

Addendum for Chapel Hill Transit High Capacity Transit Study (CHT HCTS)

December 10, 2024

Q: Our interpretation of the RFLOI is that since this project shall include no more than 10% design, that proposers for this project would not be required to be registered according to the following statement: “Firms that are not providing engineering services need not be registered with the North Carolina Board of Examiners for Engineers and Surveyors.” Can CPRC/DCHC-MPO confirm that the scope of this project does not require proposers to be registered with the NC Board of Examiners for Engineers and Surveyors?

A: The “project shall include no more than 10% design” statement was included in the RFLOI because transportation planning funds (PL) are the primary funding source for this study, and this funding source cannot be used for the design phase of a construction project. Based on the scope of this project, an understanding of engineering and design principles are necessary to identify candidate corridors, but this is primarily a feasibility study. Design and engineering would be a potential next step. It is up to the proposing firm to determine to what extent engineering services be included in the letter of interest—if engineering services are included, then a registered engineer/PE is needed to complete this work.

Q: Can CPRC/DCHC-MPO clarify how this project will be billed? The RFLOI indicates a lump sum contract, but on our prior NCDOT-funded projects, we have been required to bill on a time and materials basis.

A: This will be a lump sum project.

Q: The RFLOI indicates that the project is to be complete 8 months from notice to proceed. However, the Project Management tasks also notes there will be four quarterly meetings with the TAC. Can you please confirm the expectation of an 8-month project schedule, and not a 12-month schedule?

A: Yes, the expectation is an 8-month project schedule. The four “quarterly” meetings reference was inadvertently left in from a previous version of the RFLOI that included a 12-month schedule.

Q: Does Chapel Hill Transit have any post-pandemic on-board transit survey data?

A: A regional onboard survey was conducted in 2023 (administered by GoTriangle), and this included Chapel Hill Transit. The summary report is attached here.

Q: Does Chapel Hill Transit have any data on transfers between current routes and other regional providers/operators? (e.g. GoTriangle, GoDurham, etc.)

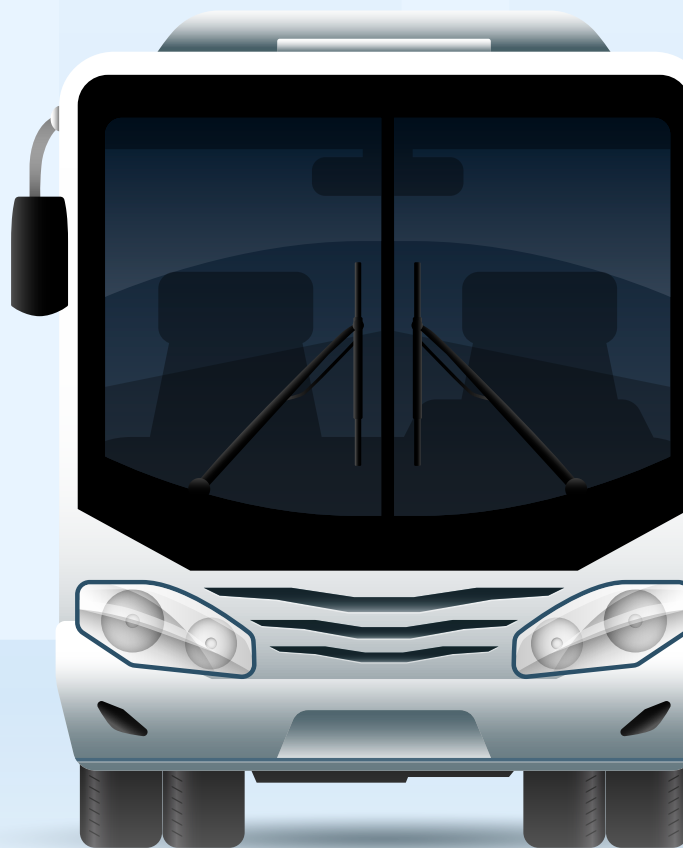
A: Since CHT does not collect fares, the agency does not have a way to track transfers.

Chapel Hill transit

FEBRUARY 2024

Chapel Hill Transit Agency Report

CHAPEL HILL TRANSIT SURVEY



PREPARED BY



Executive Summary

Transit serves many users across the Raleigh-Durham-Chapel Hill metropolitan area, also known as “the Triangle.” Driven by a diverse economy, temperate climate, and a skilled workforce, the Triangle is among the fastest-growing places in the U.S. Investments in Wake Transit Plan (WTP) initiatives like Bus Rapid Transit will continue to influence county, regional, and university-based fixed route services, and shape both transportation and land use decisions. Understanding transit trip-making, travel patterns, and characteristics within this context is critical for agencies to determine where to invest and how to keep pace with user demand.

This report highlights the findings of the survey of Chapel Hill Transit’s (CHT) 19 fixed routes, which was part of an inaugural, system-wide survey of 112 fixed routes operated by nine transit systems in the region. This survey expanded on the 2015/2016 survey, which only collected data on Wake County transit systems (i.e., GoRaleigh, GoTriangle, GoCary, and NCSU). Conducted in the Fall 2023, this tablet-based survey collected data on user demographics, ridership, and origin-destination trip-making. Representatives of the local agencies participated in inter-agency meetings throughout the survey process. An interlocal agreement between the City of Raleigh and GoTriangle facilitated participation of transit agencies within Wake, Durham, and Orange counties.

