NATIONAL CAPITAL REGION TRANSPORTATION PLANNING BOARD COMMUTER CONNECTIONS PROGRAM

2008
VANPOOL DRIVER SURVEY

Prepared for:

Metropolitan Washington Council of Governments
777 North Capitol Street, NE, Suite 300
Washington, DC 20002-4239

Prepared by:

LDA Consulting
Washington, DC

in association with:
CIC Research, Inc.
San Diego, CA

NOVEMBER 18, 2008

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ABSTRACT

TITLE: National Capital Region Transportation Planning Board (TPB) Commuter Connections 2008 Vanpool Driver Survey Report

DATE: November 18, 2008

AUTHORS: Nicholas Ramfos, Director, Commuter Connections
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AGENCY: The National Capital Region Transportation Planning Board (TPB) is the federally designated Metropolitan Planning Organization (MPO) for the region, and plays an important role as the regional forum for transportation planning. The TPB prepares plans and programs that the federal government must approve in order for federal-aid transportation funds flow to the Washington region. The TPB became associated with the Metropolitan Washington Council of Governments (COG) in 1966. COG was established in 1957 by local jurisdictions to address regional concerns including growth, air quality, public health, transportation, and housing. Although the TPB is an independent body, its staff is provided by COG's Department of Transportation Planning.

ABSTRACT: This document provides results of an analysis of vanpool driver practices in the Washington DC metropolitan region. The TPB has undertaken the study described in this report to evaluate vanpooling for planning and TDM program implementation purposes in the Washington DC metropolitan region. The 2008 study represents the fourth vanpool study for the Washington region. Similar studies have been previously conducted in 1982, 1989 and 2002. This report details the survey and sampling procedures and provides highlights of the survey results. The survey was only administered to registered vanpools and results do not necessarily represent all vanpools that operate in the region. Data for this analysis was collected from vanpool drivers between January and March 2008 through mail, fax-back and telephone follow-up surveys.

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TABLE OF CONTENTS

SECTION 1 INTRODUCTION

The Metropolitan Washington Council of Governments (COG) is the regional organization of the Washington area's major local governments and their governing officials, plus area members of the Maryland and Virginia legislatures and the U.S. Senate and House of Representatives. The National Capital Region Transportation Planning Board (TPB), the federally-designated Metropolitan Planning Organization (MPO) for Washington, DC and the surrounding areas of Maryland and Virginia, directs the continuing comprehensive transportation planning process. The TPB includes representatives from the sixteen local jurisdictions that are members of COG, plus the state legislatures, the two state transportation agencies, the District of Columbia Department of Public Works, the Metropolitan Washington Airports Authority, the Washington Metropolitan Area Transit Authority, and five Federal agencies. Staff of COG serves as the staff of the TPB.

In this role, COG/TPB projects anticipated regional travel patterns through its regional transportation planning models, which are developed using data collected from periodic travel surveys, mechanized vehicle count systems, and observation tools such as cordon counts. One modal element that is difficult to project is vanpooling, due to the generally low prevalence of this mode in the modal split and the difficulty of estimating vehicle occupancy.

COG also serves as a primary provider of regional transportation demand management (TDM) information and services to commuters through its Commuter Connections program. Commuter Connections is a network of transportation organizations dedicated to assisting commuters to find commute options to and from work, other than driving alone. In an effort to improve the effectiveness and efficiency of these services, COG performs evaluations of these services. One of these services is assistance to vanpools, particularly in the formation of vanpool groups. A vanpool is a group of seven to 15 commuters traveling to and from work together in a passenger van. The vanpool occupants might include passengers who are dropped off at other worksites or companies.

To provide information that can serve both of these planning and evaluation functions, COG has undertaken the vanpool driver study described in this report to examine vanpooling practices in the Washington DC region. The 2008 study represents the fourth vanpool study for the Washington region. COG previously conducted similar vanpool studies in 1982, 1989 and 2002.

The 2008 survey was administered through a mail-out/mail- or fax-back survey sent to vanpool operators and drivers who had registered in a vanpool database maintained by COG or by one of four other vanpool programs which support vanpools traveling to the Washington metropolitan region. Drivers were asked to mail or fax back the completed questionnaire or complete the survey online. Follow-up telephone calls were made to operators/drivers who did not respond through one of these methods. This report details the survey and sampling procedures and provides highlights of the survey results. We note that because the survey is administered only to registered vanpools, it does not necessarily represent all vanpools that operate in the region. Vanpools that do not register could have different characteristics and experiences than do registered vanpools.

This report is divided into four sections. Following this introductory section is a description of the survey and sampling methodology (Section 2). A presentation of survey results is contained in Section 3. Section 4 presents selected comparisons between the 1989, 2002, and 2008 surveys.

Several appendices also are included. These include: observations on the survey methodology, details on the distribution of sample record results, and copies of the mail-out and telephone survey instruments and associated cover letters.

SECTION 2 SURVEY AND SAMPLING METHODOLOGY

OVERVIEW

The survey was administered through a mailed packet that contained a letter of introduction and a copy of a mail-back/fax-back questionnaire. The surveyed population consisted of vanpool drivers who travel to destinations in the Washington region and who had registered their vanpool with COG or with one of four other organizations that provide support to vanpools operating in the Washington metropolitan region. Using a similar survey methodology to the 1989 and 2002 studies, vanpool drivers were contacted by mail and if not reached, were contacted by follow-up telephone calls using Computer Assisted Telephone Interviewing (CATI). Similar to the 2002 study, follow-up calls were made to operators/drivers who did not respond to the mailed survey packet to attempt to administer the entire questionnaire by telephone. This proved to be a successful strategy, obtaining an overall response rate of 60%.

COC staff provided a total of 1,030 vanpool driver and operator records for the study to CIC Research. CIC examined the database and eliminated duplicate records, with a resulting final sample of 861 records. CIC Research assembled questionnaire packages that were sent to all operators/drivers for whom a mailing address was available. Some records only had a telephone number. CIC Research contacted these operators/drivers during the follow-up telephone survey phase.

One of the databases provided by COG, the database for the George Washington Regional Commission (GWRC) vanpool program, included numerous vanpool operators who oversaw multiple vans. In these cases, only the operators' contact information was available, so CIC mailed questionnaire packages to the operators to distribute to their respective drivers. Follow-up telephone surveys were conducted with vanpool drivers who had not returned their completed surveys via mail/fax/ Internet, and follow-up reminder calls were made to GWRC operators.

QUESTIONNAIRE DESIGN AND PRETEST

The questionnaire used for the 2008 survey was based on the 2002 survey instruments. Minor adjustments were made to reflect changes in vanpooling in the Washington region since the last vanpool survey was conducted. COG, LDA Consulting, and CIC Research jointly prepared the questionnaire, which was reviewed by the Commuter Connections TDM Evaluation Group. A copy of the final mail-out and telephone questionnaires, as well as the introductory letters, and telephone script can be found in Appendices C, D and E.

For the current study, CIC requested assistance from GWRC with the vanpool operators. GWRC sent out an alert letter to operators asking their cooperation with the upcoming vanpool survey. This additional step in 2008 facilitated CIC's recruitment calls to operators requesting that they distribute surveys to vanpool drivers. A copy of the alert letter can be found in Appendix E.

SAMPLE SELECTION PROCESS

COC provided five databases from which to obtain the sample. Because it was expected that some vanpool drivers could be included in multiple databases, a hierarchy was developed for selection of sample points from these databases. The order of preference for selection from the sample was:

1. VPSI (records=226)
2. GWRC (records=340)
3. PRTC (records=78)
4. Crystal City Commuter Vans (records=16)
5. Commuter Connections (records=370)

If a vanpool driver was listed in multiple databases, the records were examined and only one was kept. Items for comparison included first and last name, phone number, and address. In addition, CIC inspected the list for minor differences that would result in duplicate records. Much of the inspection involved a visual scan of the records since duplicate cases could differ through only a slight difference in spelling, spacing, use of abbreviations, etc. A total of 16 sample points had no mailing address, only a telephone number or e-mail address. These sample points were removed from the list prior to mailing the survey packages, and retained for calling or e-mailing at a later time. The cleaned sample included 861 records.

SURVEY ADMINISTRATION

A total of 510 individual survey packets were mailed out to vanpool drivers in the first mailing. Survey packets containing an introductory letter, survey form and postage-paid reply envelope were sent to each of the potential vanpool drivers for whom CIC had a mailing address. Each vanpool driver record was assigned a unique number to facilitate the check-in process and to eliminate duplicate questionnaires.

All survey packets were sent via Federal Express to Eagle Direct mailing service on January 25, 2008. Eagle Direct, in turn mailed the packets out on January 29, 2008. A follow-up mailing was originally planned, but COG and the consultants decided there was a greater likelihood of a successful contact through the telephone follow-up effort. This is described under the telephone survey effort below.

The majority of GWRC and a few of PRTC's database included operators with multiple vanpools. The 62 GWRC and PRTC vanpool operators were called and asked if they would be willing to participate in the study. Thirty-three (33) of the 62 operators agreed to participate in the survey, but were reluctant to provide CIC with their driver's names, addresses, or telephone numbers.

To retain drivers' privacy, CIC prepared survey packages for the operators to send to each of the drivers in the operators' groups. A total of 335 surveys were mailed to the 33 GWRC and PRTC operators. (The remaining 16 sample points had no addresses and could therefore not be mailed survey packages. These sample points were contacted later by telephone or e-mail.) The operators were then responsible for distributing the packets to their respective drivers. Reminder calls were made or e-mails were sent to GWRC and PRTC operators during March, 2008. On March 13, 67 replacement packets were sent to four operators who had not distributed the original packets.

The cover letter inside the survey packages explained that vanpool operators or drivers had four possible options to respond to the survey. They could: 1) return the completed questionnaire in the enclosed post-age-paid envelope, 2) fax the completed questionnaire to a toll-free number, 3) use the enclosed PIN number to log onto the web and enter their responses via the Internet, or 4) complete the survey over the phone by calling a toll-free telephone number.

A three-week period was designated for vanpool drivers to respond. Following this period, drivers whose records contained a telephone number and who had not responded to the mail-out survey or who had not received a mail-out packet because the database did not include a mailing address, were called and asked to complete a survey via the telephone. Approximately 365 drivers were initially eligible for inclusion in the follow-up telephone survey. (This number does not include the surveys sent to the GWRC and PRTC operators). As completed surveys were returned via the mail, fax, or internet, these sample points were removed from the telephone survey base.

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

- an explanation of the purpose of the study
- identification of the group to be sampled
- overview of COG and its function
- verbatim reading of the questionnaire
- review of all instructions to insure interviewers were familiar with the terminology
- review of skip-patterns to familiarize interviewers with questionnaire flow
- practice session on CATI systems in full operational mode

Telephone calls were made to vanpool drivers between February 22, 2008 and March 24, 2008. The calls were conducted via CIC's CATI system using VOXCO software. After a maximum attempt of 15 calls, when the call was answered by an answering machine, a message was left asking the person to call back on CIC's 1-800 number. All interviewing was conducted with survey supervisors present. The survey supervisor was responsible for overseeing the CATI server, checking quotas, editing call-back appointment times, monitoring interviews, answering questions, reviewing completed surveys, and passing respondents to an available station when they called in on the 800 line. To insure quality control, periodic random monitoring by the survey supervisor was conducted.

A total of 408 surveys were completed via telephone, postal mail, internet, or fax by April 11, 2008, the survey cutoff date. By using multiple methods of survey administration, the respondent was able to choose the most flexible and convenient way to return the questionnaire. A tally of the completed questionnaires by method of administration is as follows: 204 returned via mail (50%), 131 completed by follow-up telephone call (32%), 65 completed via the internet (16%), six returned by fax (1%), and two called the toll-free number (<1%).

Taking into account an initial sample frame of 861 (including 177 dead sample points*) the combined mail/fax-back and telephone response rate was 47%. After removing the dead sample points, the response rate is calculated on a sample size of 684 and is equal to 60%. The refusal rate for the telephone survey was 2.6%**. The final disposition of results is detailed in Appendix A.

