

# TECHNICAL MEMORANDUM #1

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**From:** HDR Engineering, Inc. of the Carolinas Consulting Team (HDR)  
**To:** Capital Area Bus Transit Development Plan Steering Committee & CAMPO  
Technical Coordinating Committee  
**Date:** September 22, 2011  
**Topic:** 2010 Capital Area Bus Transit Rider Survey

## 1 Introduction

A key component of the Capital Area Bus Transit Development Plan involved administering an Origin/Destination (O/D) rider survey to users of Capital Area Transit (CAT), Cary Transit (CTran), Triangle Transit (TTA), and the North Carolina State University Wolfline (Wolfline). The survey was developed in order to gain additional insights into riders' travel, demographic, and attitudinal characteristics. The results from the survey will be used in crafting the final recommendations of the Capital Area Bus Transit Development Plan. Additionally, origin and destination location information will be used in updating the Triangle Regional Model.

## 2 Methodology

Four separate questionnaires were developed respectively for CAT, CTran, Triangle Transit, and Wolfline services. HDR developed the initial questionnaires which were subsequently approved prior to distribution by the Capital Area Transit Development Plan Steering Committee. The survey questionnaires were identical for CAT and CTran, with the exception that each jurisdiction included local examples for the locational questions (such as providing local intersections or place names). The TTA survey was mostly the same, but included slightly different wording on the fare question, and a different set of attribute questions. The scale of the attribute rankings was also different, with CAT and CTran using a five-point scale and TTA using a seven-point scale. TTA's 2009 survey used a seven-point scale and they desired to maintain the same scale for continuity.

Besides the different attribute scale and questions, CAT and CTran included two questions related to amenities at bus stops and the willingness to walk further to have access to amenities. These questions were added at the request of the Center for Urban Affairs & Community Services at North Carolina State, which was doing a study of mass transit use and attitudes toward transit use. An additional question asked on the CAT and CTran surveys was the riders' preferred method of receiving information. The TTA survey included two unique questions instead that asked about how riders would rate the August 2010 service changes and whether they would take the new bus route to the RDU airport. The Wolfline survey was an abbreviated survey that asked about 15 questions instead of the 40 or so questions on the other surveys. The reason for this difference was due to the length of time riders spent

on the Wolfline service. These routes are shorter and can be crowded, which diminishes the time and willingness to complete a robust survey instrument. A separate attitudinal survey on Wolfline services was being planned, which eliminated the need to ask these questions as well.

Planning Communities, LLC (PCL) translated each survey instrument into Spanish. AJM Consulting (AJM) was responsible for survey distribution through a workforce of survey administrators and the subsequent data entry of all received survey responses.

A survey pre-test was performed on a sample of CAT routes in the middle of September 2010. About 670 surveys were distributed with 127 surveys returned for a 19% response rate. Of particular concern was the length of the surveys and whether the wording of the questions was clear. There was no observed decrease in the response rate for the last questions compared with the first, indicating that “survey fatigue” was not an issue. Some wording was clarified based upon comments from riders taking the survey, but no major changes were made.

For the actual survey, all survey administrators were trained. Final O/D rider surveys were administered on-board CAT, CTran, Triangle Transit, and Wolfline routes between October 29, 2010 and November 4, 2010. A sample of runs was chosen with service hours surveyed based on random selection stratified so that all routes of interest were surveyed. Only weekdays were sampled on all four systems. AJM survey administrators accompanied operators along fixed-routes for the full duration of the route run. Survey administrators were instructed to give all riders who boarded the bus during the route run a questionnaire. All participants were provided a pencil to fill out the survey. Completed forms were returned to the surveyor who placed the surveys in an envelop denoting the route and run number. No mail back option was provided. Past experience at multiple properties have shown that few people take advantage of this option and many who do do not correctly fill out the survey form to reflect the trip on which they received it. Since space on the form was already limited, the Capital Area Transit Development Plan Steering Committee agreed that the mailback option was not required. Survey forms are located at the end of this memorandum.

Separate surveys were available in Spanish. A separate instrument was selected rather than having the translation on the English survey due to space constraints. Surveyors were instructed to distribute a Spanish language survey on request. The number of Spanish surveys received back were 35 on CAT, 9 on CTran, and 7 on Triangle Transit.

The survey goal was to achieve a 90% confidence level +/- 10% for the CAT daytime local routes individually and for the off-hour and express routes as groups. These accuracy levels were also desired for the individual TTA and Wolfline surveyed routes and for the CTran routes as a group. Achieving these accuracy levels was tempered by the budget available.

These accuracy levels were met on most CAT daytime, TTA, and Wolfline surveyed routes. For CAT daytime routes, the exceptions were Route 3 Glascock, Route 10 Longview, Route 19 Apollo Heights, Route 21 Caraleigh, Route 8C Sawmill, Route 11C Buck Jones, Route 23C Millbrook, and Route 24C North Crosstown. For TTA, the exceptions were Route 303 and Route 305 while two Wolfline routes, Route 2 and the Werewolf, had a sampling error above 10%. The grouped routes, including the off-hour CAT and CTran routes each possessed sampling errors below 10%. The grouped commuter express CAT routes had a sampling error that was only slightly above the 10% threshold.

## 2.1 CAT O/D Rider Survey

The CAT on-board O/D rider survey was administered on November 1, 2010 and November 2, 2010. Several Triangle Transit routes, including the Wake Forest Express, Knightdale Express, and Zebulon Express, are included as they are operated by CAT. The R-Line, Route 40E, Route 31 (Sunday only), Route 34 (Sunday only), and the Wake Forest Loop were not surveyed. Both the R-Line (the downtown free circulator) and the 40E Wake Tech Express serve specialized markets, and the Wake Forest Loop is a contracted service to the Town of Wake Forest. For budgetary reasons, these routes were not surveyed. For the CAT system as a whole, a total of 2,131 responses were received. CAT systemwide average daily ridership for the surveyed routes is estimated to be 16,569 boardings, which is based on total ridership figures for fiscal year (FY) 2009-2010. Overall, this sample size is accurate at the 90% confidence level, plus or minus 1.7% for systemwide statistics.

Beyond the CAT systemwide statistics, sampling response rates and accuracy levels is observable by each surveyed route. **Exhibit 2-1** provides an overview of all sampled CAT routes, showing the average FY 2009-2010 weekday ridership, total responses received by route, and the sampling error percentage. CAT routes whose sampling error exceeds +/- 10% are highlighted in red. The majority of highlighted routes represent off-hour services, with operating hours in the early-morning and late-evening. However, taking the off-hour routes as a whole, the sampling error decreases to 5%.

A sampling factor is calculated for each route in order to expand the total route sample responses to the overall system as a whole. Doing so controls for different response rates on the various routes, so that the overall system results properly reflect the relative ridership proportions for each route. CAT ridership data from fiscal year 2009-2010 provides the average weekday passenger boardings for each route. The total route sample provides the number of returned CAT O/D rider surveys by route. By dividing the total route sample by the average number of weekday boardings, a unique control factor is obtained for each route. This factor is applied to each response, by route, in order to equal the number of average daily weekday boardings.

**Exhibit 2-1**  
**Sampled CAT Routes**

Route	Average Weekday Ridership	Total Route Responses	Sampling Factor	Sampling Error % - 90% Confidence
<b>CAT Daytime Local Routes</b>				
1 Capital	1,749	104	16.820	7.8
2 Falls of Neuse	986	193	5.109	5.2
3 Glascock	290	40	7.253	12.0
4 Rex Hospital	1,010	171	5.906	5.7
5 Biltmore Hills	573	62	9.240	9.8
6 Crabtree	707	66	10.717	9.6
7 South Saunders	1,076	109	9.874	7.4
8 Northclift	438	68	6.441	9.1
10 Longview	393	42	9.349	11.9
11 Avent Ferry	835	99	8.434	7.7
12 Method	770	102	7.551	7.5

Route	Average Weekday Ridership	Total Route Responses	Sampling Factor	Sampling Error % - 90% Confidence
13 Chavis Heights	286	63	4.536	9.1
15 WakeMed	1,938	73	26.544	9.5
16 Oberlin Road	517	72	7.175	8.9
18 Worthdale	508	72	7.057	8.9
19 Apollo Heights	353	24	14.721	16.1
21 Caraleigh	484	23	21.056	16.7
22 State Street	397	114	3.483	6.4
Route 7C Carolina Pines	362	114	3.176	6.3
Route 8C Sawmill	183	40	4.566	11.4
Route 11C Buck Jones	289	24	12.059	16.0
Route 15C Trawick	638	109	5.848	7.1
Route 23C Millbrook	267	51	5.229	10.3
Route 24C North Crosstown	306	6	51.002	33.4
Route 25C Triangle Town Ctr.	307	64	4.791	9.1
<b>TOTAL</b>	<b>15,662</b>	<b>1,905</b>	<b>8.221</b>	<b>1.7</b>
<b>CAT Off-Hour Routes</b>				
26c Early East	8	3	2.755	40.3
28 Southwest	15	2	7.640	55.9
29c North Night	41	22	1.878	12.1
30 Northeast	50	4	12.379	39.7
32 Sanderford Road	103	35	2.942	11.3
33c Glenwood	29	11	2.604	19.7
35 Poole Road	92	37	2.482	10.4
36 Garner Station	153	10	15.337	25.1
37 North Hills	67	1	66.834	82.0
38 Blue Ridge	88	30	2.917	12.2
39 Cameron Village	68	22	3.101	14.4
<b>TOTAL</b>	<b>714</b>	<b>203</b>	<b>3.5172</b>	<b>4.8</b>
<b>CAT Commuter Express</b>				
Route 70 Brier Creek Express	44	19	2.315	14.3
Route KRX Knightdale Express	22	5	4.385	32.9
Route ZWX Zebulon Express	61	21	2.902	14.6
Route WFRX	66	4	16.593	40.0
<b>TOTAL</b>	<b>193</b>	<b>49</b>	<b>3.938</b>	<b>10.1</b>
<b>OVERALL TOTAL</b>	<b>16,569</b>	<b>2,131</b>	<b>7.775</b>	<b>1.6</b>

\*Source: 2010 CAT Rider Survey

## 2.2 CTran O/D Rider Survey

The CTran O/D rider survey sampled all existing weekday CTran routes over an average weekday period. The on-board O/D rider survey was administered on October 29, 2010. A total of 143 responses were received for the system. CTran systemwide average weekday boardings are estimated to be 450, which

is based on total ridership figures for FY 2009-2010. Overall, this sample size is accurate at the 90% confidence level, plus or minus 5.7% for systemwide statistics.

Beyond the systemwide statistics available for CTran, sampling response rates and accuracy levels is also observable by each surveyed route. **Exhibit 2-2** provides an overview of all CTran routes, showing the average FY 2009-2010 weekday ridership, total responses received by route, and the sampling error percentage. CTran routes whose sampling error exceeds +/- 10% are highlighted in red. While most routes exceeded the sampling error threshold of +/- 10% on an individual basis, overall the systemwide sample size is accurate at the 90% confidence level.

A sampling factor is calculated in order to expand the total route sample responses to the overall system as a whole. CTran ridership data from FY 2009-2010 provides the average weekday passenger boardings for each route. The total route sample provides the number of returned CTran O/D rider surveys by route. By dividing the total route sample by the average number of weekday boardings, a unique control factor is obtained for each route. This factor is applied to each response, by route, in order to equal the number of average daily weekday boardings.

**Exhibit 2-2  
Sampled CTran Routes**

<b>Route</b>	<b>Average Weekday Ridership</b>	<b>Total Route Responses</b>	<b>Sampling Factor</b>	<b>Sampling Error % - 90% Confidence</b>
Route 1 Maynard	59	20	2.957	15.0
Route 2 Maynard	51	13	3.908	19.8
Route 3 Harrison	47	18	2.642	15.4
Route 4 High House	83	21	3.947	15.5
Route 5 Kildaire Farm	97	40	2.420	9.9
Route 6 Buck Jones	111	31	3.586	12.5
<b>OVERALL TOTAL</b>	<b>448</b>	<b>143</b>	<b>3.132</b>	<b>5.6</b>

*\*Source: 2010 CTran Rider Survey*

### 2.3 TTA O/D Rider Survey

The TTA O/D rider survey sampled most existing Wake County weekday TTA routes over the course of an average weekday period. TTA routes only serving Durham or Orange Counties were not surveyed, nor were Route 201 and Route 311. The scope of services was the development of a Wake County bus plan, so routes that served only other counties were not of interest, and Routes 201 and 311 were not surveyed due to low ridership and budgetary limitations. The on-board O/D rider survey was administered on November 4, 2010. Overall, a total of 649 responses were returned from the TTA survey. TTA systemwide average weekday boardings are estimated to be 2,524, which is based on average daily passenger counts from July 2010 to December 2010. Farebox passenger count data was used for this time period because of route changes that occurred in August 2010. Overall, this sample size is accurate at the 90% confidence level, plus or minus 2.8% for systemwide statistics.

Beyond the TTA systemwide statistics, sampling response rates and accuracy levels are detailed for each surveyed route. **Exhibit 2-3** provides an overview of all sampled TTA routes, showing the average

weekday ridership, total responses received by route, and the sampling error percentage. TTA routes whose sampling error exceeds +/- 10% are highlighted in red.

A sampling factor is calculated in order to expand the total route sample responses to the overall system as a whole. TTA ridership data from July 2010 to December 2010 provides the average weekday passenger boardings for each route. The total route sample provides the number of returned TTA O/D rider surveys by route. By dividing the total route sample by the average number of weekday boardings, a unique control factor is obtained for each route. This factor is applied to each response, by route, in order to equal the number of average daily weekday boardings.

**Exhibit 2-3  
Sampled TTA Routes**

<b>Route</b>	<b>Average Weekday Ridership</b>	<b>Total Route Responses</b>	<b>Sampling Factor</b>	<b>Sampling Error % - 90% Confidence</b>
Route CRX Chapel Hill-Raleigh	488	196	2.489	4.5
Route DRX Durham-Raleigh	290	86	3.372	7.4
Route 100 RDU	568	92	6.173	7.8
Route 102 Garner	105	46	2.282	9.1
Route 105 RTP-Raleigh	334	78	4.282	8.1
Route 301 Cary-Raleigh	468	79	5.924	8.4
Route 303 Cary-Raleigh midday	102	38	2.684	10.5
Route 305 Apex-RTP	169	34	4.970	12.6
<b>OVERALL TOTAL</b>	<b>2,524</b>	<b>649</b>	<b>3.889</b>	<b>2.7</b>

*\*Source: 2010 TTA Rider Survey*

## 2.4 Wolfline O/D Rider Survey

The Wolfline O/D rider survey sampled all existing weekday Wolfline routes over an average weekday period. The on-board O/D rider survey was administered on November 3, 2010. As a whole, a total of 1,960 responses were received across the Wolfline system. The systemwide Wolfline average weekday boardings are estimated to be 9,530, which is based on total ridership figures for FY 2009-2010. Overall, this sample size is accurate at the 90% confidence level, plus or minus 1.7% for systemwide statistics.

Beyond the systemwide statistics available for Wolfline, sampling response rates and accuracy levels is available by each surveyed route. **Exhibit 2-4** provides an overview of all Wolfline routes, showing the average FY 2009-2010 weekday ridership, total responses received by route, and the sampling error percentage. Wolfline routes whose sampling error exceeds +/- 10% are highlighted in red.

A sampling factor is calculated in order to expand the total route sample responses to the overall system as a whole. Wolfline ridership data from FY 2009-2010 provides the average weekday passenger boardings for each route. The total route sample provides the number of returned Wolfline O/D rider surveys by route. By dividing the total route sample by the average number of weekday boardings, a unique control factor is obtained for each route. This factor is applied to each response, by route, in order to equal the number of average daily weekday boardings.

**Exhibit 2-4  
Sampled Wolfline Routes**

<b>Route</b>	<b>Average Weekday Ridership</b>	<b>Total Route Responses</b>	<b>Sampling Factor</b>	<b>Sampling Error % - 90% Confidence</b>
Route 1 Avert Ferry	1,916	489	3.918	3.2
Route 2 North Campus	542	36	15.065	13.2
Route 3 Engineering	666	180	3.699	5.2
Route 4 Westgrove	262	68	3.859	8.5
Route 5 Varsity	800	389	2.056	2.9
Route 6 Carter Finley	524	67	7.814	9.3
Route 7 Wolflink Shuttle	1,322	233	5.673	4.8
Route 8 Southeast Loop	1,337	127	10.527	6.9
Route 9 Greek Village	1,577	188	8.388	5.6
Route 11 Village Link	308	115	2.678	6.0
Werewolf (nights)	138	3	46.000	46.9
Prowl (Th, Fr nights)	138	65	2.123	7.4
<b>OVERALL TOTAL</b>	<b>9,530</b>	<b>1,960</b>	<b>4.862</b>	<b>1.6</b>

\*Source: 2010 Wolfline Rider Survey

### 3 Survey Results

A total of 4,883 responses were received from CAT, CTran, TTA, and Wolfline riders. The results from the survey are summarized below. In some cases, questions were common to all four surveys while in others they were uniquely tailored to specific systems. As a result, summaries are grouped by question, with comparisons made among systems where applicable. Answers from the surveys provide insight into riders' travel, demographic, and attitudinal preferences. Specific components include a demographic profile of current riders, origin and destination location, and customer satisfaction responses by route and market segment. Results are presented for the weighted responses.

Results are not presented here for questions 2, 2A, 2B, 3, 3A (Wolfline only), 3B (Wolfline only), 3C (Wolfline only), 4B, 5A, 5B (Wolfline only), 5C (Wolfline only), 7, 7A, 7B, 8, 9B, 10B, 27 (CAT and CTran only), and 40 (TTA only) since they were open ended questions. However, the results of these questions can be found in the survey databases.

