Item # 5

TELECENTER UTILIZATION AND TELEWORKER TRAVEL BEHAVIOR SURVEYS

Prepared for:

Metropolitan Washington Council of Governments
Commuter Connections Program

Prepared by:

Elham Shirazi
Los Angeles, CA
(310) 474-2325

Under direction of:

LDA Consulting

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INTRODUCTION

This brief report describes the methodologies and results of data collection undertaken for the Commuter Connections program of the Metropolitan Washington Council of Governments (COG) at telecenters administered by the General Services Administration (GSA). These data were collected to assess the average utilization of telecenters and the travel behavior of commuters who work at telecenters. Both of these data collection efforts also were conducted in 2001. And the utilization inventory was updated in 2002 and 2003.

The results of the surveys will be used, as part of a larger evaluation of Transportation Emission Reduction Measures (TERMs) administered by COG, to estimate the travel and air quality impacts of the telecenters. This analysis will be conducted in the spring of 2005.

TELECENTER UTILIZATION

Methodology

All GSA telecenter managers were asked to collect information on the total number of reservations made for use of the telecenter and on the number of employees who actually came to work at the telecenters. This information was collected for a four-week period (20 business days, Monday through Friday) from March 22 through April 15, 2004. Thirteen of fifteen GSA telecenters compiled the information. Participating telecenters included NetTech, Hagerstown, Bowie, Calvert, Waldorf, Manassas, Stafford, Fairfax, Herndon, Sterling, Fredericksburg, Woodbridge and Laurel Lakes. The survey results are shown below. The tables include data from 2001-2003.

Results

Based on information received from the 13 telecenters, a total of 317 seats were available for teleworking on a daily basis. Center capacity ranges from 16 to 37 seats per telecenter. For the 20 days covered by the survey, a total of 6,340 seats were available for teleworking.

Percent Seats Reserved – The percentage of available seats reserved varied from center to center, ranging from a high of 78% of the center's capacity to a low of 17% of capacity. As shown in Table 1, in 2004, an average of 50% of the seats at the telecenters were reserved ahead of time. This was essentially the same as the reservation rate in 2001 and 2002.

Table 1: Reservations of Seats

Year	# of Days Surveyed	Total Seats Available *	Total Reservations	Reservations / Available Seats
2004	**20**	**6.340**	**3,160**	**50%**
2002	21	6,720	3,558	53%
2001	22	6,952	3,526	51%

*This indicates the number of seats available over the total survey period. For example, in 2004, 317 seats were available each day, for a total of 6,340 seats available for the 20 days of reporting by the centers.

Fulfillment of Reservations – As Table 2 indicates, about 74% of the telecommuters who made reservations actually came to work at the telecenters. The level of attendance ranged from a high of 97% reservations to a low of 51% of reservations. This appears to have increased slightly since 2001. In 2001, about two-thirds of reserved seats were used and in 2004, three-quarters of reservations were used.

Table 2: Users by Reservation

Year	# of Days Surveyed	Total Reservations	Total Uses	Users/ Reservations
2004	**20**	**3,160**	**2,335**	**74%**
2002	21	3,558	2,468	69%
2001	22	3,526	2,340	66%

Telecenter Utilization – Table 3 presents the utilization rate of the centers. The overall utilization rate, measured by the number of seats used during the survey period as a proportion of the seats available, was 37%. Utilization levels by center ranged from 56% to 16%. This rate was approximately the same as was achieved in 2001 and 2002.

Table 3: Utilization Rate

Year	# of Days Surveyed	Total Seats Available	Total Uses	Users/ Available Seats
2004	**20**	**6.340**	**2,335**	**37%**
2002	21	6,720	2,468	37%
2001	22	6,952	2,340	34%

TELEWORKER TRAVEL BEHAVIOR

Methodology

The second objective of this research was to assess the impact of telecenter use on travel behavior of teleworkers. To identify the travel patterns of teleworkers, the telecenter managers distributed surveys to teleworkers who used the centers during the four-week survey period. The survey collected data on telecenter workers travel patterns for a one-week period. Of the 15 telecenters surveyed, 13 returned surveys from a total of 126 individual teleworkers. The following sections present the results of the surveys. This survey was also conducted in 2001 and those results are presented for comparison.

Results

Work Locations – The survey first asked telecommuters where they worked each of the days during the survey period. As the last column in Table 4 indicates, teleworkers worked at the centers for about 32% of their workweek, or 1.6 days per week. Tuesdays and Fridays were the most popular days for working at the telecenters. Respondents worked at a main office about half (58%) of the week.

Table 4: Location of Work by Day of Week

	Mon		Tues		Wed		Thurs		Fri		WEEK	
Location	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Main office	87	70%	67	54%	82	65%	86	69%	38	30%	**360**	**58%**
Home	2	2%	3	3%	8	6%	2	2%	3	2%	**18**	**3%**
Telecenter	**24**	**19%**	**48**	**38%**	**30**	**24%**	**33**	**26%**	**64**	**51%**	**199**	**32%**
Satellite office	1	1%	1	1%	1	1%	0	0%	0	0%	**3**	**<1%**
Executive suite	0	0%	0	0%	0	0%	0	0%	0	0%	**0**	**0%**
Other	0	0%	4	3%	4	3%	1	1%	0	0%	**9**	**1%**
Regular day off	8	7%	1	1%	0	0%	1	1%	11	9%	**21**	**3%**
Vac./holiday	2	2%	1	1%	2	2%	2	2%	9	7%	**16**	**3%**

* Column percentages might not equal 100%, due to rounding

Tenure at the Telecenter **–** Respondents also were asked how long they had worked at the telecenter. As shown below, in 2004, the average teleworker had worked at the center for 30 months. Individual teleworkers' tenures at the telecenter ranged from 2 to 122 months. The average tenure was longer in 2004 than the 22-month average as reported in the 2001 telecenter user survey.

Table 5: Tenure

	Months at the telecenter	
	Average	**Median**
2004	**30 months**	**24 months**
2001	22 months	19 months

Average Trip Distance – Table 6 below shows average trip distances from the teleworker's home to the telecenter and from home to the main worksite on non-telecommute days. On average, teleworkers traveled just over 9 miles to the telecenter and nearly 47 miles on non-telework days. Thus, they save about 37 miles, each way, on days they work at the telecenter. This travel distance saving was slightly higher than the 34 mile saving calculated in 2001, but the sample sizes are relatively small for both surveys (126 in 2004 and 167 in 2001), so the difference is not statistically significant.

Table 6: Average Trip Distance

	Average One-way Miles to Telecenter	Average One-way Miles to Main Worksite	Mileage Saving
2004			
Average	**9.4 miles**	**46.8 miles**	**(37.4 miles)**
Median	7 miles	40 miles	(33 miles)
2001			
Average	8.9 miles	42.8 miles	(33.9 miles)
Median	10 miles	33 miles	(25 miles)

Mode of Travel on Telework Days – Next, teleworkers were asked about their mode of travel on telework and non-telework days. Table 7 provides results for the days teleworkers traveled to the telecenter. The overwhelming majority (94%) drove alone in 2004, three percent carpooled, two percent rode a train, and two percent biked or walked to the center. The predominance of drive alone in 2004 was consistent with the 93% drive alone rate found in the 2001 survey.

Table 7: Mode of Travel to Telecenter

	Mon		Tues		Wed		Thurs		Fri		WEEK	
Mode	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Drove alone	23	96%	45	96%	33	94%	31	94%	59	92%	**191**	**94%**
Carpool	0	0%	2	4%	1	3%	0	0%	2	3%	**5**	**3%**
Vanpool	0	0%	0	0%	0	0%	0	0%	0	0%	**0**	**0%**
Bus	0	0%	0	0%	0	0%	0	0%	0	0%	**0**	**0%**
Train/rail	0	0%	0	0%	1	3%	1	3%	2	3%	**4**	**2%**
Bike/walk	1	4%	0	0%	0	0%	1	3%	1	2%	**3**	**2%**

* Column percentages might not equal 100%, due to rounding

Mode of Travel on Non-Telework Days – Teleworkers also were asked if they had changed the way they travel to the main worksite on non-telework days, since they started using the telecenter. These results are shown in Table 8, along with any differences in mode use. The last column of the table shows the mode use differences calculated from the 2001 survey data. The 2004 data show slight mode changes from "prior to TC" to "with TC," with driving alone increasing slightly, from 38% to 42%. A similar result was found in 2001, but neither result was statistically significant.

Table 8: Mode of Travel to Main Office

Mode	Prior to TC*	With TC	Difference (2004)	Difference (2001)
Drove alone	38%	42%	**+4%**	+3%
Carpool	25%	20%	**-5%**	-2%
Vanpool	11%	13%	**+1%**	-3%
Bus	7%	6%	**-1%**	+2%
Train/rail	19%	20%	**+1%**	+2%
Bike/walk	0%	0%	**0%**	0%

*Table includes only days that commuters traveled to the main worksite

Impact on Vehicle Trips

Finally, Table 9 shows the overall mode split for the teleworkers mode during the survey week, including both telework and non-telework days. Overall teleworkers increased the total number of days they drove alone during the week and decreased the number of days they used all alternative modes. The new drive alone trips primarily occurred on telework days.

Table 9: Mode of Travel – Overall Change on Telecenter and Non-Telecenter Days

Mode	Prior to TC*	With TC	Difference (2004)	Difference (2001)
Drove alone	38%	60%	**+22%**	+13%
Carpool	25%	15%	**-10%**	-7%
Vanpool	11%	8%	**-3%**	-6%
Bus	7%	4%	**-3%**	-1%
Train/rail	19%	13%	**-6%**	-6%
Bike/walk	0%	<1%	**0%**	0%

*Table counts only days that commuters traveled to a location outside their home for work

Weekly Vehicle Trips – As can be seen in Table 10, teleworkers increased the total number of vehicle trips they made during the week when they used the telecenters by a net total of 80 trips per week. This finding parallels the results of the 2001 survey and studies of other telecenter users nationwide. This could be because availability of transit and alternative transportation to telecenters is often limited. In many cases, commuters who typically use an alternative mode of transportation to their main worksite have no choice but to drive alone to telecenters.

Table 10: Vehicle Trips

	Drove Alone	Carpool*	Vanpool **	Total Vehicle Trips
2004				
Prior to TC	229.2	74.5	5.7	309.3
With TC	344.0	41.5	3.8	389.3
Net change	+114.8	-33.0	-1.8	+ 80.0
2001				
Net change	+100.0	-36.6	4.5	+ 60.2

* Carpool trips count as one-half a vehicle trip (i.e., 149 carpool person trips reported for Prior-to-TC period.
** Vanpool trips count as one-twelfth of a vehicle trip (i.e., 68 vanpool person trips reported for with-TC period.

Impact on VMT

Even with increased weekly vehicle trips, telecenter users decreased their total weekly VMT due to the shorter distance to the telecenter, 9.4 miles to the telecenter compared to 46.8 miles to the main worksite.

Table 11 presents the net impacts of telecenter use on vehicle trips and VMT. Use of the telecenter resulted in a weekly VMT reduction of 7,972 miles, or 1,594 miles per day (7,972 miles divided by five days). The daily VMT reduction per telecenter user in 2004 was 12.6 miles. This compares closely to 13.9 miles reduction in VMT per telecenter user in 2001.

This average VMT reduction per teleworker can be used to estimate the total VMT reduction for all telecenter users, by multiplying the per teleworker VMT reduction by the total number of seats used per day at all centers. The average number of seats used is 125, calculated by multiplying the 37% utilization rate by the total seat count of 339 (317 from centers that participated in data collection and an additional 22 seats for two centers that did not participate). Multiplying 125 seats used per day by 12.6 VMT reduced per telecenter user yields an estimate of 1,575 VMT reduced per day.

Table 11: Impact on VMT

	Prior to TC (weekly)		With TC (weekly)*	
	Vehicle Trips	**VMT (one-way)**	**Vehicle Trips**	**VMT (one-way)**
Main worksite	309	14,465	185	8,662
Telecenter	0	0	193	1,816
Daily VMT	309	14,465	378	10,478

* "With-TC" includes only trips to main worksite or to telecenter. Trips to other locations (satellite work site, etc.) were not included because information on travel distance to these locations was not available.

Weekly one-way VMT reduction (14,465 – 10,478)		3,986
Weekly round-trip VMT reduction (3,986 x 2)		7,972
Daily round-trip VMT reduction (7,972 / 5)		1,594
Telecenter users participating in the survey		127
Average daily VMT reduction per telecenter user (1,594 / 127)	**2004**	**12.6 miles**
	2001	13.9 miles
Average daily VMT reductions for all GSA telecenters	**2004**	**1,575**

Item # 5

COMMUTER CONNECTIONS

GUARANTEED RIDE HOME (GRH) PROGRAM

2004 GRH SURVEY REPORT

DRAFT

Prepared for:

Metropolitan Washington Council of Governments
Commuter Connections Program

Prepared by:

LDA Consulting
Washington, DC

In association with:

CIC Research, Inc.

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SECTION 1 - INTRODUCTION

This report presents the results of a survey (GRH survey) of 1,033 commuters who currently participate or who have participated in the Commuter Connections regional Guaranteed Ride Home (GRH) Program operated by the Metropolitan Washington Council of Governments (MWCOG). MWCOG, through the National Capitol Region Transportation Planning Board, introduced the Commuter connections GRH Program in 1997 to eliminate one barrier to using alternative modes, commuters' fear of being without transportation in the case of an emergency. The program provides up to four free rides home per year in a taxi, rental car, public transit, or a combination of these modes, in the event of an unexpected personal emergency or unscheduled overtime.

When the program was implemented, it was offered to commuters who used alternative modes three or more times per week and who would register with Commuter Connections for GRH. In January 1999, to encourage additional participation, the program guidelines were changed to require use of alternative modes only two days per week.

Commuter Connections undertook the survey described in this report for two purposes:

- To identify and examine commute and demographic characteristics of commuters participating in GRH.
- To collect data needed to estimate reductions in vehicle trips, vehicle miles traveled, and emissions reduced as a result of commuters' participation in the GRH Program.

This report covers the first of these two objectives. The report focuses on how the survey was conducted and what results were obtained. The second objective, the estimate of travel and air quality impacts of the program, will be addressed in an evaluation to be conducted in the spring of 2005. That evaluation will assess impacts of GRH and other Transportation Emission Control Measures (TERMs).

This report is divided into four sections following this introduction:

- Section 2 – Description of the survey and sampling methodology
- Section 3 – Presentation of the survey results
- Section 4 – Conclusions from the survey results

Following these four main sections are five appendices dealing with survey procedures. They include:

- Appendix A – Distribution of dialing results
- Appendix B – GRH Survey instruments
- Appendix C – Interviewer aids
- Appendix D – Non-Response Survey
- Appendix E – Results from 2004 and 2001GHR Surveys – Comparison on Key Questions

SECTION 2 – SURVEY AND SAMPLING METHODOLOGY

SURVEY GOALS

A primary goal of the GRH survey was to examine travel characteristics of GRH Program participants. MWCOG, through its Commuter Connections Program, introduced GRH in January 1997. Since that time, MWCOG collected data on GRH applicants through a series of placement surveys conducted to assess travel and air quality impacts of Commuter Connections' regional rideshare database. MWCOG also conducted a GRH applicant survey in the winter of 2001. The survey documented in this report mirrors the questionnaire and methodology used for that 2001 survey.

The 2001 GRH survey and the survey described in this report were designed to examine three key questions associated with the GRH Program. Did GRH participants make certain commuting changes and did GRH play a role in the change. Did GRH:

- Encourage commuters who drive alone to work to use alternative modes?
- Encourage commuters who use alternative modes to use these modes more days per week?
- Encourage commuters who use alternative modes to use them for a longer period of time?

SAMPLE SELECTION PROCESS

Since January 1997, more than 30,000 commuters have joined the GRH Program. Not all of these applicants are currently registered for the program. Some have let their registrations expire. A small percentage of commuters in the database never registered, but have participated in the program under a "one-time exception" rule, that allows commuters who otherwise meet the program requirements to receive one GRH trip without prior registration. All of these applicants, both past and current participants, were eligible for selection to be surveyed.

The 2001 GRH survey sampled from commuters who entered the database between January 1997 and February 2001. The 2004 survey sampled from among commuters who entered the database, either for the first time or as a re-registrant, between March 1, 2001 and March 15, 2004.

In March 2004, the GRH database contained approximately 23,500 records of respondents who either entered the database or whose registration was updated during the March 2001 to March 2004 survey period. MWCOG's staff removed the majority of duplicate records. The database contained duplicate records because commuters who re-register for the program at the end of each year of participation are given a new status code and a new record. In addition to removing these records, other duplicate records were removed that were observed to contain slight differences in name, but with the same telephone number or address. The remaining database included approximately 22,300 records from which to draw the sample.

According to MWCOG's specifications, 1,000 completed surveys were to be collected, with a minimum of 70% of selected survey participants responding. An initial sample of 1,429 randomly selected program participants was drawn from the database. A replacement sample of 239 was drawn at a later date, once all the initial sample points were exhausted and additional points were needed to complete the quota of

1,000[1]. The initial sample was insufficient largely because the database included records that were three years old and the sample had a large number of applicants who could not be reached for one of the following reasons:

- Respondent no longer at the work number and the home number not in service
- Respondent no longer at work and no home number was available
- Respondent no longer at work or home number
- Respondent no longer at work and home number produced a fax computer tone
- Wrong work number and no home number
- Wrong work number and home number not in service
- Respondent moved out of area

After the survey fieldwork was completed, it was discovered that records that had been designated as "one-time exceptions" had been excluded for the initial sample selection. This occurred because GRH participants labeled "one-time exceptions" did not have an initial date, and were thereby overlooked in the sample selection criteria. All excluded "one-time exception" records, a total of 570, were sent to the market research contractor. This file was cleaned and resulted in 553 records. A sample of 250 records were drawn from this file and 30 interviews were completed. Appendix A details the overall dialing disposition of the fieldwork.

QUESTIONNAIRE DESIGN

LDA Consulting, together with input from COG and CIC Research, Inc., designed the questionnaire used in the survey. The questionnaire collected data on seven major topics:

- Registration status
- Commute patterns before participating in GRH
- Commute patterns during participation in GRH
- Influence of GRH on commute choices
- Source of information on GRH program and knowledge of GRH advertising
- Use of and satisfaction with GRH trips and the GRH Program
- Participant demographics

The questionnaire was designed for telephone administration using Computer Assisted Telephone Interviewing (CATI). Prior to conducting the full survey, 52 pretest interviews were conducted and the results reviewed. Using input from the pretest, the questionnaire was modified slightly and finalized with approval of COG project staff. A copy of the final questionnaire is provided in Appendix B.

1 The additional 234 sample points covered 37 people who were no longer with the company and their home number was not in service, 20 people who were no longer with the company and were not at their home number, 22 people whose company number was no longer in service and their home number was no longer in service, 16 people whose company number was no longer in service and the home number was wrong, 19 people whose work number was wrong and the home number was wrong, 14 people whose work number was wrong and their home number was not in service, 18 people with various combinations of moved out of area, wrong work number, computer tone and no or not in service home number. In addition, 93 telephone numbers had reached 15 or over dialing attempts and were replaced.

SURVEY ADMINISTRATION

After the questionnaire was finalized, an introductory letter was designed and mailed to all prospective respondents to introduce them to the survey. The letter included a Spanish insert instructing Spanish speakers about the project. On March 29, 30, and 31, 2004 COG staff mailed the letter and insert. Copies of these documents can be found in Appendix C. Interviews were conducted in CIC's telephone survey facilities, using the CATI (computer-assisted telephone interviewing) system and Quantime software.

Prior to beginning the full survey effort, interviewer-training sessions were held. Issues discussed in the session included:

- An explanation of the purpose of the study and the group to be sampled
- Overview of COG and its function
- Verbatim reading of the questionnaire
- Review of the definition and instruction sheet to familiarize interviewers with the terminology
- Review of skip-patterns to familiarize interviewers with questionnaire flow
- Practice session on CATI systems in full operational mode

Calls were made between April 12 and May 18, 2004. Interviewers made all weekday calls from 8:00 am to 5:00 pm, local time, and all weekend calls from noon to 8:30 pm, local time. Home telephone numbers were called on weekdays from 5:30 pm to 8:30 pm, local time. Calls were first directed to the respondent's work number. If contact was unsuccessful, the respondent was called at home. Interviews were conducted while respondents were at work or at home, depending on their wishes. If the call was answered by an answering machine, three more attempts were made to contact the respondent, and then the interviewer left a message asking the person to call back on a 1-800 number.

All interviewing was conducted at CIC's offices with survey supervisors present. The survey supervisor was responsible for overseeing the CATI server, checking quotas, editing call-back appointment times, monitoring interviews, answering questions, reviewing completed surveys, and passing respondents to an available station when they called in on the 1-800 line.

To insure quality control, the survey supervisor conducted periodic random monitoring. A total of 1,004 interviews were completed from the list of 1,668 respondents for the initial interviewing effort. This group had a refusal rate of 8.5 percent.[2] An average of 11.5 call attempts was made for each completed interview, slightly higher than the 10.3 call attempts needed for the November 2002 survey.

The second group of interviews was interviewed between June 2 and June 7, 2004 and were completed from a random selection of 250 "one-time exception" records. The refusal rate for this group was 4.0 percent. An average of 23.1 call attempts was made for each completed interview.

WEIGHTING OF SURVEY DATA

After all interviews were completed, the data were weighted to align the survey results with the total population of GRH participants. The criterion used to weight the survey data was "type" of GRH partici-

2 Refusal rates are calculated as the number of initial refusals plus the number terminated during the interview, divided by the total sample. See Appendix A.

pant. This variable denotes if the participant is currently registered for GRH, was registered in the past, or is a one-time exception (never registered for the program but met all other requirements and used a GRH trip once). The following table shows the relationship between the sample and the total participation group for the weighting variable – type of GRH participant.

Type of GRH Participant	Sample Group	Total Population
Current participant/registrant	84.2%	58.9%
Past participant/registrant	12.6%	38.7%
One-time exception users	3.2%	2.4%

The differences between these groups test statistically significant. As anticipated, the sample group contained a higher proportion of current participants and a lower proportion of past participants and one-time exceptions, when compared to the total respondent group. Past registrants are considerably more difficult to reach by telephone. This is likely because they have moved or changed jobs, perhaps also the reason they are no longer participating in GRH.

STATISTICAL DISTRIBUTION COMPARISON BETWEEN SAMPLE AND TOTAL POPULATION

To assess whether or not distributional differences between the sample results and the total respondent 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 1,034 respondents while the total respondent group contained 22,914 individuals. Comparisons between the groups were made with respect to type of GRH participant.

All comparisons showed statistical differences between the distributional make-up of the groups for the sample and total respondent participation at the 99 percent confidence level. As a result, the data were weighted according to the total respondent participation distribution.

NON-RESPONSE SURVEY

While the proportion of non-response to the survey was relatively small, a non-response survey still was conducted to determine if the non-response group was in some manner systematically different from the survey group. A total of 142 people were eligible for inclusion in the non-response survey. These applicants were made up applicants who refused to participate in the survey when initially called.

