



COMMUTER CONNECTIONS

2016 RETENTION RATE SURVEY REPORT

Prepared for:

**Metropolitan Washington Council of Governments
Commuter Connections Program**

Prepared by:

**LDA Consulting
Washington, DC**

In association with:

CIC Research, Inc.
San Diego, CA

September 20, 2016



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ABSTRACT

TITLE: Commuter Connections Retention Rate Survey Report

DATE: September 20, 2016

AUTHORS: Lori Diggins, Principal, LDA Consulting
Nicholas Ramfos, Director, Transportation Operations Programs

AGENCY: The Metropolitan Washington Council of Governments is the regional planning organization of the Washington area's major local governments and their governing officials. COG works toward solutions to problems in such areas as growth, air and water quality, transportation, and housing, and serves as the regional planning organization for metropolitan Washington.

ABSTRACT: This report was conducted for the first time in fiscal year 2016 and presents the results of a "retention rate" survey of 989 commuters who participated in Commuter Connections' carpool/vanpool ride-matching service, regional Guaranteed Ride Home (GRH) program, or who requested other commute information or assistance from the Commuter Connections website in the Washington DC metropolitan region. These services are operated by the Metropolitan Washington Council of Governments to assist commuters who live and/or work in the region to use travel modes other than driving alone to travel to and from work. The purpose of the survey is to estimate the share of past service users who made shifts to alternative modes and who continued to use alternative modes years after receiving the services.

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EXECUTIVE SUMMARY

This report presents the results of a “retention rate” survey of 989 commuters who participated in Commuter Connections’ carpool/vanpool ridematching service, regional Guaranteed Ride Home (GRH) program, or who requested other commute information or assistance from the Commuter Connections website. These services are operated by the Metropolitan Washington Council of Governments (MWCOC) to assist commuters who live and/or work in the metropolitan Washington region to use travel modes other than driving alone to travel to and from work.

Commuter Connections undertook the survey described in this report to estimate the share of past service users who made shifts to alternative modes and who continued to use alternative modes years after receiving the services. In particular, the survey targeted commuters who had received the Commuter Connections services between July 2008 and before July 2014, the start of the 2014-2017 TERM evaluation period. Following are highlights of the survey analysis. Additional analysis will be performed during the Transportation Emission Control Measures (TERM) evaluation in the spring of 2017 to estimate the travel and air quality impacts generated by commuters’ continued use of alternative modes. Results will be reflected in the FY2015-FY2017 TERM Analysis Report.

Services Received from Commuter Connections

At the start of the survey, respondents were asked to indicate which Commuter Connections services they had used, with specific questions asked for carpool/vanpool support services, services to support use of public transit, bicycling, and telework, and the GRH Program.

- The most common service, by far, was GRH; 81% of all respondents said they had participated in this program.
- About four in ten (38%) respondents received one or more carpool/vanpool services. Primary services cited included carpool/vanpool matchlist (20%), carpool/vanpool “rider wanted” bulletin board (13%), and match map showing home/work locations of potential carpool or vanpool partners (9%).
- Thirty-five percent of respondents received a transit or bike support service. Most common services in this category were transit schedule/route/fare information (28%) and Park & Ride lot information (10%). Five percent received bicycling information/ bike map and 5% received information on special events, such as Bike-to-Work Day. Four percent of respondents said they obtained telework information.
- More than four in ten (43%) respondents said GRH was the only service they received. These respondents were designated as “GRH Only” for further analysis. Thirty-eight percent of respondents said they participated in GRH but also received other non-GRH services. These respondents were classified as “GRH/Non-GRH. About two in ten respondents (19%) had never participated in GRH, but had received another Commuter Connections service. These respondents were classified as “Non-GRH Only.”

Year of Last Services Received from Commuter Connections

Eligible respondents for this survey included two groups of commuters, defined by their date of most recent Commuter Connections service request, which was classified as a last activity date: 1) a commuter who registered or participated in the GRH program after June 2008 and who completed or ended their registration prior to March 16, 2013, and 2) a commuter who received a service other than GRH between July 1, 2008 and June 30, 2014.

- Of the potential survey respondents in the original population, 59.5% had a last activity date between 2008 and 2010. The last activity date was 2011 or 2012 for 27.8% of the commuters. Just over one in ten (13.7%) had a last activity date of 2013 or 2014.
- As anticipated, commuters with early activity dates were more difficult to reach than were those with more recent dates, thus the sample of completed interviews contained a higher proportion of recent participants and a lower proportion of participants from earlier years, when compared to the original population. Respondents with a last activity year of 2008-2010 comprised 34.5% of the survey interviews, compared with 54.1% of

the original population, while respondents with last activity dated in 2013-2014 accounted for 23.0% of the survey interviews, compared with 13.0% of the original database population.

Current Commute Mode

The overriding objective of the Retention Rate Survey was to estimate the share of service users who made shifts to alternative modes after receiving Commuter Connections services and the share of commute trips that these commuters were still making in alternative modes at the time of the survey. To answer these results, respondents were first asked how they were currently commuting “in a typical week” at the time of the survey.

- At the time of the survey, respondents reported making 63% of their weekly commute trips by alternative modes; 39% of weekly commute trips by bus or train, 20% by carpool/vanpool, and 4% by walking or bicycling. Respondents drove alone for 22% of weekly commute trips and eliminated 15% of trips by telework and compressed work schedules.
- Somewhat surprisingly, the current use of alternative modes was nearly as high for respondents whose last activity year was in the early years of the evaluation period (2008-2010) and for those with more recent requests for service. About 70% of respondents whose last activity year was 2013 or 2014 were using alternative modes at the time of the survey. The rate was 62% for respondents whose last activity date was 2011 or 2012 and 62% for those who last participated between 2008 and 2010.
- Differences in alternative mode use were more distinct by the Commuter Connections programs and services the respondent had used. GRH Only respondents made 67% of their weekly commute trips by alternative modes and GRH/Non-GRH respondents used alternative modes for 64% of weekly trips, compared with 51% for respondents who received only a non-GRH service.

Commute Mode Before Requesting and Receiving Commuter Connections Services

All respondents who were using an alternative mode at the time of the survey were continued alternative mode users, but if they were using these modes before they requested and received Commuter Connections services, they would not be counted as a Commuter Connections “new placement” in alternative modes. To assess the incidence of mode changes since receiving services, survey respondents were asked how they commuted prior to registering for GRH or prior to requesting and receiving the non-GRH service from the Commuter Connections website.

- Prior to requesting and receiving assistance, respondents made 72% of their weekly work trips by alternative modes. Respondents used a bus or train for 45% of weekly trips, carpooled for 15%, rode in a vanpool for 7%, and bicycled or walked for 4%. They drove alone for 23% of weekly commute trips and eliminated 5% of trips through telework and compressed work schedules.
- The overall percentage of alternative mode weekly commute trips was higher before receiving services (72%) than at the time of the survey (63%). Use of bus/train fell as a share of weekly work trips. Use of carpool, vanpool, and bike/walk remained essentially the same. A notable result was that the share of weekly work trips eliminated by telework and compressed work schedule grew from 5% of weekly trips at the “before service” time to 15% of weekly trips at the time of the survey.
- GRH users were largely responsible for the overall high alternative mode use for the “before requesting and receiving services” time period. GRH Only respondents made 81% of their commute trips by alternative modes before joining GRH and GRH/Non-GRH respondents used alternative modes for 74% of their weekly commute trips. Prior alternative mode use was much lower, 50%, among respondents who requested and received only non-GRH services.

Retention Rate and Implications for 2017 Commuter Connections TERM Analysis

When both the current commute mode and the “before service” mode are taken into account, a more conservative, but also more realistic view of a retention rate emerges. Only two combinations of current mode and prior mode would be counted as “retained placements” by the definitions used in the Commuter Connections TERM Framework Methodology. These are: 1) commuters who were using alternative modes at the time of the survey who previously drove alone to work, and 2) commuters who were using an alternative mode at the time of the survey who were using a different alternative mode before receiving services.

- The last activity year appeared to have little impact on the “new alternative mode” retention rate. The retention rate for respondents with a last activity date of 2013-2014 was 28%. The retention rates were essentially the same for respondents with last activity date of 2011-2012 (32%) and 2008-2010 (29%).
- The “new alternative mode” retention rate differed, however, by Commuter Connections program used. The retention rate for GRH users was 31%, while the rate for non-GRH users was 23%.

Note that the retention rates calculated above likely overestimate the actual rates, however, when all past service users are included. Many commuters in the sample database could not be contacted because they were no longer working, had changed jobs or moved out of the region, had died, or because contact information available was no longer valid. Additionally, many commuters for whom contact information appeared to be valid did not respond to the survey. It is possible they thought the survey did not apply to them because they were no longer participating in Commuter Connection program services or because they were no longer using alternative modes of travel.

Thus, the retention rate factors that are applied in the 2017 TERM analysis will need to take into account that the continued alternative mode use found among surveyed commuters likely was higher than that for commuters who did not participate in the survey. The survey data do not suggest a definitive method to account for this likelihood. One possible adjustment could be to apply the GRH and Non-GRH retention rates to reduced bases of past participant populations. However, other options might also be considered. The specific method will be defined during the FY2015-FY2017 Commuter Connections TERM analysis.

Motivations for Driving Alone and for Using Alternative Modes

Commuters use and switch among commute modes for many reasons related to service and personal motivations. To examine these motivations, survey respondents who were driving alone at the time of the survey but who had used alternative modes previously were asked why they shifted to driving alone. Respondents who were using alternative modes at the time of the survey were asked about the reasons they continued using these modes. Alternative mode users also were asked if any Commuter Connections program services had “assisted or influenced” them to continue using alternative modes.

- The most often-named reasons for driving alone were that they changed jobs, work hours, or work location (37%) or that they moved to a new residence (21%). Some respondents cited reasons related to change in their transit or rideshare arrangements; carpool/vanpool arrangement broke up (15%), did not like carpooling/vanpooling/bus/train (15%), or transit schedule/route changed so that transit was no longer a feasible option (9%), and 14% said driving alone was faster, easier, or less expensive.
- The most common reason to continue using alternative modes, named by 41% of respondents, was that the mode was the easier or most convenient mode. One-quarter (25%) of respondents said they saved money or reduced wear and tear on a personal vehicle and 20% said they enjoyed riding the bus/train, riding with others in a carpool/vanpool, or liked walking/bicycling.
- More than half (52%) of current alternative mode users said at least one Commuter Connections program and/or service had assisted or influenced their continued use of the modes. Overall, the most influential/helpful service was GRH, named by 32% of all alternative mode users and more than one-third of those who had received this service. Transit schedule/route information was cited by 16% of all alternative mode users and over half of those who had received it. About one-third to one-half of respondents who received each individual service said it had influenced or assisted them.

TABLE OF CONTENTS

SECTION 1 - INTRODUCTION	1
SECTION 2 – SURVEY AND SAMPLING METHODOLOGY	2
Survey Goals	2
Sample selection process	2
Questionnaire design	3
Survey administration	4
Weighting of survey data	5
SECTION 3 - SURVEY RESULTS	7
Characteristics of the Sample	7
- Demographics	
- Demographics by last activity year	
- Work schedule	
- Commute length	
Services Received from Commuter Connections	11
- Guaranteed Ride Home	
- Carpool/vanpool services	
- Transit/bike/telework services	
- Classification of respondents by service category	
- Non-GRH services received – GRH/Non-GRH users and Non-GRH only users	
- “Current” GRH registration status	
Current and Previous Commute Modes and Alternative Mode Retention Rates	15
- Current commute modes	
- Commute mode before receiving Commuter Connections services	
- Retention Rate, Accounting for Both Prior and Current Commute Mode	
- Commute Mode “During” Commuter Connections Service Use	
Motivations for Driving Alone and for Using Alternative Modes	27
- Reasons to shift to driving alone	
- Reasons to continue using alternative modes	
- Role of Commuter Connections Services in Influencing or Assisting Continued Use of Alternative Modes	
Commuter Connections Satisfaction	30
- Desired improvements to Commuter Connections services	
- Reasons for not re-registering for GRH	
Appendix A – Disposition of Final Dialing Results	
Appendix B – Survey Questionnaire	
Appendix C – Respondent Alert Letter	
Appendix D – De-Duplication Protocol	

LIST OF TABLES AND FIGURES

<u>Tables</u>	<u>Page</u>
1 Sample Population by Most Recent Program Activity and Contact Method	3
2 Sample Population by Last Activity Date (Year)	3
3 Level of Confidence for Analysis Levels	6
4 Race/Ethnicity	8
5 Demographic Profile by Last Activity Year	9
6 GRH Registration Status as Defined by Respondent (during survey interview)	14
7 Current Alternative Mode Use by Program Used and Last Activity Date	18
8 Current Alternative Mode Use by Demographic Characteristic	19
9 Duration of Alternative Mode Use After Receiving Services (Non-GRH Only Users Who Drive Alone)	25
10 Last Year Using Alternative Mode – All Respondents and by Last Activity Date	25
11 Last Year Using Alternative Mode by Program Classification	26
12 Suggested Improvements to Commuter Connections Services	30
<u>Figures</u>	<u>Page</u>
1 Annual Household Income	7
2 Respondent Age Distribution	8
3 Commute Distance (miles) – All Respondents	10
4 Individual Services Received from Commuter Connections as Defined by Respondent (during survey interview)	11
5 Services Received from Commuter Connections as Defined by Respondent (during survey interview)	12
6 Non-GRH Services Received from Commuter Connections – GRH/Non-GRH Users and Non-GRH Only Users	13
7 First Participation Year as Defined by Respondent (during survey interview)	14
8 Current Commute Modes – Percentage of Weekly Commute Days	16
9 Current Commute Modes – Percentage of Weekly Commute Days by Last Activity Date	17
10 Current Overall and Individual Alternative Mode Percentages by Last Activity Date	17
11 Current Commute Modes – Percentage of Weekly Commute Days by Program Used	18
12 Current Overall and Individual Alternative Mode Percentages by Program Used	19
13 Commute Modes Before Receiving Commuter Connections/Comparison with Current Commute	20
14 Alternative Mode Use – Current Commute and Before Receiving Services by Program Used	21
15 Commute Changes from Before Receiving Services to Current Commute by Last Activity Date	22
16 Commute Changes from Before Receiving Services to Current Commute by Program Used	23
17 Alternative Modes Used During GRH (GRH users) or After Receiving Non-GRH Services (Non-GRH Only users)	24
18 Reasons to Switch to Driving Alone	27
19 Reasons to Continue Using Alternative Modes	28
20 Services Received from Commuter Connections and Services that Influenced/Assisted Continued Use of Alternative Modes	29
21 Reasons GRH Users Who Used Alternative Modes Did Not Re-register for GRH	31

SECTION 1 INTRODUCTION

This report presents the results of a “retention rate” survey of 989 commuters who participated in Commuter Connections’ carpool/vanpool ridematching service, regional Guaranteed Ride Home (GRH) program, or who requested other commute information or assistance from the Commuter Connections website. These services are operated by the Metropolitan Washington Council of Governments (MWCOCG) to assist commuters who live and/or work in the metropolitan Washington region to use travel modes other than driving alone to travel to and from work.

Commuter Connections undertook the survey described in this report to estimate the share of past service users who made shifts to alternative modes and who continued to use alternative modes years after receiving the services. In particular, the survey targeted commuters who had received the Commuter Connections services before July of 2014, the start of the 2014-2017 TERM evaluation period.

The report describes how the survey was conducted and the results that were obtained. Additional analysis will be performed during the Transportation Emission Control Measures (TERM) evaluation in the spring of 2017 to estimate the travel and air quality impacts generated by commuters’ continued use of alternative modes.

This report is divided into two sections following this introduction:

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

Following these sections are four appendices, including:

- Appendix A – Disposition of dialing results
- Appendix B – Survey questionnaire
- Appendix C – Respondent alert letters
- Appendix D – De-duplication protocol

SECTION 2 – SURVEY AND SAMPLING METHODOLOGY

Survey Goals

The primary goal of the Retention Rate survey was to estimate the percentage of commuters who previously participated in Commuter Connections' Guaranteed Ride Home (GRH) Program or who received other Commuter Connections services who shifted to alternative modes for commuting and continued using those modes. The survey was conducted to support the 2017 triennial Commuter Connections Transportation Emission Control Measures (TERM) evaluation.

In past Commuter Connections TERM evaluations, commute mode shifts motivated by TERMS were assumed to extend only through the three-year cycle of the evaluation period, so the travel and air quality impacts of the shifts were not carried over to the next evaluation cycle. If mode shifts do extend beyond three years, however, additional impacts could be retained from one three-year TERM evaluation cycle to the next.

The 2016 Retention Rate survey was designed to estimate how long TERM-related mode shifts that past service users made prior to the start of the current evaluation period (July 2014) continued. Survey respondents were asked about Commuter Connections services they received, how they commuted at the time of the survey, and what modes they used prior to starting to use current alternative modes. The survey data were used to develop an estimate of the "retention rate" or lifecycle of continued alternative mode experience.