#### 3.1 Trip Purpose

The results from several questions deserve highlighting. **Questions 1 and 6** asked riders about the purpose of their trip, including "Where did you come from before getting on this bus?" and "Where are you going now?". The results from CAT, CTran, TTA, and Wolfline riders provide insight into linkages between the various origin and destination points.

**Exhibit 3-1** details the trip purposes of CAT riders. The major trip linkage was from people going from home to work (3,727, 23%) followed by riders going from work to home (2,042, 13%). The disparity between these two responses is partially affected by the morning bias – riders were more likely to fill

out their survey for their morning trip than their return trip in the evening. Other major trips include riders going from home to some other trip purpose type (1,047, 7%), home to shopping (690, 4%), and college to home (598, 4%). From home to personal business was also significant at 585 trips (4%). The data also revealed several oddities, including 774 riders who reported traveling from home to home. This likely resulted from riders' not understanding the question and reporting their round-trip instead of their one-way trip. Additionally 525 riders reported traveling from work to work which could be attributable to similar confusion, but could represent riders who use transit to commute between jobs.

**Exhibit 3-1  
CAT Origin/Destination Trip Purpose Matrix**

From / To	Work	College	School (K-12)	Restaurant	Recreation	Medical	Personal	Home	Shopping	Other	No response	Total	%
Work	525	43	33	71	29	28	62	2,042	138	161	49	3,132	19.7%
College	116	126	9	5	6	17	23	598	58	71	30	1,029	6.5%
School (K-12)	-	-	49	3	-	54	-	213	17	34	-	369	2.3%
Restaurant	3	-	6	25	8	8	-	103	43	53	-	249	1.6%
Recreation	-	-	-	11	24	-	3	17	6	18	-	80	0.5%
Medical	3	16	12	-	-	21	5	239	41	53	6	390	2.5%
Personal	20	8	-	-	-	-	83	185	15	64	41	374	2.4%
Home	3,727	580	247	234	161	529	585	774	690	1,047	157	8,573	54.0%
Shopping	38	32	-	5	-	12	26	429	78	69	70	689	4.3%
Other	135	20	25	10	54	20	39	423	26	251	2	1,003	6.3%
No response	34	8	-	17	-	6	21	77	56	7	101		
<b>Total</b>	<b>4,567</b>	<b>825</b>	<b>382</b>	<b>364</b>	<b>281</b>	<b>688</b>	<b>826</b>	<b>5,024</b>	<b>1,111</b>	<b>1,821</b>		<b>15,889</b>	
<b>%</b>	<b>28.7%</b>	<b>5.2%</b>	<b>2.4%</b>	<b>2.3%</b>	<b>1.8%</b>	<b>4.3%</b>	<b>5.2%</b>	<b>31.6%</b>	<b>7.0%</b>	<b>11.5%</b>			

\*Source: 2010 CAT Rider Survey

The trip purposes of CTran riders are highlighted in Exhibit 3-2. The major trip linkage was from people going from home to work (164, 37%) followed by riders going from work to home (54, 12%). Many riders also reported traveling from work to work, totaling 43 trips (10%). Other major trips include riders going from home to some other trip purpose type (28, 6%) and home to shopping (27, 6%).

**Exhibit 3-2  
CTran Origin/Destination Trip Purpose Matrix**

From / To	Work	College	School (K-12)	Restaurant	Recreation	Medical	Personal	Home	Shopping	Other	No response	Total	%
Work	43	-	-	-	-	-	-	54	13	6	-	116	26.1%
College	3	-	-	-	-	-	-	10	-	-	-	13	3.0%
School (K-12)	-	-	-	-	-	-	-	-	4	-	-	4	0.8%
Restaurant	4	-	-	-	-	-	-	2	-	-	-	6	1.4%
Recreation	-	-	-	-	-	-	-	4	-	-	3	4	0.8%
Medical	-	-	-	-	-	-	-	-	-	-	-	-	0.0%
Personal	-	-	-	-	-	-	-	3	-	-	-	3	0.6%
Home	164	8	-	13	4	7	4	5	27	28	2	258	58.3%
Shopping	7	-	-	-	-	-	4	9	2	2	-	24	5.4%
Other	11	-	-	-	-	-	-	-	4	-	-	15	3.5%
No response	-	-	-	-	-	-	-	-	-	-	-		
<b>Total</b>	<b>232</b>	<b>8</b>	<b>-</b>	<b>13</b>	<b>4</b>	<b>7</b>	<b>7</b>	<b>86</b>	<b>49</b>	<b>37</b>		<b>443</b>	
<b>%</b>	<b>52.5%</b>	<b>1.8%</b>	<b>0.0%</b>	<b>2.9%</b>	<b>0.8%</b>	<b>1.6%</b>	<b>1.6%</b>	<b>19.5%</b>	<b>11.2%</b>	<b>8.2%</b>			

\*Source: 2010 CTran Rider Survey

**Exhibit 3-3** outlines the trip purposes of TTA riders. The major trip linkage was from people going from home to work (889, 36%) followed by riders going from work to home (510, 21%). Other major trips include riders going from home to college (225, 9%) and college to home (163, 7%). Trips from home to some other trip purpose type were also popular, totaling 80 total trips (3%).

**Exhibit 3-3**  
**TTA Origin/Destination Trip Purpose Matrix**

From / To	Work	College	School (K-12)	Restaurant	Recreation	Medical	Personal	Home	Shopping	Other	No response	Total	%
Work	60	30	-	17	3	-	9	510	-	35	8	663	26.7%
College	23	80	-	-	-	-	10	163	6	23	-	307	12.4%
School (K-12)	-	-	-	-	-	-	-	5	-	-	-	5	0.2%
Restaurant	-	-	-	-	-	-	-	-	-	6	-	6	0.2%
Recreation	-	-	-	3	3	-	-	12	6	-	-	24	1.0%
Medical	4	-	-	-	-	3	-	16	-	-	-	23	0.9%
Personal	-	7	-	-	-	-	-	34	6	-	6	47	1.9%
Home	889	225	17	6	6	29	25	37	6	80	2	1,322	53.2%
Shopping	-	-	-	-	-	-	-	6	-	-	-	6	0.2%
Other	29	12	-	-	-	-	3	23	-	15	-	81	3.3%
No response	6	7	-	-	-	-	-	11	-	-	-	-	-
<b>Total</b>	<b>1,006</b>	<b>354</b>	<b>17</b>	<b>25</b>	<b>12</b>	<b>32</b>	<b>47</b>	<b>806</b>	<b>25</b>	<b>160</b>		<b>2,483</b>	
<b>%</b>	<b>40.5%</b>	<b>14.3%</b>	<b>0.7%</b>	<b>1.0%</b>	<b>0.5%</b>	<b>1.3%</b>	<b>1.9%</b>	<b>32.5%</b>	<b>1.0%</b>	<b>6.4%</b>			

\*Source: 2010 TTA Rider Survey

The trip purposes of Wolfline riders are presented in **Exhibit 3-4**. The major trip linkage was from people going from home to university (3,364, 36%). This was followed by trips made from university to university (2,087, 22%), which reflects the significant role transit plays in facilitating trips made internally within the NC State campus. Other major trips include riders going from university to home (1,825, 19%) and home to work (388, 4%).

**Exhibit 3-4**  
**Wolfline Origin/Destination Trip Purpose Matrix**

From / To	Work	University	Medical	Personal	Home	Other	No response	Total	%
Work	76	113	11	2	232	33	-	467	4.9%
University	189	2,087	38	69	1,825	257	20	4,465	47.2%
Medical	-	6	2	-	13	-	-	21	0.2%
Personal	15	18	-	14	75	8	-	130	1.4%
Home	388	3,364	2	82	130	151	11	4,117	43.5%
Other	-	139	-	4	80	48	6	270	2.9%
No response	-	-	-	-	-	-	24	-	-
<b>Total</b>	<b>669</b>	<b>5,726</b>	<b>53</b>	<b>170</b>	<b>2,356</b>	<b>497</b>		<b>9,470</b>	
<b>%</b>	<b>7.1%</b>	<b>60.5%</b>	<b>0.6%</b>	<b>1.8%</b>	<b>24.9%</b>	<b>5.2%</b>			

\*Source: 2010 Wolfline Rider Survey

**Exhibit 3-5** summarizes the trip purposes for each system. In this table, “home” has been excluded as a trip purpose and home-to-home trips are not included in the totals. The purpose allocation assigned all trips with home on one end to the other trip purpose, e.g. home-to-work were all assigned to the work trip purpose. For trips that went between two other destinations, such as work-to-school, half the trips were allocated to each trip purpose. Wolfline did not provide as many trip choices since the survey instrument was a half-sized survey card due to the limited time riders spent on the bus.

**Exhibit 3-5  
Summary Trip Purpose**

Trip Purpose	CAT		CTran		TTA		Wofline	
	Total	Percent	Total	Percent	Percent	Percent	Total	Percent
Work	6,734	44.6%	283	64.6%	1,534	62.7%	878	9.4%
College/University	1,516	10.0%	20	4.5%	525	21.5%	7,690	82.3%
School (K-12)	605	4.0%	2	0.4%	22	0.9%		
Restaurant	475	3.1%	17	3.9%	19	0.8%		
Recreation	270	1.8%	7	1.6%	27	1.1%		
Medical	923	6.1%	7	1.6%	50	2.0%	45	0.5%
Personal Business	985	6.5%	8	1.8%	76	3.1%	228	2.4%
Shopping	1,460	9.7%	54	12.4%	21	0.9%		
Other	2,147	14.2%	40	9.1%	172	7.0%	499	5.3%
<b>TOTAL</b>	<b>15,114</b>	<b>100%</b>	<b>438</b>	<b>100%</b>	<b>2,446</b>	<b>100%</b>	<b>9,340</b>	<b>100%</b>

*Above total excludes home-to-home, and home as a trip purpose*

*The Wofline survey did not provide all the choices available on the other surveys; personal business included social and worship.*

The major trip purpose on the three municipal systems were all for work trips, with nearly two-thirds of the trips for this purpose on both the CTran and Triangle Transit systems. CAT had a plurality of trips for this purpose. Wofline notably had almost 10% of its trips for work. Not surprisingly, the vast majority of trips on the Wofline service were related to school trips to the university. Triangle Transit also showed a significant percentage of trips, over 1-in-5 for this trip purpose, with CAT also showing a large percentage of trips. The other major trip purpose was for shopping on both the CAT and CTran systems, with around 10% of the trips for this purpose on each system.

### 3.2 System Transfers

In **Questions 4A and 9A**, the interconnectedness of the systems was enlightening. **Exhibit 3-6** details both internal and external transfers between the various transit systems. With only Wake County routes surveyed, the majority of captured transfer activity occurred between CAT, CTran, and TTA. The question was not asked on the Wofline survey form.

Overall, the largest number of transfers occurred internally within CAT, with 12,103 riders transferring from one CAT bus to another CAT bus. Second was TTA with 736 riders reporting internal transfers followed by CTran with 120. The majority of external transfers were concentrated around TTA. TTA received a substantial number transfers from CAT (1,140); nearly as many as from other TTA buses. The reverse was also true, with CAT receiving a substantial number of transfers from TTA (1,265). Similarly, many TTA transfers went to CTran (144); slightly more than were internal CTran transfers. This clearly indicates the recent regional pass was a great development.

**Exhibit 3-6  
Transfer Matrix By System**

From / To	CAT	CTran	TTA	Wolfline	CHT	DATA	Duke	Other	No response	Total	%
CAT	12,103	25	1,140	105	5	50	6	195	9,544	13,629	81.0%
CTran	20	120	114				3	4	3	261	1.6%
TTA	1,265	144	736	110	66	57		29	1,569	2,407	14.3%
Wolfline	42		13							55	0.3%
CHT	21		36							57	0.3%
DATA	46		89							135	0.8%
Duke	8		2							10	0.1%
Other	215		56							271	1.6%
No response	9,060		1,506							10,566	
<b>Total</b>	<b>13,720</b>	<b>289</b>	<b>2,186</b>	<b>215</b>	<b>71</b>	<b>107</b>	<b>9</b>	<b>228</b>	<b>11,116</b>	<b>16,825</b>	<b>100%</b>
<b>%</b>	<b>81.5%</b>	<b>1.7%</b>	<b>12.9%</b>	<b>1.3%</b>	<b>0.4%</b>	<b>0.6%</b>	<b>0.0%</b>	<b>1.4%</b>			

\*Source: 2010 Rider Surveys

Exhibit 3-7 presents overall transfer activity by system. CAT riders were the most likely to transfer at least once, with 61.5% reporting at least one transfer. TTA riders were the least likely to have to transfer, with 47.9% reporting they did not have to transfer, but those that did transfer are more likely to have transferred two or more times.

**Exhibit 3-7  
Transfer Activity By System**

	CAT		CTran		TTA	
<b>No transfer</b>	5,829	38.5%	190	44.6%	1,165	47.9%
<b>1 transfer</b>	7,412	48.9%	198	46.6%	877	36.0%
<b>2+ transfers</b>	1,912	12.6%	37	8.8%	391	16.1%
<b>TOTAL</b>	<b>15,153</b>	<b>100%</b>	<b>426</b>	<b>100%</b>	<b>2,433</b>	<b>100%</b>

\*Source: 2010 Rider Surveys

### 3.3 Other Highlights

In **Question 13**, TTA has moved away from cash fares; most of its activity is from some sort of pass. CAT and CTran are still heavily reliant on cash fares, especially CTran.

The demographics of the systems are distinctive. TTA has a great mix of riders, with the surprise that it is not even more heavily oriented to choice riders. It is a premium service with a premium fare, but in many cases the riders are more “local” in nature. CAT is heavily transit dependent, but CTran was more diverse than anticipated. CTran also has a large Hispanic minority.

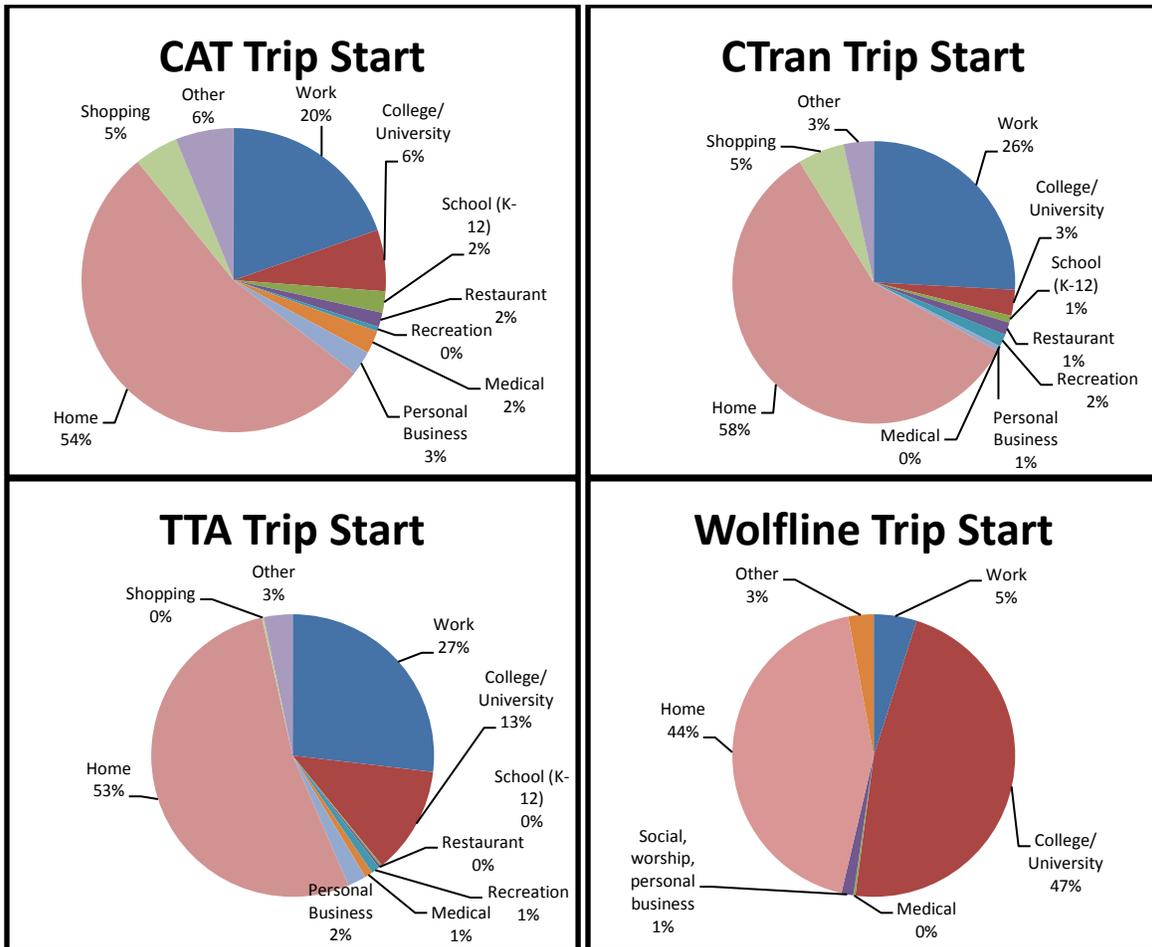
The results on how riders would like to receive information are enlightening (**Question 26**). The in-person methods are still overwhelmingly preferred, but there is a significant amount of riders who like the “new media”. Even the more traditional CAT and CTran riders (lower income, minority, etc), still showed that 20-25% of the riders prefer these new approaches.

The list of desired improvements was similar among systems. Frequency of service was ranked high on all systems, as was more evening service. On-time is an issue for both CAT and TTA. Sunday service is a desire by both CAT and CTran riders. Shelters were also important to riders on all systems.

Additional observations are included in the results for each question.

