

**SACOG Master Transportation Plan for 2035:
Public Opinion Survey Research Report**

A Quantitative Research Project

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Prepared for:
Sacramento Area Council of Governments (SACOG)

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SACOG Metropolitan Transportation Plan for 2035: Public Opinion Survey Research Report

I. INTRODUCTION

Davis, Hibbitts & Midghall, Inc. (DHM) is pleased to present the results of public opinion survey research conducted during January 2007 for the Sacramento Area Council of Governments (SACOG). The purpose of the research was to provide meaningful public input as SACOG updates its Metropolitan Transportation Plan for 2035 (MTP).

The research involved a telephone survey of 1050 residents of the SACOG six county area and an online survey of 353 SACOG area residents. We also conducted three focus group discussions, the results of which are presented in a separate report. The survey questions were prepared in close consultation with SACOG. They were designed to assess regional attitudes toward transportation system improvements and motivations for reducing automobile trips.

For the telephone survey, this report highlights key findings for the county sample (n=900) by demographic subgroups (gender and age) based on a weighted sample of the six counties in the region (El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba), and by the seven areas polled – six counties and the City of Sacramento (City) based on a stratified sample.

We also report on select findings relative to how respondents answered questions about the seriousness of the region's transportation system (Q1), the likelihood they would reduce their car trips by 10% over the next five years (Q27), and their typical one-way commute distance (Q35). In addition to conventional cross-tabulation analysis, we conducted cluster analysis to learn more about the characteristics of different population segments.

For the online survey report, we primarily report on findings from an exercise that asked respondents to choose among a series of trade-off questions the most and least likely to cause them to reduce their automobile trips by 10% or more. We also will include other online survey findings in the appropriate report sections.¹

II. METHODOLOGY AND STATEMENT OF LIMITATIONS

The sample size for the telephone survey was 1050 age 18 and older. The area sample was stratified (meaning a designated number (n=150) was sampled in each area) and is reported as such. The demographic variables are reported based on the county sample (n=900) and were weighted to assure the findings were representative of the region's population as a whole.

For the telephone survey, respondents were randomly contacted using Random Digit Dialing (RDD). In gathering the responses, DHM employed quality control measures which included questionnaire pretesting, callbacks, and verification. A copy of the annotated questionnaire is attached as Appendix A, which readers are encouraged to reference for the exact wording of questions. Computer abstracts accompany and are referenced throughout this report. Combined

¹ Telephone survey questions are referred to as Q#. Online survey questions are referred to as OQ#).

percentages in the report may not always equal the sum of individual percentages because of rounding.²

For the online survey, the 353 respondents were drawn randomly from an established panel of 12,000 residents of the Sacramento region who are demographically and psychographically (e.g. lifestyle) representative of all area residents age 18+.³ A copy of the annotated online questionnaire is attached as Appendix B.

III. KEY FINDINGS

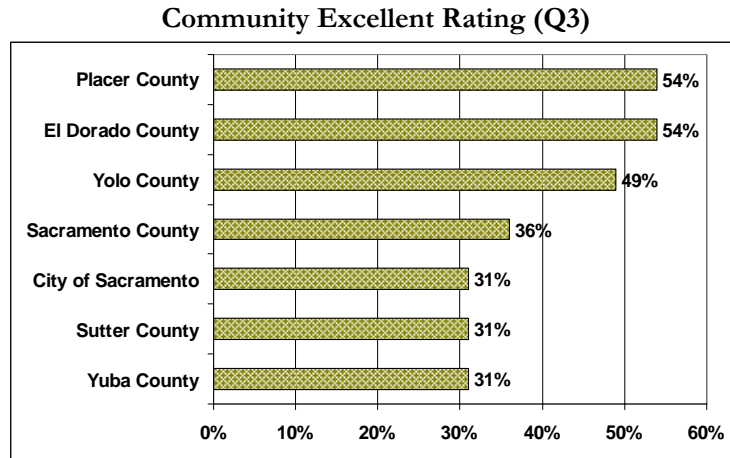
- SACOG area residents rate their communities highly and among the things they value most are access to retail and other services, small town feeling, and the outdoors
- A majority of residents rate transportation in the region as a serious problem (16% as a critical problem)
- Four out of every five residents want to see improvements made to the region's transportation system
- Residents mention improvements related to public transportation and highways, freeways, and roads about equally when asked unprompted what they would like done
- Highways, freeways, and road maintenance are considered the most important investments to make in the transportation system over the next 20 years, followed closely by public transit; planning for environmentally friendly options and community transportation projects also are considered important investments
- Expansion of light rail and adding more regular buses that run more often and reach more destinations receive similar importance ratings – 44% and 40% extremely important
- Residents want new freeway lanes, but don't express a clear preference whether they should be HOV lanes or lanes that are open to all vehicles, 24 hours a day
- Residents feel new revenue sources will be needed to build the transportation system needed in the future
- Not quite half (45%) of residents feel that over the next five years they are very or somewhat likely to shift at least 10% of their trips by car to transit, walking, or bicycling; only about a third say they are not at all likely to reduce their car trips
- The changes most likely to cause drivers to reduce their car trips are:
 - The price of gasoline rising to \$4.50 per gallon long term
 - Improved transit service, including convenient access, more time efficiency, and lower cost than driving

² Any sampling of opinions or attitudes is subject to a margin of error, which represents the difference between a sample of a given population and the total targeted population (here, the SACOG region). If respondents answered a particular question 50% each way, the margin would be +/- 3.0% (n=1050). This error margin means there is a 95% probability that the sample taken for this study would fall within the stated margin of error if compared with results achieved from surveying the entire target population.

³ The panel is maintained by Survey Sampling International (SSI), which is based in Fairfield, Connecticut and is one of the world's most reputable survey sampling companies. See www.ssisamples.com.

IV. GENERAL ATTITUDES TOWARD COMMUNITY

We asked respondents to rate their community as a place to live, on a scale of 1=poor to 4=excellent (Q3). The overall mean was 3.2; Placer, El Dorado, and Yolo had the highest mean of 3.4, and Yuba the lowest at 3.0. The following shows the percent who rated their community “excellent.”



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When we asked what they liked most about living in their area, these characteristics were mentioned, unprompted, most frequently:

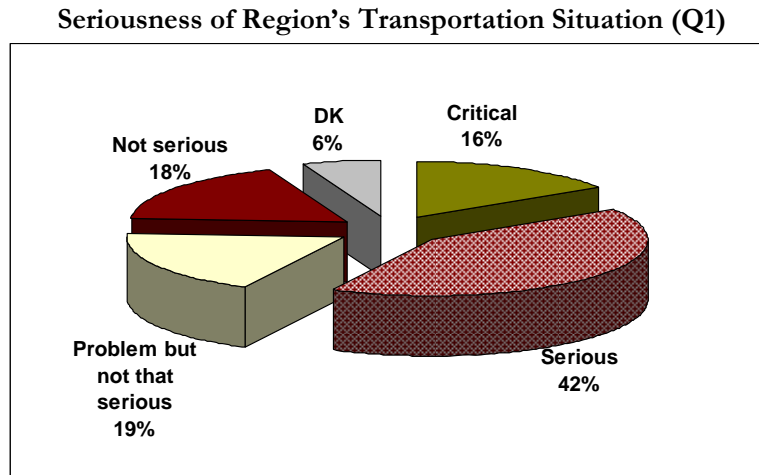
- Access to retail/services/entertainment 23%
- Small town feel 17%
- Open space/nature 14%
- The People 8%
- Security 8%
- Community feeling 7%
- Weather 5%
- Access to outdoors/recreation 4%

Yuba and Sutter mentioned small town feeling more often, while Sacramento County, the City, and Yolo named access to retail and other services and El Dorado and Placer mentioned open space and nature more often.

This positive attitude also was reflected in the two-thirds (67%) of online survey respondents who said they thought things in the Sacramento region are headed in the right direction; only 33% said wrong track (OQ1).

V. TRANSPORTATION CONCERNS

A majority (58%) of survey respondents said that they would describe the transportation situation in the region as a critical (16%) or serious (42%) problem (Q1).



Source: Davis, Hibbitts & Midghall, Inc. February 2007

Sacramento County had a higher critical/serious problem rating than El Dorado, Sutter, Yolo, and Yuba, as did age 35-54 (v. 18-34). Sutter, Yolo, and Yuba were more likely to say not a serious problem compared to Sacramento County.

Responses were very similar in the online survey, where 58% said a critical (13%) or serious (46%) problem, and 42% said not that serious (37%) or not a serious (5%) problem (OQ2).