Sample Selection Process

Eligible respondents for this survey included two groups of commuters:

- A commuter who registered or participated in the GRH program after June 2008 and who completed or ended their registration prior to March 16, 2013
- A commuter who received a service other than GRH between July 1, 2008 and June 30, 2014

An initial survey sample of potential respondents was drawn from Commuter Connections databases, both current (active) and non-active, for commuters who had a Commuter Connections activity between July 2008 and November 2015. Thirteen files containing a total of 888,435 non-unique (e.g., potentially duplicate), activity records were received from Commuter Connections. These files included data regarding participant contact and program activity. The consulting team designed a de-duplication protocol to eliminate multiple records for individual commuters, identify the most recent activity and contact information associated with each commuter, and select only the commuters whose most recent program activity fell within the eligible respondent dates noted above. Documentation containing the deduplication and record selection protocol is provided in Appendix D.

The record selection process also classified respondents by their program type (GRH – last reported activity was GRH registration or re-registration, and Non-GRH – last reported activity was non-GRH related), last year updated, and method of contact (e.g., email, phone, postal mail). Note that the GRH and non-GRH categories were not exclusive; a commuter designated as GRH could have requested and received non-GRH assistance at an earlier time and a non-GRH commuter could have participated in GRH prior to receiving the non-GRH assistance.

A total of 30,176 unique commuters were identified as eligible respondents at the conclusion of the process. Because the inherent "older" age of the contact information was expected to result in many unreachable commuters, the evaluation team extended survey invitations to all potential respondents who provided an email address and/or telephone number. The 891 commuters who provided only a postal mail address for contact were excluded from the survey invitation. The remaining 29,285 participants were contacted either by email or telephone.

Table 1 profiles the original population by most recent program activity and contact method. More than seven in ten (72.9%) commuters in the original sample frame were designated as having their last activity associated with GRH, while 27.1% most recently had a non-GRH activity. Commuters in the sample frame were about evenly split

between those with only a telephone contact (46.1%) and those who provided either an email or email and telephone (54.9%).

Table 1
Sample Frame Population by Most Recent Program Activity and Contact Method

Sample Frame by Program and Contact Method	Population	Percentage
Telephone Only		
GRH	11,023	37.6%
Non-GRH	2,188	7.5%
Email or Email/Telephone		
GRH	10,350	35.3%
Non-GRH	5,724	19.6%
TOTAL – All Groups	29,285	

Table 2 presents the sample distribution by the last activity year reported. About six in ten (59.5%) commuters in the sample had a last activity date in 2008, 2009, or 2010. The last activity date was 2011 or 2012 for 27.8% of the commuters. Just over one in ten (12.7%) had a last activity date of 2013 or 2014.

Table 2
Sample Frame Population by Last Activity Date (Year)

Sample Frame by Last Activity Year	Population	Percentage
2008	1,970	6.7%
2009	11,482	39.2%
2010	3,956	13.6%
2011	4,747	16.2%
2012	3,408	11.6%
2013	3,117	10.6%
2014 (through June 2014)	605	2.1%
TOTAL – All Groups	29,285	

Questionnaire Design

LDA Consulting, with input from the Commuter Connections TDM Evaluation Group, COG/TPB Commuter Connections staff, and CIC Research, designed both the Internet and telephone questionnaires used in the survey. The questionnaire was designed for both telephone and Internet forms of administration. All questions were included in each form, but minor wording and format changes were made to the Internet version for visual administration. A copy of the final Internet questionnaire is presented in Appendix B.

The questionnaires collected data on the following major topics, with some topics asked only of respondents who participated in the GRH Program and some asked only of respondents who had participated only in non-GRH services.

All respondents

- Commuter Connections services requested, used, or accessed, including registration in GRH
- Approximate year services were first received
- GRH program status (if applicable)
- Current commute patterns
- Influence of Commuter Connections services on decision to use alternative modes
- Respondent demographics

GRH program participants

- Commute patterns while participation in GRH
- Commute patterns before participating in GRH
- Duration of alternative mode use after ending GRH participation and reasons for switching to drive alone, asked of current drive alone commuters
- Reasons for continuing alternative mode use (current alternative mode users)
- Reasons for not renewing GRH participation

Non-GRH service users

- Shifts to alternative modes after requesting and receiving Commuter Connections services
- Commute mode before requesting and receiving services
- Duration of alternative mode use after requesting and receiving services and reasons for switching to drive alone, asked of current drive alone commuters
- Reasons for continuing alternative mode use (current alternative mode users)

Survey Administration

The survey was administered using Internet or telephone methods. Applicants who provided an email address for contact were initially contacted by email and asked to complete the survey via the Internet. Applicants who had not provided an email contact were contacted by telephone.

Survey Pretests

Telephone – Prior to conducting the full survey, a telephone pretest of the survey instrument was conducted with 26 “telephone only” respondents. The pretest indicated only minor changes to the questionnaire were necessary. But the pretest reinforced the expectation that many potential respondents would be difficult to reach, due to the years that had passed since they last received Commuter Connections services. A large proportion of telephone numbers were not-in-service, answering machines, or no answer. Interviewers also noted that numerous potential respondents had retired, no longer worked at the location, or had died.

Internet – The Internet questionnaire was internally tested extensively by project team members. After the telephone pretest was completed, the minor changes made to the telephone questionnaire were also made to the Internet questionnaire and the Computer-Assisted Web Interview (CAWI) system was tested again. Based upon this information, the project team determined that a separate pretest of the Internet questionnaire would not be required.

Telephone Interviews

Once the pretest was completed and the questionnaire finalized, telephone interviewing resumed. All interviews were conducted in CIC's telephone survey facilities, using the CATI (computer-assisted telephone interviewing) system and Voxco software. Prior to beginning the full telephone survey effort, interviewer-training sessions were held. Topics 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 demonstration mode

Telephone calls were made between March 21 and April 1, 2016. Calls were first directed to the respondent's work number. If work contact was unsuccessful, the respondent was called at home. Interviewers made weekday calls to work telephone numbers from 12:15 pm to 5:00 pm EDT and to home telephone numbers from 5:00 pm to 8:45 pm EDT. All weekend calls were made to home telephone numbers from 1:00 pm to 7:30 pm EDT. A maximum of four attempts were made to contact a commuter. If the call was answered by an answering machine, at least three more attempts were made to contact the respondent.

Survey supervisors were responsible for overseeing the CATI server, checking quotas, editing call-back appointment times, monitoring interviews, answering questions, and reviewing completed surveys. To ensure data quality, the survey supervisors conducted periodic random monitoring. Additional quality assurance checks were performed after the data were collected.

Following the telephone pretest, all remaining sample for the Telephone Only participant group were activated for the telephone survey. A total of 6,649 participant records were used during the survey fieldwork. Note that over half of telephone numbers were no longer in service, resulting in a very high (219) average number of telephone call attempts for each completed interview. Including the 26 interviews completed during the pretest, a total of 56 telephone interviews were completed for the study that concluded on April 1, 2016. Overall the telephone group had an interview refusal rate of 2.0 percent.¹ Note that this percentage does not include "soft refusals" made through call screening, in which the respondent never answered the call. A disposition of telephone dialing results can be found in Appendix A.

Internet Interviews

For the Internet survey, a list containing 21,373 registrants with email addresses was sent to COG. COG/TPB Commuter Connections staff emailed a letter of introduction to each email address, with a unique clickable link to the survey embedded in the email. Copies of this document can be found in Appendix C. Commuter Connections staff also sent two reminder letters to prospective respondents who had not yet completed the survey. A total of 933 Internet interviews were completed. Commuter Connections received "invalid/undeliverable email" notifications for 5,327 sample points, 25% of the total original email sample frame.

Weighting of Survey Data

The telephone and Internet interviews were merged together for a total of 989 completed interviews. Survey responses then were weighted to align survey results with the distribution of eligible commuters in the Commuter Connections database. The criterion used to weight the survey data was "Year of Participation." This variable denotes when the participant last used Commuter Connections programs or services. For purposes of weighting, three categories were used, 2008-2010, 2011-2012, and 2013-2014.

¹ 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.

As anticipated, commuters with early activity dates were more difficult to reach than were those with more recent dates, thus the sample group contained a higher proportion of recent participants and a lower proportion of early-year participants, when compared to the total population. Differences between the population percentages and sample percentages of each group tested as statistically significant, so were weighted to realign survey responses to the population groups.

Year of Participation	Sample Percentage	Total Population
2008 – 2010	34.5%	54.1%
2011 – 2012	42.5%	32.9%
2013 - 2014	23.0%	13.0%

Level of Confidence for Analysis

The overall level of confidence for the study was calculated using the finite population correction factor, an approach used when the sample size is large relative to the total population. Completion of 989 interviews from a population of 30,176 resulted in an overall level of confidence of 95% \pm 3.1% for the survey (Table 3). But the survey was designed for analysis by activity year and analysis by year differed because sample sizes were different. The level of confidence varied from a low of 95% \pm 6.3% to a high of 95% \pm 4.7% for individual analysis levels.

Table 3
Level of Confidence for Analysis Levels

Year of Last Participation	Number of Completed Interviews	Number of Initial Sample Points	Confidence Level from Sample
2008 – 2010	341	16,324	95% \pm 5.3%
2011 – 2012	421	9,936	95% \pm 4.7%
2013 – 2014	227	3,916	95% \pm 6.3%
Total	989	30,176	95% \pm 3.1%

SECTION 3 SURVEY RESULTS

Following are key results from each section of the survey. Percentages presented in the tables and figures show them 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.

- Demographics of the sample
- Services received from Commuter Connections
- Current commute modes
- Previous commute modes (commute modes before receiving services)
- Alternative mode retention rates
- Motivations for driving alone
- Motivations for using alternative modes
- Desired improvements to Commuter Connections services

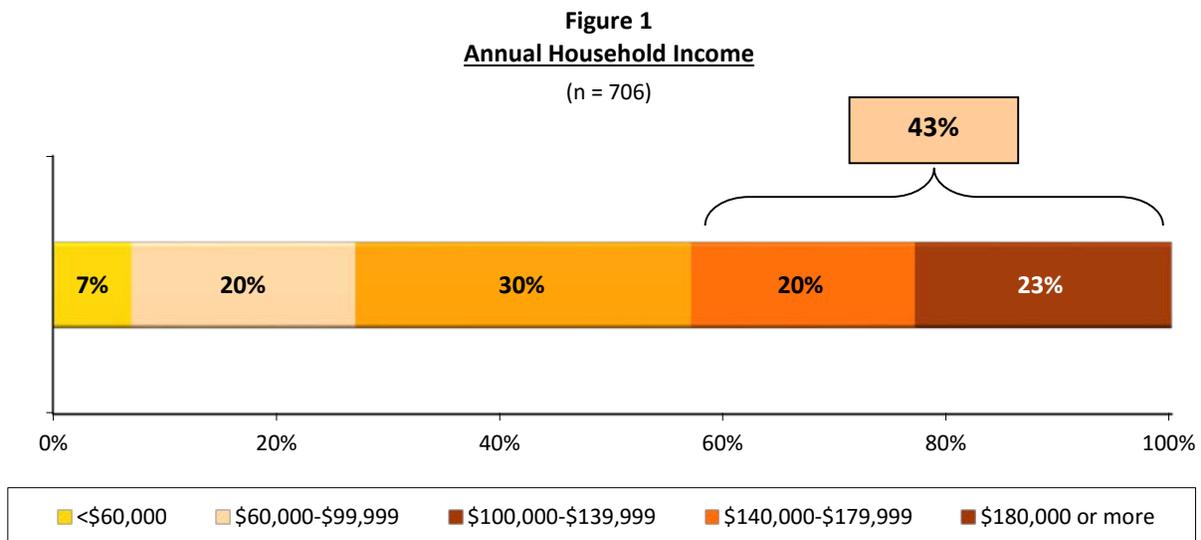
Characteristics of the Sample

The survey asked respondents four demographic questions: sex, income, age, and race/ethnicity.

Demographics

Sex – Female respondents (56%) in the sample slightly outnumbered males (44%).

Annual Household Income – Figure 1 presents the distribution of respondents' annual household income. More than seven in ten respondents (73%) had household incomes of \$100,000 or more and 43% had incomes of \$140,000 or more.



Age – Survey participants were clustered in the middle and older age brackets (Figure 2). More than seven in ten (72%) were between the ages of 45 and 64 years old. Approximately two in ten (21%) were under 45 years old and 7% were 65 years or older.

Figure 2
Respondent Age Distribution
(n = 914)

Race/Ethnicity – Lastly, as shown in Table 4, Caucasians/Whites and African-Americans represented the two largest ethnic group categories of survey respondents, 72% and 17% respectively. Asian respondents and Hispanic respondents each accounted for about 4%.

Table 4
Race / Ethnicity

Ethnic Group	Percentage (n = 805)
African-American / Black	17%
Causasian / White	72%
Asian	4%
Hispanic	4%
Other	3%

Demographics by Last Activity Year

Table 5 presents respondent demographic distributions by the last activity year reported in the database. The distributions of sex, income, age, and race/ethnicity were consistent across the three year groupings.

Table 5
Demographic Profile by Last Activity Year

Demographic Characteristic	Last Activity Year		
	2008-2010 (n = 247)	2011-2012 (n = 294)	2013-2014 (n = 165)
Sex			
- Female	55%	59%	57%
- Male	45%	41%	43%
Income			
- Under \$100,000	29%	26%	24%
- \$100,000 - \$159,999	40%	45%	45%
- \$160,000 or more	31%	29%	31%
Age			
- Under 35 years	4%	4%	5%
- 35 – 44 years	18%	14%	15%
- 45 – 54 years	37%	41%	35%
- 55 years and older	41%	41%	45%
Race/Ethnicity (excludes Other)			
- Non-Hispanic White	75%	72%	71%
- Black/African-American	17%	16%	21%
- Asian	4%	5%	4%
- Hispanic	2%	4%	3%

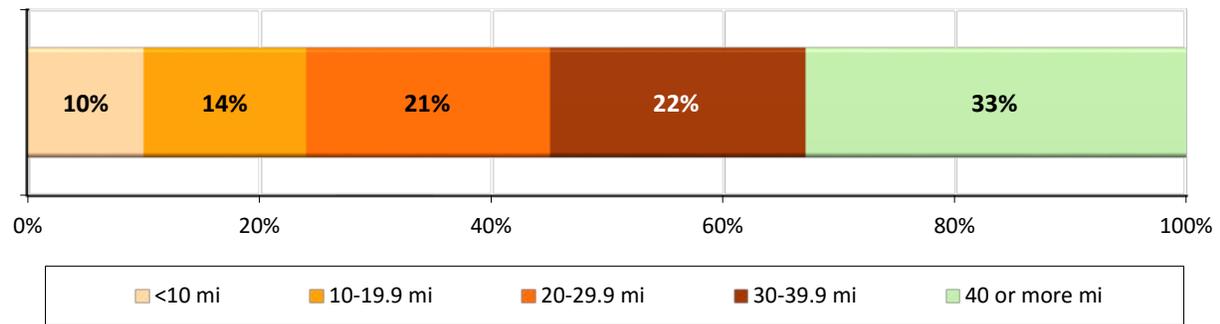
Work Schedule

The overwhelming majority (97%) of respondents worked full-time. But 23% worked a compressed schedule in which they worked a full-time schedule in fewer than five days; 13% worked a 9/80 compressed schedule, with one weekday off in alternate weeks and 10% worked either a 4/40 schedule, with one weekday off each week or 3/36 schedule, with two weekdays off per week. These respondents were classified as working a five-day week for purposes of commute mode, with one-half, one, and two weekdays off each week, respectively.

Commute Length

Commuter Miles – Commuters in the survey sample have a wide range of commute distances, from less than one mile to more than 120 miles. Figure 3 shows the distribution of distance for all respondents. More than half (55%) of respondents traveled 30 or more miles to work and 33% commuted 40 or more miles to work.

Figure 3
Commute Distance (miles) – All Respondents
 (n = 913)



The average one-way distance across all respondents was 33.9 miles. Respondents who had participated in GRH traveled farther than did those who had not used GRH:

GRH users – average of **35.6 miles** one-way

Non-GRH users – average of 26.9 miles one-way

Respondents who received services more recently traveled farther than did respondents who received services in earlier years:

2008 – 2010 last activity year – average of 32.4 miles one-way

2011 – 2012 last activity year – average of 34.8 miles one-way

2013 – 2014 last activity year – average of **38.1 miles** one-way

Services Received from Commuter Connections

The primary goal of the survey was to determine the share of past service users who were “retained” in (e.g., continued using) alternative modes. Because the retention rate could be affected by the services they received, the survey asked several questions at the start of the survey to define the services.

Respondents were first shown two lists of Commuter Connections services, one for carpool/vanpool support services and a second for services to support use of public transit, bicycling, and telework. For each list they were asked to indicate the services they had accessed, received, or requested. Then, all respondents were asked if they had ever registered for the GRH Program. Figure 4 shows the percentages of respondents who participated in or received each service.

