ITEM #3

METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS

COMMUTER CONNECTIONS
TRANSPORTATION DEMAND MANAGEMENT
EVALUATION PROJECT

FISCAL YEAR 2004
APPLICANT DATABASE
ANNUAL PLACEMENT SURVEY REPORT
APPLICATIONS RECEIVED DURING JULY-SEPTEMBER 2003
(NOVEMBER, 2003 SURVEY)

Prepared for:

Metropolitan Washington Council of Governments

Prepared by:

LDA Consulting
Washington, DC
(202) 548-0205

in association with:

CIC Research, Inc.
San Diego, CA
(619) 637-4000

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LDA CONSULTING

EXECUTIVE SUMMARY

This Survey Report presents results of an analysis of commuter transportation assistance services offered by the Commuter Connections program of the Metropolitan Washington Council of Governments (COG) to commuters and employers in the Washington, DC region.

Commuter Connections program services include: carpool and vanpool matchlists, transit route and schedule information, information on Park & Ride lot locations and HOV facilities, and employer transportation demand management (TDM) and telework assistance. Commuters obtain services by calling a toll-free telephone number or by submitting a ridematch application obtained from COG, on-line via the Commuter Connection's web site, an employer, a local partner assistance program, a transportation management association (TMA), or via a Commuter Connections information kiosk.

This report estimates transportation and air quality impacts of Commuter Connections' services implemented by Commuter Connections. Data for this analysis were collected in November 2003 through a telephone survey of 700 respondents randomly selected from the applicant database. The surveys collected data for applicants who received information or assistance during the period between July 1 through September 30, 2003.

Commuter Connections Program Activity Summary and
Overall Participation, Utilization, and Satisfaction Performance Measures
Placement Survey, July-September 2003

• Commuter applicants	4,030	
• Applicant placement rates	32.5%	
- Continued placement rate		20.4%
- Temporary placement rate		12.1%
• Applicants placed in alternative modes	1,310	
- Continued placements		822
- Temporary placements		488
• Applicants desiring rideshare information (carpool or vanpool)		59%
- Applicants who remembered receiving matchlist		48%
- Applicants who remembered receiving vanpool assistance		22%
- Applicants who remembered receiving Park & Ride info		21%
• Applicants desiring transit information		12%
- Applicants who remembered receiving transit schedule		33%
• Applicants interested in GRH		68%
- Applicants who remembered receiving GRH information		66%
• Commuters suggesting Commuter Connections improvements		38%

Commuter Connections Program
Program Impact Performance Measures
Placement Survey, July-September 2003

• Daily vehicle trips (VT) reduced	**363**	**trips**
- Continued placements	345	trips
- Temporary placements (prorated credit)	18	trips
• Daily VMT reduced	**13,026**	**VMT**
- Continued placements	12,396	VMT
- Temporary placements (prorated credit)	630	VMT
• Daily tons of NOx reduced	**0.009**	**tons**
• Daily tons of VOC reduced	**0.004**	**tons**
• Gallons of gasoline saved	**547**	**daily gallons of gas**
• Commuter costs reduced (daily)	**$1,785**	**per day**
- Annual cost saving per continued placement	**$543**	**per year**

** See Appendix B for calculations*

OTHER KEY SURVEY RESULTS

Demographics

- More than half of the respondents were female (58%).
- The average respondent was white and 42 years old, with a household income of $84,000

Commute Travel Patterns

- About 31% of respondents carpooled or vanpooled at least one day per week. Carpool and vanpool trips made up 27.0% of the weekly commute trips made by applicants.
- Nearly half (49%) of respondents said they use transit at least one day per week. Transit trips accounted for 43.7% of applicants' weekly commute trips. Three in ten (30%) transit trips were made on Metrorail. Commuter rail accounted for nearly half of transit trips
- The average one-way commute distance was 35.3 miles. The average commute time was 66 minutes.

Commute Changes

- About one-third (32.5%) of survey respondents made a commute pattern change or tried another method of transportation after receiving assistance from Commuter Connections.

- The continued placement rate (percent of applicants who made a continued change to an alternative mode) was 20.4%. The temporary placement rate (percent of applicants who made a change but returned to their original modes) was 12.1%.

- About 33% of respondents who made a continued mode change shifted from driving alone. The remaining 67% shifted from one alternative mode to another.

Information and Assistance Requested and Received

- The Commuter Connections' applicant database shows that 59% of respondents had requested ride-sharing information when they contacted Commuter Connections for assistance. Two-thirds (66%) of respondents requested Guaranteed Ride Home information or registration and about 12% requested information on transit.

- About half (48%) of respondents said they received a matchlist with names of potential carpool/vanpool partners.

- About half (49%) of these respondents tried to contact someone named on the list.

- One-third (33%) of respondents remembered receiving transit information on a matchlist. A third (32%) of these respondents said they used the information provided to contact a transit agency. The majority (88%) of these respondents said they used information they received from the transit agency to try transit.

- About 31% of the respondents who made a commute change indicated that information they received from Commuter Connections, their employers, or commute assistance organizations had influenced their decision to make a commute change. Matchlists from Commuter Connections were mentioned by 11% of these respondents and 10% mentioned transit information provided by Commuter Connections.

- More than two-thirds (70%) of respondents said their employers offer some commute services at the worksite. The most common service offered by employers was a free or discounted transit pass (e.g., Metrochek), offered by 58% of employers. Smaller percentages of employers offered cash incentives (3%), transit schedules (4%), or carpool and vanpool information (9%). A small percentage (9%) of respondents reported that one or more of these services had been implemented during the past year.

Commuter Connections Improvements Desired

- About two in five respondents (40%) thought Commuter Connections needed no service improvements and an additional 22% said they didn't know if improvements were needed.

- Of those who mentioned improvements, most suggested improvements focused on improving the quality or quantity of the information provided: more current information (6%), matches fit respondents travel patterns better (6%), more match names (6%), and vanpool resources/assistance (3%). Suggestions also were made for quicker response (3%), more advertising (5%), internet suggestions (3%), and more Commuter Connections follow-up (1%).

Guaranteed Ride Home Program

- About 68% of respondents requested GRH information and 66% said they had received information on GRH. The majority (75%) of these respondents registered for GRH.

- About a quarter (23%) of the GRH respondents who made a commute change said they were unlikely to have made the change if GRH had not been available.

- About seven percent of the GRH respondents who were using an alternative when they called Commuter Connections said they were not likely to have continued using the alternative if GRH were not available.

- A small percentage (14%) of GRH respondents said they had used the GRH program since they had registered for it. The great majority (94%) of respondents were satisfied with the service they received. Those who were not satisfied said they were unsatisfied with the taxi or driver who provided the trip or felt it was too cumbersome to receive permission for the trip.

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SECTION 1 OVERVIEW

PURPOSE OF THE REPORT

This report presents results of a commuter placement survey of a randomly selected sample of 700 commuters who applied to the regional rideshare database, administered by the Commuter Connections Program of the Metropolitan Washington Council of Governments (COG), between July 1 and September 30, 2003.

The primary purpose of conducting this survey was to collect data to document transportation, air quality, energy, and cost impacts of two commuter transportation assistance services offered by Commuter Connections to commuters and employers in the Washington, DC metropolitan region. The first, the Commuter Operations Center (COC), provides basic commute information and assistance, such as regional ridematching and transit and Park & Ride information. The second service, which is administered through the COC, is Integrated Rideshare, a Transportation Emission Reduction Measure (TERM) adopted by Commuter Connections to support regional air quality improvement goals.

The survey described in this report represents an annual survey. A similar annual survey was conducted in 2002, with results reported in Fiscal Year 2003 Placement Survey Report (May 2, 2003). Prior to 2002, COG conducted a series of eight semi-annual placement surveys between 1997 and 2001. These surveys are documented in two reports. The first report, TDM Analysis Report – Compilation of Four Quarterly Placement Surveys 1997-1998 (January 10, 2000), covers four surveys conducted during 1997 and 1998. The second report, TDM Analysis Report – Compilation of Four Quarterly Placement Surveys 2000-2002 (October 10, 2002), covers surveys conducted during 2000 and 2001.

The results of each of the two four-quarter series were combined to represent two full calendar years. Additionally, the results for individual quarters of the year were examined to identify the quarter most representative of a full calendar year. The third quarter, July through September, was chosen for this purpose for future annual surveys and was used for the 2002 survey and for the 2003 survey documented in this report. This survey covers applications received between July 1, 2003 and September 30, 2003, and the results will represent the performance for all applications received during FY 2004 (July 1, 2003 through June 30, 2004).

ORGANIZATION OF THE REPORT

The report is divided into three sections following this overview section:

- Section 2 Data Collection Methodology
- Section 3 Commuter Placement survey results
- Section 4 Program performance results

Following these sections is one appendix, presenting summaries of the calculations of transportation, air quality, energy, and cost-saving impacts.

SECTION 2 DATA COLLECTION METHODOLOGY

This section briefly describes the survey methodology used for this analysis.

SURVEY OVERVIEW

The survey described in this report was conducted with applicants who received assistance from Commuter Connections between July 1 and September 30, 2003. Respondents were chosen randomly from the commuter database. A random sample of 980 (20 of the original 1,000 were duplicates or without telephone number) was first chosen from the 4,030 applicants entered during the July 1 through September 30 survey analysis period. On October 31, COG sent an introduction letter on COG letterhead to these commuters. The letter informed potential respondents of the survey and requested their participation. A replacement sample of 86 was drawn at a later date to replace 21 records not in service, 46 records with the wrong number, 18 records no longer with the company and no home telephone number supplied, and one records with only a fax/modem number.

Prior to starting the full interview set, a pre-test of 29 respondents was conducted because the questionnaire had been modified from the immediately previous survey. A question, "How did you learn about Commuter Connections and its programs and services?" was added to capture additional influence and awareness responses. Also, the list of telework centers was updated prior to survey administration to reflect new or closed centers. After examination of the pre-test results, no changes were made to the questionnaire. Then the remaining interview calls were initiated on November 5th. Calls were completed on December 8th.

Telephone interview calls to selected commuters were first directed to the respondent's work number. If contact was unsuccessful, the respondent was called at home. Interview calls were made until 700 interviews were completed from the list, including replacements, of 1,066 applicants. An average of 9.5 call attempts were made for each completed interview. This was a slight decrease from the average of 9.9 call attempts per completed interview experienced during the last five surveys and a substantial increase over the average of 7.5 call attempts per completed interview made during the first four-survey series. This trend toward increasing call attempts is likely due to higher use by respondents of personal answering machines, caller-ID services, and other technical services that make it possible for respondents to screen telephone calls and avoid answering calls from unknown persons.

WEIGHTING OF SURVEY DATA

Respondent survey data were weighted to align survey results with the surveyed population of applicants. The criterion used to weight the survey data was "type of record," which denotes applicants as either:

1) a new applicant to the Commuter Connections program or
2) a reapply or follow-up applicant, that is, an applicant who was already in the Commuter Connections database and who requested an additional matchlist or other information

The following table shows the relationship between the sample and the total participation group with respect to the weighting variable – type of record.

Type of Record	Sample Group	Total Applicant Group
New Commuter Connections applicant	95.0%	91.8%
Reapply/Follow-up applicant	5.0%	8.2%

Absolute numerical differences existed between the sample group and total applicant population. These differences show statistical variation between the distributional make-up of the two groups and when tested, result in a significant difference at the 99 percent confidence level. After weighting the sample group, the difference between sample and total applicant for type of record will be mitigated.

STATISTICAL DISTRIBUTION COMPARISON BETWEEN SAMPLE AND TOTAL APPLICANT PARTICIPATION

To assess whether or not distributional differences between the sample results and the total applicant group existed, a series of statistical goodness-of-fit tests were conducted. These tests rely on a Chi-square distribution and measure the distributional differences between two groups. The sample group consisted of 700 respondents while the total applicant group contained 4,030 individuals. Comparisons between the two groups were made for a number of different criteria. These criteria included:

- Type of Record (variable used for weighting the sample data)
- Archive or Active Database
- Carpool/Vanpool Flag
- Rider/Driver/Both Flag
- Interest in Transit Information
- Transportation Mode when Applied for Information
- Home Jurisdiction Code
- Work Jurisdiction Code

Using the Chi-Squared distribution, none of the comparisons showed statistical differences.