ESTIMATION OF VANPOOL POPULATION

During past vanpool survey periods, the Washington DC area Beltway Cordon Count was used to develop an estimate of the total vanpool population for the study area. The number of completed questionnaires from vanpool drivers whose vans crossed the Beltway on the travel to work was expanded to equal the number of vans that had been observed crossing the Beltway cordon. This expansion factor was then used also to estimate the total number of vans operating in the region.

The most recent Beltway Cordon Count was conducted in 2001. It was used to calculate the vanpool population estimate for the 2002 Vanpool Driver Survey. Comparable cordon count statistics were not available in 2008, thus it was impossible to determine if the number of vanpools in the Washington metropolitan area had changed appreciably from the 2002 survey period. While results show a decrease in the number of registered vanpools in regional databases from 2002 (736) to 2008 (684), the 2006 Central Employment Core Cordon Count shows an increase of vanpools counted into the core employment area of Washington, DC and Arlington, VA from 2002 (approximately 700) to 2006 (approximately 1,000). Consequently, survey characteristics appearing in Section 3 – Survey Results, are presented without an estimation of the vanpool population.

It is also important to reiterate that the sample included only vans that had registered with COG or another vanpool support program. It is likely that some vans, perhaps many, non-registered vans also operate in the area. For this reason, the results of this survey should be assumed only to document the characteristics of registered vans; they are not necessarily representative of the entire vanpool population.

CONFIDENCE LEVEL AND RESPONSE RATE

The confidence level for the 2008 Vanpool Driver Survey can be calculated using the finite population correction factor. The factor is used for studies with a small total population or where the sample size approaches at least 10% of the population size. The estimated number of vanpool drivers registered in the region (684) is a finite population, coupled with the high proportion of respondents (60%), results in a confidence level of 95% $\pm$ 3.1%. This compares in a similar way to the 2002 Vanpool Driver Survey where the calculation results in a confidence level of 95% $\pm$ 3.0%.

The 2008 Vanpool Driver Survey experienced a high overall response rate of 60% (408 completed surveys divided by the active sample of 684). While this is a fairly high response rate, non-response bias may be evident among the 40% who did not respond to the survey. However, this response rate is consistent with the 1982, 1989, and 2002 surveys.

*Vanpool driver names that were considered "dead" included 43 who were identified as second drivers for a particular vanpool, 36 who were vanpool riders not drivers, 18 who were in a carpool, not a vanpool, and 5 whose vanpool was no longer in operation. In addition, 22 of the numbers were wrong, 22 numbers were not in service, 27 of the names given were no longer with the company and 4 numbers were a computer/fax or pager.

** 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.

The proportion of surveyed vanpools that crossed the Beltway, versus those that did not has changed over time from the 1989 study to the current study. The 1989 study reported that seven percent of the responding vanpools did not cross the Beltway. In the 2002 survey, the proportion of sampled vanpools that crossed the Beltway was 71% versus 29% that did not. In the current study, the proportion of sampled vanpools that crossed the Beltway was 55% versus 45% that did not.

SECTION 3 SURVEY RESULTS

This section presents an overview of the survey findings. As noted in Section 2, the sampled vanpools were not expanded to represent the entire vanpool population in the Washington metropolitan region. Thus, the findings shown in this section are presented for the frequencies of respondents and represent only responses for the registered vanpools in the sample frame. The raw numbers of respondents who answered each question are shown as (n=___).

The survey collected data in four primary topic areas. Results for these topics are presented below:

- Van ownership and operation
- Vanpool use and travel patterns
- Availability and use of vanpool assistance and support services
- Issues of potential concern to vanpool drivers

VAN OWNERSHIP AND OPERATION

The first section of the survey examined physical and ownership characteristics of the van and duration of the vanpool group.

Length of Time Vanpool in Operation and Length of Time Driving the Vanpool

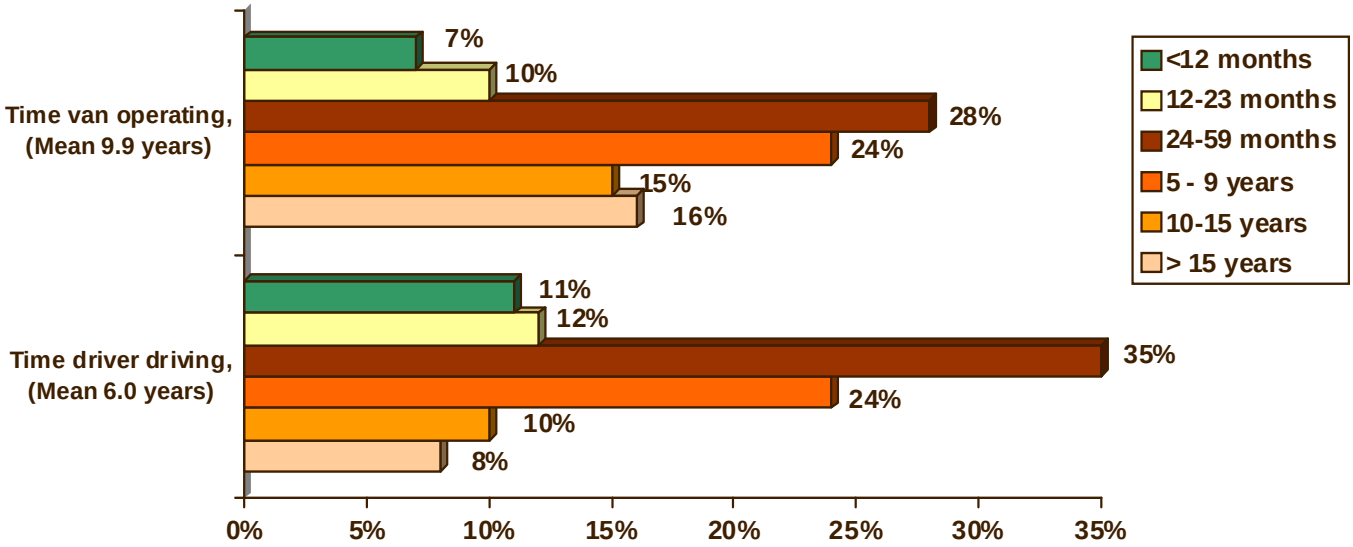
Figure 1 details the results to two questions about vanpool longevity. First, how long has the vanpool been in operation, and second, how long has the driver been driving this vanpool group?

Duration of Vanpool Operation – Vanpools in the survey had been in operation an average of 9.9 years. This was considerably longer than the average of 8.4 years measured in the 2002 vanpool survey. Likely this reflects the slowing of new vanpool start-ups in recent years. As fewer new vans enter the vanpool fleet, the average vanpool duration would rise.

About a third (31%) of the vanpools had been in operation for 10 years or longer and a quarter (24%) had operated for between five and nine years. The remaining 45% had been in operation fewer than five years.

Duration of Driving – As also shown in Figure 1, the vanpool groups had been in operation longer than the current drivers had been driving. Respondents had been driving the vans for an average of 6.0 years, about the same amount of time as was observed in 2002 (6.4 years). About a quarter (23%) had been driving for less than two years and a third (35%) had been driving at least two years but fewer than five years. The remaining respondents were divided between driving five to nine years (24%) and driving ten years or longer (18%).

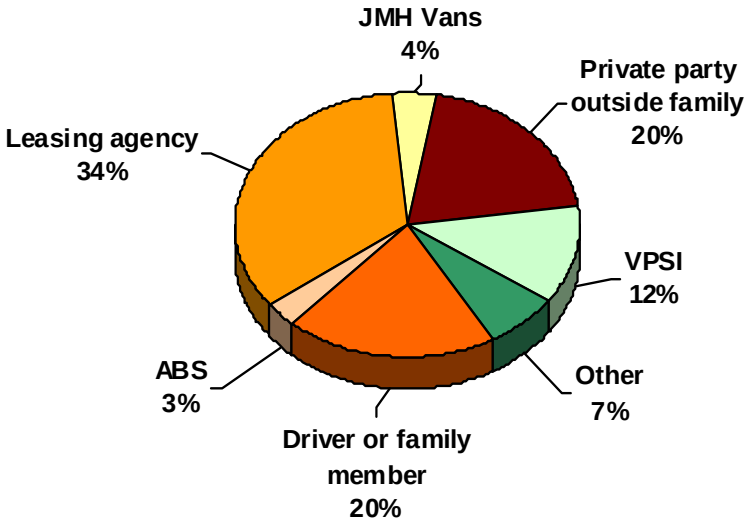
Figure 1
Length of Time Vanpool in Operation and
Length of Time Driver has been Driving
(n=408)



Van Ownership

Respondents were asked who owned the van they operated. As indicated by Figure 2, the highest proportion of vans were owned by a leasing agency (34%), followed by the respondents themselves or a family member (20%), or a private party outside the family (20%) .

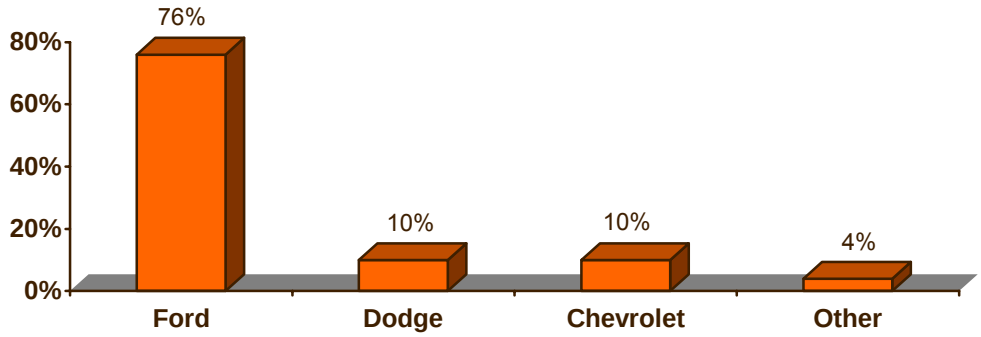
Figure 2
Distribution of Van Ownership
(n = 401)



Make, Model Year

Van Make – Figure 3 presents the distribution of vans by maker/manufacturer. Three-quarters (76%) of respondents said they drive a Ford van. About one in ten drives a Dodge and one in ten drives a Chevrolet. The remaining 4% of respondents drive another make of van.

Figure 3
Van Make/Model
(n = 408)



Van Model Year – The model year of the vans vary from 1991 models to 2008 models. 75% of the vans are model year 2002 or later. Results for this question are presented in Table 1.

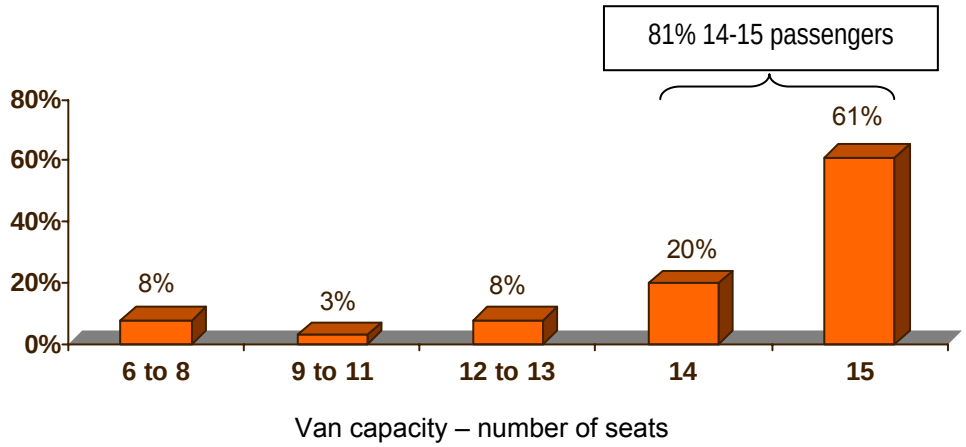
Table 1
Make and Model Year of Van
(n = 381)

Van Model Year	Percentage	Cumulative Percentage
2008	6%	6%
2007	11%	17%
2006	24%	41%
2005	12%	53%
2004	12%	65%
2003	4%	69%
2002	6%	75%
2001	4%	79%
2000	4%	83%
1999 or earlier	8%	91%
Don't know	9%	100%

Van Capacity

Respondents were asked how many passengers could be carried in the van, if every seat was filled. Van capacity ranged from a low of six people to a high of 15 people, with an average capacity, including the driver, of 13.8 people. Results for this question are shown in Figure 4.