Figure 4

Individual Services Received from Commuter Connections as Defined by Respondent (during survey interview)

(n = 983, multiple responses)

Guaranteed Ride Home

The most common service, by far, was Guaranteed Ride Home; 81% of all respondents said they had participated in this program.

Carpool/Vanpool Services

About four in ten (38%) respondents said they received one or more of the carpool/vanpool services listed. Two in ten (20%) received names of commuters they could contact to form a carpool or vanpool (matchlist). About one in ten respondents accessed the carpool/vanpool “rider wanted” bulletin board, 9% received a map showing home/work locations of people they could contact to form a carpool or vanpool (match map) and 11% received “other” carpool/vanpool information. Six percent received information on High Occupancy Vehicle (HOV) lanes or express lanes available to carpoolers and vanpoolers and 2% participated in the ‘Pool Rewards carpool financial incentive program.

Transit/Bike/Telework Services

Thirty-five percent of respondents had received a transit or bike support service. More than one-quarter (28%) obtained transit schedule, route, or fare information from the Commuter Connections website and 10% accessed information on Park & Ride lot locations. Five percent received bicycling information or a bike map and 5% received information on special events, such as Bike-to-Work Day. Four percent of respondents said they obtained telework information.

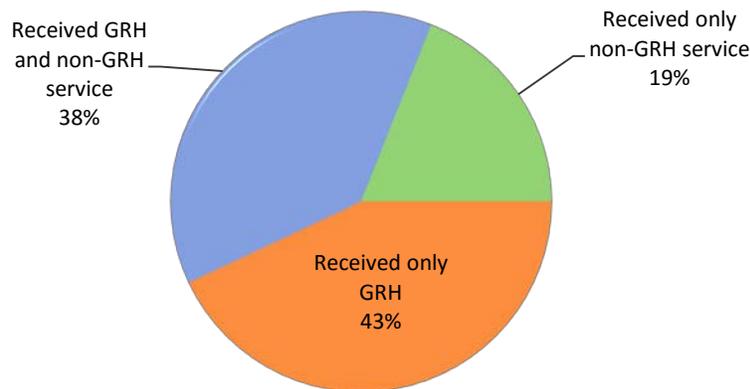
Classification of Respondents by Service Category

By combining the results of the questions about individual services, the analysis classified respondents into one of three categories, based on the combination of services they had received:

- GRH Only – Received only GRH
- Non-GRH Only – Received only a non-GRH service (e.g., carpool, vanpool, transit, bike, or telework)
- GRH/Non-GRH – Received GRH and a non-GRH service

Four in ten (43%) respondents said GRH was the only Commuter Connections service they received (Figure 5). Two in ten (19%) reported receiving only non-GRH services; they had not participated in GRH at any time. The remaining 38% said they received both GRH and another Commuter Connections service.

Figure 5
Services Received from Commuter Connections as Defined by Respondent (during survey interview)
 (n = 983)



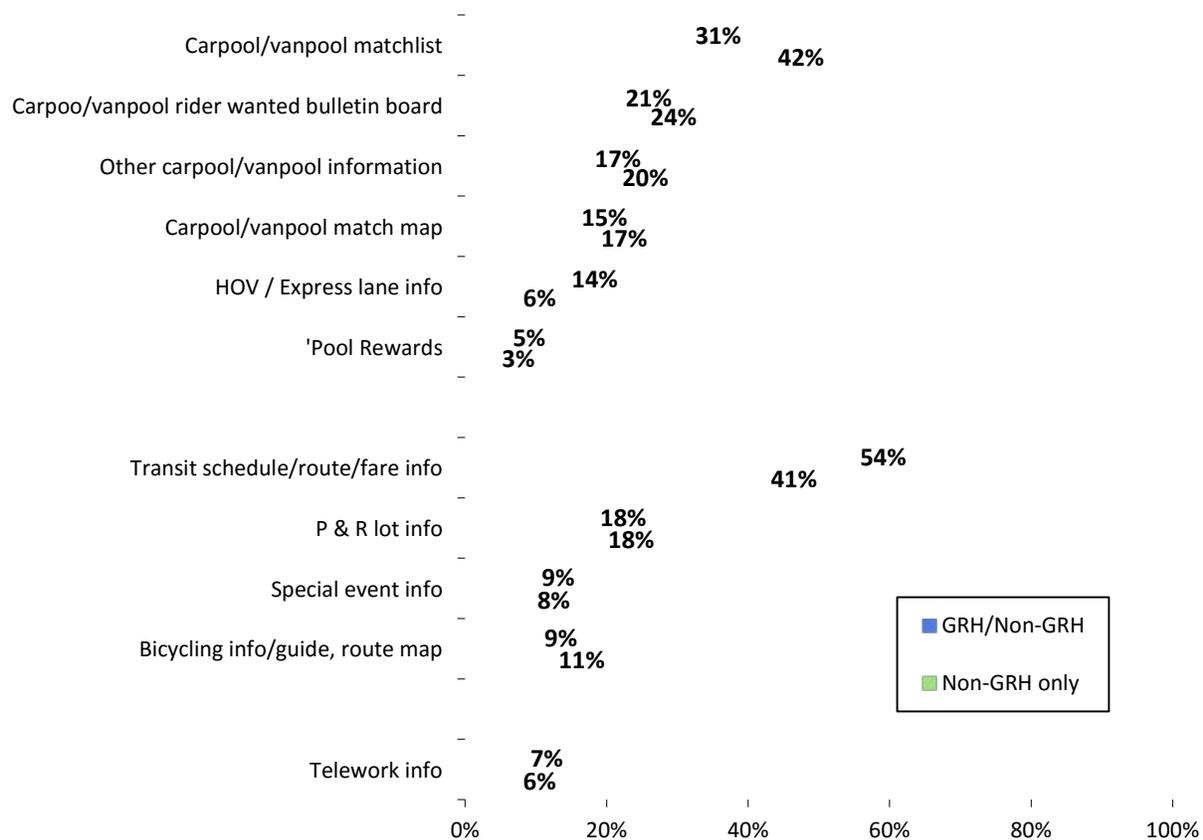
These percentages will not match the distributions of GRH and non-GRH in the sample counts described in Section 2. As previously noted, the sample designation was based on the last activity reported in the Commuter Connections database. However, it was possible that some respondents who were classified as GRH for sample purposes had received a non-GRH service at an earlier time or that a respondent who was designated as non-GRH in the sample had participated in the GRH program prior to receiving the non-GRH service. For this reason, the classification shown in Figure 5 above was used for analysis of retention rates by program and these classifications are used in other tables and figures presented later in this section.

Non-GRH Services Received by Program Classification

GRH users who also received non-GRH services reported somewhat different non-GRH services than did respondents who received only non-GRH services (Figure 6). GRH/Non-GRH users reported higher use of transit services and lower use of carpool/vanpool services than did Non-GRH Only users.

Figure 6
Non-GRH Services Received from Commuter Connections – GRH/Non-GRH Users and Non-GRH Only Users

(GRH/Non-GRH n = 383, Non-GRH Only n = 173)



More than half (54%) of the GRH/Non-GRH respondents received transit information, compared with 41% of Non-GRH Only respondents. Conversely, Non-GRH Only respondents indicated higher use of carpool/vanpool matchlists (42%) than did the respondents who also participated in GRH (31%). A statistical difference in use also was noted for HOV/Express lane information; 14% of GRH/Non-GRH respondents used this service, compared with 6% of Non-GRH Only users. Use of other services was similar between the two respondent groups.

“Current” GRH Registration Status

As noted in the Introduction section, the survey was administered only to commuters who were not currently participating in any Commuter Connections services and who had not participated in any Commuter Connections service since June 2014. However, nearly three in ten (29%) respondents said they were “currently registered” for the GRH Program and another 31% said they were not sure if they were still registered. (Table 6). These 60% of respondents represented nearly three-quarters of all respondents who said they had participated in GRH (60% of total 81% who had used GRH).

Table 6
GRH Registration Status as Defined by Respondent (during survey interview)

GRH Registration Status	Percentage (n = 989)
Past registrant	21%
Current registrants	29%
Not sure if still registered	31%
Never registered	19%

Other GRH surveys conducted by Commuter Connections have shown similar confusion regarding GRH status. It is possible these respondents did not realize they needed to re-register each year, so assumed they were still eligible for the program. About two in ten respondents who self-identified as current registrants participated most recently in 2013/2014, while only 10% of respondents who said they were past registrants or not sure of their status participated in GRH as recently as 2013/2014.

The GRH registration status actually was past/expired for all GRH respondents. But because the survey asked respondents who had participated in GRH questions relating to the times “before” and “while” participating in GRH, respondents’ who thought they were currently registered were asked a slightly different form of the questions to ensure the questions would make sense to them.

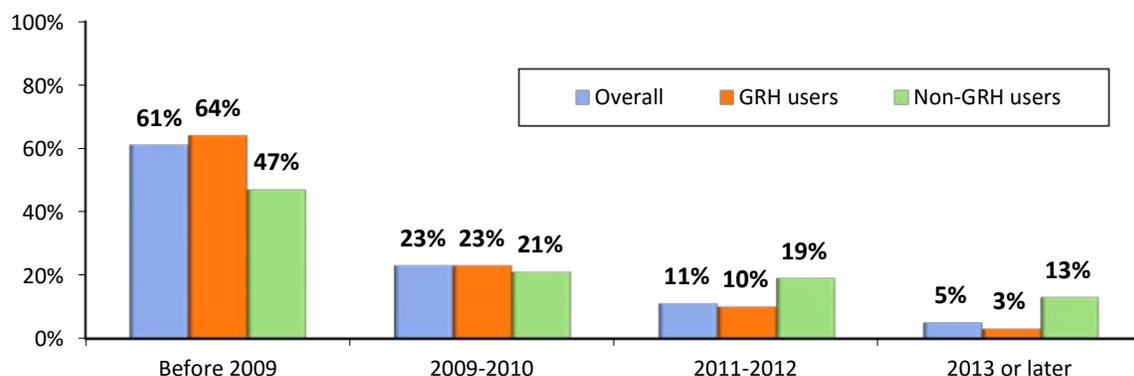
First Year of Participation in Commuter Connections Services

All respondents were asked when they first received Commuter Connections services. Respondents who were GRH Only or GRH/Non-GRH were asked when they first registered for GRH. Respondents who had received only non-GRH services were asked when they first accessed or received services from the Commuter Connections website. Across all respondents, 61% said their first participation year was before 2009, 23% first participated in 2009 or 2010, and 11% first participated in 2011 or 2012 (Figure 7). Five percent first participated in 2013 or 2014.

Figure 7
First Participation Year as Defined by Respondent (during survey interview)

All Respondents, GRH Users, Non-GRH Users

(All Respondents n = 987, GRH users n = 816, Non-GRH users n = 171)



As also shown in Figure 7, non-GRH users were more likely to have reported a more recent first participation date than were GRH users. Only 47% of non-GRH users first received services before 2009, while nearly two-thirds (64%) of GRH users first registered for GRH before 2009. About one-third (32%) of non-GRH users said they first received services in 2011 or later, compared with just 13% of GRH users.

Current and Previous Commute Modes and Alternative Mode Retention Rates

The overriding objective of the survey was to estimate the share of service users who made shifts to alternative modes after receiving Commuter Connections services and the share of commute trips that these commuters were still making in alternative modes at the time of the survey. To answer these results, respondents were first asked how they were commuting “in a typical week” at the time of the survey (current). They then were asked about their commute before they registered for GRH or before they received other non-GRH services.

Current Commute Modes

At the time of the survey, respondents reported making fully 78% of their weekly commute trips by alternative modes; they made only 22% of weekly trips by driving alone (Figure 8). They made 39% of weekly commute trips by bus or train, 13% by carpool, 7% by vanpool, and 4% by walking or bicycling. Respondents eliminated 15% of weekly commute trips by telework and compressed work schedules.

Figure 8
Current Commute Modes – Percentage of Weekly Commute Days
(n = 989)

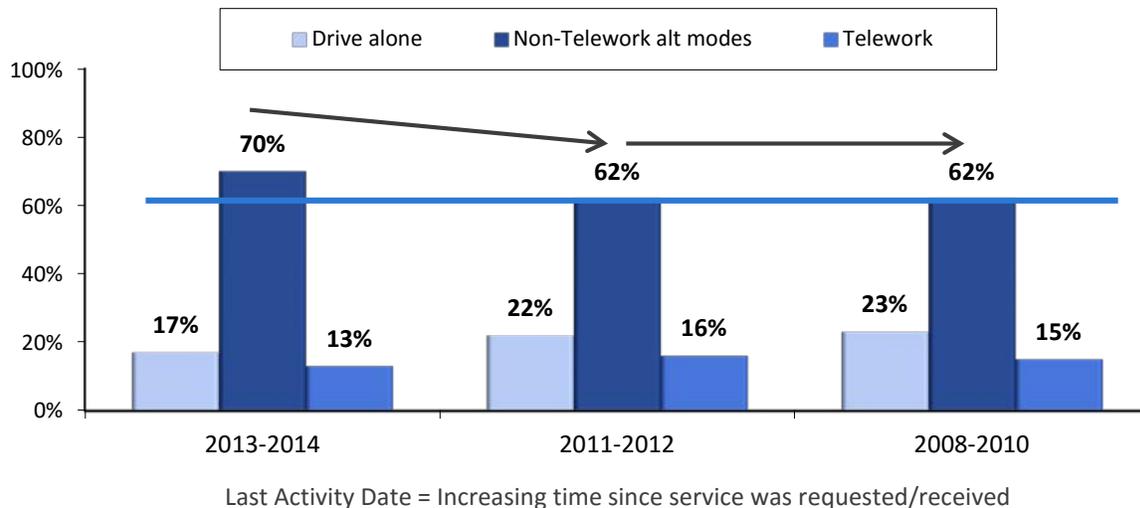
Alternative Mode Use by Last Activity Date – Somewhat surprisingly, the share of respondents who were using alternative modes was not dramatically lower for respondents who had participated in Commuter Connections programs in the early years of the evaluation period than for more recent service users. Seven in ten (70%) respondents whose last activity date was 2013 or 2014 were using alternative modes at the time of the survey (Figure 9). As had been expected, use of alternative modes was lower among respondents whose last activity date was 2011 or 2012 (62%), but respondents who last participated between 2008 and 2010 had an equally high rate of alternative mode use (62%).

This initially suggests that the year of last activity is of limited importance in determining retention rate over the time periods covered by the survey. However, as described in the data collection description of the introduction

section, a sizeable share of the commuters in the sample database could not be contacted because the email and/or telephone numbers were no longer in service, or because the commuters had retired, changed jobs, left the region, or died. It is likely that some, if not many, of these respondents would have stopped using alternative modes. Because a disproportionate share of these commuters were in early last activity year groups, the survey results likely overestimate the current alternative mode use of respondents in those groups.

Figure 9
Current Commute Modes – Percentage of Weekly Commute Days by Last Activity Date

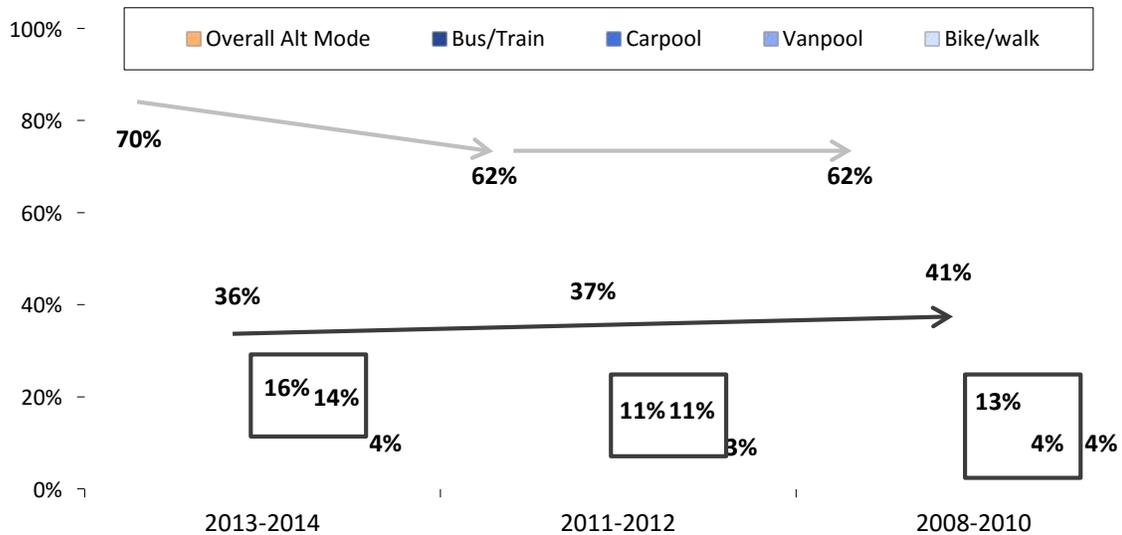
(2013-2014 n = 227, 2011-2012 n = 421, 2008-2010 n = 341)



Within the broad category of alternative modes, the specific modes used varied somewhat by the last activity year (Figure 10). Transit use was highest for early-year respondents; 2008-2010 respondents made 41% of their weekly commute trips by transit, compared with 36% for those who last participated in 2013 or 2014. Vanpooling use was notably higher among recent respondents; 2013-2014 respondents made 14% of their weekly trips by vanpooling, compared with 11% for 2011-2012 respondents and just 4% for respondents with a last activity date between 2008 and 2010.