NON-RESPONSE SURVEY

While the proportion of non-response to the survey was relatively small, a non-response survey was conducted to determine whether or not the non-response group was in some manner systematically different from the survey group. A total of 105 applicants were eligible for inclusion in the non-response survey[1]. These applicants were made up applicants who refused to participate in the survey when initially called.

[1] Refusal rate of 10.7% was calculated as the number of initial refusals plus the number terminated during the interview, divided by the total sample.

A total of 39 applicants were contacted and administered an abbreviated survey. In determining the sample size for the non-response survey, a 90 percent confidence level and 10 percent error rate was assumed coupled with the inclusion of a population correction factor. Statistical comparisons were made on the following key variables:

- Number of weekdays working
- Use and type of nonstandard or flexible hours
- How respondent gets to work
- Number of miles to work
- Information/assistance received from Commuter Connections
- Number of employees at worksite
- Age of respondent

In all areas, no statistical difference between the non-response and full survey groups occurred.

SECTION 3 COMMUTER PLACEMENT SURVEY RESULTS

This section presents the results of the November 2003 placement survey. This survey was conducted to define travel patterns of commuters who applied to the Commuter Connections program to obtain information and assistance with alternative modes and to collect data needed to estimate transportation and air quality benefits of travel changes made by these commuters.

A primary goal of the Commuter Connections program is to reduce commute vehicle trips, commute vehicle miles traveled, and emissions from commute travel by:

- Encouraging and assisting drive alone commuters to shift to commute alternative arrangements, and
- Assisting current commute alternative users to maintain their use of alternative modes or increase the number of days per week they use alternative modes

With these goals in mind, the commuter placement survey collected data in the following primary topic areas, related to commuters' travel patterns and influences on these patterns:

- Current commute patterns (commute mode, distance, time)
- Alternative mode characteristics (carpool and vanpool occupancy, rideshare/transit meeting points, distance to meeting point)
- Recent commute pattern changes (mode/frequency, occupancy)
- Use of information and assistance services received
- Influences of services on change (Commuter Connections services, employer/other services)
- Guaranteed Ride Home (impacts on commute patterns)
- Telework/Telecommute services (impacts on commute patterns)
- Demographics (age, income, ethnic group, sex, employer type and size)

Following are summaries of key results from each section of the survey. Percentages presented in the results tables show percentages weighted to the total applicant population for the survey quarter, but each table shows the raw number of respondents (e.g., n=__) who answered the question. Where possible, results from the survey are compared for sub-groups of survey respondents and/or compared with corresponding available data for the general public. Finally, comparisons are made for some questions with results from the November 2002 survey. Appendix A presents more complete results for this 2002 to 2003 comparison.

The commute pattern data from the survey were used in Section 4 to calculate estimated transportation, air quality, energy, and consumer impacts of Commuter Connections services.

CHARACTERISTICS AND DEMOGRAPHICS OF THE SAMPLE

Work and Home Locations

Table 1 shows the percentage of placement survey respondents by home and work states. The majority of respondents lived in Virginia (58%) or Maryland (39%). Top home locations included: Fairfax County, VA (16%), Prince William County, VA (14%), Montgomery County, MD (9%), Stafford

County, VA (9%), Spotsylvania County, VA (8%), Prince George's County, MD (7%), and Howard County, MD (7%).

Work locations were more evenly divided. Just over half of the respondents (52%) worked in the District of Columbia. Three in ten (30%) worked in Virginia and two in ten (18%) worked in Maryland. Top work locations outside the District of Columbia included: Arlington County, VA (17%), Montgomery County, MD (14%), and Fairfax County, VA (7%).

Table 1
Distribution by Home and Work Locations

State/County	Home Location (n=700)	Work Location* (n=700)
District of Columbia	2%	52%
Maryland Counties	39%	18%
Virginia Counties	58%	30%
Other**	< 2%	0%

* Work location percentages for Maryland and Virginia include only counties located in the COG 18-jurisdiction region (District of Columbia; Maryland: Bowie, College Park, Frederick County, Gaithersburg, Greenbelt, Montgomery County, Prince Georges County, Rockville, and Takoma Park; Virginia: Alexandria, Arlington County, Fairfax, Fairfax County, Falls Church, Manassas, and Prince William County). Maryland and Virginia locations outside this area are counted as "other."

** Each response in the "Other " category was mentioned by less than one percent of respondents.

Demographics

The survey asked respondents four demographic classification questions: sex, age, income, and ethnic group. Respondents, which mirror the applicant database, were disproportionately female, 58% female to 42% male. The remaining demographic categories are summarized in Tables 2 through 4.

As shown in Table 2, 87% of the respondents were between 25 and 54 years old. The average respondent was 42 years old.

Table 2
Distribution by Age
(n=695)

Age Group	Percentage	Age Group	Percentage
24 or under	2%	45 – 54	30%
25 – 34	23%	55 – 64	10%
35 – 44	34%	Over 64	1%

Income – As detailed in Table 3, 92% of respondents had an annual income of $40,000 or more and more than half (53%) had an income of $80,000 or more.

Table 3
Distribution by Annual Household Income
(n=603)

Income	Percentage	Income	Percentage
Less than $30,000	2%	$60,000 – 79,999	19%
$30,000 – 39,999	6%	$80,000 – 99,999	18%
$40,000 – 59,999	20%	$100,000 or more	35%

Ethnic Background – Next, as illustrated in Table 4, Caucasians and African-Americans represented the two largest ethnic group categories of survey respondents, 67% and 21% respectively. Hispanics accounted for about three percent and Asians/Pacific Islanders represented seven percent of the sample.

Table 4
Distribution by Ethnic Background
(n=665)

Ethnic Group	Percentage	Ethnic Group	Percentage
Hispanic	3%	Asian/Pac. Islander	7%
White	67%	Other/Mixed	2%
African-American	21%		

Employment Characteristics

Size and Type of Employer – Respondents were asked for what type of employer they worked and the number of employees at their worksites. These results are shown in Tables 5 and 6, respectively.

As shown in Table 5, the majority of respondents (74%) worked for employers with more than 100 employees. About two in five (43%) worked for employers that have at least 1,000 employees. About a quarter of respondents (26%) said they work for organizations with 100 or fewer employees.

Table 5
Distribution by Employer Size
(n=677)

Number of Employees	Percentage	Number of Employees	Percentage
1-25	12%	101-250	13%
26-50	7%	251-999	17%
51-100	7%	1,000+	43%

More than half of the respondents (56%) worked for a federal agency. About one in three (30%) worked for a private sector employer. State and local government agencies employed 4% and 10% worked for a non-profit organization.

Table 6
Distribution by Employer Type
(n=697)

Employer Type	Percentage
Private sector	30%
Federal agency	56%
State/local agency	4%
Non-profit	10%
Self-employed	<1%

Occupations – Respondents represented many occupations, as shown in Table 7. More than half of the respondents worked in either professional (35%) or executive/managerial (24%) positions. Other common occupations included administrative support (21%) and technicians/technical support (12%).

Table 7
Distribution by Occupation
(n=686)

Occupation	Percentage	Occupation	Percentage
Professional	35%	Military	4%
Executive/managerial	24%	Sales	1%
Administrative support	21%	Other*	3%
Technicians/support	12%		

* Each response in Other category was mentioned by fewer than 1% of respondents.

CURRENT COMMUTE PATTERNS

One section of the survey examined current commute patterns of applicants: commute mode, distance, travel time, and use of telecommute and alternative work schedules.

Current Commute Mode

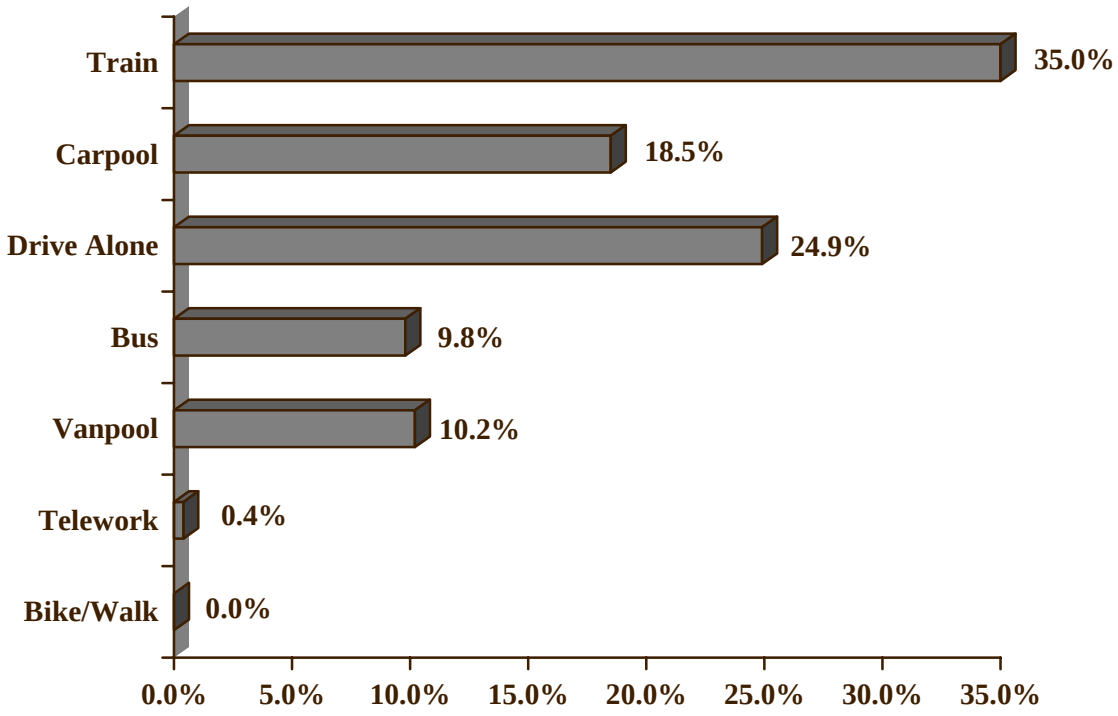
Frequency of Current Mode Use – Respondents were asked what modes they used to travel to work each day (Monday-Friday) during the survey week, or during a "typical week," if the survey week did not represent their typical commuting patterns. Figures 1 and 2 show the percentages of respondents who used each of six mode groups: train, carpool, drive alone, bus, vanpool, and bike/walk, based on the frequency with which they used the modes.

Mode Used 3+ Days Per Week – Figure 1 shows the percentage of respondents who used a mode three or more times per week, that is they used one mode "regularly." These percentages also included respondents who used a mode four or five days per week. About one percent of respondents said they did not use any single mode three or more days per week.

Train was the choice of the largest percentage of respondents (35.0%). Drive alone was used by one quarter (24.9%) of respondents as their regular mode. Almost one in five (18.5%) carpooled (including "slugs") and 10.2% vanpooled. Bus was the choice of about one in ten (9.8%). Less than one percent bicycled or walked to work or teleworked three or more days per week.

