Survey Results of Transportation Demand Management Programs in the Tampa Bay Region

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SURVEY RESULTS OF TRANSPORTATION DEMAND MANAGEMENT PROGRAMS IN THE TAMPA BAY REGION

September 1994

Prepared for:

Florida Department of Transportation, District Seven through the TMA Clearinghouse

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ACKNOWLEDGEMENTS

The Tampa Bay Commuter Assistance Program evaluation survey was conducted and analyzed by the Center for Urban Transportation Research (CUTR) for the Florida Department of Transportation, District Seven. The project was conducted through the Florida TMA (Transportation Management Association) Clearinghouse, and was funded by the Florida Department of Transportation. CUTR thanks Bay Area Commuter Services, Inc., the Tampa Downtown Partnership TMO, the Westshore Alliance TMO, the Florida Department of Transportation, and the City of Tampa, and Hillsborough County TDM professionals for their assistance during the course of this study. The following CUTR staff assisted in the analysis of the survey data and the preparation of this report:

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INTRODUCTION
The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and the Clean Air Act Amendments (CAAA) of 1990 stress the importance of multimodal solutions and have elevated the role of transit and transportation demand management (TDM) in the transportation planning process. This legislation and new emphasis is a result of the changing commuter characteristics as well as consideration of the environment. Growing concern with traffic delays, poor air quality, and greater mobility needs have led professionals to refocus the objective of our transportation system to efficiently move quantities of people and goods rather than vehicles.

As more TDM programs have been initiated in response to these concerns, there has been increased interest in measuring their performance. Performance evaluation can have one or more of the following three goals: (1) improve the commuter assistance program (CAP) performance, practices and expectations; (2) facilitate communication between commuter assistance programs of all types based upon a common understanding of key quality and operational performance requirements; and (3) serve as a working tool for planning, training, marketing, and other uses.

Funding agencies such as the Florida Department of Transportation (FDOT) and planning agencies such as the metropolitan planning organizations (MPOs) are interested in measurable impacts from the TDM programs. How many commuters have been placed into non-SOV modes? Has the program affected pollution by reducing vehicle trips and vehicle miles of travel? Has the peak travel period been spread over more time? At what cost have these results been achieved?

TDM programs such as Bay Area Commuter Services, the Downtown Tampa Partnership Transportation Management Organization (TMO), and the Westshore Alliance TMO need feedback on their programs to continuously improve performance. However, this feedback should recognize their obligation to member needs and be sensitive to the fact that some of their ridematching activities may not show results in the short term. These activities may include increasing awareness and identifying areas where sidewalks and bus shelters will provide greater connectivity. Such activities set the stage for achieving desirable results over several years.
While they may differ on their preferred measures for TDM performance evaluation, FDOT and the CAPs hold a common belief that reasonable and defensible evaluations will help improve performance of TDM agencies and enhance their credibility as one strategy in meeting the area’s transportation needs.

To evaluate the effectiveness of the CAP program in FDOT District 7, CUTR was contracted through the TMA Clearinghouse to survey a representative sample of the registrants in the databases of the three rideshare agencies. By mailing a representative number of surveys to participants of the Bay Area Commuter Services, the Westshore Alliance TMO, and the Tampa Downtown Partnership TMO services, CUTR expected to receive valuable data about the program effectiveness. The sample was chosen to be evenly distributed by the numbers of people entered into the databases over the sample time of June, 1992 through October, 1993.

PROJECT GOAL
The goal of this project was to collect and analyze the data to quantify the results of the commuter assistance programs in changing commuter travel behavior.

METHODOLOGY
CUTR developed a sampling plan for estimating the rate of persons placed into alternative travel modes by BACS and the TMOs. This placement rate, when combined with other data, would enable CUTR to calculate the transportation impacts (i.e., vehicle miles traveled (VMT), vehicle trips (VT), pollution, or gasoline consumption) for each agency. For the purposes of drawing the sample, CUTR estimated the rate based on the experiences of other TDM programs outside of Florida since the programs in Tampa did not have a historical basis.

A survey was mailed with an enclosed, postage-paid envelope to nearly 4,000 of the more than 17,000 database registrants who are recognized by the agencies as ridematching candidates. A second mailing was made to improve the response rates. Presuming a 20-30% response rate (depending on the age of the data record), eleven hundred completed surveys were expected.
Following both mailings, CUTR received 778 completed surveys and nearly 800 undelivered, unopened surveys were returned by the Post Office due to bad addresses. A sample size of about 200 persons placed was expected; less than two dozen were received. The small sample size and the large variance in responses provide an error factor of fifty-one percent for vehicle miles traveled (VMT) and associated calculations, reflected in the data presented in this report.

THREE ASPECTS OF EVALUATION

The project goal was to focus on the current performance results. However, understanding how those results are achieved is a key to improving performance. How the CAP approaches its mission and carries out its tasks or deploys its resources, should have a direct bearing on the results. These three evaluation dimensions - approach, deployment and results - provide a balanced assessment of performance.

Approach refers to how the CAP addresses the goals and objectives set forth by FDOT and/or its Board of Directors. This includes an examination of the suitability and effectiveness of the methods and techniques to meet the stated goals. It is during the approach stage that a CAP will evaluate the dependance of its strategy on quantitative information that is objective, reliable, and consistently applied. The evaluation should find evidence of unique and innovative approaches, including effective adaptations of techniques developed and used by other commuter assistance programs.

