

## **APPENDIX C**

### **Arlington Transit On-Board Survey Technical Memorandum**

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## 1.0 OVERVIEW OF TRANSIT RIDER SURVEY PROCESS

The National Capital Region Transportation Planning Board (TPB) conducted a regional on-board survey in the spring of 2008. The technical report<sup>1</sup> cites the main purposes of the survey as follows:

- 1) collect the jurisdiction of residence data of Washington Metropolitan Transit Authority's (WMATA) weekday bus passengers in support of WMATA's bus subsidy allocation formula;
- 2) collect origin and destination trip patterns of the local jurisdiction bus systems for local bus route planning and regional travel demand model validation; and,
- 3) collect other travel-related and demographic data to update the regional profile of WMATA and local bus system riders and their related bus trips.

The survey instrument was based on previous bus surveys conducted by MWCOG and WMATA as well as a recently-completed on-board survey conducted by the Maryland Transit Administration. The purpose for this coordinated effort was to ensure the resulting dataset can be used in both local transit planning and modeling as well as regional travel demand modeling which includes transit travel between Maryland and Washington DC and surrounding areas.

The survey was distributed among bus passengers of Arlington County Transit (ART), Prince George's County (TheBus), City of Fairfax (CUE), Alexandria (DASH), Frederick County (TransIT), Potomac Rappahannock Transit Commission (PRTC), Montgomery County (Ride-On), and WMATA's MetroBus. Table 1-1 summarizes the survey's raw and expanded responses by service provider.

**Table 1-1  
2008 Regional Bus Survey  
Raw and Expanded Responses by Service Provider**

Service Provider	Raw Survey Responses	Expanded Responses
TransIT	156	2,813
CUE	376	3,563
ART	398	4,719
PRTC	603	12,425
DASH	815	14,673
TheBus	331	15,262
Ride-On	2,717	97,966
MetroBus	23,023	454,897
Total	28,419	606,318

This Technical Memorandum summarizes survey responses for ART riders. It is important to note that this was a limited survey of only about 9.4% of all ART riders (FY 2008, when survey was conducted). Thus, results may not necessarily be truly indicative of actual ridership characteristics.

NuStats' regional survey included surveying riders on Arlington Transit (ART), a fixed-route service. No surveys were completed on Arlington's paratransit service STAR (Specialized Transit for Arlington

<sup>1</sup> MWCOG, 2008 Regional Bus Survey, Technical Report, June 2009

Residents). The following eight (8) ART routes were surveyed: ART 41, ART 51, ART 52, ART 53, ART 61, ART 74, ART 75, and ART 82.

Surveys were passed out in the form of paper questionnaires that could be completed and turned in on-board, or completed off-bus and mailed in (each questionnaire contained a business mail permit for free return). The short survey consisted of twelve (12) questions on a two-sided standard sheet of paper and was available in English and Spanish. A copy of the English version of the questionnaire is provided in *Section 4.0* of this Appendix.

The raw data from NuStats' survey of ART buses was used in the analysis in *Section 2.0 Responses to Survey Questions*.

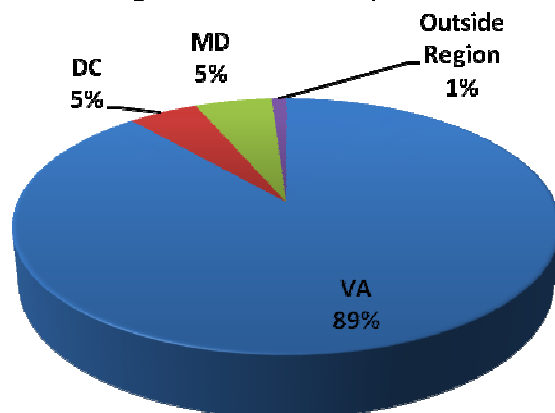
## 2.0 RESPONSES TO SURVEY QUESTIONS

The survey of ART passengers consisted of twelve (12) questions that focused on demographic characteristics of the riders (e.g., gender, age, and income) and trip characteristics (e.g., trip origin, destination, and fare payment method). This section details the rider responses to each question. As previously noted, surveys were only conducted on fixed-route buses (ART) and not on STAR (Specialized Transit for Arlington Residents) paratransit routes.