Figure 4
Van Seating Capacity
(n = 399)



Six in ten (61%) vans were traditional commuter vans, with capacity for 15 passengers and an additional 20% of the vans carry 14 passengers. The remaining 19% carry between six and 13 passengers. About eight percent of the vans could be considered "minivans," with eight or fewer passengers.

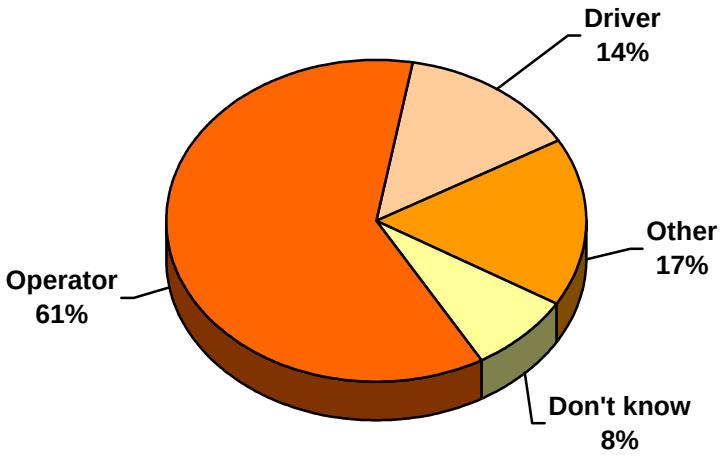
Type of Van Insurance, Person Responsible for Paying Insurance, and Annual Insurance Cost

The survey asked three questions related to van insurance. What type of insurance do you have? Who pays the insurance cost? And what is the annual insurance cost?

Type of Insurance – About 56% of respondents said they carry commercial insurance and 6% have personal insurance. Another nine percent carried another type of coverage. But nearly three in ten (29%) said they were unsure of the type of insurance they have, likely because their insurance is administered by the van operator.

Who Pays Insurance Cost – Figure 5 portrays the distribution of who pays for van insurance. About six in ten (61%) respondents said the van owner is responsible for the payment of the insurance and 14% said the van driver was responsible. About two in ten (17%) said someone else paid the insurance. Eight percent of respondents were unsure of who pays for the insurance.

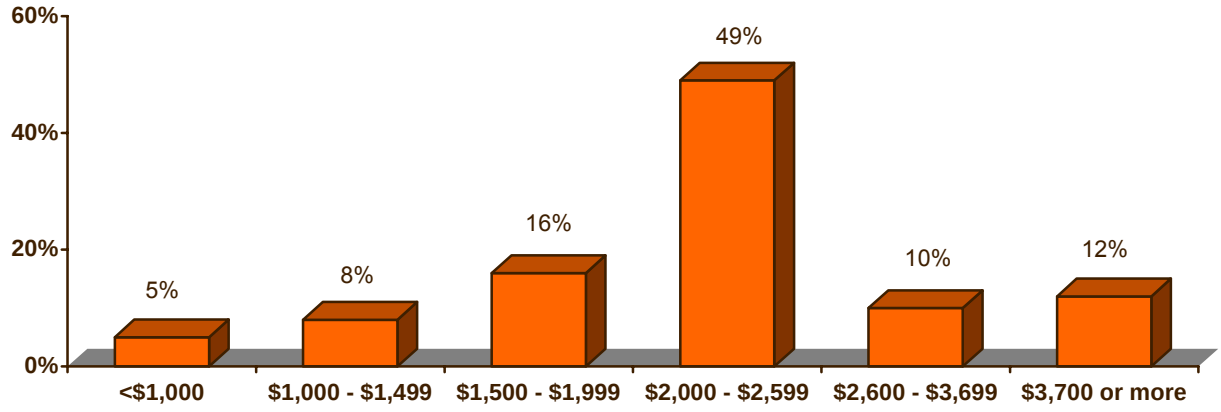
Figure 5
Person Responsible for Paying Insurance
(n = 408)



Annual Insurance Cost – A large majority (74%) of respondents were unsure of the cost of their van insurance. This could be due to the fact that many drivers do not own the van they drive, and, in most cases, the van owner pays the insurance.

Among those who gave an annual insurance cost for their van, the cost ranged from a low of $500 to a high of $10,000. Three in ten (29%) paid less than $2,000. Half (49%) paid between $2,000 and $2,599 per year. 12% paid $3,700 or more per year for insurance. The mean cost was $2,548 and the median was $2,106. These results are presented in Figure 6

Figure 6
Insurance Cost
(n = 76)



VANPOOL USE AND TRAVEL PATTERNS

A second section of the questionnaire asked about vanpool occupancy, origin and destination, number and locations of passenger pick-up and drop-off locations, and travel distance and time. Results for these questions are described below.

Usual Vanpool Size and Vanpool Size on Wednesday Prior to the Survey

Usual Size – The survey asked vanpool drivers how many people, including the driver, "usually" ride in the vanpool, that is the total number of people who are part of the vanpool group. The average (mean) number of people, including the driver, who usually ride in the vanpool was 10.5 people.

As shown in Table 2, about half (47%) of the vanpools usually have 10 or fewer passengers. About three in ten (29%) usually have 11 or 12 riders. The remaining 24% said they usually have 13 to 15 riders.

Table 2
Number of People in the Vanpool
Usual Number and Number on Previous Wednesday
("Usually ride" n = 407, "Rode Previous Wednesday" n = __)

Number of People Riding in Vanpool	"Usually Ride" Percentage	"Rode Previous Wednesday" Percentage
5 or fewer people	4%	8%
6 – 10 people	43%	57%
11 – 12 people	29%	18%
13 – 15 people	24%	9%
Don't know	___	8%
Mean	**10.5**	**9.0**

Riders "Last Wednesday" – Respondents also were asked how many people rode in their vanpool on the Wednesday prior to the survey. The last column of Table 2 shows these results. This question examined the actual number of people who would be likely to ride on a typical day, recognizing that some absenteeism is to be expected.

On average, 9.0 people, including the driver, rode in the van that day. This indicates that the average absenteeism rate is about 1.5 people, compared to the 10.5 people who "usually ride" in the van.

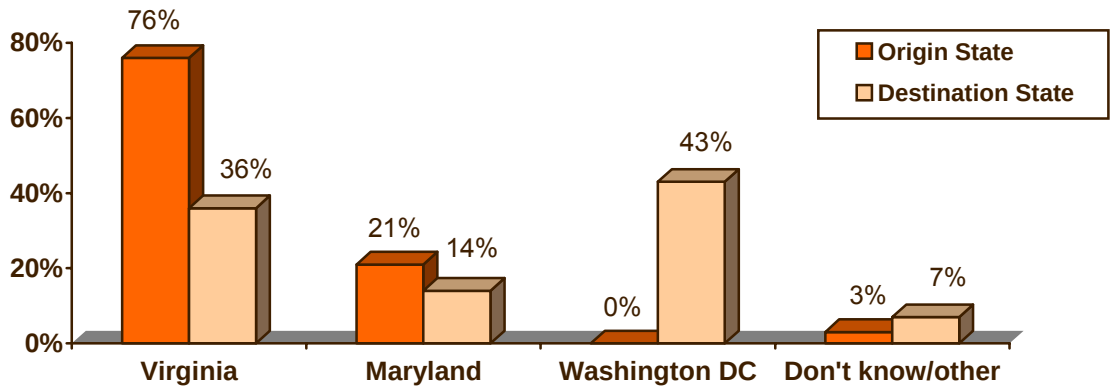
Sixty-five percent of respondents said they had 10 or fewer riders on the previous Wednesday. Two in ten (18%) said 11 or 12 people rode in the van and nine percent said between 13 and 15 people rode in the vanpool.

Vanpool Origin and Destination States and Counties

States of Origin and Destination – Figure 7 presents the distribution of vanpool origin and destination states. More than three-quarters (76%) of the vanpools originate in Virginia. Most of the remaining respondents (21%) said their vanpools originate in Maryland. A small number (2%) of vanpools originate either in Pennsylvania or West Virginia. These vans are included in the "don't know / other" category.

About four in ten (43%) respondents said their vanpools were destined for Washington, DC. Virginia was the destination of about a third (36%) of the vanpools and Maryland was the destination of 14% of the vanpools.

Figure 7
Distribution by Origin and Destination Jurisdiction
(n = 408)



Counties of Origin and Destination – Table 3 shows the origin and destination counties mentioned most frequently. The top three origin counties all were located in Virginia. They included: Spotsylvania (27%), Prince William (21%), and Stafford (17%). The top origin counties in Maryland included: Frederick (5%), Anne Arundel (3%), and Howard (3%).

As noted above, Washington DC dominated the list of destination jurisdictions with 43% of the vanpools. Three Virginia jurisdictions accounted for almost a third of the vanpool destinations: Fairfax County (13%), Arlington County (12%), and the City of Alexandria, (7%). Two Maryland counties, Montgomery (7%) and Anne Arundel (3%) accounted for another ten percent of the destinations.

Table 3
Distribution by Origin/Destination Jurisdiction
(n = 408)

Origin/Destination County/State	Origin Percentage	Destination Percentage
District of Columbia	0%*	43%
Virginia Counties		
Alexandria City	0%*	7%
Arlington County	0%	12%
Culpeper County	1%	0%
Fairfax County	2%	13%
Fauquier County	2%	0%
Loudoun County	3%	2%
Prince William County	21%	1%
Spotsylvania County	27%	0%
Stafford County	17%	0%
Warren County	2%	0%
Other Virginia	1%	1%
Maryland Counties		
Anne Arundel County	3%	3%
Baltimore County	1%	0%
Carroll County	2%	0%
Charles County	2%	0%
Frederick County	5%	0%
Howard County	3%	0%
Montgomery County	2%	7%
Prince Georges County	1%	2%
St. Mary's County	0%	2%
Washington County	1%	0%
Other Maryland	1%	0%
Other	3%	0%
Don't know	0%	7%

* Less than 0.5%.

State to State Vanpool Trips

Table 4 presents the percentages of vanpool trips made within and between states. More than four in ten (44%) trips do not cross a state boundary: nine percent remain within Maryland and 35% are wholly within Virginia. The primary state-to-state trips include: Virginia to District of Columbia (37%) and Maryland to District of Columbia (8%). All other state-to-state movements represented 10% or less of the total trips.