Deployment is the extent to which the commuter assistance program's approaches are applied to all relevant programs and activities. The factors used to evaluate deployment include the effective use of the approach: in key activities (e.g., employer outreach); in the development and delivery of products and services (e.g., how the CAP selects new services); and in interactions with customers, employers, the Board of Directors, funders, suppliers of goods and services, and employees.

Results are the achievements of the purposes contained in the organization's goals and objectives.
The factors used to evaluate results include one or more of the following: current performance levels; performance levels relative to appropriate comparisons and/or benchmarks; rate of performance improvement; demonstration of sustained improvement and/or sustained high-level performance; and, breadth and importance of performance improvements.

Prior to this project, BACS and the TMOs had few benchmarks of their past performance or from other areas within or outside of Florida by which to measure their performance. The following will discuss several of the key performance factors required to measure results.

MEASURING RESULTS
There are several contributing factors that can influence the desired results of reduced VMT, VT, etc. The flowchart (see Figure 1) identifies these factors and the following paragraphs summarize the relationships.

Marketing approaches such as advertising, employer outreach, public relations, advocacy of policies, and investments in amenities such as sidewalks and bus shelters are intended to generate awareness and use of alternative modes. Many of these commuters or employers will seek information and/or assistance from BACS or the TMOs to find a transportation option that meets their needs. This is frequently done through the employer’s Employee Transportation Coordinator (ETC).

Data received from these individuals and employers are entered into the database, and most of these people are registered for the ridematching system. A list is produced for the individuals to identify possible ridesharers, or a letter is printed indicating that no matches were found. If registrants receive a good list, they may contact one or more of the people on this list, and may or may not form or join a car or vanpool. Even if the applicants do not rideshare with one of the people identified by the rideshare agency, the commute habits may still have been influenced by the actions of the CAP by encouraging commuting with a neighbor, coworker, or household member.
Figure 1

Ride Matching Flowchart

**APPROC H**

- GOALS & OBJECTIVES
  - Creative, unique Strategies
  - Adapt successful Techniques

**DEPLOYMENT**

- Products & Services
  - Pricing Strategies
- Marketing & Promotion
  - Distribution Channels

**RESULTS**

- Customers
  - Interested in Services
  - Not Interested in Services
- Service Rate
  - Received Info & Asst. on Alt. Mode
  - Received Letter that No Matches and/or Bus Service is Available
- Customer Followup
  - Received Follow-up Assistance by TMO, ETC, or BACS
  - Did Not Receive Follow-up Assistance by TMO, ETC, or BACS

**Customer Action**

- Took Action (e.g., called people on the matchlist or bus co.)
- Was Contacted by Another Customer
- Did Not Initiate Action Step

**Contact Rate**

- Reached Person on Matchlist or Bus Co.
- Did Not Reach Person on Matchlist or Bus Co.

**Placement Rate**

- Began Using Alt. Mode Due to Assistance
- Began Using Alt. Mode Due to Influence

**Usage Rates**

- Increased Frequency of Use
- Increased Participation or Increased Mode Share
- Increased Duration of Alt. Mode

**Transportation Benefits**

- VMT, VT, Pollutant Reduction
While most of the components of the flowchart are self-explanatory, a few data items warrant further explanation. The product of the following data can be used to estimate the transportation benefits for BACS and the TMOs:

**Number of customers:** Number of different commuters who have used the services over the reporting period. Usually, this is not the same as the total number of customers in the database as some of them may have been registered with the CAP for longer than the reporting period. Once a standard definition (e.g., each individual who requested CAP assistance over the 12 month reporting period) is developed by FDOT, this number should be tracked by the CAP. It will be the key variable for monitoring effectiveness once the following rates are established.

**Service Rate:** Number of times a commuter contacts, or is contacted by, the service agency. If one customer is provided two matchlists, and later receives requested bus route information, three services have been provided to one customer over the reporting period.

**Customer Follow-up:** Number of times the commuter is assisted to arrange an alternative mode by the service agency. This can be active coordination of a meeting or 'zipcode parties' or assistance for the commuter to take the initiative to contact a potential partner. Follow-up may also involve transit route information and assistance.

**Customer Action:** Evidence that the commuter was in contact with a potential carpool partner.

**Contact Rate:** Number of commuters served who successfully contact the individual or service agency with whom they were matched by the CAP or TMO. Even if a carpool is not formed, the number of people who follow-through and are able to contact their potential partner is relevant to the carpool process and can be evaluated.

**Placement Rate:** Percentage of customers who form a pool or ride transit as a direct or indirect
result of the CAP’s efforts. The placement rate was determined from this survey of the BACS and TMOs customers. There are three types of placement rates to be identified: customer direct placement rate; customer indirect placement rate; and, general public indirect placement rate. The direct placement rate focuses on those customers who change their travel behavior as a direct result of a CAP program or service. The customer indirect placement rate refers to those who change travel behavior but do not attribute the change to a specific service. The remaining group, the general public indirect placement rate, refers to those who are affected by marketing of the program or take advantage of a service (e.g., use a new bikepath) that never make direct contact with the CAP.

**Frequency:** Average number of days per week a person placed into a pool or bus actually uses this mode to commute. CAP services also should strive to increase the frequency of use of these options.

**Average Carpool or Vanpool Occupancy:** The average number of passengers per vehicle involved in carpools or vanpools during the reporting period. This information will show results of the CAP’s efforts to increase the size of existing pools, even if no carpools are formed.