A total of 39 people were contacted and administered an abbreviated questionnaire, shown in Appendix D. In determining the sample size for the non-response survey, the consultants assumed a 90 percent confidence level and 10 percent error rate, coupled with the inclusion of a population correction factor.

Statistical comparisons were made on the following variables:

- Currently registered for Commuter Connection's GRH program
- Number of weekdays working
- How respondent gets to work
- Age of respondent
- Ethnicity of respondent
- Household income of respondent

In all areas except one, no statistical difference between the non-response and full survey groups occurred. The area, which showed a statistical difference, was whether or not the respondent was currently registered in the GRH program. The non-response group was more likely to not be currently registered in the program, which would tend to explain why they were less apt to participate in the survey.

SECTION 3 – SURVEY RESULTS

Following are key results from each section of the survey. Survey result percentages presented in the results tables and figures show percentages weighted to the total applicant population, but also show the raw number of respondents (e.g., n=__) to which the weighting factor was applied for that question.

Where relevant, survey results are compared for sub-groups of respondents. Survey results also are compared with corresponding data for the 2001 GRH survey and the 2004 State of the Commute survey conducted in the Washington region, when these data were available. These comparisons are presented in the appropriate sub-sections.

- Demographics of the sample
- GRH participation characteristics
- GRH information sources
- Current commute patterns for GRH participants
- Commute patterns before and during participation in GRH
- Influence of GRH on commute choices
- Use of and satisfaction with GRH trips and the GRH Program

CHARACTERISTICS AND DEMOGRAPHICS OF THE SAMPLE

Home and Work Location

As shown in Table 1, six in ten respondents worked in the District of Columbia (61%) and three in ten (30%) worked in Virginia. The remaining nine percent worked in Maryland. The distribution by home state is considerably different. The majority of respondents live in Virginia (67%). About a third (29%) live in Maryland. A few (2%) live in the District of Columbia or in another state (2%).

Table 1
Home and Work States

(n=1,034)

State	Percentage	
	Home State	Work State
District of Columbia	2%	61%
Maryland	29%	9%
Virginia	67%	30%
Other	2%	0%

Top home locations for GRH registrants include, by state and county:

Virginia		**Maryland**	
Prince William County	21%	Montgomery County	6%
Fairfax County	18%	Prince George's County	7%
Stafford County	9%	Charles County	4%
Spotsylvania County	6%	Frederick County	3%
Loudon County	6%	Anne Arundel County	3%

Demographics

The survey asked respondents four demographic questions: sex, age, income, and ethnic group. Most GRH participants were female (57%). The average GRH participant was 44 years old, had an average household income of $95,000, and was of white ethnic background (71%). Details of these characteristics are presented in Tables 2 through 4.

Age – As shown in Table 2, GRH participants were clustered in the middle and older age brackets. About two-thirds (68%) were between the ages of 35 and 54 years old. About 18% were under 35 and the remaining 15% were 55 years or older.

Table 2
Respondent Age

(n=1,011)

Age Group	Percentage
18 – 24 years	<1%
25 – 34 years	17%
35 – 44 years	35%
45 – 54 years	33%
55 – 64 years	14%
65 years or older	1%
Average	**44 years**

Income – GRH participants have quite high annual household incomes. Table 3 shows that more than eight in ten respondents (82%) had household incomes of at least $60,000 and four in ten (39%) had incomes of $100,000 or more.

Table 3
Annual Household Income

(n=859)

Income	Percentage
Less than $30,000	1%
$30,000 – 39,999	3%
$40,000 – 59,999	14%
$60,000 – 79,999	19%
$80,000 – 99,999	24%
$100,000 – 119,999	17%
$120,000 – 139,999	8%
$140,000 – 159,999	5%
$160,000 or more	9%
Average	**$95,000**

Ethnic Background – Lastly, as shown in Table 4, Caucasians and African-Americans represent the two largest ethnic group categories of GRH survey respondents, 71% and 21% respectively. Hispanics account for about four percent of the sample and Asians/Pacific Islanders represent three percent.

Table 4
Ethnic Background

(n=983)

Ethnic Group	Percentage
Hispanic	4%
Caucasian	71%
African-American	21%
Asian/Pacific Isl.	3%
Other	1%

REGISTRATION INFORMATION

Registration Status

As noted earlier, the GRH database population was divided into three categories by their registration status. Table 5 presents the distribution of respondents by these categories.

Table 5
Registration Status
(n=1,030)

Registration Status	Percentage
Current registrants	58.9%
Past registrants	38.7%
One-time exceptions	2.4%

The majority (59%) of respondents said they were currently registered for the Program. About four in ten (39%) said they had been registered, but were not currently participating. The remining two percent said they never registered; they participated as one-time exceptions.

It should be noted that registration status in the survey was defined by the respondent. This was necessary for completion of questions that asked about the times "during" and "before" participation in GRH. But a substantial number of respondents defined their registration status differently than was shown in the GRH database. Nearly one in five (191) of the 1,030 respondents said they were currently registered, when their registrations had actually expired. It is possible these respondents did not realize they needed to re-register after the first year, so assumed they were still eligible for the program. These respondents were treated as "currently registered" in the survey.

A smaller number of respondents, 25 of the total 1,030, said they were no longer registered for the program, when their registration was actually current; they registered or re-registered less than one year before the survey was conducted. One explanation for these respondents is that, since their last registration/re-registration date, they made a commute change that would make them ineligible for GRH, such as reducing their use of alternative modes to less than twice per week. Because these respondents considered themselves no longer registered, they were treated as "past registrants" in the survey.

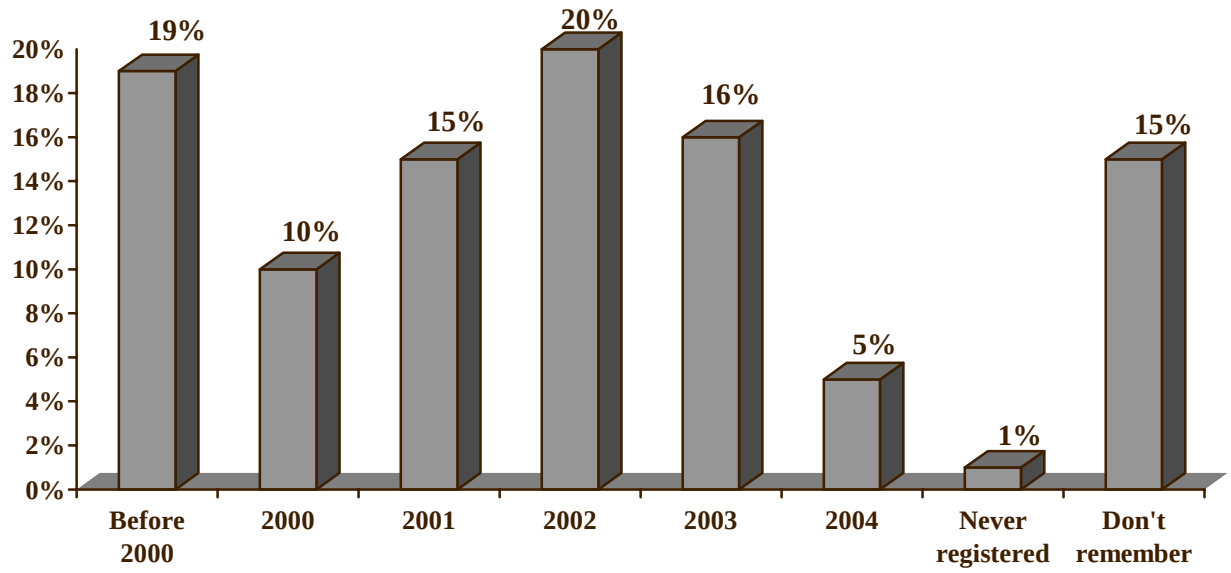
Finally, some respondents classified as current registrants or past registrants first joined GRH as one-time exceptions and later completed the official registration procedure. In this survey, they are treated as either current or past registrants, whichever applies. In the rest of this document, all results related to one-time exception include only those respondents who have never registered.

Year of Registration

Respondents were asked the year they first joined the program. The GRH Program was implemented in 1997, but continues to attract new participants each year. Respondents in this survey were selected from those who had registered or re-registered sometime between March 2001 and March 2004. As shown in Figure 1, within that group, about three in ten had first registered in 2000 or before. About one in five said they registered in 2002. Note that because the GRH survey interviews were conducted in April 2004, registration figures for 2004 include only registrants who joined GRH in January 1 through March 15.

Figure 1
Year First Registered for GRH Program

(n=1,034)



Participation in Other GRH Programs

When asked if they had participated in another GRH program prior to joining Commuter Connections' program, only one percent of respondents (9 respondents) said they had participated previously. Four respondents said "my employer" sponsored the program and two said the program was sponsored by "Virginia Railway Express – VRE."

Time Participating in GRH

Table 6 shows how long respondents have been registered for the GRH Program, or in the case of past registrants, how long they were registered.

Table 6
Length of Time Registered in GRH Program

(Current and Past Registrants)

Registration Status	Time in GRH				
	<1 year	1 year	2 years	3 years	>3 years
All registrants (n=892)	7%	29%	21%	17%	26%
	36%		64%		
Current registrants (n=773)	9%	26%	20%	15%	30%
	35%		20%	45%	
Past registrants (n=119)	3%	34%	21%	19%	23%
	37%		21%	42%	

About two-thirds of all respondents (64%) participated (past registrants) or have been participating (current registrants) for two or more years. The distribution of participation duration was quite similar for past and current registrants. Slightly over one-third of both groups participated for one year or less; 35% of current registrants and 37% of past registrants. And about 45% of current registrants had been in the program for three years or longer, compared with 42% of past registrants.

Reasons for Not Re-registering

Past registrants were asked why they did not re-register for GRH Program when their registration expired. Table 7, shown on the following page, presents common reasons for not re-registering. Table 7 also shows the results for this question from the 2001 GRH survey.

The reasons fell into two major categories:

- Reasons associated with the program
- Reasons associated with the personal circumstances of the registrant

The most frequently mentioned program reason was "did not know I had to re-register," cited by 14% of respondents. The percentage of respondents citing this reason dropped from 21% in the 2001 survey. Another 13% said they "forgot" or "didn't get around to re-registering." About one in six respondents said they were no longer eligible for the program, either because the "carpool, vanpool, or transit arrangement didn't work out" (10%) or because they couldn't use an alternative mode at least two days per week (6%). Small numbers said they "had never used the program," thus didn't feel they needed it (6%), "had a bad experience" with the program (5%), or thought it was "too much effort to use the program" (2%).

Table 7
Reasons Past Registrants Did Not Re-Register

Reasons	GRH – 2004 (n=125)	GRH – 2001 (n=126)
Program-Related Reasons		
Did not know I had to re-register	14%	21%
Didn't get around to it, forgot	13%	7%
CP, VP, transit didn't work out	10%	6%
Couldn't rideshare/use transit two+ days per week	6%	4%
Never used program	6%	----
Dissatisfied with program, bad experience	5%	----
Too much effort to use the program	2%	14%
Personal-Circumstance Reasons		
Changed job/work hours	27%	25%
Needed my car for work/other purpose	10%	3%
Retired/telecommuter/don't commute, don't need now	6%	5%
Moved to a different residence	3%	7%
Joined an employer program	----	2%
Other**	4%	20%

*Adds to more than 100% due to multiple responses.
**Each response in the "Other" category was mentioned by less than one percent of respondents.

But most respondents cited personal circumstances that were unrelated to the program. More than one-quarter said they "changed job or work hours" (27%) and 10% said they needed their cars for work or other purposes. Smaller percentages of respondents said they had retired or were not commuting any longer (6%) or had moved to a new residence (3%). It is possible personal circumstances actually represent higher proportions of the reasons for not re-registering. As noted earlier, past registrants were under-represented in the survey sample, because they are more difficult to reach by telephone. It is likely that some of these unreachable registrants have moved out of the Washington region or changed jobs and it was impossible to find a forwarding phone number for them.

GRH INFORMATION SOURCES

The survey also asked respondents how they learned about GRH and their awareness of any advertising about the program.

How Heard About GRH

Commuters heard about the GRH Program from various sources. As shown in Table 8, more than a quarter of respondents (26%) mentioned word of mouth/referrals as their source of information. About one in seven (16%) cited the radio as their source of information and one in ten mentioned the Internet (11%) or their employer (10%). Another 11% said they heard about GRH through a brochure (6%) or marketing materials sent to them directly by Commuter Connections (5%). Smaller percentages of respondents said they learned of GRH through a train/bus sign (7%), TV (3%), or other sources.

Table 8
How Respondents Learned About GRH

(n=1,034)

Information Source	Percentage
Don't know	11%
Word of mouth – referral	26%
Radio	16%
Internet	11%
Employer/employee survey	10%
Bus/train sign	7%
Brochure/promo materials	6%
Direct mail/postcard from CC	5%
TV	3%
Newspaper	2%
Newsletter	2%
Bus/train schedule	1%
Other *	5%

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

Sources of information were very similar for current and past registrants and for registrants who joined the program recently and those who joined several years ago. But a few differences were observed for some sub-groups of respondents. Respondents who registered in 2002 or later were more likely to have heard about the program through the Internet; 15% of respondents who joined in 2002, 2003, or 2004 cited the Internet, compared with 10% of respondents who joined in 2001 or earlier.

Some differences also were noted for respondents by their pre-GRH commute mode. One in five (20%) respondents who drove alone to work pre-GRH mention the radio as their source, compared with 12% of other respondents. This reinforces the value of drive-time advertising to alert this group. And the internet was a significant source of GRH information for drive alone respondents (15%) and commuter rail riders (18%), while only about eight percent of other respondents mentioned the internet.

GRH Advertising

Heard or Saw GRH Advertising – When asked how they heard about GRH, about four in ten respondents cited a form of GRH advertising undertaken by Commuter Connections, such as radio or Internet. Respondents who did not mention one of these sources of GRH information were asked if they had heard, seen, or read any advertising about GRH. An additional third of respondents said yes. When added together, this totaled to 72% of respondents who said they had heard or seen some GRH advertising.

Influence of Ads on GRH Registration – Respondents who said they had seen or heard GRH ads were asked if they had registered for GRH before they encountered the ads. A large majority (76%) said they had not registered before that time. This equates to more than half (54%) of the total survey respondents.

These respondents were asked one more follow-up advertising question; "did the advertising encourage you to seek information about GRH or to register for GRH?" An overwhelming 91% of these respondents said the advertising had encouraged them. This group accounted for 49% of the total survey respondents.

CURRENT COMMUTE PATTERNS

An important section of the survey examined characteristics of respondents' commuting behavior. Because the survey was designed to examine behavior changes as a result of GRH, respondents were asked about their commuting for three time periods:

- **Current** – Commuting patterns at the time of the survey
- **With-GRH** – Commuting patterns during the time the respondent participated in GRH (the current time for current registrants and one-time exception users and a previous time for respondents who were no longer registered)
- **Pre-GRH** – Commuting patterns at the time just before the respondent registered for GRH (current and past registrants) or heard about GRH (one-time exception users)

Commute pattern questions in the survey included:

- Number of days worked per week
- Current mode used
- Carpool occupancy
- Length of time using current alternative modes
- Commute distance

Work Schedule

Days Assigned to Work Each Week – The overwhelming majority (97%) of respondents worked a five-day week. About two percent worked four days per week and one percent worked a three-day week.

Compressed Work Schedules – About 20% of respondents said they worked a compressed work schedule; 2% worked a 4/40 CWS and 18% worked a 9/80 CWS. These respondents were classified as working a five-day week for purposes of commute mode, with either one or one-half work days off each week.

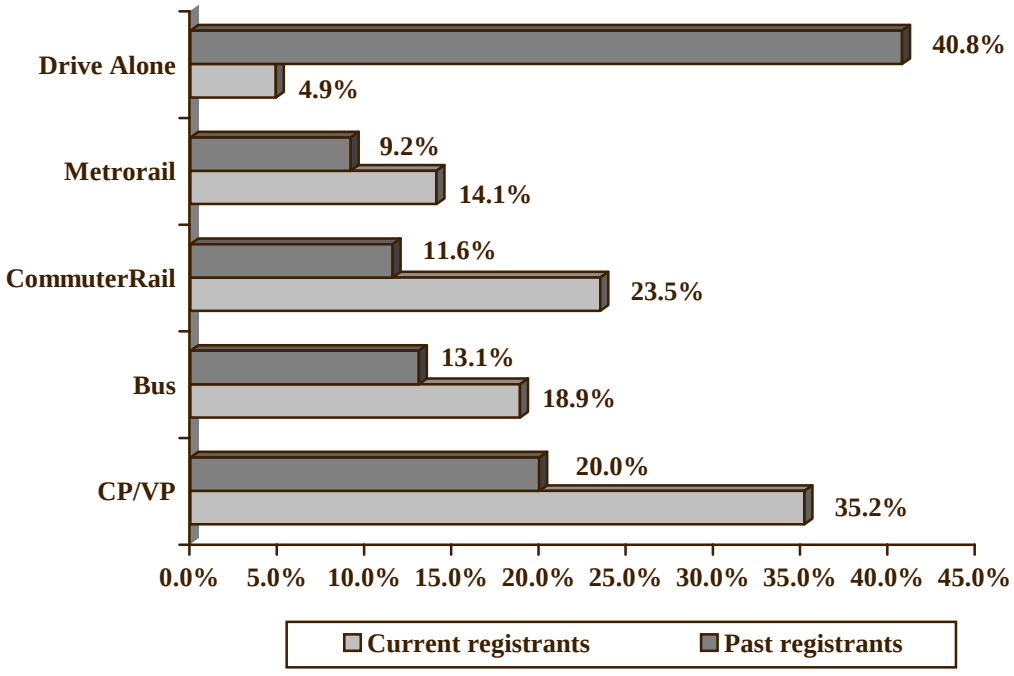
Current Commuting Mode

Respondents were asked about use of various commute modes for the preceding week. If a respondent said last week was not a "typical" commute week, they were instead asked about their travel for a "typical" Monday through Friday. Figures 2 and 3 show the percentages of respondents who used each of five mode groups: carpool/vanpool, bus, drive alone, Metrorail, and commute train, based on the frequency with which they used the modes. Because it is expected that past respondents would have different modes from current respondents, these two groups are shown separately.

Primary Commute Mode – Figure 2 shows the percentage of respondents who used each mode as their "primary" mode, that is, three or more times per week. This category also includes respondents who said they used these modes four or five times during the week. The percentages for each group will not total to 100% because in each case, some respondents did not use a single mode three or more days per week.

Figure 2
Current Commute Modes
Modes Used Three or More Days Per Week

Current Registrants (n=871) and Past Registrants (n=130)



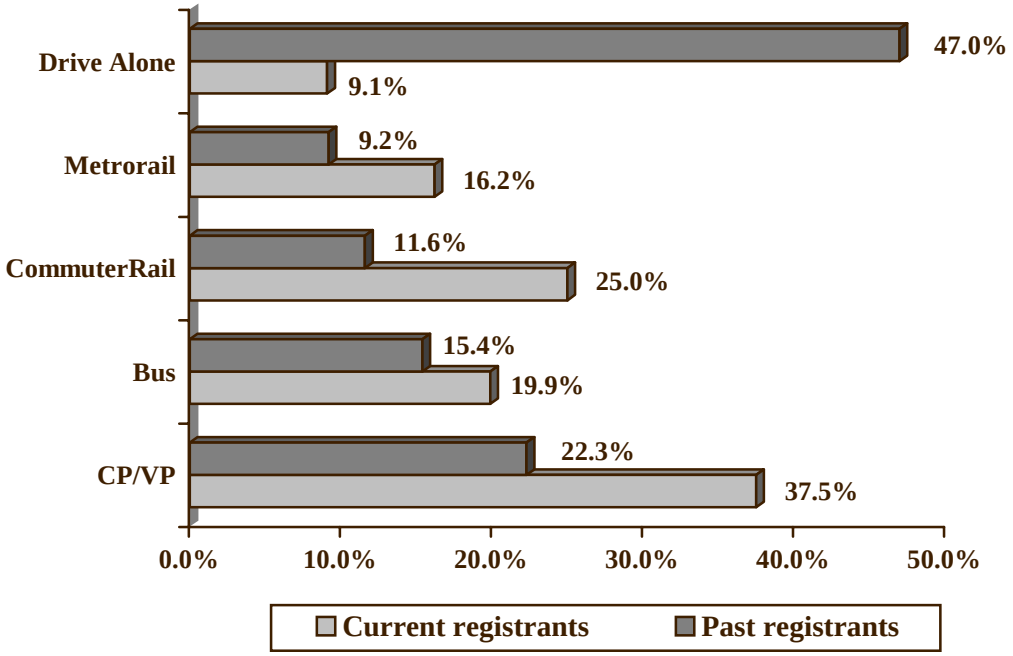
Current Registrants – Carpool/vanpool was the most common primary mode for current registrants. It was used by more than a third of these respondents (35.2%). One of two train modes, commuter rail, was the second most common primary mode for current registrants, used by nearly a quarter (23.5%). About two in ten current registrants (18.9%) said they used the bus three or more days per week and 14.1% used Metrorail. About five percent of current registrants said they primarily drove alone to work. A small percentage of current registrants bicycled or walked to work (1.5%) and about two percent said they did not use any mode three or more days per week. These respondents are not shown in Figure 2.

Past Registrants – Not surprisingly, past registrants were more likely than current registrants to drive alone; 40.8% of past registrants said this was their primary mode. But more than half of past registrants (53.9%) said they still used an alternative mode most of the time, even though they were no longer in the GRH Program. This is surprising in that these respondents were still eligible for GRH. About one in five (20.0%) was carpooling or vanpooling. Just over a third said they regularly used transit; 13.1% regularly rode the bus to work, 11.6% traveled by commuter rail, and 9.2% used Metrorail. About two percent of past registrants bicycled or walked to work (2.3%). These respondents are not shown in Figure 2.

All Commute Modes Used – Figure 3 shows the percentage of GRH participants who used each of the four mode groups 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. Percentages for the groups in this figure will total to more than 100% because some respondents used more than one mode.

Figure 3
Current Commute Modes
Modes Used One or More Days Per Week

Current Registrants (n=871) and Past Registrants (n=130)



Current Registrants – The relative use of the modes did not change from the three or more days per week order, but 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. For current registrants, carpool/vanpool continued as the most popular mode; 37.5% of current GRH participants used this mode at least occasionally. Commuter rail, used by 25.0% of current registrants was the second most popular mode. About one in five (19.9%) said they used the bus at least occasionally and 16.2% used Metrorail at least one day per week. One in ten (9.1%) said they drove alone one or more days per week.

Drive alone remained the most used mode for past registrants; 47.0% of past participants used this mode at least occasionally. Carpooling/vanpooling was second in popularity, with about two in ten respondents (22.3%) using these modes. Bus was the choice of 15.4% of past registrants, 11.6% used commuter rail, and 9.2% traveled by Metrorail.