**Q1. Where did you come from before getting on this bus?**

- |   |                               |
|---|-------------------------------|
| 1) Work   | 5) Recreation ( <i>Home</i> ) |
| 2) College/University                                     | 6) Medical ( <i>Other</i> )   |
| 3) School (K-12) ( <i>Medical/dental appointment</i> )    | 7) Personal Business          |
| 4) Restaurant ( <i>Social/worship/personal business</i> ) | 8) Home                       |
|   | 9) Shopping                   |
|   | 10) Other                     |
- \*Italicized choices represent those found on the Wolfline survey form only (organized by choice number)



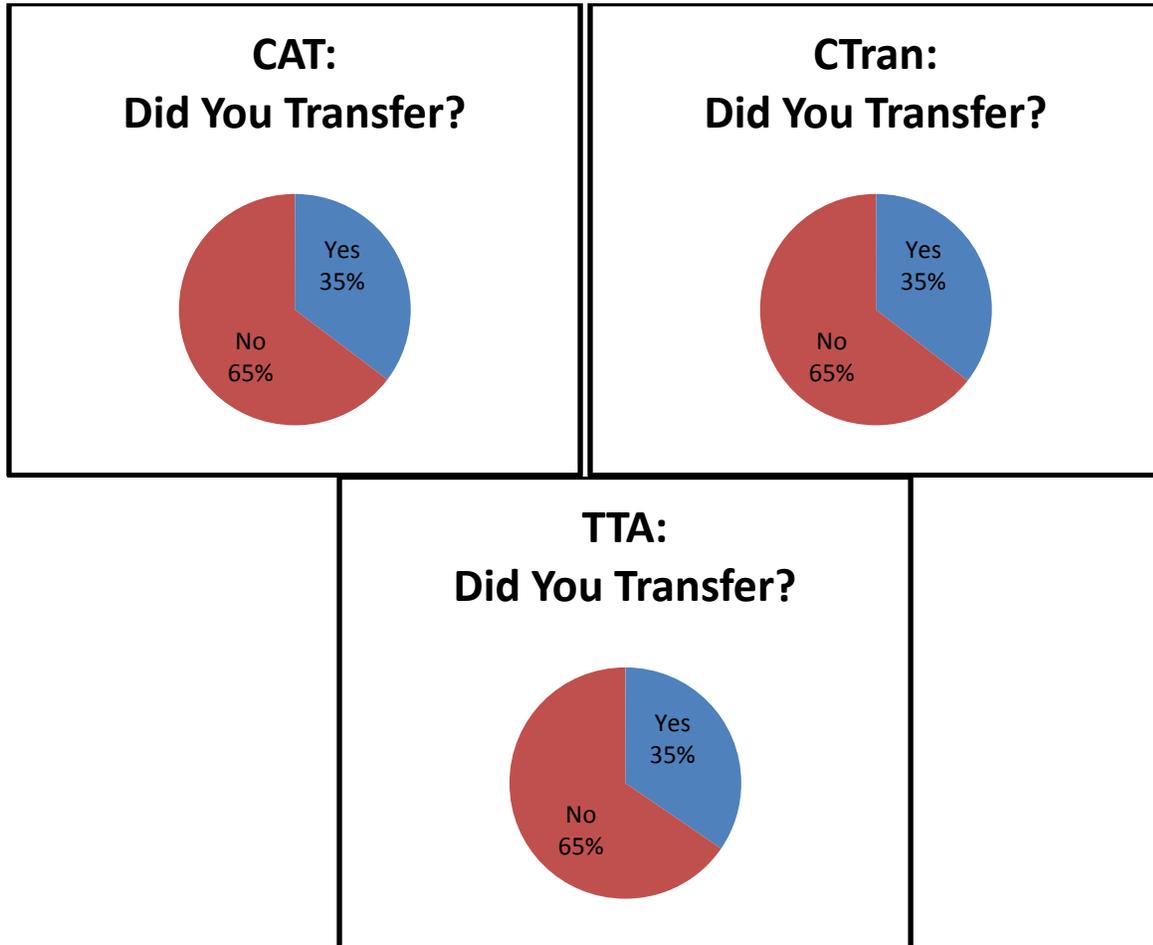
**KEY FINDINGS**

In the case of CAT, CTran, and TTA, the majority of riders were surveyed on their origin trip from home. Besides “home”, the next most popular origin across each of the three systems was “work” encompassing roughly a quarter of total responses. Wolfline riders’ trip origins were split between “college/university” and “home”. These results are to be expected given Wolfline’s predominant student population.

**Q4\*. Did you transfer to get to this bus?**

\*Question was not asked on Wolfliner survey

- 1) Yes
- 2) No



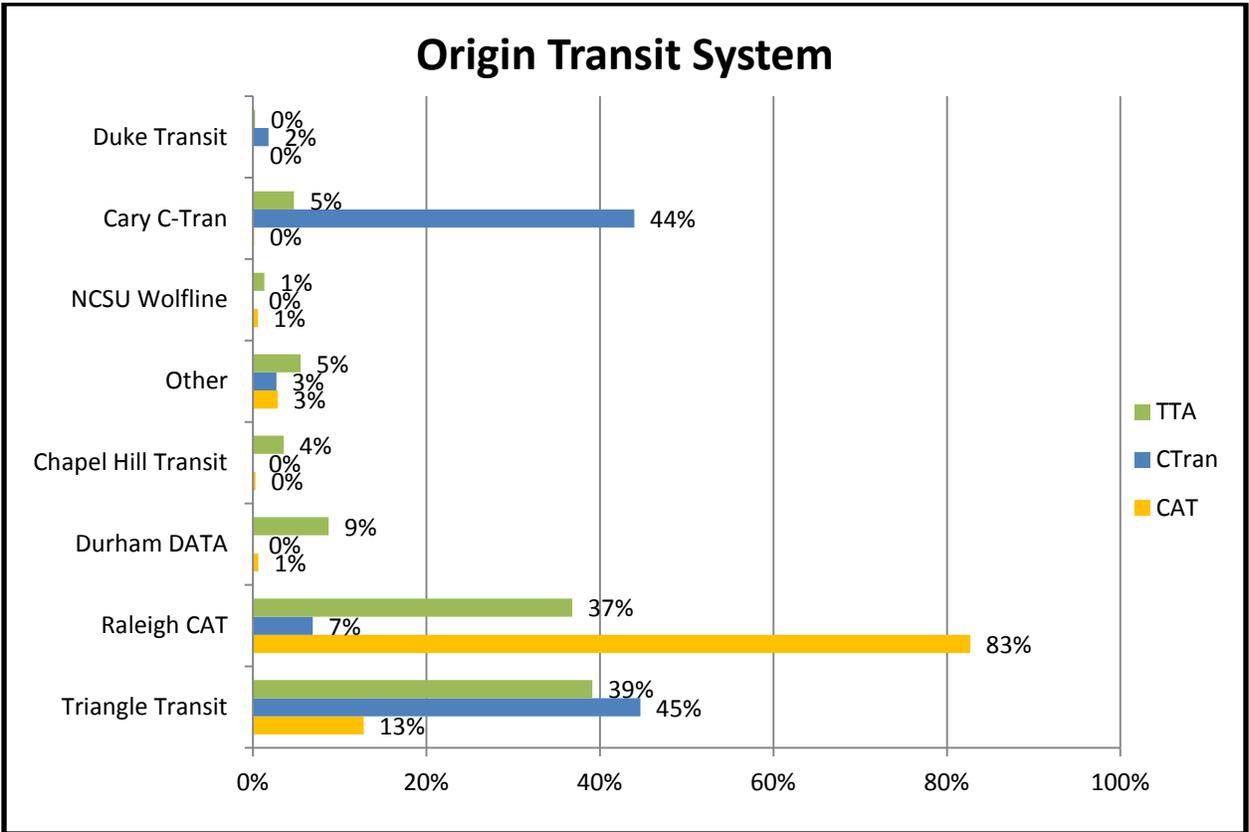
**KEY FINDINGS**

Across CAT, CTran, and TTA, the results were consistent: the majority of surveyed riders did not transfer prior to boarding.

**Q4A\*. If yes, what system did you come from?**

\*Question was not asked on Wolfline survey

- |                        |                  |
|------------------------|------------------|
| 1) Triangle Transit    | 5) Other         |
| 2) Raleigh CAT         | 6) NCSU Wolfline |
| 3) Durham DATA         | 7) Cary CTran    |
| 4) Chapel Hill Transit | 8) Duke Transit  |



**KEY FINDINGS**

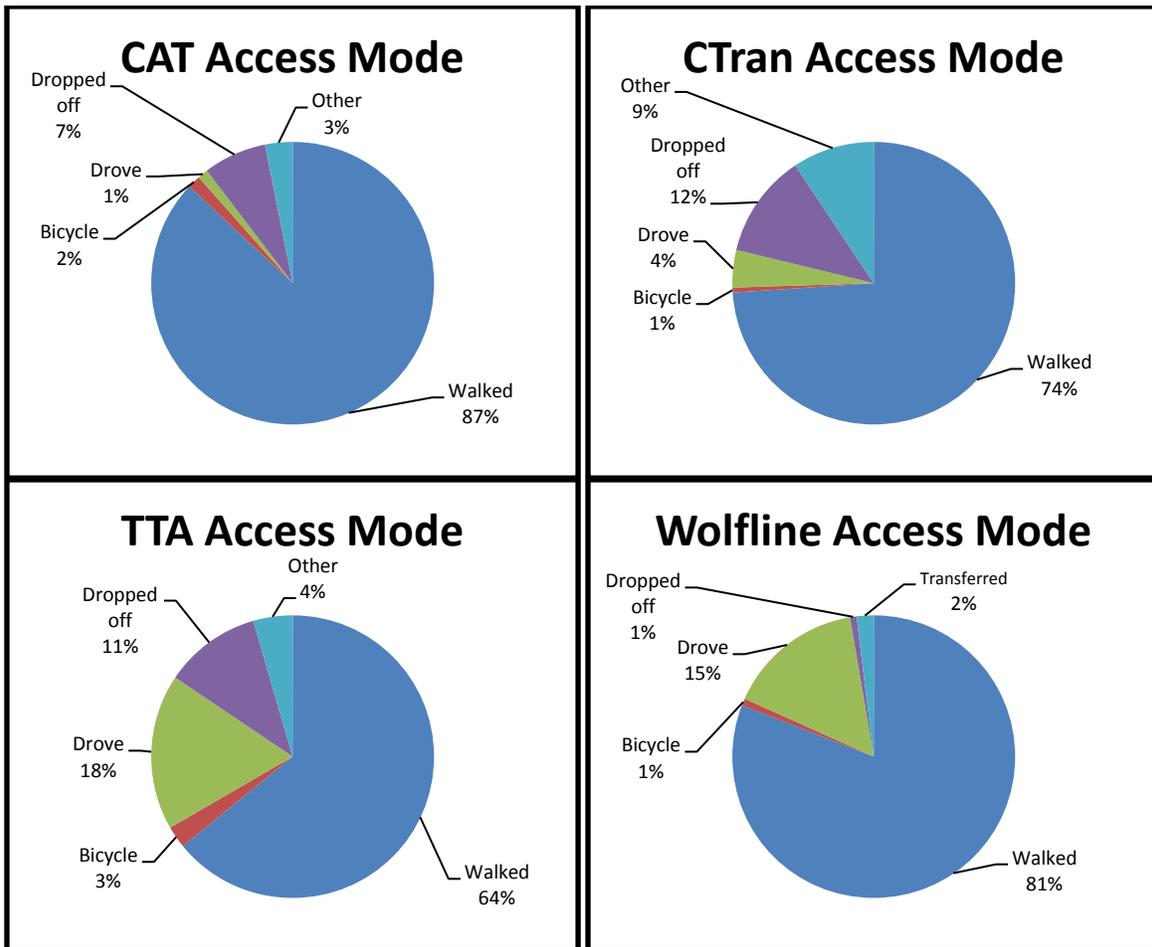
For CAT, the vast majority of transfer activity occurred internally within the system. CTran riders were roughly evenly split between internal transfer activity and transit trips originating aboard TTA. TTA riders were similar, with a roughly even split between internal transfer activity and transit trips originating aboard CAT. Low DATA, Duke, and CHT responses for TTA reflect that only Wake County routes were surveyed.

**Q5\*. How did you get to your first bus?**

\*Question #2 on Wolfline survey form

- 1) Walked
- 2) Bicycled */(Rode a bicycle)*
- 3) Drove */(Drove and parked)*
- 4) Dropped off
- 5) *Transferred*
- 6) Other

\*Italicized choices represent those found on the Wolfline survey form only (organized by choice number)



**KEY FINDINGS**

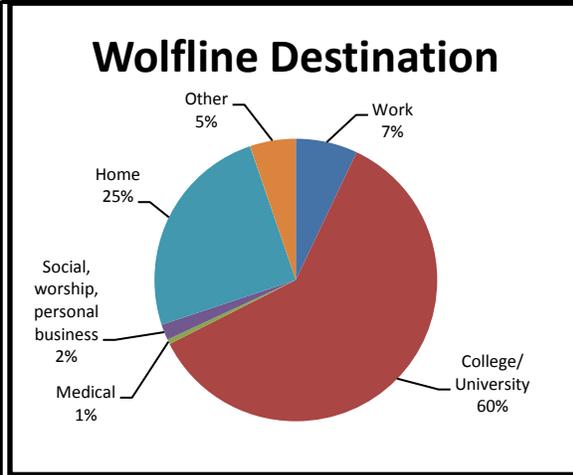
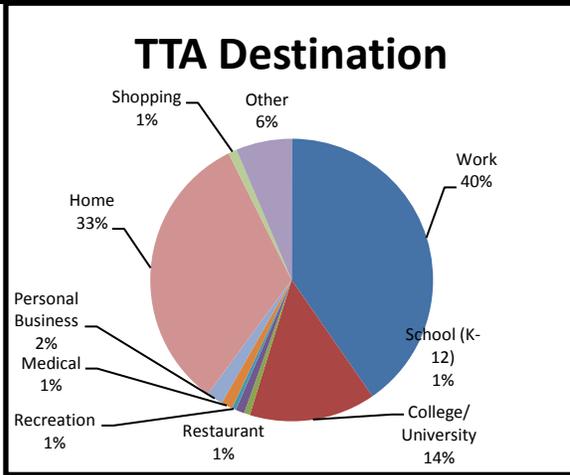
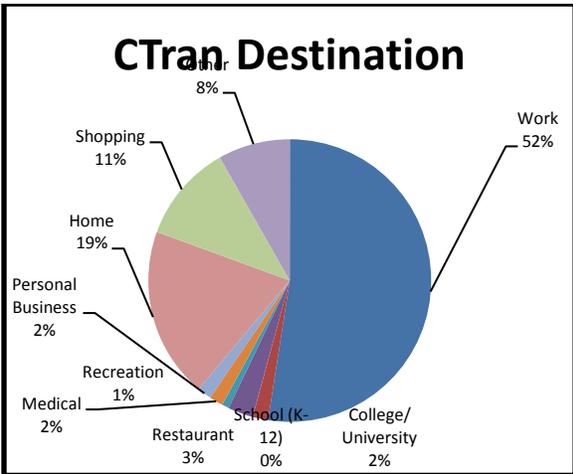
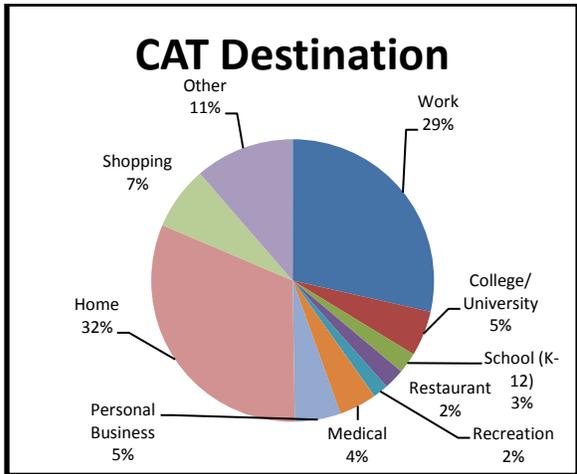
Across all four systems, a majority of riders walked to the bus. This is especially true for CAT and Wolfline riders, which is likely influenced by the larger share of transit dependent riders using the system. For TTA, nearly a third of riders used a car to access their bus when combining the “drove” and “dropped off” responses. This finding is influenced by TTA’s larger share of choice commuters.