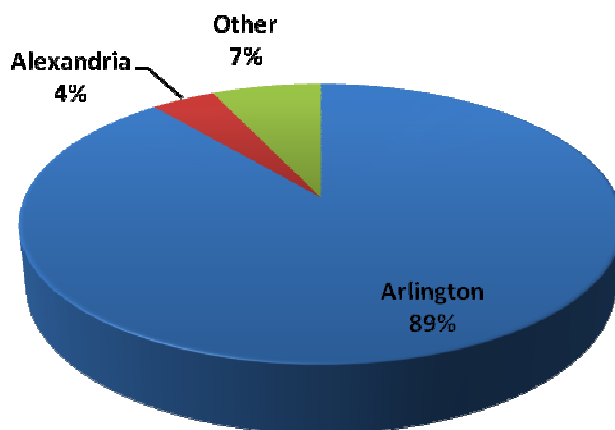
### LOCATION OF RESIDENCE

The first survey question asked riders to report their home address (or, for visitors, the address of where they are staying in the D.C. area). Responses from the survey indicate that ART riders are predominantly Virginia residents (89%), while 5% live in the District or Maryland and approximately 1% live outside the region (as shown in *Figure 2-1A*). Within Virginia, survey responses indicate that the majority of riders are Arlington residents (89%), with 4% living in Alexandria and the remaining 7% living in other Virginia cities (as shown in *Figure 2-1B*).

**Question 1. Location of Residence**  
**Figure 2-1A. All Responses**

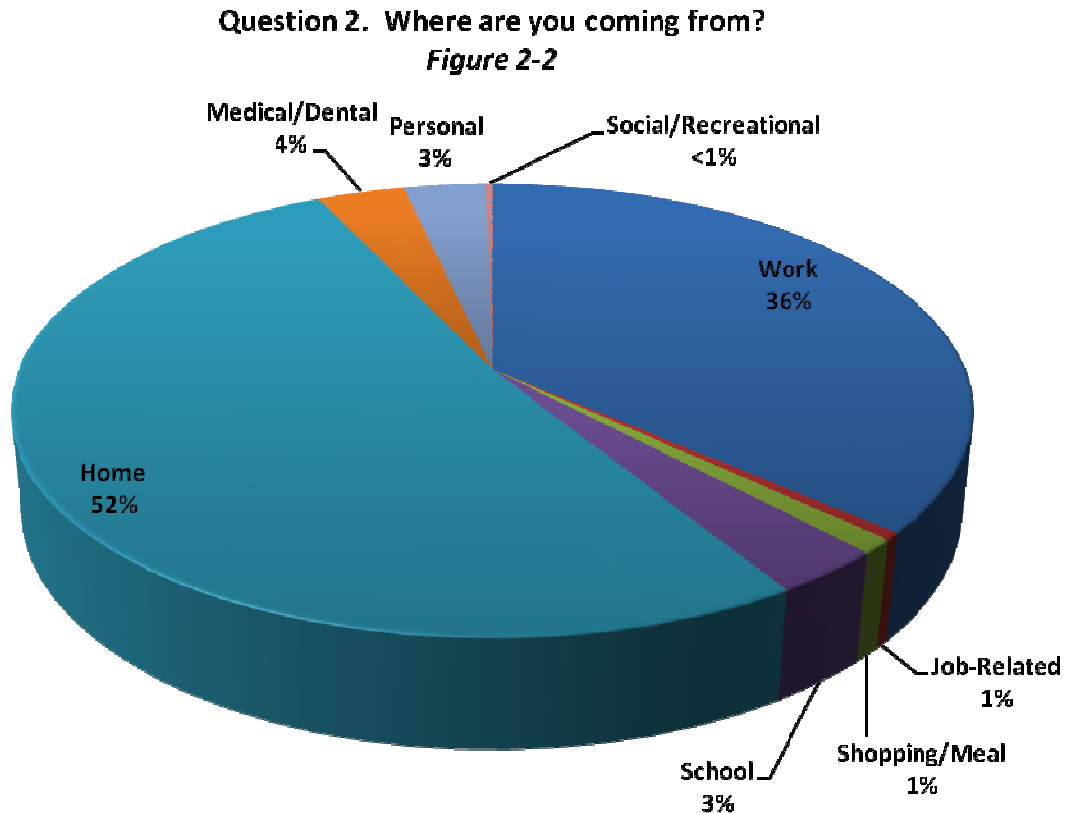


**Figure 2-1B. Responses Within Virginia**



## **TRIP ORIGIN**

The second survey question asked riders to identify their trip origin (i.e., their starting place before boarding that one-way bus ride). Responses to the survey question indicate that just over half (52%) began their trip at home and just over one-third (36%) began their trip at work. The following origins each received less than 5% of responses: medical/dental; school; personal; shopping/meal; job-related; and social/recreational (as shown in *Figure 2-2*).