Figure 1
Current Commute Modes

Modes Used Three or More Days Per Week (n=700)

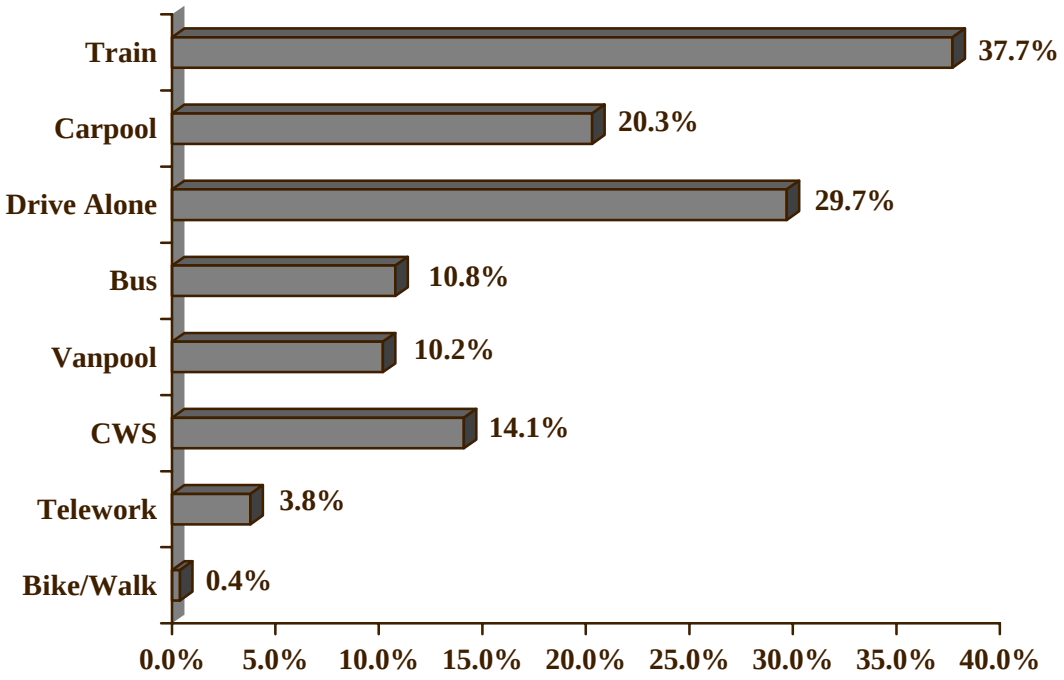


Mode Used 1+ Day Per Week – Figure 2 shows the percentage of respondents who used the mode at least one day during the survey week. This category also includes respondents who said they used these modes two, three, four, or five times during the week. In this case, the percentages of participants using each mode increased, because some respondents who were counted in the three or more days per week category used a secondary mode in addition to their primary mode. Thus, some respondents were counted in more than one mode category. For this reason, the individual mode percentages add to more than 100%.

Again train was the most popular mode; 37.7% of respondents used this mode either regularly or occasionally and drive alone was still the second most popular mode, used by nearly three in ten respondents (29.7%). Carpool was the third most popular mode; 20.3% of respondents said they carpooled or casual carpooled ("slug") one or more days per week and 10.2% vanpooled. One in ten (10.8%) rode a bus and 0.4% said they bicycled or walked to work either occasionally or regularly. Some respondents also noted that they either teleworked (3.8%) or had a compressed work schedule day off (14.1%) one or more days per week.

Figure 2
Current Commute Modes

Modes Used 1+ Days Per Week (n=700)



* Mode percentages add to more than 100% due to multiple responses

Table 8 shows use of individual modes within rideshare and transit. About three-quarter (78%) of respondents who used transit used a train. Train ridership was divided approximately equally among Metrorail and the two commuter rail services, VRE, and MARC. Public bus or private buspool accounted for the remaining 22% of transit use.

Nearly half (49%) of respondents who were ridesharing used a traditional carpool with the same partner(s) all the time. About a third (36%) vanpooled. Casual carpools or "slug," carpools picking up riders at established meeting points but with different partners each day, made up 15% of ridesharers.

Table 8 also shows a comparison of commute modes of respondents with those of the general commuting population, as determined from the State of the Commute survey conducted in 2001. As seen in the table, the percentage of regional commuters who drove alone three or more days per week (71.9%) was considerably higher than for placement survey respondents (24.9%), because Commuter Connections' applicants were motivated to use an alternative mode. Rideshare use was much higher (28.7%) than in the general population (7.6%). Transit use also was higher among the placement survey sample (44.8%) than among the general population (17.2%).

Table 8
Individual Commute Modes by Days Used per Week

Commute Mode	Annual Placement Survey Percentage of Respondents		SOC Survey (2001) Mode 3+ days per week
	1+ Days * (n=700)	3+ Days (n=700)	
Drive alone	29.7%	24.9%	71.9%
Rideshare	30.5%	28.7%	7.6%
Transit	48.5%	44.8%	17.2%
Bike/walk	0.4%	0.0%	2.2%
Compressed work schedule	14.1%	0.0%	N/A
Telecommute	3.8%	0.4%	N/A
Rideshare	**30.5%**	**28.7%**	**7.6%**
- Regular carpool	14.8%	14.1%	6.9%
- Vanpool	10.2%	10.2%	0.5%
- Casual carpool (slug)	5.5%	4.4%	0.2%
Transit	**48.5%**	**44.8%**	**17.2%**
- Metrorail	14.6%	12.9%	11.8%
- Ride a bus/shuttle	9.8%	8.7%	3.9%
- MARC (MD commuter rail)	10.2%	9.9%	0.3%
- AMTRAK/other train	0.0%	0.0%	0.3%
- VRE	12.9%	12.2%	0.2%
- Buspool	1.0%	1.1%	0.7%

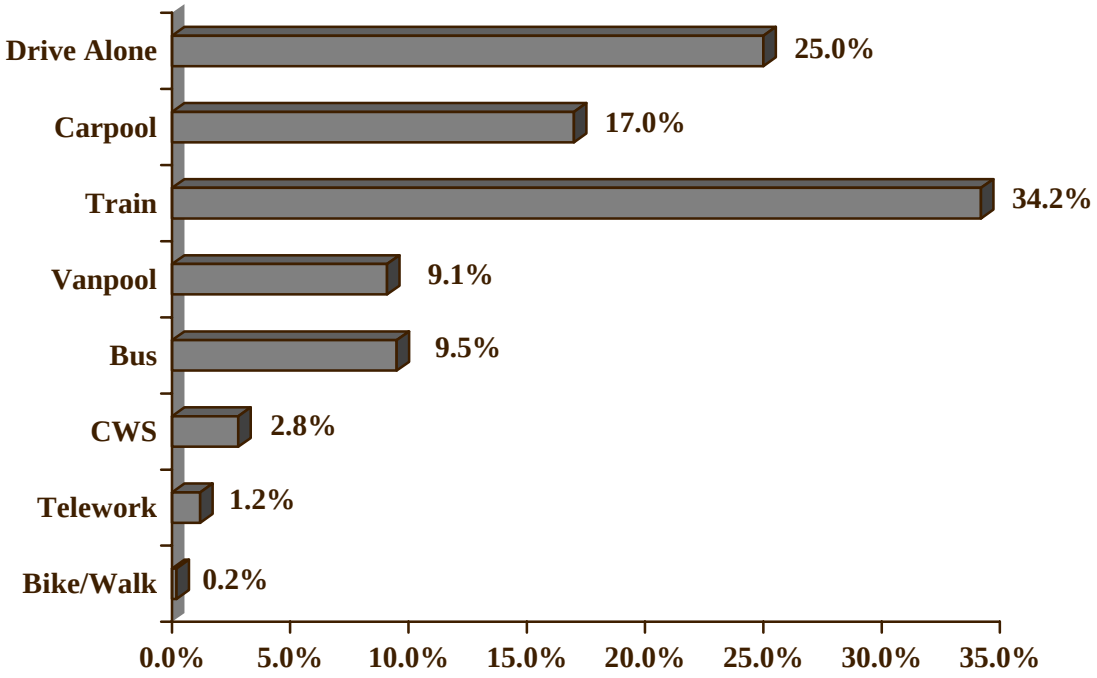
* Percentage adds to more than 100% due to multiple responses

Mode Split by Percentage of Weekly Trips – Mode split also was calculated in a second way, as the percentage of weekly work day trips made by each mode. This depiction of mode split accounts for part-time and occasional use of modes. It also accounts for commute days for which trips were not made through use of teleworking and compressed work schedule. While not "commute modes" in the conventional sense, they represent work days and so were included. Percentages in this figure are based on the number of days respondents actually worked or had a compressed schedule day off. Days not assigned to work and days not worked due to illness or vacation are not included in the figure.

Figure 3 shows percentages of total weekly work day trips for which respondents used each of six commute modes or alternatives: drive alone, carpool, vanpool, bus, train, and bike/walk, and compressed work schedule and telework days.

Figure 3
Mode Split – Weekly Work Day Trips

(n=700)



As shown, respondents used the train for more than three in ten (34.2%) work day commute trips. The second most popular mode, used for 25% of weekly work trips, was drive alone. Two in ten (17.0%) work day trips were made by carpool, 9.1% were made by vanpool, and 9.5% of trips were by bus. Compressed work schedule days off (2.8%) , teleworking (1.2%), and bicycling/walking (0.2%) made up small percentages of weekly work days.

Primary Commute Mode by Demographic Group

Analysis of survey data showed some differences in primary commute mode (mode used 3 or more days per week) between various demographic groups. Tables 9, 10, 11, and 12, present primary mode by respondent sex, age, income, and ethnic group categories, respectively.

Mode by Gender – As shown in Table 9, men were slightly less likely than women to drive alone (22% of men compared to 27% of women). They also were slightly more likely to use transit than were women.

Table 9
Current Primary Mode (3+ days) by Sex

Sex	(n= __)	Primary Commute Mode*			
		DA	CP/VP	Transit	Telecommute
Male	295	22%	29%	48%	<1%
Female	405	27%	28%	44%	<1%

* Percentages do not add to 100%, because some respondents do not use a single mode 3+ days per week.

Mode by Age – As shown in Table 10, the percentage of respondents who drove alone generally declined with increasing age. One in three respondents 25-34 years old (29%) and a quarter of 35-44 years olds (26%) drove alone, compared with 22% of respondents 45-54 years old and less than one in five 55-64 years old (19%). Transit use, in particular, increased with increasing age, from just less than one-third (31%) of respondents 25-34 years old to more than half (51%) of respondents 55 years or older.
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Table 10
Current Primary Mode (3+ days) by Age

Age	(n= ___)	Primary Commute Mode*			
		DA	CP/VP	Transit	Telecommute
< 25 years **	16	38%	25%	31%	0%
25 – 34	160	29%	29%	39%	1%
35 – 44	235	26%	32%	41%	<1%
45 – 54	205	22%	24%	54%	0%
55 – 64	70	19%	30%	51%	0%

* Percentages do not add to 100%, because some respondents do not use a single mode 3+ days per week.
** Caution: very small sample size

Mode by Income – Table 11 presents primary mode by seven income categories. Solo driving appeared to drop generally with increasing income. Carpool/vanpool use generally tended to increase with increasing income and was most common among the highest income category ($100,000 or more). This suggests that a benefit other than cost saving, a typical ridesharing benefit, might be the attraction to ridesharing for this group. Transit use was generally high among all income categories.

Table 11
Current Primary Mode (3+ days) by Income

Income	(n____)	Primary Commute Mode *			
		DA	CP/VP	Transit	Telecommute
Less than $30K**	11	36%	18%	45%	0%
$30K – 39,999	36	33%	19%	47%	0%
$40K – 59,999	121	31%	26%	41%	1%
$60K – 79,999	113	24%	20%	43%	2%
$80K – 99,999	108	29%	24%	45%	0%
$100K+	214	16%	33%	50%	0%

* Percentages do not add to 100%, because some respondents do not use a single mode 3+ days per week.
** Caution: very small sample size

Mode by Ethnic Group – The final table in this series, Table 12, shows primary mode by ethnic group. Hispanic respondents were more likely to drive alone than were respondents in other ethnic groups. Whites and African-Americans were most likely to carpool or vanpool than were other groups, but the sample sizes of Hispanic and Asian/Pacific Islander respondents were quite small and these numbers should be viewed cautiously.

Table 12
Current Primary Mode (3+ days) by Ethnic Group

Ethnic Group	(n= ___)	Primary Commute Mode*			
		DA	CP/VP	Transit	Telecommute
Hispanic**	24	39%	32%	28%	0%
White	443	23%	27%	48%	1%
African-American	137	29%	27%	43%	0%
Asian/Pacific Islander	43	29%	44%	27%	0%

* Percentages do not add to 100%, because some respondents do not use a single mode 3+ days per week.
** Caution: very small sample size

Commute Distance

Commuters in the survey sample had a wide range of commute distances, ranging from less than one mile to 150 miles. The average one-way commute distance, as reported by respondents was 35.3 miles. This

was higher than the 33.6 miles distance computed by COG using home and work coordinates and considerably higher than the 15.5 mile average one-way travel distance of all regional commuters, as estimated by the 2001 State of the Commute survey.

Table 13 presents the distribution of respondents in various distance categories for the placement surveys (computed distance). As shown, a small percentage (5%) of respondents traveled fewer than 10 miles to work. Another third (35%) commuted between 10 and 29.9 miles. The remaining 60% commuted 30 or more miles one-way.