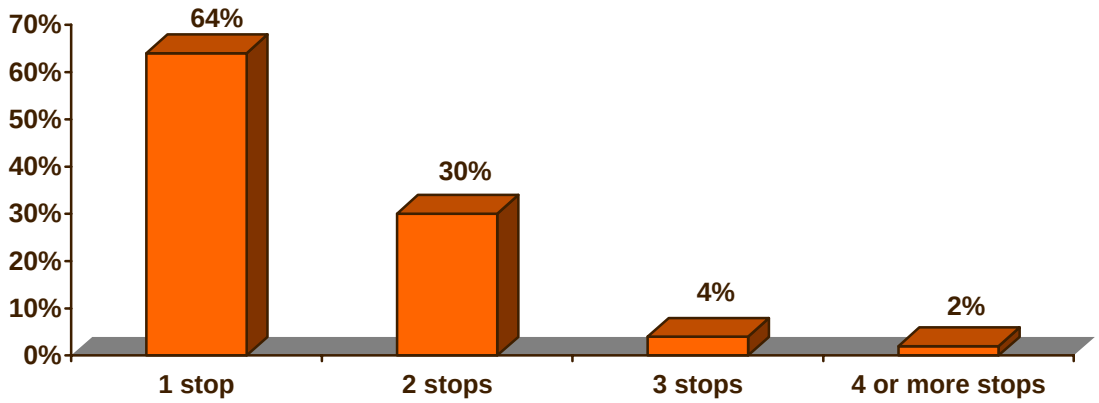
Table 4
Distribution by Origin and Destination Jurisdiction
(n = 385)

	Destination State (Percentage of total Trips)				
Origin State	**DC**	**Maryland**	**Virginia**	**Other**	**TOTAL**
DC	0%	0%	<1%	0%	**<1%**
Maryland	8%	9%	3%	<1%	**20%**
Virginia	37%	4%	35%	0%	**76%**
Other	1%	1%	1%	1%	**3%**
TOTAL	**46%**	**15%**	**39%**	**1%**	**100%**

Number of Vanpool Stops to Pick-up and Drop-off Passengers

As illustrated in Figure 8, nearly two-thirds (64%) of the vanpools make one stop at a central meeting place to pick up passengers in the morning. Three in ten (30%) of the vanpools make two stops and the remaining six percent make three or more stops.

Figure 8
Number of Rider Pickup Stops Made by Vanpool in the Morning
(n = 405)



About three in ten (28%) respondents said that all passengers worked at the same location, so that only one drop-off stop was made at the final vanpool destination. The remaining 72% said they made at least one additional drop-off stop before parking the van.

Vanpool Collection, Line-Haul, and Distribution Time

The survey asked detailed questions about the timing of the morning vanpool trip, including the time at which the driver leaves home to start the trip, the time the van leaves the last passenger pick-up stop, the time the van arrives at the first passenger drop-off stop, and finally, the time the van is parked for work. The ranges of times respondents reported for these four vanpool activities are:

Vanpool Activity	**Range of Time**
• Vanpool drivers leave home:	3:15 am and 7:15 am
• Vanpool leaves the last pick-up stop:	4:05 am and 8:00 am
• Vanpool arrives at the first drop-off stop:	3:45 am and 9:15 am
• Van is parked for work:	3:50 am and 9:35 am

The percentage distributions of responses to these questions are shown in Table 5. As shown, more than eight in ten (81%) of the vanpool drivers leave their homes to start the vanpool trip before 6:00 am. Six in ten (60%) of the vanpools make their last pick-up stop between 5:30 and 6:29 am. More than two-thirds (67%) of the vanpools make their first passenger drop-off stop between 6:00 and 6:59 am. And almost six in ten (57%) park the van for work between 6:30 and 7:29 am.

Table 5
Vanpool Trip Start, Pick-up, Drop-off, and End Times

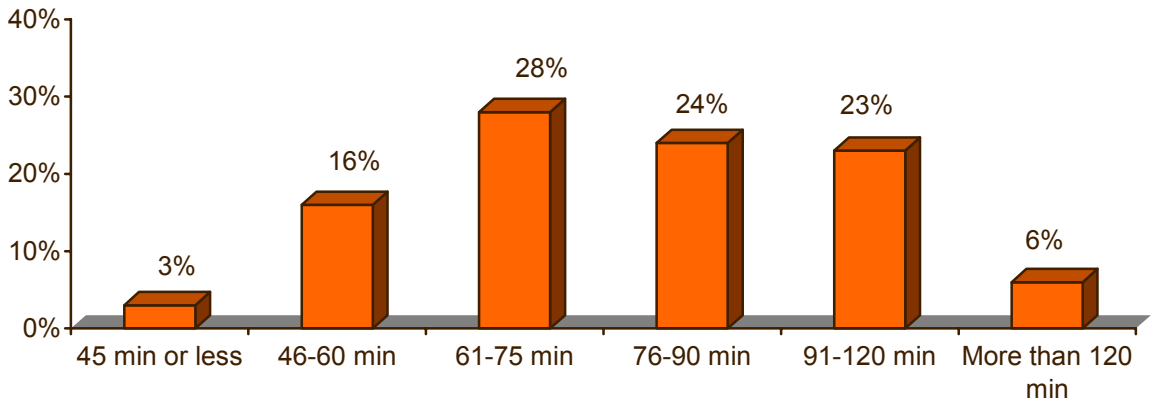
Morning Time	**Vanpool Morning Activity (Percentage of Vanpools)**			
	Driver Leaves Home (n=392)	**Van Leaves Last Pick-Up Stop** (n=391)	**Van Arrives First Drop-Off Stop** (n=376)	**Van Parked for Work** (n=398)
Before 5:00 am	28%	7%	<1%	0%
5:00 am – 5:29 am	28%	20%	1%	<1%
5:30 am – 5:59 am	25%	34%	14%	10%
6:00 am – 6:29 am	12%	26%	26%	22%
6:30 am – 6:59 am	5%	11%	41%	35%
7:00 am – 7:29 am	2%	1%	11%	22%
7:30 am – 7:59 am	0%	1%	6%	8%
8:00 am or later	0%	<1%	1%	3%

Using the start and end time data provided by vanpool drivers for various morning activities, it was possible to estimate the amount of time vanpools spent in vanpool rider pickup (collection) and drop-off (distribution). It also was possible to estimate the total travel time experience by the driver and by the vanpool at its maximum rider level (line-haul time). These survey results are detailed below.

Total Driver Travel Time – Figure 9 shows the distribution of total travel time for the vanpool trip, from the time the driver leaves home in the morning to the time he or she parks the van for work. The average total travel time is 84 minutes.

About one in five (19%) of the vans travel one hour or less. More than a quarter (28%) travel between 61 and 75 minutes, another quarter (24%) travel between 76 and 90 minutes, and slightly less than a quarter (23%) travel between 1½ and 2 hours. The remaining six percent travel more than 2 hours.

Figure 9
Total Travel Time
(n = 388)



Pick-up (Collection) and Drop-Off (Distribution) Time – Table 6 shows the distribution of time it takes the driver in the morning to pick-up all passengers at the start of the vanpool trip and drop them off at their respective work destinations. About one in eight (13%) of the driver respondents said they pick-up all passengers within 10 minutes of leaving their homes. Almost three in ten (29%) said it takes between 11 and 20 minutes to collect all passengers, and 28% reported that passenger pick-up takes between 21 and 30 minutes. The remaining 31% said morning passenger pick-up consumes more than 30 minutes.

Passenger drop-off takes less time. Approximately one in eight (12%) of the vanpool drivers said that drop-off takes no additional time, because all passengers work at the location where the van is parked. Almost half (46%) said it takes one to ten minutes to drop-off passengers. About three in ten (31%) respondents reported that drop-off takes between 11 and 20 minutes, and the remaining 11% of drivers said drop-off takes more than 20 minutes.

Table 6
Morning Passenger Pick-up and Drop-off Time
(Pick-up n = 379, Drop-off n = 372)

Time	Passenger Pick-up (Percentage)	Passenger Drop-Off (Percentage)
0 minutes	2%	12%
1– 5 minutes	3%	23%
6 – 10 minutes	8%	23%
11 – 15 minutes	16%	23%
16 – 20 minutes	13%	8%
21 – 30 minutes	28%	7%
31 – 40 minutes	15%	2%
More than 40 minutes	16%	2%
Mean	**28 minutes**	**12 minutes**

On average, it takes a vanpool group 28 minutes to pick-up passenger in the morning (collection stage). Passenger drop-off (distribution stage) on the destination end consumes another 12 minutes. As noted above, the average vanpool trip takes 84 minutes. Thus, collection and distribution together total 40 minutes and comprise about 48% of the total vanpool trip time. The "line-haul" portion of the trip, when the vanpool is carrying its full load of passengers, takes 44 minutes, or 52% of the total trip time.

The total time devoted to vanpool rider collection and distribution appears to have risen slightly since the last vanpool survey. The 40 minutes total pick-up and drop time was eight minutes more than the 32 minutes measured in the 2002 survey. But the line-haul portion of the trip has not changed since 2002. In 2002, the total travel time was 77 minutes, with 45 minutes devoted to the line-haul portion. This was essentially the same as the 45 minutes line-haul travel time in 2008.

Travel Distance

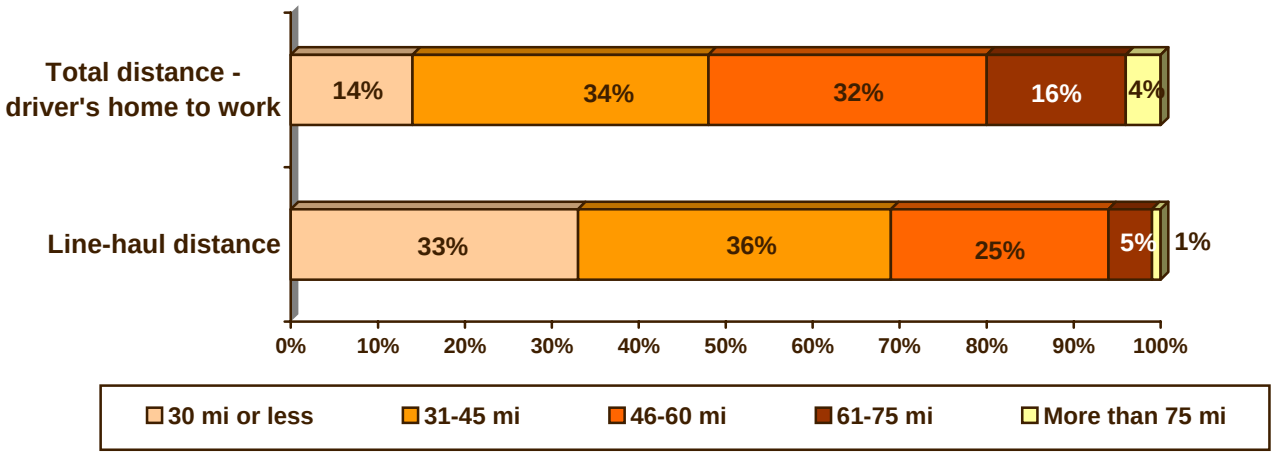
The survey also asked the vanpool drivers how many miles they traveled for the total trip and for the portion of the trip between the last pick-up and first-drop off stops (line-haul portion). These results are shown in Figure 10. Vanpool drivers commute an average of:

- 48.6 miles from their home to their work location
- 39.5 miles from the last morning pick-up to the first drop-off location

Fourteen percent (14%) of the respondents said the total trip distance was 30 miles or less. One-third of respondents (34%) travel between 31 and 45 miles, and another third (32%) travel 46 to 60 miles. The remaining 20% travel more than 60 miles one-way. Two-thirds (69%) of the respondents said the line-haul portion of the trip was 45 miles or less.

Respondents whose trips originated in Virginia traveled an average total trip distance of 50 miles, compared to 44 miles for respondents whose trips originated in Maryland. Trip distances for destination states ranged from 47 miles for Virginia, 49 miles for District of Columbia, to 52 miles for Maryland.

Figure 10
Travel Distance
(Total n = 386, Line-haul n = 381)



Primary Vanpool Routes and Use of HOV Lane

The survey asked respondents which major roads they used for their vanpool trip and if they used an HOV lanes on the route.

Primary Vanpool Routes – A large share of respondents said they used a major interstate highway for at least part of their vanpool trip. The most widely used roadway was the Virginia portion of I-95, south of Washington, DC. This was used by 60% of respondents for a portion of their trip. I-395 / Shirley Highway in Virginia was used by one in five respondents and 14% used the Capital Beltway. About one in ten traveled on I-66 in Virginia and a similar percentage of respondents said they traveled on I-270 in Maryland for a portion of the vanpool trip. All other roadways were named by no fewer than six percent of respondents. The distribution of all roadways used is listed in Table 7.