**Q6\*. Where are you going now?**

\*Question #4 on Wolfline survey form

- |   |                      |
|---|----------------------|
| 1) Work   | 5) Recreation/(Home) |
| 2) College/University                               | 6) Medical/(Other)   |
| 3) School (K-12)/ (Medical/dental appointment)      | 7) Personal Business |
| 4) Restaurant /(Social, worship, personal business) | 8) Home              |
|   | 9) Shopping          |
|   | 10) Other            |

\*Italicized choices represent those found on the Wolfline survey form only (organized by choice number)



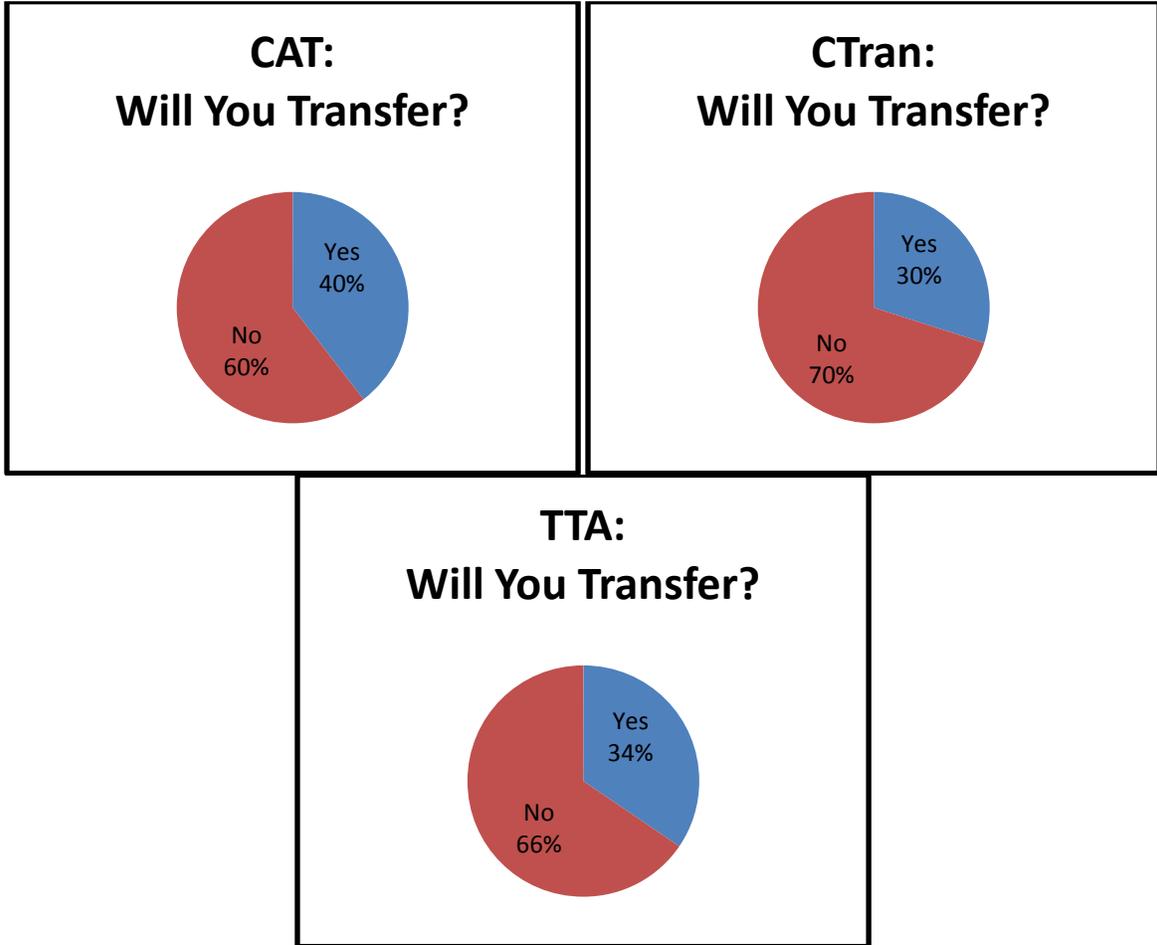
**KEY FINDINGS**

For CAT, CTran, and TTA users, the majority of riders surveyed responded with “home” or “work” as their trip destination. Of the three systems, CAT had the highest share of reported discretionary trip destinations. This is likely influenced by CAT having the largest share of transit dependent riders among the four systems surveyed. For Wolfline riders, as expected, the system differed from CAT, CTran, or TTA in that the majority of riders responded that they were on their way to campus.

**Q9\*. Will you transfer when you get off this bus?**

\*Question was not asked on Wolfline survey

- 1) Yes
- 2) No



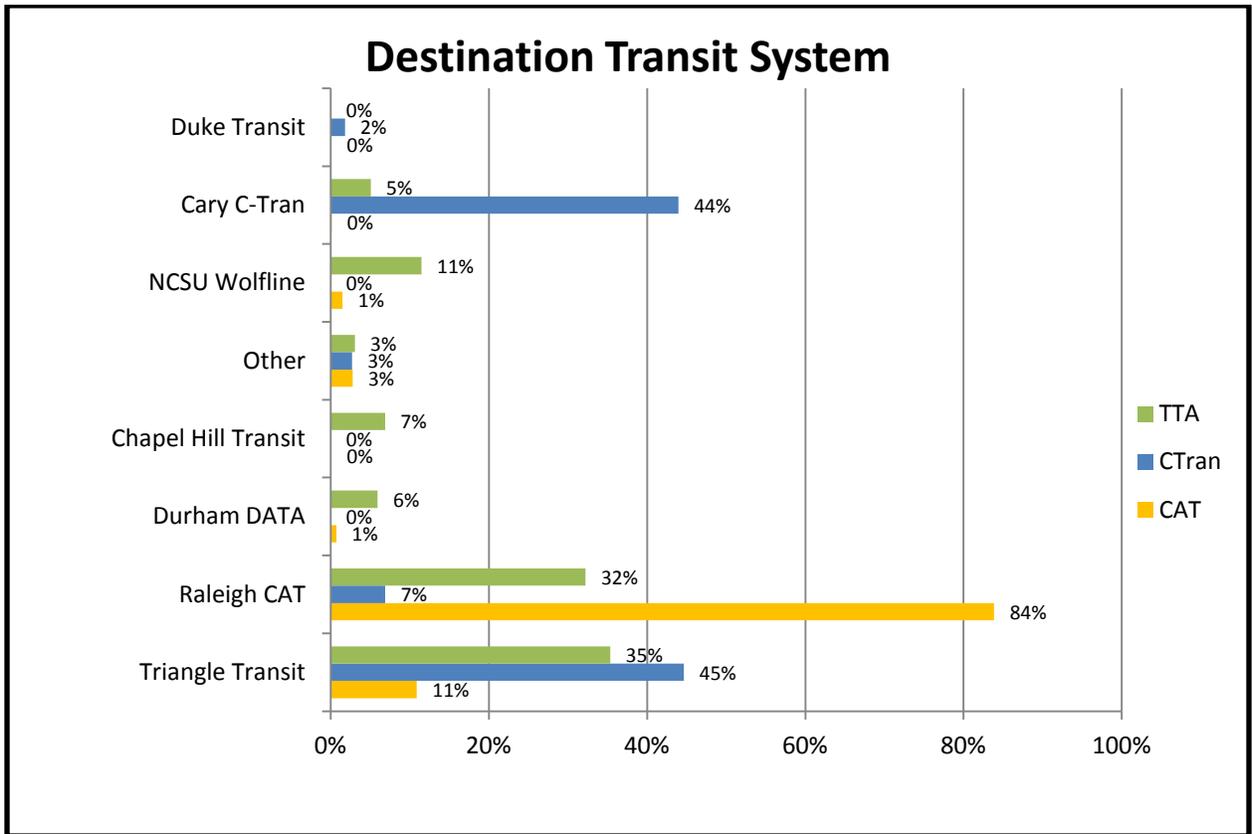
**KEY FINDINGS**

Across CAT, CTran, and TTA, the results were consistent: the majority of surveyed riders did not plan on transferring after alighting from the bus.

**Q9A\*. If yes, what transit system will you transfer to?**

\*Question was not asked on Wolfline survey

- |                        |                  |
|------------------------|------------------|
| 1) Triangle Transit    | 5) Other         |
| 2) Raleigh CAT         | 6) NCSU Wolfline |
| 3) Durham DATA         | 7) Cary CTran    |
| 4) Chapel Hill Transit | 8) Duke Transit  |



**KEY FINDINGS**

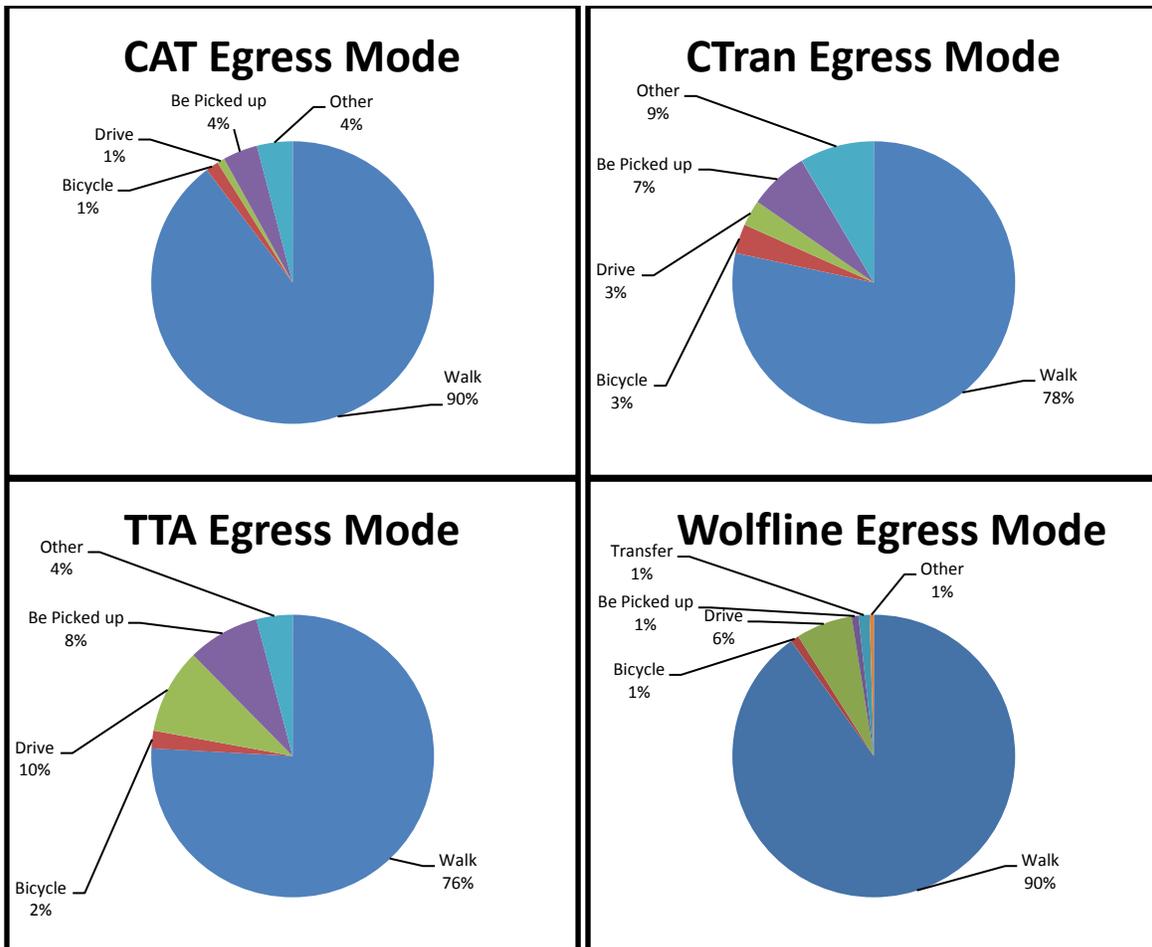
For CAT, roughly 85% of total transfers were to other CAT buses. CTran riders were roughly split between internal transfer activity and boarding TTA buses. TTA riders were similar, with a split between internal transfer activity and boarding CAT buses. Low DATA, Duke, and CHT responses for TTA reflect that only Wake County routes were surveyed.

**Q10\*. How will you get to where you are going when you get off your last bus?**

\*Question #6 on Wolfline survey form

- 1) Walk
- 2) Bicycle/*(Ride a bicycle)*
- 3) Drive */(Drove and parked)*
- 4) Be picked up
- 5) *(Transfer to another bus)*
- 6) Other

\*Italicized choices represent those found on the Wolfline survey form only (organized by choice number)



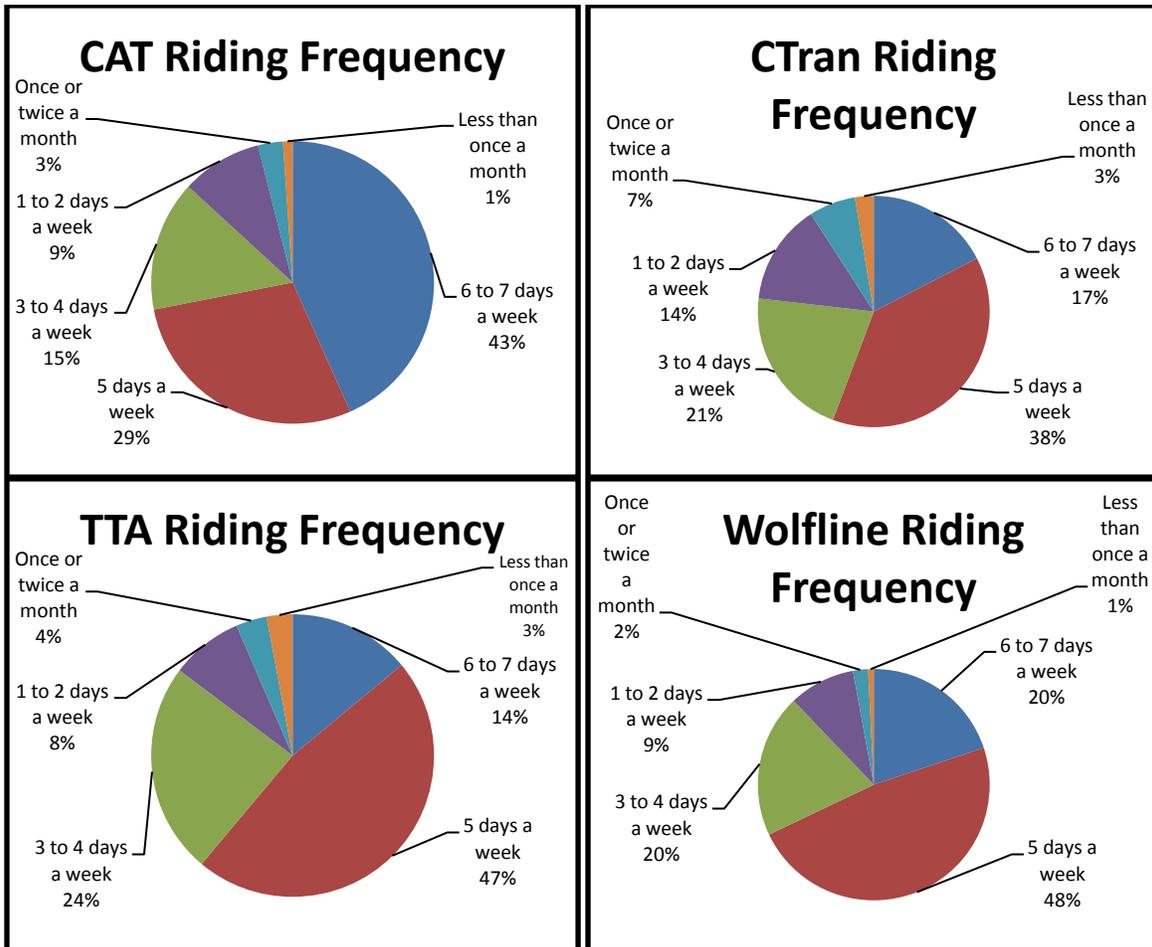
**KEY FINDINGS**

Across all four surveyed systems, the majority of riders reported walking from the bus. Besides “walk”, the next most popular modes were “drive” and “be picked up”. Compared to the other three systems, TTA had the largest share of riders who reported either driving or being picked up from the bus. This finding likely reflects the large share of choice riders using TTA’s bus service for commuting purposes.

**Q11\*. How often do you ride the bus?**

\*Question #7 on Wolfline survey form

- 1) 6 to 7 days a week
- 2) 5 days a week
- 3) 3 to 4 days a week
- 4) 1 to 2 days a week
- 5) Once or twice a month
- 6) Less than once a month



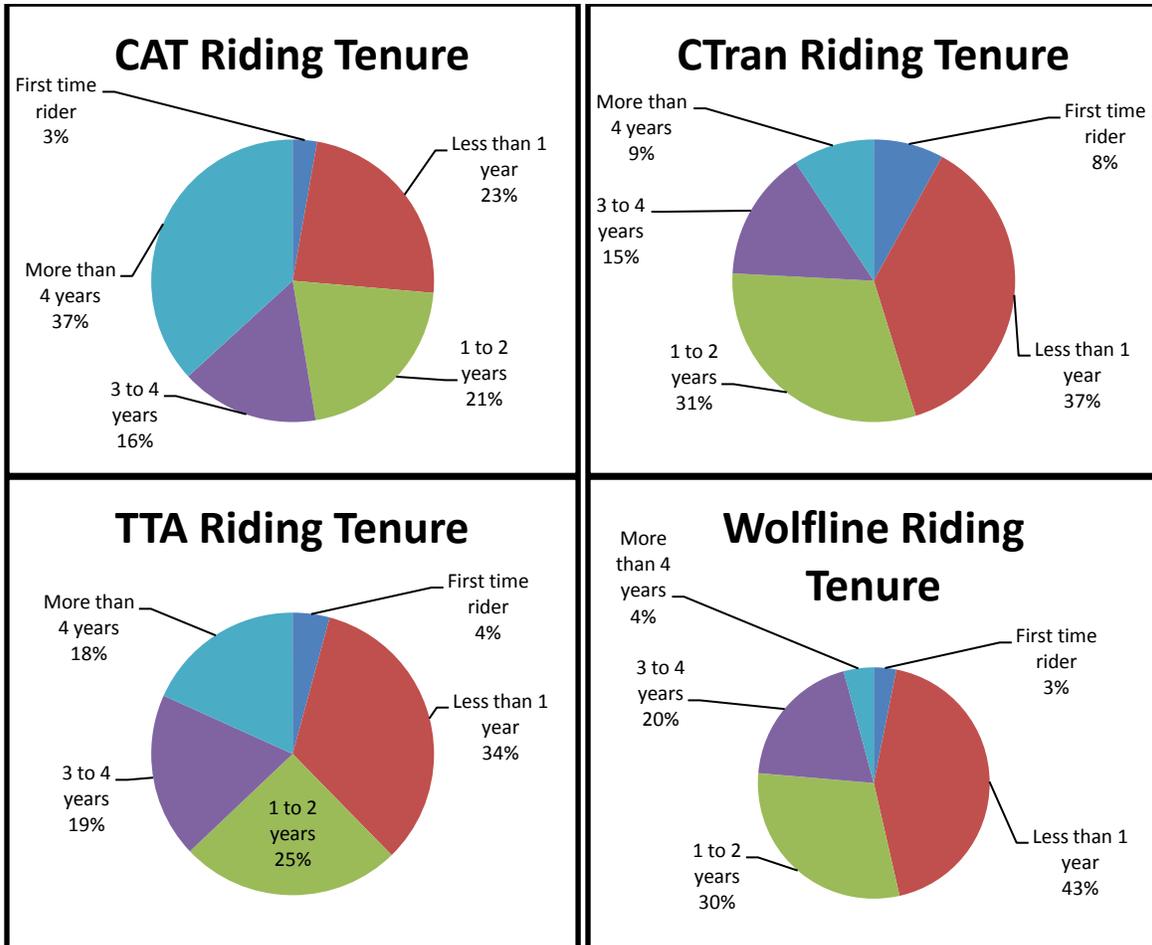
**KEY FINDINGS**

For CTran, TTA, and Wolfline, a plurality of riders responded using the bus 5 days a week. This is likely due to the high proportion of users who use these systems for commute trips to work and school. For CAT, a plurality of riders responded riding the bus 6 to 7 days a week. With CAT riders more likely to be from the traditional transit markets, these findings illustrate that riders rely on the system for not only work trips but discretionary trip purposes as well.