Table 13
Commute Distance (miles)
(n=668)

Number of Miles	Percentage	Cumulative Percentage
Fewer than 10 miles	5%	5%
10 to 19.9 miles	14%	19%
20 to 29.9 miles	21%	40%
30 to 39.9 miles	19%	59%
40 or more miles	41%	100%
Average reported distance	35.3 miles	
Average computed distance	33.6 miles	

As expected, commute distances also vary by commute mode. Table 14 indicates that vanpoolers travel the farthest, an average of 47.3 miles one-way. Respondents who drove alone, carpooled, or used transit traveled approximately the same distance.

Table 14
Commute Distance (miles) by Primary Mode (3+ days per week)
(n=697)

Mode	Average Distance
Drive alone	32.7
Carpool	33.6
Vanpool	47.3
Transit	31.6
B/W	N/A

Commute Travel Time

One-way commute travel time of respondents ranged from less than 5 minutes to three hours, with an average of 66 minutes. Well over three-fourths of respondents (82%) traveled more than 40 minutes one-way, as can be seen in Table 15.

Commute travel time for the placement survey was longer than that for the general public. The average commute time for all commuters in the region was 32 minutes, as reported in the 2001 State of the Commute survey of regional commuters. Only about one in five commuters traveled 40 or more minutes.

Table 15
Commute Length (minutes)
(n=698)

Number of Minutes	Percentage	Cumulative Percentage
10 minutes or less	1%	1%
11 to 20 minutes	2%	3%
21 to 40 minutes	15%	18%
41 to 60 minutes	38%	56%
61 to 80 minutes	19%	75%
More than 80 minutes	25%	100%
Average time	66 minutes	

Alternative Work Schedules

About three in ten respondents (31%) reported that they worked a non-standard schedule. Most common were "flexible work hours" schedules (16% of total respondents) that allow employees to change their arrival and departure times from a worksite standard. About 15% of respondents reported working a compressed work schedule (CWS), in which they work a full work week (35-40 hours) in fewer than five days per week. The most common CWS arrangement was a 9-80 schedule (13%). The remaining CWS respondents said they worked a 4-40, 3-36, or other CWS arrangement.

CURRENT POOL CHARACTERISTICS

The second part of the survey collected data on occupancy and composition of carpools and vanpools and explored how ridesharers and transit riders access these commute modes.

Carpool and Vanpool Size

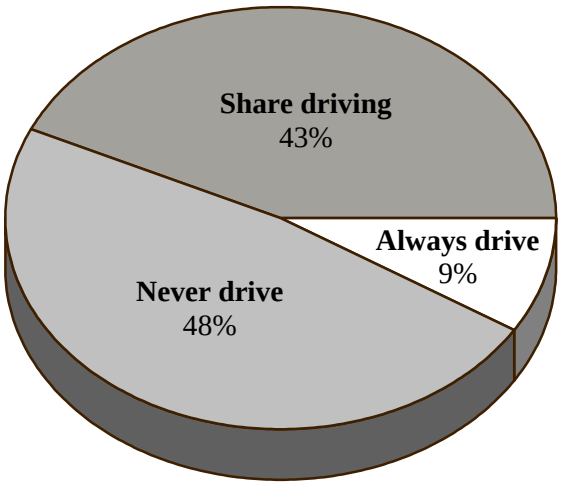
Approximately three in ten (30.5%) of survey respondents said they rideshare (carpool or vanpool) at least one day per week. Carpools had an average size of 2.9, including the driver. Vanpool occupancy was on average 10.5, including the driver. Vanpools ranged in size from 6 to 15 occupants, but about half (49%) of the vanpools had 12 or more occupants.

Carpool Members

Ridesharers in the survey sample tended to carpool more with co-workers than with family members. About one-third (38%) of respondents' carpool partners were co-workers, while only 16% were family or household members. This is not unexpected, as commuters who carpool primarily with family members were less likely to need Commuter Connections to find a carpool partner. Children under the age of 16 accounted for less than three percent of carpool occupants.

As shown in Figure 4, nearly half of carpoolers and vanpoolers shared driving (43%). A slightly higher percentage (48%) said they never drive. This was primarily vanpoolers and casual carpoolers. About 9% said they always are the pool driver.

Figure 4
Driving Frequency of Carpoolers/Vanpoolers
(n=211)



Access to Carpools, Vanpools, Buspools, and Transit

Table 16 presents how carpoolers, vanpoolers, buspoolers, and transit riders traveled to where they meet other ridesharers or where they started their transit trip.

Table 16
Access Mode to Alternative Mode Meeting Place
(n=511)

Access Mode to Alternative Mode	Percentage
Drive to central location or to drivers/passengers home	76%
Walk	11%
Picked up at home	7%
Bus/transit	3%
Carpool/vanpool	3%

Just over three-fourths (76%) drove to the meeting point, either a central location or to the passenger's or driver's home. This is significant to the calculation of the air quality impact of ridesharing, because a large proportion of auto emissions are produced during the first few miles of a vehicle trip, when the engine is cold. (For more details on calculating emissions reductions, refer to "Transportation Emission Reduction Measures (TERMs) Revised Evaluation Framework – 1999-2002" (March 2001). Even though these trips tend to be short, an average of just 6.2 miles for the survey respondents, these trips must be accounted for in an air quality analysis.

RECENT COMMUTE PATTERN CHANGES

The third survey section asked respondents about commute patterns changes they made since receiving assistance from Commuter Connections. Data were collected on: types of changes made, "permanence" of change, reasons for changes, and details of previous commute patterns.

Types of Changes Made

The survey asked respondents if they had made any of the following commute changes since receiving information from Commuter Connections: joining or forming a new carpool or vanpool; adding a new rider to a carpool or vanpool; starting to use transit, bicycle, or walking; starting to telework or work a compressed work schedule; increasing the number of days using alternative modes; or adding another rider to an existing carpool or vanpool. Respondents who said they had not made any of these specific changes were asked if they had made any other type of change. Table 17 summarizes the changes made.

Of the 700 respondents surveyed, 32.5% said they had made a change to an alternative mode. The largest segment, 15.0%, said they started using or tried using transit, bicycle or walk for their commute. About 10% said they joined or created a new carpool or tried carpooling and 5.1% said they joined or created a new vanpool or tried vanpooling. About 2.2% started teleworking or using a compressed work schedule.

Table 17
Commute Changes Made
(n=700)

Type of Commute Change	Percentage
Joined or created a new carpool or tried carpooling	10.2%
Joined or created a new vanpool or tried vanpooling	5.1%
Started using transit/bike/walk	15.0%
Started teleworking/compressed work schedule	2.2%
Increased number of days using alternative modes	0.0%
Added another person to existing carpool or vanpool	0.0%
Other change	0.3%
Total respondents with change	**32.5%**

Continued vs Temporary Change

Respondents who said they had made a change were asked if the change was "continued," that is they had continued with the new alternative mode until the time of the survey, or if it was "temporary," meaning they had returned to their previous commute mode before being interviewed for the survey. Table 18 presents results for this question.

Table 18
Distribution of Continued and Temporary Changes
(n=224)

Type of Change	Percentage
Continued	62.8%
Temporary	37.2%

More than three-fifths (63%) of the respondents who said they made a change said they had continued the change and the remaining 37% said the change was temporary. This delineation between temporary and continued is important because the temporary changes do not produce the ongoing travel and air quality impacts of the continued changes. Thus, temporary change impacts will be discounted, as described further in Section 4.

Placement Rates

The change totals shown in Table 18 represent the placement rates for this sample:

- Continued placement rate = 20.4%
- Temporary placement rate = 12.1%

Change by Demographic and Employment Characteristics

Review of the survey data showed few differences between respondents who made travel changes and those who did not change.

Change by Demographic Characteristics – The survey examined demographic characteristics of respondents who had made continued or temporary changes and respondents who did not make any changes, to see if the groups were different in fundamental ways. Several results can be cited:

- The average commute distances were essentially the same for continued placements (33.7 miles), temporary placements (33.4 miles), and respondents who did not make a change (33.7 miles)
- Women made changes at a slightly higher rate (35%) than did men (30%).
- Rates of changes varied slightly by income group (range from 26% to 42%), but no clear trend was evident. Placement rates also varied by age, but again, no obvious trend was apparent.
- Asian respondents were less likely to have made a change (27%) than were other respondents (Hispanics: 41% placement rate; Whites: 32% placement rate, and African-Americans: 37% placement rate). But the numbers of total Asian and Hispanic respondents were small (43 and 24 respectively), thus these results might not be statistically reliable.

Change by Employer Type – Respondents who worked for state or local governments organizations were less likely to have made changes than were respondents who worked for other types of organizations. Only about 25% of these workers made a continued or temporary change. By contrast placement rates were 32% for federal government workers, 40% for non-profit organization employees, and 33% for private sector employees.

Change by Employer Size – Table 19 shows the percentage of respondents who made a change by their size of employer. Change percentages varies slightly by employer size, ranging from 28% to 35%. But there was no apparent pattern in the placement percentages.

Table 19
Change by Employer Size

Employer Size	(n=___)	Percentage who Changed
1-50 employees	127	32%
51-100 employees	49	31%
101-250 employees	89	36%
251-999 employees	116	28%
1,000 or more employees	296	35%

Previous Mode of Commuter Who Changed Mode

The majority of commuters who made a mode change either shifted from one mode to another or increased the number of days they used an alternative mode they had been using prior to receiving assistance. Table 20 indicates the previous and current commute mode of these respondents.

Table 20
Types of Mode Changes (Continued or Temporary)
(n=224)

Type of Mode Change	Percentage
Drive Alone to Alternative Mode	**33%**
- Drive alone to transit*	18%
- Drive alone to rideshare	15%
Alternative Mode to Alternative Mode	**67%**
- Rideshare to transit*	9%
- Transit* to rideshare	14%
- Rideshare to rideshare	20%
- Transit to transit*	23%

* Transit includes: bus, train, bike, walk, and telecommute

About one-third of respondents who made a change (33%) shifted from driving alone to an alternative mode. These respondents were divided approximately equally between shifts to rideshare (carpool or vanpool) and shifts to transit, bike, walk, or telecommute. The remaining respondents were previously using an alternative mode, but made a change within these alternatives. About nine percent shifted from

rideshare to transit and 14% shifted from transit to rideshare. The remaining 43% shifted within ridesharing or transit, for example, from bus to train, or from carpool to vanpool.

It is important to note the percentage of shifting between alternative modes, because commuters who made these shifts reduced vehicle trips only if they shifted to a higher occupancy mode (carpool to vanpool or vanpool to transit, for example) or increased the number of days they use the alternative. Some of these shifts, such as a shift from transit to rideshare, actually increased the count of vehicle trips the respondent made during the week, reducing the air quality benefit of the shift. This is not to say these were not desirable shifts from the perspective of the commuter, but these shifts must be accounted for in determining the transportation and air quality benefits of the services.

Reasons for Changes

Respondents who said they had made a commute change were asked the reasons for their changes. Table 21 summarizes the responses.

Table 21
Reasons for Commute Change
(n=223)

Reasons	Percentage*	Reason	Percentage *
Commute related reasons		**Personal related reasons**	
- Save time	22%	- Changed job/work hours	14%
- Save money	19%	- No vehicle available	13%
- Tired of driving	10%	- Moved to new residence	11%
- Reduce congestion/pollution	5%	- Just give it a try/compare	2%
- Save wear/tear on car	2%	- Safety	2%
- Too stressful/too much traffic	1%		
Commute service reasons			
- Carpool broke up/didn't work	4%		
- Financial incentive offered	3%		
- CP/VP partner available	2%		
- Use HOV lane	2%		
- Parking cost too high	2%		

* Multiple responses permitted.

Many respondents made the change for commute-related reasons: save time (22%), save money (19%), because they were tired of driving (10%), or because they wanted to reduce congestion or pollution (5%). Commuter program strategies or facilities, such as HOV lanes (2%), availability of a carpool or vanpool partner (2%), financial incentives (3%), or high parking charges (2%) influenced smaller number of respondents to make the change.

A significant number of respondents mentioned an outside factor, such as changing jobs (14%), unavailability of a vehicle (14%), or moving residence (11%) as influencing the decision to make a change. This emphasizes the potential for Commuter Connections, its regional partners, and its employer clients to market alternative modes through new employee orientation and through direct mail to new residents.

Reasons for Not Continuing Changes

The 85 respondents who said their changes were temporary were asked why they had not continued with the changes. The reasons cited included: "inconvenient" (26%), "car became available" (20%), mode "took too much time" (20%), job change (17%), mode "cost too much" (10%), or "carpool/vanpool fell apart" (4%).

