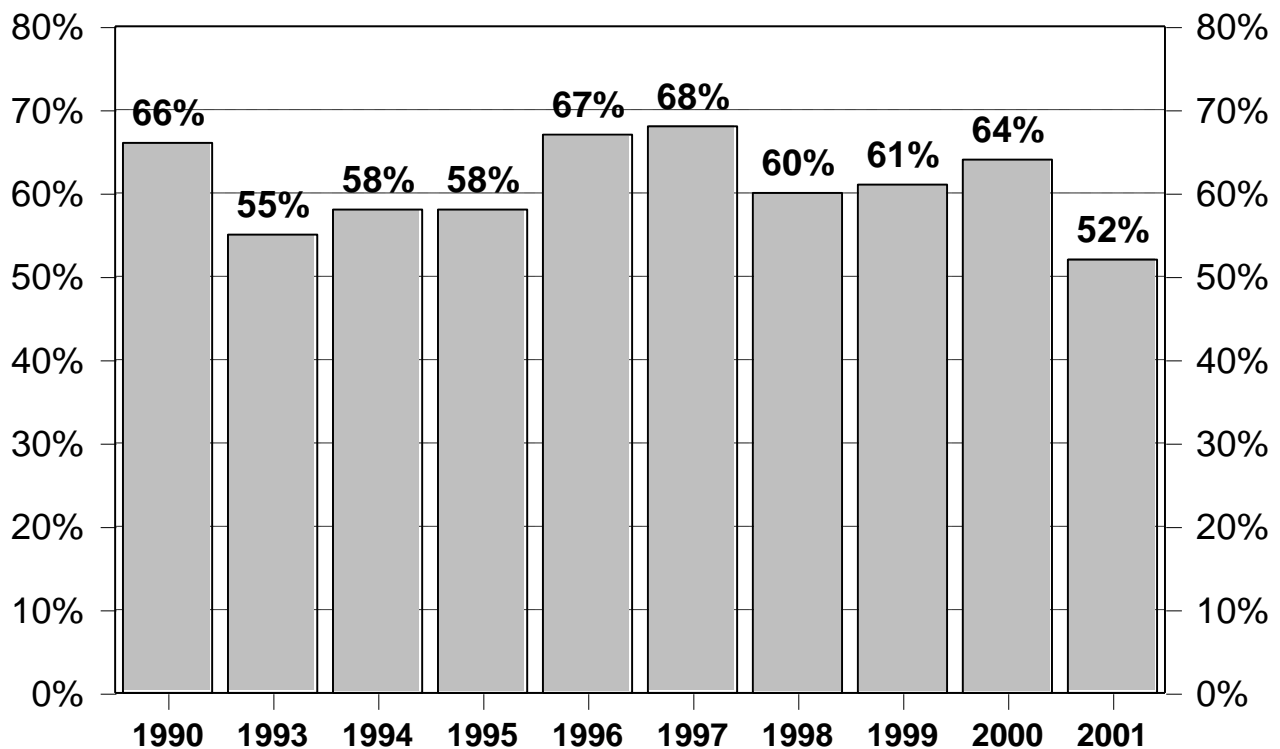


Table 3: Perceived Magnitude of Valley's Air Pollution Problem

Size of Problem	1990	1993*	1994	1995	1996	1997	1998**	1999**	2000**	2001**
Big+Moderate	92%	92%	92%	90%	95%	94%	90%	95%	94%	89%
Big	66%	55%	58%	58%	67%	68%	60%	61%	64%	52%
Moderate	26	37	34	32	28	26	30	34	30	37
Small	4	7	6	9	4	3	6	2	4	6
Don't Know	4	1	2	1	1	3	4	3	2	5

*How big of a problem do you think air quality is here in the Valley? Would you say it is a big problem, a moderate problem, or a small problem? *Wording change in question from "major, moderate, or minor" to "big, moderate, or small" problem. **Not asked of same sample as rest of survey questions. Question asked of 400 heads of households in Metro-Phoenix on the WestTrack Market Monitor.*

C. Perceptions of the Valley's Traffic Congestion Problem

1. Degree of Traffic Congestion Problem

More than two-thirds of all residents surveyed (68%) feel the Valley's traffic congestion problem is a "big problem." This is similar to last year's findings (69%) but down from 1999 (77%). An additional 28% feel that it is a "moderate problem" (up 4 points from 24% last year). Only 3% feel that it is a "small problem." Women are significantly more likely than men to view traffic congestion as a "big problem" (73% vs. 62% of men). Residents of Mesa and Peoria are most likely to feel that traffic congestion is a "big problem" (77% and 74% vs. 58% to 70% for other Valley cities). As in 2000, Valley residents under the age of 30 are significantly less likely (52%) than older residents to feel that traffic congestion is a "big problem" (71% of those 50+).

Table 4: Perceived Magnitude of Valley's Traffic Congestion Problem

Size of Problem	1996	1997	1999	2000	2001
Big+Moderate	95%	95%	97%	93%	96%
Big Problem	67%	63%	77%	69%	68%
Moderate Problem	28	32	20	24	28
Small Problem	4	3	2	4	3
Don't Know	1	2	1	3	1

37: How big of a problem do you say traffic congestion is here in the Valley? Would you say it is a big problem, a moderate problem, or a small problem?

2. Comparison of Perception of Problems of Air Quality and Traffic Congestion

The following table shows that Valley residents are more concerned about traffic congestion than they are about air quality. Whereas 96% of residents feel traffic congestion is a “moderate” or “big” problem, 89% of residents feel that way about air quality. There is a significant 16 point difference in the percentage who feel traffic congestion is a “big problem” and those who feel air quality is a “big problem” (68% vs. 52%). While those believing that traffic congestion is a big problem increased slightly from last year, the percent believing air quality is a big problem decreased significantly compared to 2000.

Table 5: Perceived Magnitude of Valley's Traffic Congestion and Air Pollution Problems

Size of Problem	Air Quality			Traffic Congestion		
	1999 (n=402)	2000 (n=404)	2001 (n=417)	1999 (n=884)	2000 (n=836)	2001 (n=1248)
Big + Moderate	95%	94%	89%	97%	93%	96%
Big Problem	61%	64%	52%	77%	69%	68%
Moderate Problem	34	30	37	20	24	28
Small Problem	2	4	6	2	4	3
Don't Know	3	2	5	1	3	1

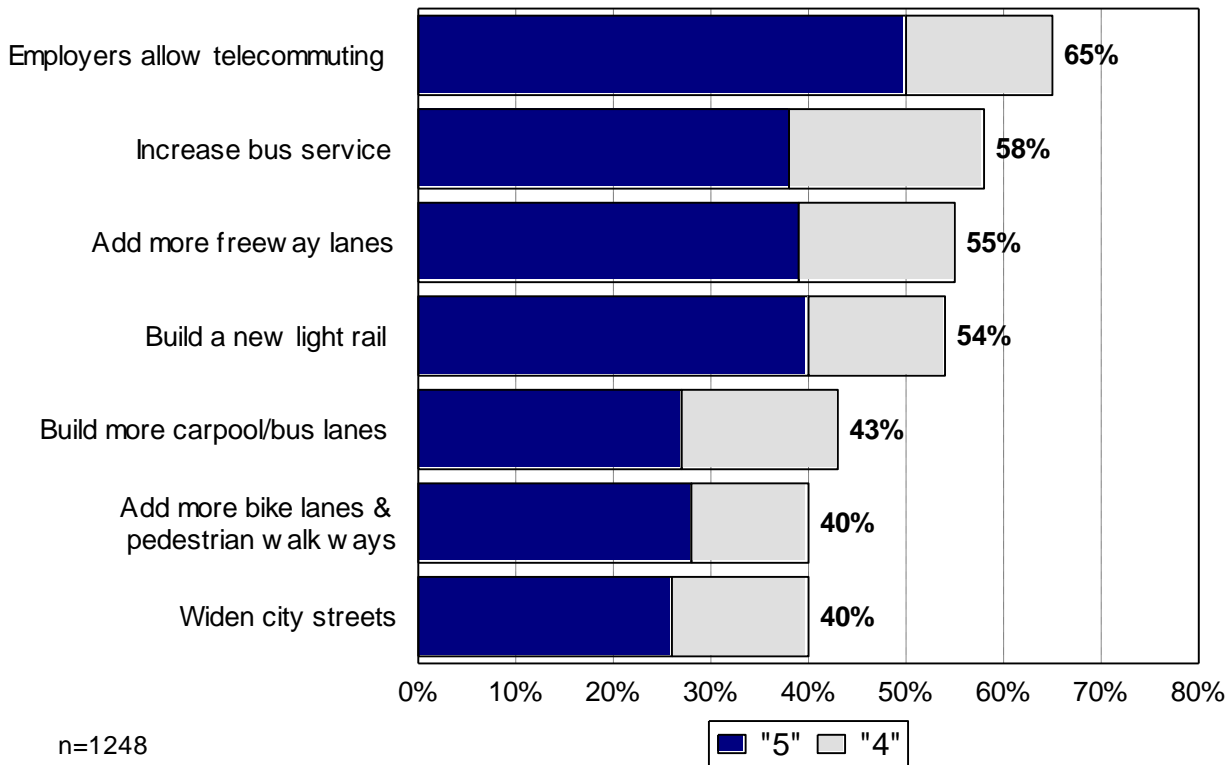
3. *Support for Solutions to Relieve Traffic Congestion in Community*

ALL residents were asked the question: “Even though Phoenix and Tempe have passed a sales tax for improved transit in those cities, I would like to get your input on what you think would be good solution for traffic congestion in your community.” All residents were then asked to rate their support for each solution using a scale from 1 to 5, where “5” means they would definitely support the solution.

Encouraging employers to allow telecommuting was the most strongly supported solution presented to residents (65%, 50% “definitely would support + 15% “4” rating). However, support for increasing bus service, adding more freeway lanes, and building a new light rail system is also considerable (58%, 55% and 54% gave a rating of 4 or 5, respectively).

Solutions for Traffic Congestion Summary of Top 2 Support Ratings

(4 + 5 where 5 means "would definitely support")



There were several significant differences in the opinions among different age groups. The details are demonstrated in the table below. Residents ages 30 to 49 are significantly more likely than those who are younger and older to support the promotion of telecommuting (73% vs. 58% and 62%, respectively). Those under 30 are significantly more likely than older residents to be supportive of widening streets (65% vs. 49% and 58%) and adding carpool lanes (50% vs. 40% and 42%). Adding more freeway lanes is more appealing to residents under 50 (60% vs. 49% of those 50 and older).

Whereas women are more supportive of improving bus service (62% vs. 54% of men) and adding more bike lanes and pedestrian walkways (46% vs. 35% of men), adding more freeway lanes is more appealing to men (61% vs. 50% of women).

Residents with an annual household income under \$50K are significantly more likely than those with higher incomes to indicate they would support increasing bus service (68% vs. 54%, respectively). Those earning less than \$40K are more likely to support adding more bike lanes and pedestrian walkways (50% vs. 37% of those earning more).

**Table 7a: Summary of Top 2 Support Ratings
(4 + 5 where 5 means “would definitely support”)**

Solutions	2001 (n=1248)	Age		
		<30 (244)	30-49 (432)	50+ (545)
Allow employees to telecommute 1+/week	65%	<u>58%</u>	73%	<u>62%</u>
Increase bus service	58%	62%	57%	57%
Build a new light rail	54%	55%	56%	51%
Add more freeway lanes	55%	65%	58%	<u>49%</u>
Build more carpool/bus lanes	43%	50%	42%	<u>40%</u>
Add more bike lanes and pedestrian walkways	40%	41%	41%	40%
Widen city streets	40%	54%	<u>40%</u>	<u>33%</u>
Nothing				

38-44: Even though Phoenix and Tempe have passed a sales tax for improved transit in those cities, I would like to get your input on what you think would be good solutions for traffic congestion in your community. Using a scale from 1 to 5 where 1 means you would definitely NOT support the solution and 5 means you would definitely support the solution, please tell me how strongly you would support each of the following:

Bold denotes a significantly higher percent and underline denotes the corresponding significantly lower percentage.

The responses to these questions by city are shown in the table below. It is important to interpret these data with caution, however, because of the small sample sizes for Glendale, Chandler and Peoria.

Gilbert residents were more likely than residents of any other city to be supportive of adding more lanes to freeways. They were the least likely to support increased bus service. In contrast, **Phoenix** residents were the most likely to indicate support for improved bus services and light rail.

Scottsdale residents gave the greatest level of support to telecommuting and light rail. This same pattern was evident among **Tempe** and **Mesa** residents, as well.

Glendale residents tended to be more supportive of the telecommuting, transit, light rail and freeway options than residents in other cities and **Chandler** residents are slightly more interested in adding carpool lanes, improving transit or light rail. **Peoria** residents are most interested in telecommuting or adding more lanes to freeways.

**Table 7b: Summary of Top 2 Support Ratings
(4 + 5 where 5 means “would definitely support”)**

Solutions	Total (1248)	Phx (280)	Scotts (200)	Tempe (204)	Gilbrt (203)	Mesa (146)	Glndl (53)	Chndlr (74)	Peoria (27)
Allow employees to telecommute 1+/week	65%	67%	68%	67%	66%	62%	66%	62%	56%
Add more freeway lanes	58	59	51	51	70	52	47	58	48
Increase bus service	54	64	52	51	44	58	58	60	44
Build a new light rail	55	59	54	56	51	48	47	58	44
Widen city streets	43	46	36	34	46	36	40	45	30
Build more carpool/bus lanes	40	45	42	41	36	39	42	50	22
Add more bike lanes and pedestrian walkways	40	45	38	37	30	36	45	42	26

4. Other Suggested Solutions

Residents were asked if there was any other solution, that was not mentioned, they could recommend. Sixty-two percent (62%) of residents were unable to give any other suggestion (nothing, don't know, no answer). **The three most popular suggestions were adding some kind of rail system (6%), limiting growth (5%), and an increase in public transit (5%).** A few residents mentioned implementing incentives for using alternate modes (2%) and staggering work schedules or making more flexible work schedules (2%). All other suggestions were made by fewer than 2% of residents.

III. Clean Air Campaign

A. Campaign Awareness and Perceptions

There have been several Clean Air theme lines over the “life” of the Clean Air Campaign. The first was “Don’t Drive 1 in 5,” which was followed by “Let’s Clean the Air” with a Clean Air Thursday focus; and then “Let’s Clear the Air: Rideshare.” In 1997 and 1998 the Clean Air Campaign theme was based on the phrase “We’ve Got a Problem with Our Air...Rideshare.” In 1999, messages such as “Yeah, but it's a dry pollution” and “Together we can make a difference” were used in the campaign. . Last year, “It all adds up to cleaner air” was the overall campaign message. Currently, “Blue Looks Better on You” is the overall campaign theme.

1. Campaign Awareness -- Trend Data

The table below shows that **overall awareness of the campaign** (i.e., the net total for TV, radio, news stories, and PSAs) **again reached its highest level since 1991**. As in 2000, **seven in eight Valley residents (88%) had seen or heard an ad for the Clear Air Campaign or a news story/PSA** about ways to help reduce the Valley’s air pollution. This is most likely due at least in part to the fact that in addition to the winter clean air campaign, there was a summer Ozone campaign with the assistance of special funding from MAG.

Men are significantly more likely than women to be familiar with some aspect of the campaign (90% vs. 85%, respectively). In addition, younger residents (under 50) are more likely to be aware of the campaign (92% vs. 82% for those 50 and older).

Table 8: Aided Campaign Awareness -- Trend data

Study	Percent Aware
1987	78%
1989	97%
1990	95%
1991	92%
1992	83%
1993	87%
1994	62%
1995	65%
1996	54%
1997	82%
1998	81%
1999	79%
2000	88%
2001 ¹	88%

38-1: Net Awareness of advertising/news story/PSA.

¹ Campaign included radio ad about woman who calls the police and reports that Camelback Mountain is missing and “Coughing Camelback Mountain.”

2. *Awareness of Clean Air Campaign Advertisements*

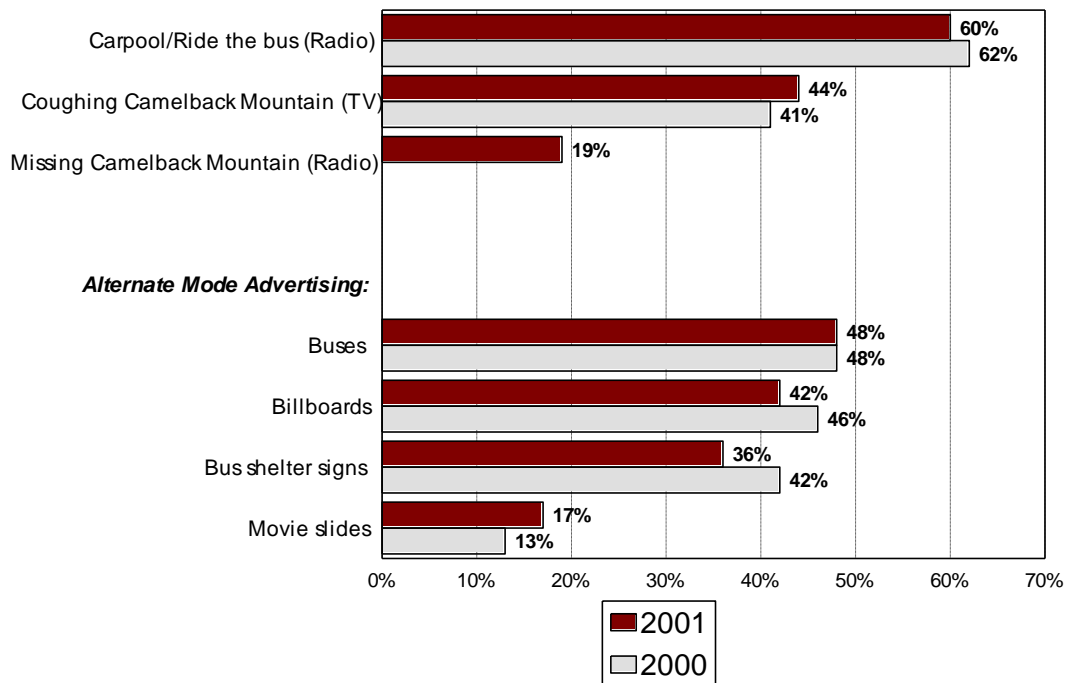
Approximately three in five residents surveyed (60%) recalled hearing 10-second radio spots during traffic reports on Metro Traffic reminding them to carpool or ride the bus (compared to 62% last year). These spots were aired on approximately forty stations for eight weeks during the summer Ozone campaign and for ten weeks during the winter campaign. Men are significantly more likely than women to report hearing these spots (64% vs. 56%). Residents age 49 or younger were significantly more likely than older residents to recall hearing the radio ads (64% vs. 54%). In addition, those with two employed household members were more likely than those with only one to recall hearing the ads (68% vs. 59%).

Approximately three in seven (44%) remembered the television ad that shows Camelback Mountain coughing. Interestingly this ad has not aired with any frequency in recent years and was only shown for six weeks on a few cable stations over the winter months in late 2000 and early 2001. Recall was significantly higher among residents ages 30 to 49 (53% vs. 37% of older residents).

Nearly one in five residents (19%) recalled the 60-second radio advertisement about the woman who calls the police to report that Camelback Mountain is missing. This ad aired three weeks on three stations during the winter campaign. Residents age 49 or younger were significantly more likely than older residents to recall hearing the radio ad (26% vs. 10%).

Residents were most likely to recall seeing advertisements for alternate mode usage on the sides of buses (48%) and on billboards (42%). Bus shelter signs followed closely behind (36%). Although far fewer remembered ads on movie slides (17%), recall is higher than in 2000 (13%).

Advertising Recall



Viewers under the age of 50 were significantly more likely than those 50 and older to recall seeing alternate mode advertising in all of the places it appeared. Residents under 30 are significantly more likely than older residents to have seen ads on bus shelter signs (50% vs. 33%). Men were significantly more likely than women to be aware of ads on buses, on bus shelter signs and on movie slides (54% vs. 43%, 44% vs. 29%, and 22% vs. 12%, respectively).

Interestingly, residents who use alternate modes sometimes are significantly more likely than those who drive alone or always use an alternate mode to recall seeing billboard ads (56% vs. 44% and 38%, respectively). Those who always use alternate modes are significantly more likely than those who always drive alone to recall ads on movie slides (34% vs. 20%).