Table 7
Primary Routes Used by Vanpools
(n = 408)

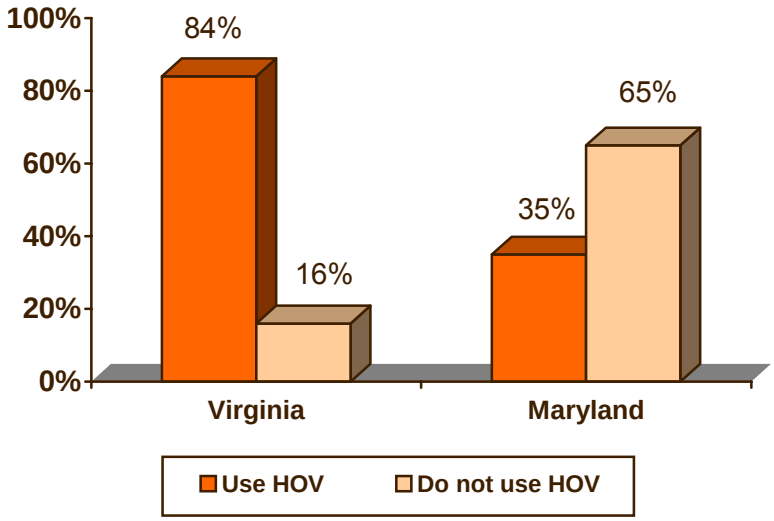
Primary Routes	Percentage
I-95 (VA)	60%
I-395/Shirley Highway (VA)	20%
Capital Beltway	14%
I-66 (VA)	11%
I-270 (MD)	8%
I-295 / SE-SW Freeway	5%
I-95 (MD)	4%
US Route 29	4%
Route 267 / Dulles Toll Road (VA)	4%
MD Route 3	4%
US Route 50	3%
George Washington Parkway	3%
US Route 301	3%
I-70 (MD)	2%
MD Route 210 / Indian Head Highway	2%
MD Route 32	2%
US Route 1	2%

Use of HOV Lanes – Almost three-quarters (72%) of respondents said their vanpool uses an HOV lane during the trip to work. But use of the lanes is unevenly distributed between the two primary origin states, Virginia and Maryland.

As Figure 11 indicates, 84% of the vanpools that originate in Virginia use an HOV lane, compared to only 35% of the vanpools that originate in Maryland. This is almost certainly related to the greater availability of HOV lanes that exist in Virginia (I-95, I-66, I-395, Dulles Toll Road, some arterial streets) compared to Maryland (I-270 and US-50), as well as the distribution of trip origins within Virginia and Maryland.

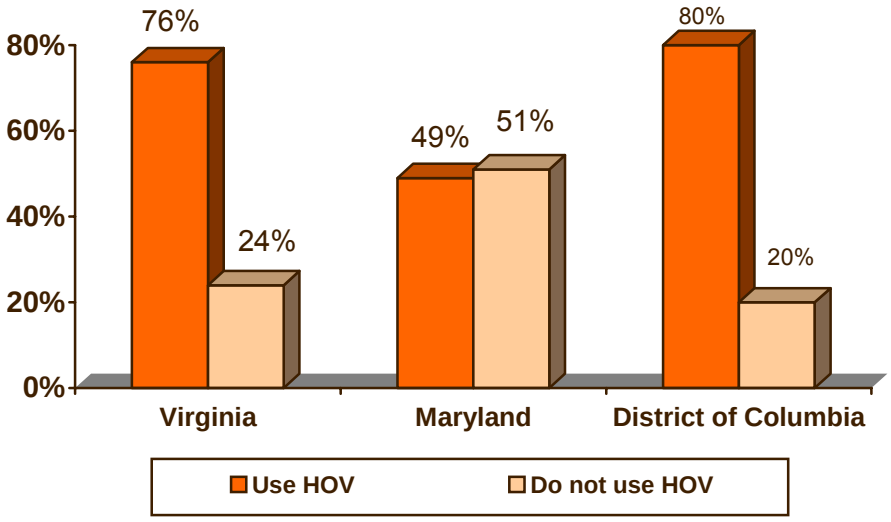
The 35% HOV use in Maryland, although lower than in Virginia, is considerably above the 19% rate measured in 2002. This is certainly related to development of new HOV lanes on US50 in Maryland. These HOV lanes did not exist when the 2002 survey was conducted.

Figure 11
Use of HOV Lane to Work by Origin State
(Virginia n = 311, Maryland n = 82)



Use of HOV lanes is more evenly distributed by destination state, as shown in Figure 12. About three-quarters of the vanpools traveling to Virginia (76%) and 80% of vanpools traveling to the District of Columbia use an HOV lane. About a half (49%) of the vanpools destined for Maryland use an HOV lane.

Figure 12
Use of HOV Lane to Work by Destination State
(Virginia n = 148, Maryland n = 57, District of Columbia n = 176)



VANPOOL ASSISTANCE AND SERVICES

The third section of the survey asked respondents about vanpool assistance services and benefits they receive, either from their employer or another commute assistance group. Additionally, respondents were asked about parking charges they pay at their worksite.

Assistance Received when Forming Vanpool

More than four in ten (44%) vanpool drivers said they received some type of assistance in forming their vanpool. The remaining drivers said they didn't receive assistance (49%) or didn't know if their vanpool had received assistance (7%), possibly because the driver was not driving the van when it was formed. The percentage of assisted vanpools is approximately the same as was calculated from the 2002 survey; in that survey, 40% of vanpool drivers reported they had received vanpool formation assistance.

The percentage of vanpools assisted in the survey might not be representative of all vanpools operating in the region. As was noted earlier, the vanpool survey included only drivers who had registered their vanpools with one of the five organizations that provide vanpool support, presumably to obtain assistance. It is likely that a larger share of non-registered vanpools did not receive assistance from one of these ride-share or vanpool organization, but it is possible that they received assistance from another entity, such as an employer.

Of respondents who did receive assistance, 16% said it was provided by their employer and 30% received assistance from another organization, including Commuter Connections (8%), VPSI (7%), RADCO/GWRC (6%), PRTC (3%) or another organization (6%). Table 8 shows these results.

Table 8
Sources of Vanpool Formation Assistance
(n = 395)

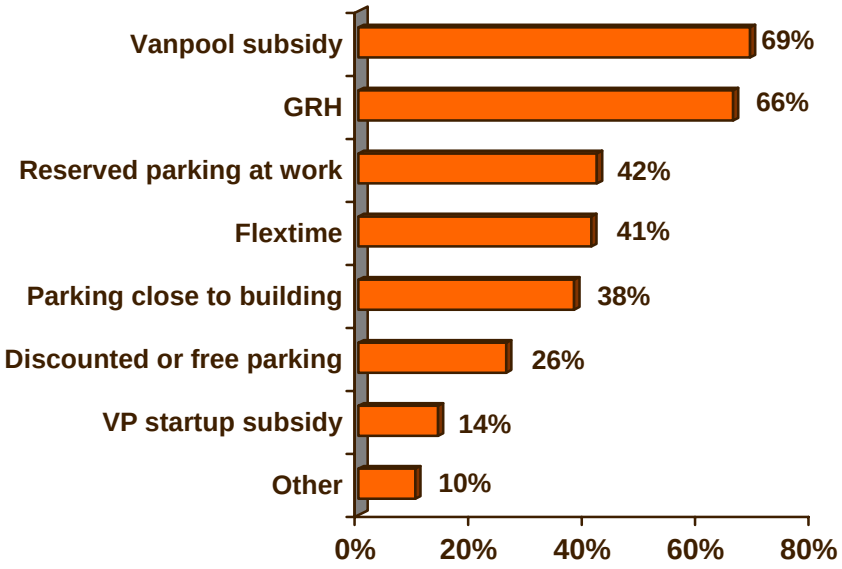
Source of Formation Assistance	Percentage *
No assistance received	56%
Employer	16%
Commuter Connections	8%
VPSI	7%
RADCO/GWRC	6%
PRTC	3%
Other	6%

* Multiple responses permitted.

Vanpool Services or Benefits Received from Employers and Commute Organizations

Respondents also were asked about vanpool services they or their vanpool receive from an employer, a commute service organization, or a local jurisdiction agency. Nearly all (94%) respondents indicated that they receive one or more commute services or benefits at work for vanpooling. This was about the same percentage as received assistance in 2002, 86% of all drivers surveyed. Figure 13 shows the services mentioned in 2008 and the percentages of respondents who have access to these services.

Figure 13
Vanpool Services or Benefits Received
(n = 408, multiple responses permitted)

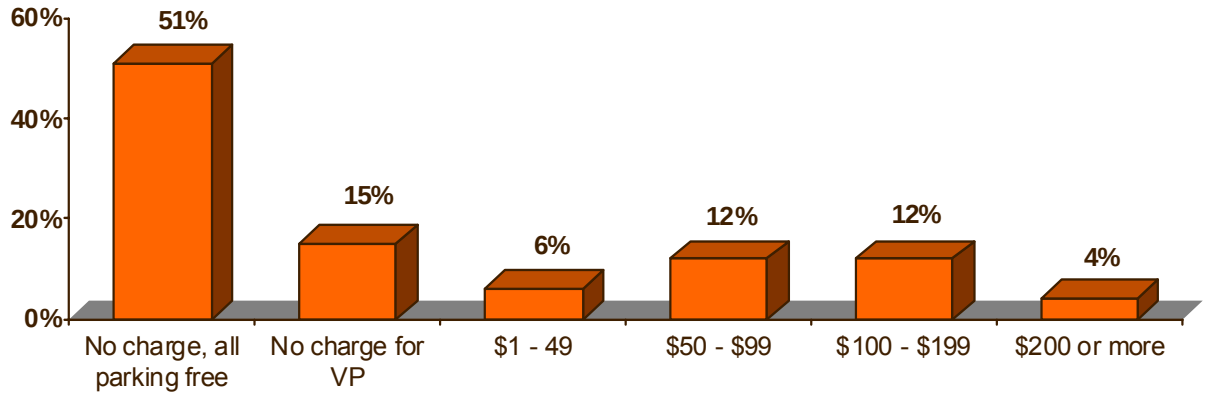


The most common services were vanpool subsides, received by 69% of vanpools, and Guaranteed Ride Home, available to 66%. About four in ten (42%) said they had reserved parking at work, flexible arrival and departure hours (41%), and/or parking close to the building (38%). Smaller percentages said they received discounted or free parking (26%), a vanpool start-up subsidy (14%), or another service (10%).

Monthly Parking Fee

About two-thirds (66%) of the respondents said they pay no parking fee at work. Most of these respondents (51%) said parking is free for all employees. An additional 15% of drivers said there is a charge for parking, but that vanpools are exempt from the fee (e.g., parking is free for vanpools). The remaining 34% said they do pay a fee to park. Figure 14 details the monthly parking fees paid. These respondents were evenly divided between those who paid less than $100 (18%) and those who paid $100 or more (16%). A small percentage (4%) said they pay more than $200 per month.

Figure 14
Monthly Parking Fee Paid
(n = 388)



The share of drivers who said they had free parking had gone up from the 2002 survey. In 2002, 60% of drivers reported having free parking, while the percentage was 66% in 2008. But the split between free parking for all employees and free parking only for vanpools had changed. In 2002, only 40% of drivers said all employees had free parking and 20% said parking was free only for vanpools. This suggests a greater share of vans now could be traveling to suburban locations, where parking charges are rare.

As shown in Table 9, respondents whose vans were parked for the day in Maryland were most likely to have free parking. More than nine in ten of these respondents (93%) said parking was free for all employees and an additional seven percent said parking was free for vanpools.

Table 9
Monthly Parking Fee Paid by Destination State
(District of Columbia n = 168, Maryland n = 56, Virginia n = 141)

Parking Fee	District of Columbia Percentage	Maryland Percentage	Virginia Percentage
No charge – free for all employees	39%	93%	47%
No charge – free for all vanpools	21%	7%	11%
Parking fee $1 - $99	17%	0%	26%
Parking fee $100 - $199	14%	0%	15%
Parking fee $200 or more	9%	0%	1%

Almost six in ten (58%) respondents who parked in Virginia said they had free parking and an additional quarter of respondents (26%) said they paid less than $100 for parking. One percent paid $200 or more for parking.