Mode Group Distribution – Table 9 shows use of individual modes within the mode groups shown in Figures 2 and 3. The bottom of the table also shows use of drive alone, bike/walk, compressed schedules, and telecommute. The table presents mode distributions for current and past GRH registrants. Additionally, the distribution is shown for Washington metro region commuters, as reported in the 2004 State of the Commute (SOC) survey. As seen in the table, for every alternative mode except Metrorail, both the current and past registrant groups had higher mode shares than did the regional population. About 11.3% of all regional respondents said they primarily used Metrorail for commuting. Metrorail was used by 14.1% of current GRH registrants, but only 9.2% of past GRH registrants.

Carpool/Vanpool – Among all commuters in the region who carpooled or vanpooled, regular carpooling dominated. More than 82% of regional carpool/vanpool use was in regular carpools. Small proportions of regional carpoolers/vanpoolers used either casual carpool (13%) or vanpool (5%). This distribution was significantly different from the distributions for GRH registrants.

About a fifth of current GRH registrants in the carpool/vanpool group said they "casual" carpool, or "slug." The remaining respondents in this category were split approximately evenly between regular carpools and vanpools. For past registrants, regular carpooling dominated the carpool/vanpool category; it was nearly as high in absolute percentage for past registrants (12.3%) as for respondents currently in GRH (13.7%). Vanpooling made up a much lower share of this mode group for past registrants. Only about a quarter of past registrants in the carpool/vanpool group said they vanpooled, compared with more than four in ten current registrants in this group.

Bus – The bus mode group showed markedly different overall mode shares for the three populations, but this mode group was dominated by regular bus for all three respondent groups: current registrants, past registrants, and regional commuters.

Commuter Rail – Commuter rail showed dramatic differences for the three populations. Nearly a quarter of current registrants used commuter rail, compared with less than one percent of all commuters. MARC and VRE commuter rail services accounted for 61% of the total train use (Metrorail plus commuter rail) for current registrants and 52% for past registrants, but only four percent of regional train use. Metrorail dominated train use for regional commuters, with 93% of train riders using this mode.

Table 9
Current Primary Commute Modes – 3+ Days Per Week

Current and Past GRH Registrants and Regional Commuters

Commute Mode	GRH Registrants		Regional 2004 SOC Survey**
	Current (n=871)	Past (n=130)	
Carpool/vanpool	**35.2%**	**20.0%**	**5.6%**
- Regular carpool	13.7%	12.3%	4.6%
- Casual carpool (slug)	6.9%	3.1%	0.7%
- Vanpool	14.6%	4.6%	0.3%
Transit	**56.6%**	**33.9%**	**16.6%**
Bus	**18.9%**	**13.1%**	**4.4%**
- Ride a bus/shuttle	17.9%	13.1%	4.0%
- Buspool	1.0%	0.0%	0.4%
Metrorail	**14.1%**	**9.2%**	**11.3%**
Commuter Rail	**23.6%**	**11.6%**	**0.9%**
- MARC (MD commuter rail)	8.2%	2.3%	0.3%
- VRE	14.8%	8.5%	0.4%
- AMTRAK/other train	0.6%	0.8%	0.2%
Drive alone	4.9%	40.8%	70.5%
Bike/walk	1.5%	2.3%	2.1%
Compressed work schedule	0.0%	0.0%	0.0%
Telecommute	0.3%	1.5%	2.1%

* Percentages will not total to 100%, because some respondents did not use any mode three or more days per week.
** Data from 2004 State of the Commute regional survey for the Metropolitan Washington region.

The disproportionate shares of commuter rail and vanpooling for GRH registrants are likely is due to several factors. These commuters travel long distances. And commuter rail service is generally very infrequent outside of peak commuting periods, heightening both the value of and need for GRH service. Additionally, VRE offered a GRH program prior to the start of Commuter Connections' GRH program and has incorporated the regional GRH Program into its marketing, providing an additional method for these commuters to learn about GRH.

Pool Occupancy

The average number of occupants in GRH participant carpools and vanpools was 3.1 and 11.2 people respectively.

Commute Length

Commute Miles – Commuters in the survey sample had a wide range of commute distances, from less than one mile to more than 120 miles. As shown in Table 10, the average one-way distance for GRH respondents was 32.7 miles. This distance is considerably longer than the distance of 16.5 miles traveled by the average commuter in the Washington metro region. About 56% of GRH respondents commute at least 30 miles to work, compared to 16% of all regional commuters, as observed in the 2004 SOC survey of Washington metro region commuters.

Table 10
Commute Distance (miles)

GRH Respondents and All Regional Commuters

Number of Miles to Work	GRH – 2004 (n=957)		Region – 2004 SOC * (n=6,222)	
	Percentage	Cumulative Percentage	Percentage	Cumulative Percentage
Less than 10 miles	8%	8%	36%	36%
10 – 19.9 miles	14%	22%	30%	66%
20 – 29.9 miles	22%	44%	18%	84%
30 – 39.9 miles	23%	67%	9%	93%
40 miles or more	33%	100%	7%	100%
Average (mean)	**32.7 miles**		**16.5 miles**	

* Data from 2004 State of the Commute regional survey for the Metropolitan Washington region.

Commute Time – GRH participants commute, on average, about 50 minutes one way. This also is longer than the commute time for all regional commuters, who commute an average of 34 minutes. As presented in Table 11, about six in ten (61%) GRH participants commute more than 45 minutes each way to work. About a third (35%) commute more than an hour. Only eight percent of all regional commuters travel this long to work.

Table 11
Commute Time (minutes)
GRH Respondents and All Regional Commuters

Number of Minutes to Work	GRH – 2004 (n=)		Region – 2004 SOC * (n=6,606)	
	Percentage	Cumulative Percentage	Percentage	Cumulative Percentage
20 minutes or less	6%	6%	36%	36%
21 – 30 minutes	9%	15%	20%	56%
31 – 45 minutes	24%	39%	23%	79%
46 – 60 minutes	26%	65%	13%	92%
61 minutes or more	35%	100%	8%	100%
Average (mean)	**50 minutes**		**34 minutes**	

* Data from 2004 State of the Commute regional survey for the Metropolitan Washington region.

COMMUTE PATTERNS BEFORE AND DURING PARTICIPATION IN GRH

The GRH survey was conducted in part to determine if and how commuters' participation in GRH had affected their commute patterns. Three key research questions were examined – did GRH:

- Encourage commuters who were driving alone to shift to alternative modes?
- Encourage commuters who were using alternative modes to use them more days per week?
- Extend the duration of commuters' use of alternative modes?

Survey results pertaining to these questions are presented below.

"With-GRH" Modes Compared to "Pre-GRH" Modes

Respondents were asked about their commute modes during the time they participated in the GRH program and their modes before they participated. For current registrants and one-time exception users, the "with-GRH" modes were their current modes, as described earlier. Because past registrants might have changed modes since they left the program, these respondents were asked about their weekly travel during "the time you were registered."

All respondents also were asked about their "pre-GRH" modes. Current and past registrants were asked about the "time before you registered for the GRH Program." Because one-time exception users did not register, they were asked about the "time before you heard about the GRH Program."

Primary Mode (3+ Days Per Week) – Figure 4, on the following page, presents a comparison of respondents' primary modes before participating in GRH (pre-GRH) and while participating (with-GRH).

The same mode groups are presented as were shown in Figures 2 and 3: drive alone, Metrorail, commuter rail, carpool/vanpool, and bus and the percentages shown are percentages of respondents who used the mode groups three or more days per week.

Note that the totals of these percentages do not add to 100%, because some respondents did not use a single mode three or more days per week. Additionally, five percent of respondents said they were not living or working in the Washington area before joining GRH. These respondents did not have a "pre-GRH" primary mode and were removed from the pre-GRH base.

As shown, the percentage of respondents who regularly drove alone, three or more days per week pre-GRH was 26.1%. Drive alone mode share dropped greatly to 4.9% for the "with-GRH" time period. Carpool use increased from pre-GRH to with-GRH, from 29.1% to 35.1% . A substantial portion of this growth was in vanpooling. Pre-GRH, 8.8% of respondents vanpooled. With-GRH, the percentage increased to 14.2%.

Regular use of train (Metrorail plus commuter rail) increased from 26.9% of respondents to 35.2%. It is interesting to note that nearly all the train increase occurred in commuter rail (VRE, MARC, and Amtrak). Before GRH, 12.6% of the respondents used these modes. With GRH, more than one in five respondents (20.2%) used commuter rail three or more days per week. Finally, bus ridership rose from 15.6% pre-GRH to 21.3% with-GRH.

Figure 4
Pre-GRH and With-GRH Commute Modes (3+ days per week)

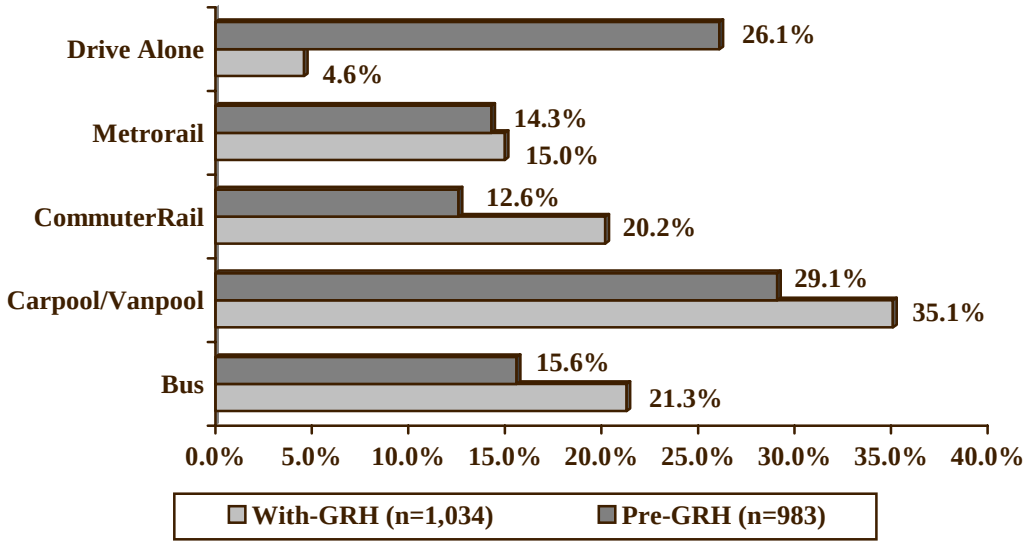


Table 12 illustrates the mode changes respondents made from their primary "pre-GRH" mode to their primary "with-GRH" mode. As expected, drive alone users made the greatest mode changes. More than a third (38%) shifted to carpooling and about half (47%) shifted to transit. About one in ten (11%) said they continued to drive alone three or more days per week.

Table 12
With-GRH Mode by Pre-GRH Mode (3+ Days per Week)

Pre-GRH Mode	With-GRH Mode*				
	DA	CP/VP	Bus	Metrorail	Commuter Rail
Drive alone (n=238)	11%	38%	17%	13%	17%
Alternative Modes					
- CP/VP (n=290)	5%	70%	13%	4%	7%
- Bus (n=151)	1%	10%	78%	5%	6%
- Metrorail (n=137)	<1%	10%	7%	67%	11%
- Commuter rail (n=140)	0%	16%	3%	0%	75%

* Pre-GRH and with-GRH mode shares and between mode shift percentages will not total to 100%, because some respondents did not use a single mode 3+ days per week either pre-GRH and/or with-GRH. Additionally, bus/walk and telecommute are not counted above.

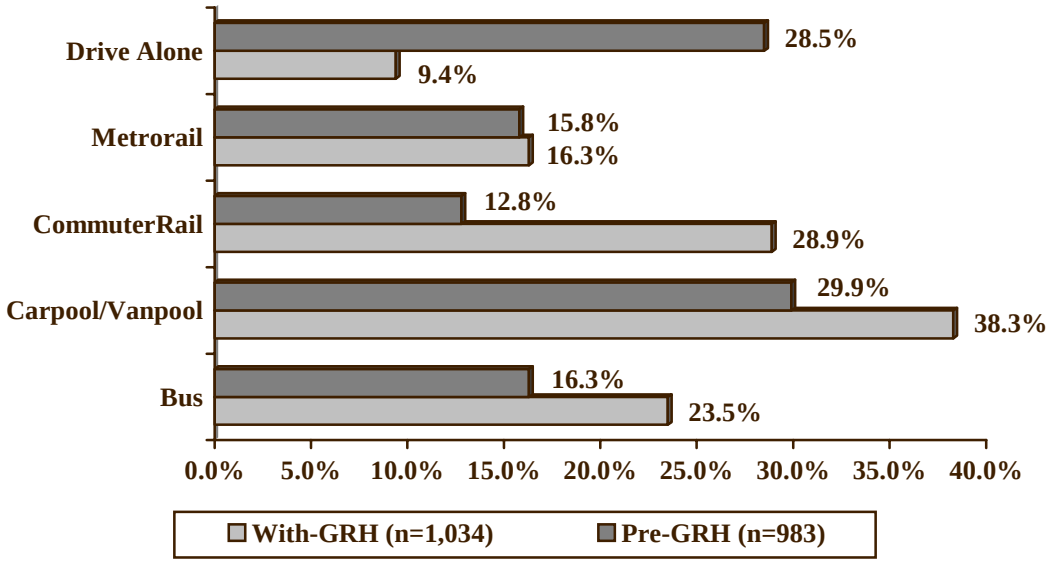
Respondents who were using alternative modes before they joined GRH largely remained in their pre-GRH modes after they joined GRH. About two-thirds of carpoolers/vanpoolers (70%) and Metrorail riders (67%) stayed in these modes. Three-quarters of bus (78%) and commuter rail riders (75%) continued with these modes. Some switching did occur among alternative modes, with carpool/vanpool the primary gainer, attracting 10% each of bus riders and Metrorail riders and 16% of commuter rail riders. About one in eight (13%) respondents who was carpooling/vanpooling pre-GRH started using the bus while in the GRH program and 11% of pre-GRH Metrorail riders shifted to commuter rail.

Occasional Mode (1+ Days Per Week) – Figure 5 shows the percentages of respondents who said they used each mode group at all (1+ days per week) pre-GRH and with-GRH. Note that this includes also respondents who said they used each mode more often, for example, three or more days per week.

The pattern of relative mode use before and during participation in GRH is the same in this figure as was seen in Figure 4 (primary mode – mode used 3+ days per week). Use of the drive alone mode dropped from 28.5% to 9.4%. But this drop was less than the reduction for regular use (3+ days per week) of drive alone (26.1% pre-GRH to 4.6% with-GRH), indicating that the drive alone mode continued to be a popular occasional mode for GRH participants.

Commuter rail showed the largest increase in occasional use, more than doubling from 12.8% of total respondents pre-GRH to 28.9% with-GRH. Carpool/vanpool and bus use both showed marked increases from pre-GRH to with-GRH. Occasional use of Metrorail showed the smallest increase from the pre-GRH time to the with-GRH period, growing only from 15.8% to 16.3%.

Figure 5
Pre-GRH and With-GRH Commute Modes (1+ days per week)



"With-GRH" Days in Alternative Modes Compared to "Pre-GRH" Days

The second research question focused on frequency of alternative mode use. Did participants who were using alternatives before joining the program increase the number of days they used these modes after registering for GRH? Table 13 shows the number of alternative mode days per week for these respondents, pre-GRH and with-GRH. Unfortunately, it was not possible to answer the question with confidence, due to a small sample. Only 45 of the 1,034 respondents said they had increased alternative mode frequency. But clearly, these respondents did increase their use of alternative modes.

As shown, two-thirds (66%) of the respondents were using alternative modes four days per week and another quarter (22%) used these modes three days per week before joining GRH. So most respondents could add only one or two days of alternative mode use per week. This is consistent with the change in the overall increase in average alternative mode days from 3.5 days to 4.7 days, or about 1.2 days per week increase per respondent.

Table 13
Days Using Alternative Modes Pre-GRH and With-GRH

Respondents Who Used Alternative Mode Pre-GRH
and Increased Alternative Mode Frequency With-GRH

Days Using Alternative Modes	Pre-GRH Percentage (n=45)	With-GRH Percentage (n=45)
0	0%	0%
1	2%	0%
2	10%	0%
3	22%	10%
4	66%	9%
5	0%	81%
Average	**3.5 days/week**	**4.7 days/week**

The analysis also examined the overall frequency of alternative mode use for all GRH respondents. These results are shown in Table 14.

Table 14
Days Using Alternative Modes Pre-GRH and With-GRH

All GRH Respondents
(n=983) *

Days Using Alternative Modes	Pre-GRH	With-GRH
0	26%	4%
1	0%	1%
2	1%	1%
3	2%	4%
4	11%	16%
5	60%	74%
Average	**3.5 days/week**	**4.5 days/week**

*Respondents who were not in the regional workforce prior to registering for GRH were removed from the sample base. These 51 respondents could not provide information on commute patterns pre- GRH.

As Table 14 illustrates, the average number of days all GRH participants used alternative modes increased, from 3.5 days per week to 4.5 days per week. But the majority of the increase came from respondents who did not use alternatives at all pre-GRH. In other words, the overall increase in the average frequency of alternative mode use resulted from shifts from drive alone to alternatives, rather than from shifts among current alternative mode users. On a positive note, since there was very little change in the one-day, two-days, and three-days per week categories, it is clear that most of the respondents who never used alternatives before GRH started using alternatives four or five days per week with-GRH.

Length of Time Using Current Alternative Modes

The third research question examined the duration of alternative mode arrangements. Did GRH encourage participants to stay in alternative modes longer than they otherwise would have done? Respondents who said they used an alternative mode at least one day during the survey week were asked how long they have been using this form of transportation. Table 15 presents this distribution for the survey results.

Table 15
Length of Time Using Alternative Modes

Length of Time	GRH – 2004 (n=910)	Region – 2004 * (n= 1,719)
Less than 12 months	13%	23%
12 – 23 months	13%	13%
24 – 35 months	15%	11%
36 – 59 months	21%	14%
60 – 83 months	11%	39%
7 or more years	27%	
Mean duration		
- All alt mode users (n=861)	65 months	70 months
- "New" alt mode users (n=192)	44 months	----
- "Pre-GRH" alt mode users (n=669)	72 months	----

* Data from 2004 State of the Commute regional survey for the Metropolitan Washington region.

GRH participants generally were long-term users of alternative modes. More than a third (38%) of respondents had used their current alternative mode for five or more years and about three-quarters (73%) had used this mode for at least two years.

The third column in Table 15 displays this same information for all regional commuters, based on data from the 2004 State of the Commute survey conducted in 12 jurisdictions in the Washington metropolitan region. Slightly over a third (36%) of regional commuters said they used their current alternative mode for less than two years, compared to about one-quarter (26%) of GRH respondents.

Table 15 also shows the average time these respondents had used their current alternative mode. The overall average for GRH respondents was 66 months, compared with 70 months for all commuters in the region. GRH respondents who used alternative modes "pre-GRH" were especially long-time users; they used alternative modes an average of 72 months. An interesting finding is that respondents who had not used alternative mode pre-GRH, but started when they joined GRH, used alternative modes an average of 44 months. This suggests that new alternative mode users became committed users.

The long duration of alternative mode use for GRH is an encouraging finding, because it means that congestion mitigation and air quality improvement benefits of commuters in the GRH program extend for a substantial period of time. Thus, a portion of GRH benefits can be assumed to carry over from past GRH evaluation periods for purpose of the TERM analysis.

Time Participating in GRH by Time Using Alternative Modes – Another comparison was made for the length of time current registrants and one-time exception users had participated in GRH as a function of the time they had spent in an alternative mode. As can be seen in Table 16, the length of time the participant had been in the GRH program was somewhat related to the length of time the participant used the current alternative mode.

Table 16
Length of Time Using Alternative Modes

By Time Participating in GRH
(Current Registrants and One-time Exception Users only)

Time Participating in GRH	Time Using Alternative Mode				
	1-11 months	12-23 months	24–35 months	36–47 months	48+ months
1 year or less (n=257)	27%	25%	17%	6%	25%
	52%		48%		
2 to 3 years (n=249)	4%	11%	31%	21%	33%
	15%		85%		
More than 3 years (n=211)	6%	6%	4%	6%	78%
	16%			84%	

A large portion of current registrants and one-time exception users used their current alternative modes more than three years, and most of them joined GRH two or more years ago. This suggests that the program continues to attract long-term alternative mode users who perhaps are now learning of the program.

But among more recent registrants, a pattern emerges showing a connection between time in GRH and time in alternative modes. Among respondents who had participated in the GRH program one year or less, over half (52%) had been in their alternative mode for less than 2 years and a quarter (27%) had been using the alternative mode for less than one year. This result suggests that many GRH participants might be learning about GRH at the time they change modes.

One point should be noted for the 16% of respondents who said they had been in the GRH program more than three years but had been using an alternative mode less than three years. The survey asked respondents how long they had been using alternative modes they were currently using. It is possible that these respondents were using a different alternative mode when they started in GRH and switched to their current mode while they have been participating.

INFLUENCE OF GRH ON COMMUTE PATTERN DECISIONS

The comparison of pre-GRH and with-GRH commute patterns is only part of the question of GRH's impact. Also important is the value of GRH in motivating these changes. As noted earlier, three types of pre-GRH and with-GRH commute pattern combinations were examined:

- **Start alternative mode** – Respondents who drove alone pre-GRH and started using alternative modes with-GRH
- **Maintain alternative mode** – Commuters who were using an alternative mode pre-GRH and continued using it with-GRH
- **Increase alternative mode** – Commuters who were using an alternative pre-GRH and increased the frequency of alternative mode use with-GRH

Table 17 presents a breakdown of the total respondents into these three "pre-GRH" to "with-GRH" alternative mode change groups.

Table 17
Alternative Mode Decisions

(n=936)*

Decision: Pre-GRH to With-GRH	Percentage
Start alternative mode	25%
Maintain alt mode	71%
Increase alt mode	4%

* Note that 51 respondents were not in the Washington metropolitan workforce during the "pre-GRH" period. And 47 said they were driving alone to work full-time while they were in GRH. These 98 respondents are not included in the base.

The largest percentage of respondents said they maintained their use of alternative modes. This is to be expected, since most respondents said they were using an alternative pre-GRH. But about 25% of respondents said they started using alternatives when they joined GRH. A small number of respondents (4%), said they increased the number of days they used alternative modes.

Importance to Decision to Start, Maintain, or Increase Use of Alternatives

For whichever of the three commute pattern categories that applied, respondents were asked how important GRH was to their commute decision.

Start Using Alternative Mode – Results presented in Table 18 indicate that nearly half (46%) of all the respondents who drove alone pre-GRH and started using alternative modes with-GRH said GRH was "very important" to the decision to make the change. About a quarter (26%) said GRH was "somewhat important" to the decision. The remaining quarter (28%) said GRH was "not at all important."