The CHT survey was conducted from October 23 through October 26, 2023. Survey methodology established route-specific sampling targets, collected On-to-Off (O2O) trips, and supported insights from user participation and perspectives. Survey results provide:

- Snapshot comparison of demographic, ridership, and origin-destination information, along with information about transfers and cross-system travel.
- Transit trip end location and time of day data for use in updating the Triangle Regional Travel Demand Model (Gen 2), the platform to assess and forecast future transportation demand in the region.
- Data to inform the Capital Area Metropolitan Planning Organization (CAMPO) and Durham-Chapel Hill-Carrboro MPO (DCHC-MPO) Metropolitan Transportation Plans (MTPs). The regional MTPs meet necessary federal requirements to prioritize projects on both local and regional scales.
- Insights for agency staff and county and regional transit leaders to inform short and long-range transit planning.

The survey findings and data will support Title VI and equity evaluations, allow for analysis of trends in relation to past surveys, and provide an updated baseline for future analysis and surveys. This CHT report provides high-level survey findings for Chapel Hill. The survey results can be found in an interactive, online dashboard (<https://etcinstitute.com/triangle-wake-county-nc-transit-portal/>).

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Introduction

This report summarizes the process and results of the 2023 Triangle Regional Transit Survey for those surveys conducted on Chapel Hill Transit buses. A survey was conducted in Fall 2023 for fixed routes services in Wake, Durham, and Orange Counties, including: Chapel Hill Transit (CHT), GoApex, GoCary, GoDurham, GoRaleigh, GoTriangle, Orange County Transportation Services (OCTS), Piedmont Authority for Regional Transportation (PART), and Wolfline (NCSU). GoRaleigh managed the administration, synthesis, and dissemination of survey results supported by consultants. This system-wide, tablet-based survey collected data on fixed route user demographics, ridership, and origin-destination data. Information obtained from the surveys will be used to:

- Support the long range and metropolitan transportation plans for Capital Area Metropolitan Planning Organization (CAMPO) and Durham-Chapel Hill-Carrboro MPO (DCHC-MPO);
- Support county transit plans, future rail and BRT corridors, and other initiatives;
- Inform Triangle regional travel demand (TRM) and STOPS model updates;
- Meet Federal requirements that Federally-funded or regionally significant transportation projects must be identified in a transportation plan that demonstrates conformity with National Ambient Air Quality Standards (NAAQS); and
- Inform long-range multimodal transportation network plans across the region.

History

This survey builds on past surveying efforts in the region.

Transit providers throughout the region were surveyed in 2006, including Capital Area Transit (now GoRaleigh), Durham Area Transit Authority (now GoDurham), CHT, Cary Transit (CTRAN, now GoCary), Triangle Transit (now GoTriangle), NCSU, and Duke University Transit.

In 2018 and 2019, CHT conducted customer satisfaction surveys, which did not measure origin-destination characteristics.

In the early Spring of 2020, the transit agencies in the Triangle Region coordinated to initiate the Triangle Regional Transit Survey. The survey was suspended in 2020 due to the COVID-19 pandemic. The agencies restarted the survey the following year, but it was canceled in Summer 2021.

Planning for the current survey began in Spring 2023.

Chapel Hill Transit System

Chapel Hill Transit provides fare-free fixed-route bus service, park-and-ride shuttle service, and demand-response service in Chapel Hill, Carrboro, and the University of North Carolina (UNC). It runs a total of 23 routes which includes two circulator routes (Route CL and U), three express routes (Route CCX, FCX, and JFX), and three Safe Ride routes. Most of the routes, including the circulator routes and express routes, originate from UNC. The Safe Ride Routes are Safe Ride G Route, Safe Ride J Route, and Safe Ride T Route which run only on Thursday, Friday, and Saturday for the students of UNC during the fall and spring semesters. Chapel Hill Transit buses operate from 5:00 am to 1:15 am on weekdays, from 8:00 am to 6:30 pm on Saturdays, and from 10:30 am to 11:30 pm on Sundays. On weekends, there are only nine operational routes.

Chapel Hill Transit provides a demand-response service called EZ Rider that provides transit service to people with disabilities who cannot use fixed route services. Chapel Hill Transit's park-and-ride shuttle service, called Tar Heel Express, provides service for special events such as UNC football and men's basketball home games.

As per the National Transit Database, Chapel Hill Transit provided over 1.6 million fixed-route passenger trips and about 0.3 million demand-response passenger trips in the town of Chapel Hill in 2022.

Methodology Overview

Surveys of regional fixed route transit service were conducted in two phases. First, an on-to-off (O2O) survey was conducted on high volume routes (i.e., routes typically exceeding 1,000 average weekday riders), and then origin-destination surveys were conducted on all regional routes.

On-to-off Survey

An O2O survey was conducted in order to develop more detailed expansion plans for selected routes and ensure that trip paths are well-represented. For the O2O survey, video and GPS equipment was temporarily installed on select routes. This method captures more than 98 percent of all boardings (on) and alightings (off) by capturing photos of the shoes of riders when they board and alight the bus. No identifiable detail is captured by the equipment, meaning riders remain anonymous. Included with each photo is data regarding the time, direction, and location of the vehicle. O2O routes were selected based on a combination of factors, including ridership, regional priorities, and agency input. Routes with average weekday ridership greater than 1,000, as well as routes along the proposed commuter rail project and Bus Rapid Transit (BRT) corridors, were prioritized. Input from the regional transit agencies was also incorporated to finalize which routes received O2O surveying. For the O2O survey, CHT Routes FCX, J, NS, RU, and U were selected.