Approximately the same percentage (60%) of respondents who parked in the District of Columbia said they had free parking, but parking fees for those who did pay to park were slightly higher than for vans parked in Virginia; 17% said they paid less than $100 for parking, and nine percent paid $200 or more.

OTHER ISSUES

Level of Concern with Vanpool Issues

Finally, respondents were asked to rate their level of concern with various vanpool issues on a scale of one to five, with one equal to "no concern" and five equal to "great concern."

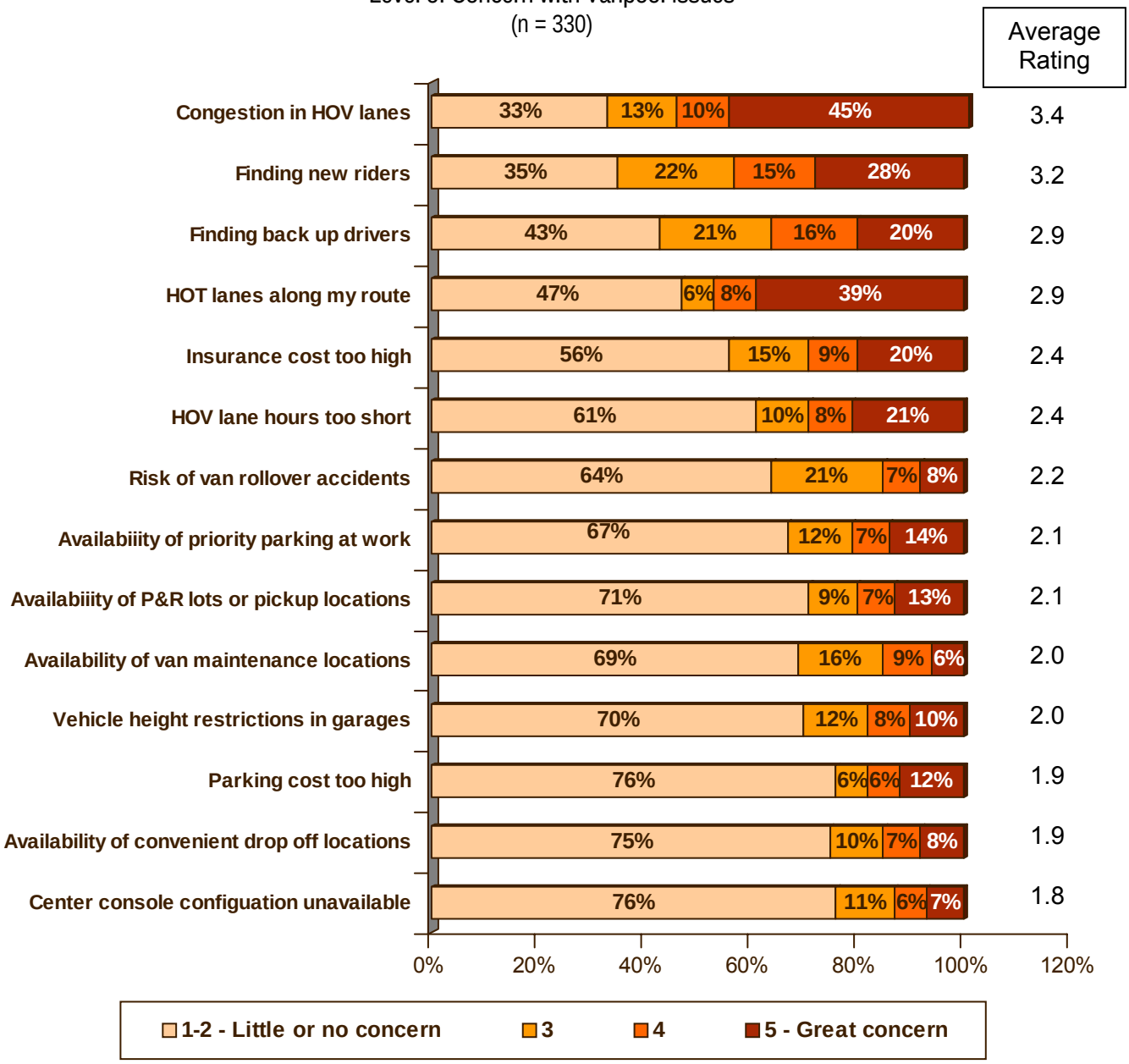
Figure 15 lists the issues presented in the questionnaire and shows the percentages of respondents who rated each issue a 1 or 2, a 3, a 4, or a 5. The right side of the figure also shows the average rating for each issue. Overall the ratings suggest only modest concern for most issues. The highest average rating was 3.4 and only four of the issues had a rating of 2.9 or higher.

The most pressing issue was "congestion in HOV lanes," which had an average rating of 3.4. It was cited as a great concern (rating of 5) by 45% of respondents and as a concern (4) by another 10%. Finding new riders (average rating of 3.2) was cited as a concern or great concern to 41% of drivers. Finding back-up drivers (2.9) also appeared to be of moderate concern.

"New High Occupancy Toll (HOT) lanes along my route," (2.9), also was notable because 39% of drivers rated it a "great concern." Two other issues, "insurance cost too high" and "HOV lane hours too short", received average ratings of 2.4. In both of these cases, about 30% of drivers rated them of concern (4) or great concern (5).

All other issues received an average rating of 2.2 or lower, suggesting they did not present serious concern to most drivers.

Figure 15
Level of Concern with Vanpool Issues
(n = 330)



Several other issues were not specified in the questionnaire, but were mentioned by drivers as being of concern. These issues are listed in Table 10, with the percentage of respondents who reported these issues. The top issues named by the largest number of respondents all related to HOV lanes: "single-person hybrid cars in HOV lanes" (4%), "need more/extended HOV lanes" (2%), and "cost of gas/ operating costs" (2%). All other issues were named by less than 2% of the respondents.

Table 10

Other Vanpool Issues Noted by Drivers
(n = 408)

Issues	Percentage
Single-person hybrid cars in HOV lanes	4%
Need more/extended HOV lanes	2%
Cost of gas/operating costs	2%
Parking issues	1%
Issues with converting to HOT lanes	1%
AC/heat/seats/armrests/maintenance	1%
Getting/keeping riders	1%
HOV violators/enforcement	1%
Extend HOV hours earlier	1%
Need VP subsidy/assistance	1%
Congested roads/conditions/bad drivers	<1%
Reimbursement/Metrochek issues/collecting fees	<1%
Other HOV issues	2%
Other	3%

Level of Concern by Population Sub-Groups

Not surprisingly, some respondent sub-groups were more concerned about these issues than were other sub-groups. Notable results are presented in Table 11.

As shown, respondents who said the driver paid for insurance was more concerned about the cost of insurance (3.5 average concern rating) than were respondents who said either the van owner (rating of 2.4) or the leasing agency (rating of 2.1) paid for the insurance. And respondents whose insurance cost was $2,000 (rating of 4.0) or more were more concerned about insurance cost than were those whose insurance cost was less than $2,000 (rating of 3.3).

Differences also were noted in two HOV lane issues for respondents who did and did not use HOV lanes for their trip to work. Respondents who used the HOV lanes rated a concern of "congestion in HOV lanes" an average of 3.8, compared with an average concern rating of 2.5 for respondents who did not use HOV lanes. HOV users also were more concerned that HOT lanes would be implemented along their route to work (3.2 rating) than were respondents who did not use HOV lanes (2.0 rating).

Table 11
Vanpool Issue Concern Ratings by Respondent Sub-groups

Vanpool Issue	Respondent Sub-Group	Average Concern Rating
Insurance cost too high by:	**Who pays for insurance**	
	Driver pays (n = 50)	3.5
	Van owner pays (n = 187)	2.4
	Leasing agency pays (n = 52)	2.1
Insurance cost too high by:	**Annual insurance cost**	
	$2,000 or more (n = 49)	4.0
	Less than $2,000 (n = 19)	3.3
Congestion in HOV lanes by:	**Use HOV lane**	
	Yes (n = 275)	3.8
	No (n = 91)	2.5
New HOT lanes along route to work by:	**Use HOV lane**	
	Yes (n = 264)	3.2
	No (n = 86)	2.0
Parking cost too high by:	**Monthly parking fee paid**	
	$150 or more (n = 29)	3.8
	$50 – $149 (n = 82)	2.9
	$1 – $49 (n = 19)	2.1
	Free parking (n = 22)	1.2

The other concern that varied significantly by respondent sub-group was parking cost by the monthly parking fee paid. Respondents who paid $150 or more per month for parking rated this concern 3.8 on average, compared to a rating of 2.9 for respondents who paid between $50 and $149, a rating of 2.1 for respondents who paid between $1 and $49 per month, and a rating of 1.2 for respondents who said they had free parking.

Concern ratings also were examined for several other issues and sub-groups for which ratings differences might be expected. These issues and sub-groups are listed below. No significant ratings differences were observed for any of these issues/sub-groups.

Vanpool Issue	Respondent Group (Sub-groups)
• P&R availability by:	Origin state (MD, VA)
• Convenient drop-off locations by:	Destination state (DC, MD, VA)
• Availability of priority parking at work by:	Receive reserved van parking (yes, no)
• Availability of priority parking at work by:	Receive van parking close to building (yes, no)
• Find new riders by:	Origin state (MD, VA)
• Finding new riders by:	Had assistance forming vanpool (yes, no)
• Finding new riders by:	Destination state (DC, MD, VA)

SECTION 4 COMPARISONS BETWEEN 1989, 2002, AND 2008 SURVEYS

As noted earlier, COG conducted similar vanpool driver surveys in 2008, 2002 and in 1989. This section highlights several noteworthy differences between the results of the three studies. These differences include the following:

- Number of vanpools crossing the Beltway
- Distribution by origin and destination state
- Average vanpool occupancy
- Trip distance and travel times
- Number of morning passenger pick-up and drop-off stops
- Vanpool concerns

NUMBER OF VANPOOLS CROSSING THE BELTWAY

The number of surveyed vanpools crossing the Beltway declined from 1989 to 2002 and declined again from 2002 to 2008. The numbers decreased from 541 vanpools in 1989 to 313 in 2002 and to 223 in 2008. This decrease in the proportion of sampled vanpools crossing the Beltway suggests a change has occurred in the orientation of vanpools trips and/or the number of passengers carried in vanpools in the central Washington DC area.

DISTRIBUTION BY ORIGIN AND DESTINATION STATE

Results on the distribution of vanpools by origin and destination states were almost identical for the 2008 and 2002 studies. In 2008, 77% of the sampled vanpools originated in Virginia and 20% originated in Maryland, compared to 77% from Virginia and 21% from Maryland in the 2002 survey. However, there was a marked change from the 1989 survey to 2002, in which 60% of the vanpools originated in Virginia and 40% originated in Maryland.

VANPOOL OCCUPANCY

Also supporting the observation of changing vanpool use was the measured decrease in the average "usual" passenger occupancy of vanpools from the 1989 study to the 2008 study. The 2008 survey calculated an average occupancy of 10.5 passengers, compared with 10.8 passengers in 2002. In comparison, the 1989 vanpool driver survey showed an average vanpool occupancy of 11.5 passengers. This 26 year period indicates a trend toward decreasing vanpool capacity, due likely to the growth of minivans (5-7 passengers) in the vanpool fleet.

The percentage of "usual" riders who actually rode in the van on any one day tended to increase slowly over time. In 1989, 86% of the "usual" riders actually rode in the van., compared to 89% in 2002. This percentage increased once again in 2008 to 92%, suggesting vanpools are filling most of the seats and that passengers are regular vanpool riders.