Figure 10
Current Overall and Individual Alternative Mode Percentages by Last Activity Date

(2013-2014 n = 227, 2011-2012 n = 421, 2008-2010 n = 341)

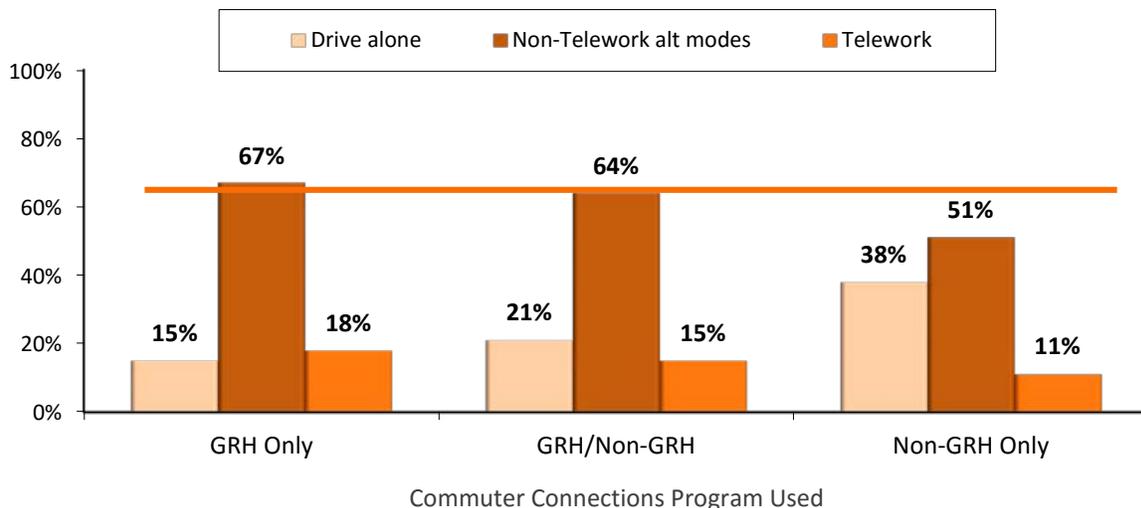


Last Activity Date = Increasing time since service was requested/received

Alternative Mode Use by Program Used – Figure 11 presents the shares of commute trips made by driving alone, by alternative modes, and by telework for respondents in the three program groupings: GRH Only (GRH was the only service received), GRH/Non-GRH (participated in GRH and received a non-GRH service), and Non-GRH Only (received only a non-GRH service). Respondents who participated in GRH, either as GRH Only or GRH/Non-GRH, used alternative modes for considerably larger shares of their trips than did Non-GRH Only users. GRH Only respondents made 67% of their weekly commute trips by alternative modes and GRH/Non-GRH commuters used alternative modes for 64% of weekly trips, compared with 51% for respondents who received only a non-GRH service.

Figure 11
Current Commute Modes – Percentage of Weekly Commute Days by Program Used

(GRH Only n = 433, GRH/Non-GRH n = 383, Non-GRH Only n = 173)



Respondents who had used GRH, whether alone or in combination with a non-GRH service, showed higher use of bus/train than did Non-GRH respondents (Figure 12). Conversely, respondents who received a non-GRH service, either alone (Non-GRH Only) or in combination with GRH (GRH/Non-GRH) reported higher use of carpool than did GRH Only users. As previously noted, GRH/Non-GRH users received transit information at a higher rate than did Non-GRH Only respondents. And Non-GRH Only respondents used carpool/vanpool matchlists at a notably higher rate than did GRH/Non-GRH respondents. Thus, their current mode use was consistent with their service use patterns.

Figure 12

Current Overall and Individual Alternative Mode Percentages by Program Used

(GRH Only n = 433, GRH/Non-GRH n = 383, Non-GRH Only n = 173)

Alternative Mode Use by Year and Program – Table 7 presents alternative mode rates for combinations of last activity date and program classification. Alternative mode use among GRH Only and GRH/Non-GRH users was higher than for the Non-GRH Only respondents for each year grouping. But within program categories, the alternative mode use was only slightly different by last activity year. The only statistical difference by year was for the GRH Only group; the alternative mode use rate for 2013-2014 respondents (90%) was statistically higher than the rate for 2008-2010 respondents (80%). But other apparent differences were not statistically significant.

Table 7

Current Alternative Mode Use by Program Used and Last Activity Date

(GRH Only – 2008-2010 n = 136, 2011-2012 n = 189, 2013-2014 n = 108)

(GRH/Non-GRH – 2008-2010 n = 125, 2011-2012 n = 170, 2013-2014 n = 88)

(Non-GRH Only – 2008-2010 n = 80, 2011-2012 n = 62, 2013-2014 n = 31)

Program Classification	Last Activity Date		
	2008-2010	2011-2012	2013-2014
GRH Only	80%	84%	90%
GRH/Non-GRH	79%	78%	83%
Non-GRH Only	63%	60%	64%

Alternative Mode Use by Demographic Characteristics – Finally, the analysis explored whether current alternative mode use varied by respondent demographics (Table 8). Current alternative mode use was higher among respondents who were male, Black/African-American, 45 years or older, and with household incomes of \$100,000 or more. However, the differences were slight across the categories.

Table 8
Current Alternative Mode Use by Demographic Characteristic

	Percentage of Respondents Reporting Alternative Mode Use
Sex	
- Female (n = 503)	76%
- Male (n = 379)	81%
Income	
- Under \$100,000 (n = 185)	73%
- \$100,000 - \$159,999 (n = 309)	79%
- \$160,000 or more (n = 212)	80%
Age	
- Under 35 years (n = 39)	71%
- 35 – 44 years (n = 145)	76%
- 45 – 54 years (n = 350)	79%
- 55 years and older (n = 380)	79%
Race/Ethnicity	
- Non-Hispanic White (n = 588)	76%
- Black/African-American (n = 138)	82%

Commute Mode Before Receiving Commuter Connections Services

The second element needed to estimate retention rates was the modes respondents used before they registered for GRH or before they received non-GRH commute services. All respondents who were using an alternative mode at the time of the survey were continued alternative mode users, but if they were using these modes before they received commute services, they would not be counted as a Commuter Connections “new placement” in alternative modes. In other words, while the service might have helped them continue to use alternative modes, it did not reduce any new vehicle trips when compared to their commute before they received the service.

To assess the incidence of mode changes, survey respondents, both those in alternative modes and those who were driving alone at the time of the survey were asked how they commuted prior to registering for GRH or prior to receiving the non-GRH service from the Commuter Connections website.

Before receiving services, respondents used alternative modes for 72% of weekly trips; they used a bus or train for 45% of weekly trips, carpooled for 15%, rode in a vanpool for 7%, and bicycled or walked for 4% (Figure 13). They drove alone for 23% of weekly commute trips and eliminated 5% of weekly trips through telework and compressed work schedules.

Figure 13
Commuter Modes Before Receiving Commuter Connections Services and Comparison with Current Commute

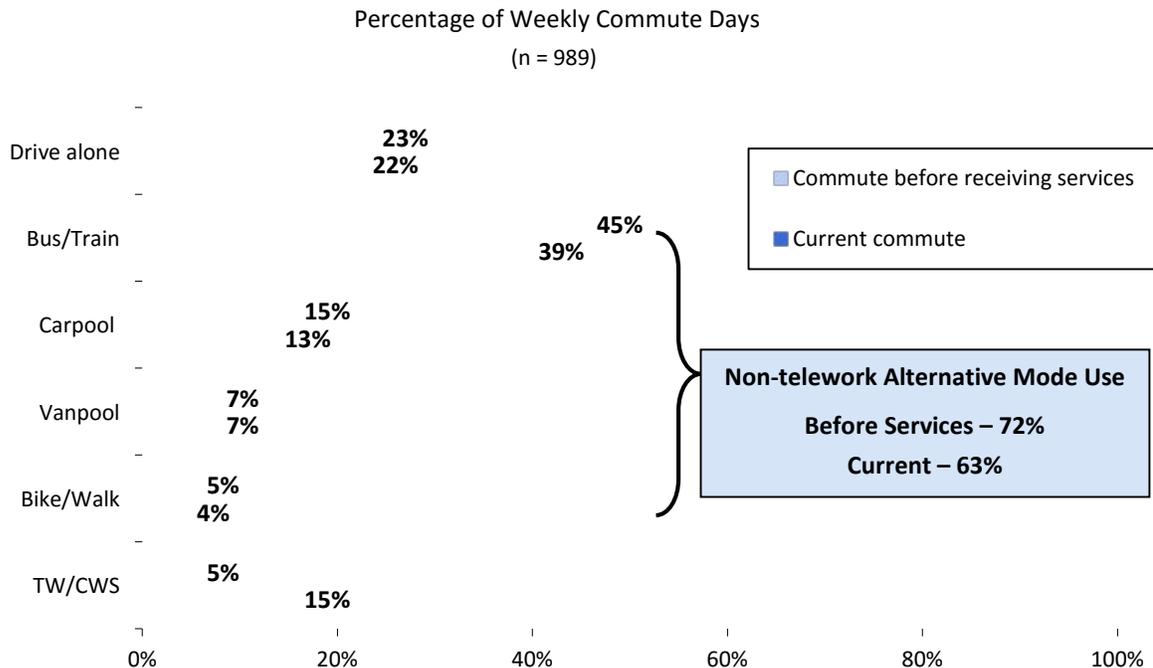
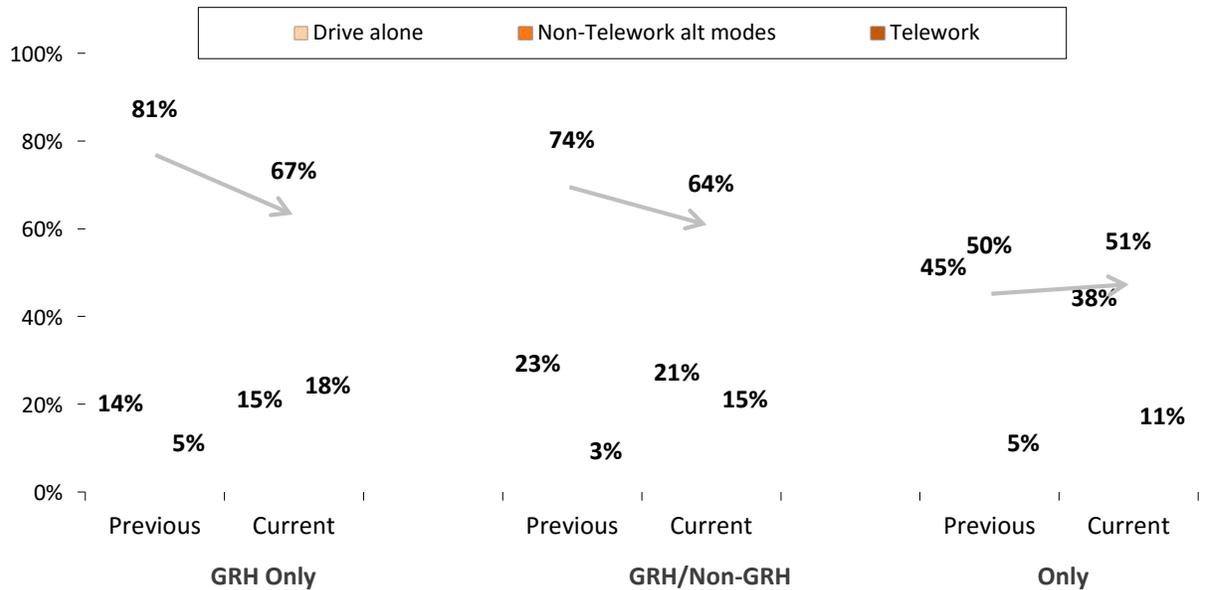


Figure 13 also repeats the mode share results for the current commute, previously presented in Figure 8. The overall percentage of alternative mode weekly commute trips was higher before receiving services (72%) than at the time of the survey (63%). Use of bus/train fell as a share of weekly work trips. Use of carpool, vanpool, and bike/walk remained essentially the same. A notable result was that the share of weekly work trips eliminated by telework and compressed work schedule grew from 5% of weekly trips at the “before service” time to 15% of weekly trips at the time of the survey.

Alternative Mode Use Before Receiving Services by Program Classification – GRH users were largely responsible for the overall high alternative mode use for the “before receiving services” time period. As illustrated in Figure 14, GRH Only respondents made 81% of their commute trips by alternative modes before joining GRH and GRH/Non-GRH respondents used alternative modes for 74% of their weekly commute trips. This result is reasonable considering commuters must be using an alternative mode to register for GRH. Prior alternative mode use was much lower, 50%, among respondents who received only Non-GRH services.

While the data initially might suggest a higher retention rate for GRH users, the retained *impact*, as measured by the difference between the current alternative mode use percentage and the percentage of alternative mode use before receiving services, actually was as great for the Non-GRH Only respondents. Non-GRH Only respondents maintained their alternative mode use from their pre-service commute (50%) to their current commute (51%). By contrast, current alternative mode use was lower for GRH Only (67%) and GRH/Non-GRH (64%) respondents than for their commutes before they requested/received services.

Figure 14
Alternative Mode Use – Current Commute and Before Receiving Services by Program Used
 Percentage of Weekly Commute Trips Made by Driving Alone, Alternative Modes, and Telework
 (GRH Only n = 433, GRH/Non-GRH n = 383, Non-GRH Only n = 173)



Retention Rate, Accounting for Both Prior and Current Commute Mode

When both the current commute mode and the “before service” mode are taken into account, a more conservative, but also more realistic view of retention rate emerges. Five cases of before-to-current mode combinations are possible:

Current new alternative mode

- Previous drive alone (**change to new alternative mode**)
- Previous, different, alternative mode (**change to new alternative mode**)

Current drive alone

- Previous alternative mode (change to drive alone)
- Previous drive alone (no change)

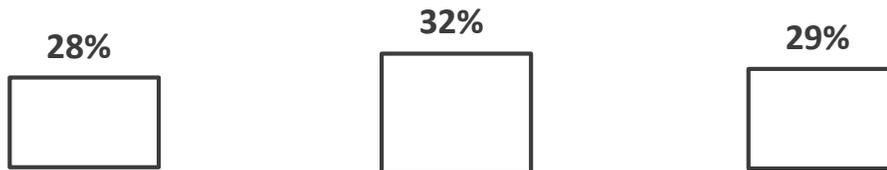
Current alternative mode, same previous alternative mode (no change)

- New Alternative Mode Use – The first two cases represent commuters who made commute changes to new alternative modes after receiving Commuter Connections services. These include commuters who were using alternative modes before receiving services who shifted to a different alternative mode and commuters who were previously driving alone. These two cases comprise the “retained” commuters.
- Current Drive Alone – The third and fourth groups were driving alone at the time of the survey. Some of these commuters also drove alone before receiving services and some previously used alternative modes but were no longer using them at the time of the survey.
- Continued Alternative Mode Use with No Change – The final case includes commuters who used alternative modes before receiving services and were using the same modes at the time of the survey. These commuters continued using alternative modes, but did not make any mode changes.

New Alternative Mode Retention Rates by Last Activity year – As illustrated in Figure 15, the last activity date appeared to have little impact on the alternative mode retention rate. The retention rate for respondents with a last activity date of 2013-2014 was 28%; 15% of these respondents drove alone before receiving the services but started using an alternative mode and 13% used alternative modes before receiving services but changed to a different alternative mode. The overall retention rates were essentially the same for respondents with last activity date of 2011-2012 (32%; 11% previous drive alone, 21% previous alternative mode) and 2008-2010 (29%; 11% previous drive alone, 18% previous alternative mode).