Table 9: Awareness Ads

Ads	2000 (836)	2001 (1248)	Gender		Age		
			Men (617)	Women (632)	<30 (244)	30-49 (432)	50+ (545)
Metro Traffic reports (10-second Radio)	62%	60%	64%	<u>56%</u>	68%	63%	<u>54%</u>
On sides of buses	48%	48%	54%	<u>43%</u>	57%	54%	<u>41%</u>
On billboards	46%	42%	44%	40%	49%	47%	<u>37%</u>
On bus shelter signs	42%	36%	44%	<u>29%</u>	50%	40%	<u>28%</u>
Coughing Camelback Mtn. (TV)	41%	44%	47%	41%	44%	53%	<u>37%</u>
On movie slides	13%	17%	22%	<u>12%</u>	25%	21%	<u>9%</u>
Woman reports Camelback Mountain is missing	N/A	19%	18%	19%	23%	27%	<u>10%</u>

47: Have you heard any advertising in the past four months about the Clean Air Campaign that included a radio ad about a woman who calls the Police to report that Camelback Mountain is missing?

48-1: Have you heard any advertising in the past four months about the Clean Air Campaign that included a TV ad showing a coughing Camelback Mountain? 49-1: Have you heard any radio spots on traffic reports that remind drivers to carpool or ride the bus? 50-1: Have you seen advertising in any of the following places that encourage people to carpool, ride the bus, work at home, or not drive alone in general?

Bold denotes a significantly higher percent and underline denotes the corresponding significantly lower percentage.

3. Overall Opinion of Clean Air Campaign

As shown in the graph below and the table on the following page, public perceptions of the Clean Air Campaign have been measured since 1989. While overall favorability (i.e., the percentage who are “very” or “somewhat” favorable toward the campaign) has stayed relatively consistent over the years, the percentage of those feeling “very” favorable toward the campaign has fluctuated a great deal. In particular, the percentage of Valley residents who are “very favorable” toward the campaign the past six years has dropped off considerably. **Currently 36% are “very” favorable toward the campaign and an additional 48% are “somewhat favorable.”**

Younger residents (under 30) are significantly more likely than older residents to indicate they hold a favorable opinion of the campaign (94% gave a very + somewhat rating vs. 81%). Residents who always use an alternate mode are significantly more likely than those who always drive alone to say they have a “very favorable” opinion toward the campaign (48% vs. 30%). Glendale residents are significantly less likely than residents of other cities to hold a “very favorable” opinion of the campaign (20% vs. 34% overall).

Favorability Toward Clean Air Campaign
(Percent very/somewhat favorable among those aware of campaign)

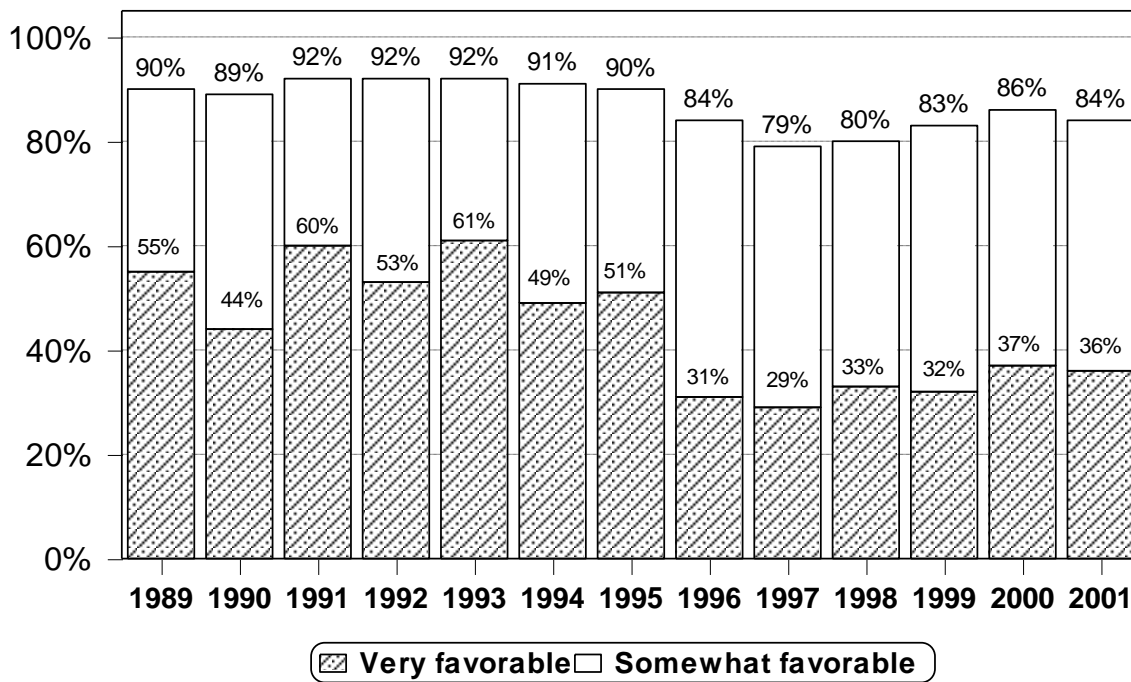


Table 10: Opinion of Clean Air Campaign

Favorability	1996	1997	1998	1999	2000	2001
Very+ Somewhat	84%	79%	80%	83%	86%	84%
Very favorable	31%	29%	33%	32%	37%	36%
Somewhat favorable	53	50	47	51	49	48
Not favorable	12	16	14	11	10	13
Don't know	5	5	6	6	4	4

Favorability	1989	1990	1991	1992*	1993	1994	1995
Very+ Somewhat	90%	89%	92%	92%	92%	91%	90%
Very favorable	55%	44%	60%	53%	61%	49%	51%
Somewhat favorable	35	45	32	39	31	42	39
Not favorable	7	9	7	8	6	9	6
Don't know	3	2	1	1	2	-	5

*Change in wording of question from *highly* favorable to *very* favorable began in 1992.

52: Overall, what is your opinion of these advertisements that encourage people to use other modes of transportation or work from home instead of driving alone? Is your opinion of the campaign very favorable, somewhat favorable, or not favorable? (Among those aware of radio ads/spots, PSA's or news stories.) Note: some respondents aware of advertising not asked due to programming error.

B. Response to Campaign Message

Residents aware of the TV or radio advertising and/or the PSAs and news stories about clean air were asked what they and their family members had done in response to the information.

Nearly five in seven residents (55%) who had seen or heard something about the Clean Air Campaign indicated they have taken some ACTION to try to reduce air pollution as a result of the information (down from 58% last year and 66% in 1999). The most common actions taken are to carpool or drive less (mentioned by 24% and 17% respectively). Driving less often was more likely to be an action taken by those who are not employed (mentioned by 25%) than those who are employed (12%). Women are significantly more likely than men to say they carpool (27% vs. 20%, respectively) and in fact are significantly more likely to report taking any type of action at all (60% vs. 50% of men). Whereas younger residents are more likely to report carpooling in response to the campaign (27% vs. 17% of those 50+), older residents are more likely to say they respond by driving less often (21% vs. 13% of those under 50).

Effect of Clean Air Ads/News Stories

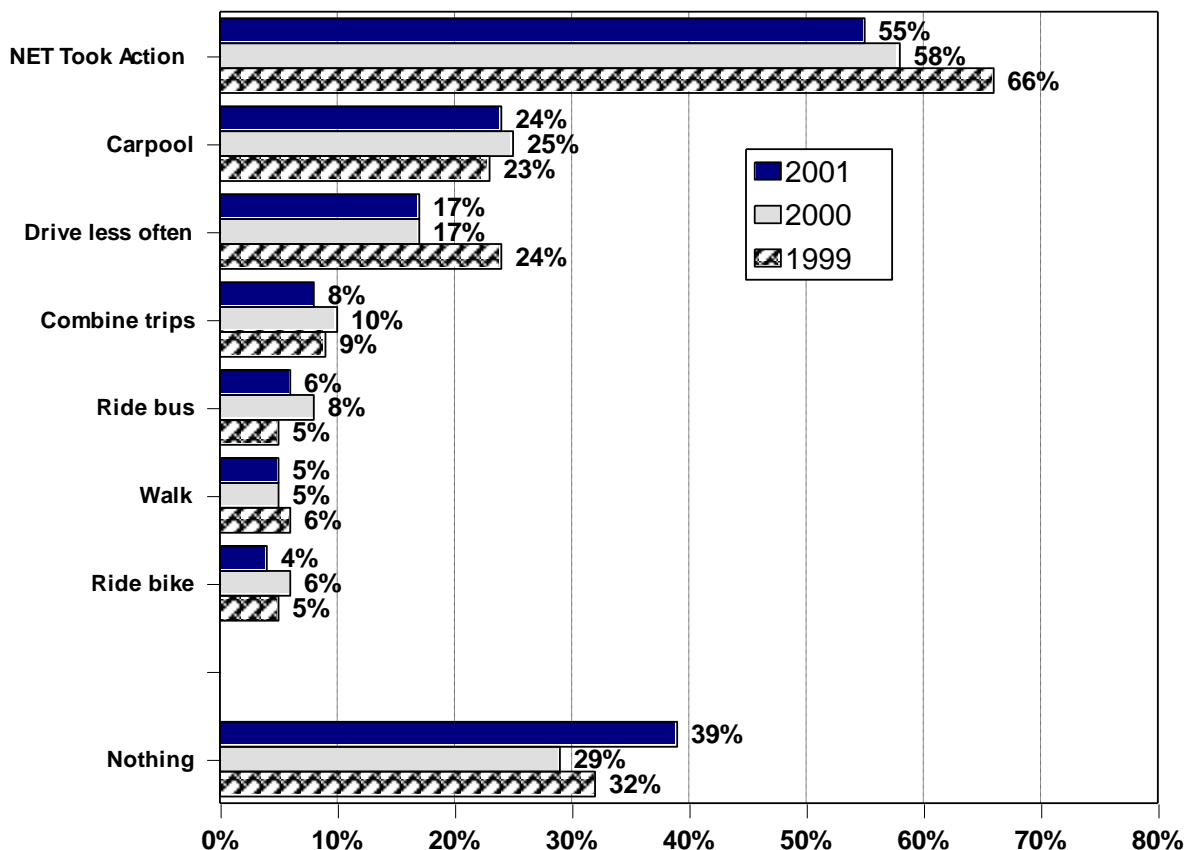


Table 11: Actions Taken In Response to Clean Air Ads and/or News Stories

Response	Year		
	Total 1999* (n=701)	Total 2000 (n=662)	Total 2001 (n=1096)
Nothing	32%	29%	39%
Net Took Action	66%	58%	55%
Carpool/vanpool	23	25	24
Drive less often	24	17	17
Combined trips	9	10	8
Ride bus	5	8	6
Walk	6	5	5
Ride bike	5	6	4
Worked at home	2	3	3
Tune-up vehicles	7	3	2
Comply with no-burn days	9	1	1
Bought smaller/newer vehicle	2	-	1
Moved closer to work/school	-	2	1
Support the issue/make donations	-	-	1
Refuel after 4 p.m.	-	-	1
Plan routes	-	1	-
Stay home more	-	1	-
Other ³	13	4	5
Don't know/refused	3%	5%	6%

53: What have you or your family members done, if anything, in response to the ads, news stories and public service announcements about ways to reduce air pollution? (Among those aware of ads or news stories and PSAs) Note: some respondents aware of advertising not asked due to programming error.

*In 1999, question worded: ...about ways to reduce your drive alone trips and reduce air pollution?

³ Includes all responses $\leq 1\%$.

IV. Commuting Behavior

To determine the attitudes and behaviors of those who travel to work or school regarding commuting alternatives, employees and students were asked numerous questions about the modes of transportation used to travel to work or school. This continues a line of questioning included in previous studies conducted for the RPTA.

Beginning in 1993, students were asked about their commuting behavior in addition to employed respondents. Telecommuting and compressed schedules also have been included in the base of "alternate modes of transportation" since 1993 because they represent *trips that are not driven to work*. Where available, tracking data is presented and analyzed. To allow for comparisons between data collected since 1993 and data from previous studies, data from non-employed students have been removed from some tables. Results also were computed with and without data regarding telecommuting and compressed schedules.

The sub-total *percentages of people* in single occupant vehicles (driving alone or riding a motorcycle) or using alternate modes of transportation that are cited reflect the NET percent of the sample who are SOVs and AMUs (i.e., each person only counts once as an SOV and/or once if they use any of the alternate modes). In other words, *net percentages reflect the actual number of alternate mode users*.

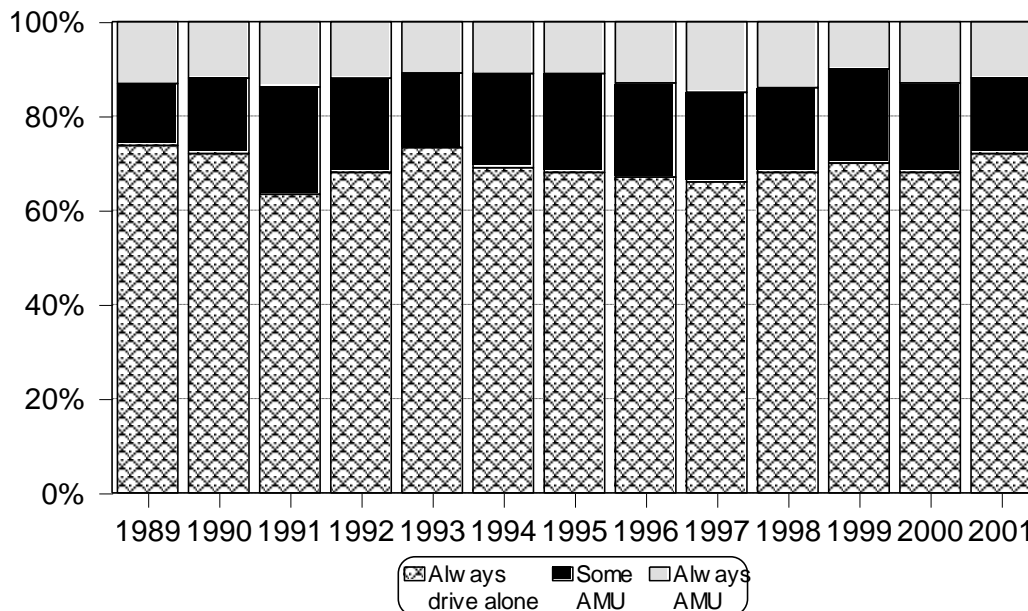
The reason for reporting net totals for percent of people instead of cumulative sums of the percentage using each mode of transportation is that some alternate mode users utilize more than one mode during the week (e.g., they may ride a bike two days a week, but also may walk one day). Consequently, simply adding together the percent of people using each alternate mode over-states the percentage using alternate modes overall. The percentages for all studies conducted between 1989 and 1993 have been corrected, when possible, to reflect the net percents.

A. Distribution of Commuter Sub-groups within the Employed Driving Public

The graph below shows the shifts that have occurred since 1989 in the percentage of people who always drive alone to work, occasionally use an alternate mode of transportation, or always use an alternate mode of transportation. Data were not available from studies conducted prior to 1989.

The usage of traditional alternate modes (i.e., bus, bike, walk, or carpool) decreased to one of the lowest levels in the past decade (28% of employed residents used one of these four alternate modes to travel one or more days a week to work). The majority of this decrease occurred among those who occasionally use alternate modes (down to 16% from 19%). The percentage of employed residents who exclusively used alternate mode remained stable (12% vs. 13% in 2000).

Percent of Employed People Using Different Modes for Commuting



**Table 13a: Percent of Employed People Who Always Drive Alone
Compared to Those Using Alternate Modes
(Excluding Telecommuting and Compressed Schedules)**

Year	Always Drive Alone	Drive Alone & Alt. Mode	Always Alternate Mode	Total Alternate Mode
1989 (n=568)	73%	13%	13%	26%
1990 (n=426)	72%	16%	12%	28%
1991 (n=502)	64%	23%	14%	37%
1992 (n=436)	68%	20%	12%	32%
1993 (n=380)	74%	16%	11%	27%
1994 (n=390)	69%	20%	11%	31%
1995 (n=254)	68%	21%	11%	32%
1996 (n=236)	67%	20%	13%	33%
1997 (n=306)	66%	19%	15%	34%
1998 (n=322)	68%	18%	14%	32%
1999 (n=439)	70%	20%	10%	30%
2000 (n=424)	68%	19%	13%	32%
2001 (n=653)	72%	16%	12%	28%

70: Alternate mode usage (Non-home based employees).

Total Alternate mode usage (i.e., when telecommuting and compressed schedules are included as alternate modes) also decreased to the lowest level since 1993 (37% 2001, 40% 2000). As seen in the previous table, **the decrease is due to a smaller percentage of the population reporting to occasionally use an alternate mode (24% down from 27% in 2000)**. The percent who exclusively use an alternate mode remained stable (13% 2001).

Table 13b: Percent of Employed People Who Always Drive Alone Compared to Those Using Alternate Modes (Including Telecommuting and Compressed Schedules)

Year	Always Drive Alone	Drive Alone & Alt. Mode	Always Alternate Mode	Total Alternate Mode
1993 (n=380)	64%	23%	13%	36%
1994 (n=390)	56%	32%	11%	44%
1995 (n=254)	59%	29%	12%	41%
1996 (n=236)	56%	30%	13%	44%
1997 (n=306)	57%	29%	15%	43%
1998 (n=322)	57%	27%	16%	43%
1999 (n=439)	59%	32%	9%	41%
2000 (n=424)	60%	27%	13%	40%
2001 (n=653)	63%	24%	13%	37%

70: Alternate Mode Usage (Non-home based employees.)

B. Mode of Transportation Used as Percent of Employed People

In 2001, the percent of people who drive alone to work at least one day a week once again climbed to 87% after decreasing in 2000.

The decrease in overall alternate mode usage appears to be due primarily to a decrease in the usage of carpools and vanpools (22% down from 27% in 2000) as well as a decline in the percentage of workers reporting to work compressed schedules (9% compared to 12% in 2000).

Commuting using the bus increased to the highest level reported since 1996 (7%). The percentage of employed residents telecommuting one or more days a week doubled from 5% to 10%.

Table 14: Mode of Travel to Work at least One Day/Week as Percent of People 1995 to 2001
(Base: Non-home based employed persons**)

Travel Mode	1995 (237)	1996 (231)	1997 (306)	1998 (322)	1999 (430)	2000 (424)	2001 (653)
SOV							
Drive alone	87%	86%	83%	81%	88%	83%	86%
Motorcycle	1	-	3	2	2	-	2
SOV NET TOTAL	87%	86%	83%	81%	89%	83%	87%
Alternate Mode							
Carpool	25%	25%	23%	25%	23%	23%	19%
Vanpool	-	-	-	-	-	4	3
Bike	6	4	6	5	4	4	3
Bus	4	8	5	3	3	4	7
Walk	8	4	6	5	4	3	5
Alt. Mode Sub TOTAL	33%	33%	34%	32%	30%	32%	28%
Non-trip Modes							
Tele-commute	4%	5%	6%	7%	5%	5%	10%
Compress. Sched.	11	9	11	14	14	12	9
Total Net Alt. Mode	41%	44%	43%	43%	41%	40%	37%

24: During a typical week, how often do you use each of the following methods to arrive at work or school? (List is rotated)

*Net Total data not available. Actual net percentages may be slightly lower than the sums reported.