Table 18
Importance of GRH to Alternative Mode Decisions

Importance to Decision	Start alt mode (n=229)	Maintain alt mode (n=596)	Increase alt mode (n=44)
Very important	46%	40%	27%
Somewhat important	26%	32%	30%
Not at all important	28%	28%	43%

Maintain Use of Alternative Mode – The second column in Table 18 shows the importance of GRH to respondents' decisions to continue using alternative modes they used before joining GRH. GRH appears to be similarly important for these respondents as for those who were not using alternative modes at all pre-GRH. About 72% of respondents who maintained use of an alternative mode or who started using alternative modes said GRH was "very important" or "somewhat important" to their decision.

Increase Use of Alternative Mode – The third column shows GRH's importance to respondents who increased their use of alternative modes. GRH appeared to be less important for this decision than for decisions to start or maintain use of alternatives. Only 57% said it was "very important" or "somewhat important" to this decision, compared with 72% of respondents in the other two groups. And more than four in ten (43%) said it was "not at all important," compared with only about a quarter (28%) of respondents who started or maintained alternative mode use.

Importance of GRH to Start Alternative Modes by Days Using Alternative Modes With-GRH – Results presented in Table 19 show the relative importance of GRH to registrants who were driving alone

full-time before they registered by the number of days they used alternative modes during GRH. The sample size of respondents who were infrequent (1-3 days per week) users of alternative modes is small (15 respondents), but it appears that GRH was much less important to these respondents than to those who began using alternative modes full-time (4 or 5 days per week). Only about one third (36%) of occasional alternative mode users said GRH was very important or somewhat important to their decision, compared with nearly three-quarters (73%) of those who started using alternative modes full-time.

Table 19
Importance of GRH to Decision to Start Alternative Mode*

By Days Using Alternative Modes While in GRH

Importance	Days Using Alt Mode With-GRH	
	1-3 days/wk (n=15)	**4-5 days/wk** (n=210)
Very important	18%	46%
Somewhat important	18%	27%
Not at all important	64%	27%

* Respondents who always drove alone to work pre-GRH

Importance of GRH to Maintain Alternative Modes by Pre-GRH Alternative Modes – Respondents who were using alternative modes before they joined GRH differed slightly in their perceived value of GRH by the modes they were using pre-GRH. These results are shown in Table 20.

Table 20
Importance of GRH to Decision to Maintain Alternative Mode*

By Alternative Modes Used Pre-GRH

Importance	Pre-GRH Mode Used (3+ days/week			
	CP/VP (n=175)	**Bus** (n=131)	**Metrorail** (n=123)	**Commuter Rail** (n=131)
Very important	42%	47%	41%	30%
Somewhat important	38%	28%	26%	35%
Not at all important	20%	24%	33%	35%

* Respondents who used alternative modes pre-GRH

Respondents who were carpooling/vanpooling or riding the bus seemed to find GRH most important. Four in ten (80%) of carpoolers/vanpoolers and three-quarters (75%) of bus riders said GRH was "very important" or "somewhat important" to their decision to continue using these modes. By contrast, only about two-thirds of Metrorail (67%) or commuter rail (65%) rated it as valuable.

Importance of GRH by Registration Status – Results presented in Table 21 show the relative importance of GRH to current registrants and past registrants. Among participants who started using an alternative mode, current and past registrants rated GRH about equally important, with about half of both groups (47%) saying GRH was "very important" and about a quarter saying it was "somewhat important."

Table 21
Importance of GRH to Decision to Start or Maintain Alternative Mode

Current and Past Registrants

Importance	Start Alt Mode *		Maintain Alt Mode **	
	Current Registrants (n=190)	**Past Registrants** (n=32)	**Current Registrants** (n=470)	**Past Registrants** (n=77)
Very important	47%	47%	43%	35%
Somewhat important	24%	28%	33%	31%
Not at all important	29%	25%	24%	34%

* Respondents who always drove alone to work pre-GRH
** Respondents who used alternative modes at least occasionally pre-GRH

Some difference also was noted between current and past registrants who continued using an alternative. Current registrants rated GRH as more important than did past registrants; 76% of current registrants said GRH was "very important" or "somewhat important," compared to 66% of past registrants. This result also could suggest why current registrants have remained in the program.

Likelihood to Use Alternative Modes if GRH Not Available

Respondents also were asked if they would have made the same commute pattern decisions if GRH had not been available to them. Table 22 shows how likely respondents were to have started, increased, or maintained use of alternative modes if GRH had not been available to them.

Half (50%) of respondents who started using alternative modes said they were "very likely" to have made the change even if GRH had not been available and 28% said they were "somewhat likely" to have done so. But nearly one-quarter (22%) said they were "not at all likely" to have started using alternative modes if GRH had not been available.

Table 22
Likelihood to Start, Maintain, or Increase
Use of Alternative Modes if GRH Not Available

Likelihood	Start Alt Mode (n=225)	Increase Alt Mode (n=42)	Maintain Alt Mode (n=573)
Very likely	50%	48%	71%
Somewhat likely	28%	23%	23%
Not at all likely	22%	29%	6%

A small number of respondents used alternative modes pre-GRH but increased their use of these modes while participating in GRH. GRH's value for these respondents was similar to that for new alternative mode users. Three in ten (29%) respondents said they were "not at all likely" to have made this change without GRH. About half (48%) said they were "very likely" to have made this change without GRH and the remaining 23% said they were "somewhat likely" to have made this change.

Among the respondents who had been using an alternative pre-GRH, GRH seemed less necessary to their decision. Almost three-quarters (71%) said they were "very likely" to have continued using these modes and additional 23% said they were "somewhat likely." Only six percent said they were "not at all likely" to have maintained their alternative mode use without GRH.

Likelihood to Start or Continue Modes by Registration Status – Finally, Table 23 shows differences between current and past registrants in likelihood to start or maintain alternative modes without GRH.

Table 23
Likely to Start or Maintain Alternative Modes Without GRH

Current and Past Registrants

Likelihood	Start Alt Mode *		Maintain Alt Mode **	
	Current Registrants (n=193)	Past Registrants (n=31)	Current Registrants (n=469)	Past Registrants (n=77)
Very likely	53%	46%	72%	71%
Somewhat likely	34%	19%	23%	22%
Not at all likely	13%	35%	5%	7%

* Respondents who always drove alone to work pre-GRH
** Respondents who used alternative modes at least occasionally pre-GRH

It appears that GRH was more important to past registrants who started using alternatives than to current registrants who started. About a third of past registrants (35%) said they were "not likely" to have started using alternatives without GRH, compared to about 13% of current registrants. But the past registrant sample size is quite small (31).

Results for past and current registrants were quite similar among registrants who had been using alternative modes pre-GRH and continued using them with-GRH. For both groups, less than 10% of respondents said they were "not likely" to have continued using alternative modes if GRH had not been available.

Other Influences Motivating Commute Changes

Tables 18 through 23 presented an apparent contradiction. Despite the high percentage of respondents who rated GRH as "very important" or "somewhat important" to their decisions to use alternative modes, most respondents said they were likely to have made these decisions anyway, implying that GRH was not essential to their decision. These results are consistent with other GRH program evaluations. GRH users typically do rate GRH as a valuable service, but indicate that it is not "the reason" for which they made a change to an alternative mode. They were influenced by a variety of factors, of which GRH was one.

Other Assistance or Benefits That Influenced Decision – With this in mind, respondents were asked if they had received other commute benefits or assistance, in addition to GRH, that influenced their commute mode choice decision. Table 24 shows that 40% of all survey respondents received such assistance or benefits. Current registrants were slightly more likely than past registrants to cite such benefits; 41% of current registrants received benefits compared with 33% of past registrants.

Table 24
Assistance or Benefits Received That Influenced Commute Decision

All Respondents and Current and Past Registrants

Received Assistance or Benefit	All Respondents (n=1,034)	Current Registrant (n=871)	Past Registrant (n=130)
Yes	40%	41%	33%
No	60%	59%	67%

Respondents who received commute assistance or benefits in addition to GRH were asked what assistance or benefit was more important to their decision than GRH. Table 25 shows these results. About a third of respondents (35%) mentioned another service or benefit. The most common other benefit, named by 28% of total respondents, was "discount/free transit pass/Metrochek." Additional respondents cited several other financial incentives. Three percent mentioned other cash incentives and one percent named "assistance from employer" as a more important benefit than GRH.

Table 25
Assistance or Benefits More Important to Decision Than GRH

(n=1,034)

Assistance/Benefit	Percentage*
Discount/free transit pass/Metrochek	28%
Other cash incentive	3%
Assistance from employer	1%
Other**	3%

* Percentage will not add to 100% because not all respondents mentioned a service that was more important than GRH

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

Other Factors or Circumstances That Influenced Decision – Respondents also were asked if any other factors or circumstances, other than GRH and other than the assistance or benefits mentioned above, were important to their decision to use alternative modes. Table 26 lists the factors mentioned.

About four in ten (42%) said no other factor was important. Respondents who did cite other factors primarily mentioned factors related to positive or negative characteristics of commuting, such as, "didn't want to drive" (16%), wanted to "save money" (12%), or "save time" (11%). Smaller percentages of respondents noted "traffic congestion" (3%), "parking issues" (3%), "stress" (2%), "save wear and tear on vehicle" (2%), or "use HOV lanes" (2%). A few respondents mentioned other personal circumstances, such as "job or work hours changes" (4%), "moving to a new residence" (2%), or "family obligations" (2%).

Table 26
Other Factors/Circumstances Important
to Decision to Use Alternative Modes

Other Factors/Circumstances	Total * (n=840)
No other factor was important	42%
Didn't want to drive	16%
Save money	12%
Save time	11%
Changed job/work hours	4%
Traffic congestion	3%
Parking issues	3%
Stress	2%
Save car wear and tear on vehicle	2%
Use HOV lane	2%
Moved to a different residence	2%
Close	2%
Family obligations	2%
Easy, convenient	1%
More flexibility	1%
Didn't like other transportation	1%
Don't know	2%
Other ***	5%

* Might add to more than 100% due to multiple responses
** Caution: small sample size
*** Each response in the "Other" category was mentioned less than one percent of respondents

USE OF AND SATISFACTION WITH GRH

Characteristics of Participants Who Used GRH Trips

Used GRH Trip by Registration Status – As shown in Table 27, only 25% of all respondents said they had taken a GRH trip. Current registrants used GRH trips at a slightly higher rate than did registrants.

Table 27
Used GRH Trip
by All Respondents, Current Registrants, and Past Registrants

Taken a GRH Trip	All Registered Respondents (n=1,001)	Current registrants (n=871)	Past Registrants (n=130)
Yes	25%	25%	21%
No	75%	75%	79%

Used GRH Trip by With-GRH Modes – Table 28 compares use of GRH by four "with-GRH" mode groups: carpool/vanpool, bus, Metrorail, and commuter rail. Use of GRH varied slightly by the mode used. Carpoolers/vanpoolers had the highest trip usage; 35% of these respondents said they took a GRH trip. Bus riders used a GRH trip (29%) at about the average rate (27%). Commuter rail and Metrorail riders had the lowest usage. Only 20% and 21%, respectively, of these respondents took GRH trips.

Table 28
Used GRH Trip by With-GRH Mode (3+ days per week)

Current Registrants and One-Time Exceptions (OTE)

Used GRH Trip	Percentage (n=904)	With-GRH Mode (3+days/week)			
		CP/VP (n=302)	Bus (n=160)	Metrorail (n=123)	Commuter Rail (n=199)
Yes	27%	35%	29%	21%	20%
No	73%	65%	71%	79%	80%

Used GRH Trip by Commute Distance – Table 29 presents a comparison of the commute distance of respondents who did and did not use a GRH trip. The table shows that GRH trip users commuted about the same distance, 32.5 miles, as did respondents who did not use a GRH trip, 32.8 miles.

Table 29
Used GRH Trip by Commute Distance (miles)

Commute Distance	Used GRH Trip (n=250)	Didn't Use GRH Trip (n=707)
Less than 10 miles	4%	10%
10 – 19.9 miles	16%	13%
20 – 29.9 miles	22%	22%
30 – 39.9 miles	27%	22%
40 miles or more	31%	33%
Average (mean)	**32.5 miles**	**32.8 miles**

Reasons for Taking GRH Trip

Table 30 lists the reasons for which participants used the service. If respondents had taken more than one trip, they were asked to report on the reason for their most recent trip. The overwhelming reason was "illness," either of the respondent (30%), a child (28%), or another family member (10%). "Unscheduled overtime" (15%) and "other personal emergency" (10%) were the two other common reasons.

Table 30
Reason for Taking a GRH Trip – Most Recent Trip

(n=274)

Reason	Percentage
Illness (self)	30%
Illness of child	28%
Unscheduled overtime	15%
Other personal emergency	10%
Illness of family member	10%
Missed CP/VP	3%
Train/van broke down	1%
Other*	3%

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

Satisfaction With the Trip

Participants, who had taken a GRH trip were asked if the service was satisfactory. The overwhelming majority (93%) said they were satisfied. Reasons given by the 11 unsatisfied respondents were: "driver unaware of GRH" (3 respondents), "waited too long" (3 respondents), "hard to get approval" (2 respondents), and other responses mentioned by one respondent each.

As shown in Table 31, respondents waited an average of 16 minutes for a taxi, compared with about 20 minutes wait as measured in the 2001 GRH survey. In 2004, more than half (56%) said the taxi arrived within 10 minutes and four of five (80%) respondents waited 20 minutes or less.

Table 31
Time Waited for Taxi

(n=273)

Wait Time	Percentage	Cumulative Percentage
5 minutes or less	28%	28%
6 to 10 minutes	28%	56%
11 to 20 minutes	24%	80%
21 to 30 minutes	13%	93%
31 to 45 minutes	3%	96%
46 to 60 minutes	3%	99%
61 or more minutes	1%	100%
Mean Time	**16 minutes**	

Desired Improvements to the GRH Program

Participants appear to be generally quite satisfied with the GRH Program. More than a quarter (28%) of respondents said that they felt no improvement was necessary for the GRH program. An additional four in ten participants (40%) were unsure of a way Commuter Connections could improve the GRH Program. Specific suggestions mentioned by respondents are detailed in Table 32.

Table 32
Suggested Improvements to GRH Program

(n=1,034)

Desired Improvement	Percentage*
No improvement needed	28%
More advertising	8%
Allow more trips per year	3%
More flexibility in eligibility/procedures	3%
Easier/faster approval	3%
Quicker response for ride requests	3%
Better directions/information on how to use	2%
Better communication with cabs/complaints	2%
Wider area for trips	2%
Don't require registration	1%
Notify when time to re-register	1%
Other	7%
Don't know	41%

* Might add to more than 100% due to multiple responses

SECTION 4 – CONCLUSIONS

This section of the report presents major conclusions from the analysis of the GRH survey. Appendix E provides conclusions dealing with technical elements of the survey methodology and sampling procedures.

Conclusions are provided for the following topics:

- Program participation findings
- Impact of GRH on commute patterns
- Implications of results for travel and air quality assessment
- Program marketing findings

Program Participation Findings

Several results related to program participation are notable, as summarized below:

- The program appears to be able to attract participants who recently started using alternative modes. More then half of the participants who joined the program within the past year had been using an atlernative less than two years. But the program also continues to atttract some long-term users of alternative modes.

- But of the commuters who joined GRH, 32% no longer participate in the program (past registrants). Past registrants left the program for two types of reasons: reasons associated with characteristics of the program and reasons associated with personal circumstances of the registrants. More than half of respondents mentioned circumstance reasons. But 21% of respondents said they did not know they had to re-register. This suggests additional and/or clearer information might be needed to keep them in the program. Fourteen percent said they left because it was "too much effort to use the program."

Impact of GRH on Commute Patterns

The GRH survey was designed to examine three key questions: Did the GRH Program:

- Encourage commuters who drive alone to work to use alternative modes, such as transit and car-pool?
- Encourage commuters who use alternative modes to use these modes more days per week?
- Encourage commuters who use alternative modes to use them for a longer period of time?

- ***Shifts from Drive Alone to Alternative Modes*** – The survey clearly showed that some commuters who registered for GRH were driving alone prior to joining the program. But the percentage of participants who had been drive alone commuters was much less than was projected when the program was being developed, because nearly three-quarters of participants (72%) were regularly using alternative modes before they joined the program.

  About 26% of participants said they were driving alone three or more days per week before they joined GRH. A small number (11%) of these commuters still were driving alone most of the time, even with GRH, but the majority (89%) shifted from regularly driving alone to regularly using alternative modes. These respondents represented about 23% of total GRH registrants.

- ***Increase Use of Alternative Modes*** – It is difficult to draw definitive conclusions on the role of GRH in encouraging more frequent use of alternative modes, because only 45 of 1,034 respondents increased the number of days they used alternative modes. The low respondent number is not necessarily indicative of GRH's value for this type of change, however. Overall, participants who were using an alternative pre-GRH already did so four or five days per week. In other words, a large majority of participants already were using alternative modes full-time.

  But among the small sample of respondents who did increase the number of days they used alternative modes, the results were notable; the with-GRH frequency was 4.5 days per week, compared with a pre-GRH frequency of 3.5 days per week.

- ***Extending the Duration of Alternative Mode Use*** – The survey results indicated that 74% of participants had been using their current alternative mode for more than two years and 38% had used the alternative at least five years. The average time using the alternative mode was about 65 months.

  But this is not significantly different from the average 70 month duration of rideshare arrangements for the regional population. The regional population does appear to have a larger percentage of recent switches to alternative modes. About a third of regional commuters started using alternatives within the past two years, compared with about a quarter of GRH respondents. This implies that GRH tends to attract a greater share of long-term users of alternative modes than recent switchers.

- ***Role of GRH in Motivating Change*** – The majority of respondents said that the GRH Program was important to their decision to start, maintain, or increase use of alternative modes. But conversely, the majority of respondents also said they were likely to have made the same commute decisions even if GRH were not available. This suggests that GRH is a useful and even valuable service, but not "the reason" that commuters choose alternative modes.

  GRH seemed to be more valuable as a motivator for participants who were driving alone pre-GRH to start using alternatives than for participants who already were using an alternative at the time they registered to continue in these modes. Participants who were driving alone pre-GRH rated GRH higher in importance than did respondents who were alternative users pre-GRH. New alternative mode users also said they were less likely to have made the change without GRH. In other words, GRH appears to have a bigger impact on encouraging shifts from drive alone to alternative modes than encouraging alternative mode users to extend the time they use alternatives.

Implications of Results for Travel and Air Quality Impact Assessment

An important role of the survey was to collect data to support the upcoming TERM evaluation, scheduled to be performed in the spring of 2005. Several of the findings have specific implications for the assessment of travel and air quality impacts of GRH in that evaluation. These findings include:

- A finding that will support travel benefits is that the average number of vehicle trips each GRH participant reduces each day, called the "vehicle trip reduction (VTR) factor," might be higher than had been calculated from Commuter Connections' rideshare placement surveys, although additional calculation will be needed to verify this tentative finding. Even with the high percentage of partici-

pants who were using alternatives prior to joining GRH, the shifts from drive alone to alternative modes appears to be higher than the placement surveys indicate. Additionally, a much greater percentage of mode shifts appear to go to transit, which will have a positive impact on the VTR factor, because transit is assumed to represent no vehicle trips at all.

- A second positive finding is that the average duration of alternative mode use is certainly longer than three years, since more than half of GRH participants have been in their alternative modes at least this long. This is an encouraging finding, because it means that congestion mitigation and air quality improvement benefits of GRH extend longer than the two years that had been generally assumed and that a portion of the benefits can be carried over from one evaluation period to the next. It also appears, however, that the overall duration of rideshare arrangements for GRH users is not noticeably longer than for the regional population.

- Another finding related to impact assessment is that the benefit from participants who increase their use of alternatives is likely to be small. Although some benefit is achieved by this increase, only four percent of participants fall into this category and the average increase was only one day per week, so the overall impact will be minimal.

- Finally, more than half of past registrants continued to use alternative modes, even though they were no longer registered. About 20% of past registrants were still carpooling or vanpooling and 34% continued to use transit. Thus, the region does not lose the air quality and congestion mitigation benefit of these participants, even after they leave the program.

Program Marketing Findings

Finally, several survey results relate to program marketing. These conclusions are summarized below:

- The number of commuters registered has grown steadily since the program started and the program continues to attract substantial numbers of new participatns each year.

- Program marketing seems to be an effective source of information for GRH. Nearly three-quarters of respondents said they had heard or seen some form of GRH advertising. And almost half of the total survey respondents said they had not registered before hearing or seeing the ads and that the ads had encouraged them to register.

- The results also showed the need for multiple outreach channels. Word of mouth was the predominant method by which respondents learned of GRH, but radio, Internet, employer, bus/train signs, and brochures/direct mail from COG all were noted by at least five percent of respondents as their first information source about GRH.

- The Internet in particular appears to be a growing source of information. About 15% of respondents who registered in 2002 or later cited the internet, compared with 10% of respondents who joined in 2001 or earlier.

- Radio and the Internet may be particularly important marketing tools to reach drive alone commuters. One in five (20%) respondents who drove alone to work pre-GRH mentioned the radio as their source, compared with 12% of other respondents. And 15% of drive alone commuters said they

learned about GRH through the internet, while only about eight percent of other respondents mentioned the Internet.

APPENDICES

APPENDIX A – DISPOSITION OF FINAL DIALING RESULTS

APPENDIX B – SURVEY QUESTIONNAIRE

APPENDIX C – LETTERS, INSTRUCTIONS & DEFINITION OF TERMS

APPENDIX D – NON-RESPONSE SURVEY QUESTIONNAIRE

APPENDIX E - RESULTS FROM 2004 AND 2001 GRH SURVEYS - COMPARISON ON KEY QUESTIONS

APPENDIX A
DISPOSITION OF FINAL DIALING RESULTS

Dialing Disposition at Conclusion of Survey	Total Sample Frame: Initial Interviews No.	Initial Interviews Percent	One-Time Exceptions No.	One-Time Exceptions Percent
Completed Interviews	1,004	60.2%	30	12.0%
No Answer	32	1.9%	2	0.8%
Answering Machine	212	12.7%	99	39.6%
Busy	24	1.4%	5	2.0%
Arranged Call Back	73	4.4%	41	16.4%
Respondent Never Available	13	0.8%	1	0.4%
Business Number/Fax/Modem	3	0.2%	1	0.4%
Not In Service	48	2.9%	15	6.0%
Refused	90	5.4%	4	1.6%
Respondent Terminated	52	3.1%	6	2.4%
Language Not English	1	0.1%	--	
Spanish	2	0.1%	--	
Wrong Number	39	2.3%	10	4.0%
No Longer with Company	53	3.2%	5	2.0%
Never Heard of GRH	3	0.2%	--	
Retired, Not Employed	19	1.1%	--	
Respondent Not One-Time Exp.	-	-	31	12.4%
	1,668	100.0%	250	100.0%
Total Dialings	11,508		694	
Average Number of Dialings per Complete:	11.5		23.1	

APPENDIX B
SURVEY QUESTIONNAIRE

Final – 04/14/04

Hello. May I speak to _ . My name is _____. I'm calling from CIC Research on behalf of Commuter Connections. We're surveying people who have registered for or participated in Commuter Connections' Regional Guaranteed Ride Home (GRH) program. It takes less than __ minutes. Is now a good time?