Respondents identified, unprompted, the following as the most serious transportation problems in the region, grouped into broader categories (Q2):

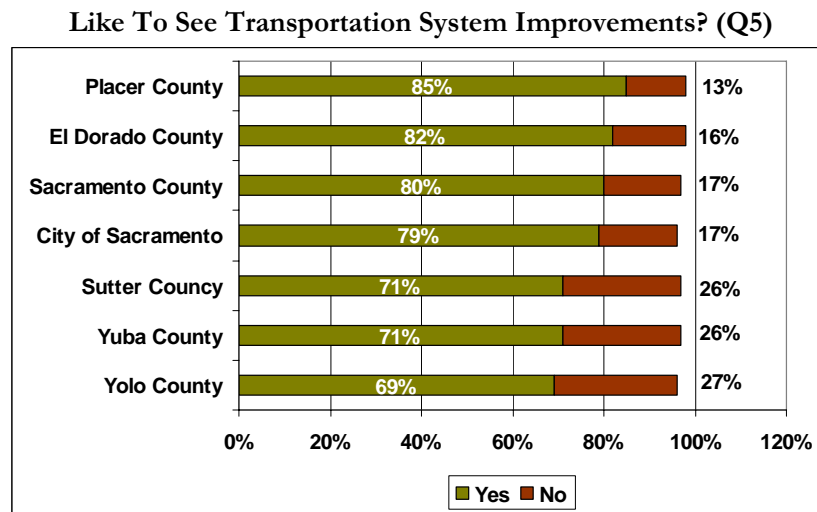
- **Traffic congestion-related.....21%**
 - Congestion (general)/too many cars (18%)
 - Commuter traffic/rush hour/peak times (2%)
 - Interchange bottlenecks/access to (1%)
- **Public transportation-related..... 16%**
 - Public transportation/not enough transit options (9%)
 - Bus service/need more buses/routes/longer hrs. (6%)
 - Light rail extension to more areas (1%)
- **Highway/freeway capacity..... 9%**
 - Highways/freeways/not enough options (5%)
 - Capacity of highways/freeways/roads not wide enough/need more lanes (4%)
- **Growth/development.....3%**
- **Road/highway/street maintenance/repairs.....2%**

El Dorado and Placer identified traffic congestion more often than Yolo and Yuba, while the City said public transportation more than El Dorado and Yuba. Those less likely to say they would

reduce their car trips and those with one-way commutes of 11-20 miles said traffic congestion more often, while those who said they were very likely to reduce their car trips identified public transportation more often.

We also asked online survey respondents who said the transportation system was a critical or serious problem what should be done about it, unprompted (OQ4).⁴ The solutions they offered most often related to expanding public transportation, with light rail/rapid transit mentioned the most but also including some reference to bus service. Some mentioned concerns about the affordability and safety of public transportation. Mentioned second most often were solutions related to freeway and highway improvement and expansion. Several offered expanding *both* mass transit and freeways. A few mentioned road maintenance, local street improvements, and limit building permits.

A substantial 79% of our telephone survey respondents said they would like to see transportation system improvements made; only 18% said no and 3% didn't know (Q5). Responses differed somewhat by area:



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Females said yes more often than males, as did age 35-54. Those who said the transportation situation was critical/serious were more likely to say yes to the need for transportation system improvements. Those who said the transportation situation was not at all serious had the highest no responses, closely followed by those who didn't know.

⁴ We had intended in OQ3 to have the respondents first describe the problem, but mistakenly had an incorrect skip-pattern; thus, we do not report findings related to that question.

Asked to describe the specific improvement they would like to see made, the following were the most frequent responses, shown by broader categories:

- **Public transportation-related.....44%**
 - Light rail extended to more areas (23%)
 - Bus service improved, expanded (15%)
 - More transit/accessible in more areas (6%)
- **Highways/freeways..... 25%**
 - Highway capacity/freeways increased/more lanes (12%)
 - More highways/freeways (9%)
 - Reduce congestion on highways (4%)
- **Roads/streets..... 24%**
 - Road conditions improved/highway street repairs (19%)
 - More roads/side streets (5%)
- **Bike lanes added/extended/improved.....9%**

VI. TRANSPORTATION PRIORITIES

General Priorities

We asked survey respondents about the emphasis they want placed on different investments in the regional transportation system over the next 20 years on a scale of 1=not important at all to 5=extremely important (Q7-11).

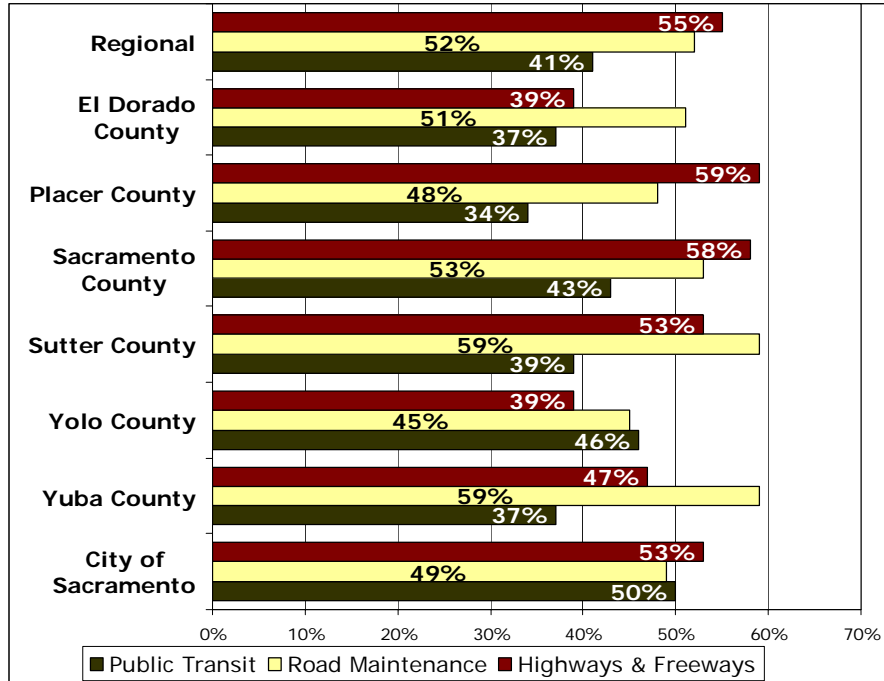
Importance of Regional Transportation Investments (Q7-11)

Investment	Extremely Important %	Mean
Highways and freeways like 5,50,80,99, 65	55%	4.2
Road maintenance	52%	4.2
Public transit including buses, light rail, and commuter rail	41%	3.9
Incentives to promote local government planning for efficient and environmentally friendly transportation & land use options	32%	3.8
Community transportation projects including bicycle lanes, sidewalks, and safer residential streets	33%	3.7

Source: Davis, Hibbitts & Midghall, Inc. February 2007

There were a number of differences by area. The following chart shows the percent extremely important for the region as a whole and by the seven areas for the three top-rated investments.

**Top Transportation System Investments
(% Extremely Important)(Q7,8,11)**



Source: Davis, Hibbitts & Midghall, Inc. February 2007

When we look at significant differences by means among the different areas for all of the investments:

- Road maintenance was rated higher by Sutter and Yuba than Yolo
- Highways and freeways were rated more important by Placer, Sacramento County, and Sutter than Yolo and El Dorado
- Public transit was rated more important by Yolo; Sacramento County and the City rated public transit higher than Yuba and the City also rated it higher than El Dorado
- Local government incentives rated highest among City residents, followed closely by Yolo and both significantly higher than El Dorado, and the City also significantly higher than Sacramento County and Yuba
- Community transportation projects rated more important among City residents; they were higher than El Dorado and Yuba and along with Sacramento County, Sutter, and Yolo were higher than Placer

Females and age 18-34 (v. 35-54) rated community transportation projects as more important. Those who said the region's transportation situation was critical/serious rated highways and freeways as more important, as did some commuters (1-5, 11-20, and 21+ compared to no miles). Respondents who were more likely to say they would reduce their car trips rated public transit, government incentives, and community transportation projects higher.

Public Transit Options

After rating the five transportation system components in general, respondents were asked to rate seven public transit options that might help reduce traffic congestion in the region a scale of 1=not important at all to 5=extremely important (Q12-18).

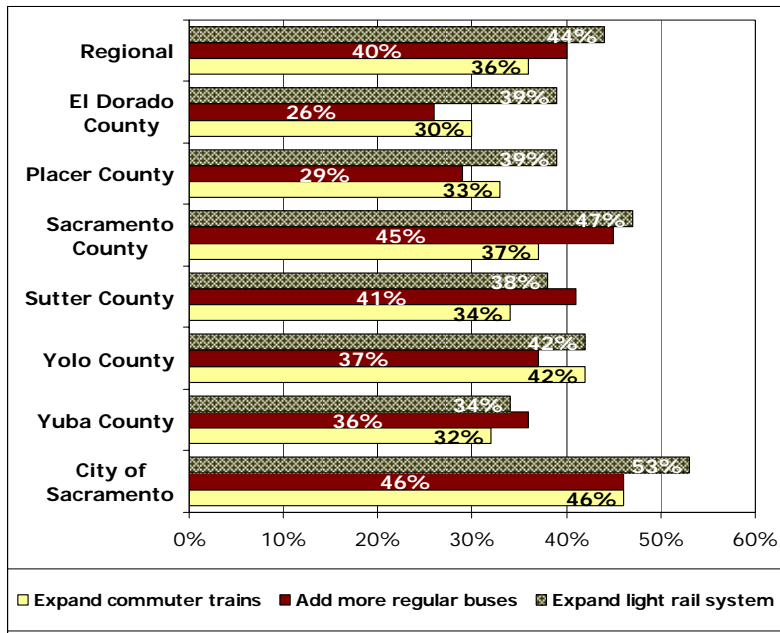
Importance of Public Transit Options (Q12-18)

Option	Extremely Important %	Mean
Expand the light rail system	44%	3.9
Add more regular buses that run more often and reach more destinations	40%	3.8
Expand the commuter train system	36%	3.8
Expand community shuttle buses connecting to activity centers	33%	3.6
Add more express bus service on the freeways	32%	3.6
Add new types of buses that move faster and can carry more people	28%	3.5
Add new streetcar service	21%	3.0

Source: Davis, Hibbitts & Midghall, Inc. February 2007

The following shows extremely important responses by area for the three top-rated public transit options.