SERVICES RECEIVED AND INFLUENCE OF SERVICES ON COMMUTE CHANGES

The survey also reviewed types of services, information, and assistance that respondents received from Commuter Connections, and services and programs offered by respondents' employers and other sources. The survey also asked respondents about the influence of these services on commute changes and solicited feedback from respondents on how Commuter Connections could improve its services.

Sources of Information about Commuter Connections

Commuters have a variety of sources through which they can learn of Commuter Connections. Table 22 presents the primary sources of information used to learn of Commuter Connections.

Nearly half of the respondents mentioned one of two sources of information: word of mouth – referrals (27%) or internet (21%) . About an eighth of respondents mentioned radio (12%) and another eighth cited employer/employee survey (12%) as the way they heard about Commuter Connections. Smaller percentages of respondents said they learned of Commuter Connections through a brochure or promotional material (7%), bus or train sign (5%), or highway sign (4%).

Table 22
How Respondents Learned of Commuter Connections
(n=700)

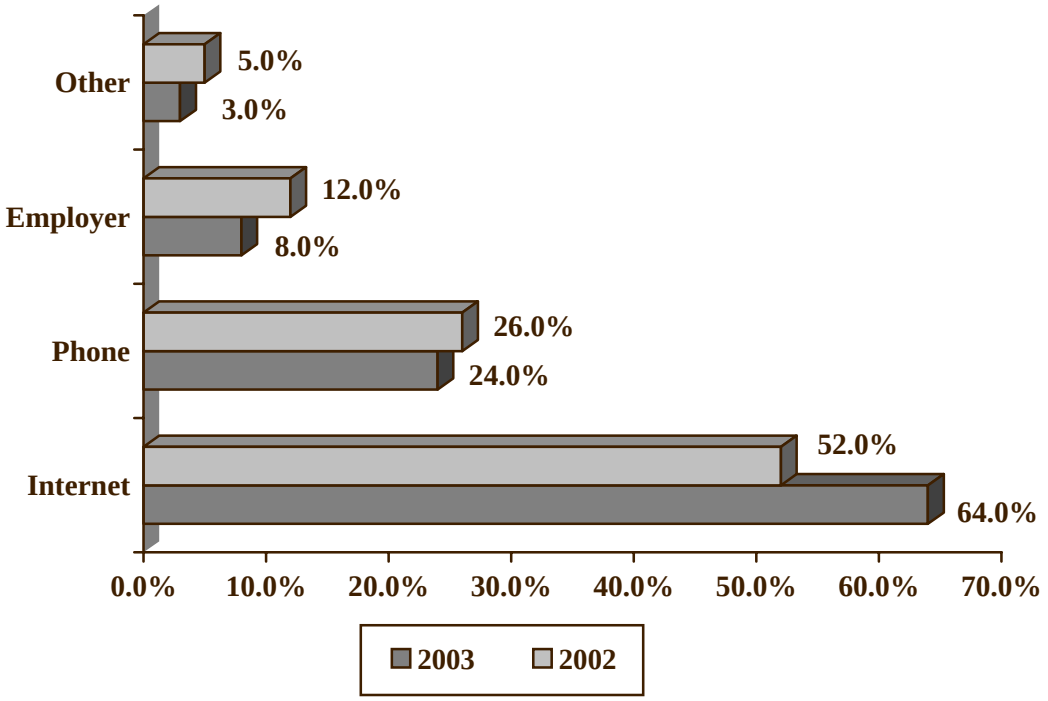
Information Source	Percentage
Word of mouth – referral	27%
Internet	21%
Radio	12%
Employer/employee survey	12%
Brochure/promo materials	7%
Bus/train sign	5%
Highway sign	4%
TV	3%
Other rideshare organization	2%
Bus/train schedule	2%
Newspaper	2%
Newsletter	1%
Direct mail/postcard from CC	1%

Methods Used to Contact Commuter Connections

Commuters also can contact Commuter Connections in a variety of ways. Figure 5 displays results for this question for both 2003 and 2002. An interesting result of the 2003 survey was that nearly two-thirds (64%) of respondents said they made this contact through the Commuter Connections webpage on the internet. This was considerably higher than the 52% of respondents who said in the 2002 survey that they used this method to contact Commuter Connections.

In 2003, about a quarter (24%) said they contacted Commuter Connections directly by phone and 8% said they made the contact through their employer or through work. In both cases, these percentages were smaller than in 2002. Small percentages made the contact in 2003 through another internet site (2%) or through a city or county rideshare program (1%).

Figure 5
How Respondents Contacted Commuter Connections
(n=700)



Information Desired by Applicants

When commuters contact Commuter Connections, the staff member asks if they are interested in receiving various types of assistance and information. As shown in Table 23, an examination of the Commuter Connections records shows that respondents were much more interested in receiving ridesharing information than transit information. In 2003, a majority (59%) said they were interested in receiving carpool and/or vanpool information.

Two-thirds of applicants (68%) asked for information about the Guaranteed Ride Home program. Some of these GRH applicants might have called Commuter Connections to re-register for GRH, required annually of each registrant who wishes to continue to have access to GRH.

About 12% of applicants were interested in receiving transit information. This relatively low percentage, compared to the percentages for rideshare information, likely reflects Commuter Connections' role as primarily offering ridematching services. It also may reflect commuters' high awareness of the transit services available to them and their awareness of sources other than Commuter Connections for transit information, for example, the Washington Metropolitan Area Transit Authority, which offers information through a telephone service and a website, and local community bus operators' telephone and internet information services.

Table 23
Information Requested From Commuter Connections
(n=700)

Information Requested	2003 Percentage*	2002 Percentage *
Rideshare	59%	86%
-- Carpool only	6%	11%
-- Vanpool only	4%	6%
-- Carpool and vanpool	49%	69%
Transit	12%	7%
Guaranteed Ride Home	68%	47%

* Multiple responses permitted

Table 23 also shows the percentages of applicants who asked for these services during the 2002 survey quarter. Interestingly, a much higher percentage of applicants asked for rideshare information: 86% in 2002 compared to 59% in 2003. But the requests for GRH information were much higher in 2003 than in 2002. These changes in distribution might be related to GRH and other program promotions that Commuter Connections conducted during the July through September 2003 time period. These promotions appear to have attracted large numbers of current transit riders who were interested only in receiving transit information.

Information Received from Commuter Connections

In the survey, respondents were asked what information and assistance they remembered receiving from Commuter Connections. Table 24 shows the percentage of respondents who said they received each of several types of information.

Table 24
Information Respondents Remember Receiving From Commuter Connections
(n=700)

Information Received	Percentage*	Information Received	Percentage*
Guaranteed Ride Home info	61%	Park & Ride information	21%
Matchlist	48%	Telecommute/telework	9%
Transit schedule	33%	HOV	8%
Vanpool assistance	22%	Other	<1%

* Multiple responses permitted

GRH information was the most prevalent, received by nearly two-thirds of the respondents (61%), followed by rideshare matchlists, received by 48%. Transit schedules, vanpool assistance, and park & ride lot information were received by 33%, 22% and 21% of respondents respectively. Smaller percentages of respondents said they remembered receiving information on telecommute/telework (9%) or HOV facilities (8%).

The percentages of respondents who said they received matchlists (48%) was somewhat lower than the percentage who requested information (59%), as noted in Table 23. This difference likely reflects the fact that not all commuters who apply for a match can be matched, due to incompatible work schedules or work/home locations.

Use of Matchlist Information

Matchnames – About half of the respondents (48%) said they received one or more names of potential rideshare partners on a matchlist prepared by Commuter Connections or by another organization. These respondents were asked about their use of matchlist information. Their responses are shown in Table 25.

Table 25
Actions Taken by Respondents who Received Matchnames

Action Taken	Yes	No
Received matchnames (n=700)	48%	52%
Called names (n=332)	49%	51%
Able to reach people named on matchlist (n=161)	89%	11%
People called were interested in ridesharing (n=141)	45%	21%*

* An additional 34% of respondents said the people they called were not interested in ridesharing because the "schedule or destination was not compatible"

Reasons for Not Trying to Make Contact – About half (49%) of the respondents said they tried to call one or more of the people listed on the matchlist. Of the respondents who did not try to make contact, the primary reason was "work hours not compatible with mine" (25%) or work or home location not compatible with mine" (23%). About equal percentages said they had already found a rideshare partner (15%) or had decided they didn't want to carpool or vanpool (17%). One in tens respondents (10%) said they "haven't gotten around to it."

Success in Reaching Someone Named on the Matchlist – The great majority (89%) of the respondents who did try to make contact were successful in reaching someone named on this list. This suggests that the information provided on the matchlists is generally current and accurate. The 18 respondents who were not able to reach someone on the list said they encountered the following problems: left message

but no call back (11 respondents), phone number not correct or disconnected (3 respondents), the commuter was no longer at that job or had moved (2 respondents)., or other reason (3 respondents).

Interest in Ridesharing – About four in ten (45%) respondents who were able to reach someone said that person was interested in ridesharing. These respondents represented 19% of respondents who received matchlists. About two in ten (21%) of the respondents who reached a person on the matchlist said the people were not interested in ridesharing. The remaining 34% said the people they reached were not interested because the schedules or destinations were not compatible. To some extent compatibility is an individual standard. One applicant might be willing to drive out of his way or to arrive at work 30 minutes earlier than scheduled to take advantage of carpooling benefits, while another applicant would feel these accommodations were too inconvenient. But this result suggests the software might not match applicants with as much precision as some commuters would like.

Transit Information – As part of the Integrated Rideshare Transportation Emission Reduction Measure (TERM), Commuter Connections includes on the matchlist information on transit organizations that offer transit service that might meet the travel needs of the recipients. About a third (33%) of the respondents remembered receiving transit information. This was slightly higher than the 27% of total respondents in the 2002 survey who said they remembered receiving transit information.

About a third (32%) of these respondents said they used the information to contact a transit agency. The majority (88%) of those who contacted a transit agency said they used information they received to try transit. These respondents represented about five percent of the total respondent population.

Reasons for Not Trying Transit – Those who contacted the transit agency but did not try transit were asked why the information they received did not encourage them try transit. The reasons mentioned are listed in Table 26.

Table 26
Reasons Respondents Did Not Try Transit
(n=36)

Reasons	Frequency**
Already using transit	11
Commute too long	6
Prefer current mode/other modes	5
Wouldn't work with my schedule	5
Too expensive	5
Too far from home/work	3
Other	4

*Multiple responses permitted
** Frequency counts are provided rather than percentages, due to the small sample size

The primary reason, mentioned by 11 of the 36 respondents was that already were using transit. Six respondents said the commute using transit would be too long and five said it would be too expensive. Five respondents said they liked using the current mode or another mode and another five said transit wouldn't work with their schedules.

Reasons for Not Contacting Transit Agency – Those who did not contact the transit agency were asked why they had not done so. The reasons mentioned are listed in Table 27. The primary reason, mentioned by 34%, was that they weren't interested or hadn't asked for transit information. About one in five (18%) said they liked using the current mode or another mode. Another, 16% said they already had transit information, 12% said transit stops were too far from their homes or work. About seven percent said they never got around to calling. Other responses included: "already taking transit," "routes/times didn't work for me," "didn't need to call, Commuter connections sent it all," and "don't like transit, wouldn't ever use transit."

Table 27
Reasons Respondents Did Not Contact Transit Agency
(n=160)

Reasons	Percentage*
Wasn't interested, didn't ask for transit info	34%
Prefer current mode/other modes	18%
Already had transit info	16%
Too far from home/work	12%
Never got around to it	7%
Routes/times didn't work for me	4%
Already taking transit	4%
Didn't need to, Commuter Connections sent it all	2%
Don't like transit, wouldn't ever use transit	2%
Other**	4%

*Multiple responses permitted

Other Sources of transit Information - Respondents who used transit at the time of the survey were asked how they heard about transit service. Table 28 shows the sources of information. More than a third (35%) said they received information from a personal referral source, such as a friend, relative, or co-worker, and another 30% "always knew it was there." About 8% said they "always used transit." Other sources of information included: "internet" (9%), "advertisements," (8%), and "employer" (4%). About six percent said they received information from Commuter Connections, two percent said they "called the transit agency directly," and two percent said they "saw the bus or transit station."