REGISTRATION INFORMATION

Q1. In what year did you first register for Commuter Connections' GRH program?

1 Before 2000
2 2000
3 2001
4 2002
5 2003
6 2004
7 Never registered (SKIP TO Q3)
8 Don't remember/don't know

Q2 Are you currently registered for Commuter Connections' GRH program?

1 yes (SKIP TO Q6) 2 no (SKIP TO Q4) 9 DK (CONTINUE)

Q3 Have you ever taken a GRH trip provided by Commuter Connections' GRH program?

1 yes (SKIP to Q8) 2 no (THANK and TERMINATE)

Q4 How long were you registered in the GRH program?

1 Less than 1 year
2 1 year
3 2 years
4 3 years
5 more than 3 years
9 Don't remember/don't know

Q5 Why did you not re-register when your registration expired? (DO NOT READ)

1 changed job/work hours
2 moved to a different residence
3 joined a program offered by employer
4 joined a program offered by TMA or other group
5 couldn't use transit or rideshare at least 2 days per week
6 couldn't continue using carpool/vanpool/transit didn't work out
7 needed my car for work or other purpose (had to start driving alone)
8 too much effort to use the program
9 did not know I had to re-register
10 other (SPECIFY) _____

Q6 Did you participate in another GRH program before registering for Commuter Connections' GRH program?

1 yes (ASK Q7) 2 no (SKIP TO Q8)

Q7 Who offered/sponsored that program? (DO NOT READ)

1 My employer
2 Local government program (i.e., Fairfax County, Montgomery County)
3 VRE
9 Other _____

DEFINITION OF REGISTRATION STATUS

IF Q1=7 AND Q3=1, GRHTYPE = ONE_TIME
IF Q1=8 AND Q2=9 AND Q3=1, GRHTYPE = ONE_TIME

IF Q1=1, 2, 3, 4, 5, 6, OR 8 AND Q2=1, GRHTYPE = CURR_REG

IF Q1=1, 2, 3, 4, 5, 6, OR 8 AND Q2=2, GRHTYPE = PAST_REG
IF Q1=1, 2, 3, 4, 5, OR 6 AND Q2=9 AND Q3=1, GRHTYPE = PAST_REG

COMMUTE PATTERNS

Q8 Next, I'd like to ask you about your travel to work. First, in a TYPICAL week, how many weekdays (Monday-Friday) are you assigned to work?
_____ Days

Q9 Do you work a compressed or flexible work schedule, for example, a full-time work week in fewer than five days or a schedule with flexible start and end times?

1 yes (CONTINUE) 2 no (SKIP TO Q11)

Q10 What type of schedule do you use?

1. 4/40 (4 10-hour days per week, 40 hours)
2. 9/80 (9 days every 2 weeks, 80 hours)
3. 3/36 (3 12-hour days per week, 36 hours - police, fire, hospitals)
4. flex-time or flexible work hours (core hours with flexible start & stop)
5. other (SPECIFY) _____

Q11 Would you consider last week to be a typical work and commute week?

1 yes (ASK Q12, THEN SKIP TO Q15) 2 no (SKIP TO Q13)

Q12 Then thinking just about LAST week, how did you get to work each day. Let's start with Monday? . . . How about Tuesday? . . . Wednesday? . . . Thursday? . . . Friday?

(IF RESPONDENT MENTIONS MORE THAN ONE MODE ON ANY DAY, PROMPT FOR THE MODE USED FOR THE LONGEST DISTANCE PORTION OF THE TRIP.)
(IF Q10 = 1, 2, OR 3 AND RESPONDENT DOES NOT MENTION "CWS day off" (RESPONSE 1), ASK:) "You said you typically work a compressed work schedule. Did you have a compressed work schedule day off last week?"
(IF ALL WEEKDAYS IN Q8 ARE ACCOUNTED FOR BY MODES 1-15 IN Q12 BEFORE ALL WEEKDAYS ARE COUNTED, ASK: "You said you typically work only (number of weekdays reported

in Q8) per week. Were the weekdays I haven't asked you about regular days off for you last week?" **IF RESPONSE IS YES, CATI WILL AUTOFILL REMAINING DAYS WITH CODE 16; OTHERWISE CONTINUE AND RECORD MODES USED FOR THOSE DAYS)**

(IF RESPONDENT MENTIONS "BUSINESS TRIP, WORK OUT OF AREA" (RESPONSE 17) FOR ANY DAY, CODE RESPONSE 17, THEN ASK "If you had at your regular work location worked that day, how would you likely have traveled to work?" **AND CODE ADDITIONAL MODE RESPONSE FOR THAT DAY.**

(IF RESPONDENT MENTIONS "SICK, VACATION, HOLIDAY" (RESPONSE 18) FOR ANY DAY, CODE RESPONSE 18, THEN ASK "If you had worked that day, how would you likely have traveled to work?" **AND CODE ADDITIONAL MODE RESPONSE FOR THAT DAY.**

	Go to Work				
Mode/Day of Week	Mon	Tues	Wed	Thur	Fri
1. compressed work schedule day off	1	1	1	1	1
2. telecommute/telework	2	2	2	2	2
3. drive alone in your car, taxi	3	3	3	3	3
4. motorcycle	4	4	4	4	4
5. carpool, including carpool w/family member, dropped off	5	5	5	5	5
6. casual carpool (slugging)	6	6	6	6	6
7. vanpool	7	7	7	7	7
8. buspool	8	8	8	8	8
9 rode a bus (public Bus, shuttle)	9	9	9	9	9
10. Metrorail	10	10	10	10	10
11. MARC (MD Commuter Rail)	11	11	11	11	11
12. VRE	12	12	12	12	12
13. AMTRAK/other train	13	13	13	13	13
14. bicycle	14	14	14	14	14
15. walk	15	15	15	15	15
16. regular day off (non-CWS)	16	16	16	16	16
17. business trip, work out of area, etc. (prompt for travel on non trip day)	17	17	17	17	17
18. sick, vacation, holiday, etc. (prompt for travel on non sick, vacation day)	18	18	18	18	18
19. N/A					

Q13 Then thinking about a TYPICAL week, what type or types of transportation do you use to get to work**?**

(PROGRAMMER, LIST MODES FOR USE IN Q14. IF Q10 = 1, 2, OR 3, ADD "CWS day off" TO LIST OF MODES FOR Q14). (IF "CWS DAY OFF" IS IN Q13 LIST, ASK FIRST:) "You said you typically work a compressed work schedule. How many compressed schedule days do you typically have off in a week**?"**

THEN FOR EACH OTHER MODE MENTIONED IN Q13, ASK…

Q14 About how many days per week do you use <MODE FROM Q13>?

(IF RESPONDENT MENTIONS MORE THAN ONE MODE ON ANY DAY, PROMPT FOR THE MODE USED FOR THE LONGEST DISTANCE PORTION OF THE TRIP.)
(IF SUM OF DAYS FROM Q14 NE Q8, ASK) "And how do you commute on other days you are assigned to work?**" – ACCEPT OPTION OF "didn't work, regular day off."**

(IF RESPONDENT MENTIONS "BUSINESS TRIP, WORK OUT OF AREA" (RESPONSE 17) FOR ANY DAY, CODE RESPONSE 17, THEN ASK "If you had worked at your regular work location that day, how would you likely have traveled to work?" **AND CODE ADDITIONAL MODE RESPONSE FOR THAT DAY.**

	Go to Work – number of days				
Mode/Days typically used per week	1	2	3	4	5
1. have a compressed work schedule day off	1	2	3	4	5
2. telecommute/telework	1	2	3	4	5
3. drive alone in your car, taxi	1	2	3	4	5
4. motorcycle	1	2	3	4	5
5. carpool, including carpool w/family member, dropped off	1	2	3	4	5
6. casual carpool (slugging)	1	2	3	4	5
7. vanpool	1	2	3	4	5
8. buspool	1	2	3	4	5
9 a bus (public Bus, shuttle)	1	2	3	4	5
10. Metrorail	1	2	3	4	5
11. MARC (MD Commuter Rail)	1	2	3	4	5
12. VRE	1	2	3	4	5
13. AMTRAK/other train	1	2	3	4	5
14. bicycle	1	2	3	4	5
15. walk	1	2	3	4	5
16. have a regular day off (non-CWS)	1	2	3	4	5
17. have a business trip, work out of area, etc. (prompt for travel on non trip day)	1	2	3	4	5
18. N/A					
19. N/A					

IF NO ALT MODE MENTIONED IN Q12 OR Q14, ASK Q14A

Q14a Do you occasionally use any of the following types of transportation to get to work? (READ; Select all that apply)

1 Carpool or Casual Carpool
2 Vanpool
3 Bus or Train
4 Bike or Walk
5 Don't use any of these modes (DO NOT READ)

Q15 About how many miles do you usually travel from home to work one way?
_____ miles one way

Q16 And about how many minutes does it take you to get to work? _____ minutes

(If Q12 or Q14 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, or 15 ASK ABOUT MOST COMMON ALTERNATIVE <MODE Q12 or Q14>. OTHERWISE, SKIP TO Q18)

Q17 About how long have you been using < MODE Q12 OR Q14 > for your trip to work? **(DO NOT READ) (ADD TO BRIEFING DOCUMENT INSTUCTIONS IF RESPONDENT SAYS, "DO YOU MEAN HOW LONG HAVE I BEEN USING THIS MODE OR HOW LONG I'VE BEEN IN THIS PARTICULAR ARRANGEMENT," INTERVIEW SHOULD SAY, "USING THIS TYPE OF TRANSPORTATION")**

_____ months (CONVERT YEARS TO MONTHS)
_____ Don't know

(IF Q12 or Q14 = 5, 6, OR 7, ASK Q18, OTHERWISE SKIP TO Q21)

Q18 Including yourself, how many people usually ride in your <carpool or vanpool>? (If more than one answer in Q12 or Q14, select one using this priority: vanpool, carpool, casual carpooling.)
_____ total people in pool

(ASK Q19-Q20 OF RESPONDENTS ANSWERING CODE 5-13 IN Q12 OR Q14)

Q19 How do you get from home to where you meet your <MODE Q12 or Q14>?

1 picked up at (or leave from) home by car/van pool or driver (SKIP TO Q21)
2 drive alone to driver's home or drive alone to passenger's home
3 drive to a central location, like a park & ride or station
4 another car/van pool, including dropped off by HH members
5 bicycle
6 motorcycle
7 walk
8 driver of carpool/vanpool
9 bus/transit
* other (SPECIFY) _____

Q20 How many miles is it one way from your home to where you meet your <MODE Q12 OR Q14>?
_____ miles (no decimals)

PREVIOUS MODE

(IF PAST_REG, ASK Q21-23. IF CURR_REG, SKIP TO Q27. IF ONE_TIME, SKIP TO Q24)

(Past Registrants)

Q21 Next I'd like you to think back to the time that you were registered for the GRH program. During that time, how many days were you assigned to work in a typical week?

____ days

Q22 And at that time, what type or types of transportation did you use to get to work? (**PROGRAMMER, LIST MODES FOR USE IN Q23)**

FOR EACH MODE MENTIONED IN Q22, ASK…

Q23 About how many days per week did you use <MODE FROM Q22>??

(IF SUM OF DAYS FROM Q23 NE Q21, ASK) "And how did you commute on other days you were assigned to work?" **ACCEPT OPTION OF "didn't work, regular day off."**

(IF Q12 OR Q14 = 1 AND RESPONDENT DOES NOT MENTION "CWS day off" (RESPONSE 1), ASK:) "You said you typically work a compressed work schedule now. Did you work a compressed schedule during the time you were registered for the GRH program?"

(IF Q12 OR Q14 = 2 AND RESPONDENT DOES NOT MENTION "Telecommute/telework" (RESPONSE 2), ASK:) "You said you typically telecommute now. Did you telecommute during the time you were registered for the GRH program?"

	Go to Work – number of days				
Mode/Days typically used per week	1	2	3	4	5
1. compressed work schedule day off	1	2	3	4	5
2. telecommute/telework	1	2	3	4	5
3. drive alone in your car, taxi	1	2	3	4	5
4. motorcycle	1	2	3	4	5
5. carpool, including carpool w/family member, dropped off	1	2	3	4	5
6. casual carpool (slugging)	1	2	3	4	5
7. vanpool	1	2	3	4	5
8. buspool	1	2	3	4	5
9 rode a bus (public Bus, shuttle)	1	2	3	4	5
10. Metrorail	1	2	3	4	5
11. MARC (MD Commuter Rail)	1	2	3	4	5
12. VRE	1	2	3	4	5
13. AMTRAK/other train	1	2	3	4	5
14. bicycle	1	2	3	4	5
15. walk	1	2	3	4	5
16. regular day off (non-CWS)	1	2	3	4	5
17. business trip, work out of area, etc. (prompt for travel on non trip day)	1	2	3	4	5
18. N/A					
19. N/A					

(NOW SKIP TO Q27)

(One-Time Exceptions)

Q24 Now, please think back to the time before you heard about the GRH program. At that time, how many days were you assigned to work in a typical week?

____ days Did not work then (IN Q25, AUTOCODE "DID NOT WORK THEN." IN Q26, AUTOCODE RESPONSE 19, "DID NOT WORK THEN,")

Q25 And at that time, what type or types of transportation did you use to get to work? (**PROGRAMMER, LIST MODES FOR USE IN Q26)**

FOR EACH MODE MENTIONED IN Q25, ASK…

Q26 About how many days per week did you use <MODE FROM Q25>??

(IF SUM OF DAYS FROM Q11f NE Q11d, ASK) "And how did you commute on other days you were assigned to work?" **– ACCEPT OPTION OF "didn't work, regular day off."**

(IF Q12 OR Q14 = 1 AND RESPONDENT DOES NOT MENTION "CWS day off" (RESPONSE 1), ASK:) "You said you typically work a compressed work schedule now. Did you work a compressed schedule before you heard about the GRH program?"

(IF Q12 OR Q14 = 2 AND RESPONDENT DOES NOT MENTION "Telecommute/telework" (RESPONSE 2), ASK:) "You said you typically telecommute now. Did you telecommute before you heard about the GRH program?"

	Go to Work – number of days				
Mode/Days typically used per week	1	2	3	4	5
1. compressed work schedule day off	1	2	3	4	5
2. telecommute/telework	1	2	3	4	5
3. drive alone in your car, taxi	1	2	3	4	5
4. motorcycle	1	2	3	4	5
5. carpool, including carpool w/family member, dropped off	1	2	3	4	5
6. casual carpool (slugging)	1	2	3	4	5
7. vanpool	1	2	3	4	5
8. buspool	1	2	3	4	5
9 rode a bus (public Bus, shuttle)	1	2	3	4	5
10. Metrorail	1	2	3	4	5
11. MARC (MD Commuter Rail)	1	2	3	4	5
12. VRE	1	2	3	4	5
13. AMTRAK/other train	1	2	3	4	5
14. bicycle	1	2	3	4	5
15. walk	1	2	3	4	5
16. regular day off (non-CWS)	1	2	3	4	5
17. business trip, work out of area, etc. (prompt for travel on non trip day)	1	2	3	4	5
18. N/A					
19. Did not work then, did not work in area then					5

(NOW SKIP TO INSTRUCTIONS BEFORE Q30)

Q27 Now, please think back to the time before you registered for the GRH program. At that time, how many days were you assigned to work in a typical week?

____ days. Did not work then (IN Q28, AUTOCODE "DID NOT WORK THEN." IN Q29, AUTOCODE RESPONSE 19, "DID NOT WORK THEN,")

Q28 At that time, what type or types of transportation did you use to get to work?
(**PROGRAMMER, LIST MODES FOR USE IN Q29)**

FOR EACH MODE MENTIONED IN Q29, ASK…

Q29 About how many days per week did you use <MODE FROM Q28>??

(IF SUM OF DAYS FROM Q29 NE Q27, ASK) "And how did you commute on other days you were assigned to work?" **– ACCEPT OPTION OF "didn't work, regular day off."**

(IF Q12 OR Q14 = 1 AND RESPONDENT DOES NOT MENTION "CWS day off" (RESPONSE 1), ASK:) "You said you typically work a compressed work schedule now. Did you work a compressed schedule before you registered for the GRH program?"

(IF Q12 OR Q14 = 2 AND RESPONDENT DOES NOT MENTION "Telecommute/telework" (RESPONSE 2), ASK:) "You said you typically telecommute now. Did you telecommute before you registered for the GRH program?"

	Go to Work – number of days				
Mode/Days typically used per week	1	2	3	4	5
1. compressed work schedule day off	1	2	3	4	5
2. telecommute/telework	1	2	3	4	5
3. drive alone in your car, taxi	1	2	3	4	5
4. motorcycle	1	2	3	4	5
5. carpool, including carpool w/family member, dropped off	1	2	3	4	5
6. casual carpool (slugging)	1	2	3	4	5
7. vanpool	1	2	3	4	5
8. buspool	1	2	3	4	5
9 rode a bus (public Bus, shuttle)	1	2	3	4	5
10. Metrorail	1	2	3	4	5
11. MARC (MD Commuter Rail)	1	2	3	4	5
12. VRE	1	2	3	4	5
13. AMTRAK/other train	1	2	3	4	5
14. bicycle	1	2	3	4	5
15. walk	1	2	3	4	5
16. regular day off (non-CWS)	1	2	3	4	5
17. business trip, work out of area, etc. (prompt for travel on non trip day)	1	2	3	4	5
18. N/A					
19. Did not work then, did not work in area then					5

GRH INFLUENCE IN STARTING, CONTINUING, OR INCREASING USE OF ALTERNATIVE MODES

Skip instruction for previous Drive Alone by registration status

INSTRUCTIONS BEFORE Q30

Current Registrants

(IF **CURR_REG** AND IF Q12 or Q14 =5, 6, 7, 8, 9, 10, 11,12, 13, 14, OR 15 AND Q29 NE 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, ASK Q30.

(IF Q29 = 19, SKIP TO Q45)

Past Registrants
IF **PAST_REG** AND IF Q23 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, OR 15 AND Q29 NE 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, OR 15 , ASK Q31.
(IF Q29 = 19, SKIP TO Q46)

One-time Exception users
IF **ONE_TIME** AND IF Q12 or Q14 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, OR 15 AND Q26 NE 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, OR 15 , ASK Q32.
(IF Q26 = 19, SKIP TO Q45)

ALL OTHERS, SKIP TO INSTRUCTIONS BEFORE Q35

(Current Registrants who always drove alone to work before registering)

Q30 You said that you regularly drove alone before you registered for GRH. How important was the availability of GRH to your decision to start carpooling, vanpooling, using transit, biking,or walking (FROM Q12 or Q14)? (READ)

1 very important
2 somewhat important
3 not at all important
9 DK/REFUSED (DO NOT READ)

(NOW SKIP TO Q33)

(Past Registrants who always drove alone to work before registering)

Q31 You said that you regularly drove alone before you registered for GRH. How important was the availability of GRH to your decision to start carpooling, vanpooling, using transit, biking, or walking (FROM Q23)? (READ)

1 very important
2 somewhat important
3 not at all important
9 DK/REFUSED (DO NOT READ)

(NOW SKIP TO Q34)

(One-Time Exceptions who always drove alone to work before learning about GRH)

Q32 You said that you regularly drove alone before you heard about GRH. How important was the availability of GRH to your decision to start carpooling, vanpooling, using transit, biking, or walking (FROM Q12 or Q14)? (READ)

1 very important
2 somewhat important
3 not at all important
9 DK/REFUSED (DO NOT READ)

(CONTINUE WITH Q33)

(Current Registrants or One-Time exceptions who always drove alone to work before registering)

Q33 If GRH had not been available, how likely would you have been to start carpooling, vanpooling, using transit, biking, or walking (FROM Q12 or Q14)? (READ)

1 very likely
2 somewhat likely
3 not at all likely
9 DK/REFUSED (DO NOT READ)

(NOW SKIP TO Q45)

(Past Registrants who always drove alone to work before registering)

Q34 If GRH had not been available, how likely would you have been to start carpooling, vanpooling, using transit, biking, or walking (FROM Q23)? (READ)

1 very likely
2 somewhat likely
3 not at all likely
9 DK/REFUSED (DO NOT READ)

(NOW SKIP TO Q46)

Skip instruction for increased use of alt modes by registration status
INSTRUCTIONS BEFORE Q35

Current Registrants
(IF **CURR-REG** and IF Q12 or Q14 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, OR 15 AND THE FREQUENCY OF Q12 or Q14 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, OR 15 IS GREATER THAN THE FREQUENCY OF Q29 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, OR 15, ASK Q35 AND Q38.

Past Registrants
IF **PAST_REG** and IF Q23 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, OR 15 AND THE FREQUENCY OF Q23 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, OR 15 IS GREATER THAN THE FREQUENCY OF Q29 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, OR 15, ASK Q36 AND Q39.

One-time Exceptions
IF **ONE_TIME** and IF Q12 or Q14 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, OR 15 AND THE FREQUENCY OF Q12 or Q14 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, OR 15 IS GREATER THAN THE FREQUENCY OF Q26 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, OR 15, ASK Q37 AND Q38.

ALL OTHERS SKIP TO INSTRUCTIONS BEFORE Q40)

(Current Registrants who increased use of alternative modes after registering)

Q35 You said that since you registered for GRH, you've increased the number of days per week that you use types of transportation OTHER than driving alone for your trip to work. How important was GRH to your decision to make this change? (READ)

1 very important
2 somewhat important
3 not at all important
9 DK/REFUSED (DO NOT READ)

(NOW SKIP TO Q38)

(Past Registrants who increased use of alternative modes after registering)

Q36 You said that while you were registered for GRH, you used types of transportation OTHER than driving alone more days per week for your trip to work than you did before you registered for GRH. How important was GRH to your decision to make this change? (READ)

1 very important
2 somewhat important
3 not at all important
9 DK/REFUSED (DO NOT READ)

(NOW SKIP TO Q39)

(One-Time Exceptions who increased use of alternative modes after registering)

Q37 You said that since you heard about GRH, you've increased the number of days per week that you use types of transportation OTHER than driving alone for your trip to work. How important was GRH to your decision to make this change? (READ)

1 very important
2 somewhat important
3 not at all important
9 DK/REFUSED (DO NOT READ)

(CONTINUE WITH Q38)

(Current Registrants or One-time Exceptions)

Q38 If GRH had not been available, how likely would you have been to make this change? (READ)

1 very likely
2 somewhat likely
3 not at all likely
9 DK/REFUSED (DO NOT READ)

(SKIP TO Q45)

(Past Registrants)

Q39 If GRH had not been available, how likely would you have been to make this change? (READ)

1 very likely
2 somewhat likely
3 not at all likely
9 DK/REFUSED (DO NOT READ)

(SKIP TO Q46)

INSTRUCTIONS BEFORE Q40
Skips for Respondents who used alt modes before GRH but did not increase the number of days using alt modes, by registration status

Current Registrants
(IF **CURR_REG** AND Q12 or Q14 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, OR 15 AND Q29 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, OR 15 , AND THE FREQUENCY OF Q12 or Q14 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 IS LESS THAN OR EQUAL TO THE FREQUENCY OF Q26 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, ASK Q40.