Top Public Transit Options
(% Extremely Important)(Q12,14,15)



Source: Davis, Hibbitts & Midghall, Inc. February 2007

When we look at significant differences by means among the areas for all of the options:

- Expanding the light rail system was rated higher by Sacramento County and the City than Yuba
- Adding more regular buses was rated more important in Sacramento County, Yolo and the City than in El Dorado and Placer
- Expanding the commuter train system was highest rated in Yolo and the City compared to El Dorado
- Expanding community shuttle buses rated higher in Sacramento County, Sutter, and the City than in Placer; City respondents also rated this higher than El Dorado and Yuba
- Adding more freeway express bus service was deemed more important by Yolo and the City than El Dorado and Placer
- Adding new types of buses was rated higher in all areas as compared to El Dorado and Placer
- Adding new streetcar service was viewed as more important in Yolo and the City compared to El Dorado and Placer

Age 18-34 rated as more important more regular buses (v. age 35-54) and new streetcar service (v. age 55+). Respondents who said the transportation situation was critical rated expanding light rail, commuter trains, more express bus service, and new streetcar service as more important than those who said the situation was not that serious or not serious. Those who said they were very or somewhat likely to reduce their car trips rated all seven public transportation options as more important than those who were not very or not at all likely to do so.

Road/Freeway System

We ended our series of questions about transportation system improvements by asking about road and freeway system options that might help reduce traffic congestion in the region, with the same scale of 1=not important at all to 5=extremely important (Q19-25).

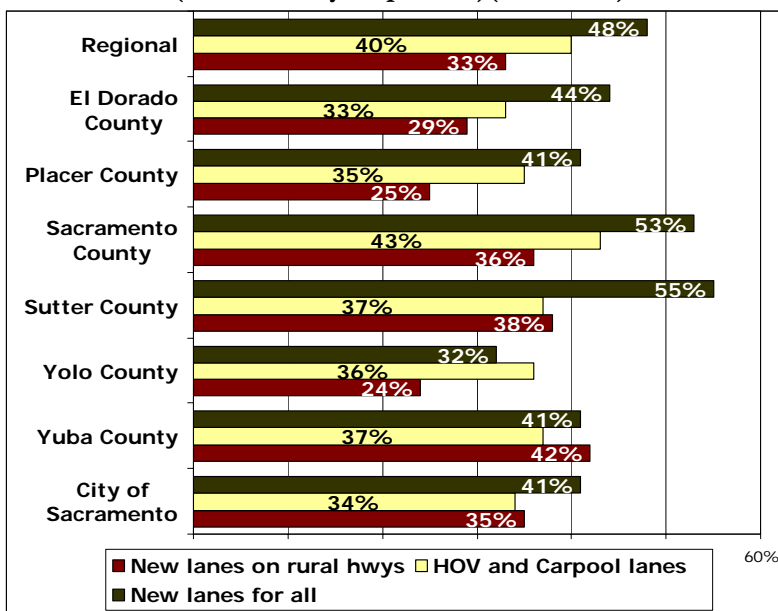
Importance of Road/Freeway System Options (Q19-25)

Option	Extremely Important %	Mean
New freeway lanes added to the regional system that can be used by all vehicles, 24 hours a day	48%	4.0
New freeway lanes added to the regional system that would be an HOV lane for carpools and busses only during rush hour traffic, and open to all traffic the rest of the time	40%	3.8
New lanes or wider shoulders added to improve rural highways	33%	3.7
New lanes added to improve four-lane or wider urban streets	27%	3.5
Add more sidewalks and crosswalks	29%	3.4
Add more bicycle lanes	28%	3.4
Add more bridges to the regional system	25%	3.4

Source: Davis, Hibbitts & Midghall, Inc. February 2007

These are the three top-rated road/freeway system options for reducing congestion, showing extremely important responses by area.

**Top Road/Freeway System Options to Reduce Congestion
(% Extremely Important)(Q19,20,22)**



Source: Davis, Hibbitts & Midghall, Inc. February 2007

When we look at significant differences by means among the areas:

- New freeway lanes for all vehicles were supported most by El Dorado, Sacramento County, Sutter, and Yuba compared to Yolo and the City
- New HOV lanes were given the same level of importance across all areas
- New lanes for both rural highways and urban streets were rated higher by Sacramento County, Sutter, and Yuba
- New sidewalks and crosswalks were more important to all areas than El Dorado and Placer
- More bicycle lanes were rated higher in all areas (except Yuba) than Placer
- More bridges were more important in Sacramento County, Sutter, Yuba, and the City

Age 18-34 rated more sidewalks and crosswalks higher. Respondents who said the transportation situation is critical/serious rated the top two – new freeways lanes for all vehicles and new HOV lanes – higher than those who said the situation is serious but not that serious/not serious.

Those who were very/somewhat likely to reduce their car trips rated adding sidewalks and crosswalks and adding more bicycle lanes higher than those who were not very/not at all likely to do so. Commuters of 21+ miles rated adding new freeway lanes to the regional system for all vehicles as more important than commuters of all other distances (except zero miles).

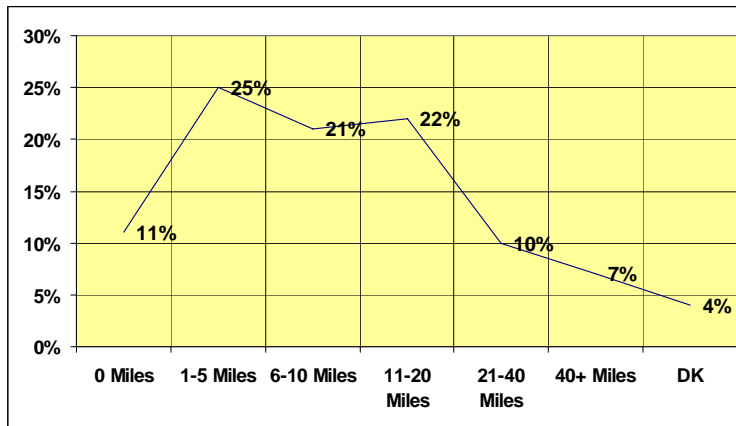
Transportation Funding

Seven in ten (71%) respondents said that new revenue sources will be required to build the needed regional transportation system over the next 10 years; only 19% said existing revenue sources will provide adequate funds and 10% said they didn't know (Q34).

Sutter was most likely to say yes, and more likely than Yolo. Those who viewed the transportation system as critical/serious were more likely to say new revenue sources would be needed.

VII. CURRENT TRAVEL BEHAVIOR

Typical One-Way Commute in Miles (Q35)



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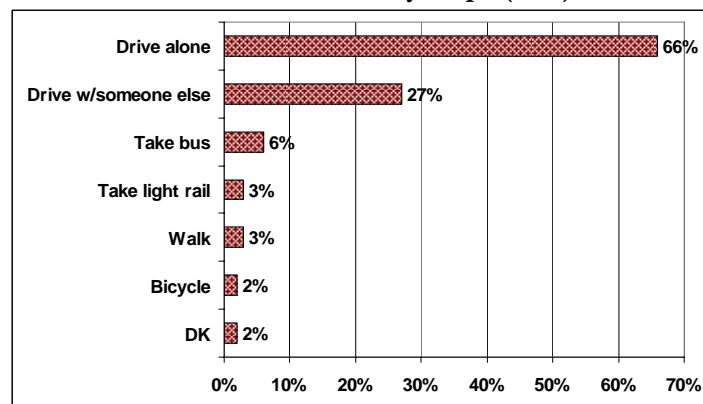
Yolo and the City had more commuters in the 1-5 mile group; so did Placer and Sutter compared to El Dorado. There were no area differences in the 6-10 mile commute category. For 11-20 miles, El Dorado, Placer, Sacramento County, and the City all indicated this one-way commute distance more than Sutter. All areas were higher in the 21-40 mile commute range than the City. Yuba had the highest 40+ mile commute, followed by Sutter.

Age 55+ more often indicated no commute miles, while males and age 35-54 more often said their one-way commute was in the 40+ mile range. Those who said the transportation situation is serious but not that serious/not serious more often were in the 1-5 mile one-way commute range. Respondents who said they were not very/not at all likely to reduce their car trips indicated more often that their commute was zero miles.

We also asked our online survey respondents about their commute, and over half (58%) said they regularly commute to work or school (OQ8). Among commuters, 71% said they commute every day and 27% several times a week. For distance, 55% said their commute was less than 15 miles, 34% said 15-30 miles, 8% 31-45 miles, 3% 45-60 miles, and 1% more than 60 miles (OQ9).

We asked telephone survey respondents how they conducted their daily trips (Q36):

How Travel for Daily Trips (Q36)



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Placer residents were more likely to drive alone than Yolo, Yuba, and the City, and El Dorado more than the City. Yuba was more likely to drive with someone else than Placer, Sacramento County, and Yolo. Sacramento County and Yolo were more likely than El Dorado to take the bus. Yolo was most likely to both walk and bicycle.

Age 35-54 drove alone more than those younger and older, while age 18-34 drove with someone else more often than age 35-54. Those who said they were not at all likely to reduce their car trips more often said they drove alone, while those who said they were very likely to do so more often were bus and light rail riders. Those with a one-way commute of 21+ miles were most likely to drive alone, and especially as compared to those with a 1-5 mile commute, while 6-10 mile commuters said they took the bus more often than commuters of 11-20 miles.

Asked how often they used public transit in their daily activities, nearly three-quarters (73%) said zero times a week, 17% said 1-3 times a week, 7% 4-10 times, and 2% 10+ times per week (Q37). El Dorado, Placer, Sutter and Yuba all said zero times a week more than Sacramento County, Yolo, and the City. Yolo was more likely than all other areas to say 1-3 times a week, followed by the City as compared to El Dorado, Placer, and Sutter.