TRIP DISTANCE AND TRAVEL TIMES

Trip lengths appear to have grown slightly, in both mileage and time. In 1989, the average one-way trip distance was 37.2 miles. By 2002, the average had risen to 46.4 miles and rose further by 2008 to 48.6 miles. The average travel time also increased, from 59 minutes in 1989 to 77 minutes in 2002, and to 84 minutes in 2008. The travel time increase between 2002 and 2008 was entirely related to the passenger pick-up and drop-off segments of the trip. These components increased eight minutes between 2002 and 2008, from 32 minutes to 40 minutes. Line haul travel time did not change.

NUMBER OF MORNING PASSENGER PICK-UP AND DROP-OFF STOPS

In the 1989 survey, about a third of the vanpools (32%) made one stop to pick up passengers in the morning and 66% picked up passengers at several meeting places. The 2002 survey showed a higher percentage (53%) of vanpools making only one pick-up stop, with the remaining 47% stopping at two or more locations to pick-up riders. In 2008, an even higher percentage (63%) of vanpools made only one pick up stop, with the remaining 37% stopping at two or more locations.

The percentage of vanpools that drop off passengers in more than one employment location also has changed. In 1989, 65% of vanpools dropped all passenger in one employment location. In the 2002 survey, this percentage had dropped subtantially, to 29%. The percentage for 2008 was the same, 29%. This indicates that vanpools are increasingly drawaing their riders from multiple employers. It could signal a decrease in the number of employers that promote and support large vanpool programs or an increase in regional and local programs designed to help vanpool drivers find riders from a wider population.

VANPOOL CONCERNS

The other survey topic in which changes were noted from 1989 to 2008 is in the area of vanpool concerns. Vanpool drivers seem less concerned about most vanpool issues in 2008 than they did in 1989. However, they are either slightly more concerned or have the same concern rating in 2008 than in 2002. As shown in Table 20, for the issues that were examined in both surveys, the average concern ratings (on a scale of 1-5) generally were higher in 1989 than in 2002 or in 2008, and were either the same or slightly higher in 2008 than in 2002.

For example, respondents were more concerned about “finding new riders”, “congestion in HOV lane”, “P&R lots/pick-up locations”, and “priority parking at work” in 2008, than in 2002. “Insurance cost too high”, and “height restriction in garages” was rated slightly lower in 2008 compared to 2002.

Table 12
Level of Concern with Vanpool Issues – 2008 Compared to 2002 and 1989

Issue *	2008 Average Concern Rating (n = 326)	2002 Average Concern Rating (n = 395)	1989 Average Concern Rating (n = N/A)**
Finding new riders	3.2	3.0	3.3
Congestion in HOV lane (2002)	3.4	2.9	N/A
Insurance cost too high (1989 "insurance")	2.4	2.7	3.1
HOV lane hours too short	2.4	2.4	NA
More HOV lanes (2002)	NA	NA	4.0
Height restriction in garages (1989 "access to garages")	2.0	2.1	2.9
Van maintenance (1989 "van servicing")	2.0	2.0	2.9
P&R lots/pick-up locations (1989 "AM meeting place")	2.1	2.0	2.0
Cost of parking too high	1.9	1.9	NA
Operating cost (1989)	NA	NA	3.3
Priority parking at work (1989 "parking at work")	2.1	1.9	3.4

* 1989 wording shown in parentheses when wording changed from 1989 to 2002

** Sample size information not available for 1989.

APPENDICES

APPENDIX A SURVEY METHODOLOGY OBSERVATIONS

This section of the report presents the major remarks associated with the technical aspects of conducting the survey for the 2008 Vanpool Driver Study. The technical elements deal with the survey and sampling procedures.

Overall, the survey and sampling methodology provided a framework for the collection of sound statistical results. Analysis of the survey dialing results supports this conclusion with refusal rates well within the acceptable range. The following should be noted for future studies:

- The use of one mailing followed by additional telephone survey callbacks helped to increase the response rate for this survey.
- Given the complexity in tracking the sample for the study, the use of a CATI system continues to be essential.
- Allowing the respondent the choice of mail back, fax back, completion via the Internet or telephone that was either respondent initiated (toll-free) or interviewer initiated, provided the greatest convinence to the respondent resulting in a high response rate.
- Rather than conducting a second mailing to drivers who had not responded, the CATI follow-up effort was used instead to successfully achieve a high response rate.
- The likelihood of completing an interview was greatly enhanced if both a work number and a home number were available.
- The nature of survey and the survey requirements means that the number of callbacks required is fairly substantial.
- Survey administration for the GWRC operator database presented a unique set of challenges to data collection. Although operators generally agreed to partipate in the survey, control of survey distribution and collection was left to the operators. After driver packets were mailed to the operators and delivered to drivers, there was no convenient way to get the drivers to send the surveys back to the operators. As a result, CIC was not able to obtain a high response rate from the GWRC operators using this methodology.

APPENDIX B
DISPOSITION OF RESULTS

Vanpool Drivers Dialing/Return Results of Sample						
CATI Dialing Result	**Commuter Connections**	**GWRC**	**PRTC**	**VPSI**	**Crystal City Commuter Vans**	**Total**
Complete	47	157	44	151	9	408
No Answer	9	6	1	9	2	27
Answering Machine	7	10	5	12	0	34
Callback	0	1	2	11	3	17
Respondent Never Available	0	1	0	2	0	3
Refused	4	4	3	7	2	20
Hostile Interrupt/Quit	0	0	1	1	0	2
Surveys Never Returned/No Phone Number	2	156	15	0	0	173
Total Active Sample	**69**	**335**	**71**	**193**	**16**	**684**
Computer/FAX/Pager	0	2	0	2	0	4
Not in Service	8	7	2	5	0	22
Wrong Number	4	8	3	7	0	22
No Longer with Company	7	10	2	8	0	27
Rider not Driver	17	11	1	7	0	36
Not Part of Vanpool	9	5	2	2	0	18
Second Driver for Vanpool	0	43	0	0	0	43
Vanpool Driver, No Riders	3	2	0	0	0	5
Total Dead Sample	**48**	**88**	**10**	**31**	**0**	**177**
TOTAL SAMPLE	**117**	**423**	**81**	**224**	**16**	**861**
Ratio(Completes/Total Sample)	**40%**	**37%**	**54%**	**67%**	**56%**	**47%**
Active Complete Ratio (Completes/Total Active Sample)	**68%**	**47%**	**62%**	**78%**	**56%**	**60%**

* GWRC Completes include fax/mail back/Internet surveys not part of main dialing

APPENDIX C
MAIL SURVEY INTRODUCTORY LETTER, AND QUESTIONNAIRE

January 29, 2008

Dear Vanpool Operator or Driver,

Vanpools are an important means of transportation for commuting in the Washington region. To learn more about the characteristics of vanpools, the Commuter Connections program at the Metropolitan Washington Council of Governments (COG) is conducting a brief survey of vanpool operators and drivers in the region. The results of this survey will be used to identify current vanpooling practices and to plan for improved facilities and services for vanpools in the future. Our goal is to have the main driver from each vanpool in the region participate in the 2008 Vanpool Driver Survey.

The survey takes only a few minutes and all responses will be kept strictly confidential. Your participation is very important.

COG has hired an independent research firm, CIC Research, Inc. to assist with the survey. To make it as easy as possible for you, COG and CIC Research have set up four methods to participate:

1 - Return the completed questionnaire it in the enclosed, postage-paid envelope to:
CIC Research, Inc., 8361 Vickers Street, San Diego, CA 92111

2 - Fax the questionnaire, toll-free, to CIC Research at (888) 714-9846

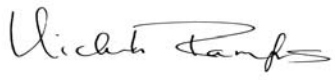
3 - Using the PIN number on the questionnaire, enter your responses on the Internet at the following web address: http://proj.cicresearch.com/vp08.htm

4 - Participate by telephone at the toll-free number (800) 892-2250. Interviewers are available at CIC Research from 9:00 a.m. to 9:00 p.m. Monday through Friday and from 1:00 p.m. to 9:00 p.m. on Saturdays. The interviewer will ask you for the PIN number on the questionnaire.

If you've been unable to complete your questionnaire by February 15, an interviewer from CIC Research will contact you by telephone. In that call, the interviewer will be able to take your answers over the telephone.

Thank you in advance for your participation in this important study. If you have any questions, please feel free to contact me at nramfos@mwcog.org or at (202) 962-3313.

Sincerely,



Nicholas Ramfos
Director
Commuter Connections

Vanpool Survey January – February 2008

METROPOLITAN WASHINGTON
COUNCIL OF GOVERNMENTS

COMMUTER CONNECTIONS
A SMARTER WAY TO WORK

Van Ownership and Operation

1. How long has this vanpool been in operation? _____ years **OR** _____ months

2. How long have you been the vanpool driver? _____ years **OR** _____ months

3. Who owns the van? (Check one)

   ❑ Myself or a family member ❑ Leasing agency ❑ Employer
   ❑ Private party outside my family ❑ Other _____

4. Please provide the following information about your van (if known).

   a) Van make/model _____ c) Model year _____

   b) Passenger capacity (including driver) if every seat is filled _____

5. Please provide the following information about your van insurance (if known).

   a) Type of insurance: ❑ Personal ❑ Commercial ❑ Don't know

   b) Who pays for insurance: ❑ Myself/driver ❑ Van owner ❑ Other _____

   c) Annual insurance cost: $ _____ per year ❑ Don't know

Vanpool Use

6. How many people, including the driver, usually ride in the vanpool? _____

7. How many people, including the driver, rode in the vanpool last Wednesday? _____

   If no one rode in the vanpool last Wednesday, please explain why not _____

8. From what area does your vanpool originate (i.e., where is your van parked overnight)? Please specify town, city, or community. _____

9. How many stops does your van make in the morning to pick up passengers?

   ❑ One stop (central meeting place) ❑ 2 stops ❑ 3 stops ❑ 4 or more stops

10. Where does the van pick up riders in the morning? Please specify the locations for the first and last morning pick-ups. Note street address, nearest cross streets, or park & ride location. Also indicate the town or city.

    a) First pick-up location: _____

    b) Last pick-up location: _____

    c) Is the last pick-up location inside or outside the Capital Beltway? ❑ inside ❑ outside

11. Where does the van drop-off riders in the morning? Please specify the locations for the first drop-off and where the van is parked during the day. Note street address or nearest cross streets. Also indicate the town or city.

    a) First drop-off location: _____

b) Is the first drop-off location inside or outside the Capital Beltway? ❑ inside ❑ outside

c) Where van is parked during the day: _____

12. At what times do the following morning vanpool activities occur? (usual / scheduled clock time)
    a) Driver leaves home at: _____ am
    b) Van leaves last pick-up stop at: _____ am
    c) Van arrives at first drop-off stop at: _____ am
    d) Van is parked for work at: _____ am

13. What is the approximate distance of your vanpool trip to work?
    a) Miles from driver's house to worksite/parking location: _____ miles
    b) Miles from last morning pick-up to first drop-off location: _____ miles

14. What major roadways does the van take for the trip to work? _____

15. Does the vanpool use an HOV lane for any portion of the trip to work?
    ❑ No ❑ Yes, use HOV lane (specify all HOV route(s)) _____

Vanpool Assistance and Services

16. In forming your vanpool, did you receive assistance from your employer or from an organization that helps with vanpool formation, organization, or ridership?
    ❑ No ❑ Yes, from employer ❑ Yes, from organization (specify) _____

17. Do you or does your vanpool receive any of the following services/benefits, from your employer, from a commute service organization, or from a local jurisdiction agency? (Check all that apply)
    ❑ No vanpool services or benefits

    ❑ Reserved van parking at work
    ❑ Van parking close to the building at work
    ❑ Discounted or free van parking at work
    ❑ Guaranteed Ride Home program
    ❑ Payment or subsidy from employer for any vanpool costs
    ❑ Vanpool start-up or other subsidy from any other organization
    ❑ Flexible work hours (arrival and departure times)
    ❑ Other _____

18. What is the monthly parking fee for your van at work? (Please check only one)
    ❑ No charge, parking is free for all employees
    ❑ No charge, parking is free for vanpools
    ❑ $1 – $49 per month
    ❑ $50 – $99 per month
    ❑ $100 – $149 per month
    ❑ $150 – $199 per month
    ❑ $200 or more per month

Other Issues

19. Following is a list of issues that might be of concern to vanpool drivers. Using a scale of 1 to 5, with "1" being "no concern" and "5" being "great concern," please rate your level of concern about each issue.
    ___ Insurance cost too high
    ___ Cost of parking too high
    ___ HOV lane hours too short
    ___ Congestion in HOV lane
    ___ Finding new riders
    ___ Risk of van rollover accidents
    ___ Finding back-up drivers
    ___ Other _____
    ___ Vehicle height restrictions in parking garages
    ___ Availability of P&R lots/ pick-up locations
    ___ Center aisle configuration unavailable from manufacturer
    ___ Availability of priority parking at work
    ___ Availability of convenient drop-off locations
    ___ Availability of van maintenance locations
    ___ New high-occupancy toll (HOT) lanes along my route

20. If you have other comments about vanpooling or vanpool services, please note them below.

_____

_____

Thank you for your cooperation. Please fax this questionnaire to us, toll-free, at (888) 714-9846. Or, if you prefer, you may provide your responses online at the following website: http://proj.cicresearch.com/vp08.htm or to an interviewer over the phone by calling the following toll-free number: (800) 892-2250. Your answers will be confidential.