Table 28
Other sources of Transit Information
(n=390)

Other sources of information	Percentage*
Personal referral – friend, relative, co-worker	35%
Always knew it was there	30%
Internet	9%
Advertisement – newspaper, radio, TV	8%
Have always used transit	8%
Commuter Connections	6%
Employer	4%
Called transit agency directly	2%
Saw bus/transit station	2%
Other	1%

*Multiple responses permitted

Park & Ride Information – Under the Integrated Rideshare Transportation Emission Reduction Measure, Commuter Connections also provides transit Park & Ride lot location information on the matchlist. About eight percent of respondents remembered receiving Park & Ride information on a matchlist.

Nearly half (47%) of these respondents said they used the information provided. Most of these respondents (69%) said they were aware of the location of the Park & Ride lots before they received the information, but about half of these respondents (50%) said they had not used the Park & Ride lots before they received information. Three-quarters (76%) of the respondents who used a Park & Ride lot listed on the matchlist said that using the lot was a factor in their decision to try transit. These respondents represented about five percent of the total applicants interviewed.

Those who did not use the Park & Ride lots were asked why they had not done so. The reasons mentioned are listed in Table 29. Nearly half (47%) said they "didn't need a Park & Ride lot." About a fifth (19%) said the lot was "not convenient to transit" and 13% said they "weren't interested/didn't ask for it." About 8% said the lot did not offer "a time saving from my previous commute" and two percent said the lot was not convenient to HOV."

Table 29
Reasons Respondents Did Not Use P&R Lot
(n=51)

Reasons	Percentage
Didn't need Park & Ride lot	47%
Not convenient to transit	19%
Wasn't interested, didn't ask for it	13%
No time saving from my previous commute	8%
Not convenient to HOV	2%
Other**	15%

*Multiple responses permitted
** Each response in the "Other" category was mentioned by less than one percent of respondents.

Assistance Offered by Employers

Respondents also were asked if their employers offered any commuter assistance services and if these services had influenced their commute decisions. More than two-thirds of respondents (70%) said their employers do offer some services. Table 30 shows that the most common service offered by employers was transit passes, offered by 58% of employers. Smaller percentages of employers offered carpool and vanpool information (9%), transit schedules (4%), cash incentives (3%), Federal tax benefit/Commuter Choice (3%), preferential parking for carpools/vanpools (3%), or parking discounts for carpools/vanpools (3%). About one in ten respondents (9%) reported one or more of these services was implemented during the past year.

Table 30
Commuter Assistance Services Offered by Employers
(n=700)

Service Offered	Percentage*	Service Offered	Percentage *
Transit pass	58%	Federal tax benefit	3%
CP/VP information	9%	Preferential parking for CP/VP	3%
Parking fee	4%	Parking discount for CP/VP	3%
Transit schedule	4%	Other **	5%
Other cash incentive	3%		

* Multiple responses permitted
** Each response in the "Other" category was mentioned by less than one percent of respondents.

As shown in Table 31, the drive alone percentage was considerably lower for respondents whose employers offered commuter services (18%) than for respondents without services (40%). Respondents with employer services were much more likely to use transit (51% compared to 33%) and slightly more likely to carpool or vanpool (30% compared to 26%).

Table 31
Current Primary Commute Mode (3+ days per week)
by Commuter Services/Benefits Offered

Commute Services Offered	(n=___)	Current Commute Mode		
		DA	CP/VP	Transit
Yes	480	18%	30%	51%
No	207	40%	26%	33%

It should be noted that many factors, in addition to commute services offered, influence choice of commute mode and it is not possible to say that the availability of these services was the only reason, or even the primary reason, for the differences in mode use. For example, the State of the Commute survey conducted in the Washington metropolitan area in 2001 showed that employers in the District of Columbia had the lowest drive alone rates and were more likely to offer commute services.

But respondents who work in the District would be faced with greater impediments to driving alone, such as congestion, longer commute distances, and parking charges, and greater availability of commute options, such as transit, than would be experienced by workers outside the District. Any of these factors might also have influenced respondents' commute mode choices.

Assistance Offered by Other Commute Assistance Groups

Respondents are not relying substantially on other organizations for commuter information or assistance; only five percent of respondents indicated they received information from another organization. Information received from these organizations included: matchlists, transit route/schedule information, discount/free transit passes, and vanpool assistance. It is possible that some of these respondents actually received information provided by Commuter Connections through the other commute assistance group, but were not aware of this. For example, some local jurisdiction commute assistance groups forward matchlist requests to Commuter Connections for processing, but then send the matchlist prepared by Commuter Connections to the commuter.

Influence of Assistance or Information

Respondents who had made a commute change were asked if the information they had received from Commuter Connections had influenced their decisions to make the change. About a third of respondents (31%) who made a change indicated that assistance or information received from Commuter Connections, the employer, or another organization had influenced their decision.

Respondents noted a variety of services that influenced them. As shown in Table 32, the most frequently mentioned services were matchlists from Commuter Connections (11%), transit information from Commuter Connections (10%), and discount or free transit passes/Metrochek provided by an employer (8%). Other Commuter Connections services mentioned included GRH, vanpool assistance, and Park & Ride information.

Table 32
Information or Assistance that Influenced Decision to Change
(n=264)

Service/Assistance	Percentage*
Matchlist from Commuter Connections	11%
Transit information (from CC)	10%
Free/discount transit pass/Metrochek (from employer)	8%
GRH information (from CC)	5%
Vanpool assistance (from CC)	3%
Park & Ride information (from CC)	3%
Other **	4%

* Multiple responses permitted
** Each response in the "Other" category was mentioned by less than one percent of respondents.

Commuter Connections Improvements

Survey respondents also were asked how Commuter Connections could improve its services to commuters. Two respondents in five (40%) said no improvements were needed and an additional 22% said they didn't know if improvements were needed. The remaining 38% of respondents mentioned one or more improvements they would like to see. Table 33 highlights responses for this question.

Most of the desired improvements focused on the quantity or quality of information: more current information, matches fit travel better (closer fit to the respondent's travel constraints), and more match names. These responses reflect a balance between the need to periodically purge the database of commuters who are no longer interested and a desire to provide many potential matches on a matchlist.

Table 33
Commuter Connections Improvements Desired
(n=700)

Improvement	Percentage*	Improvement	Percentage *
Transit improvements	7%	Quicker response	3%
More current information	6%	Vanpool resources/assistance	2%
Matches fit travel better	6%	Matches interested in RS	2%
More match names	6%	More follow-up assistance	1%
More advertising	5%	Better transit information	1%
GRH suggestions	4%	Other **	5%
Internet suggestions	3%		

* Multiple responses permitted
** Each response in the "Other" category was mentioned by less than one percent of respondents.

Fewer respondents felt improvements in Commuter Connection's operations were needed. The primary improvements, all noted by fewer than 10% of the respondents, included: quicker response (3%), more advertising (5%), internet suggestions (3%), better transit information (1%), and more follow-up assistance (1%).

Number of Matchnames Received – The 36 respondents who said they wanted more matches were asked how many they had received. Overall, these respondents received an average of 5.2 matches, but nearly half (17 respondents) said they did not receive any matchnames. An additional 3 respondents said they had received one, two, or three names. Nine respondents received between four and eight match names. The remaining seven received nine or more names.

Matches Fit Travel – The 42 respondents who said the matches they received did not fit their travel well were asked what match characteristics needed to be more compatible. The most often mentioned characteristics were: "home location" (66%), "work location" (52%), and/or work hours (52%). About one in five (19%) said they would like a "broader match area." Smaller percentages of respondents said "closer match in personal preferences" (2%) or closer match in the number of days matches wanted to carpool or vanpool (2%).

Response Time – A small percentage of respondents wanted a quicker response. In a subsequent question it was found that 48% of the respondents had received the information they requested within one week of the request, 36% waited between one and two weeks for the information and the remaining 15% said they waited three or more weeks.

GUARANTEED RIDE HOME

The survey included numerous questions to identify the impacts of Guaranteed Ride Home on commuters' travel patterns. Approximately 66% of the respondents said they had received information on GRH. These respondents were asked additional questions about their interest in and use of GRH information and services.

Registration for GRH

Three-quarters (75%) of the respondents who received GRH information subsequently registered for GRH. Those that did not register gave various reasons for not registering, as indicated in Table 34. The largest group of respondents (35%) said they couldn't use an alternative two or more days per week, as required by the program. Some respondents said they "didn't need it" (29%), perhaps because the service was available to them from their employer or from another source. Two in ten (22%) said they "hadn't gotten around to it" at the time of the survey, suggesting they might register at a later time. A small percentage (3%) of respondents said they didn't know they had to pre-register to use the program.

Table 34
Reasons for Not Registering for GRH
(n=108)

Service Received	Percentage
Couldn't use alternative 2+ days/week	35%
Don't need it	29%
Haven't gotten around to it	22%
Didn't know you had to pre-register	3%
Other	5%

* Multiple responses permitted
** Each response in the "Other" category was mentioned by less than one percent of respondents.

Influence of GRH on Commute Decisions

Decision to Start Using Alternative Mode – The 135 GRH respondents who made a commute change were asked if they would have made the change if GRH had not been available to them. As Table 35 shows, a quarter (25%) of respondents said they were not at all likely to have made the change if GRH had not been available. Another quarter (23%) said they were somewhat likely to have made the change without GRH and the remaining 52% said they were very likely to have made the change even without GRH.

Table 35
Likelihood to Change to Alternative Mode if GRH Were Not Available
(n=135)

Likelihood	Percentage
Very likely	52%
Somewhat likely	23%
Not at all likely	25%

Decision to Continue Using Alternative Mode – The 194 GRH respondents who were using alternative modes at the time they requested GRH information were asked about the importance of GRH in their decision to continue using an alternative mode. Table 36 summarizes the responses to this question.

Table 36
Importance of GRH to Decision to Continue Using Alternative Mode
(n=194)

Importance	Percentage
Very important	35%
Somewhat important	39%
Not at all important	27%

About a third of the respondents (35%) said the GRH program was very important to the decision to continue using an alternative mode and 39% said the program was somewhat important to the decision. The remaining quarter (27%) said GRH was not at all important to the decision to continue using an alternative mode.

Despite this stated importance of GRH, respondents who were current alternative mode users overwhelmingly said they were unlikely to have stopped using the alternative. As shown in Table 37, a large majority (73%) said they were "very likely" to have continued using the alternative if GRH were not available. An additional 22% said they were "somewhat likely" to have continued using the alternative. Only five percent of the respondents said they were "not at all likely" to have continued using the alternative if GRH had not been available.

Table 37
Likelihood to Continue Using Alternative Mode if GRH Were Not Available
(n=194)

Likelihood	Percentage
Very likely	73%
Somewhat likely	22%
Not at all likely	5%

Respondents who were using an alternative when they requested GRH information also were asked how important GRH was, relative to other information or assistance they received, in influencing their decisions to continue using the alternative mode. As presented in Table 38, about half (45%) of respondents said GRH was the most important assistance or was very important in the decision.

Table 38
Importance of GRH in Influencing Decisions to Continue Using Alternative Mode
(n=194)

Importance	Percentage
Most important assistance/very important	45%
Same importance as other assistance	17%
More important than some, less than other	9%
Less important or not at all important	23%
GRH was only assistance received	5%

About 17% said GRH was of equal importance to other information or assistance received and nine percent said GRH was more important than some and less important than other assistance. About a quarter (23%) said GRH was of less importance than other information received or was not at all important in the decision to make a change. For five percent of the respondents, GRH was the only information or assistance received.

Forty-two respondents said GRH was not the most important service influencing their decision. The largest number (17 respondents) cited an employer discount transit pass. Other respondents noted services provided by Commuter Connections: matchlist (8 respondents), transit information (5 respondents), Park & Ride information (2 respondents), and vanpool information (1 respondents).

Use of and Satisfaction with GRH

Only about 14% of the respondents who had registered for GRH said they had taken a GRH trip. Table 39 lists the reasons for which employees used the service. The majority (70%) of those who had taken a GRH trip had done so because of an illness, either their own, or that of a family member or rideshare partner. Another 14% had used GRH for unscheduled overtime and 12% said the reason was an "other personal emergency."