**Home-based employed excluded from data from 1993 to present.

**Table 14: Mode of Travel to Work at least
One Day/Week as Percent of People 1989 to 1994**
(Base: Non-home based employed persons**)

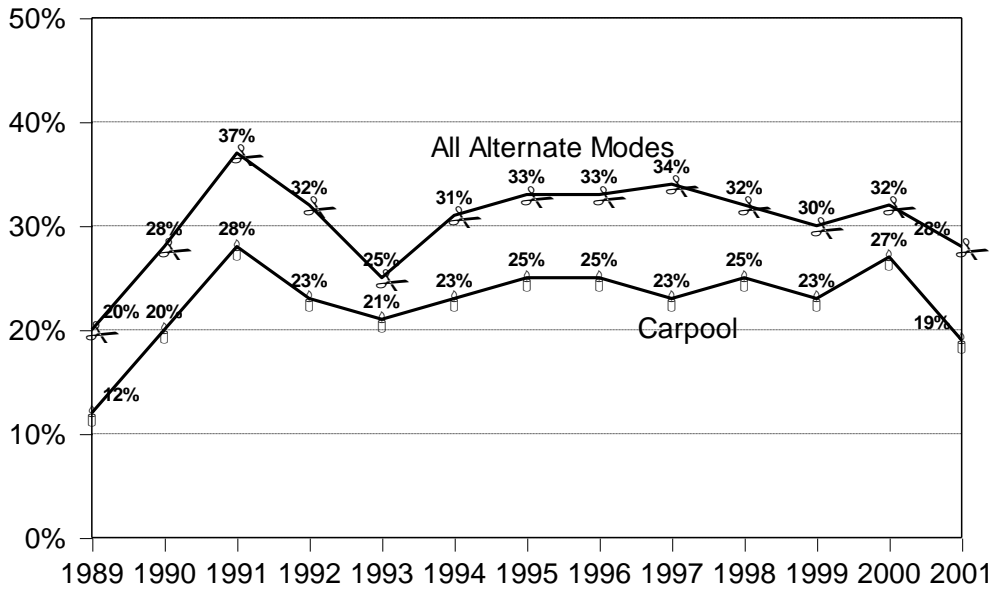
Travel Mode	1989 (568)	1990 (426)	1991 (512)	1992 (469)	1993 (399)	1994 (379)
SOV						
Drive alone	89%	86%	84%	85%	87%	88%
Motorcycle	-	2	4	2	3	3
SOV NET TOTAL	89%*	88%	87%	87%	87%	88%
Alternate Mode						
Carpool	12%	20%	28%	23%	21%	23%
Vanpool	-	-	-	-	-	-
Bike	2	6	5	6	3	6
Bus	3	4	4	3	3	5
Walk	3	3	6	4	2	4
Alt. Mode Sub TOTAL	20%*	28%	37%	32%	25%	31%
Non-trip Modes						
Tele-commute	na	na	na	na	2%	8%
Compress. Sched.	na	na	na	na	12	14
Total Net Alt. Mode	na	na	na	na	36%	44%

24: During a typical week, how often do you use each of the following methods to arrive at work or school? (List is rotated)

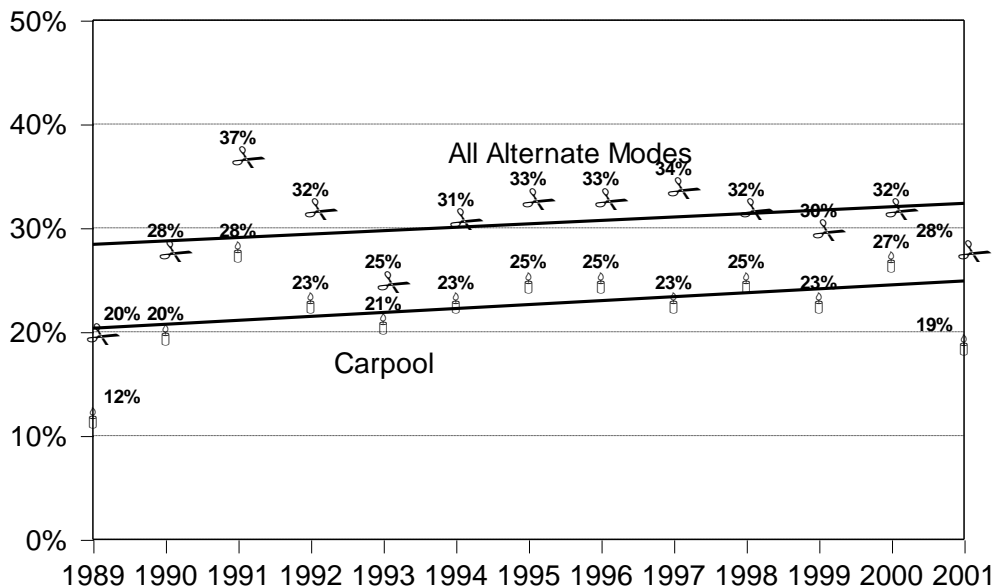
*Net Total data not available. Actual net percentages may be slightly lower than the sums reported.

**Home-based employed excluded from data from 1993 to present.

Percent of Employed Who Use Alternate Modes to Work
(Excluding telecommuting and compressed schedules)



Percent of Employed Who Use Alternate Modes to Work
Trend Line
(Excluding telecommuting and compressed schedules)



C. Mode of Transportation as Percent of Total Trips

Trip data to and from work can be analyzed two ways.

- The first is according to the *percentage of employed respondents using each mode of transportation* to get to and from work. These are the percentages discussed in Section B. These percentages add to more than 100% due to multiple responses. Those respondents who drive alone a portion of the week and also use an alternate mode of transportation one or more days each week are counted both among the percentage of respondents who drive alone each week as well as among those who use an alternate mode. Although this method of analyzing trip data is useful in providing information about the travel behavior of the population, it does not provide a clear picture of the actual mix of travel modes used to commute to and from work each day.
- The second approach is to focus on the *total number of commuting trips made each week* and the proportion of the total trips or non-trips made using each mode of transportation. ***The trip data are more indicative of the average work trip behavior on any one day.*** Analysis of the trip data using this approach is presented in this section of the report.

Despite a decrease in the percentage of people using traditional alternate modes this year, the percent of trips made using alternate modes remained the same (23%). There was a decrease in the number of alternate mode trips for carpools and vanpools (17% down to 13%), however, the percent of trips made via the bus increased from 2% to 5%.

Table 15: Mode of Travel to Work as Percent of Total Trips 1995 to 2001
(Excluding Telecommuting and Compressed Schedules)
(Base: Non-home based employed persons*)

Travel Mode	1995	1996	1997	1998	1999	2000	2001
SOV Trips							
Drive alone	73%	76%	73%	75%	78%	77%	76%
Motorcycle	1	-	2	-	1	-	1
SOV TOTAL	74%	76%	75%	75%	79%	77%	77%
Alternate Mode							
Carpool	16%	15%	14%	16%	15%	15%	11%
Vanpool	-	-	-	-	-	2	2
Bike	2	2	4	3	2	2	2
Bus	3	5	4	2	2	2	5
Walk	5	2	3	4	2	2	3
Alt. Mode TOTAL	26%	24%	25%	25%	21%	23%	23%

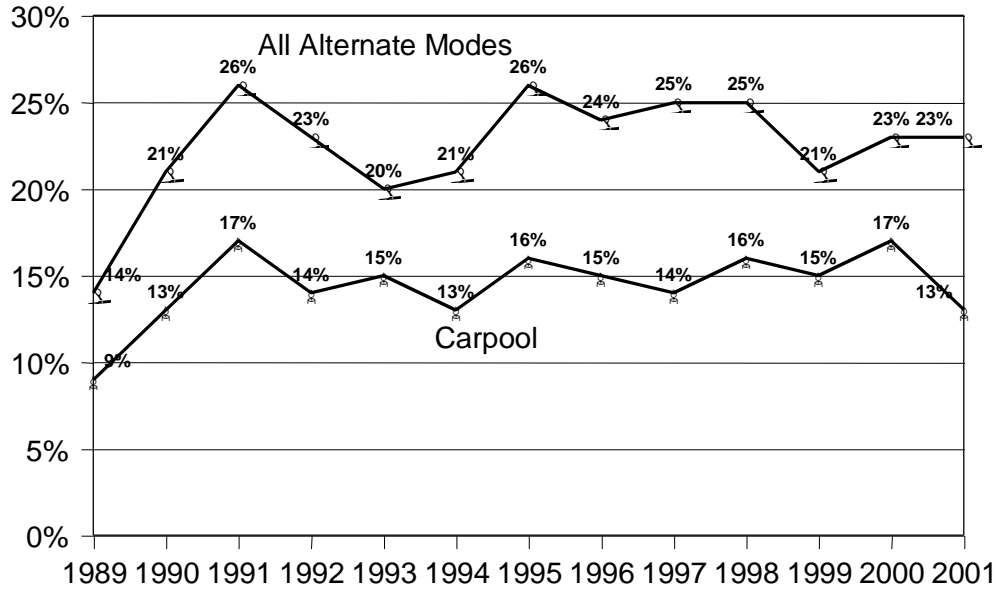
*Home-based businesses excluded from the base of employed persons beginning in 1993.

Table 15: Mode of Travel to Work as Percent of Total Trips 1989 to 1994
(Excluding Telecommuting and Compressed Schedules)
 (Base: Non-home based employed persons*)

Travel Mode	1989	1990	1991	1992	1993	1994
SOV Trips						
Drive alone	86%	78%	72%	76%	78%	77%
Motorcycle	-	1	2	1	2	2
SOV TOTAL	86%	79%	74%	77%	80%	79%
Alternate Mode						
Carpool	9%	13%	17%	14%	15%	13%
Vanpool	-	-	-	-	-	-
Bike	1	3	3	3	2	3
Bus	2	2	2	2	1	3
Walk	2	3	4	4	2	2
Alt. Mode TOTAL	14%	21%	26%	23%	20%	21%

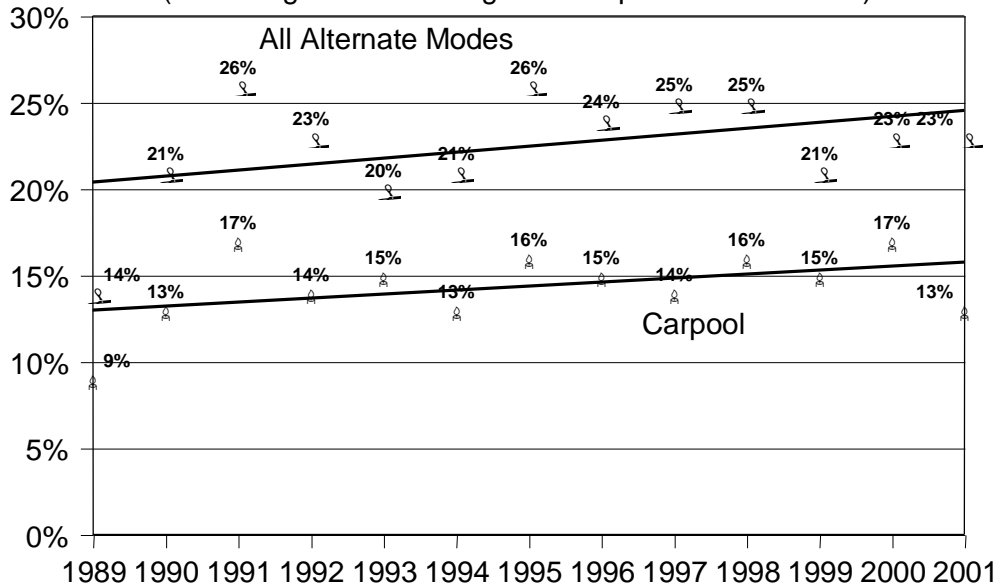
*Home-based businesses excluded from the base of employed persons beginning in 1993.

Percent of Total Trips Made Using Alternate Modes to Work
(Excluding telecommuting and compressed schedules)



Percent of Total Trips Made Using Alternate Modes to Work
Trend Line

(Excluding telecommuting and compressed schedules)



The table below shows that the percent of trips made using an alternate mode, including telecommuting and compressed schedules, also basically remained the same compared to 2000 but remained lower than levels found in the 1997 and 1998. Currently 72% of all trips are SOV and 28% are trips or non-trips related to alternate modes of transportation.

**Table 16: Mode of Travel to Work as Percent of Total Trips
Including Telecommuting and Compressed Schedules)**
(Base: Non-home based employed persons)

Travel Mode	1993	1994	1995	1996	1997	1998	1999	2000	2001
SOV Trips									
Drive alone	75%	73%	70%	72%	69%	70%	74%	73%	71%
Motorcycle	2	2	1	-	1	-	1	-	1
SOV TOTAL	77%	75%	71%	72%	70%	70%	75%	73%	72%
Alternate Mode Trips and Non-trips									
Carpool	14%	12%	15%	14%	13%	15%	14%	15%	10%
Vanpool	-	-	-	-	-	-	-	2	2
Ride a bike	2	3	2	2	4	3	2	2	2
Take the bus	1	2	3	5	3	2	2	2	5
Walk to work	2	2	5	2	3	3	2	2	3
Telecommute	2	3	2	2	3	4	2	2	4
Compressed Schedules	2	3	2	2	3	3	3	2	2
ALTERNATE MODE TOTAL	23%	25%	29%	28%	30%	30%	25%	27%	28%

D. Mode of Travel to Work as Percent of Trips by Frequency of Participation Per Week

1. Carpooling

A review of historical data shows that the **frequency of carpooling tends to be lower during years when the percentage of people carpooling is high, and higher in years when the number of carpools is low** (See graph below). For example, 28% of employed persons carpooled in 1991 and the average frequency of carpooling was 3.1 days per week. This contrasts to 1993 when 21% carpooled with an average frequency of 3.6 days per week. **In the past, therefore, increases in alternate mode usage appear to occur when people use carpools or other alternate modes less frequently (or “try out” an alternate mode) and decreases occur when people stop sampling.** A primary objective of the Clean Air Campaign and Trip Reduction Program has been to convert "samplers" into "regular" users as well as continue to promote new or infrequent (i.e., 1-2 days a week) participation in the program.

Unfortunately, in 2001, the commuting behavior did not follow normal trends. **Both the percentage of people reporting to carpool/vanpool as well as the frequency of carpooling/vanpooling decreased.** The combination of the decreases on both measures appears to show that commuters are either feeling less of a need to carpool or are unable to for one reason or another.

Unfortunately, this is also reflected in the percentage of those who drive alone five days a week with an increase from 62% to 66% (see Table 17 on the next page). The average number of days per week that residents drive alone remained the same (4.6).

Residents who carpool five days or more days a week continued to decrease (down to 30% from 38% in 2000 and 45% in 1999). Correspondingly, the percentage of those carpooling one day per week increased from 16% to 26%.

Comparison of Percent of People Carpooling and Frequency of Carpooling

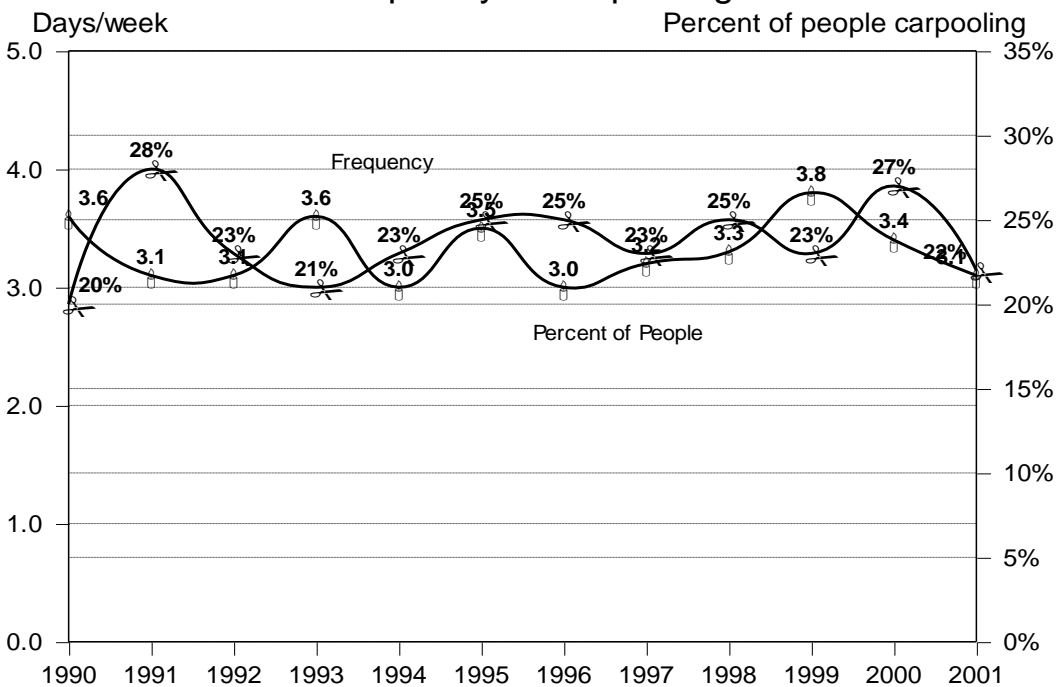


Table 17: Frequency of Driving Alone or Carpooling
(Base: Non-home based employed persons using each mode)

Study/Travel Mode	Number of days a week							Mean
	1	2	3	4	5	6	7	
1990 Study								
Drive alone	1%	2%	6%	6%	69%	10%	6%	4.6
Carpool	4%	7%	10%	12%	64%	3%	-	3.6
1991 Study								
Drive alone	2%	3%	7%	11%	65%	8%	4%	4.3
Carpool	7%	13%	15%	16%	49%	1%	-	3.1
1992 Study								
Drive alone	1%	3%	7%	11%	66%	9%	3%	4.4
Carpool	4%	21%	20%	11%	40%	4%	-	3.1
1993 Study								
Drive alone	1%	2%	5%	7%	67%	8%	10%	4.6
Carpool	3%	11%	12%	17%	52%	2%	2%	3.6
1994 Study								
Drive alone	1%	3%	4%	10%	66%	6%	9%	4.6
Carpool	7%	18%	14%	9%	49%	2%	-	3.0
1995 Study								
Drive alone	1%	3%	5%	8%	65%	10%	8%	4.6
Carpool	5%	9%	16%	13%	41%	6%	10%	3.5
1996 Study								
Drive alone	2%	6%	10%	11%	64%	5%	2%	4.5
Carpool	29%	22%	9%	9%	26%	3%	2%	3.0
1997 Study								
Drive alone	5%	6%	9%	11%	60%	5%	4%	4.4
Carpool	19%	27%	10%	13%	24%	1%	5%	3.2
1998 Study								
Drive alone	2%	6%	5%	13%	70%	3%	1%	4.7
Carpool	25%	13%	11%	14%	33%	2%	1%	3.3
1999 Study								
Drive alone	3%	5%	8%	9%	70%	4%	1%	4.6
Carpool	12%	17%	14%	12%	41%	2%	2%	3.8
2000 Study								
Drive alone	2%	4%	11%	12%	62%	5%	4%	4.6
Carpool/vanpool	16%	24%	8%	13%	36%	-	2%	3.4
2001 Study								
Drive alone	4%	5%	6%	11%	66%	5%	3%	4.6
Carpool/vanpool	26%	14%	11%	19%	30%	-	-	3.1

2. All Other Modes

The table below shows the average frequency of use for each mode in a typical week. As expected, employed residents drive alone with the greatest frequency (4.6 days/week), however, residents also rode the bus and walked on average close to four days a week to work or school (3.9 and 3.5, respectively).

Table 16: Average Frequency of Use per Week by Mode
(Base: Non-home based employed persons)

Travel Mode	2001 Average Frequency
Drive alone	4.6 days
Motorcycle	2.2 days
Carpool/vanpool	3.1 days
Ride a bike	3.3 days
Take the bus	3.9 days
Walk to work	3.5 days
Telecommute	2.7 days

E. Estimated Number of Employed Alternate Mode Commuters and Work Trips

The graph below shows that over the years significant strides have been made to increase the number of people who use alternate modes of transportation to commute to work. However, the decline in the number of people using alternate modes in 2001 has slowed that trend.

The number of alternate mode users has increased by 154,500 or 44% since 1993, while the number of non-home based employed people in Maricopa County has increased by 41%. The number of people who drive alone one or more days a week has increased by 41% (see also table on next page).

The alternate modes to have made the most significant changes since 1993 are riding the bus (up 228%), walking (up 251%) and telecommuting (up 602%). Also important to note is the significant growth in the number of employed residents who operate a home-based business since 1993 (up 80%).