Figure 15
Commute Mode Changes from Before Receiving Services to Current Commute by Last Activity Date

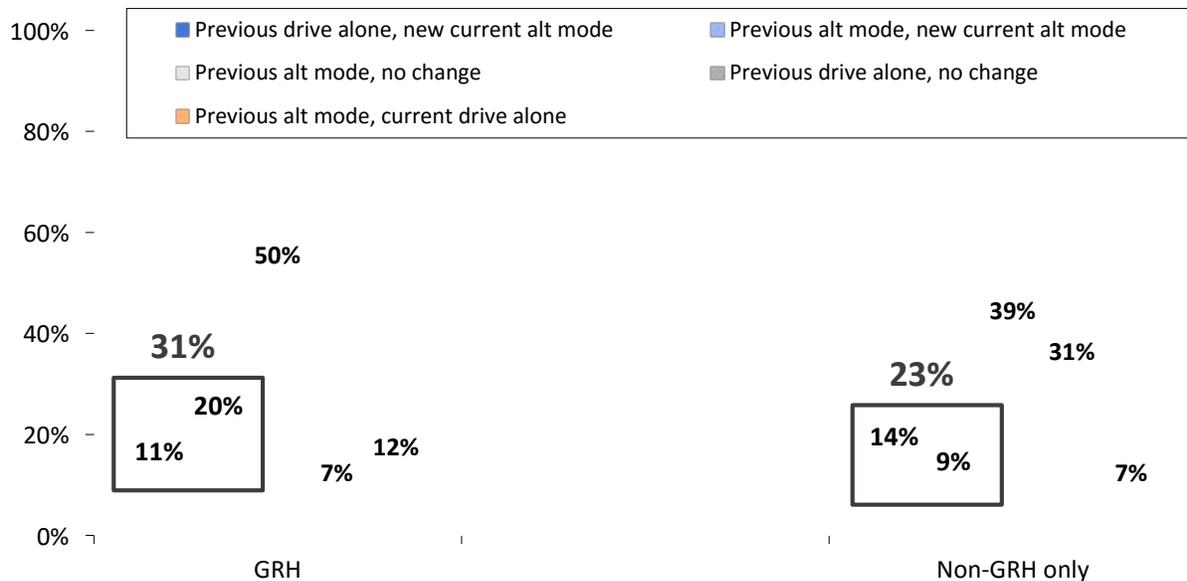
(2013-2014 n = 221, 2011-2012 n = 408, 2008-2010 n = 336)



New Alternative Mode Retention Rates by Program Classification – Figure 16 presents the retention rate by Commuter Connections program used. The retention rate for GRH users was 31%; 11% of these respondents drove alone before registering for GRH but started using an alternative mode and 20% used alternative modes before registering for GRH but changed to a different alternative mode and. The retention rate for non-GRH users was 23%; 14% who previously drove alone and started using an alternative mode and 9% previous alternative mode users who switched to a new alternative mode.

Figure 16
Commute Mode Changes from Before Receiving Services to Current Commute by Program Used

(GRH user n = 794, Non-GRH Only n = 169)



Retention Rates for the 2017 TERM Analysis – The retention rates calculated above likely overestimates the actual rates, however, when all past service users are included. As mentioned previously, many commuters in the sample database could not be contacted because they were no longer working, had changed jobs, or had died. Additionally, many commuters for whom contact information appeared to be valid did not respond to the survey. It is possible they thought the survey did not apply to them because they were no longer participating in Commuter Connection services or because they were no longer using alternative modes.

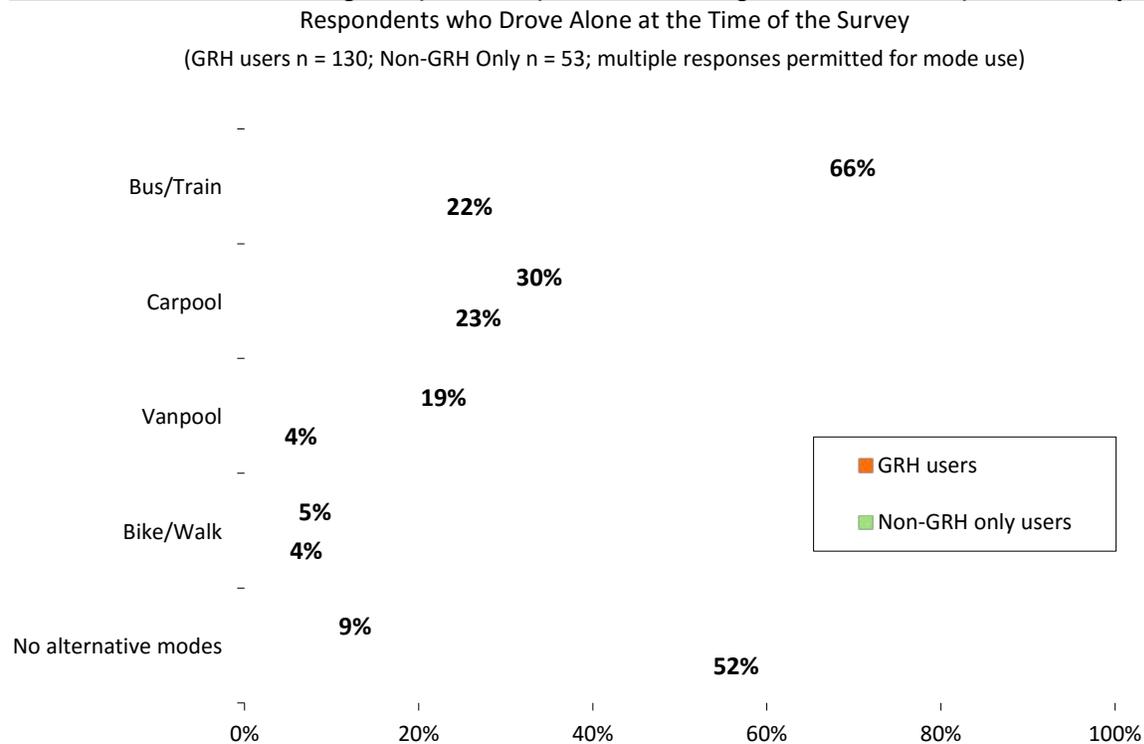
Thus, the retention rate factors that are applied in the 2017 TERM analysis will need to take into account that the continued alternative mode use found among surveyed commuters likely was higher than that for commuters who did not participate in the survey. The survey data do not suggest a definitive method to account for this likelihood. One possible adjustment could be to apply the GRH and Non-GRH retention rates to reduced bases of past participant populations. However, other options might also be considered. The specific method will be defined during the FY2015-FY2017 Commuter Connections TERM analysis.

Commute Mode “During” Commuter Connections Service Use

The survey primarily was concerned with comparing current commute mode use with mode used prior to receiving services. But other Commuter Connections surveys found that some respondents who were driving alone at the time of the survey had used alternative modes after receiving services, but for a temporary period of time. GRH respondents in particular would have been required to use alternative modes at least two days per week to participate in the program. So, GRH users and GRH/Non-GRH users were asked about their commute modes “while they were registered” for GRH. Non-GRH Only respondents were asked if they had used or tried alternative modes for commuting since receiving services from Commuter Connections. Because these respondents no longer used alternative modes, they were not considered “retained” users, but the consulting team added these questions to the survey to explore when respondents dropped out of alternative modes.

Figure 17 presents the alternative modes that drive-alone GRH respondents and Non-GRH Only respondents reported using at a previous time. As expected considering the GRH program rules, 91% of GRH users who were driving alone at the time of the survey said they had used alternative modes while they were registered for GRH. About two-thirds used public transit, 30% rode in a carpool and 19% vanpooled. On average they used some combination of these modes about 4.3 days per week. The 9% of GRH users who did not report alternative mode use during GRH represent about 1% of all GRH users.

Figure 17
Alternative Modes Used During GRH (GRH users) or After Receiving Non-GRH Services (Non-GRH Only users)



Non-GRH Only users who were driving alone at the time of the survey were less likely to have used an alternative mode in the past; 48% reported using one or more of the alternative modes listed but 52% said they had not used any of the alternative modes in the past. These results are consistent with findings from other surveys of Commuter Connections' website users, which have found that some drive alone commuters who seek commute assistance services continue to drive alone after receiving the services. Two in ten (22%) rode public transit and a similar share (23%) carpoled.

Duration of Alternative Mode Use

Non-GRH Only respondents who were driving alone at the time of the survey, but who previously used alternative modes were asked how long they used them for their commute; in essence, what was the duration of their temporary shift to alternative modes. About one-third (35%) of these respondents said they used the alternative mode for one month or less and more than half (52%) used it for six months or less (Table 9). But almost one-quarter used the mode for more than two years.

Table 9
Duration of Alternative Mode Use After Receiving Services
 (Non-GRH Only Users Who Drove Alone)

Duration of Alternative Mode Use	Percentage (n = 24)
1 month or less	35%
2 – 6 months	17%
7 – 12 months	17%
13 – 24 months	8%
25 – 36 months	13%
More than 3 years	10%

Last Year Using Alternative Modes

All respondents who were driving alone at the time of the survey were asked how long ago they started driving alone for their commute. When these results are combined with the current alternative mode use, they indicate the last year that the respondent used an alternative mode or the “last alternative mode year.” Nearly nine in ten (89%) of all respondents continued using an alternative mode until 2015 or 2016 (current alternative mode users) (Table 11). The remaining respondents stopped using alternative modes in 2013-2014 (4%) or before 2013 (3%). Four percent of all respondents said they had never used an alternative mode, either before or since receiving Commuter Connections assistance.

Table 10
Last Year Using Alternative Mode – All Respondents and by Last Activity Date

Last Year Using Alternative Mode	All Respondents (n = 989)	Last Commuter Connections Activity Year		
		2013-2014 (n = 227)	2011-2012 (n = 421)	2008-2010 (n = 341)
2015 or 2016 (current use)	89%	90%	88%	89%
2013 or 2014	4%	4%	6%	3%
Before 2013	3%	3%	2%	3%
No alternative mode reported	4%	3%	4%	5%

Last Alternative Mode Year by Last Activity Year – Table 10 also presents last alternative mode year distributions by the last year the respondent received a Commuter Connections service. Interestingly, the distribution of last alternative mode year was very similar regardless of the last activity year.

Last Alternative Mode Year by Program Classification – As illustrated in Table 11, the last alternative mode year distribution was essentially the same for respondents who had used GRH (GRH Only and GRH/Non-GRH) and for those who had used only Non-GRH services (Non-GRH Only). Among GRH users, 93% were still using alternative modes in 2015 or 2016. Among Non-GRH Only users, 95% were using alternative modes as recently as 2015.

Table 11**Last Year Using Alternative Mode by Program Classification**

(Note: Excludes respondents who said they never used alternative modes, either before or after receiving services)

Last Year Using Alternative Mode	GRH Users (n = 787)	Non-GRH Only Users (n = 120)
2015 or 2016 (current use)	93%	95%
2013 or 2014	5%	2%
2012 or earlier	2%	3%

Note, however, that these results exclude respondents who said they had not used an alternative mode in any of the time periods examined in the survey (current, before receiving service, after receiving service). A very small share, about 1%, of GRH users said they had not used an alternative mode, but 18% of Non-GRH Only users never used an alternative mode. Thus, while the retention of GRH and Non-GRH commuters was similar, the share of commuters who used alternative modes during/after receiving Commuter Connections services was higher overall for GRH users.

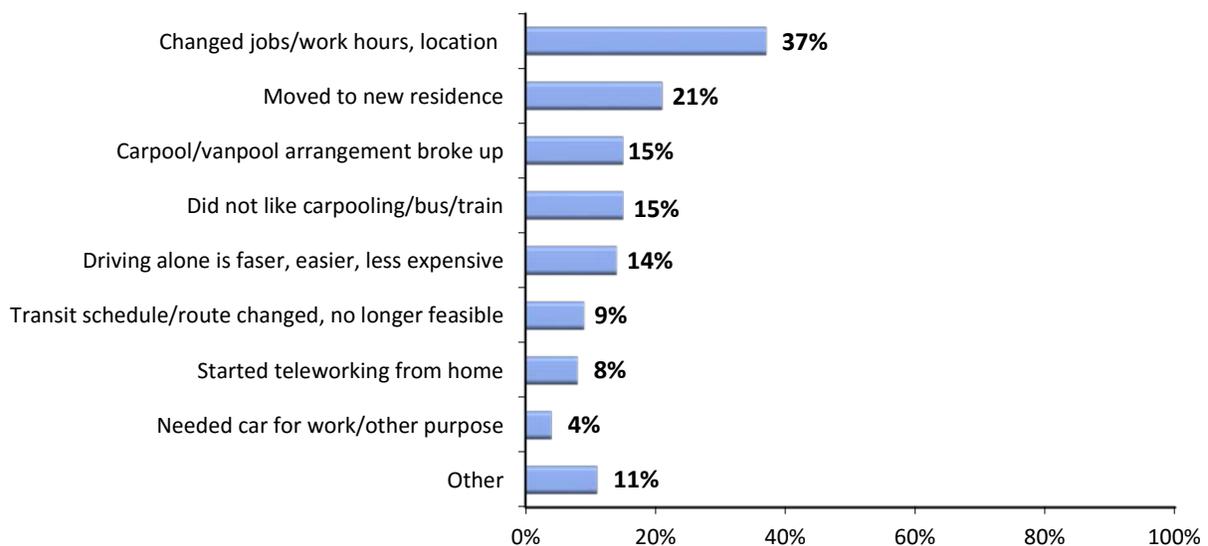
Motivations for Driving Alone and for Using Alternative Modes

Commuters use and switch among commute modes for many reasons related to service and personal motivations. To examine these motivations, survey respondents who were driving alone at the time of the survey but who had used alternative modes previously were asked why they shifted to driving alone. Respondents who were using alternative modes at the time of the survey were asked about the reasons they continued using these modes.

Reasons to Shift to Driving Alone

Figure 18 presents the reasons that respondents gave for shifting from alternative modes to driving alone. The most-named reason, cited by 37% of respondents, was that they changed jobs or work hours or because their work location changed. About two in ten (21%) gave a related reason, that they moved to a new residence. These have been common motivations for change in other Commuter Connections service user surveys.

Figure 18
Reasons to Switch to Driving Alone
Respondents who Drove Alone at the Time of the Survey, Who Previously Used Alternative Modes
(n = 148; multiple responses permitted)



Some respondents cited reasons related to change in their transit or rideshare arrangements; carpool/vanpool arrangement broke up (15%), did not like carpooling/vanpooling/bus/train (15%), or transit schedule/route changed so that transit was no longer a feasible option (9%). Fourteen percent said driving alone was faster, easier, or less expensive than the mode they used before and 8% said they started teleworking/working from home.

Reasons to Continue Using Alternative Modes

Figure 19 details the reasons that respondents gave for continuing to use alternative modes for commuting. The most common reason was that the mode they were using was the easier or most convenient mode; 41% of alternative mode users named this reason. One-quarter (25%) of respondents said they saved money or reduced wear and tear on a personal vehicle and 20% said they enjoyed riding the bus/train, riding with others in a carpool/vanpool, or liked walking/bicycling.

Figure 19
Reasons to Continue Using Alternative Modes
Respondents who Used Alternative Modes at the Time of the Survey
(n = 371; multiple responses permitted)

About one in ten cited saving time (12%), avoiding traffic or congestion (10%), receiving an incentive from their employer (10%), an efficient or reliable way to travel (9%), and wanting to help the environment or reduce climate change (8%). Small shares of respondents said they did not have a car or reliable vehicle (5%), that their current mode was the only option available (4%), or that their current mode gave them flexibility (3%).

Role of Commuter Connections Services in Influencing or Assisting Continued Use of Alternative Modes

Respondents who were using an alternative mode also were asked if any of the services they received from Commuter Connections had “influenced or assisted” them to continue using these modes. More than half (52%) of current alternative mode users said at least one Commuter Connections service had assisted or influenced their continued use of the modes. Figure 20 indicates the percentages who reported individual services. The figure also shows the overall percentages of respondents who reported receiving each service from Commuter Connections.

In general, about one-third to one-half of the respondents who received each service said it had influenced or assisted them. Overall, the most influential/helpful service was GRH, named by 32% of all alternative mode users and more than one-third of those who had received this service. Transit schedule/route information was cited by 16% of all alternative mode users and over half of those who had received it.

Figure 20
Services Received from Commuter Connections and Services that Influenced/Assisted Continued Use of Alternative Modes

(n = 989, Services Influenced (alternative mode users) n = 697)

Commuter Connections Satisfaction

Desired Improvements to Commuter Connections Services

Respondents were asked if they had any suggestions for ways Commuter Connections could improve its services. About 25% of all respondents provided suggestions as detailed in Table 11. Comments generally fell into three categories: GRH suggestions, Non-GRH service suggestions, and customer service suggestions. But within each of these categories, no single suggestion was named by more than 4% of all respondents. Thus, while respondents cited possible improvements, there did not appear to be significant programmatic or customer service issues that need particular attention.

Table 11
Suggested Improvements to Commuter Connections Services

(n = 989, multiple responses permitted)

Desired Improvement	Percentage*
<u>GRH Suggestions</u>	
Make GRH renewal/registration less complicated	2%
Send reminder when GRH is to be renewed	2%
Don't require GRH renewal	1%
Easier / faster GRH approval	1%
More direct/less time consuming trip home (GRH)	1%
<u>Non-GRH Service Suggestions</u>	
Ridematch suggestions (more match names, matches fit travel better)	4%
Transit schedule/route improvements	2%
Better / updated transit information	1%
Vanpool information / resources	1%
Slug line information	1%
<u>Customer Service Suggestions</u>	
More advertising / more program information	3%
Quicker response, better customer service	1%
More follow-up assistance	2%
Other *	10%

* Each other response was mentioned by fewer than 1% of respondents

Reasons for Not Re-registering for GRH

Finally, GRH respondents who were using alternative modes at the time of the survey were asked a related question. By using alternative modes, these commuters were still eligible to participate in GRH, but had not renewed their registration at the end of the most recent year. The survey asked these respondents why they had not continued their registration. Figure 21 presents common reasons for not re-registering, divided into two categories: reasons associated with personal circumstances of the registrant and reasons associated with characteristics of the GRH program.