Origin-Destination Survey

Survey Instrument

The OD survey contained questions about trip characteristics and rider demographics. It included questions required to meet data requirements of the regional travel demand model and Metropolitan Transportation Plan (MTP) updates and incorporated or updated questions from previous on-board surveys as appropriate. The survey instrument was developed in both a tablet (electronic) and print (paper) format. The data collected includes:

- Direction of travel
- Any other transit routes used and number of transfers
- Origin/destination
- Boarding/alighting location and coordinates for each location
- Access and egress modes
- Trip purpose
- Rider perception of fare free transit service
- Gender/race and other demographic information of respondent

Survey Sampling Plan

The sampling plan was developed for weekday travel using historic average weekday ridership by route and mirrors the methodology used in a 2015 survey of riders in Wake County. Ridership was also evaluated by time of day to determine surveying goals for peak periods (AM, midday, and PM peaks) and non-peak periods. This plan included data collection targets by transit system, specifically, the percentage of trips to be obtained on fixed transit routes.

General guidance and past experience with the FTA process informed the development of the sampling plan. At a minimum, 10 percent of each system's average weekday ridership was to be surveyed during the survey, this percentage was determined based off funding availability for this project. Additionally, a set of tiered priority corridors was developed for the region for which oversampling is desired, with at least a 20 percent target for surveying. Similar to the O2O routes, these tiered priority routes for OD

surveying reflect existing ridership and future plans for fixed-route bus or rail services. The sampling plan for CHT is included in Appendix B - Final Sampling Plan and Percentages.

Pilot Test

A pilot test of the survey instrument was conducted from September 18, 2023, to September 21, 2023. The pilot test addressed survey design, length, and response rate. Results of the pilot test were used to make changes to the survey instrument and methodology prior to survey administration.

Surveyor Training

Training was conducted from October 3, 2023, through October 12, 2023. All surveyors were trained in the classroom and in the field prior to the on-board survey administration to ensure their ability to effectively administer the survey. Surveyors were reviewed throughout the data collection effort and were retrained if issues were encountered.

Agency Staff and Rider Notification

The consultant team provided a template for a Survey Authorization Letter for the O2O and OD surveys, which agencies could customize and distribute to bus operators informing them of the survey.

Riders were informed via onboard notifications. GoRaleigh developed an onboard notification which could be displayed on screens inside buses and provided it to other agencies to use the same way or as a printed placard.

Survey Period and Administration

Surveys were administered during weekdays (Monday-Thursday) when schools were in session and avoided identified blackout dates. Blackout dates, where no survey collection occurred, were based on holidays and school schedules. Ridership was expected to be outside the norm on these days. Blackout dates were: October 2, 2023; October 6, 2023; October 13, 2023; October 27, 2023; November 22, 2023; November 23, 2023; November 24, 2023; and December 1, 2023. O2O surveys were conducted on CHT buses from October 2 through October 13, with two blackout dates, and OD surveys from October 23 through October 26, with no blackout dates.

Data Processing

To analyze survey results, sample data was expanded to the full ridership using O2O survey data and automated passenger counter (APC) data for each agency, route, time of day, and day of survey. The number of completed surveys for each route was compared to the average daily ridership during the survey period. This ratio was used to develop unlinked weight factors for each route that were used to weight each individual completed survey. The total number of transfers was also recorded for the riders that helped to create linked weight factors.

Unlinked weighted survey data was used for all results and analysis presented in subsequent sections of this report. Details on completed surveys and the sample expansion are included as Appendix C - Sample Expansion / Data Weighting and Expansion.

Interagency Coordination

Coordination for the survey effort included four interagency meetings, email and phone correspondence with representatives from all surveyed transit agencies, Capital Area Metropolitan Planning Organization (CAMPO), Durham-Chapel Hill-Carrboro (DCHC-MPO), and the Institute for Transportation Research and Education (ITRE). GoRaleigh served as the lead agency in coordinating the overall survey and worked in cooperation with GoTriangle for participation of agencies in Durham and Orange Counties. Interagency meetings included: a kick-off to introduce the survey and collect input on survey goals, schedule and methodology; a meeting to discuss feedback on the survey instrument, methodology and sampling plans; a briefing on results of the pilot survey, active on-to-off (O2O) surveying and pending OD surveying; and a final meeting to review overall survey results and the regional all systems summary report. Direct coordination with CHT and other agencies was conducted at key points during the survey process to collect operating and passenger count data and to raise awareness with drivers for field surveying.

Key Findings

This section highlights the key findings of the weighted results of the OD survey for the CHT system. Characteristics such as individual demographics, household characteristics, employment status, trip purpose, and origin-destination are included below. The weighting relates the number of surveys to the total number of boardings to better reflect the characteristics of all riders. More detailed findings from the survey are presented in the subsequent sections.