Comparison of Number of Employed People Using Alternate Modes and Total Number of Non-Home based Employed in Maricopa County

(Including telecommuting and compressed schedules)

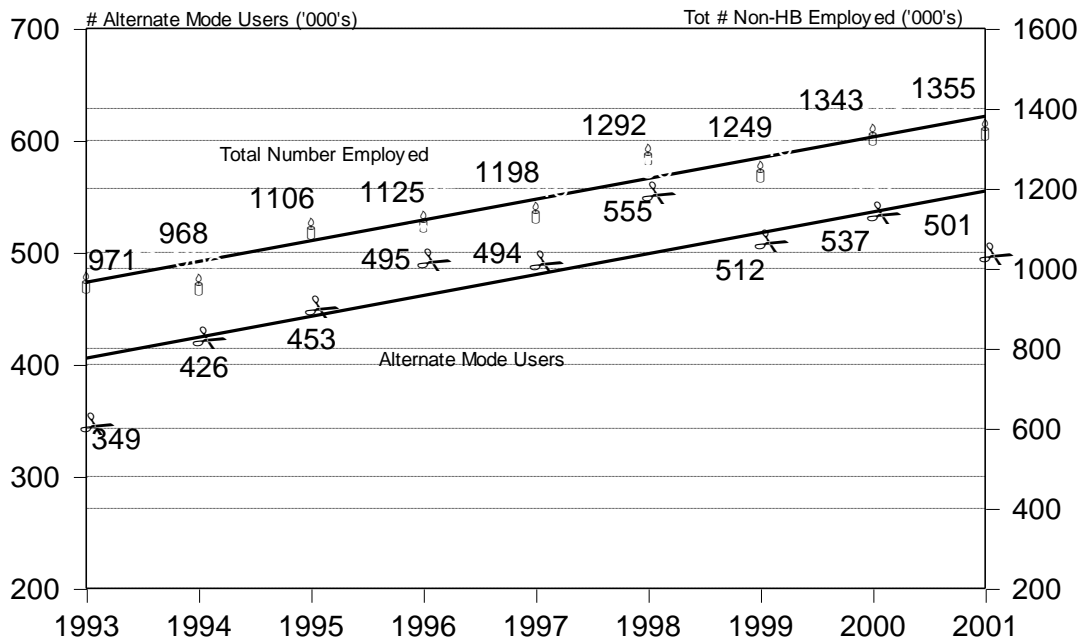


Table 18: Estimated Number of Employed Commuters by Mode
(in thousands)
Including Telecommuting and Compressed Schedules
(Base: Non-home based employed persons)

Travel Mode	Study Year									Change in #	Change in %
	1993	1994	1995	1996	1997	1998	1999	2000	2001	(93-01)	(93-01)
SOV											
Drive alone	838.7	857.1	961.9	967.2	952.8	1046.5	1099.1	1114.7	1165.6	+326.9	+39%
Motorcycle	19.3	29.2	11.0	4.5	34.4	25.8	25.0	0	27.1	+7.8	+40%
SOV NET TOTAL	838.7	857.1	961.9	967.2	952.8	1046.5	1111.6	1114.7	1179.2	+340.5	+41%
Alternate Mode											
Carpool	202.4	224.0	276.4	281.1	264.0	323.0	287.3	349.2	298.2	+95.8	+47%
Bus	28.9	48.7	44.2	90.0	57.4	38.8	37.5	53.7	94.9	+66.0	+228%
Bike	28.9	58.4	66.3	45.0	68.9	64.6	50.0	53.7	40.7	+11.8	+41%
Walk	19.3	39.0	88.4	45.0	68.9	64.6	50.0	40.3	67.8	+48.5	+251%
Tele- commute	19.3	77.9	44.2	56.2	68.9	90.4	62.5	67.2	135.5	+116.2	+602%
Compress. Sched.	115.7	136.4	121.6	101.2	126.3	180.9	174.9	161.2	122.0	+6.3	+5%
AMU NET TOTAL	347	429	453	495	494	555	512	537	501.5	+154.5	+44%
Est. Total Non-HB Empld Population	964	974	1,106	1,125	1,148	1,292	1,249	1,343	1355.4	+391.4	+41%
Est. Number of HB empld**	83.7 (8%)	185.5 (16%)	122.9 (10%)	153.3 (12%)	168.5 (13%)	143.6 (10%)	220.4 (15%)	149.2 (10%)	150.6 (10%)	+66.9	+80%
TOTAL EMPLD POP.*	1,048	1,159	1,228	1,278	1,317	1,436	1,469	1492	1506.0	+458	+44%

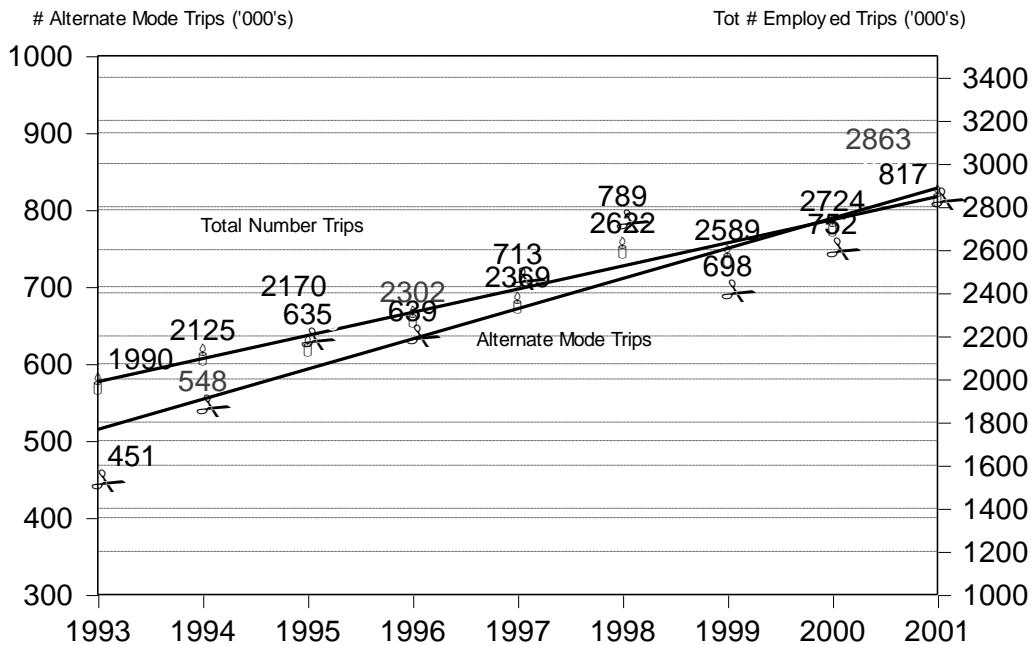
*Employment data from the State of Arizona, Department of Economic Security, Research Administration. Figures reported for 1993-1997 are for April of each year. 1998 figures are from January, 1998 through 2001 figures are from March.

**Estimate based on percentage of home-based employed reported in the telephone survey each year.

When looking at the total number of commute trips made or not made using alternate modes, we see that while the number of people using alternate mode has not increase significantly more than the percentage employed, the number of trips using alternate modes has increased significantly by 77% since 1993. The total possible number of commute trips has only increased by 44%. Of the estimated 871,400 new commute trips being made daily in the Valley since 1993, 356,600 or 41% are being made by alternate modes or trip eliminations.

As with the percent of people, the number of trips made using the bus, by walking or not made because of telecommuting have increased dramatically since 1993. **Bus trips have increased 461%, walking by 204%, and telecommuting by 336%.**

Comparison of Number of Trips per Day Made by Employed Commuters Using Alternate Modes and Total Number of Commute Trips per Day in Maricopa County
(Including telecommuting and compressed schedules)



**Table 19a: Estimated Number of Daily Commute Trips by Mode
1997 through 2001 (in thousands)
Including Telecommuting and Compressed Schedules
(Base: Non-home based employed persons)**

Travel Mode	Study Year					Chg #	Chg %
	1997	1998	1999	2000	2001	(93-01)	(93-01)
SOV							
Drive alone	1,618.7	1821.7	1872.6	1972.1	2023.4	+513.4	+34%
Motorcycle	37.2	11.5	18.5	-	22.5	+1.4	+7%
SOV TOTAL	1655.9	1833.2	1891.1	1972.1	2045.9	+514.8	+34%
Alternate Mode							
Carpool	326.2	394.8	404.3	456.6	348.8	+63.6	+22%
Bus	86.4	44.5	58.3	66.1	139.6	+114.7	+461%
Bike	90.4	88.5	42.6	55.8	50.6	+15.5	44%
Walk	66.5	83.7	68.5	43.4	89.5	+60.1	+204%
Telecom.	82.4	93.8	46.3	62.0	138.1	+106.4	+336%
Comprsd. Schd.	60.9	83.7	77.7	68.2	50.6	-3.7	-7%
AMU TOTAL	712.8	789.0	697.6	752.1	817.2	+356.6	+77%
Total # of Trips*	2,368.7	2,622.2	2588.7	2724.2	2863.1	+871.4	+44%

*Total number of trips = the total number of trips possible if everyone were to drive alone to work or school.

**Table 19b: Estimated Number of Daily Commute Trips by Mode
1993 through 1996 (in thousands)
Including Telecommuting and Compressed Schedules
(Base: Non-home based employed persons)**

Travel Mode	Study Year			
	1993	1994	1995	1996
SOV				
Drive alone	1,510.0	1,543.2	1,520.3	1,658.0
Motorcycle	21.1	34.3	14.1	5.1
SOV TOTAL	1,531.1	1,577.5	1,534.4	1,663.1
Alternate Mode				
Carpool	285.2	263.0	332.4	321.3
Bus	24.9	51.5	60.8	116.6
Bike	35.1	59.5	47.9	53.1
Walk	29.4	39.6	88.1	53.1
Telecom.	31.7	70.2	51.7	45.0
Comprsd. Schd.	54.3	64.0	54.3	50.1
AMU TOTAL	460.6	547.8	635.2	639.2
Total # of Trips*	1,991.7	2,125.3	2,169.6	2,302.3

*Total number of trips = the total number of trips possible if everyone were to drive alone to work or school.

F. Estimated Daily Savings in Vehicle Miles Traveled by Alternate Mode Usage

We are able to estimate the daily savings in vehicle miles traveled by commuters who use alternate modes of transportation by projecting results from the survey data based on State of Arizona, Department of Economic Security, Research Administration estimates of the population of employed people in Maricopa County.

Based on the DES estimate of 1,506,000 employed residents in Maricopa County and our subsequent estimate of 1,355,400 *non-home based* employed residents, we calculated that approximately 33.8 million commuter miles would be traveled each day *if every employee drove alone to work each day* (see the explanations provided with the tables on the following pages for a description of the computations used to determine these estimates). Of this total base of *possible* commuter miles, 77% are made by employees driving alone and 23% are commuted (or not driven if the employee telecommutes or works a compressed schedule) by employees using alternate modes of transportation.

By calculating the daily number of vehicle miles attributable to each mode of transportation, we are able to estimate the number of miles saved because of alternate mode usage. In other words, **people who telecommute would account for 1.3 million commuter passenger miles each day if they drove alone, but since they do not make a commute trip when they telecommute, none of the 1.3 million vehicle miles occur.** This means that more than one million vehicle miles each day are saved due to telecommuting.

In total, approximately 6.3 million vehicle miles (approximately 19% of the total possible vehicle miles) were saved or not driven daily in 2001 because employees used an alternate mode of transportation, worked at home, or had a compressed work schedule. Using the guide of one pound of pollution for every 28 vehicle miles traveled, **a savings of 6.3 million miles each day results in the release of approximately 224,800 fewer pounds (or 112 tons) of pollution into the air each day; 1,192,500 fewer pounds (or 596 tons) each week, or 31,000 tons of pollution each year.**

Details are shown in Tables 20-22.

Table 20a: Estimated Savings Due to Alternate Modes, Telecommuting, and Compressed Schedules

	2001		
	Daily	Weekly	Annually
Total Vehicle Miles	6.3 Million	33.4 Million	1.74 Billion
Pounds of <u>Pollution</u>	225,000 pounds	1,192,500 pounds	62,010,000 pounds
Tons of Pollution	112 tons	596 tons	31,000 tons
Gallons of Gas (20 miles/gal)	315,000 gallons	1,669,500 gallons	86,814,000 gallons
Cost savings – gas only	\$485,100 (1.54 per gallon per AAA 3/2001)	\$2,571,000	\$133,692,000

Table 20b: Estimated Savings Due to Alternate Modes, Telecommuting, and Compressed Schedules

	1999			2000		
	Daily	Weekly	Annually	Daily	Weekly	Annually
Total Vehicle Miles	5.8 Million	31 Million	1.6 Billion	6.2 Million	32 Million	1.66 Billion
Pounds of <u>Pollution</u>	207,400 pounds	1,120,000 pounds	58,240,000 pounds	222,000 pounds	1,154,400 pounds	60,028,800 pounds
Tons of Pollution	104 tons	560 tons	29,250 tons	111 tons	577 tons	30,014 tons
Gallons of Gas (20 miles/gal)	290,000 gallons	1,550,000 gallons	80,000,000 gallons	310,000 gallons	1,600,000 gallons	83,200,000 gallons
Cost savings – gas only	\$408,900 (\$1.41 per gallon per AAA March 1999)	\$2,185,500	\$112,800,000	\$471,200 (\$1.52 per gallon per AAA March 2000)	\$2,432,000	\$126,464,000

**Table 21: 2001 Estimated Daily Passenger and Passenger Mileage
Using All Modes to Work (in thousands)
(Base: Non-home based Employed Persons)**

Travel Mode	Number of Employed Commuters by mode		Number of Commuting Trips per week (both ways)			# of Commute Trips/day	Avg. # of miles per 1-way trip (2 yr. Avg.)	Estimated passenger miles commuted/not driven per day	
	#	%	Avg	#	%			#	%
SOV									
Drive Alone	1165.6	86%	9.2	10724	71%	2023.4	12.6	25494.6	75%
Motorcycle	27.1	2	4.4	119	1	22.5	19.0	427.8	2
SOV Net Total	1179.2	87%		10843	72%	2045.9		25922.2	77%
Alternate Mode									
Carpool	298.2	22%	6.2	1849	12%	348.8	11.0	3837.1	11%
Bus	94.9	3	7.8	740	5	139.6	9.4	1312.5	4
Bike	40.7	7	6.6	268	2	50.6	5.7	388.6	1
Walk	67.8	5	7.0	474	3	89.5	3.2	286.4	1
Telecommt	135.5	10	5.4	732	5	138.1	9.6	1325.7	4
Cmprssd					2			815.2	
Schdle	122.0	9	2.2	268		50.6	16.1		2
AMU Total	501.5	37%		4332	28%	817.3		7865.6	23%
TOTAL	1343			15175	100%	2863.2		33787.8	100%

¹ To calculate the total number of trips made each day using each mode we (a) multiplied the total population of non-home based employed people (1,355,400) by the percentage of employed people in the survey who reported using each mode; (b) multiplied the resulting population estimates for each mode by the average number of trips made (both ways) to get the total number of trips made each week using each mode; (c) divided the total number of trips made each week using each mode by the average number of days a week employees commute using any mode (5.3 = total trips divided by number of employees in sample or 3472/653=5.2).

For example, 10% of non-home based employed people in the survey reported that they telecommuted instead of driving to work one or more days a week. (a) Ten percent (10%) of the total population of non-home based employed people (1,355,400) is 135,500; (b) 135,500 times the average number of trips both ways (2.7 x 2=5.4) results in an estimated 731,900 trips not made because of telecommuting each week; (c) 731,900 trips each week is then divided by the average number of days a week employees commute using any mode (5.3) to determine the estimated number of trips not made each day due to telecommuting, which is 1,325,700.

² To calculate the estimated number of passenger miles traveled (or not traveled by telecommuting or compressed schedules) each day using each mode, we multiplied the total number of trips made each day for each mode by the average number of miles traveled to work for each mode.

**Table 22: 2001 Estimated Daily Vehicle Miles and Vehicle Miles Saved
Commuting to/from Work (in thousands)**

Travel Mode	Estimated passenger miles commuted	# of people per vehicle	Vehicle miles traveled daily ¹	Vehicle miles saved daily ²	Pounds pollution saved daily
SOV					
Drive alone	25495	1	25495	0	0
Motorcycle	428	1	428	0	0
SOV TOTAL	25923		25923	0	0
Alternate Mode					
Carpool	3837	2.5	1535	2302	83
Take the bus	1312	35	38	1275	46
Ride a bike	289	1	289	289	10
Walk to work	286	1	286	286	10
Telecommute	1326	1	1326	1326	47
Cmprssd schedules	815	1	815	815	29
ALTERNATE MODE TOTAL	7866		4289	6293	225
TOTAL	33788		30211	6293	225

(Base: Non-home based Employed Persons)

- ¹ Vehicle miles traveled each day for driving alone and riding a motorcycle are the same as the estimated number of miles commuted using each of those modes since these are assumed to be single occupant vehicles. Vehicle miles traveled by carpool are calculated by dividing the estimated number of miles commuted while carpooling by the average number of people in each carpool (2.5). Vehicle miles traveled by bus are calculated by dividing the estimated number of miles commuted while riding the bus by the average number of bus riders per bus during peak hours (35). Vehicle miles traveled by bike, walking, or telecommuting are set to "0" because no polluting vehicles are used.

For example, if 1,312,000 miles are made by people using the bus each day, but there are, on average, 35 riders on each bus during peak hours, bus riders actually account for only 38,000 vehicle miles each day (1,312,000/35=38,000)

- ² Vehicle miles saved daily is calculated by subtracting the number of vehicle miles traveled using each mode from the estimated number of miles commuted using each mode.

G. Comparison of TRP Affected and Non-Affected Organizations

With the advent of employers implementing TRP strategies in 1990-91, alternate mode usage by employees from different size organizations has been examined to monitor the impact of the TRP. In 1991 and 1992, only organizations with 100 or more employees were affected by the TRP. By 1994 all organizations with 50 or more employees were included in the TRP.

Virtually all organizations with 50 or more employees have been participating in the TRP for almost five years. Therefore, the analysis of the 2000 data will differentiate only between TRP-affected (i.e., more than 50 employees) and non-TRP affected (i.e., fewer than 50 employees) organizations. Differences from previous years in terms of the size of companies included in the analysis are noted on the tables. The margin of error for information regarding TRP-affected organizations is $\pm 5.2\%$ and for non-TRP affected organizations is $\pm 6.7\%$.

1. TRP Affected Organizations

As seen among the total sample of employed residents, total alternate mode usage for TRP affected organizations decreased to a level not reported since 1993 (currently at 38%). **As seen earlier in this section, the decline is due to a trailing off in the usage of carpools and vanpools for the work trip.** The percentage reporting a compressed workweek also decreased. A couple of positive changes did occur – the percentage of employees at TRP affected companies using the bus increased as well as the incidence of telecommuting.

Table 23a: TRP Affected Organizations (50+ Employees Only*) 1996 to 2001
Mode of Travel to Work as Percent of People
 (Base: Non-home based Employed persons)

Travel Mode	1996 (141)	1997 (187)	1998 (199)	1999 (279)	2000 (302)	2001 (366)
SOV						
Drive alone	89%	86%	85%	87%	86%	86%
Motorcycle	-	3	2	3	-	2
SOV NET TOTAL	89%	86%	85%	88%	86%	87%
Alternate Mode						
Carpool	30%	25%	25%	20%	26%	20%
Vanpool	-	-	-	-	4	2
Bike	2	6	4	4	3	3
Bus	7	5	2	3	3	7
Walk	3	6	4	4	2	4
AMU NET SUBTOTAL	34%	35%	32%	29%	33%	28%
Telecommute	5%	5%	5%	4%	5%	8%
CWW	11	15	15	17	14	10
AMU NET TOTAL	45%	44%	43%	42%	43%	38%

*Percentages prior to 1996 reflect organizations with 100 or more employees. In 1996 and 1997, percentages reflect the expansion of the TRP to organizations with 50 or more employees.

Table 23b: TRP Affected Organizations (50+ Employees Only*) 1991 to 1995
Mode of Travel to Work as Percent of People

(Base: Non-home based Employed persons)

Travel Mode	1991	1992	1993	1994	1995
	(212)	(193)	(171)	(198)	(111)
SOV					
Drive alone	85%	85%	85%	91%	86%
Motorcycle	4	2	4	4	1
SOV NET TOTAL	86%	87%	86%	90%	86%
Alternate Mode					
Carpool	32%	24%	23%	18%	26%
Vanpool	-	-	-	-	-
Bike	4	5	3	6	6
Bus	3	6	4	3	4
Walk	3	2	2	3	7
AMU NET SUBTOTAL	37%	32%	27%	26%	32%
Telecommute	Na	na	2%	7%	3%
CWW	Na	na	13	16	8
AMU NET TOTAL	Na	na	38%	43%	39%

*Percentages prior to 1996 reflect organizations with 100 or more employees. In 1996 and 1997, percentages reflect the expansion of the TRP to organizations with 50 or more employees.