**Q12\*. How long have you been riding [CAT/CTran/TTA/Wolfline]?**

\*Question #8 on Wolfline survey form

- 1) First time rider
- 2) Less than 1 year
- 3) 1 to 2 years
- 4) 3 to 4 years
- 5) More than 4 years



**KEY FINDINGS**

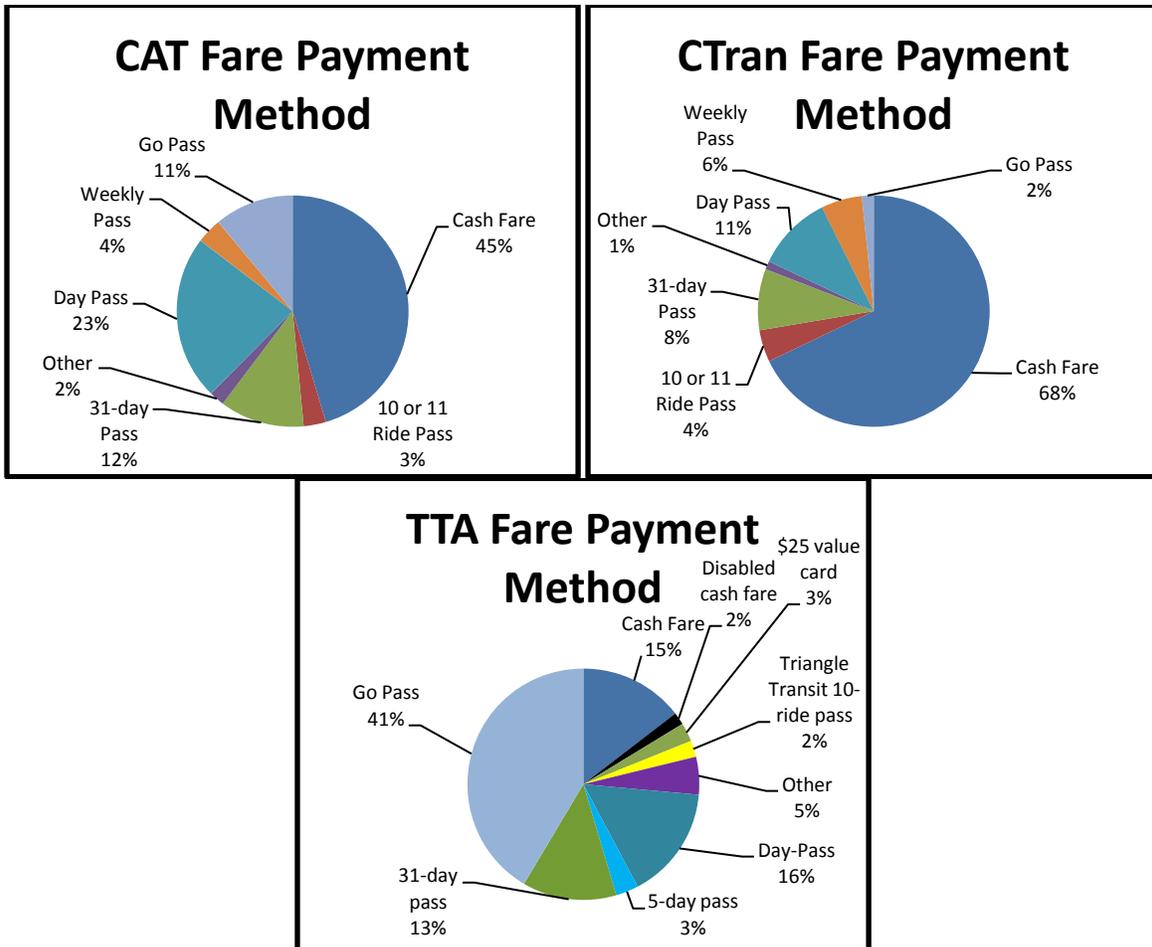
CTran and TTA riders were relatively new to each system, with a plurality responding that they had been riding for less than a year. However, CTran only recently began fixed-route service in December 2005, which limits the potential for long-term riders. CAT riders had the highest share of long-term riders, with a plurality responding that they had been using the system for more than four years. With Wolfline’s riders primarily made up of students, with a high proportion being undergraduates, as expected most responded using the system less than four years.

**Q13\*. How did you pay your bus fare?**

\*Question was not asked on Wolfline survey as the service is fare free

- |  |                           |
|--|---------------------------|
| 1) Cash fare                               | 6) Weekly Pass/(Day Pass) |
| 2) 10 or 11 ride pass/(Disabled fare card) | 7) Go Pass (5-day pass)   |
| 3) 31-day pass/ (\$25 value card)          | 8) (31-day pass)          |
| 4) Other /(Triangle Transit 10-ride pass)  | 9) (Go Pass)              |
| 5) Day Pass/(Other)                        |                           |

\*Italicized choices represent those found on the TTA survey form only (organized by choice number)



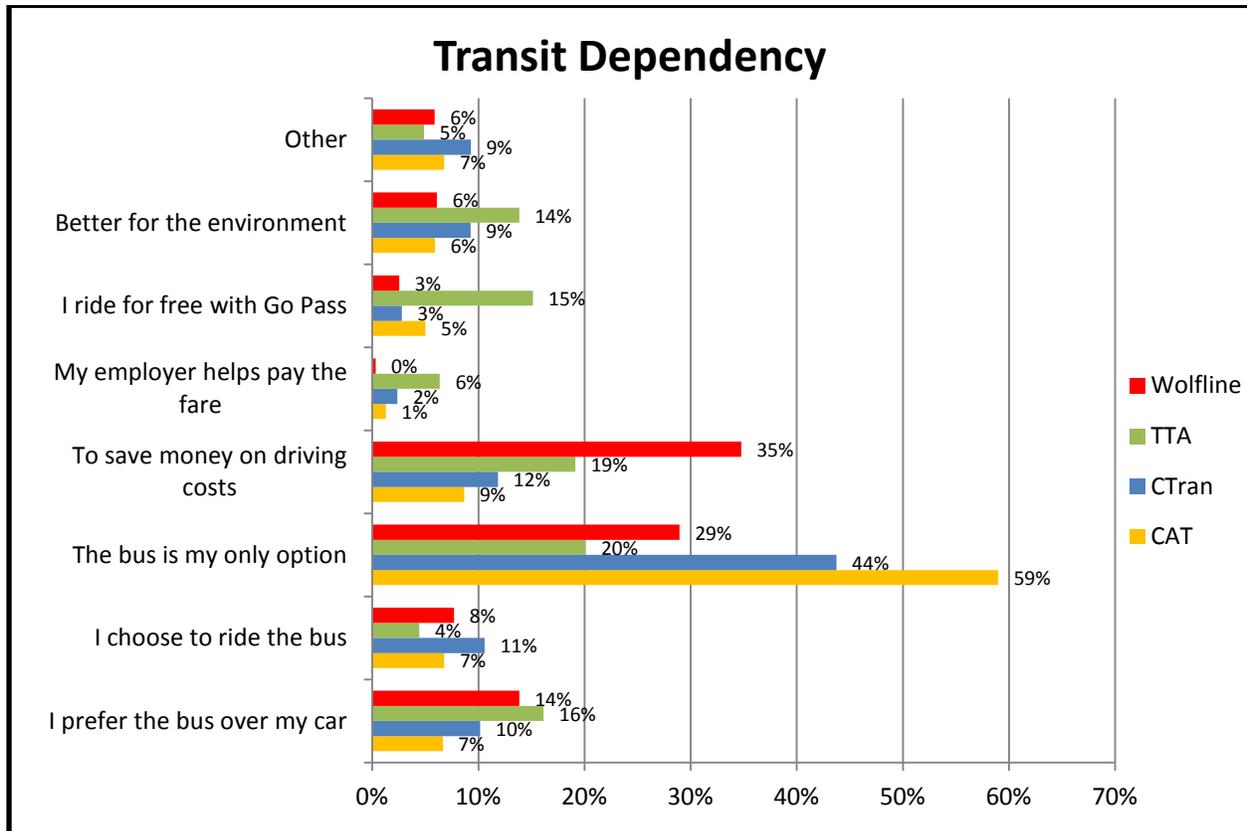
**KEY FINDINGS**

In the case of CAT and CTran, a majority of riders paid their fare by cash or by buying a system day-pass. For TTA, a plurality made use of the regional Go Pass. This could be due to the regional nature of TTA’s service, having the highest fare among the four surveyed transit systems, or the relative affluence of TTA riders.

**Q14\*. Why are you using the bus for this trip?**

\*Question #9 on Wolfline survey form

- |                                   |                                   |
|-----------------------------------|-----------------------------------|
| 1) I prefer the bus over my car   | 5) My employer helps pay the fare |
| 2) I chose to ride the bus        | 6) I ride free with Go Pass       |
| 3) The bus is my only option      | 7) Better for the environment     |
| 4) To save money on driving costs | 8) Other                          |



**KEY FINDINGS**

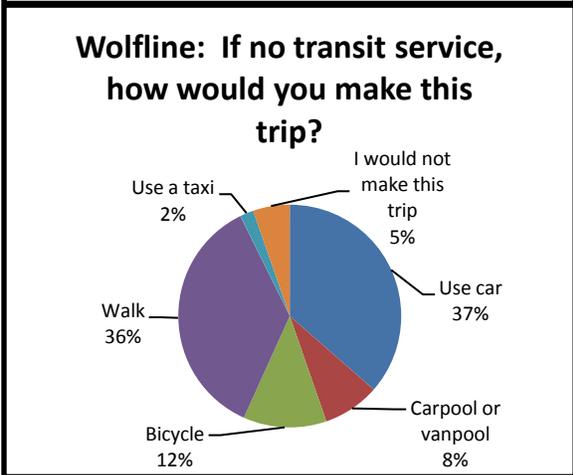
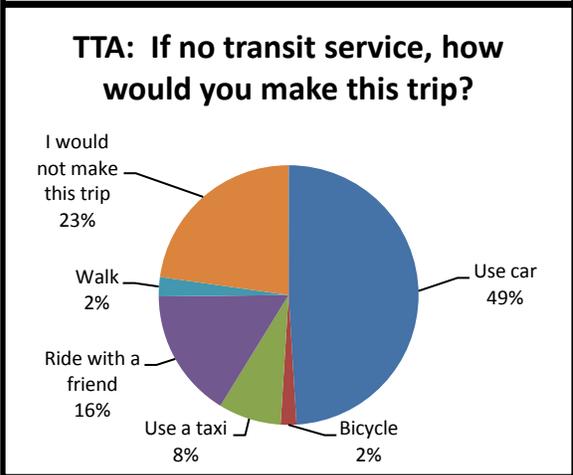
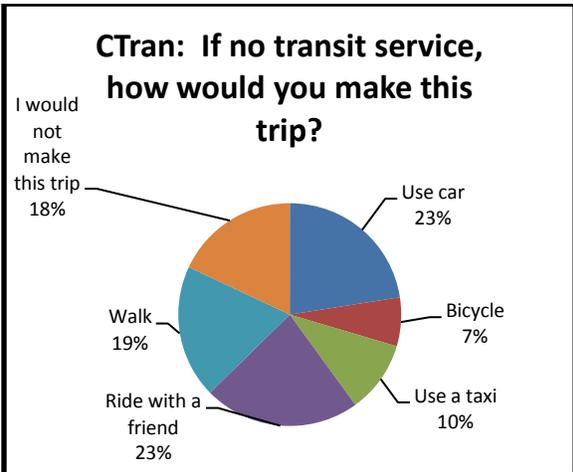
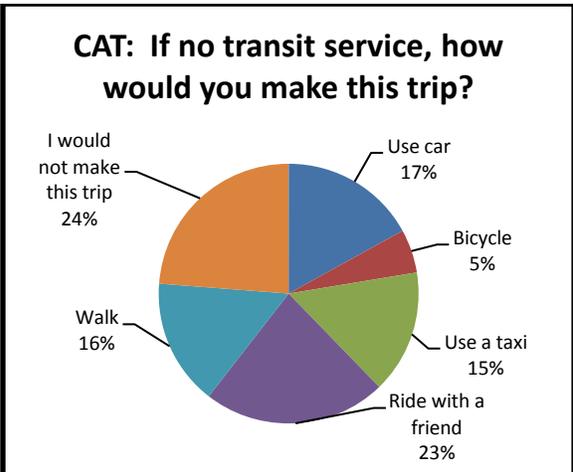
The majority of CAT riders responded the bus was their only option, reflecting CAT’s position as primarily serving the traditional transit markets. The reasons for riding TTA and Wolfline were more reflective of choice riders, which is likely based on the high proportion of work commuters and students who use both of these systems. For CTran, the results suggested a combination of both traditional and choice riders using the system.

**Q15\*. If transit service were not available, how would you make this trip?**

\*Question #10 on Wolfline survey form

- 1) Use car
- 2) Bicycle (*Carpool or vanpool*)
- 3) Use a taxi (*Bicycle*)
- 4) Ride with a friend (*Walk*)
- 5) Walk (*Use a taxi*)
- 6) I would not make this trip

\*Italicized choices represent those found on the Wolfline survey form only (organized by choice number)



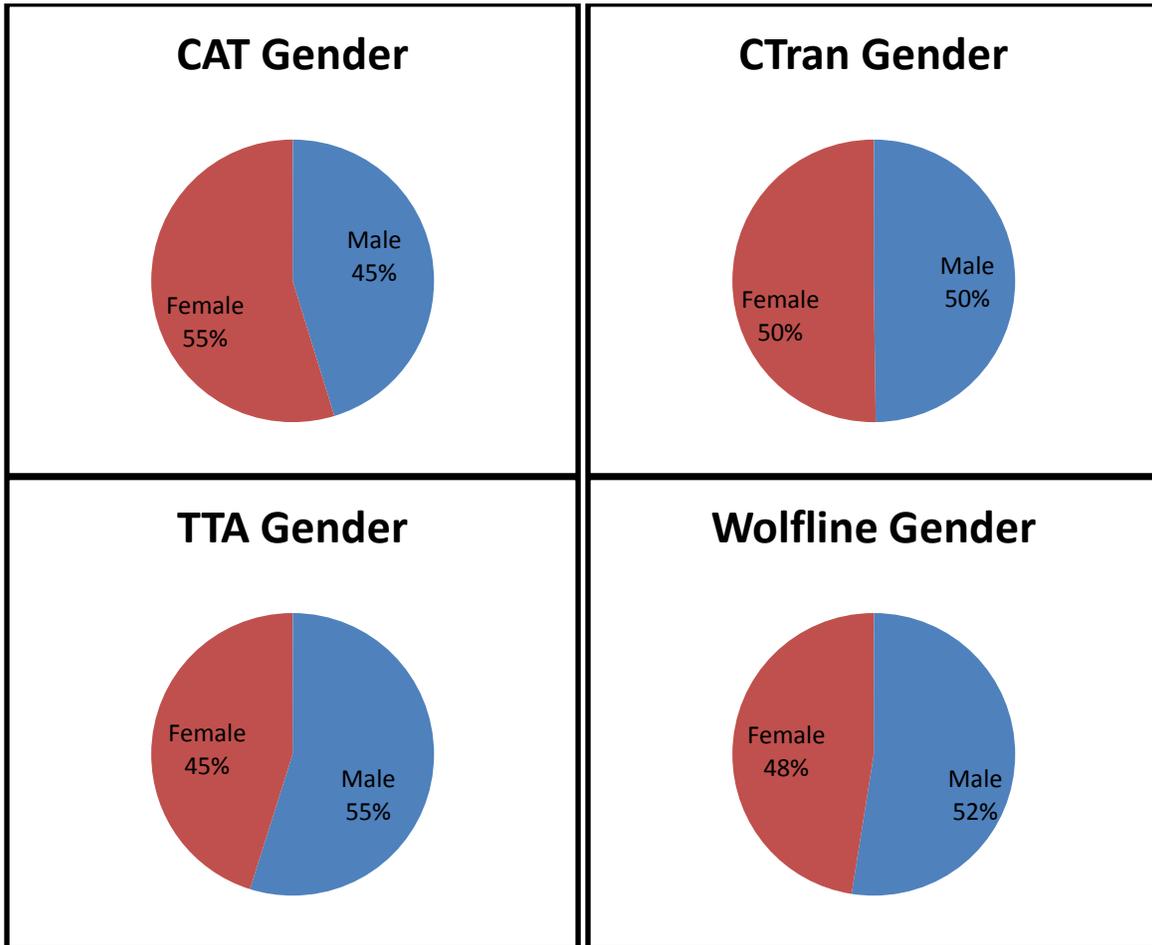
**KEY FINDINGS**

A plurality of TTA and Wolfline riders responded that they would use their car, which reinforces the notion of their users being primarily choice riders. A near majority of CAT riders responded that they would either not make the trip or would ride with a friend, reinforcing the notion of CAT's patrons being from the traditional transit markets. The results for CTran suggested a combination of traditional and choice riders.