Figure 21
Reasons GRH Users Who Used Alternative Modes Did Not Re-Register for GRH
(n = 310, multiple responses permitted)

The most common personal reason for not re-registering, mentioned by 18% of respondents, is that they had never used the program, thus didn't see a need for it. Four percent made their own arrangement for a ride home, 3% moved to a new residence, and 2% changed jobs.

Respondents also mentioned reasons related to characteristics of the program; 25% said they didn't know they had to re-register and 16% forgot to re-register. Thirteen percent said they hadn't gotten around to it. Eighteen percent said it was too much effort to use the program and 7% reported general dissatisfaction with GRH.

APPENDICES

APPENDIX A – DISPOSITION OF FINAL DIALING RESULTS

APPENDIX B – SURVEY QUESTIONNAIRE

APPENDIX C – RESPONDENT ALERT LETTER

APPENDIX D – DE-DUPLICATION PROTOCOL

APPENDIX A**DISPOSITION OF FINAL DIALING RESULTS – Telephone Survey**

LIVES	No.	%
No answer	881	13.3%
Answering machine	1,853	27.9%
Busy number	100	1.5%
Callback	17	0.3%
DEADS	No.	%
Number not in service	3,373	50.7%
Fax/Modem	50	0.8%
Other language	5	0.1%
Refused	111	1.7%
Blocked #	4	0.1%
Wrong #	123	1.8%
Company policy against surveys	1	0.0%
Minor's Cell Phone	1	0.0%
Midterm Terminate	3	0.0%
T1 Terminate - S1 = DK / REF	16	0.2%
T2 Terminate - S2 = DK / REF	4	0.1%
X2 -	13	0.2%
X3 -	38	0.6%
COMPLETED SURVEYS	No.	%
	56	0.8%
TOTAL	6,649	100.0%

Total Number of Dialings: 12,277

Average Number of Dialings Per Completed Interview: 219

APPENDIX B - SURVEY QUESTIONNAIRE

Retention Rate Survey (Internet Version) 3-2-16 - FINAL

INTRODUCTION – SHOW ONLY ON THE FIRST PAGE OF THE SURVEY

Commuter Connections is conducting this online survey of people who have participated in the Commuter Connections' carpool/vanpool ridematching or regional Guaranteed Ride Home (GRH) program, or who requested other commute information or assistance from the Commuter Connections website. Your answers will be confidential. It will take about 7 to 10 minutes.

Please complete the survey and click on the "SUBMIT" button at the end. If you need to stop before you have finished the survey, your answers will be saved and you may come back and complete the remaining questions at a later time. Thank you for your participation.

Please click on the "NEXT" button below to begin the survey.

SCREENING FOR SERVICES USED

- 1 Which of the following carpool and vanpool services have you accessed, received, or requested from Commuter Connections? You could have accessed or requested them from the Commuter Connections website or through an email, phone call, or letter. Please check all that apply.

ACCEPT MULTIPLES FOR 1-6, DO NOT ALLOW MULTIPLES WITH 90

- 1 Names of people you could contact to form a carpool or vanpool (matchlist)
- 2 Map showing home/work locations of people you could contact to form a carpool or vanpool
- 3 Carpool / vanpool rider wanted bulletin board
- 4 Other carpool / vanpool information or assistance
- 5 HOV lane information
- 6 'Pool Rewards carpool / vanpool financial incentive
- 90 Did not access, receive, or request any of these services from Commuter Connections
(PROGRAMMER: GREY OUT THIS BOX IF ANY OTHER RESPONSE IS CHECKED)

- 2 Commuter Connections also offers information on telework, transit, and bicycling around the Washington metropolitan region. Which of the following services have you accessed, received, or requested from Commuter Connections? Please check all that apply.

ACCEPT MULTIPLES FOR 1-9, DO NOT ALLOW MULTIPLES WITH 90

- 1 Transit schedule or route information, transit fare information, SmarTrip
- 2 Park & Ride lot information
- 3 Telework information, telework center information
- 4 Bicycling information, Bicycle to Work Guide, online bicycle route planning
- 5 Special events information (e.g., Bike to Work Day, Car Free Day)
- 9 Other (specify)
- 90 Did not access, receive, or request any of these services from Commuter Connections
(PROGRAMMER: GREY OUT THIS BOX IF ANY OTHER RESPONSE IS CHECKED)

- 3 Have you ever registered for Commuter Connections' Regional Guaranteed Ride Home (GRH) Program?
- 1 Yes
 - 2 No
 - 9 Not sure

IF Q3 = 1 (yes), CONTINUE TO Q4

IF (Q3 = 2, 9, OR 99) AND ((Q1 = ANY OF 1 – 6) OR (Q2 = ANY OF 1 – 9)), SKIP TO DEFUSER

IF (Q3 = 2, 9, OR 99) AND (Q1 = 90 OR 99) AND (Q2 = 90 OR 99), SKIP TO Q6

- 4 To the best of your memory, in what year did you first register for GRH? If you're not sure, please provide your best estimate.
- 1 Before 2009
 - 2 2009 - 2010
 - 3 2011 - 2012
 - 4 2013 - 2014
 - 5 2015 - 2016

- 5 Are you currently registered for Commuter Connections' GRH Program?

- 1 Yes
- 2 No
- 9 Not sure

SKIP TO DEFUSER

- 6 Do you recall requesting or receiving any other services from Commuter Connections or from the Commuter Connections website?
- 1 Yes (please specify service) _____
 - 2 No
 - 9 Not sure

DEFUSER - DEFINE USER – FOR LATER BRANCHING

Codes: 1 – GRH, 2 – GRH/Non-GRH, 3 – Non-GRH, 4 – No services, 9 – Current GRH

IF Q5 = 1, DEFUSER = 9 (Current GRH)

IF (Q3 = 2 OR 9) AND (Q1 = 90 OR 99) AND (Q2 = 90 OR 99) AND (Q6 = 2, 9, OR 99), DEFUSER = 4 (No services)

IF Q3 = 1 AND (Q1 = 90 OR 99) AND (Q2 = 90 OR 99), DEFUSER = 1 (GRH)

IF Q3 = 1 AND ((Q1 = ANY OF 1 – 6) OR (Q2 = ANY OF 1 – 9)), DEFUSER = 2 (GRH/Non-GRH)

IF (Q3 = 2 OR 9) AND ((Q1 = ANY OF 1 – 6) OR (Q2 = ANY OF 1 – 9) OR Q6 = 1), DEFUSER = 3 (Non-GRH)

BRANCHING INSTRUCTIONS

IF DEFUSER = 4 (no services requested/received), THANK AND TERMINATE – SHOW MESSAGE “That is all the questions we have. Thank you for participating in the Commuter Connections survey.”

IF DEFUSER = 1 (GRH) OR 2 (GRH/Non-GRH) OR 9 (Current GRH), SKIP TO Q9

IF DEFUSER = 3 (Non-GRH), CONTINUE WITH Q7

- 7 To the best of your memory, in what year did you first access, receive, or request services from Commuter Connections or from the Commuter Connections website? If you're not sure, please provide your best estimate.
- 1 Before 2009
 - 2 2009 - 2010
 - 3 2011 - 2012
 - 4 2013 - 2014
 - 5 2015 - 2016
- 8 Including this first request, about how many times have you accessed, received, or requested services from Commuter Connections or from the Commuter Connections website?
- 1 1 time (first request was the only time)
 - 2 2 or 3 times
 - 3 4 or more times
 - 9 Not sure

HOW THEY GET TO WORK

- 9 Next, please answer a few questions about your travel to and from work. Do you work full-time or part-time?
- 1 Part-time
 - 2 Full-time
 - 3 Other (SPECIFY) _____
 - 4 Not currently working (**THANK AND TERMINATE**)

IF Q9 = 1, AUTOCODE Q10 = 1, THEN SKIP TO Q11

- 10 Which of the following best represents your work schedule?
- 1 Part-time schedule (**AUTOCODE ONLY, DO NOT SHOW ON SCREEN**)
 - 2 Five or more days per week
 - 3 Four days per week, 35-40 hours (4/40 compressed schedule)
 - 4 Nine days every 2 weeks, 70-80 hours (9/80 compressed schedule)
 - 5 Three days per week, 32-36 hours (3/36 compressed schedule)
 - 6 Other (**SPECIFY**) _____
- 11 In a TYPICAL week, how many weekdays (Monday-Friday) are you assigned to work?
- 1 1 day per week
 - 2 2 days per week
 - 3 3 days per week
 - 4 4 days per week
 - 5 5 days per week
 - 8 0 weekdays (I work only on weekends)

IF Q11 = 8, ASK Q11a

IF Q11 = 1, 2, 3, 4, OR 5, SKIP TO Q12

11a Just to confirm, you never work Monday through Friday. You always work all your work days on weekends, is that correct?

- 1 Yes (**THANK AND TERMINATE**)
- 2 No (**ASK Q11b**)
- 8 Not sure (**THANK AND TERMINATE**)
(THANK AND TERMINATE)

11b So in a TYPICAL week, how many weekdays (Monday-Friday) are you assigned to work?

- 1 1 day per week
- 2 2 days per week
- 3 3 days per week
- 4 4 days per week
- 5 5 days per week

12 Do you telecommute or telework? For purposes of this survey, “telecommuters” are defined as “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.” Based on this definition, are you a telecommuter?

- 3 Yes
- 4 No
- 8 Not sure

IF Q12 = 2, 8, OR 9, SKIP TO Q14

13 How often do you usually telecommute?

- 1 Less than 1 time per month / only in emergencies (e.g., sick child, snowstorm)
- 2 1 to 3 times per month
- 3 1 day per week
- 4 2 days per week
- 5 3 or more days per week
- 6 Other (SPECIFY) _____

14 How often are you away from your usual work location **for an entire day** for business or work travel (e.g., meetings / visits to clients or customers)?

- 1 Never, I never travel for work
- 2 Occasionally, but less than 1 day per week
- 3 1 or more days per week

Current Travel Grid (Typical week)

- 15 Thinking about a TYPICAL week, Monday through Friday, how do you get to work? In the table below, enter the number of days you typically use each of the listed types of transportation. If you use more than one type on a single day (e.g., walk to the bus stop, then ride the bus), count only the type you use for the **longest distance part** of your trip to work.

IF Q14 = 3, ALSO SHOW: "For days that you are on business / work travel, please report the type of transportation you would use to get to work if you worked at your usual work location."

SHOW TO ALL RESPONDENTS: Indicate also how many weekdays (if any) you telecommute or have a regular day off or compressed work schedule day off.

PROGRAMMER NOTES:

CHECK SUM OF DAYS. IF TOTAL OF 2-9 IS LESS THAN 5, SHOW MESSAGE: "Please report for all days Monday – Friday, including any telecommute days and any non-work days."

IF TOTAL OF 2-9 IS GREATER THAN 5, SHOW MESSAGE: "You've reported more than five days. Please report only for Monday – Friday."

Type of Transportation	Number of Weekdays Used (0 to 5)
3 Drive alone (car, truck, van, SUV, or motorcycle), or taxi/Uber/Lyft/Split	
4 Carpool or casual carpool (slug), including ride with family member and dropped off	
5 Vanpool	
6 Bus, Metrorail, or commuter train (MARC, VRE, Amtrak)	
7 Walk or bicycle (entire trip or longest distance part of trip)	
8 Other (describe) _____	
2 Telecommute / telework all day	
19 Regular day off or compressed schedule day off	
Total Days	Sum of 1-19

DEFINE Q15 MODES USED (ALLOW MULTIPLE MODES)

AUTOCODE ONLY: don't show any messages or codes on the screen

TWDAYS = SUM OF Q15, RESPONSE 2

DADAYS = SUM OF Q15, RESPONSE 3

CPDAYS = SUM OF Q15, RESPONSE 4

VPDAYS = SUM OF Q15, RESPONSE 5

TRDAYS = SUM OF Q15, RESPONSE 6

BWDAYS = SUM OF Q15, RESPONSE 7

OTDAYS = SUM OF Q15, RESPONSE 8

IF TWDAYS > 0, Q15 MODE = 2 TELEWORK

IF DADAYS > 0, Q15 MODE = 3 DRIVE ALONE

IF CPDAYS > 0, Q15 MODE = 4 CARPOOL

IF VPDAYS > 0, Q15 MODE = 5 VANPOOL

IF TRDAYS > 0, Q15 MODE = 6 BUS or TRAIN

IF BKDAYS > 0, Q15 MODE = 7 WALK OR BICYCLE

IF OTDAYS > 0, Q15 MODE = 8 OTHER

DEFINE PRIMARY MODE (mode used most days of week)

SET Q15PRIM = Q15 MODE WITH MOST DAYS. IF TIE FOR HIGHEST NUMBER, CHOOSE PRIMARY MODE IN THIS PRIORITY ORDER: 5 (VANPOOL), 4 (CARPOOL), 6 (BUS OR TRAIN), 7 (WALK OR BICYCLE), 3 (DRIVE ALONE) ALLOW TELEWORK (2) AND OTHER (8) TO BE Q15PRIM ONLY IF ALL OTHER MODES ARE MISSING. THEN, IF TIE BETWEEN TELEWORK AND OTHER, CHOOSE OTHER

DEFINE CALTDAYS (days currently using alternative modes)

CALTDAYS = TOTAL Q15 DAYS USING MODES 4, 5, 6, 7 (= CPDAYS + VPDAYS + TRDAYS+ BWDAYS)

FOLLOW-UP QUESTIONS ON MODE BEFORE/DURING SERVICE USE

GRH users (Q20 – Q27)

- Current GRH – Q25 - Q27
- No current alt mode use – Q20 – Q24
- Current alt mode use – Q25 - Q27

Non-GRH Only Users - All are asked Q30 to define previous mode – then branch:

- No current alt mode use, no previous alt mode use – Q30 – Q35
- No current alt mode use, some previous alt mode use – Q38-Q39
- Current alt mode use, no previous alt mode use – Q40 – Q41
- Current alt mode use, some previous alt mode use – Q44

INITIAL BRANCHING INSTRUCTION – GRH OR NON-GRH ONLY

IF DEFUSER = 3 (Non-GRH), SKIP TO INSTRUCTIONS BEFORE Q30

IF DEFUSER = 1 (GRH) OR 2 (GRH/Non-GRH) OR 9 (Current GRH), CONTINUE WITH INSTRUCTIONS BEFORE Q20

GRH USERS

INSTRUCTIONS BEFORE Q20 – GRH REGISTRANTS; CHECK FOR CURRENT ALT MODE USE

Current GRH: IF DEFUSER = 9 (Current GRH), SKIP TO INSTRUCTIONS BEFORE Q25

Current alt mode use: IF CALTDAYS > 0, SKIP TO INSTRUCTIONS BEFORE Q25

No current alt mode use: IF CALTDAYS = 0, CONTINUE WITH Q20 INTRO, THEN ASK Q20 – Q24, SHOW GRH Intro and Q20 ON THE SAME PAGE

Q20 INTRO – (GRH, no alt mode)

Next, we have a few questions about your travel to work while you were registered for the Guaranteed Ride Home Program and before you registered for GRH. We understand this was some time ago, but please answer these questions to the best of your memory.

20 You said you typically drive alone or taxi to work most days now, but you would have commuted by carpool, vanpool, bus or train, or walking or bicycle at least some days while you were registered for GRH. Which types of transportation did you use while you were registered for GRH? **(ALLOW MULTIPLES FOR 1-4)**

- 1 Carpool or casual carpool (slug), including carpool w/family member and dropped off
- 2 Vanpool
- 3 Bus, Metrorail, or commuter train
- 4 Walk or bicycle (entire trip or longest part of trip to work)
- 9 Did not use any of these types of transportation while in GRH
- 99 Left blank

IF Q20 = 9 OR 99, SKIP TO Q24

**IN Q21, INSERT FORM OF Q20 MODE SHOWN, IF MORE THAN ONE Q20 MODE, NAME ALL APPLICABLE MODES.
INSERT COMMAS OR "AND" AS APPROPRIATE**

21 How many days per week did you typically [Q20MODE: carpool or casual carpool, vanpool, ride a bus or train, walk or bicycle] to work during the time you were registered for GRH?

- 1 1 or 2 days per week
- 2 3 days per week
- 3 4 or more days per week
- 99 Left blank

22 When did you switch to primarily driving alone/taxi for your trip to work?

- 1 Within the past 6 months
- 2 7 – 12 months ago (1 year)
- 3 13 – 24 months ago (2 years)
- 4 25 – 36 months ago (3 years)
- 5 More than 3 years ago
- 99 Left blank

23 For what reason or reasons did you switch to driving alone/taxi at that time?

OPEN ENDED _____

IN Q24, INSERT YEAR AS FOLLOWS:**IF Q4 = 1, INSERT, "before 2009" AS YEAR****IF Q4 = 2, INSERT, "in 2009 or 2010" AS YEAR****IF Q4 = 3, INSERT, "in 2011 or 2012" AS YEAR****IF Q4 = 4, INSERT, "in 2013 or 2014" AS YEAR****IF Q4 = 5, INSERT, "in 2015 or 2016" AS YEAR****IF Q4 = 99 (left blank), DO NOT SHOW YEAR SENTENCE.**

24 Now, think back to the time BEFORE you registered for GRH. You said you registered [].

Before you registered, how many weekdays (Monday-Friday) did you use each of the listed types of transportation to get to work? Indicate also how many weekdays (if any) you telecommuted or had a regular day off or compressed work schedule day off.