Despite a decrease in the number of carpool/vanpool trips made, the overall percent of traditional alternate mode trips by those working at TRP Affected organizations remains the same. Overall, 22% of all work trips *excluding* telecommuting and compressed schedules were made using alternate modes of transportation and 27% of all work trips *including* telecommuting and compressed schedules were made (or not made) using alternate modes.

Table 24a: TRP Affected Organizations (50+ Employees only*) 1996 to 2001
Mode of Travel to Work as Percent of Total Trips
 (Base: Non-home based Employed Persons)

Travel Mode	1996	1997	1998	1999	2000	2001
SOV						
Drive alone	77%	74%	77%	79%	78%	77%
	-	2	1	1	-	1
<u>Moto</u>						
<u>rcycle</u>						
SOV TOTAL	77%	76%	78%	80%	78%	78%
Alternate Mode						
Carpool	16%	15%	16%	13%	16%	12%
Vanpool	-	-	-	-	2	1
Bike	1	3	2	2	2	1
Bus	4	4	2	2	2	5
Walk	2	2	2	3	-	3
ALTERNATE MODE TOTAL	23%	24%	22%	20%	22%	22%

*Percentages prior to 1996 reflect organizations with 100 or more employees. After 1995, percentages reflect the expansion of the TRP to organizations with 50 or more employees.
 (Excluding Telecommuting and Compressed Schedules)

Table 24b: TRP Affected Organizations (50+ Employees only*) 1991 to 1995
Mode of Travel to Work as Percent of Total Trips
 (Base: Non-home based Employed Persons)

Travel Mode	1991	1992	1993	1994	1995
SOV					
Drive alone	71%	74%	76%	82%	74%
Motorcycle	3	1	1	3	-
SOV TOTAL	74%	75%	77%	85%	74%
Alternate Mode					
Carpool	21%	16%	16%	9%	16%
Vanpool	-	-	-	-	-
Bike	1	3	2	3	3
Bus	2	4	2	2	3
Walk	2	1	3	1	4
ALTERNATE MODE TOTAL	26%	25%	23%	15%	26%

*Percentages prior to 1996 reflect organizations with 100 or more employees. After 1995, percentages reflect the expansion of the TRP to organizations with 50 or more employees. (Excluding Telecommuting and Compressed Schedules)

2. *Non-TRP Affected Organizations*

The table below shows that an increase in the usage of telecommuting and compressed work schedules has resulted in an overall increase in the alternate mode usage among employees at Non-TRP Affected. The percentage of these employees reporting to telecommute one or more days a week more than doubled (5% to 12%) and the percentage working compressed work weeks tripled (2% to 9%). Currently, 26% of employees at Non-TRP Affected organizations carpool, bus, bike or walk to work and a total of 36% use an alternate mode, telecommute, or work a compressed work schedule.

**Table 25a: Non-TRP Affected Organizations (less than 50 employees)
1996 to 2001**

Mode of Travel to Work as Percent of People

(Base: Non-home based employed persons)

Travel Mode	1996	1997	1998	1999	2000	2001
	(83)	(105)	(99)	(140)	(118)	(252)
SOV						
Drive alone	81%	79%	81%	91%	78%	86%
Motorcycle	1	2	2	1	-	2
SOV NET TOTAL	81%	79%	82%	91%	78%	87%
Alternate Mode						
Carpool	22%	18%	26%	29%	17%	17%
Vanpool	-	-	-	-	4	4
Bike	7	5	5	3	3	4
Bus	8	4	2	3	4	8
Walk	6	6	6	3	5	7
NET SUBTOTAL	31%	31%	33%	31%	27%	26%
Non-Trip Modes						
Telecommute	6%	8%	11%	5%	5%	12%
Compressed Schedules	6	6	10	8	2	9
ALTERNATE MODE NET TOTAL	42%	41%	43%	38%	30%	36%

*Non-affected organizations refers to companies with 100 or fewer employees for 1991 and 1992 and refers to organizations with 50 or fewer employees for 1993 - 2001.

**Table 25b: Non-TRP Affected Organizations (less than 50 employees)
1991 to 1995**

Mode of Travel to Work as Percent of People

(Base: Non-home based employed persons)

Travel Mode	1991 (297)	1992 (267)	1993 (72)	1994 (128)	1995 (94)
SOV					
Drive alone	82%	85%	87%	87%	87%
Motorcycle	4	2	2	2	1
SOV NET TOTAL	84%	86%	87%	87%	87%
Alternate Mode					
Carpool	24%	21%	18%	28%	26%
Vanpool	-	-	-	-	-
Bike	6	6	4	6	7
Bus	4	2	2	8	2
Walk	7	6	2	7	12
NET SUBTOTAL	35%	31%	21%	35%	35%
Non-Trip Modes					
Telecommute	na	na	4%	8%	7%
Compressed Schedules	na	na	8	11	16
ALTERNATE MODE NET TOTAL	na	na	33%	45%	44%

*Non-affected organizations refers to companies with 100 or fewer employees for 1991 and 1992 and refers to organizations with 50 or fewer employees for 1993 - 2001.

Despite the fact that the percentage of people at Non-TRP organizations stayed the same, the percent of alternate mode trips made by those working for Non-TRP Affected organizations decreased slightly in 2001. This means that although the same number of people at non-TRP organizations were using alternate modes overall, those who were using alternate modes were doing so with a lower frequency. Currently 23% of those at Non-TRP Affected organizations carpool, bus, bike, or walk to work and this percentage moves up slightly to 26% when telecommuting and compressed schedules are included as alternate modes of transportation.

**Table 26: TRP Non-Affected Organizations*
Mode of Travel to Work as Percent of Total Trips**

Travel Mode	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
SOV											
Drive alone	72%	78%	81%	76%	75%	73%	73%	73%	77%	74%	76%
Motorcycle	2	1	1	1	-	1	1	-	1	-	1
SOV TOTAL	74%	79%	82%	77%	75%	74%	74%	73%	78%	74%	77%
Alternate Mode											
Carpool	14%	13%	13%	15%	17%	12%	13%	17%	17%	14%	10%
Vanpool	-	-	-	-	-	-	-	-	-	3	2
Ride a bike	4	3	2	2	2	4	5	5	1	1	3
Take the bus	2	1	1	2	1	6	4	1	2	3	4
Walk	5	4	2	4	5	4	4	4	2	5	4
ALTERNATE MODE TOTAL	25%	21%	18%	23%	25%	26%	26%	27%	22%	26%	23%

(Excluding Telecommuting and Compressed Schedules) (Base: Non-home based Employed Persons)

*Non-affected organizations refers to companies with 100 or fewer employees for 1991 and 1992 and refers to organizations with 50 or fewer employees for 1993-2001.

H. Alternate Mode Usage Among Students

As expected, students are significantly more likely to use alternate modes of transportation to commute to work or school. Interestingly, alternate mode usage stayed the same compared to last year despite an increase in the percentage of students driving alone one or more days a week. Overall, 63% of students reported using an alternate mode of travel for their commute at least one day a week.

Although the percentage of students using alternate modes stayed the same, the percent of alternate mode trips made by students decreased slightly from 56% in 2000 to 51% in 2001. The largest decreased in trips occurred was for carpooling (25% in 2000 compared to 15% in 2001).

**Table 27a: Mode of Travel to Work or School
as Percent of Students**

Travel Mode	1997 % of Stdnts	1998 % of Stdnts	1999 % of Stdnts	2000 % of Stdnts	2001 % of Stdnts
SOV					
Drive alone	61%	67%	72%	64%	74%
Motorcycle	4%	4%	2	3	5
SOV NET TOTAL	61%	69%	73%	64%	78%
Alternate Mode					
Carpool	34%	54%	44%	45%	36%
Vanpool	-	-	-	13	9
Bike	14	10	6	7	14
Bus	16	10	15	19	24
Walk	17	10	9	22	19
Telecommute	12	8	6	3	16
Compressed Sched.	3	4	4	0	3
ALTERNATE MODE NET TOTAL	58%	69%	56%	63%	63%

(Base: 1997 students n=57; 1998 students n=55; 1999 students n=93; 2000 students n=83; 2001 students n=123)

**Table 27b: Mode of Travel to Work or School
as Percent of Trips**

Travel Mode	1997 % of Trips	1998 % of Trips	1999 % of Trips	2000 % of Trips	2001 % of Trips
SOV					
Drive alone	45%	53%	56%	43%	47%
Motorcycle	1%	-	1	1	2
SOV NET TOTAL	46%	53%	57%	44%	49%
Alternate Mode					
Carpool	19%	29%	19%	25%	15%
Vanpool				4	3
Bike	6	4	3	4	5
Bus	13	4	12	11	13
Walk	8	5	6	11	9
Telecommute	7	4	2	1	5
Compressed Sched.	1	1	1	0	1
ALTERNATE MODE NET TOTAL	54%	47%	43%	56%	51%

(Base: 1997 students n=57; 1998 students n=55; 1999 students n=93; 2000 students n=83; 2001 students n=123)

I. Reasons for Using Alternate Modes

Overall, alternate mode users most often cite the following reasons for using an alternate mode at least once during a typical week:

- It is convenient or easier (20%)
- Its saves gas/saves money/ reduces wear and tear on car (20%)
- Do not have any other transportation (12%)
- The company is structured that way, it allows employees to work at home (11%)

Carpoolers most often say they carpool for the following reasons:

- Its saves gas/saves money/ reduces wear and tear on car (25%)
- They are going to the same place or the same direction (13%)
- Someone needs a ride/other person does not have a car (12%)
- Do not have any other transportation (11%)

Telecommuters most often say they telecommute because:

- The company is structured that way, it allows employees to work at home (42%)
- It is convenient or easier (31%)
- To take care of children or spend time with family (10%)

Bus riders most often say they take the bus because:

- They do not have any other transportation (23%)
- It is convenient or easier (21%)
- It is inexpensive and saves them money (13%)

Those who walk to work or school most often say they do so because:

- They get exercise (28%)
- Their destination is close by (24%)
- They do not have any other transportation (18%)

Those who bicycle to work or school most often say they do so because:

- They get exercise (32%)
- It is convenient or easier (14%)
- To get to the bus stop (13%)

Vanpoolers most often say they use a vanpool because:

- Do not have to worry about gas or spend less money on gas (26%)
- Someone needs a ride/other person does not have a car (25%)
- To cut down on air pollution (17%)

Table 28: Reasons for Using Alternate Modes

	Total (248)	Carpool (133)	Telecom (66)	Bus (54)	Walk (40)	Bicycle (26)	Vanpool (20)
It's convenient/easier	➤20%	9%	➤31%	➤21%	10%	➤14%	9%
Save gas/save money/reduce wear and tear on car	➤20%	➤25%	4%	➤21%	3%	4%	➤26%
Don't have any other transportation	➤12%	➤11%	-	➤23%	➤18%	3%	-
That's the way the company is set up/ company allows me to stay at home	➤11%	-	➤42%	-	-	-	-
To cut down on air pollution	9%	9%	3%	4%	-	12%	➤17%
Someone needs a ride/other person does not have car	8%	➤12%	-	-	-	-	➤25%
Exercise	8%	-	-	-	➤28%	➤32%	-
We are going to the same place/same way	7%	➤13%	-	-	-	-	7%
It's close by	4%	-	-	-	➤24%	2%	-
Do not like to drive	3%	2%	-	9%	1%	1%	-
Do not have license/can not drive	3%	2%	-	9%	-	-	-
Take care of children/spend time with family	3%	-	➤10%	-	-	-	-
Car is in the shop	3%	-	-	10%	3%	-	-
Only have one car/spouse can use car	3%	6%	-	4%	-	-	-
Saves time	2%	4%	1%	-	-	1%	-
Same schedule	2%	3%	-	-	-	-	-
Don't have to worry about parking	2%	2%	-	7%	1%	7%	9%
Company pays for it/bonuses for carpooling	2%	1%	-	7%	-	-	-
Good weather	2%	-	-	-	3%	9%	-
To get to the bus stop	2%	-	-	-	1%	➤13%	-
Avoid traffic	2%	-	-	7%	-	1%	-
To work on the computer	1%	-	3%	-	-	-	-
There is no bus	1%	-	-	-	5%	-	-
Just like to walk	1%	-	-	-	6%	-	-
Other	7%	6%	7%	7%	8%	2%	2%
Don't know/no answer	9%	9%	8%	8%	-	1%	14%

31-36: What is the main reason you Please explain? What other reason? (Among employed and students who use specific alternate mode at least once a week)

J. Telecommuting

1. Ever Telecommuted

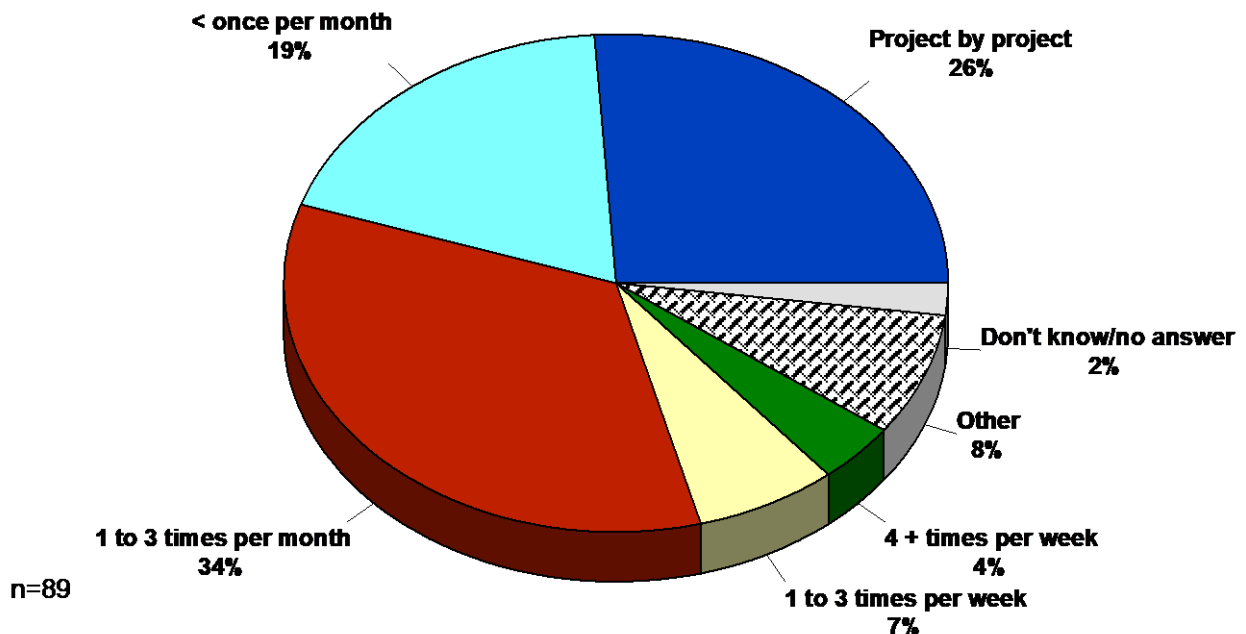
Seventeen percent (17%) of employed residents who do not typically telecommute report they have telecommuted in the past. Respondents ages 30 to 49 and those with an annual household income of \$50K or higher were most likely to have telecommuted in the past (24% and 22% vs. 17% overall).

2. Frequency of Telecommuting

Telecommuters were most likely to say they telecommute(d) one to three times per month (34%) or on a project by project basis (26%). An additional 11% indicated they used to telecommute at least once a week.

Frequency of Telecommuting

*How frequently did you or do you work at home during regular business hours?
(Among employed, non-home based who do not typically telecommute but who have telecommuted at least once.)*



V. Reduction of Drive Alone Trips

A. Willingness to Help Preserve Air Quality

All respondents were read a list of ways in which residents can help preserve air quality. They were then asked to indicate how willing they would be to take each step.

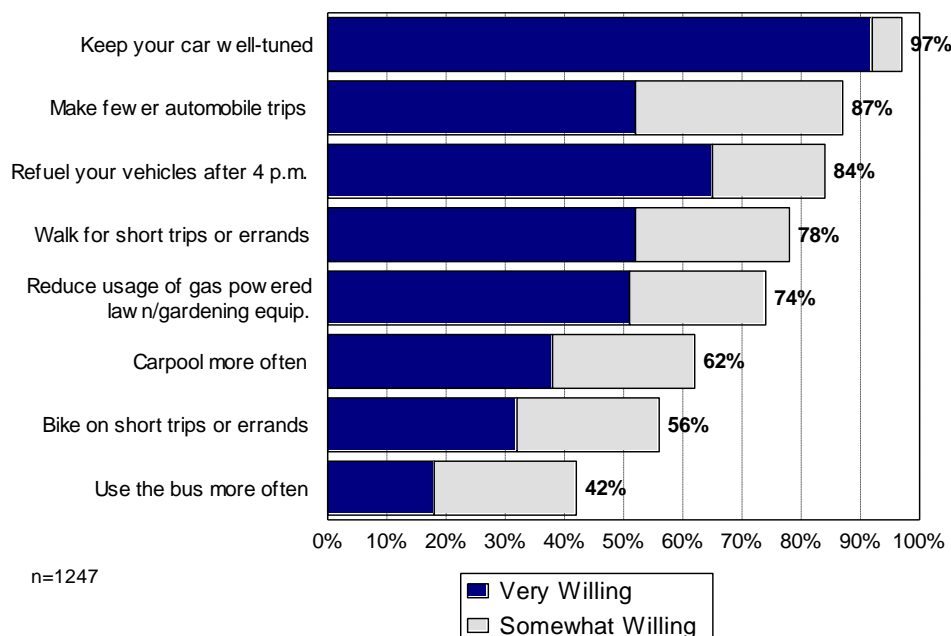
Valley residents are most willing to keep their cars well tuned in an effort to preserve air quality (97% are “very” or “somewhat willing”). A vast majority of residents (92%) said they would be “very willing” to take this action. This verbal commitment increased as income increased with only 86% of those earning less than \$15K indicating a willingness to keep their car well tuned and 99% of those earning \$50K or more annually. **A majority of residents also say they would be willing to make fewer automobile trips and to fuel after 4:00 p.m. trips to help Valley air quality** (87% and 84%, respectively), however they are more likely to be “very willing” to refuel after 4 p.m. than to make fewer auto trips (65% vs. 52% gave a “very willing” rating).

Approximately three in four residents said they would be willing to walk for short trips and to reduce their usage of gas powered lawn equipment (78% and 74%, respectively). One-half indicated they were “very willing” to take these steps (52% walking and 51% using gas-powered equipment less). Approximately three in five residents say they are willing to carpool more often (62%; 38% very + 24% somewhat) and/or bike on short trips (56%; 32% very + 24% somewhat) to help air quality.

Residents are least likely to commit to a willingness to use the bus more often (42%; 18% very + 24% somewhat). Those with an annual household income of less than \$50K are significantly more likely to express a willingness to use the bus more often (48% vs. 35% of those earning more).

Willingness to Help Preserve Air Quality

Summary of "very willing" + "somewhat willing"



Overall, willingness to help preserve air quality is higher among residents who are under 50 years old. Younger residents (under 50) are significantly more likely than older residents to indicate a willingness to refuel after 4 p.m., walk for short trips, reduce use of gas powered lawn equipment, and to bike on short trips. Those ages 30 to 49 are significantly more likely than both older and younger residents to say they would be willing to make fewer auto trips. Expressed willingness to carpool more often and ride buses more often increases significantly as age decreases.

Men are significantly more likely than women to indicate they would be willing to walk or bike for short trips (81% vs. 76% and 64% vs. 48%, respectively). Finally, residents who earn \$40K or more annually are significantly more likely than those earning less to say they would be willing to refuel after 4 p.m. (91% vs. 78%, respectively).

Table 29a: Willingness to Help Preserve Air Quality
(Summary of very willing + somewhat willing)

Responses	Total (1248)	Gender		Age		
		Men (617)	Women (632)	<30 (244)	30-49 (432)	50+ (545)
Keep your car well-tuned	97%	98%	96%	96%	98%	97%
Make fewer automobile trips	86%	86%	87%	<u>84%</u>	91%	<u>84%</u>
Refuel your vehicles after 4 p.m.	84%	82%	86%	85%	89%	<u>80%</u>
Walk for short trips or errands	78%	81%	<u>75%</u>	81%	83%	<u>73%</u>
Reduce the usage of gas powered lawn and gardening equipment	73%	73%	74%	81%	80%	<u>65%</u>
Carpool more often	63%	61%	65%	82%	<u>64%</u>	<u>55%</u>
Bike on short trips or errands	56%	64%	<u>48%</u>	69%	68%	<u>41%</u>
Use the bus more often	41%	38%	44%	53%	<u>36%</u>	<u>41%</u>

54-61: I am going to read you a list of ways in which you could help preserve air quality. For each one, please tell me if you would be very willing, somewhat willing, not very willing or not at all willing to take each step.