**Q16\*. I am [gender]?**

\*Question #11 on Wolfline survey form

- 1) Male
- 2) Female



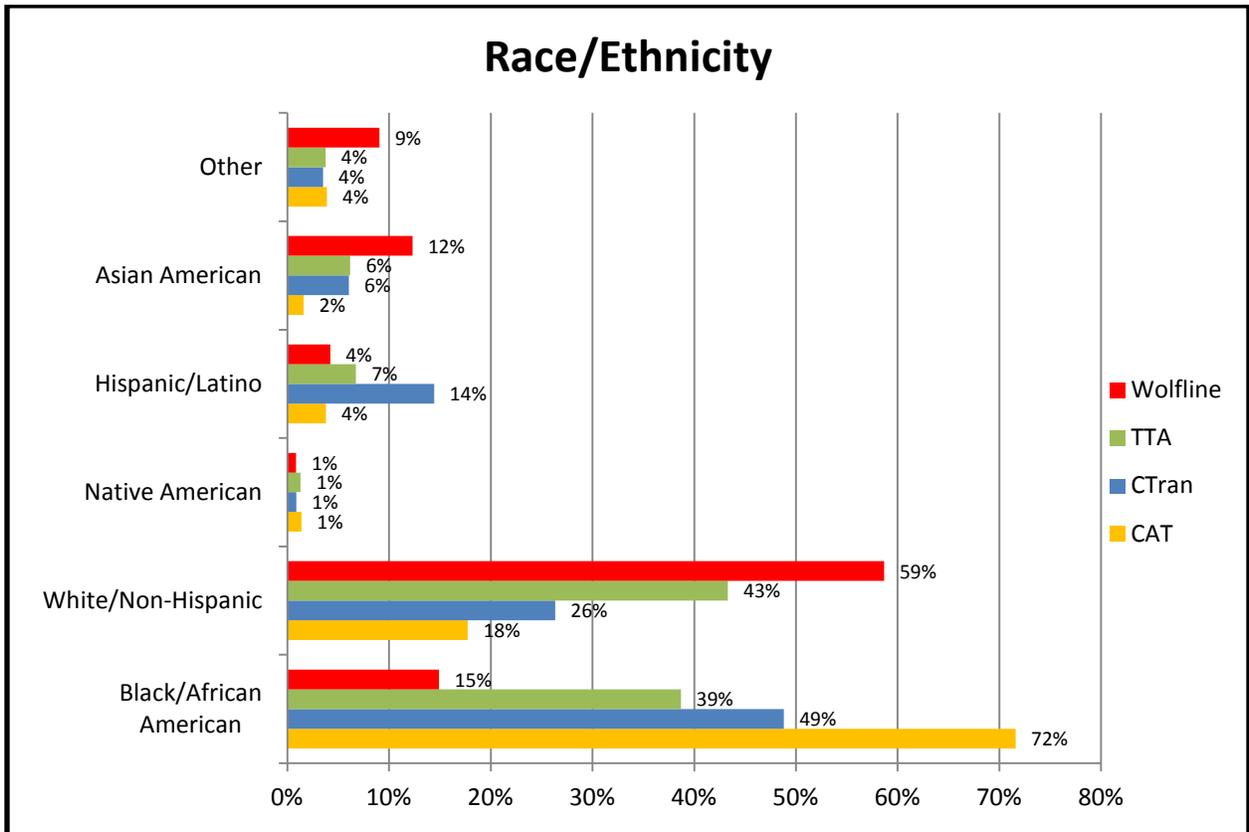
**KEY FINDINGS**

A majority of riders for TTA and Wolfline were males. For CAT, the majority were females. CTran was evenly split among male and female riders.

**Q16A\*. I am [race/ethnicity]?**

\*Question #11A on Wolfline survey form

- 1) Black/African American
- 2) White/Non-Hispanic
- 3) Native American
- 4) Hispanic/Latino
- 5) Asian American
- 6) Other



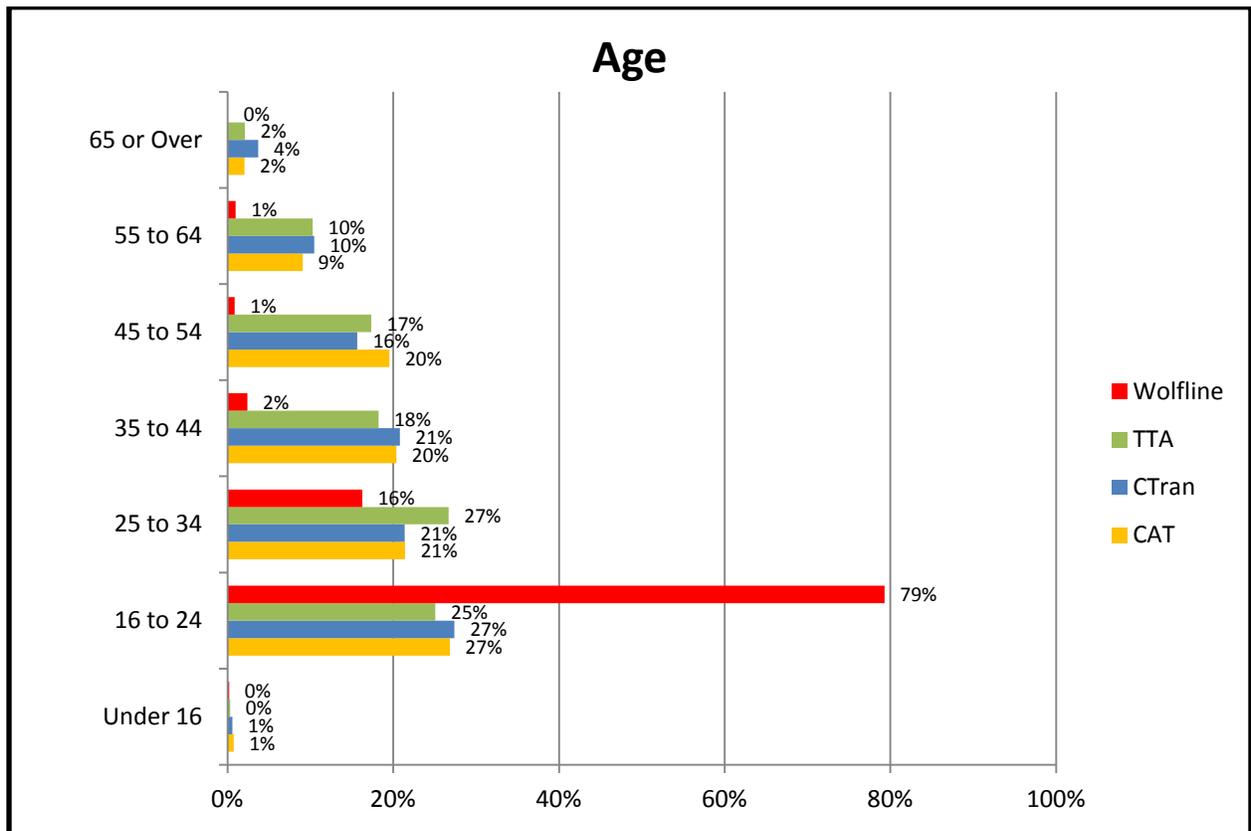
**KEY FINDINGS**

A large majority of CAT riders were Black, accounting for nearly three-quarters of the riders. Triangle Transit and CTran are more racially diverse, with Whites and Blacks accounting for nearly equal shares of riders. CTran riders were more likely to be Black, but Whites and Hispanics collectively comprised 40% of the riders. A majority of Wolfline riders were White, though the system had sizable percentage of Black, Asian, and Other riders.

**Q17\*. What is your age?**

\*Question #12 on Wolfline survey form

- 1) Under 16
- 2) 16 to 24
- 3) 25 to 34
- 4) 35 to 44
- 5) 45 to 54
- 6) 55 to 64
- 7) 65 or Over



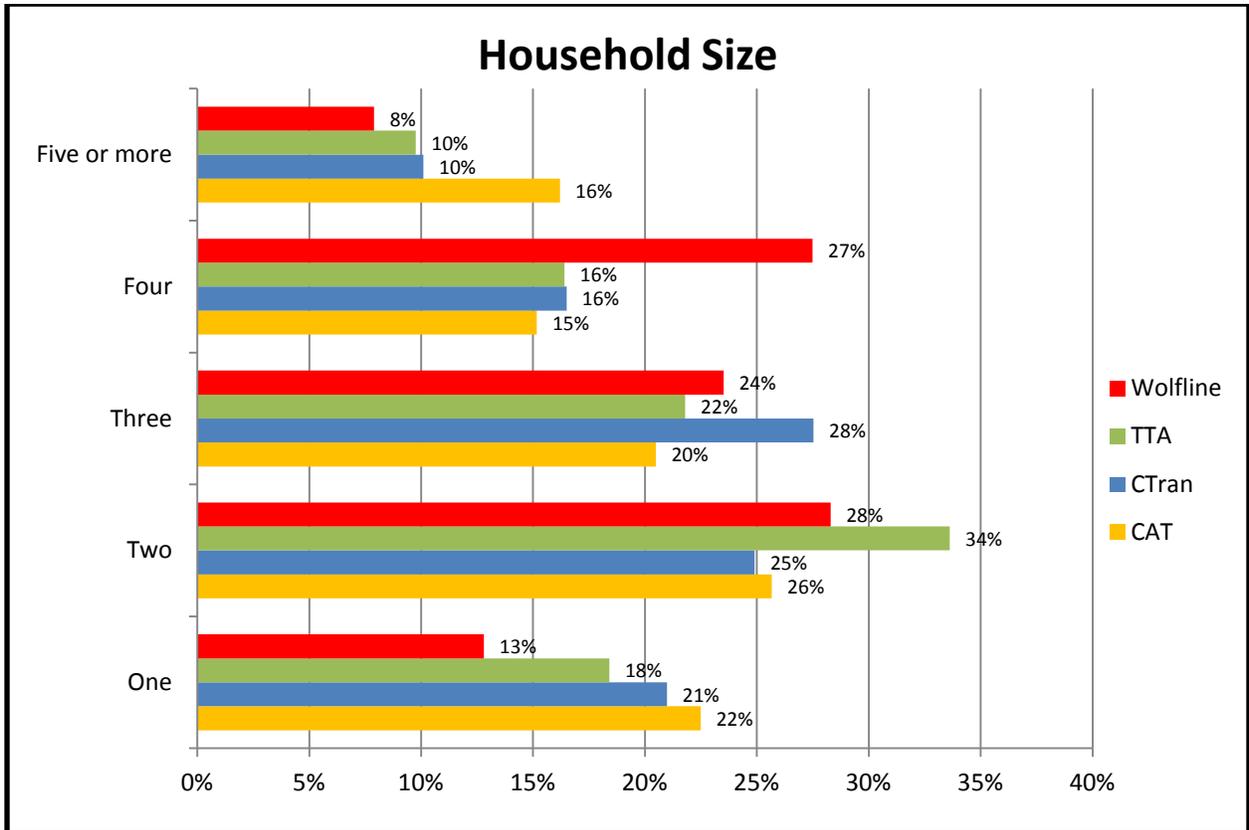
**KEY FINDINGS**

In general, transit use steadily decreased with increasing age. As expected, the Wolfline results were heavily influenced by the large undergraduate student population who use the system. CAT, CTran, and TTA had relatively proportional ridership among the age categories between age 16 and age 54, albeit with a slight decline as age increased.

**Q18\*. How many people live in your home?**

\*Question #13 on Wolfline survey form

- 1) One
- 2) Two
- 3) Three
- 4) Four
- 5) Five or more



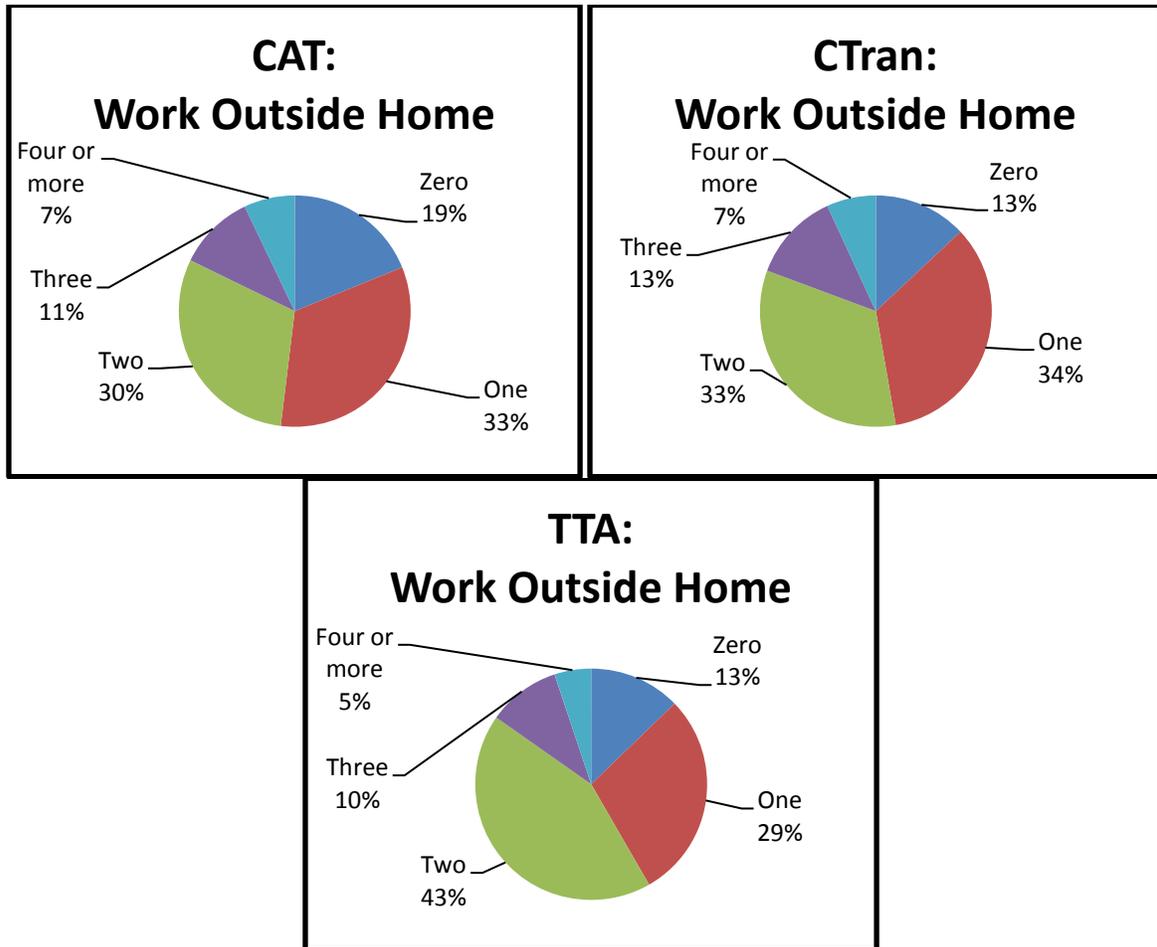
**KEY FINDINGS**

Across all four surveyed transit systems, most riders had two or three members in each household. Outside of these ranges, Wolfline had a high proportion of riders with a household size of four. This likely reflects the high proportion of students who use the service and are more likely to live in larger households.

**Q19\*. How many people live in your home also work outside the home?**

\*Question was not asked on Wolfline survey

- 1) Zero
- 2) One
- 3) Two
- 4) Three
- 5) Four or more



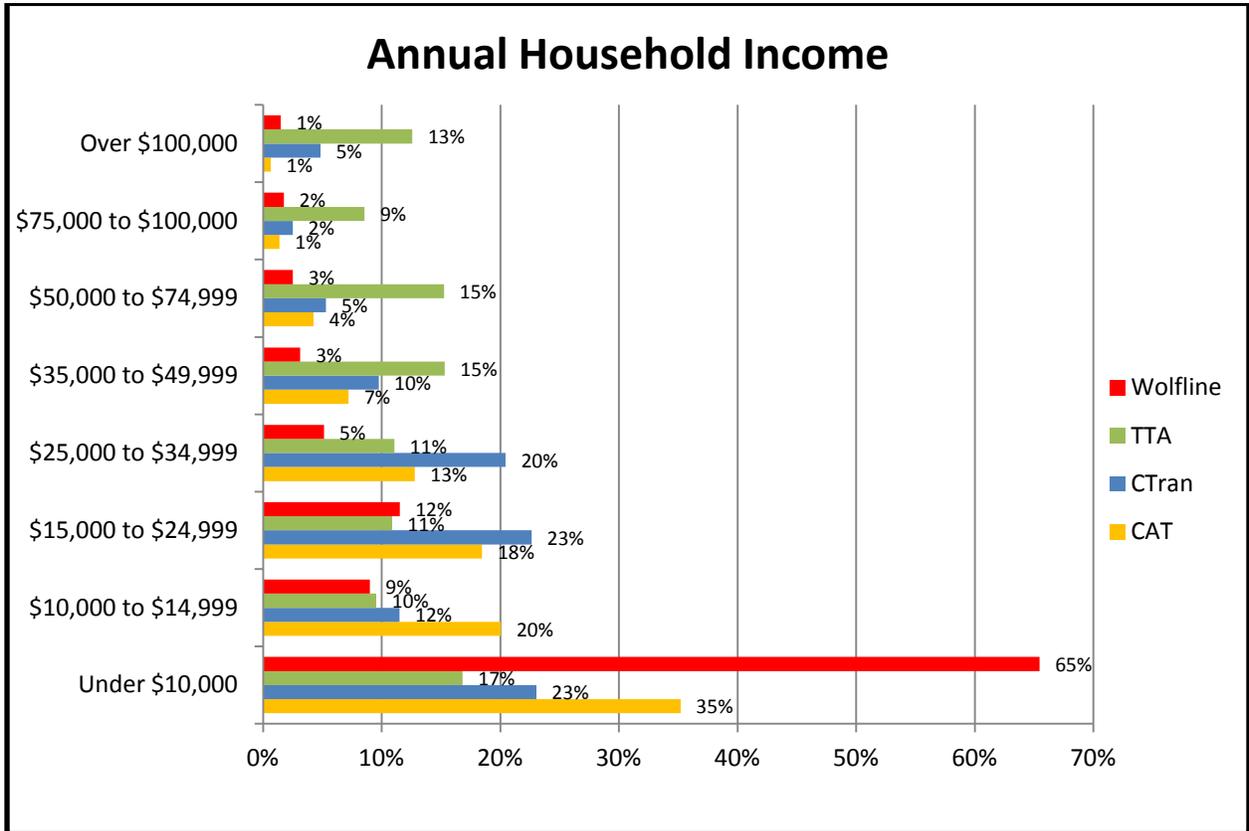
**KEY FINDINGS**

Consistent results were observed across CAT, CTran, and TTA, with the majority of surveyed riders responding between one and two household members. These results were also consistent with the survey question regarding household size, which indicated most riders having between two and three household members.