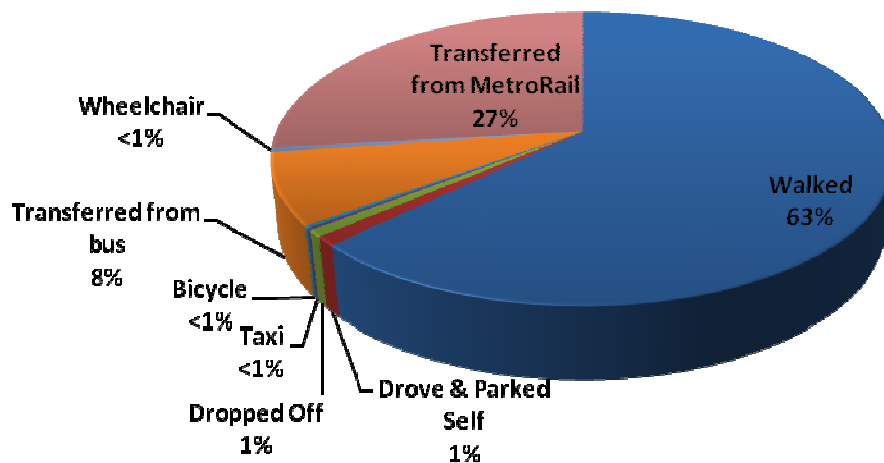


**GETTING TO THE BUS FROM ORIGIN**

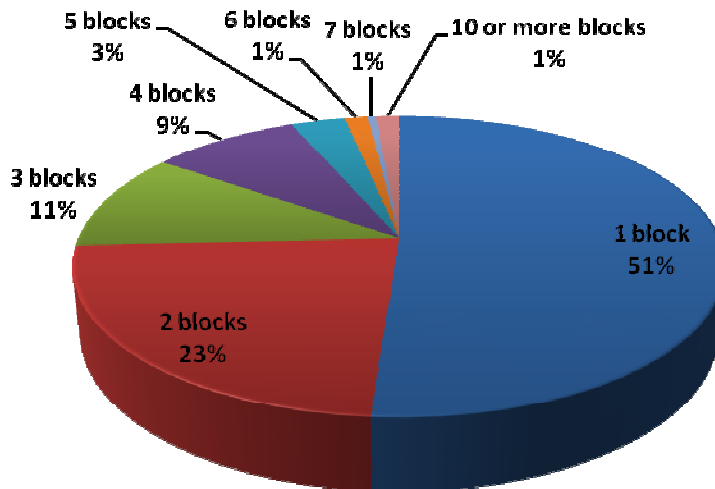
The third survey question asked riders to identify their mode of travel getting to the bus (i.e., how did they get from their origin to the bus stop). Survey responses indicate that almost two-thirds of riders (63%) walked to the bus stop, almost one-third (27%) transferred from the MetroRail, and 8% transferred from another bus (as shown in *Figure 2-3A*). One percent or less of riders indicated each of the following: dropped off; drove and parked; took a taxi; bicycled; or used their wheelchair. There were zero responses for riders transferring from MARC, VRE, and/or Amtrak. For those riders who walked to the stop, just over half indicated that they walked 1 block, 23% walked 2 blocks, and approximately 10% each walked 3 or 4 blocks; the remaining 6% walked more than 5 blocks, with just 1% walking over 10 blocks (as shown in *Figure 2-3B*).