- **Many riders are dependent on transit**, with only 36.8 percent reporting they own a car they could have used to complete this trip. About **21.8 percent of riders reported that they don't have a license**.
- Correspondingly, **most riders are from low-income households** – 51.8 percent have incomes below \$50,000; About 22.1 percent of riders refused to disclose their income.
- **Most riders (54.7 percent) are between 18 and 24 years old**, representing the student population.
- Ridership across the system is diverse. **74.4 percent of the riders speak English at home** with the remaining speaking Spanish (10.2 percent), Chinese (3.7 percent), Hindi (1.4 percent), Korean (1.4 percent), and many other languages (8.9 percent).
- **44.0 percent of riders overall identified as White and 22.6 percent as Black/African American**. Around 16.7 percent of riders identified as Asian.
- The largest share of trips had **home as one end of the trip** (52.0 percent as origin and 36.3 percent as destination). Almost 50 percent of the trips were home-based school trips (i.e., trips from home to school/university or the reverse).
- **The majority of transit riders are students (68.8 percent) and workers (60.5 percent)**, including employed students (32.0 percent). Only 2.7 percent were neither workers nor students. 21.2 percent of riders' households did not include any employed persons.
- By and large, **people walk less than 6 minutes** to reach their bus stop. Biking to or from the bus is limited, less than 1 percent, and use of a car by either driving or drop off was under 10 percent.
- **Around 6 percent of respondents said that they had used a bikeshare or scooter share service in the past 30 days**, but less than 1 percent of bus trips involved bikeshare or scooter share.
- **Transfers are rare**. 93.7 percent of riders made zero transfers. Among those who had transfers, 79.2 percent of the first transfers were to a CHT route and 20.8 percent to a GoTriangle route.
- Bus trips are spread over the day with the highest number in midday. **The largest share of respondents (48.1 percent) boarded the bus between 9:00 am and 3:29 pm** (midday).
- **43.6 percent of riders used some type of method of trip planning** like an app, agency website, or paper schedules.

On-to-off Survey Results

The on-to-off (O2O) survey complemented and supplemented the main onboard survey with information on the boarding and alighting locations of riders. Unlike the main survey, no further information (e.g., demographics, trip purpose, trip origin, etc.) was collected beyond route, direction, and time. The simple nature allowed for the collection of 3,324 responses for CHT. Table 1 shows the breakdown of surveys by time of day.

Table 1: Breakdown of O2O surveys by time of day for CHT

Agency	Early AM (Before 6:00 AM)	AM (6:00 AM to 8:59 AM)	Midday (9:00 AM to 3:29 PM)	PM (3:30 PM to 6:29 PM)	Evening (After 6:30 PM)	Total
CHT	38	772	1,492	855	167	3,324

This effort was focused on the highest ridership routes for CHT, whereas the OD Survey collected a sample of more than 1,600 on a much broader set of routes. The number of routes surveyed for CHT is shown in Table 2. OD data is valuable for understanding the route segments traveled. Boarding and alighting counts give the number of people getting on and off, but not the link between those activities.

Table 2: O2O and OD routes surveyed for CHT

Agency	O2O Routes	OD Routes
CHT	5	19

Origin-Destination Survey Results

For CHT systems, the OD survey collected 1,669 surveys (Table 3). This sample data was weighted using the full ridership data from the O2O survey and APC. Thus, this section features analysis and descriptions of the breakdown of answers using the weighted, unlinked totals. By applying the weights to the sample, the numbers represent the total daily ridership of the system by number of boardings. The data also contain a linked weight which divides the unlinked weight by one plus the number of transfers to approximate unique trips that include one or more boardings. While the latter is useful, survey results are presented by unlinked values.

Table 3: Total number of unweighted and weighted surveys

Transit System	Unweighted Surveys Collected	Weighted-Unlinked Expanded Surveys
CHT	1,669	11,833

Rider and Household Characteristics

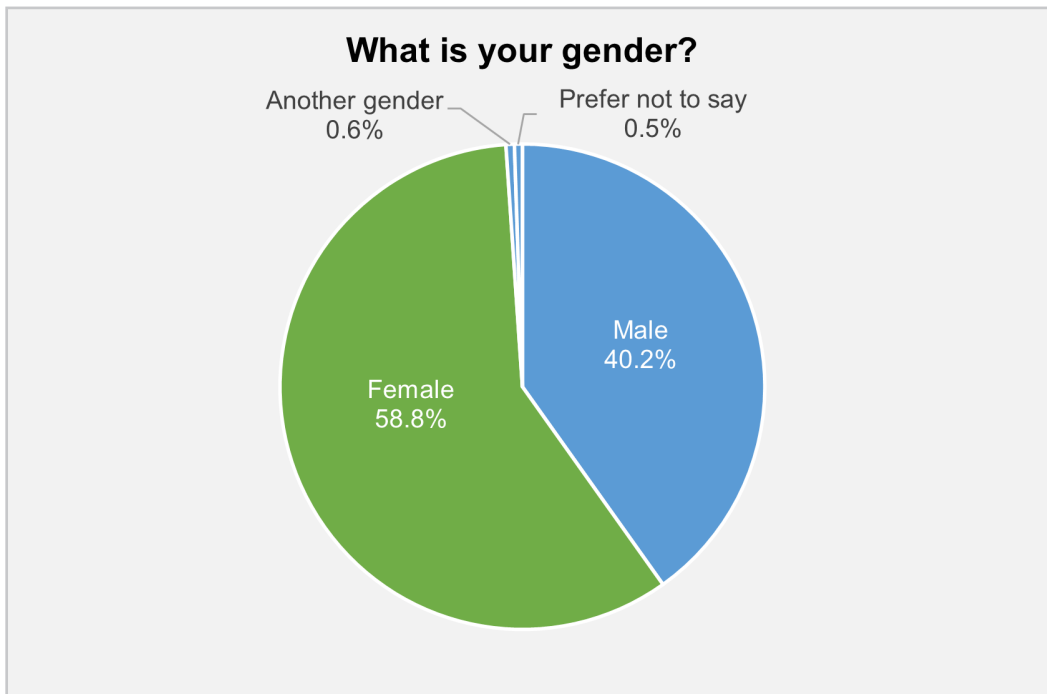
This section discusses the data that describe the demographic characteristics of fixed route transit riders including gender, age, race and ethnicity, availability of a driver's license, number of people in the household, household income, number of vehicles available in the household, languages spoken at home, employment status, and information on work and school trips. The responses to these questions will help the agency understand the populations it serves and deliver services that meet their needs.