**Duration:** The average life of the carpool, for example, may be shorter or longer than the funding period. Some studies report a carpool duration average of two years. Including pool duration as an important variable in the effectiveness equation also recognizes the need and funding required for maintaining existing pools and bus ridership.

Once the placement, frequency, average occupancy, and duration rates are determined, program effectiveness can be determined by applying those rates to the number of customers and related changes to travel behavior (i.e., reductions in VMT per person placed)

**SURVEY RESULTS**
To determine the results of the efforts of these programs, and establish base-line data for future
evaluations, a logical starting place is to view the frequency of usage of the different commute alternative modes encouraged and facilitated by the transportation agencies. The marketing initiatives used by the agencies should address both mode changes from single occupant vehicles, and increased frequency of these alternatives.

Table 1
Mode Split and Frequency

Question: Please Circle the Number of Days in a typical week that you use each of the Following Modes to get to Work.

<table>
<thead>
<tr>
<th>Workdays per week</th>
<th>Work 0 Days/wk</th>
<th>Work 1-3 Days per Week</th>
<th>Work 4-5 Days per Week</th>
<th>Work 6-7 Days per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commute Frequency</td>
<td>Same Mode</td>
<td>Various Modes</td>
<td>Same Mode</td>
<td>Various Modes</td>
</tr>
<tr>
<td>Total #</td>
<td>3.2%</td>
<td>1.7% 0.1%</td>
<td>80.5% 4.8%</td>
<td>7.5% 2.3%</td>
</tr>
<tr>
<td>Drive Alone</td>
<td>0.8% 0.1%</td>
<td>68.3% 4.2%</td>
<td>6.4% 1.5%</td>
<td></td>
</tr>
<tr>
<td>Carpool</td>
<td>0.1% 0.1%</td>
<td>6.4% 3.2%</td>
<td>0.4% 1.5%</td>
<td></td>
</tr>
<tr>
<td>Vanpool</td>
<td>0.4%</td>
<td>2.2% 0.1%</td>
<td>0.1% 0.3%</td>
<td></td>
</tr>
<tr>
<td>Transit</td>
<td>0.4%</td>
<td>2.8% 1.5%</td>
<td>0.4% 0.5%</td>
<td></td>
</tr>
<tr>
<td>Bicycle</td>
<td>0.4%</td>
<td>0.4% 0.3%</td>
<td>-- 0.5%</td>
<td></td>
</tr>
<tr>
<td>Motorcycle</td>
<td>0.1%</td>
<td>-- --</td>
<td>-- --</td>
<td></td>
</tr>
<tr>
<td>Walk</td>
<td>0.3%</td>
<td>0.3%</td>
<td>-- 0.4%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>0.3%</td>
<td>0.1% 0.3%</td>
<td>-- 0.4%</td>
<td></td>
</tr>
</tbody>
</table>

n=778

Three-fourths of the people who responded to the survey commute alone every day they work, though six percent drive alone part-time (See Table 1). Approximately one-third of the carpoolers share the ride on a part-time basis. Another positive indicator for Tampa Bay TDM professionals is the market which remains untapped of two or three day per week ridesharers. Many people who may not want or be able to carpool four or five days a week, may be willing to try
ridesharing one to three days. There is also, statistically, a low percentage of cyclists, walkers, and transit riders.

To persuade commuters out of their SOV mode, the CAP must provide the opportunity and encouragement for the individuals to car/van pool. The most frequent method of promoting ridesharing is through the matchlist which must be delivered very soon after an individual expresses an interest in ridesharing. The more memorable a matchlist is, the more effective it will be. The matchlist needs to make an impression on the person for whom it is intended. Sometimes it is advisable to deliver more than one matchlist per year to an applicant, to get the desired impressions.

Table 2
Did you receive a list of persons interested in carpooling/vanpooling?

<table>
<thead>
<tr>
<th>Did you receive a list of persons interested in carpooling/vanpooling?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>30.2%</td>
</tr>
<tr>
<td>No</td>
<td>47.4%</td>
</tr>
<tr>
<td>Received letter stating the TDM agency could not find matches at this time</td>
<td>15.0%</td>
</tr>
<tr>
<td>Did Not Receive &quot;No Matches&quot; Letter</td>
<td>22.6%</td>
</tr>
<tr>
<td>Did Not Remember</td>
<td>9.8%</td>
</tr>
<tr>
<td>No Response</td>
<td>22.4%</td>
</tr>
</tbody>
</table>

Less than one-third of the people surveyed remember receiving a matchlist with prospective ridesharers, although only one of every six of these people (5.1% of all surveys returned) attempted to contact at least one person listed. Less than two percent of the people who returned a survey formed or joined a carpool or vanpool with people on their matchlist.

Close to half of the people believe they did not receive a matchlist. Nearly one third of the
respondents got what is called a "sorry letter" which informs them that when their data was processed, no matches were found. Almost one quarter of the people surveyed reported that they had received nothing from the CAP. In other parts of the country, programs reinforce the suggestion to use alternative transportation, and to offer assistance by following the distribution of the matchlist with a phone call to the commuters they serve to improve effectiveness.

Almost all of the people in the rideshare database are supposed to have received at least one matchlist, and those who received a "sorry letter" on the initial match attempt are supposed to be reprocessed every two to three months until a successful matchlist is produced. Either the matchlists are not reaching the commuters for whom they are intended, or these lists are disregarded or discarded before they can be noticed by the commuter.