**Q20\*. What is your annual household income?**

\*Question #14 on Wolfline survey form

- |                         |                          |
|-------------------------|--------------------------|
| 1) Under \$10,000       | 5) \$35,000 to \$49,999  |
| 2) \$10,000 to \$14,999 | 6) \$50,000 to \$74,999  |
| 3) \$15,000 to \$24,999 | 7) \$75,000 to \$100,000 |
| 4) \$25,000 to \$34,999 | 8) Over \$100,000        |



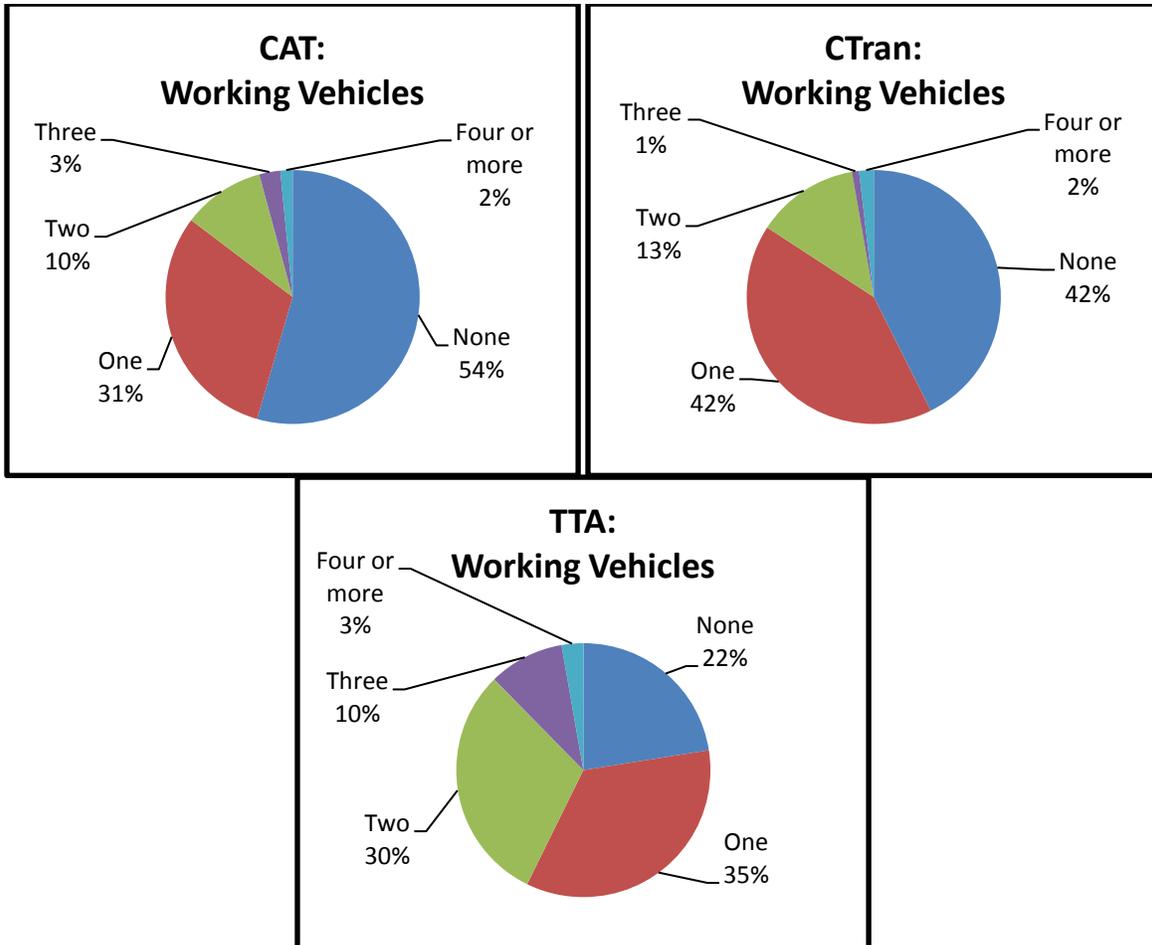
**KEY FINDINGS**

The majority of Wolfline riders reported an annual household income level of under \$10,000, which is likely influenced by the high response rate of students. The majority of CAT riders reported annual household incomes of under \$15,000 while CTran riders were under \$25,000. TTA riders were divided in reported annual household income, with half making over \$35,000 and the other half making under \$35,000.

**Q21\*. How many working vehicles are available in your home?**

\*Question was not asked on Wolfline survey

- 1) None
- 2) One
- 3) Two
- 4) Three
- 5) Four or more



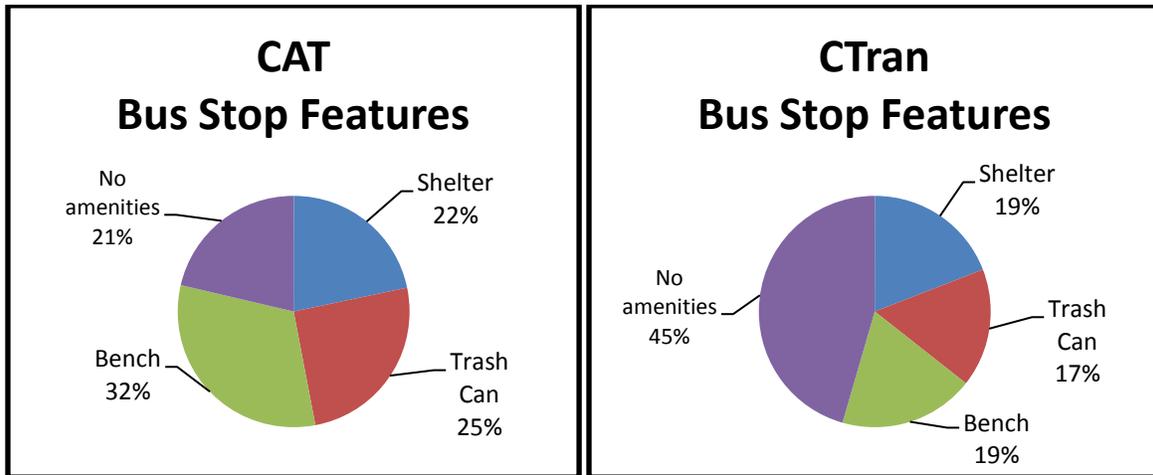
**KEY FINDINGS**

A majority of CAT riders reported no working vehicles while a plurality of CTran riders also reported no working vehicles. This is expected given that CAT and CTran's riders are more likely to be considered transit dependent as compared to TTA. For in TTA's case, the survey revealed under a quarter of riders reporting no working vehicles; thus illustrating the system's predominant choice rider market.

**Q22\*. The bus stop where I got on has a...**

\*Question was not asked on TTA or Wolfline survey

- 1) Shelter
- 2) Trash can
- 3) Bench
- 4) No amenities



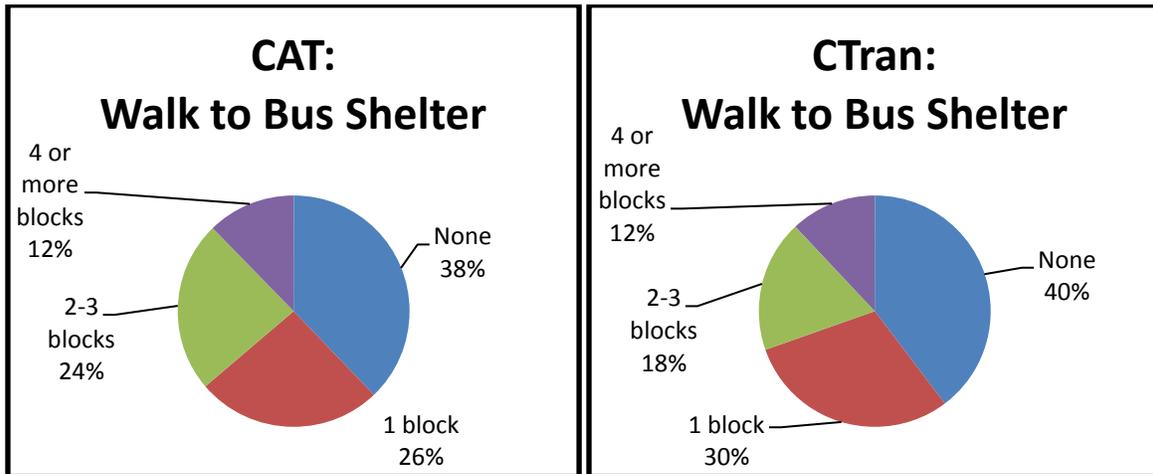
**KEY FINDINGS**

Results indicate that survey respondents who boarded CAT buses noted a larger share of bus stop amenities as compared to those who boarded CTran buses.

**Q23\*. How much further would you walk to a bus stop with a shelter?**

\*Question was not asked on TTA or Wolfline survey

- 1) None
- 2) 1 block
- 3) 2-3 blocks
- 4) 4 or more blocks

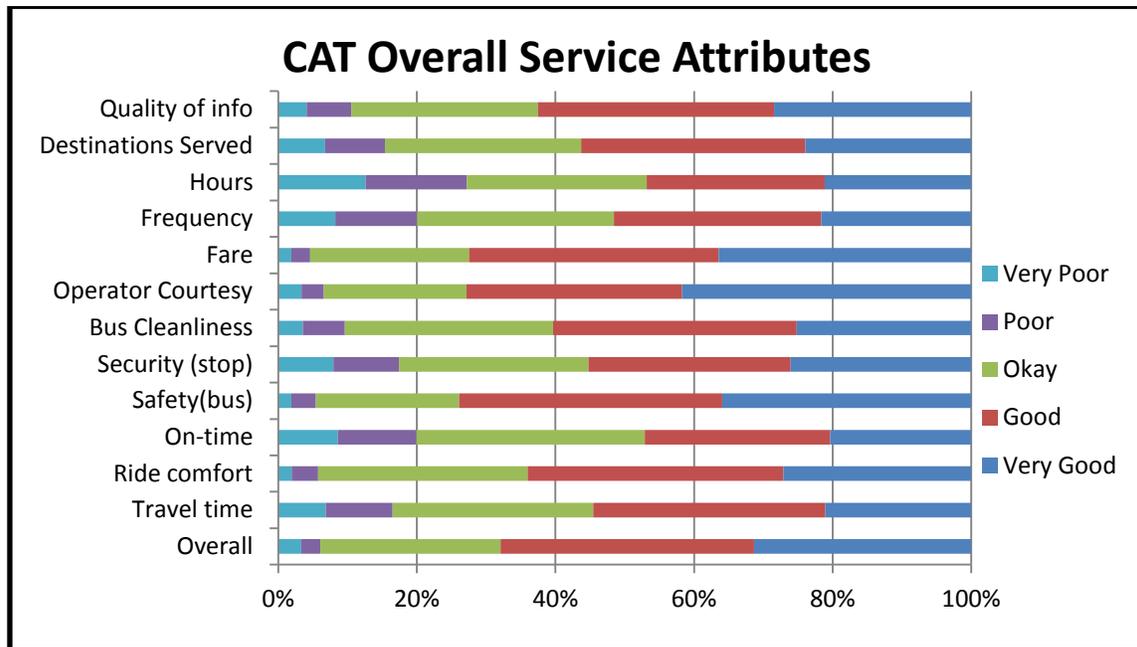


**KEY FINDINGS**

Similar results were found for both CAT and CTran surveyed riders, with a plurality of each stating that they would be unwilling to walk further to a bus stop with a shelter. However, about a half of the riders reported that they would be willing to walk between 1 to 3 blocks to reach a shelter.

## Q24\*. CAT service attributes

\*Corresponds to question #24 on the CAT survey only



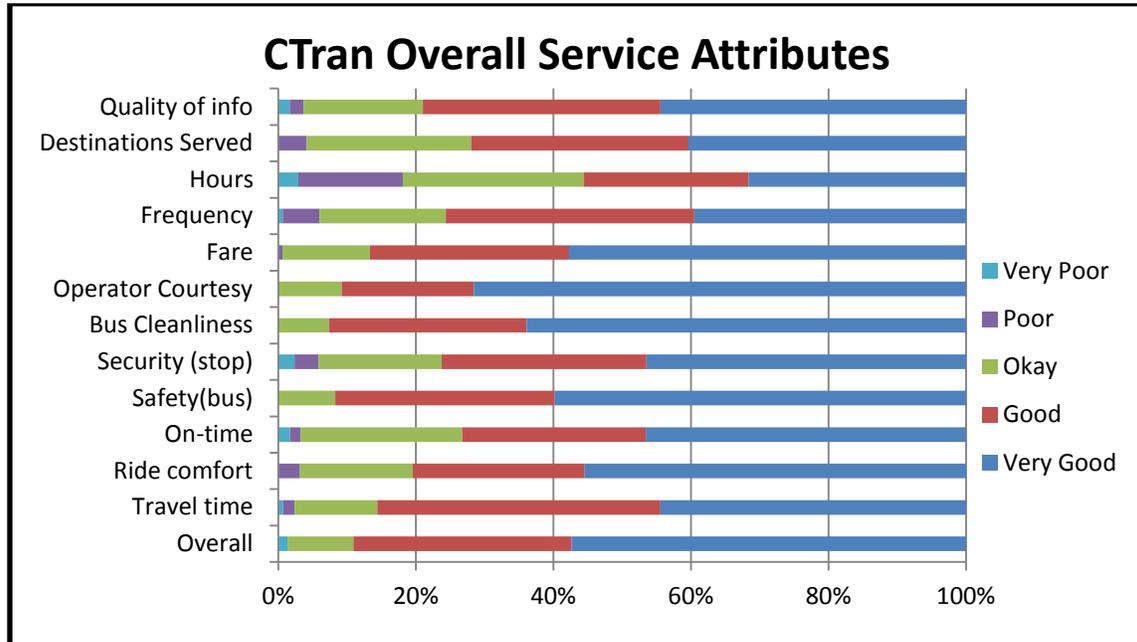
### CAT Service Attributes

	Overall	Travel time	Ride comfort	On-time	Safety (bus)	Security (stop)	Bus Cleanliness	Operator Courtesy	Fare	Frequency	Hours	Destinations served	Quality of info
<b>Very good</b>	31%	21%	27%	20%	36%	26%	25%	42%	36%	22%	21%	24%	28%
<b>Good</b>	37%	33%	37%	27%	38%	29%	35%	31%	36%	30%	26%	32%	34%
<b>Okay</b>	26%	29%	30%	33%	21%	27%	30%	21%	23%	28%	26%	28%	27%
<b>Poor</b>	3%	10%	4%	11%	4%	9%	6%	3%	3%	12%	15%	9%	6%
<b>Very poor</b>	3%	7%	2%	9%	2%	8%	4%	3%	2%	8%	13%	7%	4%
<b>Composite</b>	<b>3.90</b>	<b>3.52</b>	<b>3.83</b>	<b>3.39</b>	<b>4.03</b>	<b>3.56</b>	<b>3.72</b>	<b>4.05</b>	<b>4.02</b>	<b>3.45</b>	<b>3.28</b>	<b>3.58</b>	<b>3.76</b>

### KEY FINDINGS

Overall, riders were satisfied with CAT's bus services. On a scale of 1 to 5 with 1 being very poor and 5 being very good, the overall ranking is 3.90 (good). The median of the composite scores is 3.72. On a weighted basis, the top three scoring attributes are operator courtesy, safety on the bus, and fare. The three lowest scoring attributes are hours of service, on-time performance, and frequency of service.