Age 35+ did not take transit more often than age 18-34, while age 18-34 took transit 1-3 times more often than age 55+ and 4-10 times more often than age 35-54. Those not very/not at all likely to reduce their car trips said they did not take transit more than those who said they were very/somewhat likely to do so, while the latter were more likely to indicate they used transit 1-10 times per week. Commuters of 21+ miles did not use transit at all more than commuters of 1-10 miles.

Online survey respondents indicated how often they drove their automobile alone to take local trips of 3 miles or less, medium distance trips of 3-10 miles, and regional trips of more than 10 miles (OQ5,6,7).

How Often Drive Alone To Take Different Trips (OQ5,6,7)

Frequency	Local Trips	Medium Trips	Regional Trips
Every day	33%	37%	19%
Not every day, but several times a week	38%	34%	25%
About once a week	16%	18%	22%
Less than once a week, but more than once a month	6%	7%	18%
Once a month or less	7%	5%	16%

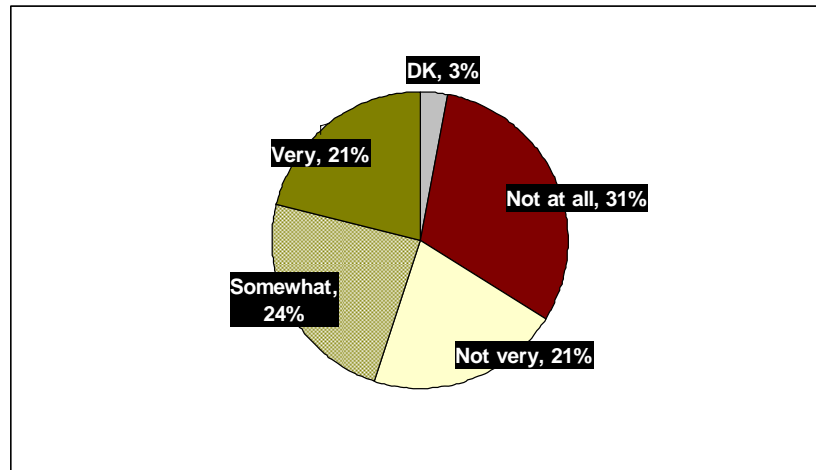
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Among these online survey respondents who regularly commuted, 78% said they drove alone, 14% said they drove with someone else, 4% took the bus, and 3% took rail (OQ11). Most (84%) said their commute was very (38%) or usually (46%) predictable (OQ12).

VIII. FUTURE TRAVEL BEHAVIOR

We asked respondents how likely it is that over the next five years they will shift at least 10% of their trips by car to transit, walking, or bicycling (Q27).

**Likelihood Will Reduce at Least 10% of Car Trips
Over Next Five Years (Q27)**



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Yolo said very likely most often, and more than all areas except the City, which also said very likely more often than El Dorado, Placer, and Yuba. Sutter said very/somewhat combined more than El Dorado and Placer. El Dorado, Placer, Sacramento County, and Yuba all said not very/not at all likely more than Yolo and the City. El Dorado said not at all likely more than all areas except Placer.

Ages 18-54 said very/somewhat likely more than age 55+, while age 55+ said not very/not at all likely more often than younger respondents. We saw no relationship between how respondents viewed the seriousness of the transportation situation and how likely they were to reduce their car trips. Those with any commute distance were more likely than those with none to say very/somewhat likely.

Respondents estimated on average that the price of gasoline will be \$5.11 five years from now (Q26). Placer and Sacramento guessed lower than all areas except El Dorado. Sacramento County guessed higher than all areas except Sutter.

Ages 18-54 more often estimated in the range of \$3.50-\$3.99, while age 55+ said don't know more often. Those who said the transportation situation was critical/serious averaged higher than the estimate of those who said the situation was serious but not that serious/not serious.

We presented respondents with six changes that could happen over the next five years and asked how likely each was to cause them to reduce their car trips by 10% or more based on a scale of 1=not at all likely to 5=very likely. (Q28-33).

**Which Change Over Next Five Years
Would Cause You To Reduce Your Car Trips by 10% or More (Q28-33)**

Change	% Very Likely	Mean
If the price of gas would be over \$4.50 per gallon long term	42%	3.6
If public transit was less expensive than driving and parking	34%	3.4
If frequent transit service was within a short walk (5-15 minutes) to my home and work	32%	3.4
If the price of gas would be over \$3.50 per gallon long term	35%	3.3
If there were more lighting and sidewalk improvements to make me feel safer walking short distances	33%	3.2
If there were more bicycle lanes available to make me feel safer using my bicycle for short trips	22%	2.8

Source: Davis, Hibbitts & Midghall, Inc. February 2007

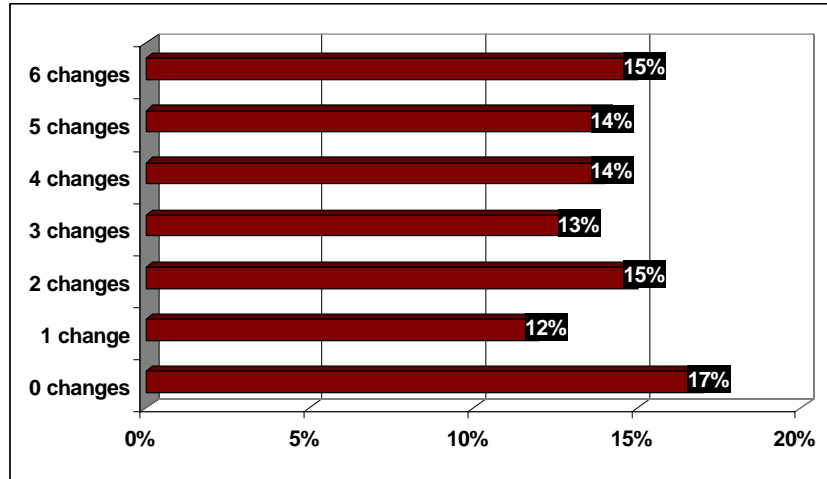
By means, Sacramento County was more likely than El Dorado or Placer to say they would reduce car trips if the price of gas was over \$4.50 per gallon. Yolo said they would reduce car trips if public transit was less expensive more than El Dorado and Placer. The City said if frequent transit service was within a short walk more than El Dorado. All areas said they would reduce their car trips if gas was \$3.50 per gallon more than El Dorado; the same pattern held true for if there were safer walking conditions. Yolo was more likely to say if there were more bicycle lanes than all areas except Sacramento County, and Sacramento County said this more often than Placer.

For all of the changes except frequent transit service, the likelihood of reducing car trips decreased as age increased; for frequent transit service, the two youngest age groups were the same. We found no correlation between the likelihood of reducing car trips and how serious respondents thought the transportation situation was. As we would expect, for each of these changes those who earlier said they were very or somewhat likely to reduce their car trips were more likely to say these changes would cause them to do so. The only correlation we saw to commute distance was that those with one-way commutes of 1-20 miles were more likely than those with no commute distance to say they would reduce car trips if the price of gas was over \$4.50 per gallon long term.

For this same set of questions (Q28-33), we also looked at what percentage of respondents said one or more of these changes would *very* likely (score of 5) cause them to reduce their car trips by 10%. Only 35% said none of them would, 16% said one item, 13% said two, 11% three, 10% four, 7% five items, and 7% all six of the items.

We then looked at what percent said one of more of these changes would be *very or somewhat* likely (4 +5 score) to cause them to reduce their car trips by 10%.

How Many Changes Were *Very or Somewhat* Likely To Cause Them to Reduce Their Car Trips by 10%



Source: Davis, Hibbitts & Midghall, Inc. February 2007

IX. MAXDIFF EXERCISE ON REDUCING CAR TRIPS

The online respondents went through an exercise using a research technique called MaxDiff. This technique is especially effective in evaluating long lists of items. For this survey, respondents were presented with multiple tradeoff-format questions and asked to choose the most and least likely among a list of items that might cause them to reduce their car trips by 10% or more.

The results were processed statistically to provide a relative and comparable mean importance rating as shown below. Based on this processing, a mean of 5.0 or higher would be considered above average in terms of its likelihood to affect the future frequency of car trips. For a more complete discussion of the research methodology and results, see Appendix B.

The following shows the six possible causes that had a mean of 5.0 or higher.

Cause to Reduce Car Trips	Average
The price of gas would be over \$4.50 per gallon long term	37.19
A rail station (light rail, streetcar, or commuter train) would be within easy walking distance (5-15 minutes) to my home	9.59
The time for a trip by transit would be at least 25% faster than by car	8.23
The time for a trip by transit would be the same as by car	5.67
The time it takes for your typical daily trips in your car would increase by 50% from today	5.31
Rail service (light rail, streetcar, or commuter train) would come reliably every 15 minutes	5.19

Source: Davis, Hibbitts & Midghall, Inc.; November 2006

The one that clearly stands out – the price of gas would be over \$4.50 per gallon long term – was also the one that telephone survey respondents said was the most likely to cause them to reduce their car trips by 10% or more over the next five years (Q28).

Similar to online survey respondents, telephone survey respondents also said improvements in the public transportation system would motivate them to reduce their car trips, specifically if it was less expensive than driving and parking (Q33) and if frequent transit service was within a short walk of their home and work (Q30).

X. CLUSTER ANALYSIS ON REDUCING CAR TRIPS

We conducted cluster analysis on the telephone survey results to learn whether there were shared attributes among different segments of the area’s population that would help SACOG better predict the likelihood that someone would reduce their future car trips.