Tempe and **Chandler** residents are more likely to indicate a willingness to walk for short trips (82% and 84% vs. 67% to 80% for other cities). Carpooling more often is a more popular option among **Mesa** and **Glendale** residents (70% and 72% vs. 62% overall). **Tempe** respondents are most likely to say they would be willing to bike on short trips (67% vs. 58% overall). Residents of **Phoenix**, **Tempe** and **Mesa** are more likely to report being willing to use the bus more often (45% vs. 22% to 42% for other cities). Nearly all **Peoria** residents say they are willing to make fewer auto trips to help preserve air quality (96% vs. 86% overall).

Table 29b: Willingness to Help Preserve Air Quality
(Summary of “very willing” + “somewhat willing”)

Responses	Total (1248)	Phx (280)	Scotts (200)	Tempe (204)	Gilbrt (203)	Mesa (146)	Glndle (53)	Chndlr (74)	Peoria (27)
Car well-tuned	97%	96%	96%	96%	99%	98%	96%	99%	100%
Fewer automobile trips	86	87	83	88	83	88	87	78	96
Refuel after 4 p.m.	84	85	86	85	87	82	87	88	78
Walk	78	79	80	82	73	80	68	84	68
Reduce the usage of gas powered lawn equip.	73	77	70	71	71	73	68	77	70
Carpool	63	61	57	61	65	70	72	58	56
Bike	56	55	56	67	57	56	62	62	52
Use the bus	41	45	42	45	32	44	40	34	22

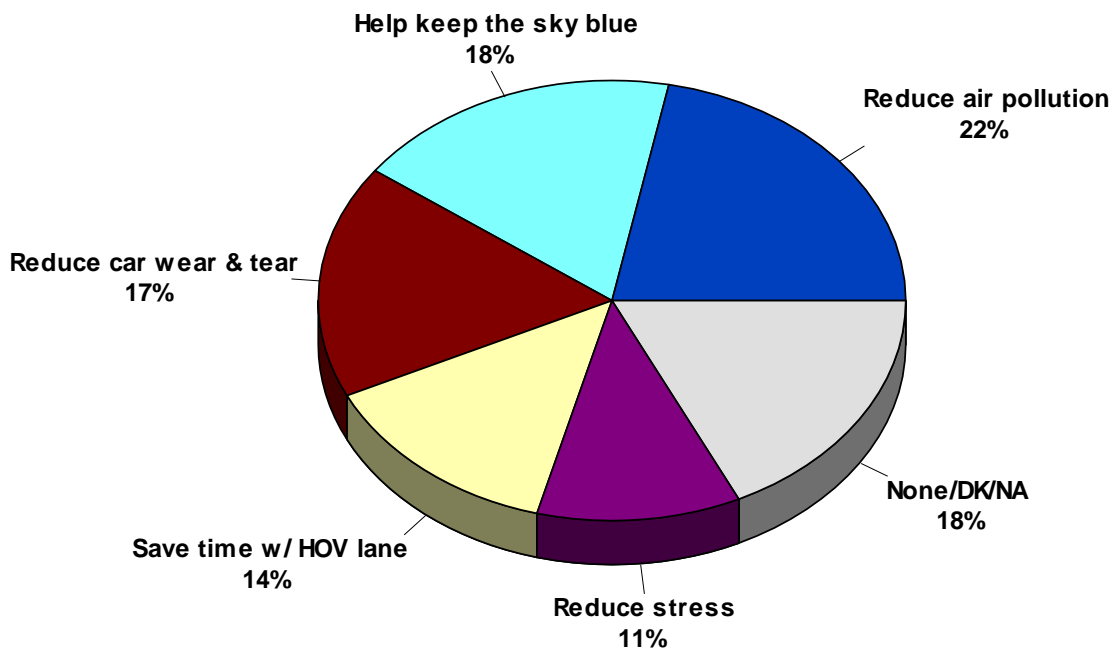
B. Information that Encourages Alternate Mode Usage

Residents say they would be most encouraged to consider using an alternate mode by messages about reducing air pollution and increasing resident health (22%) and helping to keep the sky blue (18%). Interestingly, residents considered to be potential alternate mode users are significantly more likely than those who typically use alternate modes and those who are not potential AMU's to find the message "by carpooling you help keep the sky blue" the most compelling reason to consider using an alternate mode.

Nearly one in five found reducing wear and tear on their cars and/or saving money (17%) as the most encouraging message. Residents were least likely to indicate that information about saving time by using the HOV lane (14%) and reducing stress (11%) would compel them to change their travelling behavior.

Of importance, nearly one in five residents did not give their opinion on the matter (18% don't know/no answer/refused). This may indicate that these residents did not find any of the information particularly motivating.

Message Most Likely to Encourage Carpooling



Whereas women are significantly more likely than men to find information about reducing air pollution and improving resident health encouraging (27% vs. 16%), information about reducing wear and tear on their car and/or saving money resonates better with men (20% vs. 14% for women).

Younger residents (under 30) are significantly more likely than those 50 and older to indicate they find information about saving car wear and tear and/or money to be the most encouraging message (22% vs. 13%). Saving time is more encouraging to those ages 30 to 49 than to those 50 and older (18% vs. 10%). Finally, older residents (50+) are significantly more likely to be unable to select any message as the most encouraging (27% vs. 14% of those ages 30 to 49 and 7% of those under 30).

Residents who always drive alone were significantly more likely than those who always use an alternate mode to select information about helping to keep the sky blue as the most compelling message (22% vs. 11%).

Scottsdale residents are significantly more likely than Phoenix residents to find the message about carpooling to help reduce air pollution and keep residents healthy to be encouraging (30% vs. 20%, respectively).

Table 30: Most Encouraging Information

Response	2001 (1248)	Gender		Age		
		Men (616)	Women (631)	<30 (244)	30-49 (432)	50+ (545)
Reduce air pollution/ keep residents healthy	22%	16%	27%	24%	21%	22%
Keep the sky blue	18%	19%	16%	19%	18%	16%
Reduce wear and tear on car/ save money	17%	20%	14%	22%	18%	13%
Save time by using the HOV lane	14%	14%	13%	15%	18%	10%
Reduce stress by sharing the ride	11%	10%	13%	13%	10%	12%
None/Don't know/No answer	18%	20%	18%	7%	14%	27%

64: Which of the following types of information would most likely encourage you to consider using alternative modes of transportation for getting around the Valley instead of driving alone? Information about how by carpooling....

C. Past Alternate Mode Usage and Potential for Future Usage

Employed residents and students who did not indicate that they used an alternate mode during a typical week were asked about alternate mode usage within the past two years and about the potential for past users to use alternate modes again.

I. Past Alternate Mode Usage

Two in five (40%) employed residents and students who reported they do not typically use an alternate mode reported that they have done so in the past two years. Younger respondents (<30) and those with three or more employed household members are most likely to have used an alternate mode in the past (57% vs. 35% of older residents and 56% vs. 38% of those with fewer employed residents).

They were most likely to report that they have driven or ridden with others to work with some regularity within the past two years (25%). An additional thirteen- percent (13%) say they worked at home in the past. Many reported that they used to walk to work, take the bus, and/or ride a bike to work during the last four years (7%, 7%, and 6%, respectively).

Younger respondents (under 30) were more likely than older respondents to report past usage of all methods, except telecommuting, to arrive at work or school. In contrast, respondents ages 30 to 49 were significantly more likely than younger respondents to report working at home within the past two years (17% vs. 8%). Finally, respondents from households with three or more employed residents were more significantly more likely to report they used to drive or ride with others to work (42% vs. 21% of those with fewer working members).

Table 31: Past Alternate Mode Usage
(Among those who do not use an AMU in a typical week)

Response	2001 (n=427)	Age		
		<30 (n=103)	30-49 (n=214)	50+ (n=99)
Drive or ride with others to work	25%	47%	<u>16%</u>	<u>24%</u>
Work at home	13%	<u>8%</u>	17%	12%
Walk to work or school	7%	16%	<u>5%</u>	<u>3%</u>
Take the bus work or school	7%	14%	<u>3%</u>	9%
Ride a bike to work or school	6%	14%	<u>3%</u>	<u>2%</u>

26: Have you used any of the following methods to arrive at work or school more than just a few times in the past two years? (Among employed or students, non-home based, who reported no alternate mode usage in a typical week)...

Bold denotes a significantly larger number in comparison to the underlined number.

2. *Would Consider Alternate Modes Again*

Overall, nearly seven in ten (68%) respondents who used an alternate mode in the past to get to work or school reported they would be likely to consider using that method again. Those most likely to consider using the specific alternate mode they once used rode their bike in the past (75%). Nearly two-thirds (63%) said they would carpool again. Approximately five in seven would consider working from home (56%) and riding the bus (55%) as a method of commuting to school or work again. Those who walked in the past were the least likely to say they would consider doing it again (46%).

**Table 32: Would Consider Alternate Modes Again
(Summary of Very Likely + Somewhat Likely)**

Response	2001 (n=170)
NET would consider alternate mode again	68%
Ride a bike to work or school	75%
Drive or ride with others to work	63%
Work at home	56%
Take the bus work or school	55%
Walk to work or school	46%

28: *How likely would you be to consider (appropriate alternate mode) again?* (Among employed or students, non-home based, who reported no alternate mode usage in a typical week, but have used an alternate mode in the past four years). Percentages are based to those who have used the alternate mode in the past. ...

3. *Reasons for Not Using Alternate Modes*

Those who do not typically use an alternate mode to commute to school or work are most likely to say it is because their work schedule varies, there is no one to carpool with and/or because it is inconvenient (27%, 15%, and 12% respectively). Approximately one in ten say they do not use an alternate mode because it is faster to drive (10%), there is not transit near their homes (9%), and/or because they need a vehicle at work (8%).

Table 33: Reasons for Not Using Alternate Modes
(Among employed and students who do not typically use an alternate mode)

Responses	2001 (n=427)
Work schedule varies/early morning	27%
People I work with do not live close enough to carpool	15%
Convenience/inconvenient to use other modes of transportation	12%
Faster to drive/would take too long to use the bus	10%
No transit system close to where I live	9%
Need vehicle for work	8%
Need to drop off/pick up kids	6%
Work far from home/too far to walk/ride bike	6%
Like driving/independence	5%
Live close to work	3%
Need to go to a second destination after work/second job/school	2%
It is unsafe to ride bike	2%
Not enough co-workers to carpool	1%
Other	8%
Don't know/no answer	4%

101: People have a lot of reasons why they drive along to work or school. Why aren't you currently using an alternate mode of transportation to commute to work or school (Among employed or students, non-home based, who reported no alternate mode usage.)

**4. Changes that would enable Use of Alternate Modes
(Among Employed and Students)**

Employed residents and students who did not indicate that they used an alternate mode during a typical week were asked what changes would make it possible for them to use some means other than driving alone to commute to work or school.

Nearly three in five (57%) reported there are some circumstances that would enable them to use an alternate mode. **Respondents were most likely to say better transit (21%) and/or a carpool partner (16%) would enable them to use an alternate mode.** A few say that light rail (6%), living closer to work (6%), some kind of employer incentive (5%) would prompt them to use an alternate mode. While a slight majority appear willing to use an alternate mode, 43% either “don’t know” what would motivate them (14%) or say it is not possible and/or it is undesirable for them to ever consider using an alternate mode of transportation (29%). Although the question was changed slightly from 2000 to 2001 and was asked of a smaller sub-group of the population, the rank order of responses remained the same.

**Table 34: Changes that would enable Use of Alternate Modes
(Among employed and students who do not currently use an alternate mode)**

Responses	2001 (n=427)	2000* (n=836)
NET: Able to Take Action	57%	45%
Better transit service	21%	22%
If had someone to carpool with in the area	16%	3%
Light rail	6%	4%
Move closer to work/find work closer to home	6%	1%
Employer incentives (telecommute/ work 9-80 hr schedule)	5%	2%
Change jobs/retire	4%	2%
Consistent work schedule	4%	-
Lifestyle change/get married/divorced/no kids	1%	-
No car/car breaks down	1%	-
Gas prices continue to increase/could not afford gas	-	3%
Coordinate work times for carpooling	-	1%
NET: Nothing/not possible/not willing	29%	33%
Already use Alternate Modes		
Already carpool	-	2%
Already walk	-	1%
Other	4%	10%
Don't know	14%	22%

30: What changes would make it possible for you to be able to use some means other than driving alone to commute to work or school? * 2000 Question wording: What would need to happen before you and your family members would be able to periodically use some means other than driving alone to get to work or school, or to travel around the Valley in general? (Asked of all respondents in 2000.)

VI. Bicycling Behavior

A. Bicycle Usage and Current Destinations

One-third of Valley residents (34%) currently ride a bicycle for some purpose. Men are significantly more likely than women to say they bike ride (38% vs. 29%). Residents ages 30 to 49 are more likely than those younger or older to ride a bike (44% vs. 30% of younger residents and 26% of older residents). **Scottsdale and Tempe residents are significantly more likely to ride bikes than residents of the City of Phoenix (40% vs. 29%).**

A majority of Valley riders (68%) say they bicycle for exercise and/or do not have a specific destination; they ride “around the neighborhood.” An additional 27% say they bike to the grocery store (up from 14% last year). Nearly one in five (18%) report biking to the park (down from 27% in 2000). The park is more popular among younger riders (21% vs. 8% of those 50 and older). Some Phoenix area residents use their bikes to go to convenience stores (6%), visit friends (6%), and to get to work and school (both at 5%).

Table 35: Current Bicycle Destinations

Responses	2000 (836)	2001 (1248)
Yes, currently ride	34%	35%
Destinations	(n=280)	(n=436)
Neighborhood/exercise/training	68%	68%
Grocery store	14%	27%
Park	27%	18%
Visit friends	4%	6%
Convenience store	2%	6%
Work	8%	5%
School	4%	5%
Shopping	4%	4%
Restaurant	-	2%
Bus stop	1%	1%
Other	2%	2%

65: Do you currently ride a bicycle for any purpose? 66: What places do you go to when you ride your bike? (Among those who ride a bicycle)

B. Potential Future Destinations

All bike riders were asked where they would ride their bikes if improvements such as the addition of more on-street or off-street bikeways were made in their community. While some riders named new destinations, many named the destinations they currently bicycle to. In order to make the data meaningful, the data below shows only those who named “new” destinations.

If improvements such as more on-street or off-street bikeways were made, an additional 16% say they would ride to the grocery store. Improvements would prompt nearly one in ten to bike to work (8%) and/or ride for fun or exercise around the neighborhood (9%). Other bike riders say they would ride their bikes to parks and shopping (both at 7%).

Table 36: Future Bicycle Destinations (if improvements)

Responses	2000 (836)	2001 (1248)
Yes, currently ride	34%	35%
Destinations	(n=280)	(n=436)
Grocery store	17%	16%
Neighborhood/exercise/training	6%	9%
Work	8%	8%
Park	8%	7%
Shopping	8%	7%
Visit friends	3%	3%
Convenience store	2%	2%
School	4%	2%
Restaurants	3%	2%
Anywhere/everywhere	3%	-
Mountain preserve/desert	3%	-
Downtown	2%	-
Nowhere	2%	-
Library	1%	-
Run errands	1%	-
Movies	1%	-
Other	3%	1%
Don't know/no answer/no new destination mentioned	26%	43%

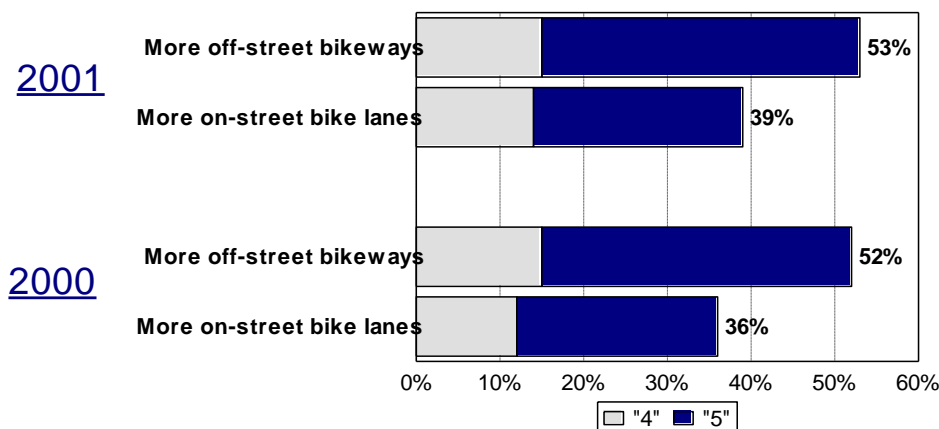
67: What places would you bike to if improvements such as more on-street or off-street bikeways were available in your community? (Among those who ride a bicycle)

C. Likelihood of Increased Bicycling

Bike riders are more likely to increase the amount they bike ride if there are more *off-street bikeways* (53% rated “4” or ”5”). In addition, 39% say more bike lanes *on the streets* would encourage them to ride more often. Riders under 50 are significantly more likely than those 50 and older to be motivated to ride more by adding more on-street bike lanes (44% vs. 27%). These are similar to last year’s findings.

Likelihood of Increasing Bike Riding (Among Riders)

Summary of 4 + 5 Ratings where "5" means "very likely"



D. Surface for Riding

Bike riders are most likely to ride on residential streets (94%), however side-streets and paved bikeways are also quite popular (77% and 67%, respectively). Fewer ride on unpaved trails (39%) and busy major streets are the least popular (29%). These results are very similar to last year. As might be expected, residents under 30 are significantly more likely than older residents to ride on unpaved trails and major streets (53% vs. 35% and 44% vs. 24%, respectively).

Table 37: Typical Surface/Area Used for Riding

Surfaces	2000 (280)	2001 (436)
Local or residential streets	93%	94%
Side streets with some traffic	81%	77%
Paved bikeways	70%	67%
Unpaved trails	37%	39%
Major streets with lots of traffic	28%	29%

68: When you go biking do you typically ride on... (Among those who ride a bicycle)

E. Distance Biked

On average, Valley bikers travel 4.4 miles on a typical bike ride. They are most likely to ride one to three miles (47%).

Table 38: Average Distance Biked

Miles	2000 (280)	2001 (436)
Less than one mile	7%	9%
1 to 3 miles	47%	47%
4 to 6 miles	25%	22%
7 to 10 miles	9%	10%
More than 10 miles	10%	11%
Average	4.8 miles	4.4 miles
Don't know/no answer	1%	2%

71: On average, how far do you ride your bicycle on a typical bike ride? (Among those who ride a bicycle)

VII. Miscellaneous

A. Valley Metro

1. Awareness of "Valley Metro"

Greater than two-thirds (68%) of Valley residents have heard of the name "Valley Metro." Residents under 30 are significantly more likely than those who are 50 and older to be familiar with Valley Metro (74% vs. 63%, respectively). As expected, residents who always use an alternate mode are significantly more likely than those who always drive alone to be aware of Valley Metro (80% vs. 66%, respectively). Tempe and Peoria residents are most likely to have heard of Valley Metro (74% vs. 67% overall).

2. Awareness of Valley Metro Services (Among those Aware)

Residents who have heard of Valley Metro are most likely to indicate Valley Metro provides bus service and/or public transit (61% and 22%, respectively). A few residents associate Valley Metro with Dial-a-Ride (4%), a future light rail system (2%), and handicapped vans (2%).