The quality and scope of services directly affect customer retention and referral business which are far less expensive than attracting new customers. Marketing surveys have shown that dissatisfied customers will tell an average of ten other people, and people with positive experiences will tell five. This tool effectively gauges the quality of service and products the participating commuters believe they receive. If either the matchlist accuracy or the customer service aspects fall below the commuter's expectations, the loss of repeat and referral business to the CAP will be significant.

| Table 3 |
| Repeat/Referral Business Indicators |
| --- | --- | --- | --- |
| Question | YES | NO | No Response |
| Would you use our services again? | 33.7% | 14.0% | 52.3% |
| Would you recommend our services to a friend? | 46.8% | 9.0% | 44.2% |

The people who would use the CAPs' services outnumbered those who would not, by almost five to two. The ratio should be higher, but when weighed against the number of people who returned
a survey without completing this section, something else becomes apparent. More than half of the respondents felt neutral, or realized that they were not qualified to make a determination on this question, perhaps because they had only minimal, if any contact with the CAP agencies. The fourteen percent who said they would not use the services again, are people who were dissatisfied, or felt that the services would not meet their needs. When the nine percent of non-referrals is considered, a more accurate assessment of the level of customer satisfaction can be drawn.

Five out of every six people who responded would refer the services to a friend. This provides a baseline measurement of customer service expectations for future surveys. The number of people who responded to this question was higher than the number for repeat business, leading to the conclusion that although a person may not feel qualified to judge the quality of the service, the function of the services, as understood by the respondents, is favorable.

Although carpooling has gotten the most attention for its practicality as a commute alternative, the agencies need to understand the wants of the commuters they serve. There are other initiatives which the customer may consider to accomplish the goals of the CAP to reduce pollution and traffic congestion by reducing the number of SOVs on the Tampa Bay area roadways.

Table 4
Alternative Use Within the Last Three Years

Question: In the past 3 years, have you regularly carpooled, vanpooled, or taken the bus to work (even if you are not carpooling, vanpooling or using transit NOW)?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>24.3%</td>
</tr>
<tr>
<td>No</td>
<td>67.2%</td>
</tr>
<tr>
<td>No Response</td>
<td>8.5%</td>
</tr>
</tbody>
</table>

Nearly one out of every four database registrants has tried a popular commute alternative regularly within the last three years, and three out of five of these people still rideshare. For almost half
of these individuals, carpooling was the option of choice.

One of the functions of the agencies, once a car/vanpool has been established, is to work to extend the duration and increase the occupancy of these ridesharing arrangements. The following table suggests a baseline of this data for future surveys.

Table 5

Average Carpool/Vanpool Duration and Occupancy

<table>
<thead>
<tr>
<th>Duration and Occupancy:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg. car/vanpool duration</td>
<td>3.1 years</td>
</tr>
<tr>
<td>Avg. carpool occupancy</td>
<td>2.23 persons</td>
</tr>
<tr>
<td>Avg. vanpool occupancy</td>
<td>8.87 persons</td>
</tr>
</tbody>
</table>

n=the number of respondents who provided data for this field

The average carpool or vanpool participant has been ridesharing for more than 3 years in their current pool, indicating that once established, maintained pools should be seen as investments to reduce VMT and VT, and provide a lasting benefit to the Bay Area.

These carpools and vanpools involve household members, non-household relatives, co-workers and a few others. Over 53 percent of the pools include members from the same household. About 10 percent include non-household relatives. Co-workers represent 65 percent of the pool participants, and "others" only comprise three percent of the carpools and vanpools.

There is an evident market of people who recently used these options and/or are willing to use these alternatives. The obstacles and inconveniences need to be identified and addressed at the same time incentives are instituted to keep these commuters faithful to the alternative modes.

For the 40 percent who tried, and ceased ridesharing regularly, the service agency can address some of the top reasons cited for discontinuing this commute strategy. Many of the top reasons
are convenience issues which may be resolved with information obtained during a follow-up call between the agency and the customer.

Table 6

Top reasons given for discontinuing a carpool/vanpool

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percent of Respondents citing reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work schedule changed</td>
<td>32.1%</td>
</tr>
<tr>
<td>Took too much time</td>
<td>23.8%</td>
</tr>
<tr>
<td>Bus route changed</td>
<td>20.2%</td>
</tr>
<tr>
<td>Need car at work</td>
<td>16.7%</td>
</tr>
<tr>
<td>Car fixed</td>
<td>13.1%</td>
</tr>
<tr>
<td>Changed job/work site</td>
<td>13.1%</td>
</tr>
<tr>
<td>Other ridesharers quit</td>
<td>10.7%</td>
</tr>
<tr>
<td>Costs too much</td>
<td>9.5%</td>
</tr>
<tr>
<td>Moved</td>
<td>7.1%</td>
</tr>
<tr>
<td>Too stressful</td>
<td>5.9%</td>
</tr>
<tr>
<td>Company relocated</td>
<td>5.9%</td>
</tr>
<tr>
<td>Other ridesharers became unreliable</td>
<td>2.4%</td>
</tr>
<tr>
<td>Other</td>
<td>5.9%</td>
</tr>
</tbody>
</table>

Other issues, of course, represent expected situational changes which are unavoidable (see table above), and may demand immediate response from the CAP to re-enroll a participant in the program at a new address or worksite, to overcome the obstacle.