Table 39
Reasons for Using GRH Trip
(n=48)

Likelihood	Percentage
Illness - family member/RS partner	43%
Illness (self)	27%
Other personal emergency	14%
Unscheduled overtime	12%

The large majority (94%) of the respondents who had used the program said the service had been satisfactory. Those who found it unsatisfactory said it was hard to get approval for the trip (1 respondent) or didn't like the taxi or driver who provided the trip (1 respondent).

TELECOMMUTE ASSISTANCE

Nine percent of respondents said they had received information on telecommuting from Commuter Connections. These respondents were asked additional questions about their use of the information and their use of telecommuting before and after receiving the information.

The majority (76%) of these respondents said they had received "general telecommute information." One-third (35%) received information on telework centers. The remaining respondents said they had received a referral to a federal agency telecommute coordinator (3%).

Two respondents said they had use the information to talk to their employers about telecommuting and one said he/she had used the information to start telecommuting. The majority (92%) of respondents who received information said they had not yet used it. This high percentage could be related to the timing of the survey; the survey was conducted about six weeks after the end of the three-month period during which requests were fulfilled. It is possible some of these respondents have used the information subsequently.

About six percent of the respondents were telecommuting at the time they requested information and two started telecommuting after receiving telecommute information. Of the remaining respondents, more than one-third (39%) said they were still interested in telecommuting.

SECTION 4 PROGRESS ON PERFORMANCE MEASURES AND GOALS

One purpose of the evaluation was to document transportation and air quality impacts of the Commuter Operations Center and Integrated Rideshare TERM. This report also documents Commuter Connections' progress on participation, utilization, and satisfaction performance measures.

Participation, utilization, and satisfaction measures can include, for example, the number of commuter assistance requests, number of matchlists provided, and users' satisfaction with the assistance. These measures are important primarily for tracking purposes, but also are used to assess **program impact measures**, the ultimate measures of results or benefits, such as transportation, air quality, and energy benefits. Program impact measures include, for example, the number of vehicle trips reduced.

The Commuter Operations Center's basic services include: carpool and vanpool matchlists, information on transit routes and schedules, information on Park & Ride lot locations, and information on HOV lanes and other HOV facilities. Commuters obtain these services by calling the Commuter Connections toll-free telephone number or by sending a ridematch application/request form obtained from their employers, a local jurisdiction commuter assistance program, a TMA, the Commuter Connections website, or other source.

The placement survey on which this report is based provides data to calculate transportation and air quality impacts for Commuter Connections program services provided to commuters through the Commuter Operations Center and for Integrated Rideshare. The survey also includes brief sections on GRH and Telework Resource Center, but impacts of these and other TERMs: Employer Outreach, Employer Outreach for Bicycling, and Mass Marketing are calculated primarily through other methods using data collected through other means. The results of these other impact analyses will be reported in June 2005, as part of the 2003-2005 TERM analysis.

PARTICIPATION, UTILIZATION, AND SATISFACTION

The results of six participation, utilization, and satisfaction measures are presented in Table 40 below for the Commuter Connections Program overall. These data were drawn from the Commuter Connections database and from the commuter placement survey conducted for this project. Data drawn from the survey were described in Section 3.

Table 40
Commuter Connections Program Activity Summary and
Overall Participation, Utilization, and Satisfaction Performance Measures
Placement Survey, July-September 2003

• Commuter applicants	4,030	
• Applicant placement rates	32.5%	
- Continued placement rate		20.4%
- Temporary placement rate		12.1%
• Applicants placed in alternative modes	1,310	
- Continued placements		822
- Temporary placements		488
• Applicants desiring rideshare information (carpool or vanpool)		59%
- Applicants who remembered receiving matchlist		48%
- Applicants who remembered receiving vanpool assistance		22%
- Applicants who remembered receiving Park & Ride info		21%
• Applicants desiring transit information		12%
- Applicants who remembered receiving transit schedule		33%
• Applicants interested in GRH		68%
- Applicants who remembered receiving GRH information		66%
• Commuters suggesting Commuter Connections improvements		38%

PROGRAM IMPACT MEASURES

COG also established five program impact performance measures to assess the impacts of Commuter Connections' commuter assistance services. These measures are:

- Vehicle trips (VT) reduced
- Vehicle miles traveled (VMT) reduced
- Emissions reduced
  - Tons of Nitrogen Oxides - NOx
  - Tons of Volatile Organic Compounds - VOC
- Gallons of gasoline saved
- Commuter travel costs reduced

The results for these measures, calculated from the survey data and other data provided by Commuter Connections are shown in Table 41.

Table 41
Commuter Connections Program
Program Impact Performance Measures
Placement Survey, July-September 2003

• Daily vehicle trips (VT) reduced	**363**	**trips**
- Continued placements	345	trips
- Temporary placements (prorated credit)	18	trips
• Daily VMT reduced	**13,026**	**VMT**
- Continued placements	12,396	VMT
- Temporary placements (prorated credit)	630	VMT
• Daily tons of NOx reduced	**0.009**	**tons**
• Daily tons of VOC reduced	**0.004**	**tons**
• Gallons of gasoline saved	**547**	**daily gallons of gas**
• Commuter costs reduced (daily)	**$1,785**	**per day**
- Annual cost saving per continued placement	**$543**	**per year**

Calculations of these impacts are briefly described below. Appendix B in this report provides a summary worksheet of the impact calculations. For further detail on the methodology used to calculate impacts, refer to the "Transportation Emission Reduction Measures (TERMs) Revised Evaluation Framework – 1999-2002" (March 2001).

Vehicle Trips Reduced

Vehicle trip reduction (VTR) measures the number of vehicle trips no longer made as a result of commuters increasing their use of high occupancy modes. Vehicle trip reduction can occur from shifts from driving alone to an alternative mode, shifts within alternative modes to HIGHER occupancy alternatives, and increases in the number of days commuters use alternatives. The calculation of trip reduction must also account, however, for shifts that do not reduce, and indeed may increase, vehicle trips. These shifts include shifts within alternative modes to LOWER occupancy alternatives, and decreases in the number of days commuter use alternatives.

To simplify measuring the impacts of these various shifts, a VTR "factor" is used, combining the impacts of various changes into one number, representing the average number of vehicle trips reduced by a new commuter "placement." This factor is multiplied by the number of placements to estimate the vehicle trip reduction of all commuters placed in alternative modes.

Two VTR factors were derived from detailed examination of the types of changes reported by survey respondents, one for continued change and a second for temporary change. The VTR factors are shown below:

- Continued change VTR factor: 0.42 daily one-way VT reduced per continued placement
- Temporary change VTR factor: 0.44 daily one-way VT reduced per one-time placement

Continued Change – The calculation of vehicle trip reduction for continued change placements was performed by multiplying the 0.42 continued VTR factor, by the number of continued placements (822). The resulting daily vehicle trip reduction is **345 one-way vehicle trips reduced per day**.

Temporary Change – The calculation of vehicle trip reduction for temporary placements multiplied 0.44, the temporary VTR factor, by the number of temporary placements (488). This resulted in a reduction of 215 one-way vehicle trips reduced. Because these placements lasted only 4.3 weeks on average, the trip reduction was discounted by 92%. An 8% credit was allocated to the placements, representing the portion of a year (4.3 of 52 weeks) when the mode was used. Thus, **18 daily trips were reduced by temporary changes**.

All Placements VT Reduction – The total vehicle trip reductions from continued and temporary commute changes of all applicants were then added to obtain a total trip reduction for all applicants. This sum, 345 + 18, equaled **363 daily vehicle trips reduced**.

Vehicle Miles Traveled (VMT) Reduced

The reduction in vehicle miles traveled, or VMT, is the second travel impact measures. It was calculated by multiplying the number of vehicle trips reduced by the average commute distance for respondents who made a commute change.

Continued Change – Respondents with continued changes traveled an average of 35.9 miles per one-way commute trip. As shown in Appendix B, the total estimated number of VMT reduced by continued change placements during the evaluation period was **12,396 daily VMT reduced**.

Temporary Change – Temporary change placements traveled an average of 35.4 miles per one-way commute trip. This average length was multiplied by the 18 vehicle trips reduced, resulting in **630 VMT reduced by temporary placements**.

All Placements VMT Reduction – The total VMT reduced by continued and temporary commute changes of all placements, 12,396 and 630 respectively, were added to obtain a total VMT reduction of **13,026 daily VMT reduced**.

Emissions Reduced

The calculation of emissions benefits, defined as tons of pollutants reduced, applied one regional emission factor to the number of vehicle trips or "trip ends" and another factor to VMT to determine the pollutants

reduced as a result of the program. This analysis calculated emission reduction for two pollutants: Oxides of Nitrogen (NOx) and Volatile Organic Compounds (VOC).

For 2005, the attainment year for the 2003 – 2005 evaluation cycle, the NOx emission factors are:

Trip end (cold start)	=	0.9905 grams per one-way vehicle trip reduced
VMT (running)	=	0.6881 grams per vehicle mile reduced

The emission factors for 2005 for VOC are:

Trip end (cold start)	=	1.658 grams per one-way vehicle trip reduced
VMT (running)	=	0.290 grams per vehicle mile reduced

The first emission factor, estimating emissions from starting a cold-engine vehicle, is multiplied by the estimated vehicle trips reduced, adjusted to remove commuters who make a drive alone trip to a rideshare or transit meeting point. The second factor, which estimates emissions from running a warm-engine vehicle, is multiplied by the vehicle miles reduced, adjusted to account for the length of drive alone trips to rideshare and transit meeting points. The sum of the products of these two calculations determines daily NOx reductions.

The emission reduction calculation for vehicle trips and VMT reduced by all placements is shown in Appendix B. The emissions reduced by all placements equaled **0.009 tons of NOx per day and 0.004 tons of VOC per day**.

Gallons of Gasoline Saved

The fourth performance measure assesses the number of gallons of gasoline saved by increased use of alternative modes. This performance measure is calculated by dividing the number of daily VMT reduced by an average miles per gallon fuel efficiency of the mix of vehicles in the region. The calculation for this measure is shown in Appendix B. As shown, **547 gallons of gasoline were saved daily** from increased use of alternative modes by Commuter Connections applicants.

Commuter Travel Costs Reduced

The fifth program impact performance measure is commuter travel costs reduced. This performance measure, which assess benefits to commuters, was calculated by multiplying the number of daily VMT reduced by an average travel cost per mile for the mix of types of vehicles in the region.

This calculation, also presented in Appendix B indicates that new Commuter Connections **continued placements saved a total of $1,785 daily** by beginning or increasing their use of alternative modes, or a total of $446,250 annually ($1,785 per day x 250 commute days per year). Dividing the annual overall saving by the number of continued commuter placements (822), this equals a saving of $543 per commuter per year.