**Question 3. How did you get to this bus?**

**Figure 2-3A. All Responses**



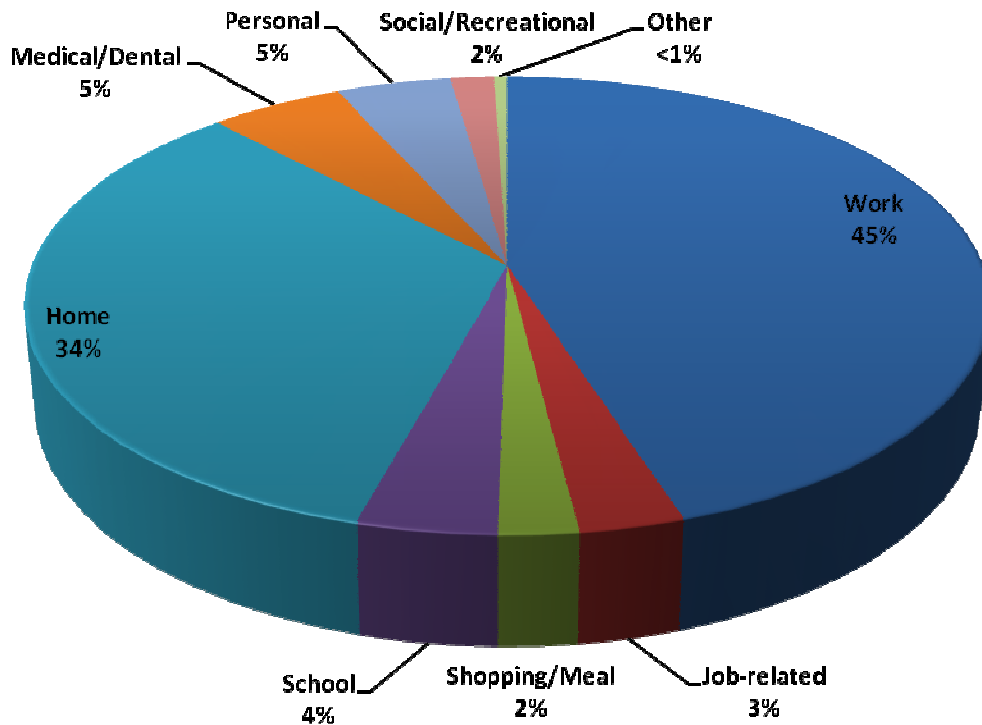
**Figure 2-3B. Walk Responses - Number of Blocks Walked**



**TRIP DESTINATION**

The fourth survey question asked riders to identify their trip destination (i.e., their ending place after exiting that one-way bus ride). Responses to the survey question indicate that just under half (45%) were going to work and approximately one-third (35%) were on their way home. The following responses each received 5% or less of responses: medical/dental; personal trip; school; job-related; shopping/meal; social/recreational; and other (as shown in *Figure 2-4*).