Past Registrants
IF **PAST_REG** and Q23 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, OR 15 and Q29 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, OR 15, AND THE FREQUENCY OF Q23 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 IS LESS THAN OR EQUAL TO THE FREQUENCY OF Q29 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, , ASK Q41.

One-Time exceptions
IF **ONE_TIME** and Q12 or Q14 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, OR 15 AND Q26 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, OR 15, AND THE FREQUENCY OF Q12 OR Q14 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 IS LESS THAN OR EQUAL TO THE FREQUENCY OF Q26 = 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, , ASK Q42.

(ALL OTHERS, SKIP TO INSTRUCTIONS BEFORE Q45)
(Current Registrants who were ridesharing/using transit at least some days before registering)

Q40 You said that you were carpooling, vanpooling, using transit, biking, or walking (FROM Q29) before you registered for GRH. How important was the availability of GRH to your decision to continue using a type of transportation other than driving alone? Was it… (READ)

1 very important
2 somewhat important
3 not at all important
9 DK/REFUSED (DO NOT READ)

(NOW SKIP TO Q43)

(Past Registrants who were ridesharing/using transit at least some days before registering)

Q41 You said that you were carpooling, vanpooling, using transit, biking, or walking (FROM Q29) before you registered for GRH. How important was the availability of GRH to your decision to continue using a type of transportation other than driving alone? Was it… (READ)

1 very important
2 somewhat important
3 not at all important
9 DK/REFUSED (DO NOT READ)

(NOW SKIP TO Q43)

(One-Time Exceptions who were ridesharing/using transit at least some days before hearing about GRH)

Q42 You said that you were carpooling, vanpooling, using transit, biking, or walking (FROM Q26) before you heard about GRH. How important was the availability of GRH to your decision to continue using a type of transportation other than driving alone? Was it… (READ)

1 very important
2 somewhat important
3 not at all important
9 DK/REFUSED (DO NOT READ)

(NOW SKIP TO Q44)

(Current Registrants or Past Registrants))

Q43 If GRH had not been available, how likely would you have been to continue? Would you say it was… (READ RESPONSES)

1 very likely
2 somewhat likely
3 not at all likely
9 DK/REFUSED (DO NOT READ)

(NOW SKIP TO Q45)

(One-Time Registrants)

Q44 If GRH had not been available, how likely would you have been to continue? Would you say it was … (READ)

1 very likely
2 somewhat likely
3 not at all likely
9 DK/REFUSED (DO NOT READ)

INSTRUCTIONS BEFORE Q45
(IF **CURR_REG** or **ONE_TIME,** ASK Q45)

(IF **PAST_REG,** ASK Q46)

(Current Registrants or One-Time Exceptions)

Q45 Did you receive any commute assistance or benefits, in addition to GRH, from any source, that influenced your decision to carpool, vanpool, use transit, bike, or walk (FROM Q12 or Q14)?

1 yes
2 no (SKIP TO Q48)
9 DK/REFUSED (DO NOT READ; SKIP TO Q48)

(NOW SKIP TO Q47)

(Past Registrants)

Q46 Did you receive any commute assistance or benefits, in addition to GRH, from any source, that influenced your decision to carpool, vanpool, use transit, bike, or walk (FROM Q23)?

1 yes
2 no (SKIP TO Q48)
9 DK/REFUSED (DO NOT READ; SKIP TO Q48)

Q47 Was any assistance or benefit you received more important than GRH to your decision? (DO NOT READ; ACCEPT ONLY ONE RESPONSE)

1 matchlist
2 transit route/schedule info
3 P&R info
4 vanpool assistance
5 HOV lane specs
6 discount/free transit pass/Metrochek/SmarTrip, Smart Benefits
7 NuRide (Virginia carpool incentive)
8 other cash incentive
9 employer GRH
10 CP/VP preferential parking
11 parking fees
12 carpool/vanpool discount park**ing**
13 assistance from employer
14 no assistance more important
15 other _____

Q48 Were any other factors or circumstances important to your decision? (DO NOT READ; ACCEPT MULTIPLE RESPONSES)

1 changed jobs or work hours
2 moved to a different residence
3 save money
4 save time
5 didn't want to drive
6 no longer had a car available for commuting
7 needed my car for work or other purpose (had to start driving alone)
8 family obligations
88 other (SPECIFY) _____
99 no other factor or circumstance was important

REFERRAL SOURCES FOR GRH, GRH ADVERTISING RECALL

Q49 How did you hear about the GRH Program? (DO NOT READ, ACCEPT MULTIPLE RESPONSES; PROBE FOR ADDITIONAL SOURCES)

1 direct mail/postcard from COG/CC
2 radio
3 TV
4 bus/train sign
5 internet
6 bus/train schedule
7 brochure/promo materials
8 highway sign
9 Info Kiosk
10 yellow Pages (One Book or Verizon)
11 newsletter
12 newspaper (regional or local)
13 employer/employer survey
14 fair/on-site event
15 word of mouth
16 other rideshare/transit organization
17 Other (specify)_____
19. DK/Ref.

IF Q49 = 1, 2, 3, 4, OR 5, SKIP TO Q52

Q50 Have you heard, seen, or read any advertising about GRH?

1. yes
2. no (SKIP TO Q54)
9. DK/Ref (SKIP TO Q54)

Q52 Had you registered for GRH before you saw or heard this advertising?

1. Yes (SKIP TO Q54)
2. No
9. DK/Ref

Q53 Did the advertising encourage you to seek information about GRH or to register for GRH?

1. yes
2. no
9. DK/Ref

USE OF GRH

(IF **Q3=1,** SAY "You said you had taken a GRH trip," THEN SKIP TO Q55)

Q54 Have you taken a GRH trip since you registered for GRH?

1 yes 2 no (SKIP TO Q59)

Q55 For what reason did you take the trip? (ASK ABOUT MOST RECENT TRIP; DO NOT READ, ACCEPT ONLY ONE RESPONSE)

1 illness (self) 6 illness of carpool partner

2 illness of family member
3 other personal emergency
4 illness of child
5 child care problem
7 unscheduled overtime
8 missed CP/VP
9 other (SPECIFY) _____

Q56 Was the service satisfactory?

1 yes (SKIP TO Q58)
2 no
9 DK (SKIP TO Q58)

Q57 Why was it not satisfactory?

1 waited too long
2 hard to get approval
3 didn't like taxi/driver
4 other (SPECIFY) _____

Q58 About how long did you wait for the taxi to arrive? (IF DK, ASK FOR BEST GUESS)

_____ minutes

Q59 In what ways could Commuter Connections improve the GRH program? (DO NOT READ, CHECK ALL THAT APPLY)

1 quicker response for GRH ride requests
2 don't require registration
3 allow use of GRH if ridesharing/using transit less than twice per week
4 allow more GRH trips in a year
5 easier/faster approval process
6 wider area for trips
88 no improvement needed
99 other (SPECIFY)
98 DK

DEMOGRAPHICS

Now just a few last questions to help us group your answers with those of others.

Q60 Which of the following groups includes your age? (READ CHOICES)

1 under 18
2 18 - 24
2 25 - 34
3 35 - 44
4 45 - 54
5 55 - 64
6 65 or older
9 Refused

Q61 Do you consider yourself to be Latino, Hispanic, or Spanish?

1. Yes
2. No
9. DK/Ref.

Q62 Now I want to ask you about your race. Which one of the following best describes your racial background. Is it . . . (READ CHOICES 1-5; SELECT ONE RESPONE ONLY)

1. White
2. Black or African-American
5. Native Hawaiian or Other Pacific Islander
6. Other (SPECIFY) _____

3. American Indian or Alaska Native
4. Asian
9. DK/Ref

Q63 Finally, please stop me when I reach the category that best represents your household's total annual income. Is it . . . (READ CHOICES)

1 less than $20,000
2 $20,000 - $29,999
3 $30,000 - $39,999
4 $40,000 - $59,999
5 $60,000 - $79,999
6 $80,000 - $99,999
7 $100,000 -$119,999
8 $120,000 - $139,999
9 $140,000 - $159,999
10 $160,000 or more
19 Ref, DK

Thank you very much for your time and cooperation!

(RECORD SEX:) 1 male 2 female

APPENDIX C
LETTERS, INSTRUCTIONS & DEFINITION OF TERMS

Dear Sir/Madam:

I am writing to request your participation in a short survey of people who have used and/or registered with the *Commuter Connections* Regional Guaranteed Ride Home (GRH) program. The Metropolitan Washington Council of Governments (COG) will be overseeing this survey on behalf of *Commuter Connections*.

You will be contacted by telephone within the next few days by CIC Research, Inc., an independent research firm hired by COG. An interviewer will ask you questions for just a few minutes about your commute to work and your experience with the GRH program. Your input is very important to us <u>even if you are no longer registered in the program and/or have not used a GRH trip</u>.

The information you provide will be kept completely confidential, and will be used only to help improve the regional GRH program. Thank you in advance for your help. If you have any questions about this study, please call Nicholas Ramfos, *Commuter Connections* Project Manager, at (202) 962-3200.

Sincerely,

Ronald F. Kirby
Director, Department of
Transportation Planning

Spanish-Language Version

Se esta escribiendo para pedirle que participe en un breve cuestionario para personas que han usado y/o estan registradas en el programa GRH de 'Commuter Connections', del área de Washington, D.C. de los recursos de transportación. El 'Metropolitan Washington Council of Governments (COG)' va a estar encargado de supervisar este cuestionario de parte de 'Commuter Connections'.

Se le va a llamar por teléfono en los próximos dias desde CIC Research, Inc., una compañia independiente contratada por COG. Un entrevistador le hará unas preguntas por unos breves minutos acerca de la transportación que usa para ir al trabajo y su experiencia con el program GRH. Sus respuestas son muy importantes para nosotros, aun cuando no haya participado en el programa 'GRH'.

La información que usted nos va a dar será completamente confidencial, y se va a usar solamente para ayudar a mejorar programas que satisfacen las necesidades de transportación. Se agradece de antemano por su ayuda. Si usted tiene alguna pregunta sobre este estudio, por favor llame gratis a Angela Peña, Transportation Specialist, al teléfono 1-888-637-6378.

GRH (Guaranteed Ride Home) - #823

Q1, Q1a, Q3, Q4, etc:

GRH Guaranteed Ride Home (otherwise known as GRH) provides commuters who regularly carpool, vanpool, bike, walk or take transit to work with a reliable ride home when one of life's unexpected emergencies arises. Commuters will be able to use GRH to get home for unexpected personal emergencies and unscheduled overtime up to FOUR times per year.

Q7. VRE. Virginia Railway Express. Commuter rail.

Q12, Q13:

Drive Alone. Should include dropped off by taxi or other "livery" service, if the passenger is the only passenger. If two or more passengers are in the car, excluding the driver, it would be a carpool. You drive alone if you travel from your home to work by driving your car, motorcycle, or moped, without a passenger.

Carpool. You carpool if you arrive at your worksite by automobile with 2 to 6 occupants and your carpool has a regular arrangement between the occupants. May also include occupants that are being dropped off at other worksites or companies.

Vanpool. 7 - 15 occupants commuting to and from work by automobile. May also include occupants that are being dropped off at other worksites or companies.

Buspool. A buspool is a large vanpool - generally 16+ people regularly riding together. It differs from a bus in that the riders "subscribe" or sign up to ride and have a reserved seat.

Casual carpooling/slugging. Casual carpools are carpools that are formed on a day-to-day basis to take advantage of HOV lanes. They are most popular for commuters coming from Virginia to downtown Washington. People who want rides park at a few well-established but unofficial parking areas in VA and line up to wait for drivers. People who want riders cruise by that location and pick up as many as the car will hold. There are pick-up locations in Washington for the evening trip as well, but drivers and riders do not generally carpool home together.

Transit. You are a transit commuter if you ride a local or commuter bus (Metrobus, The Bus, Ride-On, Fairfax Connector, OmniRide, OmniLink, DASH or any other public or private bus), commuter rail (MARC, VRE), Amtrak, or Metrorail to get to work.

Telecommuting. You telework or telecommute if you work at your home, telework center, or satellite office other than your normal worksite, during your regular work time.

Day off/compressed work schedule. This is a non-standard of flexible (flex) schedule:
4/40 (4 10-hour days per week for a total of 40 hours)
9/80 (9 days every 2 weeks for a total of 80 hours)
3/36 (3 12-hour days per week for a total of 36 hours per week, usually worked by police, firemen, hospitals, etc.
Flex-hours (core hours with flexible start & stop times)

MARC. Maryland Area Rail Commuter. Lite rail which comes from Baltimore and West Virginia, similar to our Coaster.

Amtrak. Just like the Amtrak train here.

Metrorail. This is a subway within Washington, D.C., & northern Virginia and Maryland. It's mostly underground, but does also run above ground in some areas.

Contact person:
Mr. Nicholas W. Ramfos, Chief of Alternative Commute Programs
Metropolitan Washington Council of Governments (COG)
Commuter Connections
777 North Capitol Street NE, Suite 300
Washington DC 20002
202/962-3200

How we got your number:
The telephone number was randomly selected from a database of Guaranteed Ride Home participants. The numbers were provided by Metropolitan Washington Council of Governments and consisted of participants that had entered the GRH database between March 2001 and February 2004.

You work for:
CIC Research, Inc.
San Diego, CA
(800) 892-2250 or (858) 637-4000

Supervisors:
Da'Wan Baker, Dave Harper, Scot Evans and Susan Landfield

APPENDIX D
NON-RESPONSE SURVEY QUESTIONNAIRE

MWCOG Guaranteed Ride Home Survey - #823
Non-Response Survey – 5/4/2004

Hello. May I speak to _ . My name is _____. I'm calling from CIC Research on behalf of Commuter Connections. We're surveying people who have registered for or participated in Commuter Connections' Regional Guaranteed Ride Home (GRH) program. It takes less than __ minutes. Is now a good time?

REGISTRATION INFORMATION

Q2 Are you currently registered for Commuter Connections' GRH program?

1 yes 2 no 9 DK

COMMUTE PATTERNS

Q8 I'd like to ask you about your travel to work. In a TYPICAL week, how many weekdays (Monday-Friday) are you assigned to work?
_____ Days

Q9 Do you work a compressed or flexible work schedule, for example, a full-time work week in fewer than five days or a schedule with flexible start and end times?

1 yes (CONTINUE) 2 no (SKIP TO Q13)

Q10 What type of schedule do you use?

6. 4/40 (4 10-hour days per week, 40 hours)
7. 9/80 (9 days every 2 weeks, 80 hours)
8. 3/36 (3 12-hour days per week, 36 hours - police, fire, hospitals)
9. flex-time or flexible work hours (core hours with flexible start & stop)
10. other (SPECIFY) _____

Q13 Now, thinking about a TYPICAL week, what type or types of transportation do you use to get to work**?**

(PROGRAMMER, LIST MODES FOR USE IN Q14. IF Q10 = 1, 2, OR 3, ADD "CWS day off" TO LIST OF MODES FOR Q14). (IF "CWS DAY OFF" IS IN Q13 LIST, ASK FIRST:) "You said you typically work a compressed work schedule. How many compressed schedule days do you typically have off in a week**?"**

THEN FOR EACH OTHER MODE MENTIONED IN Q13, ASK…

Q14 About how many days per week do you use <MODE FROM Q13>?

(IF RESPONDENT MENTIONS MORE THAN ONE MODE ON ANY DAY, PROMPT FOR THE MODE USED FOR THE LONGEST DISTANCE PORTION OF THE TRIP.)

(IF SUM OF DAYS FROM Q14 NE Q8, ASK) "And how do you commute on other days you are assigned to work?**" – ACCEPT OPTION OF "didn't work, regular day off."**

(IF RESPONDENT MENTIONS "BUSINESS TRIP, WORK OUT OF AREA" (RESPONSE 17) FOR ANY DAY, CODE RESPONSE 17, THEN ASK "If you had worked at your regular work location that day, how would you likely have traveled to work?" **AND CODE ADDITIONAL MODE RESPONSE FOR THAT DAY.**

	Go to Work – number of days				
Mode/Days typically used per week	1	2	3	4	5
1. have a compressed work schedule day off	1	2	3	4	5
2. telecommute/telework	1	2	3	4	5
3. drive alone in your car, taxi	1	2	3	4	5
4. motorcycle	1	2	3	4	5
5. carpool, including carpool w/family member, dropped off	1	2	3	4	5
6. casual carpool (slugging)	1	2	3	4	5
7. vanpool	1	2	3	4	5
8. buspool	1	2	3	4	5
9 a bus (public Bus, shuttle)	1	2	3	4	5
10. Metrorail	1	2	3	4	5
11. MARC (MD Commuter Rail)	1	2	3	4	5
12. VRE	1	2	3	4	5
13. AMTRAK/other train	1	2	3	4	5
14. bicycle	1	2	3	4	5
15. walk	1	2	3	4	5
16. have a regular day off (non-CWS)	1	2	3	4	5
17. have a business trip, work out of area, etc. (prompt for travel on non trip day)	1	2	3	4	5
18. N/A					
19. N/A					

DEMOGRAPHICS

Now just a few last questions to help us group your answers with those of others.

Q60 Which of the following groups includes your age? (READ CHOICES)

1 under 18
2 18 - 24
2 25 - 34
3 35 - 44
4 45 - 54
5 55 - 64
6 65 or older
9 Refused

Q61 Do you consider yourself to be Latino, Hispanic, or Spanish?

1. Yes
2. No
9. DK/Ref.

Q62 Now I want to ask you about your race. Which one of the following best describes your racial background. Is it . . . (READ CHOICES 1-5; SELECT ONE RESPONE ONLY)

1. White
2. Black or African-American
3. American Indian or Alaska Native
4. Asian
5. Native Hawaiian or Other Pacific Islander
6. Other (SPECIFY) _____
9. DK/Ref

Q63 Finally, please stop me when I reach the category that best represents your household's total annual income. Is it . . . (READ CHOICES)

1 less than $20,000
2 $20,000 - $29,999
3 $30,000 - $39,999
4 $40,000 - $59,999
5 $60,000 - $79,999
6 $80,000 - $99,999
7 $100,000 -$119,999
8 $120,000 - $139,999
9 $140,000 - $159,999
10 $160,000 or more
19 Ref, DK

Thank you very much for your time and cooperation!

(RECORD SEX:) 1 male 2 female

APPENDIX E
RESULTS FROM 2004 AND 2001 GRH SURVEYS
COMPARISON ON KEY QUESTIONS

Registration Information

- **Registration status** – Percentage of all respondents

	2004	2001
Current registrant	59%	62%
Past registrant	39%	32%
One-time exception	2%	6%

- **Length of time in GRH** – Percentage of all registrants

	2004	2001
Less than 1 year	7%	7%
1 year	29%	39%
2 years	21%	23%
3 years	17% }	
More than 3 years	26% }	31%

- **Reasons for not re-registering** – Past registrants only

	2004	2001
Program Related Reasons		
Didn't know I had to re-register	14%	21%
Didn't get around to it, forgot	13%	7%
CP/VP/Transit didn't work out	10%	6%
Couldn't rideshare/use transit 2+ days per week	6%	4%
Never used program	6%	---
Dissatisfied with program, bad experience	5%	---
Too much effort to use program	2%	14%
Personal Circumstance Reasons		
Changed job/work hours	27%	25%
Needed car for work/other purpose	10%	3%
Retired/telecommute/don't commute/don't need	6%	5%
Moved to different residence	3%	7%
Joined employer program	---	2%
Other	4%	20%

GRH Information Sources

- **How heard about GRH** – Percentage of all respondents

	2004	2001
Word of mouth – referral	26%	----
Radio	16%	----
Internet	11%	----
Employer/employee survey	10%	----
Bus/train sign	7%	----
Brochure/promo materials	6%	----
Direct mail/postcard from Commuter Connections	5%	----
TV	3%	----
Newspaper	2%	----
Newsletter	1%	----
Bus/train schedule	1%	----
Other	5%	----

- **Awareness/influence of GRH advertising** – Percentage of all respondents

	2004	2001
Heard or saw GRH advertising	72%	---
Registered after hearing ads	54%	---
Advertising encouraged respondent to register	49%	---

Current Travel Information

- **Current mode split (modes used 3+ days per week)** – Percentage of current and past registrants

	Current Registrants			Past Registrants		
	2004		2001	2004		2001
DA/Motorcycle	4.9%		8.9%	40.8%		31.8%
CP/VP	35.2%		34.6%	20.0%		19.3%
Bus	18.9%		17.8%	13.1%		8.9%
Metrorail	14.1%	37.7%	35.5%	9.2%	20.8%	33.0%
Commuter Rail	23.6%			11.6%		
Bike/walk	1.5%		0.7%	2.3%		1.5%
Telecommute	0.3%		0.4%	1.5%		1.1%
No mode used 3+ days	1.5%		2.1%	1.5%		4.4%

- **Average length of commute**

	2004	2001
Distance	32.7 miles	31.7 miles
Time	50 minutes	57 minutes

- **"Pre-GRH" Modes vs "With-GRH" Modes (3+ days per week)** – Percentage of all registrants – modes used before registering/participating in GRH and the modes used while registered/participating in GRH

	Pre-GRH			With-GRH		
	2004		2001	2004		2001
DA/Motorcycle	26.1%		23.2%	4.6%		9.4%
CP/VP	29.1%		30.4%	35.1%		33.7%
Bus	15.6%			21.3%		
Metrorail	14.3%	42.5%	44.9%	15.0%	56.6%	54.8%
Commuter Rail	12.6%			20.3%		

- **Average Days Using Alternative Modes "Pre-GRH" and "With-GRH"** – Percentage of all registrants – number of days using carpool, vanpool, transit, bike, or walk for commuting before registering/participating in GRH and the modes used while registered/participating in GRH

	2004		2001	
	Pre-GRH	With-GRH	Pre-GRH	With-GRH
0 days/week	26%	4%	23%	8%
1 day/week	0%	1%	0%	0%
2 days/week	1%	1%	0%	1%
3 days/week	2%	4%	1%	4%
4 days/week	11%	16%	2%	7%
5 days/week	60%	74%	74%	80%
Average days/week	3.5	4.5	3.8	4.4

- **Length of time using alternative modes** – Respondents who currently use alternative modes

	2004		2001
1 – 11 months	13%		12%
12 – 23 months	13%		14%
24 – 35 months	15%		17%
36 – 59 months	21%		
60 – 83 months	11%	59%	57%
84 + months (7 or more years)	27%		
Average duration (months)	**65 months**		**N/A**
New alt mode users	**44 months**		**N/A**
"Pre-GRH" alt mode users	**72 months**		**N/A**

Influence of GRH on Commute Pattern Decisions

- **Alternative mode changes from "Pre-GRH" to "With-GRH"** – All respondents

	2004	2001
Started using alternative mode	25%	19%
Maintained use of alternative mode	71%	80%
Increased alternative mode use (frequency)	4%	2%