CHECK SUM OF DAYS. IF TOTAL OF 2-19 IS LESS THAN 5, SHOW MESSAGE: "Please report for all days Monday – Friday, including any telecommute days and any non-work days."

IF TOTAL OF 2-19 IS GREATER THAN 5, SHOW MESSAGE: "You've reported more than five days. Please report only for Monday – Friday."

BEFORE Registering for GRH Type of Transportation Used for Longest Distance Part of Trip	Number of Days Used (0 to 5)
3 Drive alone (car, truck, van, SUV, or motorcycle) or taxi/Uber/Lyft/Split	
4 Carpool or casual carpool (slug), including carpool w/family member and dropped off	
5 Vanpool	
6 Bus, Metrorail, or commuter train (MARC, VRE, Amtrak)	
7 Walk or bicycle (entire trip or longest distance part of trip)	
8 Other (describe) _____	
2 Telecommute / telework all day	
19 Regular day off or compressed schedule day off	
Total Days (DO NOT SHOW THIS LINE ON SCREEN)	Sum of 1-19

SKIP TO Q50

GRH, Current alt mode users

INSTRUCTIONS BEFORE Q25

IN Q25 INTRO, INSERT YEAR AS FOLLOWS:

IF Q4 = 1, INSERT, "before 2009" AS YEAR

IF Q4 = 2, INSERT, "in 2009 or 2010" AS YEAR

IF Q4 = 3, INSERT, "in 2011 or 2012" AS YEAR

IF Q4 = 4, INSERT, "in 2013 or 2014" AS YEAR

IF Q4 = 5, INSERT, "in 2015 or 2016" AS YEAR

IF Q4 = 99 (left blank), DO NOT SHOW YEAR SENTENCE.

Q25 INTRO – GRH, current alt mode

Now, think back to the time BEFORE you registered for GRH. You said you registered []. We understand that this was some time ago, but please answer to the best of your memory.

- 25 Before you registered for GRH, how many weekdays (Monday – Friday) did you use each of the listed types of transportation to get to work? Indicate also how many weekdays (if any) you telecommuted or had a regular day off or compressed work schedule day off.

CHECK SUM OF DAYS. IF TOTAL OF 2-19 IS LESS THAN 5, SHOW MESSAGE: "Please report for all days Monday – Friday, including any telecommute days and any non-work days."

IF TOTAL OF 2-19 IS GREATER THAN 5, SHOW MESSAGE: "You've reported more than five days. Please report only for Monday – Friday."

Type of Transportation BEFORE Registering for GRH	Number of Weekdays Used (0 to 5)
3 Drive alone (car, truck, van, SUV, or motorcycle) or taxi/Uber/Lyft/Split	
4 Carpool or casual carpool (slug), including carpool w/family member and dropped off	
5 Vanpool	
6 Bus, Metrorail, or commuter train (MARC, VRE, Amtrak)	
7 Walk or bicycle (entire trip or longest distance part of trip)	
8 Other (describe) _____	
2 Telecommute / telework all day	
19 Regular day off or compressed schedule day off	
Total Days (DO NOT SHOW THIS LINE ON SCREEN)	Sum of 1-19

IF DEFUSER = 9 (Current GRH), SKIP TO Q50

IF SUM OF (CPDAYS + VPDAYS + TRDAYS + BWDAYS) = 0 OR 1, SKIP TO Q50

IF SUM OF (CPDAYS + VPDAYS + TRDAYS + BWDAYS) >1, ASK Q26

IN Q26, INSERT Q15 MODE AS FOLLOWS:

IF CPDAYS > 0, INSERT, "carpool" AS Q15 MODE

IF VPDAYS > 0, INSERT, "vanpool" AS Q15 MODE

IF TRDAYS > 0, INSERT, "ride a bus or train" AS Q15 MODE

IF BWDAYS > 0, INSERT, "walk or bicycle" AS Q15 MODE

IF MORE THAN ONE Q15 MODE, NAME ALL APPLICABLE MODES. INSERT COMMAS OR "AND" AS APPROPRIATE

26 You said you currently [_____] to work. This makes you eligible for the GRH Program, but you are no longer registered. Why did you not continue your registration?

OPEN ENDED _____

27 For what reason or reasons do you continue using this type(s) of transportation for your commute?

OPEN ENDED _____

(OPEN-ENDED, DO NOT SHOW RESPONSES. CODE RESPONSES DURING POST-PROCESSING INTO THE FOLLOWING CATEGORIES)

- 1 Save money, less expensive
- 2 Save time, faster
- 3 Avoid traffic, congestion
- 4 Enjoy carpooling, vanpooling, riding a bus, riding a train, walking, biking
- 5 Help the environment, reduce pollution, global warming, climate change
- 6 More convenient to commute this way
- 7 Employer offers incentives for this mode
- 8 No longer have a car/parking available to me
- 9 Moved home or work location, work schedule changed
- 10 Employer now permits me to telework
- 11 Use HOV/express lanes
- 97 Other (SPECIFY _____)
- 99 Don't know/refused

SKIP TO Q50

NON-GRH USERS (DEFUSER = 3)

IF DEFUSER = 3, CONTINUE WITH Q30 INTRO, THEN Q30

IN Q30 INTRO – current alt mode, INSERT YEAR AS FOLLOWS:

IF Q7 = 1, INSERT, “before 2009” AS YEAR

IF Q7 = 2, INSERT, “in 2009 or 2010” AS YEAR

IF Q7 = 3, INSERT, “in 2011 or 2012” AS YEAR

IF Q7 = 4, INSERT, “in 2013 or 2014” AS YEAR

IF Q7 = 5, INSERT, “in 2015 or 2016” AS YEAR

IF Q7 = 99 (left blank), DO NOT SHOW YEAR SENTENCE.

Q30 INTRO – (Non-GRH)

Next, we have a few questions about your travel to work before you sought requested or received commute information from Commuter Connections or the Commuter Connections website. You said you first got information [YEAR: before 2009]. We understand this was some time ago, but please answer these questions to the best of your memory.

- 30 BEFORE you first got commute information from Commuter Connections, how many weekdays (Monday-Friday) did you use each of the listed types of transportation to get to work? Indicate also how many weekdays (if any) you telecommuted or had a regular day off or compressed work schedule day off.

CHECK SUM OF DAYS. IF TOTAL OF 2-19 IS LESS THAN 5, SHOW MESSAGE: “Please report for all days Monday – Friday, including any telecommute days and any non-work days.”

IF TOTAL OF 2-19 IS GREATER THAN 5, SHOW MESSAGE: “You’ve reported more than five days. Please report only for Monday – Friday.”

BEFORE Requesting/Receiving Commute Information Type of Transportation Used for Longest Distance Part of Trip	Number of Weekdays Used (0 to 5)
3 Drive alone (car, truck, van, SUV, or motorcycle) or taxi/Uber/Lyft/Split	
4 Carpool or casual carpool (slug), including carpool w/family member and dropped off	
5 Vanpool	
6 Bus, Metrorail, or commuter train (MARC, VRE, Amtrak)	
7 Walk or bicycle (entire trip or longest distance part of trip)	
8 Other (describe)_____	
2 Telecommute / telework all day	
19 Regular day off or compressed schedule day off	
Total Days (DO NOT SHOW THIS LINE ON SCREEN)	Sum of 1-19

DEFINE Q30 MODES USED (ALLOW MULTIPLE MODES)**AUTOCODE ONLY: don't show any messages or codes on the screen**

PTWDAYS = SUM OF Q30, RESPONSE 2
 PDADAYS = SUM OF Q30, RESPONSE 3
 PCPDAYS = SUM OF Q30, RESPONSE 4
 PVPDAYS = SUM OF Q30, RESPONSE 5
 PTRDAYS = SUM OF Q30, RESPONSE 6
 PBWDAYS = SUM OF Q30, RESPONSE 7
 POTDAYS = SUM OF Q30, RESPONSE 8

IF PTWDAYS > 0, Q30 MODE = 2 TELEWORK
 IF PDADAYS > 0, Q30 MODE = 3 DRIVE ALONE
 IF PCPDAYS > 0, Q30 MODE = 4 CARPOOL
 IF PVPDAYS > 0, Q30 MODE = 5 VANPOOL
 IF PTRDAYS > 0, Q30 MODE = 6 BUS or TRAIN
 IF PBWDAYS > 0, Q30 MODE = 7 WALK OR BICYCLE
 IF POTDAYS > 0, Q30 MODE = 8 OTHER

DEFINE PALTDAYS (days previously using alternative modes)**PALTDAYS = PCPDAYS + PVPDAYS + PTRDAYS + PBWDAYS)****NON-GRH USERS; CHECK FOR CURRENT AND PREVIOUS ALT MODE USE****INSTRUCTIONS BEFORE Q31**

- Current alt mode use, some previous alt mode use: **IF CALTDAYS > 0 AND PALTDAYS > 0), SKIP TO INSTRUCTIONS BEFORE Q44**
- Current alt mode use, no previous alt mode use: **IF (CALTDAYS > 0 AND PALTDAYS = 0), SKIP TO INSTRUCTIONS BEFORE Q40**
- No current alt mode use, Some previous alt mode use: **IF (CALTDAYS = 0 AND PALTDAYS > 0), SKIP TO INSTRUCTIONS BEFORE Q38**
- No current alt mode use, no previous alt mode use: **IF (CALTDAYS = 0 AND PALTDAYS) = 0, CONTINUE WITH Q31**

Non-GRH, NO current alt mode, NO previous alt mode

- 31 You said you typically drive alone or taxi to work most days now. In the time since you first got commute information from Commuter Connections or the Commuter Connections website, did you use any of the following types of transportation to get to work, even if only on a trial or temporary basis? **(ALLOW MULTIPLES FOR 1-4)**
- 1 Carpool or casual carpool (slug), including carpool w/family member and dropped off
 - 2 Vanpool
 - 3 Bus, Metrorail, or commuter train
 - 4 Walk or bicycle (entire trip or longest part of trip to work)
 - 9 No, did not use or try any of these types of transportation
 - 99 Left blank

IF Q31 = 9 OR 99, SKIP TO Q50**IF Q31 = ANY OF 1 – 4, ASK Q32 – Q35**

33 About how long did you use this type of transportation for your commute? If you used or tried more than one of these types of transportation, report the time for the type you used the longest.

- 1 1 month or less
- 2 2 – 6 months
- 3 7 – 12 months (1 year)
- 4 13 – 24 months (2 years)
- 5 25 – 36 months (3 years)
- 6 More than 3 years
- 99 Left blank

35 For what reason or reasons did you switch back to driving alone/taxi?

OPEN ENDED _____

SKIP TO Q50

Non-GRH, NO current alt mode, SOME previous alt mode

INSTRUCTIONS BEFORE Q38

IN Q38, INSERT Q30 MODE AS FOLLOWS:

IF CPDAYS > 0, INSERT, “carpooled” AS Q30 MODE

IF VPDAYS > 0, INSERT, “vanpooled” AS Q30 MODE

IF TRDAYS > 0, INSERT, “rode a bus or train” AS Q30 MODE

IF BWDAYS > 0, INSERT, “walked or bicycled” AS Q30 MODE

IF MORE THAN ONE Q30 MODE, NAME ALL APPLICABLE MODES. INSERT COMMAS OR “AND” AS APPROPRIATE

38 You said you typically drive alone or taxi to work most days now, but you [_____] before you first got commute information from Commuter Connections or the Commuter Connections website. When did you switch to primarily driving alone/taxi for your trip to work?

- 1 Within the past 6 months
- 2 7 – 12 months ago (1 year)
- 3 13 – 24 months ago (2 years)
- 4 25 – 36 months ago (3 years)
- 5 More than 3 years ago
- 99 Left blank

39 For what reason or reasons did you switch to driving alone/taxi at that time?

OPEN ENDED _____

SKIP TO Q50

Non-GRH, SOME current alt mode, NO previous alt mode

INSTRUCTIONS BEFORE Q40

IN Q40, INSERT Q15 ALTMODE AS FOLLOWS:

IF CPDAYS > 0, INSERT, "carpool" AS Q15 ALTMODE

IF VPDAYS > 0, INSERT, "vanpool" AS Q15 ALTMODE

IF TRDAYS > 0, INSERT, "ride a bus or train" AS Q15 ALTMODE

IF BWDAYS > 0, INSERT, "walk or bicycle" AS Q15 ALTMODE

IF MORE THAN ONE Q15 MODE, NAME ALL APPLICABLE MODES. INSERT COMMAS OR "AND" AS APPROPRIATE

40 You said you typically drove alone or taxied to work before you first got commute information from Commuter Connections but now you [] at least some of your work days. How long have you been using [this type, these types] of transportation for your commute? **[PROGRAMMER NOTE: IF MORE THAN ONE Q15 ALTMODE, ADD: "Please report the time for the type you've used the longest."]**

- 1 1 month or less
- 2 2 – 6 months
- 3 7 – 12 months (1 year)
- 4 13 – 24 months (2 years)
- 5 25 – 36 months (3 years)
- 6 More than 3 years
- 99 Left blank

41 What are the primary reasons that you use this type or these types of transportation for your commute?

OPEN ENDED _____

(OPEN-ENDED, DO NOT SHOW RESPONSES. CODE RESPONSES DURING POST-PROCESSING INTO THE FOLLOWING CATEGORIES)

- 1 Save money, less expensive
- 2 Save time, faster
- 3 Avoid traffic, congestion
- 4 Enjoy carpooling, vanpooling, riding a bus, riding a train, walking, biking
- 5 Help the environment, reduce pollution, global warming, climate change
- 6 More convenient to commute this way
- 7 Employer offers incentives for this mode
- 8 No longer have a car/parking available to me
- 9 Moved home or work location, work schedule changed
- 10 Employer now permits me to telework
- 11 Use HOV/express lanes
- 97 Other (SPECIFY _____)
- 99 Don't know/refused

SKIP TO Q50

Non-GRH, SOME current alt mode, SOME previous alt mode

- 44 You said you typically [Q15 MODE; carpool or casual carpool, vanpool, ride a bus or train, or walk or bicycle] to work at least some days now for your commute. What are the primary reasons that you use this or these types of transportation for your commute?

OPEN ENDED _____

(OPEN-ENDED, DO NOT SHOW RESPONSES. CODE RESPONSES DURING POST-PROCESSING INTO THE FOLLOWING CATEGORIES)

- 1 Save money, less expensive
- 2 Save time, faster
- 3 Avoid traffic, congestion
- 4 Enjoy carpooling, vanpooling, riding a bus, riding a train, walking, biking
- 5 Help the environment, reduce pollution, global warming, climate change
- 6 More convenient to commute this way
- 7 Employer offers incentives for this mode
- 8 No longer have a car/parking available to me
- 9 Moved home or work location, work schedule changed
- 10 Employer now permits me to telework
- 11 Use HOV/express lanes
- 97 Other (SPECIFY _____)
- 99 Don't know/refused

50 COMMUTER CONNECTIONS SERVICES ACCESSED – AUTOCODE ONLY – ACCEPT MULTIPLE RESPONSES**IF Q1 = 1, AUTOCODE Q50 = 1****IF Q1 = 2, AUTOCODE Q50 = 2****IF Q1 = 3, AUTOCODE Q50 = 3****IF Q1 = 4, AUTOCODE Q50 = 4****IF Q1 = 5, AUTOCODE Q50 = 5****IF Q1 = 6, AUTOCODE Q50 = 6****IF Q2 = 1, AUTOCODE Q50 = 7****IF Q2 = 2, AUTOCODE Q50 = 8****IF Q2 = 3, AUTOCODE Q50 = 9****IF Q2 = 4, AUTOCODE Q50 = 10****IF Q2 = 5, AUTOCODE Q50 = 11****IF Q3 = 1, AUTOCODE Q50 = 12****IF (Q1 = 90 OR 99) AND (Q2 = 90 OR 99) AND (Q3 = 2 OR 9), AUTOCODE Q50 = 90**

- 1 Names of people you could contact to form a carpool or vanpool (matchlist)
- 2 Map showing home/work locations of people you could contact to form a carpool or vanpool
- 3 Carpool / Vanpool rider wanted bulletin board
- 4 Other carpool / vanpool information or assistance
- 5 HOV lane information
- 6 'Pool Rewards carpool financial incentive
- 7 Transit schedule or route information, transit fare information, SmarTrip
- 8 Park & Ride lot information
- 9 Telework information, telework center information
- 10 Bicycling information, Bicycle to Work Guide, online bicycle route planning
- 11 Special events information (e.g., Bike to Work Day, Car Free Day)
- 12 Guaranteed Ride Home Program
- 90 Did not report receiving any of these CC services

INSTRUCTIONS BEFORE Q51**IF CALTDAYS = 0, SKIP TO Q52****IF Q50 = ONLY 90, SKIP TO Q52****IF CALTDAYS > 0 AND Q50 = ANY OF 1-12, CONTINUE WITH Q51**

- 51 You mentioned earlier that you accessed, requested, and/or received the commute information and assistance services shown below from Commuter Connections or from the Commuter Connections website. Did any of these services influence you or assist you to use carpool, vanpool, bus or train, or walk or bicycle for your trip to work?