The top two reasons cited by commuters who no longer use alternatives to the SOV can be
addressed by the TDM agency. When an employee's work schedule changes, if he or she contacts the agency, a new matchlist can be processed to identify better car/van pool partners. The individuals for whom a carpool "took too much time" may be kept in a rideshare arrangement by identifying potential partners with closer schedules and/or home or work sites. For the commuters who moved or changed their worksite, they need only request to change the information in the agency's database to receive a new matchlist with better information. Frequently, as demonstrated above, there are many factors which affect the commuting habits of the surveyed employees, and the agency must be as flexible and responsive as possible. By customizing the services offered by the CAP and meeting commuters' needs on a personal and individual basis, the car and vanpools which have been established at moderate cost can be maintained at a nominal expense. According to the US Office of Consumer Affairs, the cost of obtaining a new customer is five times the cost of retaining an existing customer.

Because the scope of services provided by BACS and the TMOs extends beyond ridematching it is important to remember that by affecting a change in commuter behavior, a successful end is achieved, although the means may not easily be tracked or measured.

| Table 7 |
|---|---|---|
| Did our program influence you in any way to car/van pool, or use transit? | Yes | No | No Response |
| | 9.1% | 72.0% | 18.9% |
| | 71 | 560 | 147 |

The nine percent of survey respondents who indicated that their behavior was affected by the CAP services may not have requested rideshare services, but could have been influenced by the agencies' advertising or presentations which demonstrate the cost savings and other benefits of using alternatives to the SOV. The fact that this number of people have been influenced to try one of the alternatives, is a starting point from which to encourage continued and more frequent use
of the commute option.

The thrust of the CAP services is focused on providing the encouragement and services necessary to prompt commuters in the district to rideshare or use transit regularly. The tool most frequently employed is the matchlist generated by a computer program which searches the entire database of potential ridesharers for individuals with similar commute patterns and locations.

The quality of this information is vital to the success of the program, as determined by changing commuter habits. The first step for the potential ridesharer, once he/she has received this list, is to contact the people listed and try to meet with at least one of them to discuss, and possibly establish a carpool.

Because of the strategy once used by some of the rideshare agencies in the Tampa Bay area, many of the respondents could not recall, or had no knowledge of their names being submitted and added to the database, or had little control to prevent this. To build a quantitatively powerful database, it had been a tactic of some of the CAP services to receive entire employee databases from some of the area's largest employers. The advantages of this system are realized in the likelihood of matching any future entries, and the ease of entering the name, address, and employer information electronically, rather than the standard touch-typing data entry. The negative result is a large database of disinterested persons. With 47 percent of the respondents indicating they never received information from BACS or the TMOs, and the low placement rate, results of this survey clearly indicate problems with the approach that was in place at the time of the survey.

Recently, these area agencies have refined the way in which this data is collected. Now, the employees of the large, targeted employers have the option of checking a "yes" box on a brief survey they receive in the workplace if they wish to be entered into the ridematching system. Their data will only be entered if they request it. Results of this survey support this strategic change.
Although the database may not continue to grow at the same rate, the data will be qualitatively better, involving only those people who will consider car and van pooling. The pool formation rate should increase because the data is better and the people on a matchlist are more likely to participate. The percentage of people in the database who are actively pooling will rise also, relative to the total database population.

**Figure 2**

Commuting Options Interest

The above figure shows that the registrants have varying degrees of interest in each of the listed alternatives. Although very few people currently reported working at home, the highest interest
was in this option. It benefits the commuter assistance programs to continue providing employers with telecommuting information.

Telecommuting is a commute option with few or no formal in-office hours other than those in the home office. There are several benefits to this arrangement. By eliminating the trip completely, VMT and VT are reduced significantly. Secondly, an employer who implements a telecommuting program can affect more commuters in an efficient, measurable way. The telecommuters' employer will get a happier, more productive worker, and significant cost-savings may be realized in the use of both parking subsidies and office space.

Despite the interest generated by employees, there are limitations which must be considered. Many jobs are unsuitable for a telecommute arrangement, and for employees whose roles are suitable, employers and managers are resistant to initiate a telecommuting program because they feel that the employee will become less productive if not directly supervised in the office. Other issues are equipment costs in the home and the office, insurance liability, security, and the loss of social aspects of the job. The Florida State Department of Management Services has a telecommuting handbook designed for state employees which discusses many of these issues, and provides a sample telecommute arrangement contract.
This figure graphically represents the travel distances for the respondents. The individual bars indicate the percentage of respondents who drive specific distances one way. The line illustrates cumulative totals of these percentages, for example, 70% of the participants drive less than 15 miles to work.

Half of the respondents commute at least eleven miles, providing the basis for a substantial carpool market in the Tampa Bay area since about 69% of all carpools fall into this category (source: 1990 Nationwide Personal Transportation Study). At one end of the chart, one fifth of these people are good candidates for bicycle and pedestrian alternatives, due to commutes shorter than five miles. On the other end of the commute spectrum, ten percent of the respondent
commuters must drive more than twenty-five miles between their home and workplace, providing a strong market for vanpools and telecommuting.

**COST EFFECTIVENESS RESULTS**

One objective of this effort is to provide a low cost basis for FDOT Districts to quickly evaluate the cost effectiveness of TDM programs. By converting the CAP results of placing people into HOV modes to "passenger trips" and allocating the costs of the programs to those units, FDOT and others will have a basis of comparison of BACS and the TMOs to other transit alternatives.