- **Importance of GRH to Decision to Start Using Alternative Mode** – Respondents who started alt modes when they registered for GRH

	2004	2001
(n= ___)	229	163
Very important	46%	50%
Somewhat important	26%	23%
Not at all important	27%	27%

- **Importance of GRH to Decision to Maintain Use of Alternative Mode** – Respondents who were using alt modes before they registered for GRH

	2004	2001
(n= ___)	596	702
Very important	40%	39%
Somewhat important	32%	25%
Not at all important	28%	35%

- **Importance of GRH to Decision to Increase Use of Alternative Mode** – Respondents who were using alt modes before they registered for GRH and increased the frequency of alt mode use

	2004	2001
(n= ___)	44	15
Very important	27%	47%
Somewhat important	30%	20%
Not at all important	43%	33%

- **Likely to Start Using Alternative Mode if GRH not available** – Respondents who started alt modes when they registered for GRH

	2004	2001
(n= ___)	225	163
Very likely	50%	63%
Somewhat likely	28%	26%
Not at all likely	22%	11%

- **Likely to Maintain Use of Alternative Mode if GRH not available** – Respondents who were us-

ing alt modes before they registered for GRH

	2004	2001
(n= ___)	573	702
Very likely	71%	76%
Somewhat likely	23%	15%
Not at all likely	6%	9%

- **Likely to Increase Use of Alternative Mode if GRH not available** – Respondents who were using alt modes before they registered for GRH and increased the frequency of alt mode use

	2004	2001
(n= ___)	42	14
Very likely	48%	22%
Somewhat likely	23%	36%
Not at all likely	29%	43%

- **Other assistance/benefit that influenced decision to start, continue, or increase use of alternative mode** – All respondents

	2004	2001
None	60%	77%
Discount/free transit pass/Metrochek	28%	17%
Other cash incentive	3%	1%
Assistance from employer	1%	1%
Other	3%	3%

- **Other factors or circumstances that influenced decision to start, continue, or increase use of alternative mode** – All respondents

	2004	2001
None	42%	43%
Didn't want to drive	16%	15%
Save money	12%	15%
Save time	11%	14%
Changed job/work hours	4%	2%
Traffic congestion	3%	3%
Parking issues	3%	4%
Stress	2%	3%
Save wear and tear on vehicle	2%	1%
Use HOV lane	2%	----
Moved to different residence	2%	2%
Close to work	2%	----
Family obligations	2%	2%
Other	8%	12%

Use of and Satisfaction with GRH

- **Used GRH trip** – all respondents, by registration status and by mode used

	2004	2001
All respondents	25%	22%
By Registration Status		
- Current registrants	25%	23%
- Past registrants	21%	19%
By Mode Used "With-GRH"		
- CP/VP	35%	27%
- Bus	29%	27%
- Metrorail	21%	18%
- Commuter rail	20%	

- **Reasons for taking a GRH trip** – Respondents who took a trip

	2004	2001
Illness (self)	30%	29%
Illness of child	28%	27%
Unscheduled overtime	15%	11%
Other personal emergency	10%	16%
Illness of family member	10%	11%
Missed CP/VP	3%	2%
Other	4%	4%

- **Time waiting for taxi** – Respondents who took a trip using a taxi

	2004	2001
5 minutes or less	28%	41%
6 – 10 minutes	28%	13%
11 – 20 minutes	24%	22%
21 – 30 minutes	13%	8%
31 – 45 minutes	3%	5%
46 – 60 minutes	3%	9%
61 or more minutes	1%	2%
Average	16 minutes	19 minutes

- **Improvements desired to GRH Program ***

	2004	2001
None needed	28%	47%
More advertising	8%	6%
Allow more trips per year	3%	----
More flexibility in eligibility/procedures	3%	2%
Easier/faster approval	3%	4%
Quicker response for ride requests	3%	4%
Better directions/info on how to use	2%	2%
Better communication with cabs/complaints	2%	----
Wider area for trips	2%	2%
Don't require registration	1%	2%
Notify when time to re-register	1%	----
Other	7%	11%
Don't know	41%	25%

* Multiple responses permitted

Demographics

- **States of Residence and Employment** – all respondents

	Residence		Employment	
	2004	2001	2004	2001
DC	2%	3%	61%	----
MD	29%	35%	9%	---
VA	67%	61%	30%	---
Other/Ref	2%	2%	0%	---

- **Gender** – all respondents

	2004	2001
Female	57%	59%
Male	43%	41%

- **Ethnic/Racial background** – all respondents

	2004	2001
Hispanic/Latino	4%	5%
White	71%	73%
Black/African-American	21%	17%
Asian	3%	4%
Other/Mixed	1%	2%

- **Income** – all respondents

	2004		2001
Under $30,000	1%		4%
$30,000 – $39,999	3%		6%
$40,000 – $59,999	14%		19%
$60,000 – $79,999	19%		20%
$80,000 – $99,999	24%		22%
$100,000 – $119,999	17%		
$120,000 – $139,999	8%	39%	30%
$140,000 – $159,999	5%		
$160,000 or more	9%		

- **Age** – all respondents

	2004	2001
18 – 24	<1%	2%
25 – 34	17%	17%
35 – 44	35%	37%
45 – 54	33%	32%
55 – 64	14%	10%
65 or older	1%	1%

Item # 6

August 27, 2004

Memorandum

To: TPB Technical Committee

From: Daivamani Sivasailam
Principal Transportation Engineer

Subject: Update on Transportation Emissions Reduction Measures (TERM) Analysis

As part of the conformity determination of the 2004 constrained long range plan (CLRP) and FY 2005-FY 2010 transportation improvement program (TIP), a parallel effort is underway to update the effectiveness of previously implemented emissions reduction measures, and analyze potential TERMs which could be adopted as emissions reduction measures if needed.

Previously implemented emissions reduction programs and TERMs

The region has been tracking the status and emissions reduction effectiveness of previously implemented emissions reduction measures and documenting results in the TERM Tracking Sheet. All the agencies that are implementing emissions reduction projects and programs have provided updates for measures which the region has taken credit in the past. For the TERMs that are implemented through the Commuter Connections program evaluations have been completed and the effectiveness of each has been adjusted.

During the 2004 state of the commute survey completed by Commuter Connections the definition of Telecommuting was refined to exclude workers who work part of the day at home or off-site and the remainder at their regular work place, and those who work at client sites and not their regular work site. (see attached memorandum of July 21, 2004 from Nicholas Ramfos to the TPB) This definitional change had the effect of reducing the total percentage of telecommuters by a few percentage points. When the same definition was applied to the 2001 survey the percentage of telecommuters also went down by a few percentage points. However, there was still significant positive growth in telecommuting between 2001 and 2004. (Note that the effectiveness of the telecommuting TERMs was not affected by this definitional change since the impact of these TERMs has always been quantified as the growth in telecommuting in terms of the refined definition between the base year and the analysis year). With the refined definition and the latest emissions factors telecommuting in the region will reduce VOC and NOx emissions by 0.289 tons/day and 0.614 tons/day in 2005.

Another change introduced to the tracking sheet was the use of 2000 as base year for all programs. After incorporating all the changes to previously implemented TERMs the region can take credit in 2005 for 3.89 tons/day of VOC reduction and 8.03 tons/day of NOx emissions reduction as shown in attachment B. (By comparison, the 2005 credit taken for the 2003 CLRP and FY 2004-2009 TIP in December of 2003 was 4.0 tons/day of VOC and 8.3 tons/day of Nox.)

Potential TERMs

With the assistance and review of the Travel Management Subcommittee staff has been updating the list of "Potential TERMs". Travel demand changes based on the FY 2003 CLRP and FY 2004-2009 TIP conformity analysis, and Mobile 6 emissions factors were used to update the emissions reduction potential of the TERMs that are on the List of Potential TERMs. This work has been completed and a final review will be undertaken by the subcommittee during its September 21, 2004 meeting. The list of Potential TERMs is included as attachment C.

Attachments

A- July 21, 2004 Memorandum from Nicholas Ramfos to TPB
B- TERM Tracking Sheet
C- List of Potential TERMs

M E M O R A N D U M

TO: National Capital Region Transportation Planning Board
FROM: Nicholas Ramfos, Chief,
Alternative Commute Programs
DATE: July 21, 2004
SUBJECT: 2004 State of the Commute Survey Results for Telecommuting, and Adjustment to 2001 Telecommuting Estimate to Reflect 2004 Definition of Telecommuting

Issue

In the 2004 State of the Commute (SOC) survey conducted by Commuter Connections, the definition of telecommuting was changed from the definition used in the 2001 SOC survey. The change was made to reflect a more accurate representation of what Commuter Connections considers telecommuting. The 2004 definition was narrower in scope than the 2001 definition and excluded some commuters who were counted as telecommuters in 2001.

Change in Definition

2004 Definition: "*wage and salary employees who at least occasionally work at home or at a telework or satellite center during an entire work day, instead of traveling to their regular work place*."

2001 Definition: "*wage and salary employees who at least occasionally work at home or at a location other than their central work place during their normal work hours*."

Likely Overrepresentations in 2001

The 2001 definition likely included several groups of commuters who would not have been counted in 2004:

- Workers, such as sales or equipment repair staff, who travel to multiple customer locations during the course of the day
- Workers who telecommute at client sites inside or outside of the Washington region
- Workers who worked a portion of the normal workday at home or another location, but traveled to the regular workplace for another part of the day; for example, a respondent who worked at home in the morning while waiting for a delivery or worked at a job site for part of a day.

Summary of Telecommute Adjustments

The table below summarizes the proposed adjustments to the 2001 telecommute estimate. The base (no adjustment) case included 386,650 telecommuters. When all the recoding was completed, the total number of telecommuters in 2001 dropped from 386,650 to 290,319, a reduction of 96,331. With the revised numbers, telecommuters accounted for 11.3% of regional commuters (workers who were not self-employed and full-time home-based).

	Adjustment	**Total Telecommuters**	**% of commuters**
2001 Base (no adj)		386,650	15.1%
2001 Adjusted	- 96,331	290,319	11.3%
2004		318,130	12.8%

Additionally, the percentage of Federal telecommuters increased significantly from 2001 to 2004 from 6.9% to 11.8%. These results track closely with recently released data from the Office of Personnel Management. Non-federal telecommuters accounted for 12.6% of telecommuting in 2001 and 13.4% in 2004. The following table summarizes the results for federal, non-federal, and total telecommuters:

	Percent of Commuters That Telecommute		
	Federal	**Non-Federal**	**Total**
2001 (Adjusted)	**6.9%**	**12.6%**	**11.3%**
2004	**11.8%**	**13.4%**	**12.8%**

Demographics and Travel Characteristics of 2004 Telecommuting

The following table provides demographic and travel characteristics for regional telecommuters in 2004 based on the 2004 State of the Commute survey:

Demographic Group	Percentage of Group Who Telecommute
Commute Distance	
Less than 10 miles	10%
10-29 miles	14%
30 or more miles	17%
Annual HH Income	
Less than $30,000	4%
$30,000 – $59,999	6%
$60,000 – $99,999	12%
$100,000 – $139,999	17%
$140,000+	21%
State of Residence	
District of Columbia	10%
Maryland	12%
Virginia	13%
State of Employment	
District of Columbia	13%
Maryland	11%
Virginia	13%

Source – 2004 State of the Commute Survey, Metropolitan Washington Council of Governments

TERM TRACKING SHEET - CURRENT MEASURES

IMPLEMENTATAION: YEAR 2000 AND LATER

Credits are taken in Air Quality Conformity Analysis FY 2004-09

***** Project Category: TR - Traffic Stream, C - Commute, H - Heavy Duty Vehicles (Engine Technology), SP- Specific Vehicle Type, TCM - Transportation Control Measures

* NOs	CREDIT TAKEN	TIP CREDITED	AGENCY	PROJECT	IMPLEMENTATION STATUS				ORIGINAL COMPLETION DATE	ACTUAL COMPLETION DATE	TONS/DAY REDUCTION CREDITED								Project Category *
					FULL	SCALED-BACK	UNDER-WAY	REM			2005		2015		2025		2030		
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
9	X	1994-99	MDOT	Park & Ride Lot - MD 210/ MD 373	X				2000	2003	0.001	0.003	0.0005	0.0013	0.0004	0.0006	0.0004	0.0006	C
19		1994-99	PRTC	VRE Woodbridge Parking Expansion (add 500 spaces)	X					2002-2003	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-
20	X	1994-99	ALEX	King St. Metrorail access improvements			X			2002, '04, '05	0.0018	0.0026	0.0009	0.0013	0.0008	0.0009	0.0008	0.0009	C
38	X	1995-00	MDOT	Signal Systems - MD 85 Executive Way to MD 355	X				1996	Pre 2000							0.0000	0.0000	TR
39	X	1995-00	MDOT	Signal Systems - MD 355 ,I-70 ramps to Grove Rd.	X				1996	n/a							0.0000	0.0000	TR
44		1995-00	MDOT	Signal Systems - MD 410, 62nd Ave. to Riverdale Rd.			X		1996	2002							0.0000	0.0000	TR
48	X	1995-00	MDOT	MARC Replacement Coaches	X				1999	2004	0.001	0.003	0.0009	0.0027	0.0012	0.0019	0.0012	0.0018	C (TCM)
49	X	1995-00	MDOT	MARC Expansion Coaches	X				1999	2004	0.008	0.024	0.0074	0.0242	0.0055	0.0153	0.0054	0.0145	C (TCM)
51	X	1995-00	VDOT	Alexandria Telecommuting Pilot Program	X					2000 & 2001									C
52	X	1995-00	VDOT	Fairfax County Bus Shelter (Fairfax Co. TDM program)			X		2000	2001									C
54	X	1995-00	VDOT	City of Fairfax Bus Shelters			X		1999	2004	0.0000	0.0009	0.0000	0.0004	0.0000	0.0000	0.0000	0.0000	C (TCM)
56	X	1995-00	VDOT	Cherry Hill VRE Access			X			2007	0.0065	0.0206	0.0033	0.0090	0.0024	0.0050	0.0023	0.0047	C (TCM)
57	X	1995-00	DC	Right Turn on Red			X			1999	0.0414	0.0499	0.0202	0.0218	0.0165	0.0113	0.0162	0.0102	TR
58	X	1995-00	WMATA	Bus Replacement (172 buses)	X				1998	1998	0.0690	0.2520	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SP (TCM)
59	X	1995-00	MCG	Shady Grove West Park and Ride			X		2010		0.0000	0.0000	0.0000	0.0045	0.0000	0.0031	0.0000	0.0030	C
60	X	1995-00	MCG	White Oak Park and Ride			X		2010		0.0000	0.0000	0.0000	0.0090	0.0000	0.0062	0.0000	0.0059	C
61	X	1995-00	MCG	Bicycle Facilities			X		FY99		0.0028	0.0017	0.0014	0.0009	0.0012	0.0006	0.0012	0.0006	C
62	X	1995-00	MCG	Pedestrian Facilities to Metrorail			X				0.0046	0.0069	0.0019	0.0031	0.0016	0.0022	0.0015	0.0021	C
63	X	1995-00	MDOT	MARC Replacement Coaches	X				1999	2004	0.0037	0.0103	0.0033	0.0099	0.0031	0.0062	0.0031	0.0059	C
64	X	1995-00	MDOT	MARC Expansion Coaches	X				1999	2004	0.0296	0.0894	0.0284	0.0636	0.0287	0.0508	0.0283	0.0482	C (TCM)
66	X	1995-00	VDOT	Commuter Lots - District Wide			X		varies	1995, 2000	0.0102	0.0284	0.0065	0.0193	0.0063	0.0165	0.0062	0.0157	C
67	X	1995-00	VDOT	I-66 and Stringfellow Rd. Park and Ride	X				2000	2000 end	0.0092	0.0172	0.0047	0.0090	0.0039	0.0062	0.0039	0.0059	C
68	X	1995-00	VDOT	Lake Ridge Park and Ride (now called Tacketts Mill lot)	X					1999/2000	0.0000	0.0086	0.0000	0.0045	0.0000	0.0031	0.0000	0.0030	C
69	X	1995-00	VDOT	Bicycle Trails and Facilities			X		varies	varies	0.0018	0.0146	0.0093	0.0076	0.0075	0.0056	0.0074	0.0053	C
70	X	1995-00	VDOT	Improved Accesss to Metrorail Stations					varies	2000-2010	0.0005	0.0009	0.0005	0.0009	0.0004	0.0006	0.0004	0.0006	C
71	X	1995-00	VDOT	I-66 HOV access at Monument Dr.	X					1997	0.0092	0.0172	0.0047	0.0090	0.0004	0.0062	0.0004	0.0059	C
72		1995-00	DC	Bicycle Facilities		X					0.0222	0.0172	0.0116	0.0094	0.0094	0.0069	0.0093	0.0065	C
73	X	1995-00	REGION	COG Regional Ridesharing Support	X					on-going	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	C

TERM TRACKING SHEET - CURRENT MEASURES

IMPLEMENTATAION: YEAR 2000 AND LATER

Credits are taken in Air Quality Conformity Analysis FY 2004-09

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					FULL	SCALED-BACK	UNDER-WAY	REM			2005		2015		2025		2030		
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
74	X	1995-00	REGION	M-47 Integrated Ridesharing	X					on-going	0.0431	0.0897	0.0180	0.0295	0.0141	0.0180	0.0139	0.0172	C
75	X	1995-00	REGION	M-92 Telecommuting Support	X					on-going	0.2886	0.6135	0.1794	0.3002	0.1788	0.2327	0.1889	0.2374	C
77		1996-01	VDOT	Duke Street Padestian Bridge					2005	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-
79	X	1996-01	VDOT	Fairfax County Bus Shelters (30 shelters with project #85)			X		1999	Summer 2001	0.0018	0.0026	0.0009	0.0013	0.0008	0.0009	0.0008	0.0009	C
81	X	1996-01	VDOT	Arlington County Metrocheck Program	X				1997	1997 Onwards	0.0018	0.0026	0.0010	0.0030	0.0010	0.0030	0.0004	0.0009	C
82	X	1996-01	VDOT	Old Dominion Drive Bike Trail			X		2000	2004	0.0009	0.0009	0.0005	0.0004	0.0004	0.0003	0.0004	0.0003	C
83	X	1996-01	WMATA	Bus Replacement (see line 58, above)	X					1998	Credit taken in line 58, above								SP
85	X	1996-01	VDOT	Fairfax County Bus Shelters (30 shelters with project #79)			X		1999	2001	0.0009	0.0009	0.0005	0.0013	0.0004	0.0009	0.0004	0.0009	C
90	X	1996-01	REGION	M-47c Employer Outreach / Guaranteed Ride Home	X					on-going	0.5595	1.0434	0.2347	0.3449	0.1807	0.2095	0.1777	0.1989	C
91	X	1996-01	REGION	M-70a Bicycle Parking			X		1999		0.0065	0.0060	0.0047	0.0045	0.0039	0.0031	0.0039	0.0030	C
92	X			M-92 Telecommuting Support	Combined with item #75														C
95	X	1997-02	MCG	Germantown Transit Center			X		2004		0.0046	0.0163	0.0023	0.0085	0.0020	0.0056	0.0019	0.0053	C (TCM)
102	X	1997-02	PG	Prince George's County Bus Replacement	X				1998	1998	0.0030	0.0090	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SP (TCM)
106	X	1997-02	VDOT	PRTC Employer Commuting Outreach Program	X					1977 on-going	0.0018	0.0004	0.0009	0.0000	0.0008	0.0000	0.0008	0.0000	C
107	X	1997-02	VDOT	PRTC Multimodal Strategic Marketing Implementation Plan	X					1977 on-going	0.0000	0.0004	0.0000	0.0004	0.0000	0.0003	0.0000	0.0003	C
108	X	1997-02	MDOT	M-103 Taxicab Replacement in Maryland			X		1999	on-going	0.0797	0.2675	0.1453	0.2155	0.1228	0.1498	0.3120	0.4810	SP
109	X	1997-02	REGION	M-70b Employer Outreach for Bicycles	X				1998	on going	0.0011	0.0013	0.0005	0.0004	0.0003	0.0003	0.0003	0.0002	C
110	X	1997-02	VDOT	M-77b Vanpool Incentive Programs in Virginia			X		1999	delayed	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	C
111	X	1998-03	WMATA	Bus Replacement (108 buses)	X				1999	1999	0.0450	0.1617	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SP
112	X	1998-03	MCG	Montgomery County Bus Replacement	X						0.0080	0.0270	0.0020	0.0070	0.0000	0.0000	0.0000	0.0000	SP
113	X	1998-03	PG	Prince George's County Bus Replacement	X				1998	1998	0.0010	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SP
114	X	1998-03	FDC	Frederick County Bus Replacement	X						0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SP
117	X	1998-03	VDOT	Arlington County Four Mile Run Bike Trail			X		1999	delayed	0.0009	0.0009	0.0005	0.0004	0.0004	0.0003	0.0004	0.0003	C
118	X	1998-03	VDOT	Northern Virginia Turn Bays	X				2000	1998	0.0009	0.0015	0.0009	0.0007	0.0008	0.0004	0.0008	0.0003	TR
119	X	1998-03	VDOT	Fairfax City Bus Replacement			X		2001	2003	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	SP
121	X	1998-03	WMATA	WMATA Bus Replacement (252 buses)	X				2001	2001	0.1060	0.3860	0.0900	0.3420	0.0000	0.0000	0.0000	0.0000	SP
122	X	97 & 98 TIP	REGION	M-101a Mass Marketing Campagin (Consumer)						ongoing	0.1191	0.2119	0.1015	0.1594	0.0980	0.1069	0.0752	0.0807	C
123	X	1999-04	MDOT	Various Park and Ride Lots(I-270/MD124, 450 & I-170/MD-75, 54 spaces)	X				2001/1999	2001	0.0074	0.0310	0.0047	0.0188	0.0039	0.0143	0.0039	0.0136	C

TERM TRACKING SHEET - CURRENT MEASURES

IMPLEMENTATAION: YEAR 2000 AND LATER

Credits are taken in Air Quality Conformity Analysis FY 2004-09

***** Project Category: TR - Traffic Stream, C - Commute, H - Heavy Duty Vehicles (Engine Technology), SP- Specific Vehicle Type, TCM - Transportation Control Measures