The analysis essentially found six well-defined segments, two of which were far more likely to say they were *very* likely to shift car trips to other types of transportation. These two segments made up 28% of respondents, and had the following characteristics:⁵

Segment 2 (18%): Ride Share Fans - 33% “Very likely” to reduce car trips (vs. 22% overall)

- Somewhat younger (median age 45.9 years, vs. 49 overall)
- Two-thirds commute 10 miles or less one way
- Most likely to drive with someone else (39%, vs. 29% overall)
- Higher-than-average public transit use
- Ethnically diverse
- Income 82% of overall median
- More likely to live in Sutter, less likely to live in Placer
- More likely to be Hispanic than total population (24% vs. 18 %).
- Lower median income than total population (\$40.9K)
- Higher expectation that gas will be between \$5.00 and \$7.00 in five years than total population (42% vs. 31%)
- Sees more importance in public transportation improvement options than total population
- More likely to reduce amount of driving upon implementation of public transportation improvements, such as more accessibility to safe bicycle and walking lanes, reduced price of public transportation, and increased frequency of transit service.
- More females than total population (58% vs. 51%)
- More likely to find importance in incentives to promote local government planning for environmentally friendly transportation.

⁵ The names used to refer to the different segments are for descriptive purposes only, and are not intended to imply anything more.

Segment 5 (10%): Progressives - 40% “Very likely” to reduce car trips (vs. 22% overall)

- Somewhat younger (46.1 years, vs. 49 overall)
- 43% commute 5 miles or less one way (vs. 37% overall)
- Higher-than-average public transit use
- Income 118% of overall median
- More likely to live in Yolo
- Highest incidence of using bicycles for daily trips (10%, vs. 3% overall)
- More likely to identify public transportation as the most serious transportation problem in Sacramento region than total population (16% vs. 8%), in terms of access and number of mass options available.
- More likely to seek improvements in bike lanes, than total population (31% vs. 10%).
- Less likely to find importance in improving highways and freeways.
- More likely to find importance in incentives to promote local government planning for environmentally friendly transportation.

The analysis also looked at different series of questions in the telephone survey, highlighting how these two segments and the other segments of the population would respond to those questions. A complete description of this analysis is in Appendix C.

XI. OBSERVATIONS AND CONCLUSIONS

Residents Value Community and Access; See Transportation Situation as Serious

SACOG area residents value their communities. They especially value access to retail, services, and entertainment and the outdoors, as well as the small town feel. Given these values, it is not surprising that they believe the transportation situation is serious and four out of every five residents believe transportation system improvements must be made. By only a slightly smaller margin, seven in ten residents believe that new revenue sources will be needed to meet future needs.

Residents Want a Mix of Transportation Improvements

SACOG residents want a mix of highway/freeway and public transportation improvements and also place a high priority on road maintenance. These findings were consistent throughout our survey research.

- Residents, unprompted, identify traffic congestion, inadequate public transportation, and limited highway/freeway capacity as the most serious problems
- Asked, unprompted, what specific improvements they would like to see made, they want transit improvements, especially extending light rail to more areas and improved bus service, increased freeway capacity, and improved road conditions
- Their priorities are very similar when presented a list of possible transportation system investments – highways/freeways, road maintenance, and public transit are the top three
- Solutions to the transportation situation offered unprompted in the online survey most often related to expanding public transportation with light rail/rapid transit mentioned the most followed by bus service, and freeway and highway improvements and expansion mentioned second most often

Transportation Priorities Similar; Emphasis Differs

We found no area or group of residents who did not want an approach to solving the region's transportation situation that included *both* expanding highway/freeway and public transportation capacity to reduce congestion. The differences we found in transportation priorities were on the *emphasis* placed on different options, not on their overall value.

The emphasis residents place on different solutions is often dependent on many variables. The report goes into detail about these differences. Some of the key factors are:

- where they live – are they in more urban areas where transit is more important to them, or outlying areas where road maintenance and freeway expansion may have more emphasis
- the length of their commute – do they commute 21+ miles one way, placing more emphasis on increased freeway lanes, or from 6-10 miles, who take the bus more often
- age – are they younger and more interested in public transit or older residents who don't commute as often and thus not as affected by traffic congestion
- how they view the seriousness of the current transportation situation – do they say the transportation situation is critical and thus place more importance on expanding light rail, commuter trains, and more express bus service
- likelihood of reducing car trips – are they more likely to say they would reduce car trips, and thus more likely to rate all of the public transportation options as more important

Most Residents Want To Reduce Their Car Trips

When asked, 45% of SACOG residents say they are likely to shift at least 10% of their car trips to transit, walking, or bicycling over the next 5 years. If we look at responses to the six changes that would be somewhat or very likely to cause them to reduce their car trips, only 17% said none of them would.

What would motivate them to reduce their car trips? Besides a \$4.50 per gallon price for gasoline over the long term, residents most often say they would need:

- Public transit that is less expensive than driving and parking
- More frequent transit service within a short walk of their home and work
- Transit trip times at least the same as by car

Meeting Future Needs Will Involve Multi-Layered Strategies

Given the diverse needs of the region, and resident interest in wanting to reduce congestion in large measure through reducing car trips, addressing the region's transportation system situation will involve multi-layered solutions. Our analysis indicates that "if you build it, they will come..." but only if the appropriate systems are in place.

Light rail, in particular, gets consistently high marks no matter how we ask about it. Additional bus service also is viewed as important. The potential for much greater use of public transit options is there, but strategies must target those most likely to use them and provide adequate access and efficiency. This means not only looking at expanding services, but also examining land use and other policies that complement and support alternative transportation where it makes sense, while at the same time providing freeway and road maintenance improvements where the need is greatest.

APPENDIX A
Davis, Hibbitts & Midghall, Inc.
SACOG MTP Survey, January 19-24, 2007
N=900, SACOG area

WARM-UP & TRANSPORTATION PROBLEM GENERAL IMAGERY

1. How would you describe the situation related to transportation here in the 6-county Sacramento region: not a serious problem, a problem but not that serious, a serious problem, or a critical problem?

Not a serious problem-----	18%	[skip to 3]
A problem but not that serious -----	19%	[skip to 3]
A serious problem-----	42%	[ask 2]
A critical problem -----	16%	[ask 2]
DK/Refused -----	6%	[skip to 3]

2. What do you think is the most serious transportation problem in the Sacramento region? (Open)

Traffic Congestion (General)/Too Many Cars -----	18%
Public Transportation/Not Enough Mass Transit Options -----	9%
Bus Service/Need More Buses/Routes/Longer Hours-----	6%
Highways/Freeways/Not Enough Options -----	5%
Capacity Of Highways/Freeways/Roads Not Wide Enough/ Need More Lanes-----	4%
Growth/Development -----	3%
Commuter Traffic/Rush Hour/Peak Times-----	2%
Road Maintenance/Need Highway/Street Repairs -----	2%
All other responses -----	1% or less
DK -----	1%

3. Overall, how would you rate your community as a place to live? You can use any number between 1 and 4, where 4 is excellent and 1 is poor.

Poor	Excellent	DK
<u>Mean</u>	<u>3.2</u>	

4. What do you like most about living in this area, meaning your community, city, and the Sacramento region? (Open)

Access to Retail/Services/Entertainment -----	23%
Small Town Feeling -----	17%
Open Space/Nature-----	14%
The People-----	8%
Security-----	8%
Community Feeling -----	7%
Weather -----	5%
Access to Outdoors/Recreation -----	4%
All other responses -----	3% or less
DK-----	1%

TRANSPORTATION PRIORITIES

5. Are there any transportation system improvements you would like to see made, including roads, freeways, bus, light rail, or pedestrian or bicycle improvements?

Yes-----	79%	[ask 6]
No -----	18%	[skip to 7]
DK/Refused -----	3%	[skip to 7]

6. Can you please describe the specific improvement you would like to see made?

Probe for specifics

Light Rail Extended To More Areas -----	23%
Road Conditions Improved/Highway Street Repairs -----	19%
Bus Service Improved/More Buses/Routes/Stops/Longer Hours	15%
Capacity of Highways/Freeways Increased/Wider Roads/ More Lanes-----	12%
Bike Lanes Added/Extended/Improved-----	9%
More Highways/Freeways -----	9%
More Public Transit/Accessible in More Areas -----	6%
More Roads/Side Streets-----	5%
Reduce Congestion on Highways-----	4%
All other responses -----	3% or less
DK-----	1%

TRANSPORTATION SYSTEM COMPONENTS

I would now like to ask you about the emphasis you want placed on different investments in the regional transportation system in the future (over the next 20 years). On a scale of 1 to 5, where 1 means “not important at all,” and “5 means extremely important,” how would you rate the importance of the following, remember you can use any number between 1 and 5.:

<u>ROTATE</u>	Not at all Important	Extremely Important	DK	Mean
7. Public transit including buses, light rail, and commuter rail -----	6% -- 6%	21% -- 25%	41% ----- 2%	3.9
8. Highways and freeways like 5, 50, 80, 99, and 65 -----	3% -- 4%	15% -- 21%	55% ----- 2%	4.2
9. Community transportation projects including bicycle lanes, sidewalks and safer residential streets -----	5% -- 15%	21% -- 26%	33% ----- 1%	3.7
10. Incentives to promote local government planning for efficient and environmentally friendly transportation and land use options ---	4% -- 10%	23% -- 23%	32% ----- 8%	3.8
11. Road maintenance -----	1% -- 4%	15% -- 26%	52% ----- 1%	4.2

Now I want to ask you specifically about public transit options that might help reduce traffic congestion in the region. On a scale of 1 to 5, where 1 means “not important at all,” and “5 means extremely important,” how would you rate the importance of the following, remember you can use any number between 1 and 5.:

<u>ROTATE</u>	Not at all Important	Extremely Important	DK	Mean
12. Expand the light rail system-----	6% --- 8% -- 15%-- 25% ---44%-----	3%-	-----	3.9
13. Add new types of buses that move faster and can carry more people -	11% --11%-- 25%-- 24% ---28%-----	2%-	-----	3.5
14. Expand the commuter train system	6% --- 9% -- 21%-- 25% ---36%-----	4%-	-----	3.8
15. Add more regular buses that run more often and reach more destinations	6% ---10%-- 20%-- 22% ---40%-----	1%-	-----	3.8
16. Add more express bus service on the freeways	9% ---13%-- 20%-- 22% ---32%-----	4%-	-----	3.6
17. Expand community shuttle buses connecting to activity centers	8% ---11%-- 24%-- 20% ---33%-----	3%-	-----	3.6
18. Add new streetcar service	20% --16%-- 22%-- 13% ---21%-----	8%-	-----	3.0

Next, I would like to ask you about the road and freeway system. Again, I will read you a short list of options that might help reduce traffic congestion in the region. On a scale of 1 to 5, where 1 means “not important at all,” and “5 means extremely important,” how would you rate the importance of the following, remember you can use any number between 1 and 5:

<u>ROTATE</u>	Not at all Important	Extremely Important	DK	Mean
19. New freeway lanes added to the regional system that can be used by all vehicles, 24 hours a day	4% --- 7% -- 19%-- 20% ---48%-----	2%-	-----	4.0
20. New freeway lanes added to the regional system that would be a high occupancy vehicle lane (HOV lane) for carpools and busses only during rush hour traffic, and open to all traffic the rest of the time	8% --- 9% -- 19%-- 22% ---40%-----	2%-	-----	3.8
21. New lanes should be added to improve four-lane or wider urban streets.	6% ---15%-- 27%-- 24% ---27%-----	1%-	-----	3.5
22. New lanes or wider shoulders should be added to improve rural highways	5% ---11%-- 25%-- 23% ---33%-----	3%-	-----	3.7
23. Add more bridges to the regional system	10% --16%-- 23%-- 20% ---25%-----	5%-	-----	3.4
24. Add more sidewalks and crosswalks	11% --15%-- 24%-- 19% ---29%-----	2%-	-----	3.4
25. Add more bicycle lanes	10% --15%-- 27%-- 18% ---28%-----	2%-	-----	3.4

TRAVEL BEHAVIOR

26. How much do you think the price of gasoline will be five years from now?

\$2.99 or more -----	10%
\$3.00 to \$3.49 -----	12%
\$3.50 to \$3.99 -----	11%
\$4.00 to \$4.49 -----	18%
\$4.50 to \$4.99 -----	5%
\$5.00 to \$6.99 -----	27%
\$7.00 or more -----	12%
DK -----	5%
Mean -----	\$5.11

27. How likely is it that over the next 5 years you will shift at least 10% of your trips by car to transit, walking or bicycling: not at all likely, not very likely, somewhat likely, or very likely?

Not at all likely -----	31%
Not very likely -----	21%
Somewhat likely -----	24%
Very likely -----	21%
DK -----	3%

Now, I will read you a list of changes that could occur over the next five years. For each one, tell me on a scale of 1 (Not At All Likely) to 5 (Very Likely), how likely it is to cause you to reduce your car trips by 10% or more?

<u>ROTATE</u>	Not at all Likely		Very Likely	DK	Mean		
28. If the price of gas would be over \$3.50 per gallon long term -----	22%	10%	17%	15%	35%	1%	3.3
29. If there were more bicycle lanes available to make me feel safer using my bicycle for short trips -----	34%	12%	15%	14%	22%	3%	2.8
30. If frequent transit service was within a short walk (5-15 minutes) to my home and work -----	17%	13%	18%	19%	32%	1%	3.4
31. If there were more lighting and sidewalk improvements to make me feel safer walking short distances -	22%	14%	15%	16%	33%	1%	3.2
32. If the price of gas would be over \$4.50 per gallon long term -----	16%	7%	14%	19%	42%	1%	3.6
33. If public transit was less expensive than driving and parking -----	18%	11%	15%	20%	34%	3%	3.4

TRANSPORTATION FUNDING AND CONCLUSION

34. In general, do you think that over the next 10 years existing revenue sources will provide adequate funds to build the regional transportation system we will need in the future or do you think new revenue sources will be needed?

Existing revenue sources will provide adequate funds -----	19%
New revenue sources will be needed-----	71%
DK-----	10%

TRAVEL BEHAVIOR AND DEMOGRAPHICS

35. How long, in miles, is your typical one-way commute: 0 miles, 1-5 miles, 6-10 miles, 11-20 miles, 21-40 miles, 40 + miles?

0 miles-----	11%
1-5 miles -----	25%
6-10 miles-----	21%
11-20 miles -----	22%
21-40 miles -----	10%
40+ miles -----	7%
DK-----	4%

36. For your daily trips, do you usually drive alone, drive with someone else, take the bus, take light rail, walk or bicycle? (Please indicate all that apply.)

Drive alone -----	66%
Drive with someone else -----	27%
Take the bus-----	6%
Take light rail-----	3%
Walk -----	3%
Bicycle-----	2%
DK-----	2%

37. How often do you use public transit in your daily activities: 0 times per week, 1-3 times per week, 4-10 times per week, or 10+ times per week?

0 times per week-----	73%
1-3 times a week-----	17%
4-10 times per week-----	7%
10+ times per week -----	2%
DK-----	2%

38. What is your age please?

18-24 -----	10%
25-34 -----	16%
35-44 -----	18%
45-54 -----	22%
55-64 -----	13%
65-74 -----	9%
75+ -----	10%
DK/Refused -----	2%

39. Do you happen to be of Hispanic or Latino heritage?
 Yes-----18%
 No -----79%
 DK/Refused ----- 3%

40. What is your main racial heritage? (READ LIST)?
 Black/African American ----- 7%
 White -----65%
 Asian/Pacific Islander ----- 6%
 American Indian----- 2%
 Multi-Ethnic (DO NOT READ)----- 2%
 Other Specify (_____)----14%
 DK/Refused ----- 6%

41. What is your total annual family income? Please stop me when I reach your income. (READ CATEGORIES)
 Under \$20,000 ----- 9%
 \$20,000, but less than \$29,999----- 9%
 \$30,000, but less than \$39,999-----11%
 \$40,000, but less than \$59,999-----14%
 \$60,000, but less than \$79,999-----14%
 \$80, 000, but less than \$99,999----- 6%
 \$100,000, but less than \$149,999----- 7%
 \$150,000 or more----- 4%
 DK/Refused -----26%

42. What is your zip code, please? (_____)*

43. Gender [FROM OBSERVATION]
 Male -----49%
 Female-----51%

Respondent Name _____ Phone # _____ Pg # _____

APPENDIX B

Davis, Hibbitts & Midghall, Inc.
SACOG Online Survey Max/Diff Exercise
N=353, region-wide, general population age 18 and older
January 2007

INTRODUCTION:

We invite you to participate in an online survey about your community’s transportation needs and priorities. Your responses will assist your regional government – Sacramento Area Council of Governments (SACOG) – to identify key issues that are important to residents.

We value your opinion, and this is strictly a research study. The study is being conducted by Davis, Hibbitts & Midghall, Inc., a well-respected independent, non-partisan public opinion research firm specializing in planning and transportation issues.

Please be assured that your information will not be sold or distributed. This study is strictly for research purposes only and all of your information is completely confidential.

1. All in all, would you say that things in the 6-county Sacramento region are headed in the right direction, or are things pretty much off on the wrong track?

Right direction-----67%
Wrong track-----33%

2. How would you describe the situation related to transportation here in the 6-county Sacramento region: not a serious problem, a problem but not that serious, a serious problem, or a critical problem?

A critical problem-----13%
A serious problem -----46%
A problem, but not that serious -----37%
Not a serious problem ----- 5%

3. (If respondent says not a serious or problem but not serious) How would you describe the problem? (Record below.)

4. (If respondent says serious or critical problem) What should be done about the problem? (Record below.)

MAX/DIFF EXERCISE – SEE END OF THIS APPENDIX

5. Which of the following best describes how often you drive your automobile alone to take local trips of 3 miles or less: every day; not every day but several times a week; about once a week, less than once a week but more than once a month; once a month or less?

Every day -----33%
 Not every day, but several times a week -----38%
 About once a week -----16%
 Less than once a week, but more than once a month ----- 6%
 Once a month or less----- 7%

6. Which of the following best describes how often you drive your automobile alone to take medium distance trips of 3-10 miles: every day; not every day but several times a week; about once a week, less than once a week but more than once a month; once a month or less?

Every day -----37%
 Not every day, but several times a week -----34%
 About once a week -----18%
 Less than once a week, but more than once a month ----- 7%
 Once a month or less----- 5%

7. Which of the following best describes how often you drive your automobile alone to take regional trips of more than 10 miles: every day; not every day but several times a week; about once a week, less than once a week but more than once a month; once a month or less?

Every day -----19%
 Not every day, but several times a week -----25%
 About once a week -----22%
 Less than once a week, but more than once a month -----18%
 Once a month or less-----16%

8. Do you regularly commute to work or school?

Yes -----58%
 No -----42%

IF YES, ASK 9-12

9. How long, in miles, is your typical commute: less than 15 miles, 15-30 miles, 31-45 miles, 45-60 miles, 60+miles?

Less than 15 miles -----55%
 15-30 miles -----34%
 31-45 miles ----- 8%
 45-60 miles ----- 3%
 More than 60 miles ----- 1%

10. How often do you commute: every day; not every day but several times a week, about once a week, less than once a week but more than once a month, once a month or less?