LIST OF APPENDICES

Appendix A
Results from November 2002 and November 2003 Database Applicant Placement Surveys - Comparison on Key Questions

Current Travel Information

Table A-1
Current Mode Split – Weekly Trips
All Modes (including compressed work schedule and telework days)
(n=700)

	2003		2002	
CWS	**2.8%**		**2.6%**	
Telework	**1.2%**		**1.2%**	
DA/Motorcycle	**24.9%**		**30.0%**	
CP	**17.9%**		**23.0%**	
Regular CP		13.4%		17.4%
Slug		4.5%		5.6%
VP	**9.1%**		**12.7%**	
Bus	**9.5%**		**10.1%**	
Buspool		0.9%		0.4%
Bus		8.6%		9.7%
Train	**34.2%**		**20.0%**	
Metrorail		12.8%		12.45
MARC		9.5%		2.65
VRE		11.9%		4.8%
AMTRAK		0.0%		0.2%
B/W	**0.2%**		**0.3%**	
Bicycle		0.1%		0.2%
Walk		0.1%		0.2%

Table A-2
Current mode split – Weekly Trips
Mode Groups (excluding CWS and TW days)
(n=700)

	2003	2002
DA/Motorcycle	26.0%	31.1%
CP	18.7%	23.9%
VP	9.5%	13.2%
Bus	9.9%	10.5%
Train	35.7%	20.8%
B/W	0.2%	0.5%

Table A-3
Work Non-standard/Flexible Work Schedules
(n=700)

	2003	2002
No	69%	63%
Yes	31%	37%
4/40	1.7%	1.7%
9/80	13.1%	14.8%
Flextime	15.8%	20.3%

Table A-4
Average Length of Commute (Distance and Time)

	2003	2002
Distance	35.3 miles	31.6.miles
Time	66 minutes	57 minutes

Table A-5
Carpool/Vanpool Occupancy

	2003	2002
Carpool/slug	2.9	2.9
Vanpool	10.5	11.4

Table A-6
Frequency of Driving Among Carpool/Vanpool Respondents

	2003	2002
(n=____)	211	282
Always drive	9%	12%
Sometimes drive	43%	45%
Never drive	48%	43%

Table A-7
Access Mode and Distance to Rideshare or Transit Meeting Points

	2003	2002
(n=____)	511	463
Picked-up at home	7%	8%
Drive to driver's home	2%	4%
Drive to central location	74%	72%
Another pool/dropped off	3%	2%
Walk	11%	10%
Drive CP/VP	1%	1%
Bus/transit	3%	3%
Average access distance	6.2 miles	5.6 miles

Travel Changes

Table A-8
Made Travel Change Since Receiving Information/Assistance

	2003	2002
(n=____)	700	700
Joined/created new CP/tried CP	10.2%	14.3%
Joined/created new VP/tried VP	5.1%	4.6%
Started using or tried transit/bike/walk	15.0%	18.3%
Started teleworking/CWS	2.2%	4.1%
Increased days/week using alt modes	0.0%	1.9%
Added person to existing CP	0.0%	2.1%
Added person to existing VP	0.0%	0.4%
TOTAL	**32.5%**	**45.7%**

Table A-9
Reasons for Making Change*

	2003	2002
(n=____)	223	332
Save time	22%	17%
Save money	19%	12%
Changed jobs	14%	22%
Circumstances (e.g., no vehicle)	14%	13%
Moved residence	11%	8%
Tired of driving	10%	7%
CP broke up/didn't work out	4%	8%
Reduce congestion/pollution	5%	4%
Metrochek/financial incentive	3%	2%
CP/VP partner became available	2%	9%
Just to try it	2%	2%
Use HOV lane	2%	2%
Save wear and tear on car	2%	2%
Safety	2%	1%
Parking cost too high	2%	2%
Too stressful/traffic	1%	3%
Other	10%	11%

* Multiple responses permitted

Table A-10
Was Change Temporary or Continued?

	2003	2002
(n=____)	224	332
Continued	62.8%	61.2%
Temporary	37.2%	39.8%

Table A-11
Continued and Temporary Placement Rates
And VTR Factors

	2003	2002
Continued placement rate	20.4%	28.0%
Temporary placement rate	12.1%	17.7%
Continued VTR	-0.44	-0.40
Temporary VTR	-0.42	-0.57
Average duration of temporary change	4.3 weeks	4.2 weeks

Information Received

Table A-12
How Contact Was Made with Commuter Connections
(n=700)

	2003	2002
CC page on Internet	64%	52%
Called CC directly	24%	26%
Employer/turned in form at work	8%	12%
Another internet site	2%	2%
Local jurisdiction program	1%	3%

Table A-13
Information Requested From Commuter Connections
(n=700)

	2003	2002
Rideshare	59%	86%
- Carpool only	6%	11%
- Vanpool only	4%	6%
- Carpool and vanpool	49%	69%
Transit	12%	7%
Guaranteed Ride Home	68%	47%

Table A-14
Types of Information Received from Commuter Connections
(n=700)

	2003	2002
GRH info	66%	49%
GRH registration	52%	31%
Matchlist	48%	64%
Transit info	33%	27%
Vanpool assistance	22%	18%
P&R info	21%	20%
GRH trip	14%	6%
Telecommute	9%	8%
HOV lane info	8%	7%

Table A-15
Types of Assistance Services Offered by Employer *
(n=700)

	2003	2002
Discount/free transit pass	58%	47%
Matchlist	9%	5%
Parking fees	4%	2%
Transit info	4%	2%
Other cash incentive	3%	4%
Federal tax benefit	3%	3%
Preferential parking	3%	2%
CP/VP parking discount	3%	2%
SmartTag Subsidy	1%	3%
Referred to CC	1%	1%
None	30%	37%

* Multiple responses permitted

Table A-16
Employer Services New Within Past Year?

	2003	2002
(n=____)	490	441
Yes	9%	11%
No	91%	89%

Table A-17
Received Information from Other Organization
(n=700)

	2003	2002
Yes	5%	5%
No	95%	95%

Table A-18
Improvements Desired of Commuter Connections *
(n=700)

	2003	2002
None needed	40%	37%
Don't know	22%	10%
Transit improvements	7%	8%
More current info	6%	12%
Better fit in matches	6%	10%
More match names	6%	8%
More advertising	5%	5%
GRH suggestions	4%	3%
Quicker response	3%	5%
Use internet/website	3%	4%
Vanpool resources/assistance	2%	4%
Matches more interested in RS	2%	2%
More follow-up assistance	1%	3%
Better transit info	1%	2%

* Multiple responses permitted

Use/Influence of Information Received

Table A-19
Received Matchnames
(n=700)

	2003	2002
Yes	48%	64%
No	52%	36%

Table A-20
Try to reach People Named on the List

	2003	2002
(n=____)	332	459
Yes	49%	53%
No	51%	47%

Table A-21
Able to Reach People on List?

	2003	2002
(n=____)	161	242
Yes	89%	89%
No	11%	11%

Table A-22
Commuters Reached Interested in Ridesharing?

	2003	2002
(n=____)	141	216
Yes	45%	44%
No	21%	21%
Schedule/locations not compatible	34%	35%

Table A-23
Reasons for Not trying to Reach Commuters

	2003	2002
(n=____)	171	220
Work hours not compatible	25%	24%
Locations not compatible	23%	23%
Didn't want to RS	17%	12%
Already found RS arrangement	15%	25%
Haven't gotten to it	10%	10%
No names on ML	10%	4%
Changed jobs	2%	2%
Changed residence	2%	<1%

Table A-24
Did Respondent Contact Transit Agency?
(Asked of Respondents Who Said They Received Transit Information)

	2003	2002
(n=____)	229	184
Yes	32%	30%
No	68%	70%

Table A-25
Did Respondent Use Information to Try Transit?

	2003	2002
(n=____)	41	35
Yes	88%	77%
No	12%	23%

Table A-26
Why Did Respondent Decide Not to Contact Transit Agency? *

	2003	2002
(n=____)	160	129
Wasn't interested	34%	15%
Prefer other modes/current mode	18%	28%
Already had info	16%	13%
Too far from home/work	12%	12%
Never got around to it	7%	10%
Already using transit	4%	4%
Routes/times not convenient	4%	4%
Didn't need to/CC sent info	2%	4%
Would never use transit	2%	3%

* Multiple responses permitted

Table A-27
Did Respondent Use Park & Ride Information?
(Asked of Respondents Who Said They Received P&R Information)

	2003	2002
(n=____)	96	91
Yes	47%	44%
No	53%	56%

Table A-28
Use Park & Ride Lot Before Receiving Information?

	2003	2002
(n=____)	45	40
Yes	50%	43%
No	50%	57%

Table A-29
Aware of Park & Ride Lot Before Receiving Information?

	2003	2002
(n=____)	45	40
Yes	69%	65%
No	31%	35%

Table A-30
Did Information Respondent Received Influence Decision to Make Commute Change

	2003	2002
(n=____)	264	343
Yes	32%	27%
No	68%	73%

2003 Influences

Matchlist (11%), transit info (10%), Metrochek/transit discount (7%), VP assistance (3%), P&R info (3%), GRH (5%),

2002 Influences

Matchlist (14%), transit info (6%), Metrochek/transit discount (4%), VP assistance (2%), P&R info (2%), GRH (3%),

Guaranteed Ride Home (GRH)

Table A-31
Mode Used When Requesting GRH Information

	2003	2002
(n=____)	464	352
DA/Motorcycle	21%	28%
CP	15%	20%
VP	11%	14%
Bus/train	52%	38%

Table A-32
Register for GRH?

	2003	2002
(n=____)	464	352
Yes	74%	63%
No	26%	37%

Table A-33
Likely to Start Using Alternative Mode Without GRH

	2003	2002
(n=____)	135	113
Very likely	52%	51%
Somewhat likely	23%	26%
Not at all likely	25%	23%

Table A-34
Likely to Continue Using Alternative Mode Without GRH

	2003	2002
(n=____)	194	91
Very likely	73%	79%
Somewhat likely	22%	14%
Not at all likely	5%	7%

Table A-35
Importance of GRH to Decision to Continue Using Alternative Mode

	2003	2002
(n=____)	194	91
Very important	35%	43%
Somewhat important	39%	25%
Not at all important	27%	32%

Table A-36
Respondent Used GRH Trip

	2003	2002
(n=____)	350	219
Yes	14%	19%
No	86%	81%

APPENDIX B
CALCULATIONS OF IMPACTS - ALL PLACEMENTS, JULY – SEPT. 2003

All Applicants Placement Rates

Continued placement rate	20.4%	*(Results from survey)*
Temporary placement rate	12.1%	

Placements

Number of applicants	4,030	*(Number of applicants during 4 quarters in which placement surveys were conducted)*
Continued placements	**822**	*(Applicants x cont. placement rate)*
Temporary placements	**488**	*(Applicants x temp. placement rate)*
TOTAL placements	**1,310**	

Daily Vehicle Trips Reduced

VTR Factors

Continued	0.42	Temporary	0.44
Continued VT Reduced *(Placements x cont. VTR factor)*	**345**	Temporary VT Reduced *(Placements x temp. VTR factor)*	215
		Discount – 4.3/*52 weeks (8.3%)*	**18**

Total daily VTrips reduced **363**

Daily VMT reduced

Ave Trip Distance

Continued	35.9	Temporary	35.4
Continued VMT Reduced *(Vehicle trips x ave. distance)*	12,396	Temporary VMT Reduced *(Vehicle trips x average distance)*	630

Total daily VMT reduced **13,026**

APPENDIX B (CONT)
CALCULATIONS OF IMPACTS - ALL PLACEMENTS

Trip and VMT Adjustment for SOV Access to HOV Modes (Reduce VT and VMT for AQ analysis)

Continued Placements		**Temporary Placements**	
Non-SOV access percentage	36%	Non-SOV access percentage (temp)	59%
Continued VT Reduction		**Temporary VT Reduction**	
VT with no SOV access *(Continued VT x non-SOV %)*	124	VT with no SOV access *(Temp x non-SOV %)*	11
Continued VMT Reduction		**Temporary VT Reduction**	
VMT with no SOV access *(Cont. VT x SOV % x total dist*	4,463	VMT with no SOV access *(Temp VT x SOV % x total dist)*	372
SOV access distance (mi.)	7.3	SOV access distance (mi.)	6.3
VMT with SOV access *(Cont. VT x SOV % x (total dist - access dist.))*	6,320	VMT with SOV access *(Temp VT x SOV % x (total dist - access dist.))*	212
Total VT for AQ analysis	**135**		
Total VMT for AQ analysis	**11,367**		

Daily Emissions Reduced		**05 Emis.**		**05 Emis.**		
NOx Emission reduction	**Trips**	**Factor**	**VMT**	**Factor**	**Total (gm)**	**Total (ton)**
Cold start	135	0.9905			134	0.0001
Running *(35 mph)*			11,367	0.6881	7,822	0.0086
						0.009
		05 Emis.		**05 Emis.**		
VOC Emission reduction	**Trips**	**Factor**	**VMT**	**Factor**	**Total (gm)**	**Total (ton)**
Cold start	135	1.658			224	0.0002
Running *(35 mph)*			11,367	0.2901	3,298	0.0036
						0.0040

APPENDIX B (CONT)
CALCULATIONS OF IMPACTS - ALL PLACEMENTS

Daily Energy Saving

Daily Energy Savings **547 gal/day**
(total daily VMT reduced / 23.8 miles/gallons)
(13,026/ 23.8)

Daily Commuter Cost Savings Saving (continued placements only)

Daily Commuter Cost Savings **$1,785 / day**
(cont. VMT reduced x $0.144/mi.)
(12,396 x 0.144)

Annual Cost Saving **$446,253 / year**
(daily cost saving x 250 days)
($1,785 x 250)

Cost Saving per commuter **$543 / year**
(cost saving / number of cont. placements)
($446,253 / 822)

* Only respondents with continued change were included in this calculation. Commuters with temporary changes would receive similar cost savings, but for only the duration of their change.