INDIVIDUAL DEMOGRAPHICS

The following section summarizes the individual demographic characteristics of survey respondents. The combined weighted and unlinked results for characteristics such as gender, race and ethnicity, age, and availability of a driver's license by the riders are discussed in this section.

Gender

CHT survey results show that the percentage of riders identifying as female (58.8 percent) was higher than the percentage of riders identifying as male (40.2 percent).



Race and Ethnicity

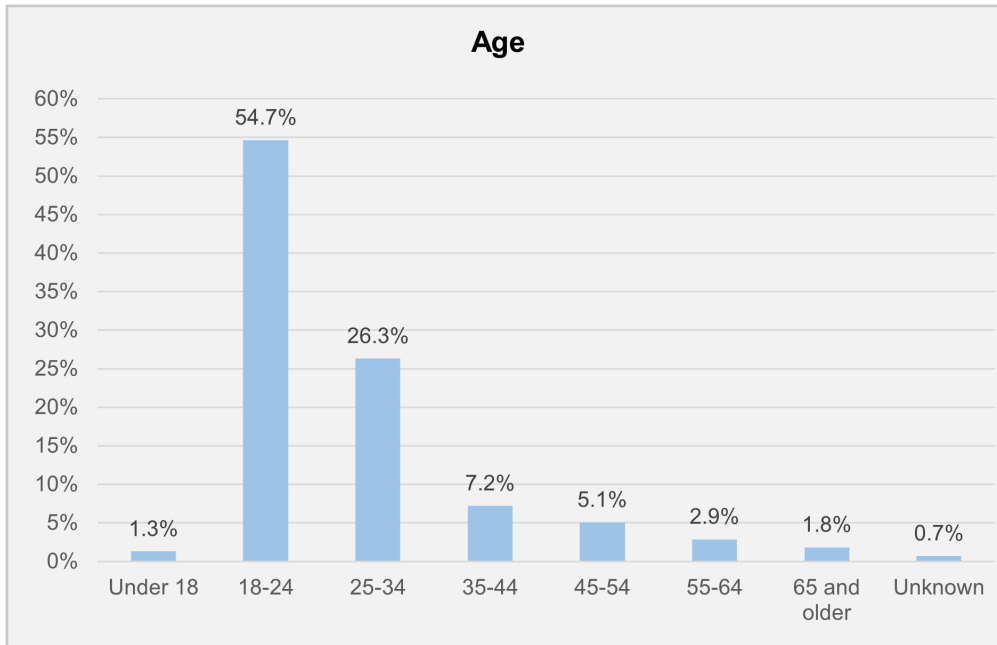
Respondents were asked to select all the races/ethnicities with which they identified. Most respondents were White riders (44.0 percent) and the second most common were Black/African American riders (22.6 percent). Other than Black/African American riders and White riders, 16.7 percent were Asian riders, 10.5 percent of riders were Hispanic/Latino, and 3.3 percent of riders belonged to two or more races. 2.3 percent of riders did not want to disclose their race.

Table 4: Distribution of riders by race and ethnicity

Race and Ethnicity	Ridership Weighted Percentage
Hispanic or Latino	10.5%
Not Hispanic or Latino	89.5%
White Alone	44%
Black or African American Alone	22.6%
American Indian or Alaska Native Alone	0.6%
Asian Alone	16.7%
Native Hawaiian and Other Pacific Islander Alone	0.0%
Two or More Races	3.3%
Prefer not to say	2.5%
Total	100%

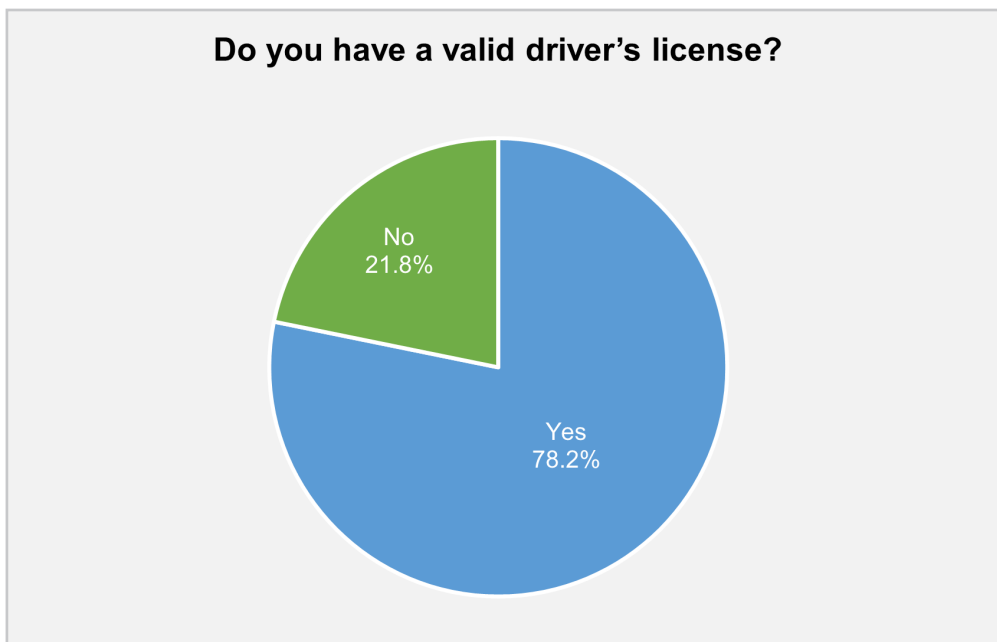
Age

CHT survey data shows that the majority of riders (54.7 percent) were adults between the ages of 18 to 24 years, representing the student population. Most other riders are distributed among 25-34 years (26.3 percent), 35-44 years (7.2 percent), 45-54 years (5.1 percent), and 55-64 years (2.9 percent). A small percentage of riders are over 64 (1.8 percent) or under 18 years (1.3 percent).