Every day -----71%
 Not every day, but several times a week -----27%
 About once a week ----- 1%
 Less than once a week, but more than once a month ----- 1%
 Once a month or less----- 0%

11. When you commute, do you drive alone, drive with someone else, take the bus, or take rail?

Drive alone	78%
Drive with someone else	14%
Take the bus	4%
Take rail	3%
Don't know	1%

12. How predictable is your commute: not at all predictable, not very predictable, usually predictable, or very predictable?

Very predictable	38%
Usually predictable	46%
Not very predictable	6%
Not at all predictable	9%

Demographics

13. Gender?

Female	51%
Male	49%

14. What is your age?

18-24	6%
25-34	21%
35-44	19%
45-54	21%
55-64	22%
65-74	8%
75 +	2%

15. Do you happen to be of Hispanic or Latino heritage?

Yes	18%
No	81%
Refused	1%

16. What is your race?

African American	2%
White	76%
Asian/Pacific Islander	10%
American Indian	2%
Multi-Ethnic	4%
Other	5%

17. Income?

Less than \$20,000	11%
\$20,000-29,999	10%
\$30,000-39,999	15%
\$40,000-59,999	21%
\$60,000-79,999	16%
\$80,000-99,999	16%
\$100,000-149,999	10%
\$150,000 or more	3%

18. County?

El Dorado	6%
Placer	12%
Sacramento	67%
Sutter	4%
Yolo	9%
Yuba	2%

Thank you for your participation. (Direct to panel provider)

MAX/DIFF EXERCISE RESULTS

INTRODUCTION

MaxDiff is an approach for obtaining importance scores for multiple items. It has been shown to deliver greater discrimination among items and between respondents than the more commonly used rating scale questions. The reason that Max/Diff is effective is two-fold. First, respondents must make trade-offs in order to choose the best and worst of the five displayed items. (See Diagram 1 below) They do not rate items in isolation, but in competition. Second, the choices are made without the use of a scale. (Scales introduce the opportunity for interpretation bias – different individuals could feel an item is equally important yet select a different number to represent that feeling.) For these reasons, Max/Diff results are able to show strong differentiation between items that are statistically reliable.

Diagram 1: Introduction and one of twelve MaxDiff questions displayed in survey

TRADE-OFF EXERCISE

The following exercise is comprised of 12 questions. Each question asks you to consider which of the five items is Most Likely and which item is Least Likely to cause you to reduce your automobile trips by 10% or more.

These questions may seem repetitive or tedious. However, we want you to consider several different scenarios against each other. Please give it your best shot!

Considering only these five items, which one is Most Likely and which one is Least Likely to cause you to reduce your automobile driving trips by 10% or more?

Click one item under Most Likely and one item under Least Likely.

Most Likely		Least Likely
<input type="checkbox"/>	A rail station (light rail, streetcar, or commuter train) would be within easy walking distance (5-15 minutes) to my home	<input type="checkbox"/>
<input type="checkbox"/>	Would have to start paying for parking at work	<input type="checkbox"/>
<input type="checkbox"/>	The price of gas would be over \$4.50 per gallon long term	<input type="checkbox"/>
<input type="checkbox"/>	More bicycle lanes would be available to make me feel safer using my bicycle for short trips	<input type="checkbox"/>
<input type="checkbox"/>	A bus stop would be within a short automobile drive (<15 minutes) to my home with easy parking	<input type="checkbox"/>

Click the 'Next' button to continue...

Next

DATA INTERPRETATION & RESULTS

Our web survey deployed a MaxDiff Exercise to best determine which items among a list of 20 would be most likely to cause the population to “reduce automobile trips by 10% or more.” This exercise (see Diagram 1 above) exposed a different group of five items to each respondent a total of twelve times. From each list respondents selected the Most Likely and the Least Likely items that would cause them to reduce auto trips by 10% or more. The grouping of five items at a time makes the exercise more manageable for respondents than had we simply asked them to rank all 20 items from a single list. By design the exercise statistically varies the number of exposures of each item and their order placement. This ensures that every item has an equally likely chance of being selected.

This method reveals each respondents rank order of the items along with the relative strength (score) for each item. In analysis a Hierarchical Bayes algorithm is employed to determine the relative strength of each item for each respondent. These scores are then scaled to a 100 point scale to most clearly show the relative strength of each item. The result from this procedure provides individual item scores for each respondent that add up to 100.

The Max/Diff results are analogous to those that would be obtained if we asked respondents to allocate points among the twenty items so that their summed total equals 100. Thus, the expected average score for each of the twenty items is (100/20) five. Items with scores above ‘5’ are above average in likelihood to reduce auto driving trips by 10% or more. Conversely, items with scores below ‘5’ are below average in likelihood to reduce auto driving trips by 10% or more.

As displayed in Diagram 2 below, there are only six items that have above average likelihood scores for reducing auto trips by 10% or more. Expensive gasoline (\$4.50 per gallon) is by far the most likely item with a score of 37. If gasoline were \$4.50/gal., the population is about seven times more likely (than for the average item tested) to reduce auto trips by 10% or more. ‘Light rail stations within 5-15 minutes (walking distance)’ with a score of 9.59 are almost twice as likely as the average item to reduce auto trips by 10% or more. The third scoring item, ‘transit that is 25% faster than car,’ received a score of 8.23. The other items with an above average chance of reducing auto driving behavior by 10% or more are ‘transit would be the same as by car,’ ‘the time for daily trips in a car increases by 50% from today,’ and ‘rail service comes reliably

every 15 minutes.’ Our results show that all other items scored below the expected average and are therefore less likely to induce the desired 10% change by the full population.

The complete results for all twenty items are displayed below. The bolded items are most likely to induce the public to reduce auto trips by 10% or more.

Diagram 2: Complete Results (weighted)

Rescaled Scores (0 to 100 scaling)		
Label	Item Number	Average
The price of gas would be over \$4.50 per gallon long term	2	37.19
A rail station (light rail, streetcar, or commuter train) would be within easy walking distance (5-15 minutes) to my home	11	9.59
The time for a trip by transit would be at least 25% faster than by car	5	8.23
The time for a trip by transit would be the same as by car	6	5.67
The time it takes for your typical daily trips in your car would increase by 50% from today	4	5.31
Rail service (light rail, streetcar, or commuter train) would come reliably every 15 minutes	15	5.19
Buses would come reliably every 15 minutes	14	3.71
The price of gas would be over \$3.50 per gallon long term	1	3.68
A rail station (light rail, streetcar, or commuter train) would be within a short automobile drive (<15 minutes) to my home with easy parking	13	3.64
A bus stop would be within easy walking distance (5-15 minutes) to my home	10	3.31
More lighting and sidewalk improvements would make me feel safer walking short distances	9	2.94
The cost of parking would be double today's cost	18	1.69
The cost of parking would be more than double today's cost	19	1.68
Would have to start paying for parking at work	20	1.62
The time it takes for your typical daily trips in your car would increase by 25% from today	3	1.54
More bicycle lanes would be available to make me feel safer using my bicycle for short trips	8	1.54
A bus stop would be within a short automobile drive (<15 minutes) to my home with easy parking	12	1.12
The time for a trip by transit would be no more than 25% slower than by car	7	0.95
Rail service would include services like Wi-Fi	17	0.94
Bus travel would include services like Wi-Fi	16	0.46

SUMMARY

The MaxDiff exercise reveals that there are only six items that have scores above the expected average likelihood for reducing auto trips by 10% or more. From that list, one item stands out:

- The price of gas would be over \$4.50 per gallon long term

At a score of 37, 'gas at \$4.50/gal' is about seven times greater than the expected average score of 5 and it is four times greater than the second scoring item. After very expensive gasoline, there is a second tier of items that scored relatively well:

- A rail station (light rail, streetcar, or commuter train) would be within easy walking distance (5-15 minutes) to my home
- The time for a trip by transit would be at least 25% faster than by car

These items are about 1.5 to 2 times more likely than the expected average to reduce trips. A third tier of items that could also reduce driving trips is comprised of:

- The time for a trip by transit would be the same as by car
- The time it takes for your typical daily trips in your car would increase by 50% from today
- Rail service (light rail, streetcar, or commuter train) would come reliably every 15 minutes

This last tier scored just marginally above what would be expected of any item among a list of 20. All other items tested have scores below the expected average of five and are therefore less likely to reduce auto trips by 10% or more for the full population.

APPENDIX C

DHM SACOG MTP Survey *Cluster Analysis* *February 2007*

Introduction

A recent survey of a representative sample of the greater Sacramento area population indicates that about one in five residents (21%) are “Very likely” to reduce car trips by at least 10% over the next five years.

Although that likelihood (Q27) is significantly correlated with quite a few of the variables...

Importance of:

7. Public transit including buses, light rail, and commuter rail
10. Incentives to promote local government planning for efficient and environmentally friendly transportation and land use options
11. Road maintenance (negative correlation)
14. Expanding the commuter train system
19. New freeway lanes added to the regional system that can be used by all vehicles, 24 hours a day (negative correlation)
24. Adding more sidewalks and crosswalks
25. Adding more bicycle lanes

Likelihood of reducing trips if:

28. ...the price of gas would be over \$3.50 per gallon long term
29. ...there were more bicycle lanes available to make me feel safer using my bicycle for short trips
30. ...frequent transit service was within a short walk (5-15 minutes) to my home and work
32. ...the price of gas would be over \$4.50 per gallon long term
33. ...public transit was less expensive than driving and parking

Profiling questions:

37. Frequency of using public transit
38. Age

...regression analysis using these variables to predict Q27 explains only 17% of the variation in response in the case of the “importance” questions and 29% of the variation for the others. Additionally, there is virtually no correlation to Q1 (seriousness of transportation situation) or Q3 (rating of community).