**Question 4. What is the destination of your trip today?**  
**Figure 2-4**

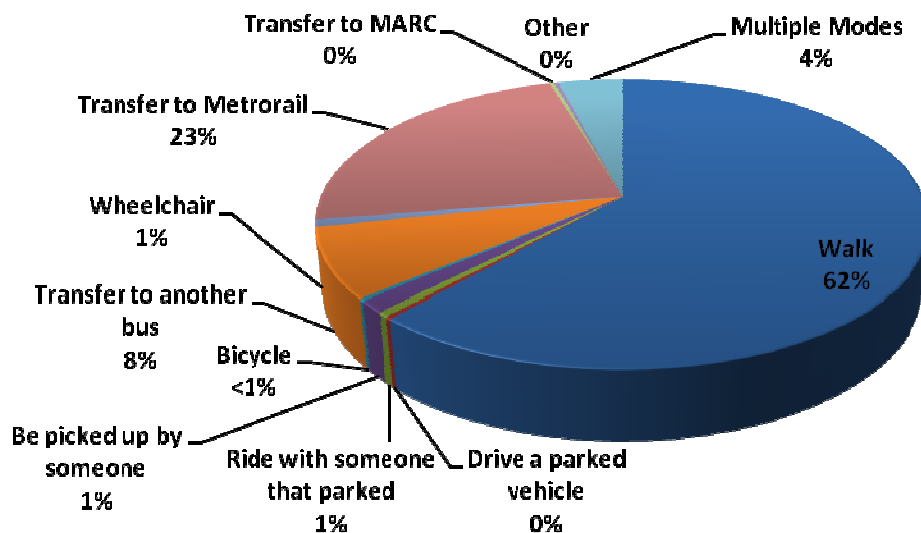


**GETTING FROM THE BUS TO TRIP DESTINATION**

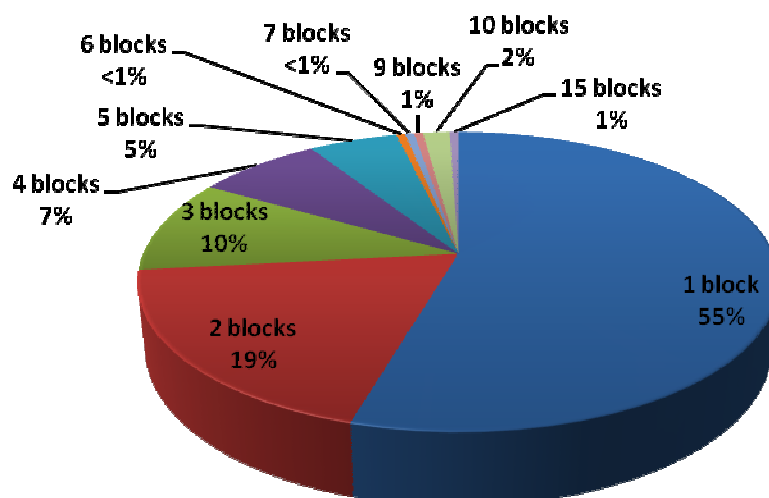
The fifth survey question asked riders to identify their mode of travel after exiting the bus (i.e., how they are planning to get from the bus stop to their end destination). Survey responses indicate that the majority of riders (62%) were walking, 23% were transferring to MetroRail, and 8% were transferring to another bus (as shown in *Figure 2-5A*). One percent or less of riders indicated each of the following: drive; ride in a car; be picked up; bicycle; wheelchair; transferring to MARC; and other. Survey responses also indicate that 4% of riders used multiple modes (at least two), and no riders transferred to VRE or Amtrak. For those riders who walked, over half (55%) walked 1 block, 19% walked two blocks, 10% walked 3 blocks, and 7% walked 4 blocks; the remaining 9% walked 5 blocks or more, with 3% walking 10 or more blocks and 1% walking more than 15 blocks (as shown in *Figure 2-5B*).