**Q24. CTran service attributes**



**CTRAN Service Attributes**

	Overall	Travel time	Ride comfort	On-time	Safety (bus)	Security (stop)	Bus Cleanliness	Operator Courtesy	Fare	Frequency	Hours	Destinations served	Quality of info
<b>Very good</b>	57%	44%	55%	47%	60%	46%	64%	72%	58%	40%	32%	40%	44%
<b>Good</b>	32%	41%	25%	27%	32%	30%	29%	19%	29%	36%	24%	32%	35%
<b>Okay</b>	10%	12%	16%	24%	8%	18%	7%	9%	13%	18%	26%	24%	17%
<b>Poor</b>	0%	2%	3%	2%	0%	4%	0%	0%	1%	5%	15%	4%	2%
<b>Very poor</b>	1%	1%	0%	2%	0%	2%	0%	0%	0%	1%	3%	0%	2%
<b>Composite</b>	<b>4.44</b>	<b>4.27</b>	<b>4.33</b>	<b>4.15</b>	<b>4.52</b>	<b>4.14</b>	<b>4.56</b>	<b>4.62</b>	<b>4.44</b>	<b>4.08</b>	<b>3.66</b>	<b>4.08</b>	<b>4.18</b>

**KEY FINDINGS**

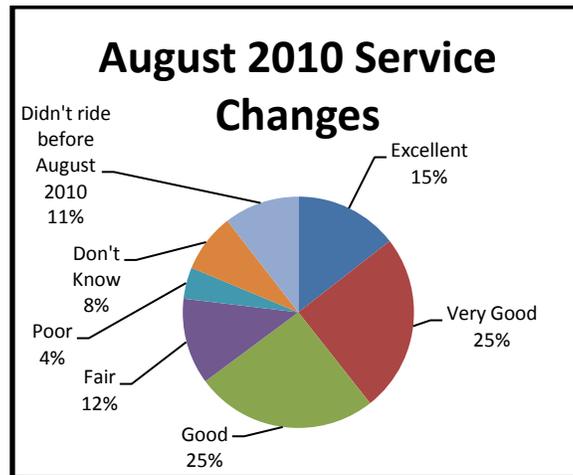
Riders were asked for their service rating for the CTran system as a whole and for several distinct aspects. Overall, riders were satisfied with CTran’s bus services. On a scale of 1 to 5 with 1 being very poor and 5 being very good, the overall ranking is 4.44 (good to very good). The median of the composite scores is 4.27. On a weighted basis, the top three scoring attributes are operator courtesy, safety on the bus, and bus cleanliness. The three lowest scoring attributes are hours of service, frequency, and destinations served.

**Q22\*. How would you rate the [TTA] August 2010 service changes?**

\*Question was not asked on the CAT, CTran, or Wolfline survey

\*\*Question #22 on TTA rider survey form only

- |              |                                   |
|--------------|-----------------------------------|
| 1) Excellent | 5) Poor                           |
| 2) Very Good | 6) Don't know                     |
| 3) Good      | 7) Didn't ride before August 2010 |
| 4) Fair      |                                   |

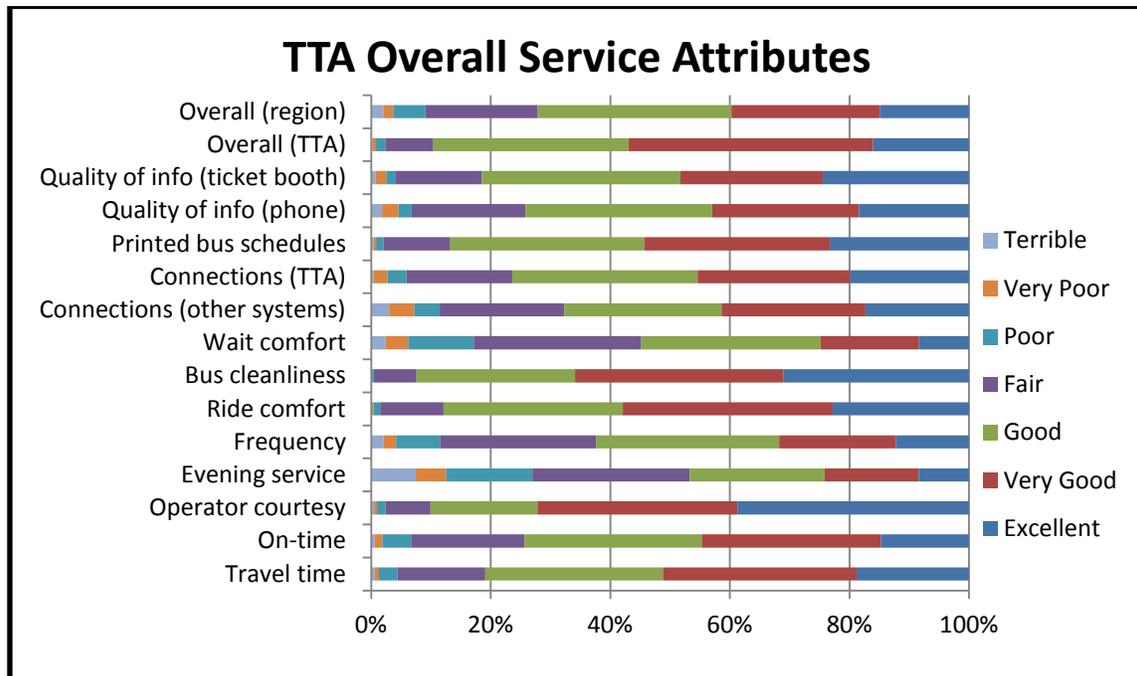


**KEY FINDINGS**

A majority of riders expressed a favorable view of the TTA August 2010 service changes, with 40% rating them as Very Good or Excellent. Only 16% rated them as Fair or Poor. Notably, 11% did not ride before August 2010, a scant three months before the survey was conducted. This high percentage could be reflective of new riders being attracted by the service changes.

## Q24\*. TTA service attributes

\*Corresponds to question #24 on the CAT survey only. Note: TTA survey used a 7-point scale.



### TTA Service Attributes

	Overall (area)	Overall (TTA)	Info (booth)	Info (phone)	Sche- dules	Connections (TTA)	Connections (other)	Comfort (wait)	Bus Clean- liness	Comfort (ride)	Freque- ncy	Evening service	Operator courtesy	On- time	Travel time
Excellent	15%	16%	24%	18%	23%	20%	17%	8%	31%	23%	12%	8%	39%	15%	19%
Very good	25%	41%	24%	25%	31%	26%	24%	16%	35%	35%	20%	16%	33%	30%	32%
Good	32%	33%	33%	31%	32%	31%	26%	30%	27%	30%	31%	23%	18%	30%	30%
Fair	19%	8%	14%	19%	11%	18%	21%	28%	7%	11%	26%	26%	8%	19%	15%
Poor	5%	2%	2%	2%	1%	3%	4%	11%	0%	1%	7%	14%	1%	5%	3%
Very poor	2%	1%	2%	3%	0%	2%	4%	4%	0%	0%	2%	5%	0%	1%	1%
Terrible	2%	0%	1%	2%	0%	0%	3%	2%	0%	0%	2%	7%	0%	1%	1%
Composite	5.12	5.59	5.47	5.22	5.61	5.33	5.05	4.62	5.89	5.67	4.89	4.32	5.97	5.25	5.45

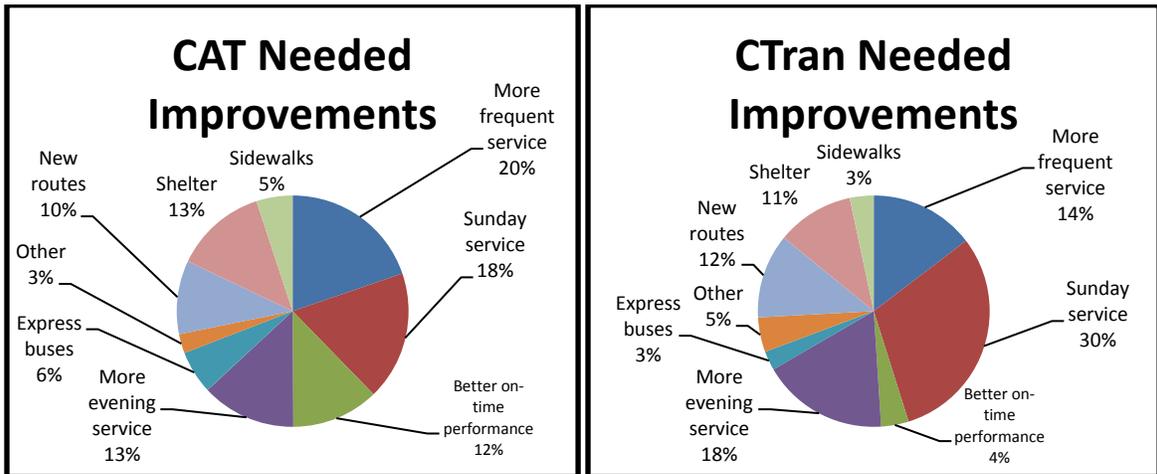
### KEY FINDINGS

Riders were asked for their service rating for the TTA system as a whole and for several distinct aspects. Overall, riders were satisfied with TTA's bus services. On a scale of 1 to 7 with 1 being terrible and 7 being excellent, the overall ranking is 5.12 (good). The median of the composite scores is 5.33. On a weighted basis, the top three scoring attributes are operator courtesy, bus cleanliness, and ride comfort. The three lowest scoring attributes are frequency, wait comfort, and evening service hours.

**Q25\*. Which bus service improvements are needed?**

\*Question was not asked on TTA or Wolfline survey

- |                               |               |
|-------------------------------|---------------|
| 1) More frequent service      | 6) Other      |
| 2) Sunday service             | 7) New routes |
| 3) Better on-time performance | 8) Shelter    |
| 4) More evening service       | 9) Sidewalks  |
| 5) Express service            |               |



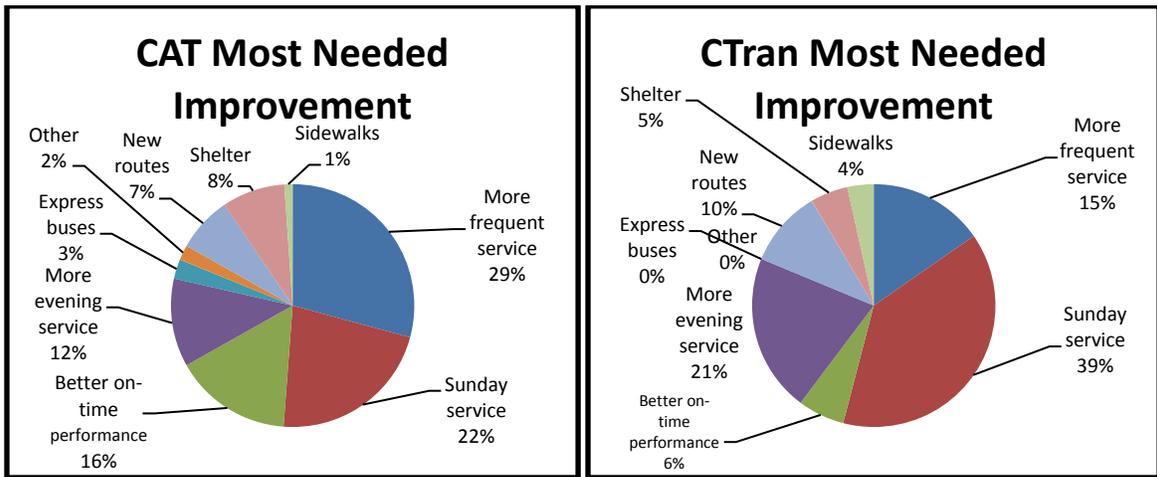
**KEY FINDINGS**

Suggested needed improvements were similar for CAT and CTran. The suggested improvements were centered on increasing the span-of-service and service days for the system. Specifically, surveyed riders' top three needed improvements for both systems included a desire for more frequent service, more Sunday service, and more evening service.

**Q25A\*. Which is most needed?**

\*Question was not asked on TTA or Wolfline survey

- |                               |               |
|-------------------------------|---------------|
| 1) More frequent service      | 6) Other      |
| 2) Sunday service             | 7) New routes |
| 3) Better on-time performance | 8) Shelter    |
| 4) More evening service       | 9) Sidewalks  |
| 5) Express service            |               |



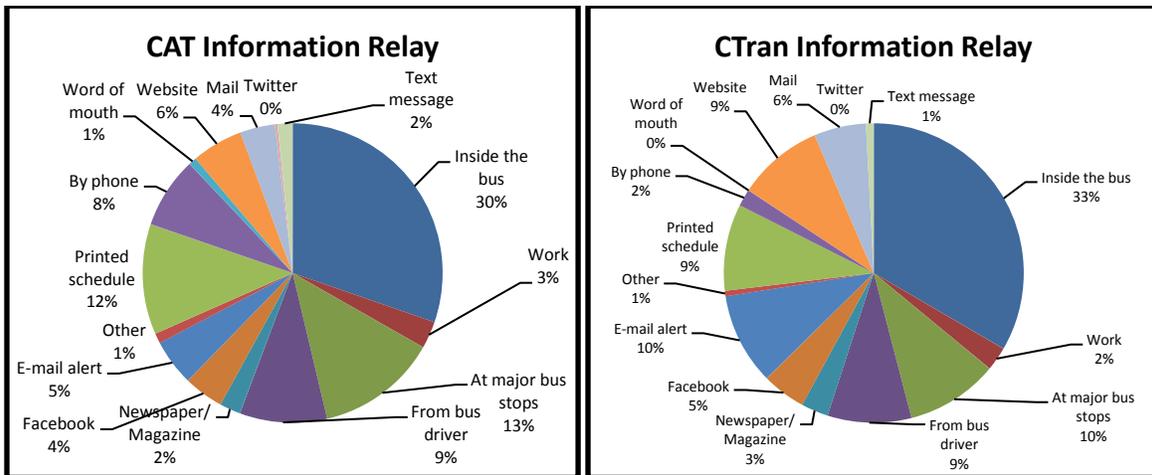
**KEY FINDINGS**

Generally, the most needed improvements were concentrated around increasing the span-of-service and service days for the system. A plurality of CAT riders selected more frequent service followed by more Sunday service and better on-time performance. For CTran, a plurality selected more Sunday service followed by more evening service and more frequent service.

**Q26\*. How would you prefer to get information about [CAT/CTran]?**

\*Question was not asked on TTA or Wolfline survey

- |                             |                                      |                            |
|-----------------------------|--------------------------------------|----------------------------|
| 1) Inside the bus (person)  | 5) Newspaper/ magazine (traditional) | 10) By phone (traditional) |
| 2) Work (person)            | 6) Facebook (new)                    | 11) Word of mouth (person) |
| 3) At major stops (person)  | 7) E-Mail alert (new)                | 12) Website (new)          |
| 4) From bus driver (person) | 8) Other                             | 13) Mail (traditional)     |
|                             | 9) Printed schedule (traditional)    | 14) Twitter (new)          |
|                             |                                      | 15) Text message (new)     |



**KEY FINDINGS**

CAT and CTran riders provided similar preferences for how they would prefer to receive information. A plurality in both systems responded that they would prefer to receive information inside the bus. Various information sources can be classified based on in-person, traditional (newspaper, phone, etc.), and new (Facebook, Twitter, etc.) media approaches. Both CAT (56%) and CTran (54%) riders preferred information sources classified as in-person approaches. However they differed in regards to traditional vs. new media approaches, with CAT (26% traditional vs. 17% new) riders favoring traditional and CTran (20% traditional vs. 25% new) riders favoring new media approaches.

**Q38\*. Which of the rated items is most important to improve?**

\*Includes responses to Question 38A, which asked: "Which of the rated items is second most important to improve?"

\*\*Both questions were only asked on the TTA rider survey

1) Total travel time	8) Comfort while waiting for bus	12) 485-Ride telephone operators
2) Buses running on-time	9) Connections with other systems	13) Ticket office information
3) Courtesy of bus operators	10) Connections with Triangle Transit	14) Overall Triangle Transit service
4) Extend evening service	11) Printed bus schedules	15) Overall area service
5) Frequency of service		
6) Comfort of the ride		
7) Cleanliness of the bus		

Improvement choice	% of respondents – most important	% of respondents – second most important	Average
Frequency of service	23.69%	20.88%	22.35%
Buses running on-time	22.57%	14.56%	18.75%
Extend evening service	18.25%	13.69%	16.07%
Comfort while waiting for the bus	7.49%	11.61%	9.45%
Total travel time	8.50%	9.06%	8.77%
Connections with other systems	7.91%	9.30%	8.57%
Courtesy of bus operators	2.65%	3.46%	3.04%
Connections with Triangle Transit	1.72%	3.77%	2.70%
Printed bus schedules	1.77%	2.78%	2.25%
485-Ride telephone operators	1.52%	2.68%	2.07%
Comfort of the ride	0.99%	2.76%	1.84%
Overall area service	1.95%	1.41%	1.69%
Ticket office information	0.85%	1.77%	1.29%
Cleanliness of the bus	0.14%	2.29%	1.16%
Overall Triangle Transit service	0.00%	0.00%	0.00%

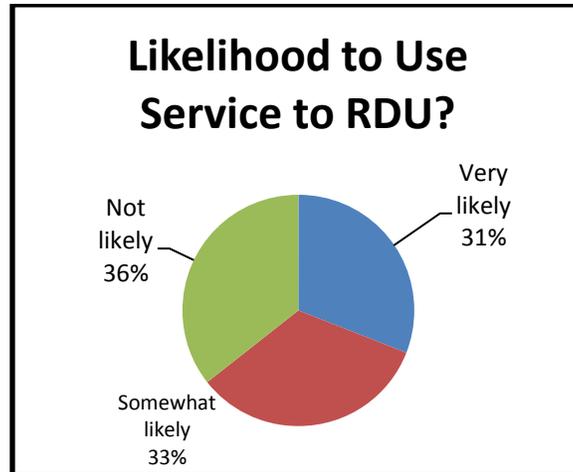
**KEY FINDINGS**

A plurality of riders selected frequency of service, which was followed closely by improving on-time performance and extending evening service hours as the most pressing improvements needed for TTA. As expected, results were similar to those found when riders identified the single most important improvement. A plurality of riders selected frequency of service, which was followed by improving on-time performance and extending evening service hours. Averaging responses across the most and second most needed improvements, these three choices continued to clearly stand out as needed improvements for TTA.

**Q39\*. How likely are you to take the bus to RDU Airport now that there is a direct bus?**

\*Question was not asked on the CAT, CTran, or Wolfline survey

- 1) Very likely
- 2) Somewhat likely
- 3) Not likely



**KEY FINDINGS**

Riders were roughly evenly split between the choices, with a slight plurality reporting not being likely to use the service.

# RIDER SURVEYS