Driver's License

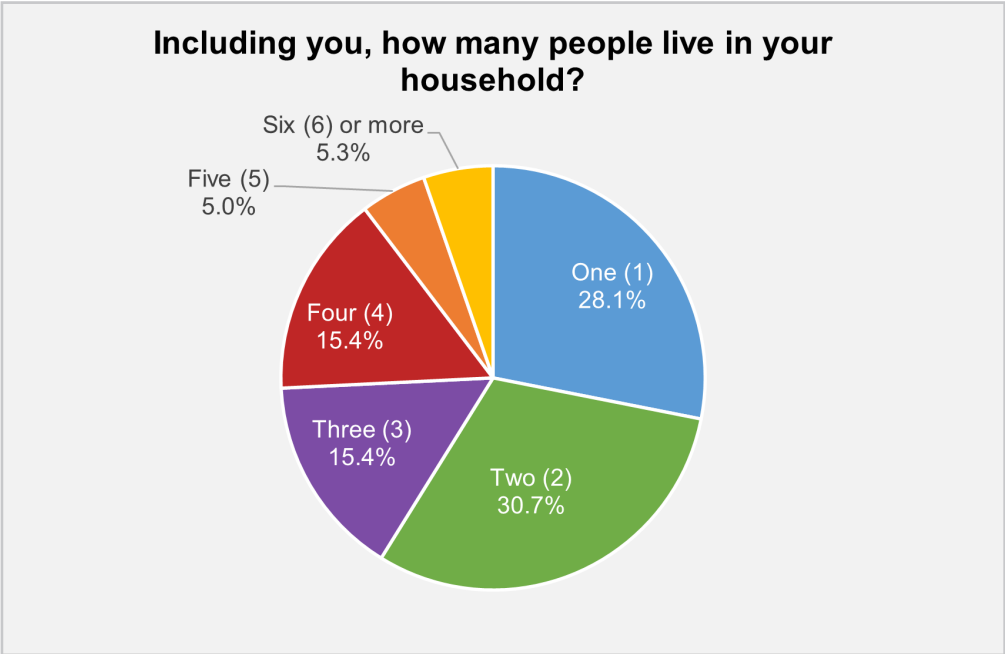
Respondents were asked if they had a valid driver's license. This data will help CHT understand the potential ability of passengers to drive themselves instead of taking transit. The results show 78.2 percent of riders had a valid driver's licenses and 21.8 percent of riders did not have a valid driver's license.



HOUSEHOLD CHARACTERISTICS

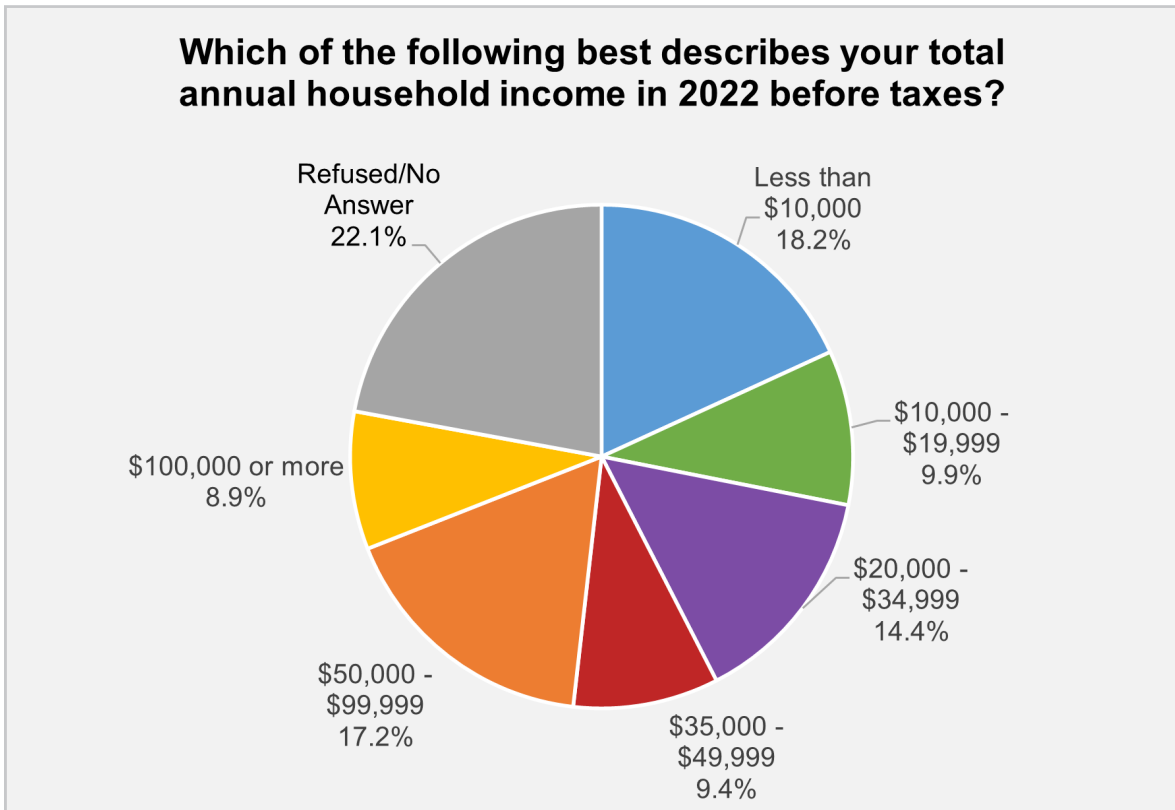
Household Size

The results show that there are 28.1 percent single person, 30.7 percent two-person, 15.4 percent three-person, 15.4 percent four-person, and 10.3 percent five-or-more-person households.