Table 39: Valley Metro Services

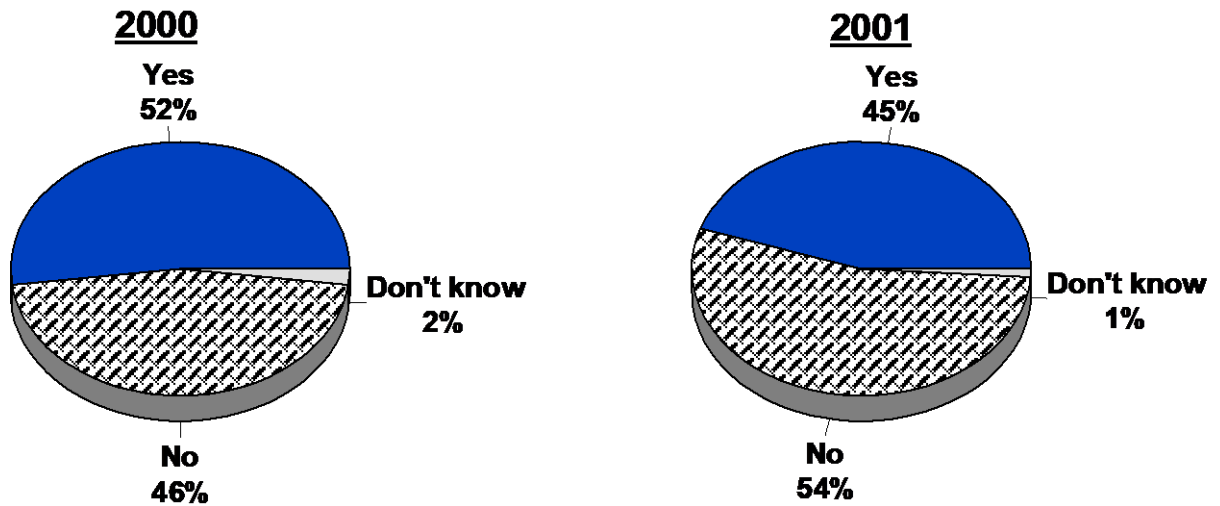
Responses	2001 (835)
Bus service	61%
Public transit system	22%
Dial-a-Ride	4%
Future train system/light rail system	2%
Handicapped vans	2%
Ambulance	1%
Fire department	1%
Shuttle service	1%
Vanpools	1%
Other	3%
Don't know/no answer	11%

6: What services does Valley Metro provide? (Among those aware)

B. Health Problems Related to High Pollution Levels

In 2001, 45% of Valley residents said that either they or someone in their household experiences health problems when pollution levels are high. This is down from 52% last year. The significant decline may be because residents are instead attributing health problems this year to the unusually high pollen levels experienced in the Valley this Spring. The intense pollen season received a lot of attention by the local media. Women (52% vs. 37% of men), and residents of Phoenix and Peoria (49% and 59% vs. 45% overall) are most likely to report that health problems related to pollution affect their family.

Health Problems Related to Pollution



C. Internet Access, Usage and Impact

1. PC Ownership and Internet Access

In 2001, five in seven area residents (70%) reported having a personal computer in their homes. This percentage has increased more than 50% since 1994 (43%). A slightly higher percentage of employed residents have a computer at home (78% up from 45% in 1994). Residents of Gilbert and Peoria are most likely to report having a PC (88% and 89%, respectively).

Access to the Internet from home, work or school has increased nearly two and one-half times since 1997 (from 30% to 72% for all households). Internet access is even higher among employed residents with 86% reporting access to the Internet at home, school, or work. Gilbert residents are most likely to report having access to the Internet (90% have access from at least one location vs. 76% overall). Growth in Internet access in the past year has occurred across the board (there were 8 to 9 point increases for all three locations). Overall, 88% of residents who have a PC at home also have access to the Internet at home (up from 84% last year).

Table 40a: Personal Computer at Home

Year of Study	Total	Employed
1994	43%	45%
1995	46%	47%
1996	42%	51%
1998	58%	66%
2000	64%	71%
2001	70%	78%

80: Do you have a personal computer at home?

Table 40b: Internet Access at Home, Work or School

Category	Total Sample					Employed		
	1997	1998	1999	2000	2001	1999	2000	2001
Home (Total sample)	25%	35%	44%	55%	64%	53%	64%	72%
Work (Non-home based employed)	34%	43%	55%	56%	64%	55%	56%	64%
School (Students)	72%	78%	84%	83%	91%	82%	88%	89%
NET Internet Access	30%	49%	57%	66%	72%	71%	80%	86%

81-83: Do you have access to the Internet at home? at work? at school?

2. *Impact of Internet on Trips*

Forty-four percent (44%) of residents with Internet access feel making purchases over the Internet causes them to make fewer driving trips. This represents a significant increase over 2000 when 28% felt this way. This percentage is significantly higher among residents under 50 (50% vs. 32% of older residents).

3. *Access Work Computer from Home*

Nearly three in ten employed residents (29%) with Internet access have access to their work computer from home (up significantly from 20% in 2000). Those with an annual household income of \$40K or higher are significantly more likely than those earning less to have access to their work computer from home (33% vs. 14%). The significant gulf between men and women that was present last year decreased to an insignificant difference of 32% of men vs. 24% of women. Last year 26% of men and only 12% of women had this type of access. Those with an annual household income of \$50K or higher (26% vs. 2% to 14% of those earning less), and of residents of Scottsdale and Peoria (42% and 57% compared 30% overall).

4. *High Speed Internet Access*

Approximately **one-third (34%) of Valley residents with Internet access have a high-speed line for their Internet connection at home** (up slightly from 32% last year). **One in four (26%) of those without a high-speed connection plan to purchase one in the future** (up from 18% in 2000).

VIII. Sample Characteristics

A. Demographic Characteristics of the Total Sample

1. Age

The average age of the sample is 47.6. Although slightly higher than the average age for the past four years, overall the age distribution of residents is similar to that of previous studies.

Table 41: Age

Category	1993	1994	1995*	1996*	1997	1998	1999	2000	2001
16 to 25	17%	17%	10%	13%	16%	15%	14%	16%	13%
26 to 35	24	23	22	18	23	22	20	17	16
36 to 45	20	20	21	22	24	18	18	19	18
46 to 55	14	13	14	14	11	14	13	15	18
56 to 65	10	11	12	14	13	10	12	13	12
66 to 75	12	11	13	12	11	13	12	11	13
Over 75	4	5	8	7	3	6	6	7	8
Avg. Age	42.9	43.0	46.5	46.9	43.4	45.0	45.6	45.9	47.6
Median	40.2	40.5	43.1	44.0	40.0	42.0	42.0	44.0	46

*Screening age 18+ instead of 16+. 76:What is your age?

2. Income

The sample income distribution increased again in 2001 and reached the highest average income level to date (\$52.4K).

Table 42: Income

Category	1993	1994	1995	1996	1997	1998	1999	2000	2001
Under \$15,000	10%	14%	13%	11%	12%	9%	7%	6%	6%
\$15,000-\$24,999	22	18	24	23	14	12	15	11	9
\$25,000-\$39,999	24	27	28	25	20	19	15	14	14
\$40,000-\$59,999	27	20	17	19	18	17	20	16	20
\$60,000-\$79,999	11	10	9	12	10	15	14	13	15
\$80,000 or more	6	10	9	10	7	10	12	15	15
Avg. Income	\$39.5K	\$40.4K	\$39.2K	\$43.1K	\$43.4K	\$44.5K	\$46.8K	\$50.5K	\$52.4K
Median Income	\$35.8K	\$34.5K	\$32.5K	\$36.1K	\$35.7K	\$41.0K	\$42.9K	\$46.6K	\$48.6K

89: Was your total family income from all sources before taxes last year...?

3. Education

Overall, the education background of the respondents in the sample is similar to the data collected for the Clean Air Campaign study over the past eight years. However, there was a slight decrease in the percentage of residents who have “high school” education (down from 24% in 2000 to 18% in 2001) and an increase in the number who have Post Graduate education (up from 10% in 2000 to 14% in 2001). The average number of years of education increased for the first time in three years to 14.3 years (up from 14 years in 1998-2000).

Table 43: Education

Category	1993	1994	1995	1996	1997	1998	1999	2000	2001
Less than HS	7%	9%	9%	7%	8%	8%	7%	8%	9%
High School Grad	29	22	25	25	27	24	22	24	18
Some College	38	39	36	42	36	38	42	36	36
Bachelor's Degree	16	21	22	16	19	18	17	21	21
Post Graduate	10	9	8	11	9	11	10	10	14
Avg. years	13.7	13.8	13.9	13.9	13.9	14.0	14.0	14.0	14.3

87: What is the highest grade of school or year of college you completed?

4. Marital Status

Fifty-six percent (56%) of sample members indicated they are married in 2001 (similar to 57% last year). Those categorizing their marital status as “other” increased to 6% in 2001, after falling to 3% in 2000.

Table 44: Marital Status

Category	1993	1994	1995*	1996	1997	1998	1999	2000	2001
Married	60%	60%	56%	59%	58%	56%	54%	57%	56%
Single	29	24	44	41	36	33	39	39	36
Other	na	na	na	na	6	11	6	3	6
Widowed	7	6	na	na	na	na	na	na	na
Divorced	6	9	na	na	na	na	na	na	na
Separated	1	2	na	na	na	na	na	na	na

*Only categories asked since 1995 were married or single or other.

77: Are you married or single?

5. *Number of Employed people in Household*

Three in five households (60%) surveyed have one or two employed residents (vs. 64% in 2000). Nearly one in four respondents (24%) reported that no one in their household is employed. Similar to the past two years, the average number of employed residents in a household is 1.4.

Table 45: Number of Employed People in Household

Category	1999	2000	2001
None	23%	20%	24%
One	27	26	26
Two	34	38	34
Three	8	10	9
Four	2	3	4
Five or more	1	1	1
Average	1.4	1.5	1.4

78: Including yourself, how many people live in your household are employed?

B. **Employee and Organization Characteristics**

A question concerning organization size was added in 1991 to assist the RPTA in tracking differences in travel behavior between employees who work for organizations that are in the Trip Reduction Program and those working for organizations not in the TRP. Currently organizations with 50 or more employees are participating in the TRP.

1. *Size of Primary Place of Employment*

The percentage of respondents working in a company of 50 or more employees decreased significantly in 2001 to 61% (down from 71% in 2000). The remaining 39% are employed by an organization with less than 50 employees. The ratios of those working for large and small companies are similar to the levels measured in 1995 when there was a 60-40 split.

Table 46: Size of Organization

No. of Employees	1993 ¹	1994	1995	1996	1997	1998	1999**	2000	2001
Less than 50	43%	33%	40%	38%	34%	32%	35%	28%	39%
50 or More	57%	67%	60%	62%	63%	65%	65%	71%	61%

11: Would you say that there are 50 or more employees or less than 50 employees at your primary place of work?

¹Base of non-home based employees begins in 1993

** Question changed in 1999 from: Would you say there are more than 100 employees, between 50 and 100 employees, or less than 50 employees at your primary place of work to current wording: previous between 50 and 100 and more than 100 added together to equal current 50 or more category.

2. *Employment Status*

The employment status of residents interviewed remained consistent with previous study findings. Currently, one-half of the sample were employed full time (49%) and nearly three in ten were retired (29%). In 2001 the percentage of unemployed residents decreased slightly to 4% (from 6% last year).

Table 47: Employment Status

Category	1993	1994	1995	1996	1997	1998	1999	2000	2001
Full-time	50%	51%	48%	47%	50%	48%	48%	48%	49%
Part-time	8	11	12	8	10	9	10	9	9
Student	9	12	9	10	10	10	11	10	10
Retired	23	21	24	29	28	24	27	26	29
Homemaker	7	13	13	11	18	13	11	11	11
Unemployed	4	5	5	4	7	4	4	6	4

7: Are you one or more of the following...?

3. *City of Employment*

Table 44 demonstrates the city of residence compared to the city of employment. The row of cities represents the cities in which the respondents live and the column represents the cities in which the respondents are employed.

Two in five employed Valley residents surveyed reported working in Phoenix this year (40% compared to 41% last year and 49% in 1999). There continues to be an increase in the percentage working in the East Valley (51% in 2001 vs. 47% in 2000 vs. 36% in 1999). Four percent (4%) are employed in the West Valley (3% in Glendale + 1% in Peoria). The largest percentage of residents representing each city usually work in the city in which they reside except for Scottsdale, Gilbert, Glendale, and Peoria. Residents of these cities are more likely or as likely to report working in Phoenix.

Table 48: 2001 Employment Status

City where Work	Total (n=653)	City of Residence							
		Phx (n=157)	Scotts (n=87)	Tempe (n=116)	Gilbert (n=111)	Mesa (n=78)	Glndle (n=34)	Chndlr (n=42)	Peoria (n=15)
Phoenix	40%	69%	49%	36%	20%	15%	44%	5%	67%
Scottsdale	11	13	32	6	7	6	3	2	-
Tempe	16	6	9	41	16	10	-	31	-
Gilbert	4	1	-	1	14	6	-	-	-
Mesa	14	1	6	6	25	50	3	14	-
Glendale	3	4	1	-	1	1	24	-	13
Chandler	6	2	-	3	12	4	-	36	-
Peoria	1	1	-	-	-	-	9	-	13
Other	5	2	2	6	4	6	18	7	7

12: In what city do you work?

4. Current Work Schedule

The percentage of employed persons working 8 hours a day/5 days a week decreased by 4 points in 2001 to 53% (vs. 57% in 2000). Fewer respondents reported working some type of compressed schedule in 2001 than in the past four years (9% down from 12%). This year employed residents were slightly more likely to report having a schedule that varies or that is part-time.

Table 49: Work Schedule

Schedule	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
8 hours a day/ 5 days a week	55%	54%	52%	51%	54%	54%	53%	56%	57%	53%
Any Compressed Schedule	6	10	14	11	9	12	12	12	12	9
10 hours a day/ 4 days a week	4	6	8	5	3	6	8	6	7	4
12 hours a day/ 3-4 days a week	1	1	4	4	4	4	3	4	2	3
80 hours in 9 days, 10th day off	1	3	2	2	2	2	1	2	3	2
Schedule varies/ other	25	22	19	19	23	14	21	15	16	22
Part time schedule	14	15	16	20	14	15	14	14	14	17

13: Which of the following most closely describes your current work schedule?

(Base: Among full time employed non-home based employed persons)

5. Primary Place of Employment

The percentage of employed people who reported having a home-based business remained the same as the level reported in 2000. Currently 10% reported that their primary place of business is their home and an additional 4% have a home based business in addition to working for a company (vs. 10% and 3% in 2000).

Table 50: Place of Employment

Place	1993*	1994	1995	1996	1997	1998	1999	2000	2001
Home-based	8%	16%	10%	12%	13%	10%	15%	10%	10%
Both	na	na	5%	5%	5%	4	2%	3%	4%
Employee of another co.	92%	84%	85%	83%	76%	84%	79%	86%	85%

8: Do you operate a home-based business or are you an employee of another company?

(Base: All employed persons)

*Question was phrased: Where is your primary place of employment? At your home or at some other location?

6. Number of Miles Traveled to Work or School

The average number of miles traveled to or from work or was consistent with 2000 findings (11.8 miles in 2001 compared to 12.4 in 2000). This number has fluctuated through out the years of the study.

Table 51: Number of Miles Commuted to Work or School One Way

Distance	1994 (n=422)	1995 (n=250)	1996 (n=238)	1997 (n=332)	1998 (n=353)	1999 (n=479)	2000 (n=463)	2001 (n=706)
Less than 5 miles	25%	26%	17%	28%	25%	23%	21%	20%
5 to 10 miles	35	38	38	36	31	28	35	33
11 to 15 miles	19	16	18	15	16	18	19	18
16 to 20 miles	11	7	12	12	13	12	9	11
More than 20 miles	10	14	15	8	11	16	14	12
Average miles	10.7	11.9	13.5	9.9	11.5	12.8	12.4	11.8

9: Approximately how many miles do you travel from your home to the place where you work or go to school, one way? (Base: Non-home based **employed persons and students**)

7. Average Commuting Distance for Employees by Mode

The average commute distance for employed residents decreased slightly in 2001 compared to the past two years (12.3 vs. 12.6 and 13.4). The distances for walking, biking, riding the bus, riding a motorcycle and driving alone all decreased. Carpooling and telecommuting distances were up slightly. These fluctuations, however, are typical because the actual number of employed people in the sample who use any one of the modes is rather small (usually less than 50). When these numbers are used in various calculations throughout the report, a two-year average is taken to balance out what may be an extraneous number in one year.

Table 52: Average Commuting Distance to Work One-way by Mode

Mode	1992 (na)	1993 (352)	1994 (334)	1995 (234)	1996 (228)	1997 (332)	1998 (322)	1999 (430)	2000 (424)	2001 (653)
Walk	2.2	4.4	5.9	2.4	3.8	2.2	1.2	1.7	3.7	2.6
Bicycle	4.1	5.9	6.8	3.8	6.3	1.8	4.8	10.1	7.2	4.3
Bus	9.9	7.1	9.7	8.9	12.7	6.8	12.3	9.1	10.2	9.6
Carpool	9.1	10.0	9.7	10.5	13.5	11.9	13.4	14.6	9.4	14.4
Motorcycle	11.3	15.3	13.4	4.0	15.0	15.6	15.4	17.7	20.7	17.4
Drive alone	10.7	10.8	11.0	13.0	13.7	10.8	12.6	13.5	12.9	12.7
Telecommute	8.8	10.0	10.2	21.3	15.8	5.9	10.3	15.1	7.5	12.4
Overall Average	10.5 miles	11.0 miles	10.7 miles	12.4 miles	13.9 miles	10.5 miles	11.9 miles	13.4 miles	12.6 miles	12.3 miles

9: Approximately how many miles do you travel from your home to the place where you work or go to school, one way? (Base: Non-home based **employed persons** using each mode)

8. *Average Length of Time for Commute to Work or School One Way*

The average commute time to work or school increased by 1.2 minutes in 2001 (to 23.1 minutes from 21.9 last year). This represents a return to the average times measured in 1998 and 1999. More than one-half of commuters (57%) reported that it takes more than 15 minutes for them to travel to school or work, one way.

Table 53: Number of Minutes for Commute to Work or School
(Among non-home based employed and students)

Category	1997	1998	1999	2000	2001
Five minutes or less	12%	13%	11%	12%	10%
6 - 10 minutes	20%	11%	19%	14%	14%
11 - 15 minutes	18%	18%	16%	17%	15%
16 - 20 minutes	15%	14%	14%	17%	15%
21 - 30 minutes	19%	20%	21%	18%	24%
More than 30 minutes	15%	21%	23%	20%	18%
Average minutes	20.5	22.8	23.6	21.9	23.1

10: Approximately how many minutes does it take you to travel from your home to the place where you work or go to school, one way?

C. Demographic Profiles of Drive Alones, AMU's, and Potential Market of AMU's

The tables on the following pages show the demographic trends from 1993 to 2001 among employed people who always drive alone and those who use an alternate mode of transportation at least once a week.

I. Drive Alones

The demographic profiles of employees who always drive alone have shifted very little since the onset of the profiling. **Overall, those who always drive alone consistently have higher annual household incomes, are older, and have more education than those who use alternate modes of transportation.** However, this year the average ages of the groups are virtually the same (39.7 for those who drive alone and 39.6 for AMU's).

Table 54: Demographic Profile of Employed Persons Who Always Drive Alone

Age	1993	1994	1995	1996	1997	1998	1999	2000	2001
16 to 25 years	15%	18%	12%	14%	14%	11%	17%	15%	14%
26 to 35 years	33	28	28	25	26	29	31	22	26
36 to 45 years	28	24	25	33	24	31	24	27	25
46 to 55 years	18	18	19	19	14	22	17	18	24
56 to 65 years	6	10	10	7	18	5	8	14	8
66 to 75 years	1	1	6	1	4	2	1	2	2
Over 75	-	1	-	-	-	-	-	-	-
Average (in yrs)	36.9	38.1	40.5	38.8	41.5	39.0	38.0	40.2	39.7

Income	1993	1994	1995	1996	1997	1998	1999	2000	2001
Less than \$15,000	4%	8%	6%	3%	8%	4%	4%	6%	2%
\$15,000 to \$24,999	19	17	24	18	10	12	13	10	10
\$25,000 to \$39,999	26	28	28	28	19	22	15	12	14
\$40,000 to \$59,999	29	24	25	24	22	16	26	20	23
\$60,000 to \$79,999	14	12	12	13	13	19	20	17	18
Over \$80,000	8	11	5	14	9	16	12	21	21
Average (in '000s)	\$43.8K	\$44.2K	\$40.1K	\$48.5K	\$50.9K	\$49.4K	\$50.6K	\$54.8K	\$56.2K

Education	1993	1994	1995	1996	1997	1998	1999	2000	2001
Less than high school	4%	4%	6%	2%	2%	3%	3%	6%	5%
High school graduate	23	20	26	23	24	20	18	22	16
Some college	38	38	38	42	39	45	48	34	40
Bachelor's degree	21	25	25	20	23	19	18	24	22
Post-graduate	14	13	6	12	9	12	12	13	16

Gender	1993	1994	1995	1996	1997	1998	1999	2000	2001
Male	54%	55%	53%	55%	49%	52%	51%	53%	56%
Female	46	45	47	45	51	48	49	47	44

(Base: Non-home based employed persons)

2. Alternate Mode Users

As indicated in the previous section, **Alternate Mode Users consistently have lower incomes, less education, and are younger than employees who always drive alone.** However, in 2001 Alternate Mode Users have the same average age as those who always drive alone.