In Q6 (specific improvements) the results are fairly expectable – those “Very likely” to reduce their trips are more likely to want increased bus service and more light rail, and less likely to mention more highways, more road capacity, or improved roads.

Segmentation – Cluster Analysis

The concept of segmentation is that differences in the opinions, behaviors, attitudes, and beliefs among populations can be captured in homogeneous subgroups that will respond differently to changes in marketing, promotion, and other aspects of the marketing mix.

A cluster analysis of the SACOG data resulted in six well-defined segments, plus an additional “Unclassified” group, consisting of respondents who gave too many “don’t know” answers to unambiguously classify. Analysis of the survey data in terms of these segments can help to develop strategies for impacting driving behavior.

Descriptions of the Segments

These brief snapshots of the segments are to give some context to the following analysis. The “Unclassified” (generally older and with lower incomes) constitute 31% of the sample.

Segment 1 (10%): Dedicated Drivers 12% “Very likely” to reduce car trips (vs. 22% overall)

- Slightly older (median age 50 years, vs. 49 overall)
- Insensitive to gas prices
- Low public transit use
- Predominantly white
- Income 116% of overall median

Segment 2 (18%): Ride Share Fans 33% “Very likely” to reduce car trips (vs. 22% overall)

- Somewhat younger (median age 45.9 years, vs. 49 overall)
- Two-thirds commute 10 miles or less one way
- Most likely to drive with someone else (39%, vs. 29% overall)
- Higher-than-average public transit use
- Ethnically diverse
- Income 82% of overall median
- More likely to live in Sutter, less likely to live in Placer

Segment 3 (7%): Suburban Commuters 3% “Very likely” to reduce car trips (vs. 22% overall)

- Somewhat younger (median age 45.6 years, vs. 49 overall)
- 38% commute more than 20 miles one way (vs. 20% overall)
- Nine out of ten do not use public transit use
- Predominantly white
- Highest income of the segments - 146% of overall median
- More likely to live in El Dorado or Yuba

Segment 4 (14%): Roads and Rails 16% “Very likely” to reduce car trips (vs. 22% overall)

- Near median age (48.3 years, vs. 49 overall)
- Average commute length
- Low public transit use
- Second-highest income - 132% of overall median
- More likely to live in Placer

Segment 5 (10%): Progressives 40% “Very likely” to reduce car trips (vs. 22% overall)

- Somewhat younger (46.1 years, vs. 49 overall)
- 43% commute 5 miles or less one way (vs. 37% overall)
- Higher-than-average public transit use
- Income 118% of overall median
- More likely to live in Yolo
- Highest incidence of using bicycles for daily trips (10%, vs. 3% overall)

Segment 6 (10%): Status Quo 14% “Very likely” to reduce car trips (vs. 22% overall)

- The youngest segment (43.5 years, vs. 49 overall)
- Average commute length
- Highest public transit use
- Lowest income of the segments - 79% of overall median

Analysis of “High Likelihood” Segments

Two of these segments – comprising over a quarter (28%) of the respondents - are significantly more likely to say that they are “Very likely” to shift car trips to other types of transportation:

Segment 2 (Ride Share Fans):

- More likely to be Hispanic than total population (24% vs. 18 %).
- More likely to commute to work by driving with someone else than the total population (39% vs. 29%)
- Lower median income than total population (\$40.9K)
- Higher expectation that gas will be between \$5.00 and \$7.00 in five years than total population (42% vs. 31%)
- Sees more importance in public transportation improvement options than total population.
- More likely to reduce amount of driving upon implementation of public transportation improvements, such as more accessibility to safe bicycle and walking lanes, reduced price of public transportation, and increased frequency of transit service.
- More females than total population (58% vs. 51%)
- More likely to find importance in incentives to promote local government planning for environmentally friendly transportation.

Segment 5 (Progressives):

- More likely to identify public transportation as the most serious transportation problem in Sacramento than total population (16% vs. 8%), in terms of access and number of mass options available.
- More likely to seek improvements in bike lanes, than total population (31% vs. 10%).
- Less likely to find importance in improving highways and freeways.
- More likely to find importance in incentives to promote local government planning for environmentally friendly transportation.

Tables Highlighting Segment 2 (*Ride Share Fans*) and Segment 5 (*Progressives*)

The following tables illustrate distinct differences between segments 2 and 5 (highlighted) and the remaining segments. Based on the responses given, each segment has an index rating for each of the following questions. The index rating is determined by the number of “top-box” responses (a 5 or 4 on the 5-point scale), subtracted by the “bottom-box” responses (a 2 or a 1), and then 100 is added to the difference. This tool amplifies small differences in research ratings to be more readily detectable.

**TABLE ONE:
Likelihood of Reducing Car Trips by Scenario by Segment
(Q28-Q33)**

Possible Changes	Segment 1: <i>Dedicated Drivers</i>	Segment 2: <i>Ride Share Fans</i>	Segment 3: <i>Suburban Commuters</i>	Segment 4: <i>Roads and Rails</i>	Segment 5: <i>Progressives</i>	Segment 6: <i>Status Quo</i>	Unclassified
If gas was over \$3.50 over the long term (Q28)	19	169	68	121	147	102	113
More / safer bicycle lanes(Q29)	47	141	65	39	151	98	86
If frequent transit service was within a short walk (Q30)	65	178	68	120	150	132	112
More lighting and sidewalk improvements for safety (Q31)	63	173	68	70	125	123	113
If gas was over \$4.50 over the long term (Q32)	43	187	102	139	157	145	122
If public transit was less expensive than driving and parking (Q33)	53	181	66	125	158	133	117

Table One clearly indicates that segments 2 and 5 are much more likely than all other segments to say they will reduce car trips upon different possible changes that may occur over the next five years.

**TABLE TWO:
Importance of Road and Freeway Options by Segment
(Q19-Q25)**

Road and Freeway Options	Segment 1: <i>Dedicated Drivers</i>	Segment 2: <i>Ride Share Fans</i>	Segment 3: <i>Suburban Commuters</i>	Segment 4: <i>Roads and Rails</i>	Segment 5: <i>Progressives</i>	Segment 6: <i>Status Quo</i>	Unclassified
New, 24 hr. freeways for all vehicles (Q19)	170	190	191	171	81	128	145
New freeway lanes that would be HOV during rush hour (Q20)	158	185	150	141	13	106	142
New lanes to improve four-lane or wider urban streets (Q21)	142	181	177	125	35	120	125
New lanes or wider shoulders to improve rural highways (Q22)	164	189	170	117	77	124	136
More bridges to the regional system (Q23)	139	167	151	99	66	100	117
More sidewalks and crosswalks (Q24)	150	181	114	44	136	119	113
More bicycle lanes (Q25)	156	171	96	30	149	108	114

Table Two shows that segment 2 (*Ride Share Fans*) finds all possibilities of future road improvements to be very important, while Segment 5 (*Progressives*) finds only the non-auto transportation possibilities (sidewalks and bike lanes) to be important. *Progressives* significantly find freeway, highway, and bridge improvements to be less important than any other segment.

**TABLE THREE:
Importance of Possible Regional Transportation Investments
By Segment (Q7-Q11)**

Transportation Investments	Segment 1: <i>Dedicated Drivers</i>	Segment 2: <i>Ride Share Fans</i>	Segment 3: <i>Suburban Commuters</i>	Segment 4: <i>Roads and Rails</i>	Segment 5: <i>Progressives</i>	Segment 6: <i>Status Quo</i>	Unclassified
Public transit (Q7)	177	180	44	172	175	103	148
Highways and freeways (Q8)	163	187	188	182	129	103	159
Bikes, sidewalks, and safer streets (Q9)	171	182	121	70	186	99	129
Incentives to promote local government planning for environment friendly transportation (Q10)	176	185	104	132	176	93	134
Road maintenance (Q11)	190	193	184	174	163	113	171

Table Three shows that *Ride Share Fans* are much more likely to find all types of transportation investments important, and that the *Progressives* find the non-auto transportation investments (public transit, bikes, sidewalks, and environmentally-friendly transportation) to be important.

**TABLE FOUR:
Importance of Public Transportation Options by Segment
(Q12-Q18)**

Public Transit Options	Segment 1: <i>Dedicated Drivers</i>	Segment 2: <i>Ride Share Fans</i>	Segment 3: <i>Suburban Commuters</i>	Segment 4: <i>Roads and Rails</i>	Segment 5: <i>Progressives</i>	Segment 6: <i>Status Quo</i>	Unclassified
Expand light rail (Q12)	183	178	34	176	154	111	148
New, faster buses that can carry more people (Q13)	152	173	36	121	105	136	126
Expand commuter train (Q14)	171	181	36	155	152	120	141
Add more regular buses that run more often and reach more destinations (Q15)	173	185	44	130	144	145	144
Add more express bus service on freeways (Q16)	160	183	69	123	121	144	131
Expand community shuttle buses connecting to activity centers (Q17)	161	177	62	102	127	141	137
Add new streetcar service (Q18)	125	147	29	67	76	123	97

Table Four shows that *Ride Share Fans* find all types of possible public transportation reforms to be more important than any other segment, with the exception of segment 1 (*Dedicated Drivers*). *Progressives* do not find new streetcars or new, faster buses that carry more people to be important.