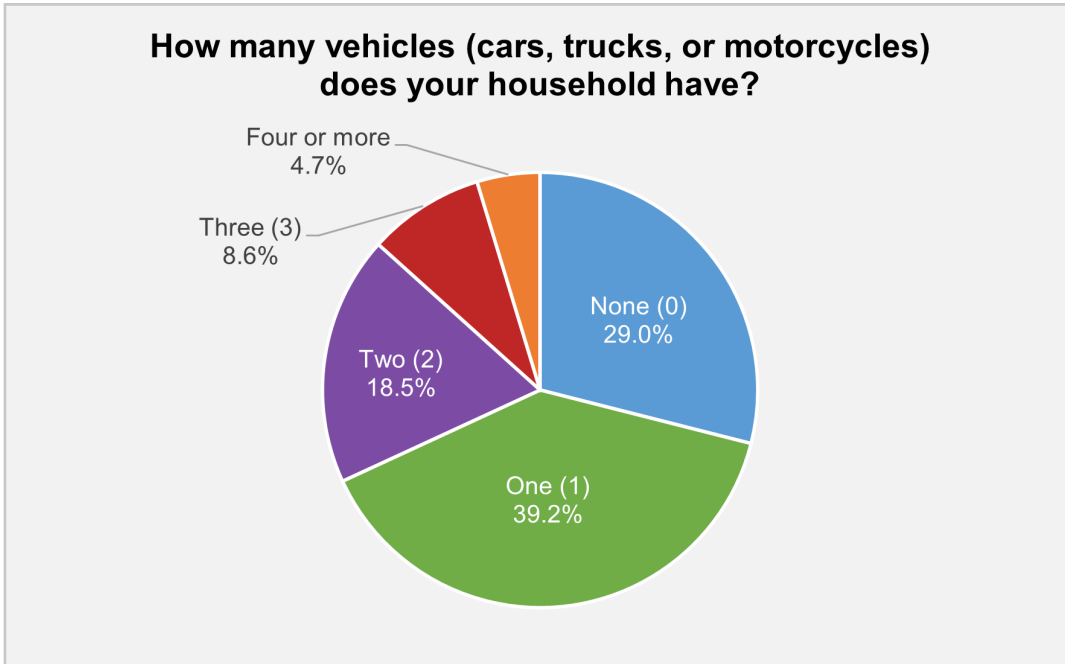
Total annual household income

CHT survey data shows that 18.2 percent of riders have a household income lower than \$10,000. These results indicate a strong reliance on transit for those with low income. Conversely, riders with a household income of more than \$100,000 represent only 8.9 percent of riders. This trend suggests that transit usage and income are inversely correlated. Many respondents (22.1 percent) refused to mention their household income during the survey.



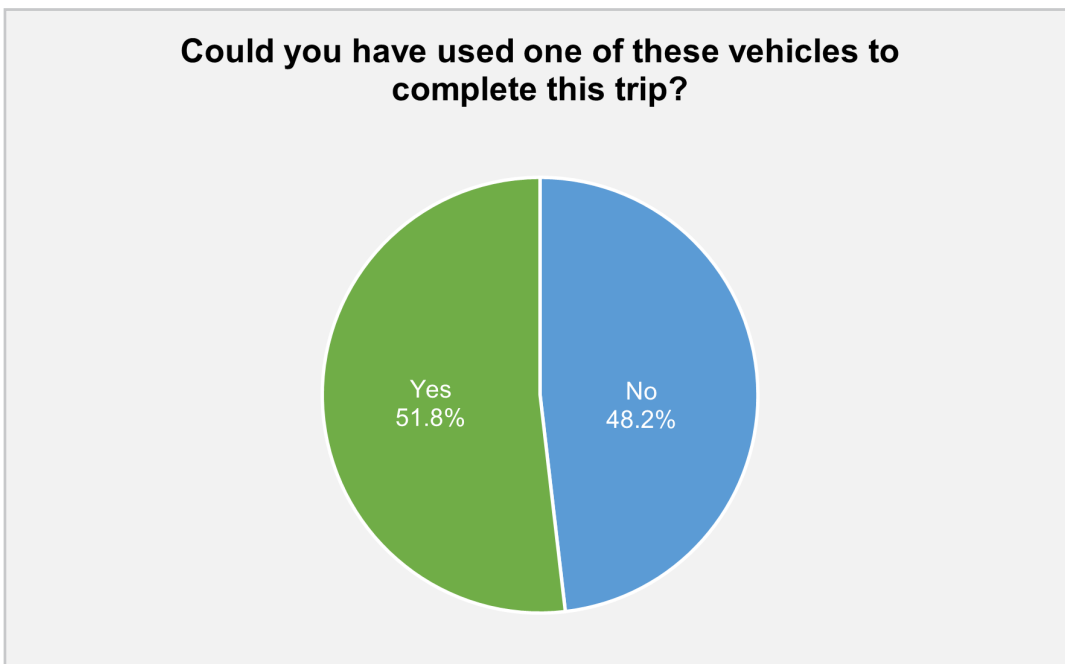
Vehicle Ownership

Ridership data shows that 29.0 percent of the riders did not own a vehicle. Another 39.2 percent of riders have access to only one vehicle in their household. This indicates that many riders may be using the transit system due to a lack of vehicles in their household.