**Question 5. How will you get from the bus to your end destination?**

**Figure 2-5A. All Responses**



**Figure 2-5B. Walk Responses - Number of Blocks Walked**

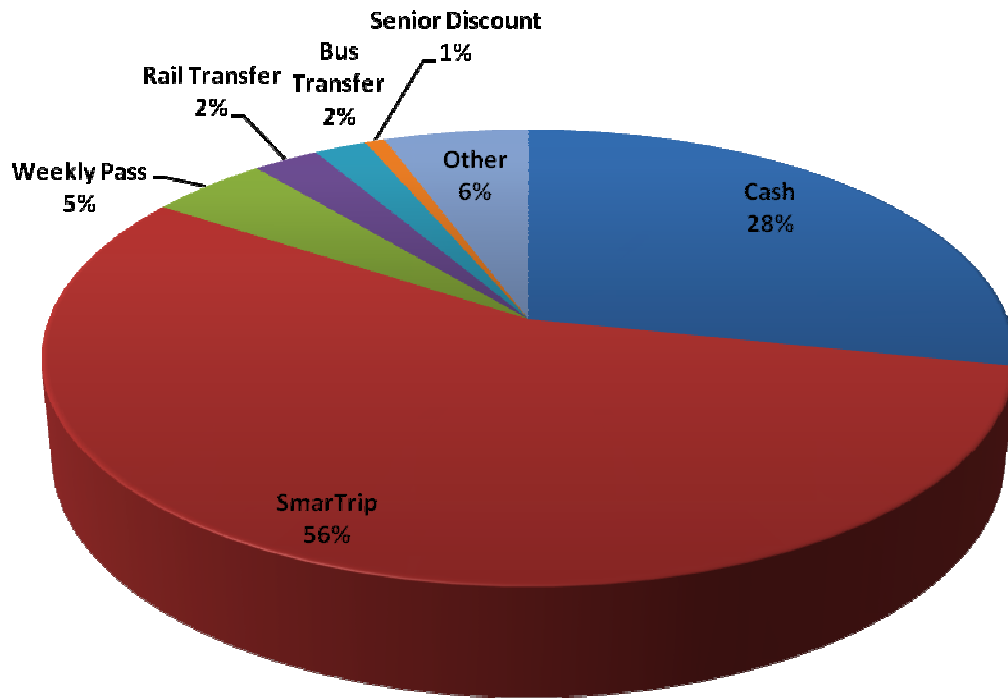


**FARE PAYMENT METHOD**

The sixth survey question asked riders to identify their method of payment for the bus ride. Responses to the survey question indicate that over half (56%) utilize a SmarTrip card and just under one-third (28%) pay with cash (as shown in *Figure 2-6*). Approximately 5% use a week pass, 4% use a transfer ticket from MetroRail and/or another bus, and 1% utilize the senior discount. The remaining 6% indicated they use a different method of payment; the majority of these write-in responses specified that the fare was paid by token or by hospital ID (ART services are free for hospital staff).

**Question 6. How did you pay the fare for this bus ride?**

***Figure 2-7***

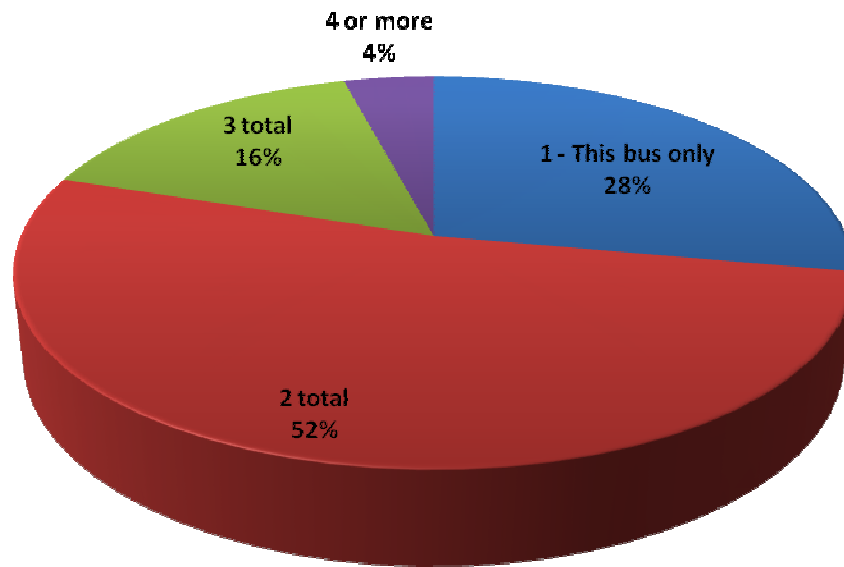


**TOTAL NUMBER OF TRANSIT MODES USED FOR TRIP**

The seventh survey question asked riders to identify the total number of buses and trains they were using in making their one-way trip, including the bus on which they were being surveyed. Survey responses indicate that just over half of riders (52%) were going to use 2 total buses and/or trains, 28% were only using the one bus on which they were surveyed, 16% were going to use 3 total, and less than 5% were going to use 4 or more buses and/or trains (as shown in *Figure 2-7*).

**Question 7. Including this bus, how many total buses and trains will you use in making this one-way trip?**

***Figure 2-7***



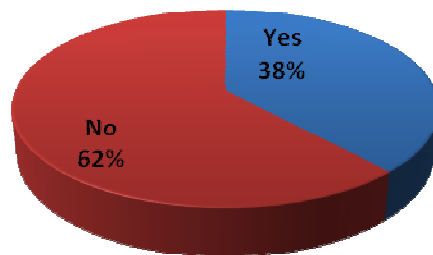
Note these results, taken directly from the raw data of the survey responses provided by NuStats, seem inconsistent with the results of Questions 3 and 5 (getting to and from the bus stop). In those two questions, results indicated that over half of riders walk directly from their trip origin to the bus stop and also walk directly from the bus stop to their trip destination. Therefore, it is expected that a similar percentage (over half) of riders would indicate only one (1) bus for the total number of transit modes for their one-way trip. However, as is shown in the chart in *Figure 2-7*, the majority of respondents indicated two (2) total buses and/or trains for their own-way trip. This discrepancy could simply be due to a misinterpretation of the question (“one-way” versus “round trip”).

## **TRANSIT BENEFITS**

The eighth survey question asked riders to identify if they received a transit benefit from their employer. Survey responses indicate that almost two-thirds of riders (62%) did not receive benefits, with the remaining 38% receiving some sort of benefit (as shown in *Figure 2-8*).