Please note that this comparison is more a measure of mobility cost than trip reduction cost. While the cost per trip reduced and other efficiency factors are useful for relative comparison to benchmark TDM programs, the cost per passenger trip is a better tool for measuring agency effectiveness relative to peer agencies and the cost of operating public transit service.

**Table 8**

<table>
<thead>
<tr>
<th>Effectiveness and Cost Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total No. of Customers</td>
</tr>
<tr>
<td>Customer Placement Rate (direct and indirect)</td>
</tr>
<tr>
<td>Number of Persons Placed</td>
</tr>
<tr>
<td>Total Expenditures for Period*</td>
</tr>
<tr>
<td>Cost Per Person</td>
</tr>
<tr>
<td>Cost Per Person Placed**</td>
</tr>
<tr>
<td>Agency Cost Per Passenger Trip***</td>
</tr>
</tbody>
</table>

* As reported by BACS, and the Westshore and Tampa Downtown TMOs.
** Assumes the average duration of those persons placed into an alternative mode is one year.
*** Cost/pass. trip = Total Expenses/(No. of Persons Placed x 2 trips/day x 4 days per week x 52 weeks/yr)

Clearly, there are significant market differences between transit and the CAPs and this sketch planning tool should not be the sole basis used for allocating funds.
There are several issues that FDOT and CUTR should resolve. One issue is the cost basis of comparing cost effectiveness of CAPs to other FDOT projects. Unlike CAPs, transit agencies offset some of their costs through the collection of revenue. Comparing the operating costs would clearly give the misleading impression that the transit average cost per trip of $2.16 is significantly less cost effective than CAPs. The exclusion of some forms of revenue (e.g., passenger fares) for transit appears to provide a reasonable basis for comparison. As an alternative, FDOT might treat only the State and Federal grant shares for transit as a comparative standard.

Another issue is the acceptance of the duration rate for pool formation. CUTR recommends that the "investment" in the people placed into a pool or bus be spread over the life of that pool, regardless of the reporting period.

Table 9
Cost per VMT Reduced

<table>
<thead>
<tr>
<th>Total CAP Budget *</th>
<th>Average VMT-error</th>
<th>Average VMT</th>
<th>Average VMT+error</th>
</tr>
</thead>
<tbody>
<tr>
<td>$938,877</td>
<td>$0.784</td>
<td>$0.400</td>
<td>$0.245</td>
</tr>
<tr>
<td>1,197,401</td>
<td>2,347,845</td>
<td>3,545,246</td>
<td></td>
</tr>
</tbody>
</table>

* Does not include In-Kind services.

To quantify another measure of the CAPs' effectiveness, the money spent during the survey period is divided by the total VMT reduced (by those individuals influenced to carpool or ride the bus by the CAPs) to yield the cost of reducing one vehicle mile of travel. The small sample of these 'influenced' individuals, combined with a large standard deviation, results in a standard error of +/- 51 percent, however the programs' range for this value is between about a quarter and seventy-eight cents.
### Table 10
VMT and Pollution Reduced by BACS and the TMOs

<table>
<thead>
<tr>
<th>Pollution Factors</th>
<th>VMT - Error</th>
<th>VMT</th>
<th>VMT + Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pollutant</td>
<td>Constants</td>
<td>1,197,401</td>
<td>2,347,845</td>
</tr>
<tr>
<td>CO-Carbon Monoxide</td>
<td>.01690 kg/mile</td>
<td>20,236 kg</td>
<td>39,679 kg</td>
</tr>
<tr>
<td>NOx-Nitrous Oxides</td>
<td>.00258 kg/mile</td>
<td>3,089 kg</td>
<td>6,057 kg</td>
</tr>
<tr>
<td>VOC-Volatile Organic Compounds</td>
<td>.00213 kg/mile</td>
<td>2,550 kg</td>
<td>5,001 kg</td>
</tr>
<tr>
<td>Total Kilograms</td>
<td></td>
<td>25,875 kg</td>
<td>50,737 kg</td>
</tr>
<tr>
<td>Total Pounds</td>
<td></td>
<td>56,995 lbs</td>
<td>111,755 lbs</td>
</tr>
<tr>
<td>Total Tons</td>
<td></td>
<td>28.498 tons</td>
<td>56 tons</td>
</tr>
</tbody>
</table>

Another goal of the Florida Commuter Assistance Program is to reduce the pollution caused by traffic congestion. By multiplying the emissions standards per mile (of the Hillsborough County MPO Air Quality Conformity Report) by the range of VMT reduced, Table 11 provides the total positive impact of the programs in FDOT District Seven. Between twenty-eight and eighty-four tons of emissions were reduced during the survey period.
RECOMMENDATIONS

1. BACS and the TMOs should share the results of this survey with their respective Boards of Directors with the goal of continuous program improvement and fostering communication in deciding the direction of the individual agencies. The aforementioned figures should be used as baseline information to measure progress from one period to the next.

2. There is no comparable cost per VMT reduced and cost per vehicle trip reduced readily available to draw conclusions as to their relative trip reduction effectiveness to alternatives such as expanding capacity or adding transit service. However, the cost per passenger trip ($1.40) is comparable to the cost per passenger trip for transit ($2.16 in Florida). FDOT should consider using the cost per passenger trip as one of the reporting requirements for BACS and the TMOs.

3. TDM strategies are viable alternatives in this region. Commuter interest exists in alternatives to the single occupant vehicle in the Tampa Bay region. In particular, commuters seem most interested in telecommuting options. FDOT, BACS, TMOs and CUTR should examine telecommuting’s market potential and resultant transportation benefits.