APPENDIX D
TELEPHONE QUESTIONNAIRE

Vanpool Survey January – February 2008

METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS

COMMUTER CONNECTIONS
A SMARTER WAY TO WORK

Project #821

Before we get started, please tell me the pin number located on the label on the top right corner of your questionnaire

PIN:_____ or

Name:_____

Van Ownership and Operation

1. How long has this vanpool been in operation? _____ years **OR** _____ months

2. How long have you been the vanpool driver? _____ years **OR** _____ months

3. Who owns the van? (Check one)

   ❑ Myself or a family member ❑ Leasing agency ❑ Employer
   ❑ Private party outside my family ❑ Other _____

4. Please provide the following information about your van (if known).

   a) Van make/model _____ c) Model year _____

   b) Passenger capacity (including driver) if every seat is filled _____

5. Please provide the following information about your van insurance (if known).

   a) Type of insurance: ❑ Personal ❑ Commercial ❑ Don't know

   b) Who pays for insurance: ❑ Myself/driver ❑ Van owner ❑ Other _____

   c) Annual insurance cost: $ _____ per year ❑ Don't know

Vanpool Use

6. How many people, including the driver, usually ride in the vanpool? _____

7. How many people, including the driver, rode in the vanpool last Wednesday? _____

   If no one rode in the vanpool last Wednesday, please explain why not _____

8. From what area does your vanpool originate (i.e., where is your van parked overnight)? Please specify town, city, or community. _____

9. How many stops does your van make in the morning to pick up passengers?

   ❑ One stop (central meeting place) ❑ 2 stops ❑ 3 stops ❑ 4 or more stops

10. Where does the van pick up riders in the morning? Please specify the locations for the first and last morning pick-ups. Note street address, nearest cross streets, or park & ride location. Also indicate the town or city.

    a) First pick-up location: _____

    b) Last pick-up location: _____

    c) Is the last pick-up location inside or outside the Capital Beltway? ❑ inside ❑ outside

11. Where does the van drop-off riders in the morning? Please specify the locations for the first drop-off and where the van is parked during the day. Note street address or nearest cross streets. Also indicate the town or city.

    a) First drop-off location: _____

b) Is the first drop-off location inside or outside the Capital Beltway? ❑ inside ❑ outside

c) Where van is parked during the day: _____

12. At what times do the following morning vanpool activities occur? (usual / scheduled clock time)
    a) Driver leaves home at: _____ am
    b) Van leaves last pick-up stop at: _____ am
    c) Van arrives at first drop-off stop at: _____ am
    d) Van is parked for work at: _____ am

13. What is the approximate distance of your vanpool trip to work?
    a) Miles from driver's house to worksite/parking location: _____ miles
    b) Miles from last morning pick-up to first drop-off location: _____ miles

14. What major roadways does the van take for the trip to work? _____

15. Does the vanpool use an HOV lane for any portion of the trip to work?
    ❑ No ❑ Yes, use HOV lane (specify all HOV route(s)) _____

Vanpool Assistance and Services

16. In forming your vanpool, did you receive assistance from your employer or from an organization that helps with vanpool formation, organization, or ridership?
    ❑ No ❑ Yes, from employer ❑ Yes, from organization (specify) _____

17. Do you or does your vanpool receive any of the following services/benefits, from your employer, from a commute service organization, or from a local jurisdiction agency? (Check all that apply)
    ❑ No vanpool services or benefits
    ❑ Reserved van parking at work
    ❑ Van parking close to the building at work
    ❑ Discounted or free van parking at work
    ❑ Guaranteed Ride Home program
    ❑ Payment or subsidy from employer for any vanpool costs
    ❑ Vanpool start-up or other subsidy from any other organization
    ❑ Flexible work hours (arrival and departure times)
    ❑ Other _____

18. What is the monthly parking fee for your van at work? (Please check only one)
    ❑ No charge, parking is free for all employees
    ❑ No charge, parking is free for vanpools
    ❑ $1 – $49 per month
    ❑ $50 – $99 per month
    ❑ $100 – $149 per month
    ❑ $150 – $199 per month
    ❑ $200 or more per month

Other Issues

19. Following is a list of issues that might be of concern to vanpool drivers. Using a scale of 1 to 5, with "1" being "no concern" and "5" being "great concern," please rate your level of concern about each issue.
    ___ Insurance cost too high
    ___ Cost of parking too high
    ___ HOV lane hours too short
    ___ Congestion in HOV lane
    ___ Finding new riders
    ___ Risk of van rollover accidents
    ___ Finding back-up drivers
    ___ Other _____
    ___ Vehicle height restrictions in parking garages
    ___ Availability of P&R lots/ pick-up locations
    ___ Center aisle configuration unavailable from manufacturer
    ___ Availability of priority parking at work
    ___ Availability of convenient drop-off locations
    ___ Availability of van maintenance locations
    ___ New high-occupancy toll (HOT) lanes along my route

20. If you have other comments about vanpooling or vanpool services, please note them below.

_____

_____

Thank you for your cooperation. Please fax this questionnaire to us, toll-free, at (888) 714-9846. Or, if you prefer, you may provide your responses online at the following website: http://proj.cicresearch.com/vp08.htm or to an interviewer over the phone by calling the following toll-free number: (800) 892-2250. Your answers will be confidential.

APPENDIX E
GWRC COVER LETTER, ALERT LETTER, AND TELEPHONE SCRIPT

January 29, 2008

Dear <name of Vanpool Operator>,

Thank you for offering to assist us with the 2008 Vanpool Driver Survey that is being conducted by Commuter Connections, a program at the Metropolitan Washington Council of Governments (COG). The results of this survey will be used to identify current vanpooling practices and to plan for improved facilities and services for vanpools in the future. All survey results will be kept confidential.

Our goal is to have the main driver from each vanpool in the region participate in the study. COG has hired an independent research firm, CIC Research, Inc. to assist with the survey effort. CIC called you earlier in January to confirm your willingness to participate, as well as the number of drivers in your vanpool operation.

As quickly as possible, please distribute one envelope to each driver. We would like to have all questionnaires returned no later than February 15. The packet contains a letter, a questionnaire and a pre-paid envelope. Drivers are identified by number only. To make it easy for drivers to return the completed questionnaire, COG and CIC Research have set up four methods as described in the packet for drivers to participate.

Thank you in advance for your assistance in this important study. If you have any questions, please feel free to contact me at nramfos@mwcog.org or at (202) 962-3313.

Sincerely,

Nicholas Ramfos
Director
Commuter Connections

ALERT LETTER

Dear GWRC Van Operators,

In early January 2008 we will begin working with the Metropolitan Washington Council of Governments (COG) to conduct the regional Vanpool Driver Survey. You may remember the 2002 study which was also conducted by COG and their consultants, LDA Consulting (Lori Diggins) and CIC Research (Lois Wauson).

As you know, vans are a very important means of transportation for commuting in the Washington region, taking numerous, single-occupancy vehicles off the road. The Metropolitan Washington Council of Governments is conducting this survey of van operators and drivers in the region in order to analyze current vanpooling practices and plan for improved facilities and services for vanpools.

The Metropolitan Washington Council of Governments and their consultants are aware that your driver contact information is confidential. However, it is important for each van driver in the Washington, DC region to participate in this survey. Therefore, I am asking you to assist us with this project by answering a few questions by telephone when CIC Research calls in January. The questions will concern the number of drivers in your operation and your contact information. CIC staff will also be sending you a package containing a cover letter, a short two-page questionnaire and pre-paid envelope for each of your drivers. Please assist them by distributing the surveys to your drivers after you receive the package in mid-January.

The drivers should fill out the questionnaire and return it directly to CIC Research; either by mailing it back, faxing it back or completing it via an easy-to-use Internet link. Hopefully, this will limit the impact on you! Also, please be assured that all of the driver information will be kept confidential and only used in the aggregate for presenting results of the study.

Thanks so much for your help.

Sincerely,

Diana Utz

SCRIPT FOR GWRC OPERATORS

Recruitment for GWRC Vanpool Operators/Drivers - #821

January 2008

Hello: My name is _____ and I'm with CIC Research. I'm calling on behalf of the Metropolitan Washington Council of Governments. They have asked us to conduct a survey of vanpool operators and drivers in the region. We got your name from (agency name from call record) and we need your help in collecting contact information for vanpool owners and drivers so that we can send survey packets to all of them.

You may remember that this study was last conducted in 2002 and it is not likely that another study of this magnitude will be conducted again in the near future. Results will be used in the planning of vanpool facilities and services in the future. The questionnaire only takes a few minutes to fill out and all responses are strictly confidential.

Q1. First I'd like to ask, are you ….?

1. An operator or owner with multiple vans, or (GO TO Q2)
2. An operator/driver with a single van (GO TO Q5)

Q2. We'd like a driver from each vanpool in your operation to receive a questionnaire and we need your help to do that. After drivers complete their questionnaires, they can either mail it back or fax it back, or they can complete it over the Internet.

1. Would you prefer to give us the names and addresses of your drivers and we'll send them the questionnaires,(GO TO Q3)
2. Or would you rather distribute the questionnaires to the drivers yourself? (SKIP TO Q4)

(IF HESITANT, SAY:) We know that your driver information is confidential and we'd like to assure you that all information we collect will be kept strictly confidential. Is there some other way we could do this so you'd feel comfortable with the procedure? (IF UNABLE TO CONVERT, THANK & TERMINATE AND RECORD REASON FOR REFUSAL ON BACK.)

Q3. Would you rather fax their names and addresses to us or would it be easier to email their contact information to us?

1. fax (GIVE RESPONDENT OUR TOLL-FREE FAX NUMBER: **888/714-9846**)
2. email (GIVE EMAIL ADDRESS: **survey@cicresearch.com**)

Q3a. And when do you think you'll be able to get those names to us? _____
(NOW SKIP TO CLOSING)

Q4. That's great. How many main drivers (one for each van) do you have so we can send you the correct number of survey packages? _____ (number of vans in the operation)

Let me just take a minute to confirm your contact information so that we can send those out to you. [SKIP TO CONTACT GRID BELOW]

Q5. We'd like to send the survey package directly to you. After you complete the questionnaire, you can either mail it back or fax it back, or you can complete the questionnaire on the Internet if you prefer. Let me confirm your contact information and we'll get those materials sent out to you. [GO TO CONTACT GRID BELOW]

CONTACT GRID

Contact Name: _____ ☐ Call Record is correct

Vanpool Co. Name: _____ ☐ Call Record is correct

Street Address: _____ ☐ Call Record is correct

City: _____ ☐ Call Record is correct

State: _____ ☐ Call Record is correct

ZIP: _____ ☐ Call Record is correct

E-mail: _____

Thank you very much for your help. We look forward to your participation.