**Table 55: Demographic Profile of Employed Persons
Who Use Alternate Modes At least Once/Week**

Age	1993	1994	1995	1996	1997	1998	1999	2000	2001
16 to 25 years	16%	21%	18%	26%	19%	22%	25%	26%	15%
26 to 35 years	34	34	37	25	30	37	28	24	23
36 to 45 years	27	21	21	30	20	19	23	22	26
46 to 55 years	15	18	11	13	9	13	12	19	25
56 to 65 years	6	4	10	6	15	6	5	5	7
66 to 75 years	1	2	1	-	7	-	1	2	1
Over 75	-	-	1	-	-	-	-	1	-
Average (in yrs)	36.6	35.5	36.5	35.5	39.7	35.4	34.7	36.3	39.6

Income	1993	1994	1995	1996	1997	1998	1999	2000	2001
Less than \$15,000	6%	10%	14%	15%	8%	6%	4%	2%	5%
\$15,000 to \$24,999	16	15	24	18	16	12	18	7	7
\$25,000 to \$39,999	25	27	25	21	28	21	16	14	15
\$40,000 to \$59,999	34	27	21	27	17	16	21	23	22
\$60,000 to \$79,999	12	11	10	12	11	22	14	17	14
Over \$80,000	4	9	7	7	6	10	15	17	18
Average (in '000's)	\$42.3K	\$43.1K	\$38.6K	\$39.6K	\$44.7K	\$47.0K	\$49.3K	\$55.7K	\$54.1K

Education	1993	1994	1995	1996	1997	1998	1999	2000	2001
Less than high school	1%	7%	15%	5%	5%	7%	3%	8%	5%
High school graduate	33	22	24	19	19	21	20	22	14
Some college	41	37	34	47	28	41	41	38	42
Bachelor's degree	15	20	22	19	30	14	19	27	21
Post-graduate	10	14	5	10	16	13	13	5	15

Gender	1993	1994	1995	1996	1997	1998	1999	2000	2001
Male	59%	57%	65%	53%	49%	56%	55%	55%	55%
Female	41	43	35	47	51	44	46	45	45

(Base: Non-home based employed persons)

3. Potential Market of Alternate Mode Users

Potential Alternate Mode Users have higher average incomes, more education, and are older than those without potential to use an alternate mode. Those with the potential to use an alternate mode are also significantly more likely to be male than female. In addition, potential AMU's are more likely to work full time, have a traditional work schedule, and work in cities other than Phoenix (42% work in Phoenix vs. 53% of non-potentials).

***Table 56: Demographic Profile of Potential vs. Non-Potential Alternate Mode Users**

Characteristics	Potential (382)	Non- Potential (324)	Characteristics	Potential (382)	Non- Potential (324)
Gender			Marital Status		
Men	59%	50%	Married	57%	49%
Women	41%	50%	Single	39%	45%
			Other	4%	4%
Age			# in Household (HH)	3.0 avg.	3.1 avg.
16 to 25 years	13%	24%	# Employed in HH	1.9 avg.	2.0 avg.
26 to 35 years	27%	20%			
36 to 45 years	26%	22%	Employment Status		
46 to 55 years	23%	11%	Full time	83%	75%
56 to 65 years	9%	6%	Part time	14%	13%
66 to 75 years	2%	2%	Student	8%	26%
Over 75	-	-	Retired	1%	1%
Average (in yrs)	39.6	37.4	Homemaker	3%	4%
			Unemployed	-	2%
Income			Work Schedule		
Less than \$15,000	3%	4%	8 hr day/5 day week	72%	52%
\$15,000 to \$24,999	1%	8%	10 hr day/4 day week	-	10%
\$25,000 to \$39,999	13%	14%	12 hr day/3 or 4 day/wk	-	8%
\$40,000 to \$59,999	15%	14%	80hrs. over 9 days	-	5%
\$60,000 to \$79,999	21%	18%	Work schedule varies	20%	21%
Over \$80,000	27%	22%	Other	8%	5%
Average (in '000's)	\$56.6K	\$54.3			
Education					
Less than high school	9%	13%			
High school graduate	18%	13%			
Some college	36%	37%			
Bachelor's degree	21%	19%			
Post-graduate	14%	14%			
Average (in yrs)	14.5	14.2			

***Potential** = Non-AMU's who are willing to use an Alternate Mode to help preserve air quality

Non-potential = Non-AMU's who are NOT willing to use an Alternate Mode to help preserve air quality

Bold denotes a significantly higher percentage than the comparative group.

Appendix A
Questionnaire

RPTA 2001 TDM Survey

Good _____, this is _____ calling for WestGroup Research in Phoenix. We are conducting a public opinion study about issues in the Valley. We're not trying to sell you anything, we simply want your opinions on a variety of issues important to Valley residents. I need to speak with someone in your household who is age 16 or older. Would that be you? Could I please speak with them?

Metro Phoenix Sample n=600

Scottsdale – n=200

Gilbert -- n=200

Tempe – n=200

Male/Female = 300 each

Minimum 300 employed full/part-time

SCR. Before I begin, do you, or does anyone in your household work for a marketing research company? (IF YES, TERMINATE)

1. What city do you live in?
 - a. Phoenix
 - b. Scottsdale
 - c. Tempe
 - d. Mesa
 - e. Glendale
 - f. Chandler
 - g. Peoria
 - h. Gilbert
 - i. Other: (SPECIFY)

2. What do you think are the most important issues facing the Valley in 2001? Any others? (TAKE UP TO THREE ANSWERS -- DO NOT READ LIST BE SURE TO PROBE FOR CLARITY)
 - a. Air Quality
 - b. Crime/violence
 - c. Education
 - d. Traffic congestion
 - e. Transportation
 - f. Public Transportation/Mass transit
 - g. Growth management/Overcrowding
 - h. Economy/Unemployment
 - i. Politics/Government
 - j. Environment
 - k. Homeless
 - l. Drugs/alcohol abuse
 - m. Water conservation
 - n. Other
 - o. Dk/no answer

3. Have you ever heard the name "Valley Metro" before? Yes/No/DK

- 3a. IF YES: What services does Valley Metro provide?

4. Are you one or more of the following: employed full time, employed part time, a student, retired, a homemaker, or unemployed? (IF NECESSARY: We never release any individual information about anyone. We only use this information to tell whether different groups have different attitudes, etc.) (MULTIPLE RESPONSE ALLOWED)
- Full time employed
 - Part time employed
 - Student
 - Retired - SKIP TO Q 20 IF ONLY
 - Homemaker - SKIP TO Q 20 IF ONLY
 - Unemployed - SKIP TO Q 20 IF ONLY
 - DK/No answer -- TERMINATE
5. **EMPLOYED ONLY:** Do you operate a home-based business or are you an employee of another company?
- Home-based business
 - Other company
 - Both
6. **ASK EMPLOYED AND STUDENTS:** Approximately how many miles do you travel from your home to the place where you work or go to school, one way?
NUMBER OF MILES _____
7. **ASK EMPLOYED AND STUDENTS:** Approximately how many minutes does it take you to travel from your home to the place where you work or go to school, one way?
 NUMBER OF MINUTES _____
8. **IF EMPLOYED:** Would you say that there are MORE THAN 50 employees OR LESS THAN 50 employees at your primary place of work?
- More than 50
 - Less than 50
 - Don't know
 - REFUSED
9. **IF EMPLOYED:** What city do you work in?
- Phoenix
 - Scottsdale
 - Tempe
 - Mesa
 - Glendale
 - Chandler
 - Peoria
 - Gilbert
 - Other: (SPECIFY)
10. What is the zip code where you work? 85 _____
11. **FULL TIME EMPLOYEES ONLY:** Which of the following most closely describes your current work schedule? READ AND ROTATE LIST
- 8 hr day/5 day week
 - 10 hr day/4 day week
 - 12 hr day/3 or 4 day week
 - 80 hours over 9 days with 10th day off
 - Work schedule varies
 - Other (SPECIFY: _____)

EMPLOYED AND STUDENTS:

12-13. During a typical week, how often do you use each of the following methods to arrive at work or school? (READ LIST AND WRITE IN NUMBER OF TIMES IF 1 OR MORE OR CIRCLE "0".)

ROTATE LIST

Take the bus	0. ___ TIMES
Ride a motorcycle	0. ___ TIMES
Ride a bicycle	0. ___ TIMES
Walk	0. ___ TIMES
Work at home instead of driving to work	0. ___ TIMES
Drive alone	0. ___ TIMES
Carpool with other adults (including family members)	0. ___ TIMES
Vanpool with other adults	0 ___ TIMES

(PROBE IF TOTALS MORE THAN 5:) Your total is more than five. Do you take more than one trip on some days, go to work or school more than five days a week, or should I change your answer?

- More than one trip 1
- More than five days 2
- Both 3
- Changes answer 4

14. IF NO WORK AT HOME IN Q12-13: Have you ever worked at home during regular business hours instead of driving to work? This does not include working at home during non-scheduled work hours.
Yes/No/DK

15. IF YES: How frequently did or do you work at home during regular business hours? ONE RESPONSE ONLY
- a. Project by project only
 - b. Less than once per month
 - c. 1 to 3 times per month
 - d. 1 to 3 times per week
 - e. 4 or more times per week
 - f. Other: Specify

IF NO ALTERNATE MODE IN Q.12-13 ASK 16, 17a, 17b, 18

16. Have you used any of the following methods to commute to work or school more than just a few times in the past two years? (THAT IS, NOT ONCE OR TWICE WHEN CAR WAS NOT AVAILABLE)
- | | | | |
|---|-----|----|----|
| a. Take the bus | Yes | No | DK |
| b. Ride a bicycle | Yes | No | DK |
| c. Walk | Yes | No | DK |
| d. Drive or ride with other adults (including family members) in a carpool or vanpool | Yes | No | DK |
| e. Have you worked at home instead of driving to work | Yes | No | DK |

17a. People have a lot of reasons why they drive alone to work or school. Why aren't you currently using an alternate mode of transportation to commute to work or school? What do you mean? Please explain.

17b. **FOR EACH MODE MENTIONED in Q16:** How likely would you be to you consider _____ again? Very likely, somewhat likely, not very likely or not at all likely?

18. What changes would make it possible for you to be able to use some means other than driving alone to commute to work or school? (IF NECESSARY: SUCH AS RIDING THE BUS, WALKING, RIDING A BIKE, CARPOOLING, OR WORKING AT HOME -- BE SURE TO PROBE FOR COMPLETE ANSWER) -- DO NOT READ LIST
- Nothing/Not possible to use alternate mode
 - Someone with same schedule to carpool with
 - Improved/expanded transit system and schedule
 - Having a way home in case of emergency
 - Having a way home in case they work overtime
 - Lived closer to work/school
 - rail/subway system
 - Having the equipment necessary so they can work at home
 - Employer is willing to have the work at home
 - Safe biking conditions
 - More/better bike facilities
 - Other: _____
 - DK/no answer
19. **IF ALTERNATE MODE USED IN Q.12-13 ASK:** Why is the main reason you ____ to work or school? Please explain? What other reasons? CODE FIRST MENTION AND OTHERS SEPARATELY

ASK ALL:

20. How big of a problem would you say traffic congestion is here in the Valley? Would you say it is a big problem, a moderate problem, or a small problem?
- Big problem
 - Moderate problem
 - Small problem
 - Don't know/NA
21. Even though Phoenix and Tempe have passed a sales tax for improved transit in those cities, I would like to get your input on what you think would be good solutions for traffic congestion in your community. Using a scale from 1 to 5 where 1 means you would definitely NOT support the solution and 5 means you would definitely support the solution, please tell me how strongly you would support each of the following: ROTATE LIST
- Add more lanes to the freeways.
 - Build more carpool/bus lanes.
 - Increase the number and frequency of buses in your community.
 - Build a new light rail in your community
 - Encourage employers to allow their employees to work from home one or more days a week.
 - Add more bike lanes and pedestrian walk ways in your community
 - Widen city streets
- 21a. Is there any other solution that you can think of that I did not mention? What is it?
22. Have you....
- Heard any advertising in the past **four** months about the Clean Air Campaign that included a radio ad about a woman who calls the police to report that Camelback Mountain is missing? YES/NO/DK
 - Heard any advertising in the past **four** months about the Clean Air Campaign that included a TV ad showing a coughing Camelback Mountain? YES/NO/DK

c. Heard any radio spots on traffic reports that remind drivers to carpool, ride the bus, or work at home?
YES/NO/DK

d. Seen advertising in any of the following places that encourage people to carpool, ride the bus, work at home, or not drive alone in general? READ AND ROTATE LIST

- D1. Billboards --YES/NO/DK
- D2. Movie slides--YES/NO/DK
- D3. Bus shelter signs--YES/NO/DK
- D4. Sides of buses--YES/NO/DK

23. **IF YES TO ANY PART OF Q22:** Overall, what is your opinion of these advertisements that encourage people to use other modes of transportation or work from home instead of driving alone? Is your opinion of the campaign Very Favorable, Somewhat Favorable, or Not Favorable?

- a. Very favorable
- b. Somewhat favorable
- c. Not favorable
- d. DK/No answer**

24. **IF YES TO ANY PART OF Q22:** What have you or your family members done, if anything, in response to the ads, news stories and public service announcements about ways to reduce your drive alone trips and reduce air pollution? (DO NOT READ LIST -- IF R SAYS NOTHING OR DON'T KNOW – CONFIRM “Nothing at all?”)

a. Nothing

- b. Drive less often
- c. Carpool
- d. Ride bus
- e. Ride bike
- f. Walk
- g. Tune up vehicles
- h. Comply with no-burn
- i. Combine trips
- k. Worked at home
- l. Work a compressed workweek
- m. Vanpool
- n. Refuel after 4:00 p.m.
- o. Other (SPECIFY: _____)
- p. DK/No answer

25. I am going to read you a list of ways in which you could help preserve air quality. For each one, please tell me if you would be very willing, somewhat willing, not very willing or not at all willing to take each step.

- a. Make fewer automobile trips
- b. Use the bus more often
- c. Carpool more often
- d. Keep your car well-tuned
- e. Bike on short trips or errands
- f. Walk for short trips or errands
- g. Refuel your vehicles after 4pm
- h. Reduce the usage of gas-powered lawn and gardening equipment

26. Do you, or does someone in your household, experience health problems such as headaches, breathing difficulties, burning eyes, etc., when the pollution levels are high?

27. Which of the following types of information would most likely encourage you to consider using alternative methods of transportation for getting around the Valley instead of driving alone? Information about how ... (READ LIST, ROTATE ORDER)
- By Carpooling, you can help reduce air pollution and keep residents healthier.
 - By Carpooling, you can reduce the wear and tear on your car and save some money
 - By Carpooling, you can save time by using the HOV or carpool lanes
 - By Carpooling, you can reduce your stress by sharing the ride.
 - By Carpooling you help keep the sky blue.
 - DO NOT READ: None/DK/No answer
28. Do you currently ride a bicycle for any purpose? (INTERVIEWER: THIS CAN BE FOR FUN, TO WORK, Etc).
- Yes
 - No
 - Don't know
29. IF YES: What places do you go to when you ride your bike? DO NOT READ LIST. MULTIPLE RESPONSES ALLOWED. ASK: Where else?
- Work
 - School
 - Grocery store
 - Park
 - Restaurant
 - Other shopping
 - Convenience store
 - Bus stop
 - Visit friends
 - Just ride around neighborhood/do not ride to a specific destination/exercise/training
 - Other: SPECIFY
30. IF YES: What places WOULD you bike to if improvements such as more on-street or off-street bikeways were available in your community?
- Work
 - School
 - Grocery store
 - Park
 - Restaurant
 - Other shopping
 - Convenience store
 - Bus stop
 - Visit friends
 - Would just ride around neighborhood more/would not ride to a specific destination
 - Other: SPECIFY
31. IF YES: When you go bike riding do you typically ride on... READ AND ROTATE LIST, YES/NO/DK FOR ALL.
- Major streets with lots of traffic
 - Side streets with some traffic
 - Local or residential streets
 - Paved bikeways

- e. Unpaved trails
32. IFYES: Using a scale from one to five where “one” means “not at all likely” and “five” means “very likely”, please indicate how likely you would be to increase the amount of bicycling you do if...READ EACH AND ROTATE
- There were more bike lanes on the streets
 - There were more bikeways that are off the streets
33. IF YES: On average, how far do you ride your bicycle on a typical bike ride?
- Less than one mile
 - 1 – 3 miles
 - 4 – 6 miles
 - 7 – 10 miles
 - More than 10 miles
 - Don't know/ no answer

TEMPE RESIDENTS ONLY:

- T1. To the best of your knowledge, has bus service recently been improved in the Tempe area? Yes/No/DK
- T2. IF YES: How did you become aware of the increased bus service in Tempe? DO NOT READ LIST**
- Stories or ads in newspaper
 - news stories on radio
 - Stories on television
 - Postcards
 - Door hanger
 - Movie theater slides
 - Heard about it from friends/family members
 - Other (SPECIFY:_____)
- T3. To the best of your knowledge, has Tempe added more bike lanes to its streets or are there more miles of bike lanes than there were a year ago? Yes/No/DK
- T4. Which of the following improvements to bus service in Tempe are you aware of? ROTATE LIST, READ ALL. ANSWER YES/NO/DK FOR EACH
- Bus service until 1 a.m.
 - New bus routes in Tempe
 - More bus stops in the city with benches and shelters
 - More bus pull outs in the city
 - 15 minute frequency during rush hour

DEMOGRAPHICS

- D1. What is your age? _____
- D2. Are you (READ LIST). . .
- Married
 - Single
 - Other
 - Refused

- D3. Including yourself, how many people in your household are employed?
- One
 - Two
 - Three
 - Four or more
 - DK/No answer
- D4. Including yourself, how many people live in your household?
- One
 - Two
 - Three
 - Four or more
 - DK/No answer
- D5. Do you have a personal computer in your home? We are not including video games for the television, such as Nintendo, as computers.
- Yes
 - No
 - Don't know
- D6. Do you have access to the Internet at home? At work? At school?
- | | | | | |
|-----------|-------|------|------------------------|----------------|
| a. Home | 1 Yes | 2 No | 3 DK/no answer | |
| b. Work | 1 Yes | 2 No | 3 Doesn't work | 4 DK/no answer |
| c. School | 1 Yes | 2 No | 3 Doesn't go to school | 4 DK/no answer |
- D7a. IF YES in a, b, or c: Do you think you make fewer driving trips because you look for information or purchase items through the Internet or e-mail?
- Yes
 - No
 - Don't know
 - Don't purchase things from the Internet
- D7b. EMPLOYED RESIDENTS ONLY: IF INTERNET ACCESS AT HOME: Can you access your work computer from home?
- Yes
 - No
 - Don't know
 - Don't have computer at work
- D8. Do you ...READ LIST
- IF INTERNET AT HOME: Have a high-speed line for Internet connections at your home?
 - ALL: Plan to purchase a high speed line for Internet connections at your home, OR
 - ALL: Have no plans to purchase a high-speed line for Internet connects at your home.
- D9. Was your total family income from all sources before taxes last year... (READ LIST)
- Under \$15,000
 - \$15,000-\$24,999
 - \$25,000-\$39,999
 - \$40,000-\$49,999
 - \$50,000-\$74,999
 - Over \$75,000
 - DK/NA/REF

D10. What is the highest grade of school or year of college you completed?
a. Less than high school
b. High school graduate
c. Some college
d. Bachelors degree
e. Post graduate degree
f. DK/NA/REF

D11. What is your zip code where you live?: 85____ __ __.

D12. RECORD GENDER: 1 Male 2 Female

Thank you for your help.

WestTrack Question

How big of a problem do you think air quality is here in the Valley? Would you say it is a big problem, a moderate problem, or a small problem?

- a. Big problem
- b. Moderate problem
- c. Small problem
- d. Don't know