4. Emphasis on building the commuter database at BACS has not yet demonstrated changes in behavior. BACS should distinguish between commuters who asked to be added to the ride-matching database, and those who simply failed to return the letter requesting not to have their names electronically entered. The latter group could be used for direct marketing of commute alternatives and future programs by the BACS and the TMOs. FDOT should be prepared for a significant decline in the customer database size but should expect to see increases in the placement rate (i.e., similar number of people influence but from a smaller pool of customers).
5. In the next quarter, TMOs should channel existing resources to follow-up with registrants to identify those who are interested in the services offered, while treating those who are not interested only as "leads" for target marketing (e.g., introduction of vanpool program).

6. BACS and the TMOs should focus strategies and tactics on each element of the alternative mode decision process (e.g., registration rate, matching rate, contact rate, placement rate, frequency, occupancy, duration and customer satisfaction). Each of these aspects contributes to changes in travel behavior which affect vehicle trips and vehicle miles of travel. FDOT should work with these agencies to develop, fund, and monitor approaches in these areas.

7. In consultation with BACS and the TMOs, FDOT should establish common criteria for tracking program performance and jointly fund evaluations of BACS and the TMOs throughout District Seven. These evaluations should be conducted by a third-party. To minimize costs, consideration should be given to collecting performance data (e.g., placement rate, duration, frequency, pool occupancy, etc.) only once every two years. A similar precedent can be found in the "waiver" process for Section 15 reporting requirements for transit agencies. This waiver allows smaller transit agencies the option of using the previous year's ridership count as part of their federal fund reporting instead of incurring the cost necessary to collect the data yearly. If the transit agency chooses, it may still collect ridership statistics yearly, and will usually choose to do so when their ridership improves. This data will become the accepted formula factors applied to constants against which the early tracked statistics such as number of customers will be factored throughout the two year period. If the agencies believe they have significantly affected these constant multipliers, they may reevaluate using methods reviewed by the TMA Clearinghouse and approved by FDOT prior to the biannual survey and analysis.

8. TMOs and BACS should place a higher priority on customer retention, follow-up, and
support. FDOT should recognize the importance and effort required to maintain current market share in addition to market growth (i.e., size of the database). FDOT should require TMOs and BACS to include activities in these areas, and allow them the freedom to decide how to implement these programs.

9. BACS, TMOs and FDOT should closely monitor trends and changes in market needs to improve relationships with customers, knowledge of customer requirements, and the key quality factors that encourage their participation. They should establish benchmarks for these key factors based on TDM programs in other parts of the country.

10. FDOT should explicitly recognize that some activities of BACS and the TMOs will not immediately result in changes in travel behavior (e.g., building support for the provision of amenities and policies supportive of alternative modes such as bicycling, transit, etc.). BACS and the TMOs should not lose sight that their approaches and deployment strategies are based on reaching a desired end result - typically, a change in travel behavior or employer policy. It is healthy to periodically review these strategies and their contribution to the organization's goals and objectives relative to the resources allocated to them.

11. FDOT should develop information on the average duration of alternative mode use in Florida. Duration can have a significant impact on the benefits received and the cost effectiveness of the program. FDOT should develop a system for tracking the actual individuals placed into a pool for several years.

12. In consultation with FDOT, BACS and the TMOs, CUTR should review the survey methodology to be used for future surveys (mail, phone, or employer distribution) to improve response rates and protect confidentiality.
APPENDIX A

TAMPA BAY COMMUTER SURVEY

1. Please circle the number of days in a typical week that you use each of the following modes to get to work.

   Days per week
   a. Drive alone  7 6 5 4 3 2 1 0
   b. Carpool  7 6 5 4 3 2 1 0
   c. Vanpool  7 6 5 4 3 2 1 0
   d. Transit  7 6 5 4 3 2 1 0
   e. Bicycle  7 6 5 4 3 2 1 0
   f. Motorcycle  7 6 5 4 3 2 1 0
   g. Walk  7 6 5 4 3 2 1 0
   h. Other  7 6 5 4 3 2 1 0
   □ Do not work

2. If you currently carpool or vanpool:
   a. How long have you been in your current carpool or vanpool? ______ months
   b. Including yourself, how many people are usually in the car or van? ______ persons
   c. With whom do you regularly carpool/vanpool? (Please check boxes below).
      Household Members □ Yes □ No
      Non-household Relatives □ Yes □ No
      Co-Workers □ Yes □ No From matchlist? □ Yes □ No
      Other □ Yes □ No From matchlist? □ Yes □ No

3. If you currently use transit, how long have you been using it? ______ months

4. Did you request carpool, vanpool or transit information from our organization in the past twelve months?
   □ Yes □ No

5. Did our program influence you in any way to carpool, vanpool or use transit?
   □ Yes □ No

6. Did you receive a list of persons interested in carpooling/vanpooling?
   □ No IF NOT, did you receive a letter from us stating we were unable to locate others with compatible schedules with whom you might carpool/vanpool?
      □ Yes □ No □ Don't Remember
   □ Yes IF SO, how many people did you attempt to call from your list? ______ □ None
   Did you form or join a carpool/vanpool with any people on your list?
      □ Yes □ No

7. Did you form or join a carpool/vanpool because your name appeared on someone else’s list?
   □ Yes □ No
   If Yes, are you still in a carpool with any of these people? □ Yes □ No
   IF NOT, how long did the carpool last? ______ months
8. In the past 3 years, have you regularly carpooled, vanpooled, or taken the bus to work (even if you are not carpooling, vanpooling, or using transit NOW)?