### **Question 8. Do you receive a transit benefit from your employer?**

***Figure 2-8***

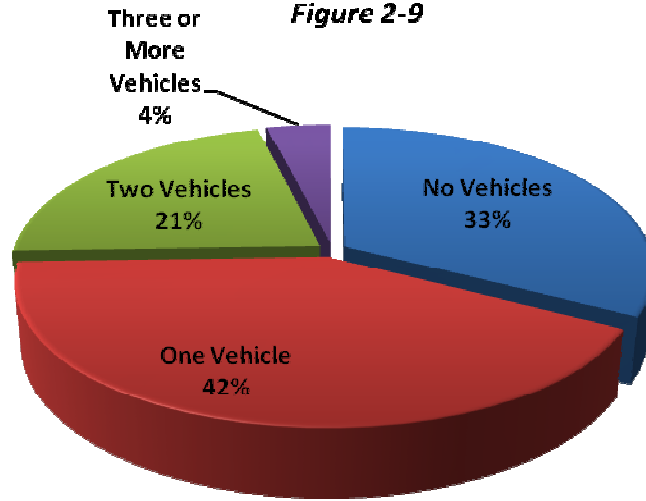


## **VEHICLES AT HOUSEHOLD**

The ninth survey question asked riders to identify how many usable vehicles were located at their household. Survey responses indicate while the greatest percentage of riders (42%) had one vehicle present at their households, approximately one-third of riders (33%) did not have any usable vehicles at their houses (as shown in *Figure 2-9*). Approximately 21% of riders had two vehicles at their houses, and the remaining 4% had four or more vehicles at their households.

**Question 9. How many usable cars, SUVs, vans, or trucks are at your home?**

**Figure 2-9**

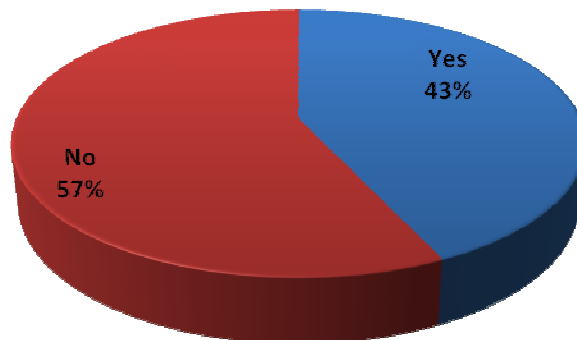


### VEHICLE AVAILABLE ON DAY OF RIDE

The tenth survey question asked riders to identify if there was a usable vehicle that was available to the rider to use to make their trip. Survey responses indicate that the majority of riders (57%) did not have a vehicle available to them on the day of their ride and therefore rely on ART to complete their daily business (as shown in *Figure 2-10*). The remaining 43% of riders did have a vehicle available to them on the day of their ride.

**Question 10. Was there a vehicle at your residence available to you today that you could have used to make this trip?**

***Figure 2-10***

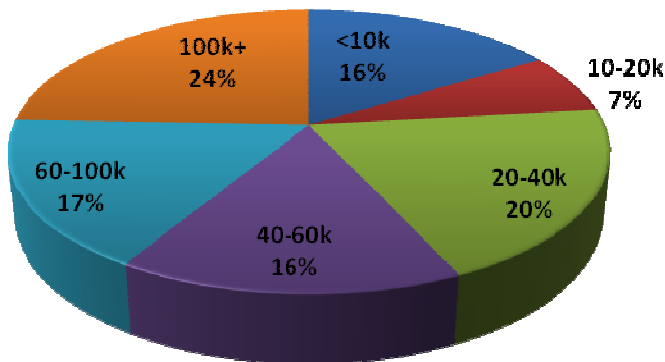


### HOUSEHOLD INCOME

The eleventh survey question asked riders to estimate their total household income for 2007 before taxes. Survey responses indicate that ART riders earn a broad range of incomes (as shown in *Figure 2-11*); at the lower end, 16% of riders reported earning less than \$10,000 and at the upper end, 24% of riders reported earning over \$100,000. The smallest percentage of riders (7%) reported earning between \$10,000-\$20,000, 20% reported earning between \$20,000-\$40,000, and approximately 16% of riders reported earning between \$40,000-\$60,000 or between \$60,000-\$100,000.