SHOW ALL RESPONSES 1-12 CODED IN Q50; ALSO SHOW RESPONSE 91 AND 98

- 1 Names of people you could contact to form a carpool or vanpool (matchlist)
 - 2 Map showing home/work locations of people you could contact to form a carpool or vanpool
 - 3 Carpool / Vanpool rider wanted bulletin board
 - 4 Other carpool / vanpool information or assistance
 - 5 HOV lane information
 - 6 'Pool Rewards carpool / vanpool financial incentive
 - 7 Transit schedule or route information, transit fare information, SmarTrip
 - 8 Park & Ride lot information
 - 9 Telework information, telework center information
 - 10 Bicycling information, Bicycle to Work Guide, online bicycle route planning
 - 11 Special events information (e.g., Bike to Work Day, Car Free Day)
 - 12 Guaranteed Ride Home Program
- 91 No, services did not influence or assist me
98 Not sure

COMMUTER CONNECTIONS IMPROVEMENTS

- 52 Do you have any suggestions for ways Commuter Connections could improve its services for you? If so, please describe them here.

OPEN ENDED _____

(DO NOT SHOW THESE RESPONSE ON SCREEN) CODE OPEN-ENDED RESPONSES INTO THE FOLLOWING CATEGORIES IN POST PROCESSING – ACCEPT MULTIPLES

- 88 no improvement needed
- 1 quicker response
- 2 more helpful staff
- 3 more follow-up assistance
- 4 more match names
- 5 matches fit travel better
- 6 matches are more interested in carpool/vanpool
- 7 better transit information
- 8 more advertising
- 9 more current information
- 10 use Internet
- 11 transit improvements
- 12 VP resources & assistance
- 13 GRH suggestion
- 14 separate driver & rider lists

DEMOGRAPHICS

The last few questions are for classification purposes only.

56 About how many miles it is from your home to work one way?

_____ miles one way

59 Which of the following groups includes your age?

- 1 under 18
- 2 18 - 24
- 3 25 - 34
- 4 35 - 44
- 5 45 - 54
- 6 55 - 64
- 7 65+
- 9 Prefer not to answer

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

- 1 Yes
- 2 No
- 9 Prefer not to answer

61 Which of the following best describes your ethnic background?

- 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 Prefer not to answer

62 Finally, please indicate the category that best represents your household's total annual income.

- 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 - \$179,999
- 11 \$180,000 or more
- 19 Prefer not to answer

63 Are you male or female?

- 1 Male
- 2 Female
- 9 Prefer not to answer

Thank you very much for your time and cooperation!

PAGE FOLLOWING SUBMIT BUTTON

Thank you for submitting your responses.

If you would like more information on commuting options, click this Commuter Connections logo. It will direct you to the Commuter Connections website.

www.commuterconnections.org

APPENDIX C
LETTER AND DEFINITION OF TERMS



Dear Sir/Madam:

Commuter Connections is conducting a brief survey of people who have participated in Commuter Connection's carpool/vanpool ridematching service, or regional Guaranteed Ride Home (GRH) program, or who requested other commute information or assistance from the Commuter Connections website. The Metropolitan Washington Council of Governments (COG) will be overseeing this survey on behalf of Commuter Connections, and I'm writing to request your participation.

Shown below is the Internet link that will take you directly to the survey. The survey will take just a few minutes to complete and will ask about your past experience with Commuter Connections' services.

<http://proj.cicresearch.com/RR16.asp?id=999999>

Your input is very important to us even if you no longer use the website or participate in GRH. If you have recently completed a feedback survey after using a Commuter Connections' service, please note that this is a different survey.

The information you provide will be kept completely confidential, and will be used only to help improve Commuter Connections' services. Thank you in advance for your help. If you have any questions about this study, please contact me at (202) 962-3200.

Sincerely,

A handwritten signature in black ink that reads "Nicholas W. Ramfos". The signature is written in a cursive style with a large initial "N".

Nicholas W. Ramfos
Director, Commuter Connections

**Instructions & Definitions of Terms for
2016 Retention Rate Survey - #823****Mode Questions/Grid:**

Day off/compressed work schedule. This is a non-standard or 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, hospital employees, etc.

flex-hours (core hours with flexible start & stop times)

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. Either formal or informal.

Drive Alone. You drive alone if you travel from your home to work by driving your car, truck, without a passenger.

Can include driving alone in a car, truck, van, SUV or motorcycle; as well as taxi/Uber/Lyft/Split

Carpool. You carpool if you arrive at your worksite by automobile, truck or van with 2 to 6 occupants. The carpool has a regular arrangement between the occupants. May also include occupants that are being dropped off at other worksites or companies. And may include family members.

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 rides 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.

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.

Ride a bus. You are a bus commuter if you ride a local, public or commuter bus (Metrobus, ART-Arlington Transit, The Bus, Ride-On, Fairfax Connector, Fairfax CUE, Loudon County Commuter Bus Service, PRTC OmniRide, OmniLink, DASH or any other public bus).

Metrorail. The Washington, DC, northern Virginia and Maryland subway, also known as Metro, that is operated by the Washington Metropolitan Area Transit Authority (WMATA). It's mostly underground, but does also run above ground in some areas. The lines are known by color, Red, Blue, Orange, Green and Yellow Lines.

MARC (MD Commuter Rail). MARC Train Service is a commuter rail system whose service areas include Harford County, Maryland; Baltimore City; Washington D.C.; Brunswick, Maryland; Frederick, Maryland and Martinsburg, West Virginia. MARC Train Service operates Monday through Friday only.

VRE (Virginia Railway Express). The VRE provides commuter rail service from the Northern Virginia suburbs to Alexandria, Crystal City and downtown Washington, D.C., along the I-66 and I-95 corridors. Services began in 1992.

Amtrak/ other train. Just like the Amtrak train here.

Bicycle. Includes rental bike services such as Capital Bikeshare and CABI. Non-motorized.

Taxi. Should include dropped off by taxi or other "livery" service, if the passenger is the only passenger. Classify as drive alone.

Other Terms Used:

Carshare, Zip car, Car2Go, Hertz on Demand. Programs for very short term car rental. Classify as drive alone.

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.

Flexible work schedule/"Flex-time". Employees select their own starting and finishing times within a set daily pe-

riod of time, e.g., between 7am and 7pm, to make up the hours they need to work daily. Flex-time is generally not available to staff who are required to work shifts.

HOT lane. "high occupancy tolls" where single occupancy vehicles can pay to use the HOV lanes.

HOV lane. "high occupancy vehicle" lane/ carpool lane/ diamond lane/ express lane.

SmarTrip and SmartBenefits are a tax-free commute benefit that companies can offer to employees in the Washington metropolitan area. [SmarTrip](#) is a permanent, rechargeable fare card and is embedded with a special computer chip that keeps track of the value of the card. Instead of receiving transit benefits as paper Metrochek cards, the benefit is loaded to the SmarTrip account. [SmartBenefits](#) replace the old Metrochek program and are claimed electronically each month.

Teleworking. Also known as telecommuting, means using information technology and telecommunications to replace work-related travel. Simply put, it means working at home or closer to home. With teleworking, employees work at home or perhaps at a local _____ one or more days per week.

Telework Centers. Previously federally funded facilities located around the Washington area that allow government and non-government employees to work closer to home some or all of the time.

Purpose of survey:

To investigate whether users of COG's Commuter Connection database (GRH or other services) are still using alternative modes as time passes.

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 Commuter Connections' participants prior to March 15, 2013 (GRH) or prior to June 30, 2014 (other services).

You work for:

CIC Research, Inc.
San Diego, CA
(800) 892-2250 or (858) 637-4000
Supervisors: Dave Harper, Susan Landfield, and Gylten Loki-Bega

APPENDIX D – DE-DUPLICATION PROTOCOL

Retention Rate Database Cleaning

Final: April 14, 2016

Initial Review of Database Tables / Objects

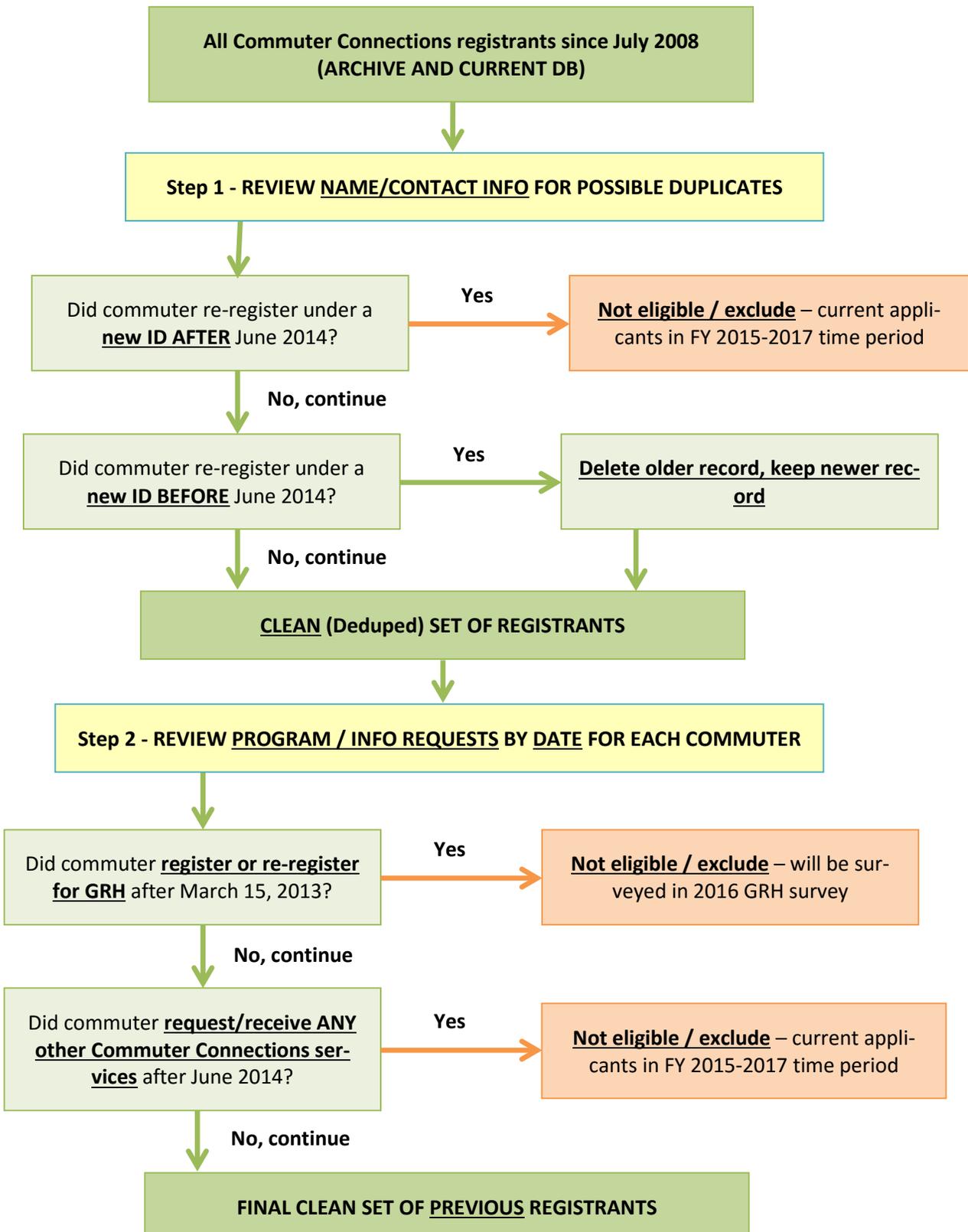
The consulting team obtained a list of all tables/objects in the Commuter Connections databases, both current (active) and archived. After reviewing all tables/objects, the consultants requested data for 13 of the tables that appeared to include information on service use, service dates, and commuter contact information that would be useful to classifying and selecting respondents for the survey.

TBLGRH_COMMUTERSUMMARY
ARCHIVE_COMMUTERS
ARCHIVE_REQUEST_INFO
TBLCCRS_MATCHREQ
TBLCOMMUTER
TBLCOMMUTERADDR
TBLCOMMUTEREMAIL
TBLCOMMUTERPHONE
TBLLINK_COMMUTERCCRS
TBLLINK_PRGMCOMMUTER
TBLLINK_DAILY_PASSENGER_INFO
TBLPROGRAMS
TBLREQUEST_INFO

Deduplication of Records and Selection of Applicable Records

The consultants next received from Commuter Connections both current and archived databases for commuters who participated in a Commuter Connections program between July 1, 2008 and February 29, 2016. The survey was to include only applicants who completed their GRH enrollment prior to March 16, 2013 or who had participated in a Commuter Connections service prior to July 1, 2014, thus the database records had to be reviewed to exclude commuter who had received services after these dates. Additionally, an initial review of the databases indicated duplication of records, thus the consultants undertook a de-duplication effort to create a database with only one record for each commuter. These steps are detailed in Figure D1.

Figure D1 – Database Cleaning Steps Flowchart



Step #1

The consultants received commuter database files in .csv format and summarized the information found in each of the archive and current Commuter Connections databases. Consultants' review of each file identified duplicate records in each table, defined by having the same commuter ID, date created, last update date, request date, address, phone number, email. As first step, these duplicate records were flagged and ultimately removed from each file to obtain clean files with a single (primary) record for each commuter in the table. Counts of duplicate records by file area presented in Table D1.

Table D1 - COG Retention Survey 2016 Data Files Primary and Duplicate Record Counts

Database File (Table) Name	Primary Records	Duplicate Records	Total Original Records
Archive_Commuters	15,283	20,705	35,988
Archive_Request_Info	1,100	40	1,140
tblCommuter	33,607	66,418	100,025
tblCommuterAddr	69,575	58,740	128,315
tblCommuteEmail	41,236	41,560	82,796
tblCommuterPhone	92,498	107,837	200,335
tblGRH_CommuterSummary	37,032	22,425	59,457
tblLink_CommuterCCRS	68,812	56,031	124,843
tblLink_PrgmCommuter	40,078	91,223	131,301
tblLog_Daily_Passenger_info	179	18,997	19,176
tbl_Request_info	4,443	616	5,059

Note: tbl_Programs also was reviewed. This included program names only.

After each individual database table was cleaned and de-duped, the tables were merged to create a single file. The combined file then was again de-duped to include a single record for each commuter, with the most recent information on service, dates, and contact information.

Step #2

The merged and clean database was then examined again to identify and exclude recent applicants as shown in Step 2 of Figure __ and to define GRH and non-GRH status of applicants. The following logical steps were applied to all records in the merged database:

- 1) If Date_Last_Modified is later than June 30, 2014, delete the record. This over-rote all other cases.
- 2) Create a new variable called GRH_Expired. This variable was calculated by adding one year to GRH_Eligible.
- 3) If there is no date in the GRH_Expired field **AND** the Date_Last_Modified is between July 1, 2008 and June 30, 2014, tag record as Non-GRH.
- 4) If GRH_Expired is later than March 15, 2013, delete. These records will be surveyed in the 2016 GRH Survey.
- 5) If GRH_Expired **OR** Date_Last_Modified is later than June 30, 2008, keep the record. As a result of the **OR** operation, some GRH records will have a Date_Last_Modified before June 30, 2008, i.e., 2007.
- 6) Remove any Commuter IDs that completed an interview in the 2014 Placement Rate Survey.

When all de-duplication, cleaning, and selection steps were completed, the resulting sample included the following distribution by year, program (GRH or non-GRH) and contact information available:

		COG Retention Rate Survey 2016 - Final Sample Distribution								
		GRH			Non-GRH			Total		
		Contact Status			Contact Status			Contact Status		
		Any Email	Phone, no email	Mail Only	Any Email	Phone, no email	Mail Only	Any Email	Phone, no email	Mail Only
Year Last Updated	2007	843	58	-	-	-	-	843	58	-
	2008	818	119	-	118	14	8	936	133	8
	2009	4,313	892	1	3,110	3,167	71	7,423	4,059	72
	2010	1,233	301	8	1,507	915	74	2,740	1,216	82
	2011	1,390	287	33	2,476	594	297	3,866	881	330
	2012	1,106	279	44	1,600	423	182	2,706	702	226
	2013	1,263	223	22	1,124	506	126	2,388	729	148
	2014	57	29	2	415	105	23	472	134	25
	Total	11,023	2,188	110	10,350	5,724	781	21,374	7,912	891