☐ Yes:  ☐ Carpool  ☐ Vanpool  ☐ Transit
☐ No

If “Yes,” what is the status of your ridesharing?

☐ Still carpooling/vanpooling/taking transit
☐ No longer carpooling/vanpooling/taking transit because:
   ☐ work schedule changed
   ☐ moved
   ☐ company relocated
   ☐ changed job/work site
   ☐ other ridesharers quit
   ☐ other ridesharers became unreliable
   ☐ other

9. If you were to drive directly to work by yourself (with no stops), how many MILES would it be one way? ______ miles one way

10. If you were to drive directly to work by yourself (with no stops), how many MINUTES would it be one-way? ______ minutes one-way

---

THE FOLLOWING QUESTIONS PERTAIN ONLY TO THOSE WHO CARPOOL/VANPOOL AT LEAST ONE DAY PER WEEK. IF YOU DO NOT CARPOOL/VANPOOL, PLEASE GO TO QUESTION 15.

11. On the days that you drive for the carpool/vanpool, how many additional MILES do you drive to pick up the other carpoolers/vanpoolers?

______ additional miles ☐ Never drive for the carpool/vanpool

12. How many additional MILES do you drive to drop them off at their worksite?

______ additional miles ☐ Never drive for carpool/vanpool

13. On the days when you ride as a passenger in your carpool/vanpool, are you:

☐ Picked up at home  ☐ Drive ______ miles to a pick-up point  ☐ Never a passenger

14. If you are leaving a car at home because of carpooling/vanpooling, is it being used by another driver who did not have another vehicle available before?

☐ No  ☐ Yes  ☐ Never leave vehicle at home  ☐ Don’t have a vehicle

If “Yes,” about how many MILES per day, on average, does this other driver drive?

______ miles per day

About how many TRIPS per day, on average, does this other driver make?

______ trips per day

How many of these trips are made between 6 a.m. and 9 a.m. weekdays?

______ trips
15. Please indicate how interested you are in each of the following commuting options by checking the appropriate box.

<table>
<thead>
<tr>
<th>Already use this option</th>
<th>Interested</th>
<th>Interested on an emergency basis only</th>
<th>Not interested at this time</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Carpooling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Vanpooling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Using Transit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Bicycling/Walking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Working at Home</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. When deciding to use our agency's services, how important is each factor? (please circle)

<table>
<thead>
<tr>
<th>Very Unimportant</th>
<th>Neutral</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivers information in a timely manner</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Knowledgeable</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Courteous</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Convenient</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Responsive</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Resolves problems quickly</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Accurate</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

17. Please circle the letter that best describes our performance:

<table>
<thead>
<tr>
<th>A = Excellent</th>
<th>B = Above Average</th>
<th>C = Average</th>
<th>D = Needs Improvement</th>
<th>F = Terrible</th>
<th>N = No Opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivers information in a timely manner</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
</tr>
<tr>
<td>Knowledgeable</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
</tr>
<tr>
<td>Courteous</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
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<tr>
<td>Convenient</td>
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<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
</tr>
<tr>
<td>Responsive</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
</tr>
<tr>
<td>Resolves problems quickly</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
</tr>
<tr>
<td>Accurate</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
</tr>
<tr>
<td>Value of service provided</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
</tr>
<tr>
<td>Overall performance</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
</tr>
</tbody>
</table>

18. Would you use our services again? ☐ Yes ☐ No

19. Would you recommend our services to a friend? ☐ Yes ☐ No
YOUR ANSWERS TO THE FOLLOWING QUESTIONS ARE FOR STATISTICAL PURPOSES ONLY AND WILL REMAIN CONFIDENTIAL.

20. How long have you worked at your current worksite? _______ years

21. How many people are employed by your company (at your worksite)? _______ employees

22. Are you: □ Male □ Female

23. How old are you? _______ years

24. Which of the following best describes the kind of work you do:
   □ Secretarial/Clerical □ Production/Crafts □ Management
   □ Executive □ Maintenance □ Sales/Service
   □ Professional/Technical □ Other _________________

25. What is the highest level of education you have completed?
   □ High School □ Technical School □ Graduate School/
   □ Some College □ College □ Post Graduate Work

26. In total, how many motor vehicles, including cars, trucks, vans, and motorcycles, are owned or leased by members of your household? _______ household vehicles

27. How often do you have a vehicle available for getting to work?
   □ Always □ Sometimes □ Never

28. What is your home zip code? ___________________

29. How long have you lived at your current address? _______ years

30. Including yourself, how many people are in your household? _______ people

31. How many members of your household are employed? _______ workers

32. What is your combined total annual household income?
   □ less than $20,000 □ $20,000 to $34,999 □ $35,000 to $49,999
   □ $50,000 to $64,999 □ $65,000 to $79,999 □ $80,000 to $99,999
   □ $100,000 or more

33. To which of the following ethnic groups do you belong?
   □ White, non-Hispanic □ Black, non-Hispanic □ Hispanic □ Asian □ Other

THANK YOU!

Please return this survey by MARCH 17 in the envelope provided. If you have misplaced the envelope, mail to CUTR/USF, 4202 E. Fowler Ave, ENB 118, Tampa, FL 33620-5350.