**Question 11. What was your estimated total household income in 2007 before taxes?**

**Figure 2-11**

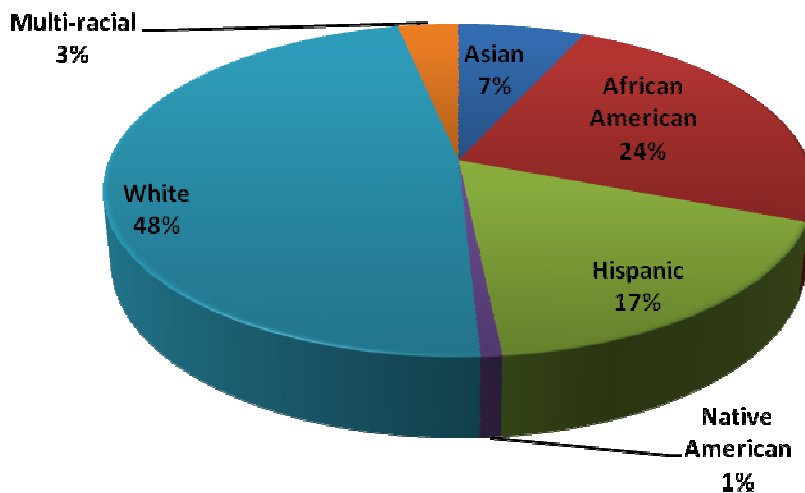


**RACE/ETHNICITY**

The twelfth survey question asked riders to indicate their race/ethnicity. Survey responses indicate approximately half of riders (48%) identify as white, approximately one-quarter of riders (24%) identify as African American, and 17% identify as Hispanic (as shown in *Figure 2-12*). Of the remainder, 7% of riders identify as Asian, 1% as Native American, and 3% identified themselves as multi-racial (indicated at least two other races/ethnicities).

**Question 12. What is your race/ethnicity?**

**Figure 2-12**



**3.0 SUMMARY OF FINDINGS**

Using the survey results presented in *Section 2.0 Responses to Survey Questions*, the typical ART transit rider can be characterized as follows:


- A Virginia resident living in Arlington
- Using transit to travel between home and work
- Walking 1-2 blocks between origin/destination and the bus stop
- Paying with either a SmarTrip card or cash
- Using 1 or 2 buses and/or trains total per one-way trip
- Not receiving transit benefits from employers
- Having one or no vehicles at home, but relying on transit because no vehicles are available to them for their daily trips
- Earning a wide range of incomes
- Caucasian

## 4.0 COPY OF QUESTIONNAIRE (ENGLISH VERSION)

**Thank You!**

Please remember to complete your address information on the front of the survey so that we can contact you if you are selected as a winner of a SmarTrip® card.

**RETURN THE COMPLETED SURVEY TO THE SURVEYOR,  
OR DROP IT IN ANY MAILBOX  
(no postage required).**



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Council Of Governments**

Local governments working together for  
a better metropolitan region.



**BUSINESS REPLY MAIL**  
FIRST-CLASS MAIL PERMIT NO. 5478 AUSTIN TX  
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NECESSARY  
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IN THE  
UNITED STATES**

If printing by mail, please use this page.

**Regional Bus Survey**  
Metropolitan Washington Council Of Governments

Please take a minute to help us plan for **YOUR** public transit needs by filling out this survey. Return the completed survey to the surveyor. Please fill out this form even if you completed one on this or another one-way trip.

**All personal information is confidential and WILL NOT be shared or sold.**

Print letters/numbers clearly in upper case: A B C 1 2 3  
Fill in bubble with: ●

**1. REGISTER TO WIN ONE OF 15 \$100 SMARTRIP® CARDS  
WHEN YOU ANSWER ALL QUESTIONS!**

Please provide your name, telephone number, and home address or if you are just visiting, where you are staying in the Washington, D.C. region.

Name \_\_\_\_\_

Street Address (NO P.O. BOXES PLEASE) \_\_\_\_\_

Apt. # \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_

Zip \_\_\_\_\_ Telephone \_\_\_\_\_

**The following questions are about THIS  
ONE-WAY TRIP you are making NOW!**

Example One-way Trip:

Continue Inside →