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					FULL	SCALED-BACK	UNDER-WAY	REM			2005		2015		2025		2030		
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
124	X	1999-04	MDOT	Signal Systems (197/MD-198, MD-382 TO US-301,US301)	x				2000	2002	0.0110	-0.0030	0.0061	-0.0021	0.0080	-0.0015	0.0079	-0.0014	TR
125	X	1999-04	VDOT	Transit Center at 7 Corners					2002		0.0009	0.0017	0.0005	0.0009	0.0004	0.0006	0.0004	0.0006	C
126	X	1999-04	VDOT	Falls Church Clean Diesel Bus Service					2000	2003	0.0040	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SP
127	X	1999-04	VDOT	VA 234 Bike Trail					2001	2007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	C
128	X	1999-04	VDOT	PRTC Ridesharing	X				on-going	2000 ongoing	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	C
130	X	1996-01	VDOT	M-14: I-66 Feeder Bus Fare Buy Down	X					1998 onward	0.0231	0.0473	0.0102	0.0206	0.0083	0.0131	0.0081	0.0124	C
131	X	2000-05	MDOT	Various park and Ride Lots	x				2002	2003	0.0064	0.0280	0.0043	0.0175	0.0038	0.0140	0.0038	0.0119	C
132	X	2000-05	MDOT	Signal Systems	X				Varies	on-going	0.0028	0.0000	0.0012	0.0000	0.0007	0.0000	0.0007	0.0000	TR
133	X	2000-05	VDOT	450 Spaces at Gambrill/Hooes Rds. Park and Ride			X		2002	2004	0.0065	0.0155	0.0028	0.0069	0.0022	0.0043	0.0021	0.0041	C
134	X	2000-05	VDOT	300 Spaces at Backlick Rd			X		2003	2006	0.0046	0.0112	0.0021	0.0049	0.0015	0.0031	0.0015	0.0030	C
135	X	2000-05	VDOT	Accotink-Gateway Connector Trail			X		2002	2005	0.0065	0.0086	0.0028	0.0038	0.0019	0.0021	0.0018	0.0020	C
136	X	2000-05	VDOT	Columbia Pike Trail			X		2000	2001, 2005	0.0055	0.0069	0.0023	0.0029	0.0015	0.0016	0.0014	0.0015	C
137	X	2000-05	VDOT	Lee Highway trail			X		2000	2005	0.0028	0.0034	0.0012	0.0016	0.0006	0.0008	0.0006	0.0008	C
138	X	2000-05	VDOT	Arlington Bus Shelter Improvements			X		2005	2005	0.0009	0.0009	0.0005	0.0004	0.0002	0.0002	0.0002	0.0002	C
139	X	2000-05	VDOT	Pentagon Metrostation Improvements	X					2003	0.0074	0.0146	0.0033	0.0063	0.0022	0.0035	0.0022	0.0033	C
140	X	2000-05	MDOT	East/West Intersection Improvements			x		2005	2006 Expect.	0.0379	0.0215	0.0640	0.0327	0.0874	0.0355	0.0859	0.0337	C
141	X	2001-06	Feds	Federal Transit/Ridesharing subsidy	X				on-going		0.0942	0.1642	0.0386	0.0555	0.0291	0.0330	0.0286	0.0313	C
142	X	2002-07	WMATA	100 CNG buses	X				2002		0.0000	0.1358	0.0000	0.1358	-	-	-	-	SP (TCM)
143	X	2002-07	WMATA	ULSD with CRT filters			X		on-going		0.2100	0.0000	0.4300	0.0000	0.4300	0.0000	0.4300	0.0000	H (TCM)
144	X	2003-08	DC	Replace 23 Taxicabs with CNG cabs			x		2005		0.0177	0.0314	-	-	-	-	-	-	H
145	X	2003-08	DC	D.C.Incident Response & TrafficManagement System			x		2005		0.0254	0.0746	-	0.0341	-	0.0185	-	0.0168	TR
146	X	2003-08	DC	Bicycle Lane in D. C. (35 Mile) *			x		2005	2005	0.0154	0.0153	0.0065	0.0053	0.0047	0.0031	0.0046	0.0029	C (TCM)
147	X	2003-08	DC	Bicycle Racks in D. C. (500) *			x		2005	2005	0.0021	0.0017	0.0009	0.0006	0.0006	0.0003	0.0006	0.0003	C (TCM)
148	X	2003-08	DC	External Bicycle Racks on WMATA Buses in D. C. (600) *	x				2005	2003	0.0031	0.0056	0.0013	0.0019	0.0010	0.0011	0.0010	0.0011	C (TCM)
149	X	2003-08	DC	CNG Rental Cars (18) *			x		2005		0.0000	0.0002	-	-	-	-	-	-	SP
150	X	2003-08	DC	Sidewalks in D.C. ($ 5 million)					2005		0.0578	0.1008	0.0243	0.0334	0.0185	0.0202	0.0182	0.0192	C
151	X	2003-08	DC	CNG Refuse Haulers (2) *	x				2005	2004	0.0001	0.0020	0.0001	0.0020	-	-	-	-	H (TCM)
152	X	2003-08	DC	Circulator /Feeder Bus Routes	x				2005	2003	0.0211	0.0363	0.0089	0.0121	0.0067	0.0073	0.0066	0.0069	C

TERM TRACKING SHEET - CURRENT MEASURES

IMPLEMENTATAION: YEAR 2000 AND LATER

Credits are taken in Air Quality Conformity Analysis FY 2004-09

***** Project Category: TR - Traffic Stream, C - Commute, H - Heavy Duty Vehicles (Engine Technology), SP- Specific Vehicle Type, TCM - Transportation Control Measures

* NOs	CREDIT TAKEN	TIP CREDITED	AGENCY	PROJECT	IMPLEMENTATION STATUS				ORIGINAL COMPLETION DATE	ACTUAL COMPLETION DATE	TONS/DAY REDUCTION CREDITED								Project Category *
					FULL	SCALED-BACK	UNDER-WAY	REM			2005		2015		2025		2030		
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
153	X	2003-08	MDOT	Commuter Tax Credit			x		2005	n/a	0.1262	0.2219	0.0530	0.0736	0.0405	0.0445	0.0398	0.0422	C
155		2003-08	MDOT	Employer Vanpool Program (WWB)				x	2005		0.0030	0.0075	0.0012	0.0024	0.0010				C
156	X	2003-08	MDOT	Green Line Link			x		2005	n/a	0.0041	0.0085	0.0017	0.0028	0.0013	0.0017	0.0013	0.0016	C
157	X	2003-08	MDOT	Park & Ride Lots - Southern Maryland *			x		2005	2003/2005	0.0080	0.0197	0.0033	0.0064	0.0027	0.0040	0.0026	0.0038	C
158	X	2003-08	MDOT	Prince George's County- Bus Exp			x		2005	n/a	0.0578	0.1191	0.0242	0.0392	0.0189	0.0239	0.0186	0.0228	C
159	X	2003-08	MDOT	MTA - Bus Service Expansion			x		2005	n/a	0.0131	0.0285	0.0055	0.0093	0.0043	0.0057	0.0042	0.0054	C
160	X	2003-08	MDOT	Ride- On - Super Discount			x		2005	n/a	0.0015	0.0026	0.0006	0.0009	0.0005	0.0005	0.0005	0.0005	C
161	X	2003-08	Regional	Regional Traveler Information Systems					2005		0.1596	0.9730	0.0816	0.4451	0.0697	0.2418	0.0686	0.2195	TR
162	X	2003-08	MDOT	Universal Transportation Access (MD + WMATA)			x		2005	n/a	0.0259	0.0452	0.0109	0.0150	0.0083	0.0091	0.0082	0.0086	C
163	X	2003-08	MCG	Construction of 1300 additional Parking Spaces at Grosvenor Metro Garage	x				2004		0.0074	0.0189	0.0030	0.0062	0.0025	0.0038	0.0025	0.0036	C (TCM)
164	X	2003-08	MCG	Bethesda Shuttle Bus Services	x				2004		0.0050	0.0087	0.0021	0.0029	0.0016	0.0017	0.0016	0.0016	C
165	X	2003-08	MCG	External Bicycle Racks on Ride-On Buses in Montgomery County	x				2004		0.0010	0.0017	0.0004	0.0006	0.0003	0.0004	0.0003	0.0003	C
166	X	2003-08	MCG	New CNG Powered Light Duty Vehicle fleet in the County	x				2004		0.0000	0.0001	-	-	-	-	-	-	SP
167	X	2003-08	MCG	Free Bus Service on Selected Routes on I-270	x				2004		0.0017	0.0030	0.0007	0.0010	0.0006	0.0006	0.0005	0.0006	C
168	X	2003-08	MCG	Annual Sidewalk Program	x				2004		0.0275	0.0480	0.0116	0.0159	0.0088	0.0096	0.0087	0.0091	C
169	X	2003-08	MDOT	Bethesda Breeze/International Express Metrobus	x		x		2005	n/a	0.0060	0.0097	0.0025	0.0032	0.0019	0.0019	0.0019	0.0018	C
170	X	2003-08	MDOT	Bethesda-8, Silver Spring Downtown Dasher and Prince Georges Co. Shuttles at 3 PNR lot			x		2005	n/a	0.0142	0.0189	0.0060	0.0064	0.0044	0.0038	0.0043	0.0036	C
171	X	2003-08	MDOT	Proposed Transportation Management District in Montgomery County (Rockville and Gaithersburg)				X	2005	n/a	0.0093	0.0142	0.0039	0.0047	0.0029	0.0028	0.0029	0.0027	C
172	X	2003-08	MDOT	Sidewalks (Bikes/Pedestrian) at / near Rail Stations	x				2005	2002	0.0150	0.0267	0.0063	0.0088	0.0048	0.0054	0.0047	0.0051	C
173	X	2003-08	MDOT	Neighborhood Sidewalks Improvements (Bike/Pedestrian)	X				2005	2004	0.0052	0.0030	0.0023	0.0011	0.0016	0.0006	0.0015	0.0005	C
174	X	2003-08	MDOT	Neighborhood Conservation Program - Neighborhood Sidewalks Improvements (Bikes/Pedestrian)		X			2005	n/a	0.0046	0.0026	0.0020	0.0010	0.0014	0.0005	0.0013	0.0005	C
175	X	2003-08	MDOT	Maryland bus Transit Service Expansion	X				2005	2004	0.0228	0.0586	0.0094	0.0191	0.0077	0.0118	0.0076	0.0112	C
176	X	2003-08	VDOT	Universal Transportation Access Program					2005	2005	0.0019	0.0034	0.0008	0.0011	0.0006	0.0007	0.0006	0.0006	C
177	X	2003-08	VDOT	Interactive Rideshare & Kiosk Initiative					2005		0.0006	0.0013	0.0003	0.0004	0.0002	0.0003	0.0002	0.0002	C
178	X	2003-08	VDOT	Mobile Commuter Stores					2005		0.0035	0.0071	0.0014	0.0023	0.0011	0.0014	0.0011	0.0014	C
179	X	2003-08	VDOT	Telework Incentive Program (Telework VA)			X		2005	2001	0.0012	0.0022	0.0005	0.0007	0.0004	0.0004	0.0004	0.0004	C
180	X	2003-08	VDOT	Commuter Choice					2005		0.0015	0.0025	0.0007	0.0008	0.0005	0.0005	0.0005	0.0005	C
181	X	2003-08	VDOT	Employer Shuttle Services					2005		0.0184	0.0301	0.0077	0.0100	0.0058	0.0060	0.0057	0.0057	C

TERM TRACKING SHEET - CURRENT MEASURES

IMPLEMENTATAION: YEAR 2000 AND LATER

Credits are taken in Air Quality Conformity Analysis FY 2004-09

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					FULL	SCALED-BACK	UNDER-WAY	REM			2005		2015		2025		2030		
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
184	X	2003-08	VDOT	Van Start / Van Save			X		2005	till 2006	0.0022	0.0047	0.0009	0.0015	0.0007	0.0009	0.0007	0.0009	C
185	X	2003-08	VDOT	Metro Shuttle Bus			X		2005	1999-2005	0.0019	0.0047	0.0008	0.0015	0.0006	0.0009	0.0006	0.0009	C
187	X	2003-08	VDOT	VRE Mid-Day Train Service	X				2005	2002	0.0025	0.0053	0.0011	0.0017	0.0008	0.0011	0.0008	0.0010	C
190	X	2003-08	VDOT	Employer Vanpool Program (Bridge deck)			X		2005	2004 - 2008	0.0015	0.0034	-	-	-	-	-	-	C
191	X	2003-08	VDOT	Town of Leesburg P&R Lot			X		2005	2004	0.0031	0.0071	0.0013	0.0023	0.0010	0.0014	0.0010	0.0014	C
192	X	2003-08	VDOT	District-wide P&R Lots	X		X		2005	2001-2005	0.0182	0.0406	0.0076	0.0133	0.0060	0.0082	0.0059	0.0078	C
193	X	2003-08	VDOT	Additional Parking at 4 Metro stations			X		2005	2001, 2005	0.0235	0.0604	0.0097	0.0197	0.0079	0.0122	0.0078	0.0116	C
196	X	2003-08	WMATA	64 CNG Buses (Purchased in 2001)	X				2005	2004	0.0021	0.0870	0.0021	0.0870	-	-	-	-	SP (TCM)
197	X	2003-08	WMATA	250 CNG Buses (175 buses by Dec. 2004; 75 buses by mid 2006)			X		2005	2004-2006	0.0083	0.3400	0.0083	0.3400	-	-	-	-	SP
198	X	2003-08	WMATA	60 Engine Replacement (MY 1992 & 1993 MY buses)	X				2004	2004	0.0138	0.0755	0.0138	0.0755	-	-	-	-	SP
199	X	2003-08	WMATA	Car Sharing Program	X				2005	2004	0.0013	0.0033	0.0005	0.0011	0.0004	0.0007	0.0004	0.0006	C
200	X	2003-08	WMATA	Bikes Racks on WMATA Buses in VA (372 Bike Racks)	X				2005	2004	0.0020	0.0035	0.0008	0.0012	0.0006	0.0007	0.0006	0.0007	C (TCM)
202		2003-08	MDOT	Fleet Replacement (state auto fleet, gas to hybrid, 250 vehicles)				x	2005		0.0055	0.013	0.0055	0.013					SP
203	X	2003-08	MDOT	Replace 55 Montgomery County 10 yr. old buses w/ new CNG buses			x		2005	n/a		0.2861		0.2861	-	-	-	-	SP
204		2003-08	MDOT	Neighborhood Bus Shuttle (5 circulator routes)				x	2005		0.0121	0.0221	0.0051	0.007	0.00	0.004	0.0038	0.0042	C
205	X	2003-08	MDOT	New Surface Parking at Transit Centers (500 spaces)			x		2005	n/a	0.0042	0.0108	0.0017	0.0035	0.0014	0.0022	0.0014	0.0021	C
206	X	2003-08	MDOT	Additional Bike Lockers at Metro-Stations				x	2005	n/a	0.0213	0.0379	0.0090	0.0125	0.0068	0.0076	0.0067	0.0072	C
207	X	2003-08	MDOT	Bike Facilities at PnR Lots or other similar location			x		2005	n/a	0.0150	0.0300	0.0063	0.0099	0.0049	0.0060	0.0048	0.0057	C
208	X	2003-08	MDOT	CNG Fueling Stations				x	2005	n/a	0.1270	0.1170	-	-	-	-	-	-	SP
209		2003-08	MDOT	Gas cap replacements (ROP Credit)				x	2005		N/A	N/A		-		-		-	SP
210		2003-08	MDOT	Gas can turnover (ROP Credit)				x	2005		N/A	N/A		-		-		-	SP
211	X	2003-08	MDOT	External Bicycle Racks on WMATA Buses (486 MD buses)	x				2005	2002	0.0023	0.0040	0.0009	0.0013	0.0007	0.0008	0.0007	0.0008	C (TCM)
212	X	2003-08	MDOT	Bike \ Pedestrian Trail - Anacostia River Walk			X		2005	n/a	0.0009	0.0008	0.0004	0.0003	0.0003	0.0002	0.0003	0.0002	C
213		2003-08	MDOT	Transit Prioritization - Queue Jumps				x	2005		0.0050	0.0068	0.0021	0.002	0.002	0.001	0.0015	0.0013	C
214	X	2003-08	MDOT	Commuter Choice Benefit/Tax Credit - Marketing Expansion			x		2005	n/a	0.0881	0.1559	0.0370	0.0517	0.0283	0.0313	0.0278	0.0297	C
215	X	2003-08	MDOT	Improvements to Pedestrian Access in TOD areas (4 locations)			x		2005	n/a	0.0096	0.0158	0.0040	0.0053	0.0031	0.0032	0.0030	0.0030	C
216	X	2003-08	MDOT	Telecommuting Expansion			x		2005	n/a	0.1041	0.2192	0.0435	0.0721	0.0341	0.0441	0.0336	0.0419	C
217	X	2003-08	MDOT	Replace older Diesel Engine in Public Sector vehicles				x	2005	n/a	0.0237	0.1300	0.0237	0.1300	-	-	-	-	H

TERM TRACKING SHEET - CURRENT MEASURES

IMPLEMENTATAION: YEAR 2000 AND LATER

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					FULL	SCALED-BACK	UNDER-WAY	REM			2005		2015		2025		2030		
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
218	X	2003-08	VDOT	MV-92 Telecommuting Program - Expanded[1]			X		2005	2003	0.1112	0.2341	0.0464	0.0769	0.0365	0.0471	0.0359	0.0447	C
219	X	2003-08	VDOT	MV-123 Employer Outreach for Public Sector Employees[1]			X		2005	2003	0.0247	0.0430	0.0104	0.0143	0.0079	0.0086	0.0078	0.0082	C
220	X	2003-08	REGION	Signal System Optimization			X		2005	2005	0.6737	0.2720	0.3447	0.1244	0.2945	0.0676	0.2896	0.0613	TR
										Available Emissions Credits	**3.892**	**8.030**	**2.319**	**4.034**	**1.935**	**1.682**	**2.092**	**1.914**	

* Projects numbers refer to the sequence of projects contained in previous Tracking Sheet updates

Potential TERMs
For Consideration During Conformity Assessment of the 2004 CLRP & FY 2005-2010 TIP

Potential TERMs	VT (2005)	VMT (2005)	NOx (2005)	VOC (2005)	Cost Effectiveness		Project Category *
			tons/day	tons/day	Nox ($/t)	VOC ($/t)	
M-07A Voluntary Employer Parking Cash-Out Subsidy	13856	214772	0.1807	0.1001	3,547	6,401	C
M-24 Speed Limit Adherence (accelerated)		-	0.9167	-	26,618	-	TR
M-47c Employer Outreach for Private Sector Employers (expanded)	1300	20155	0.0170	0.0094	200,466	361,774	C
M-93 Improve Pedestrian Facilities Near Rail Stations	1270	19683	0.0166	0.0092	114,310	206,292	C
M-103 150 Taxicab Replacement Program - CNG (expanded)			0.2030	0.1307	14,300	22,210	SP
M-103a 150 Taxicab Replacement Program - conventional vehicles		-	0.1750	0.1136	13,300	20,450	SP
M-110 10 Transit Stores in Maryland	1072	33248	0.0268	0.0127	18,505	38,971	C
M-111 Replace Traffic Signals with Lesser Controls		-	-	-	-	-	TR
M-113 6 Kiosks in Maryland	13	233	0.0002	0.0001	3,053,870	5,725,743	C
M-123 Employer Outreach for Public Sector Employers	13416	207947	0.1750	0.0970	18,668	33,689	C
M-132 Vanpool Incentive Program (expanded M-77b)	1755	109161	0.0861	0.0372	85,579	197,879	C
M-133 Metrorail Feeder Bus Service	0	5924	0.0046	0.0018	389,684	1,003,255	C
M-134 Implement Neighborhood Circulator Buses (10)	2950	45725	0.0385	0.0213	332,658	600,337	C
M-135 Construction of 1000 Parking Spaces at Metrorail Stations	0	20336	0.0157	0.0061			C
M-142e 100 CNG Buses in place of Old Diesel Buses†	-	-	-	-	-	-	SP
M-142f 100 Hybrid Buses in place of Old Diesel Buses †	-	-	-	-	-	-	SP
M-142g 100 New Diesel Buses in place of Old Diesel Buses†	-	-	-	-	-	-	SP
M-143 Real Time Bus Schedule Information	1212	18786	0.0158	0.0088	30,862	55,696	C
M-146 Purchase 185 WMATA buses (ridership growth)	18550	287525	0.2420	0.1341	437,145	788,901	C
M-148 WMATA Bus Information Displays with Maps (2000 cases)	2172	33666	0.0283	0.0157	14,142	25,521	C
M-150 Enhanced Commuter Services- (HOV Facilities)	0	48660	0.0375	0.0146	227,484	585,666	C
M-151 Enhanced Commuter Services-US 1 (Reverse Commute)	1916	50360	0.0409	0.0200	197,134	402,635	C
M-152 Enhanced Commuter Services- (Rail Relief)	0	67205	0.0518	0.0201	497,288	1,280,283	C
M-155 Expand Carsharing Program	285	4418	0.0037	0.0021	150,870	272,279	C
M-156 Free bus-to-rail/ rail-to-bus transfers (Similar to NYC pricing structure)	5013	77702	0.0654	0.0362	1,804,646	3,256,790	C
M-158 Free Bus Service Off-Peak (10:00 AM to 2:00 PM Mid-Day and Weekends)	4284	66402	0.0559	0.0310	1,251,644	2,258,800	C
M-159 W15-590 - Diesel Fuel Additive	-	-	0.1330	-	2,700	-	H
M-160 Bose Automobile Anti-Air Pollutant and Energy Conservation System	-	-	0.6100	-	1,000	-	H
M-161 Diesel Emulsion Fuel Additive (Non-road or Highway)**	-	-	0.1800	-	12,000	-	H
M-162 Early Engine Retirement (Pre-88) **	-	-	0.9000	-	2,200	-	H
M-163 Truck Idling (Truck Stops and Auxiliary Power Unit)**	-	-	0.4000	-	4,600	-	H
M-164 International Green Diesel Retrofit	-	-	0.1400	-	141,000	-	H
M-165 Bike Stations at Rail Station	105	1628	0.0014	0.0008	496,372	895,862	C

Attachment - C

Potential TERMs	VT (2005)	VMT (2005)	NOx (2005) tons/day	VOC (2005) tons/day	Cost Effectiveness Nox ($/t)	Cost Effectiveness VOC ($/t)	Project Category *
New TERMs (Revenue generating)							
M-144 Parking Impact Fees	116266	1802123	1.5165	0.8403	1,019,847	1,840,485	C
Other Suggested Measures- Under Development					-	-	
Transit Oriented Development	-	-	-	-	-	-	C
Heavy Duty Truck Pollution	-	-	-	-	-	-	H
Government Actions (ozone action day similar to snow day)	-	-	-	-	-	-	C
M-153 Remove 125 Trash Trucks	-	-	0.4860		-	-	H
M-166 Monthly Transit Pass	-	-	-	-	-	-	C
TERMs Suggetsed by Bicycle and Pedestrian Subcommittee					-	-	
Safe Route to School	-	-	-	-	-	-	C
On-line Bicycle Routing Software	-	-	-	-	-	-	C
Regional Bike Racks	-	-	-	-	-	-	C
Bike Lockers ate Park & Ride Lots	-	-	-	-	-	-	C
Subsidized Off-street Bicycle Parking	-	-	-	-	-	-	C
					-	-	

** Project Category: TR - Traffic Stream, C - Commute, H - Heavy Duty Vehicles (Engine Technology), SP- Specific Vehicle Type*

*** EPA Certified Technology available* † *Emission estimation under revision*