Could you have used one of these vehicles to complete this trip?

Of the 71.0 percent of riders who said they own one or more vehicles, 48.2 percent said they could not use one of those vehicles to complete this trip, suggesting that people are using the transit system as a necessity due to lack of an available vehicle even in households that own them.



Languages spoken at home

The respondents were asked which language they primarily speak at home. 74.4 percent of riders speak English at home with the remaining speaking Spanish (10.2 percent), Chinese (3.7 percent), Hindi (1.4 percent), Korean (1.4 percent), and many other languages (8.9 percent).

Table 5: Distribution of riders by language spoken at home

Language	Percentage
English	74.4%
Spanish	10.2%
Chinese	3.7%
Hindi	1.4%
Korean	1.4%
French	1.0%
Vietnamese	1.0
Other	6.9%
Total	100.0%

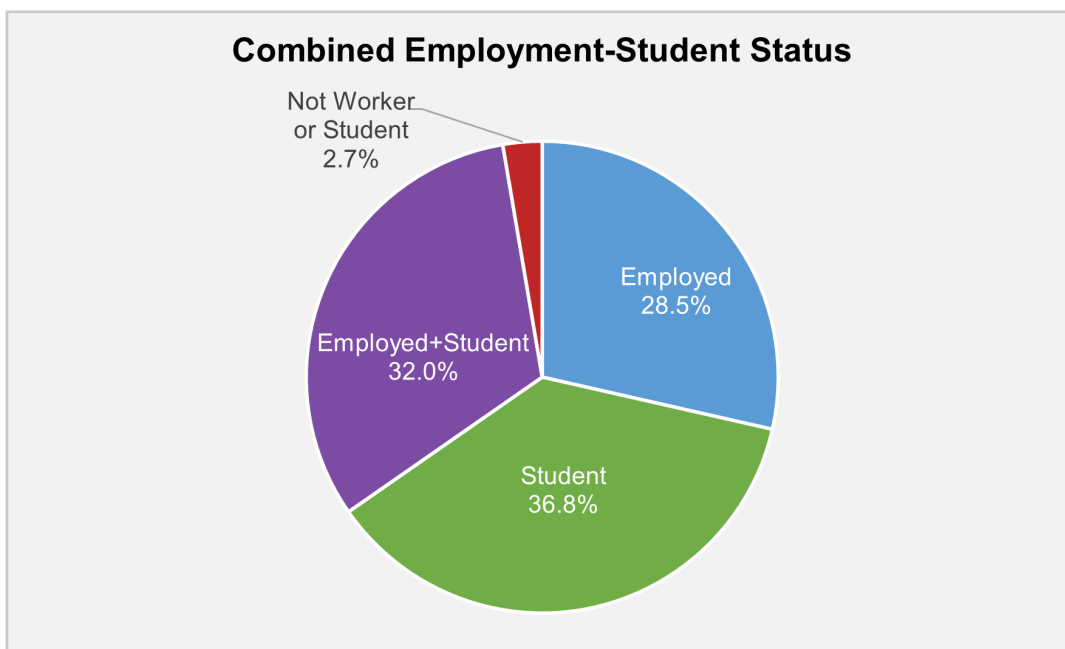
EMPLOYMENT CHARACTERISTICS

The following section discusses employment characteristics among riders. The combined weighted and unlinked results for characteristics such as employment status, student status, number of people employed in the household, and information on work and school trips are discussed in this section. The student and employment status answers were combined in this analysis to create a variable with four categories – employed only, student only, employed and student, and not employed or student.

Employment-Student Status

The results for CHT show that 28.5 percent of total riders were employed (only), 36.8 percent were students (only), 32.0 percent were students who were employed, and the remaining 2.7 percent of riders were neither workers nor students.

Almost 79 percent of the riders who were neither employed nor a student were riding the transit system because they did not own any vehicles.



Employment Status

The results show that 33.0 percent of the total riders were employed full-time, 27.5 percent were employed part-time, and the remaining were unemployed, including 1.6 percent retired.

Table 6: Distribution of riders by employment status

Employment Status	Percentage
Employed full-time (at least 35 hrs/wk)	33.0%
Employed part-time (less than 35 hrs/wk)	27.5%
Not currently employed, but seeking work	3.8%
Not currently employed, and not seeking work	34.0%
Retired	1.6%
Homemaker	0.1%
Total	100.0%

Student Status

The breakdown of student status is shown below. 68.8 percent of CHT riders were students, both employed and unemployed. Of the 68.8 percent of riders who are students, 64.5 percent were full-time college/university students, 2.6 percent were part-time college/university students, 0.1 percent were in vocational/technical/trade school, and the remaining 1.1 percent were in school (9th-12th grade).

Table 7: Distribution of riders by student status

Student Status	Percentage
Not a student	31.2%
Yes - Full-time College / University	64.5%
Yes - Part-time College / University	2.6%
Yes - Vocational / Technical / Trade School	0.1%
Yes - 9th-12th grade	1.1%
Yes - Other	0.5%
Total	100.0%

Did you or will you make a trip to school since you left home?

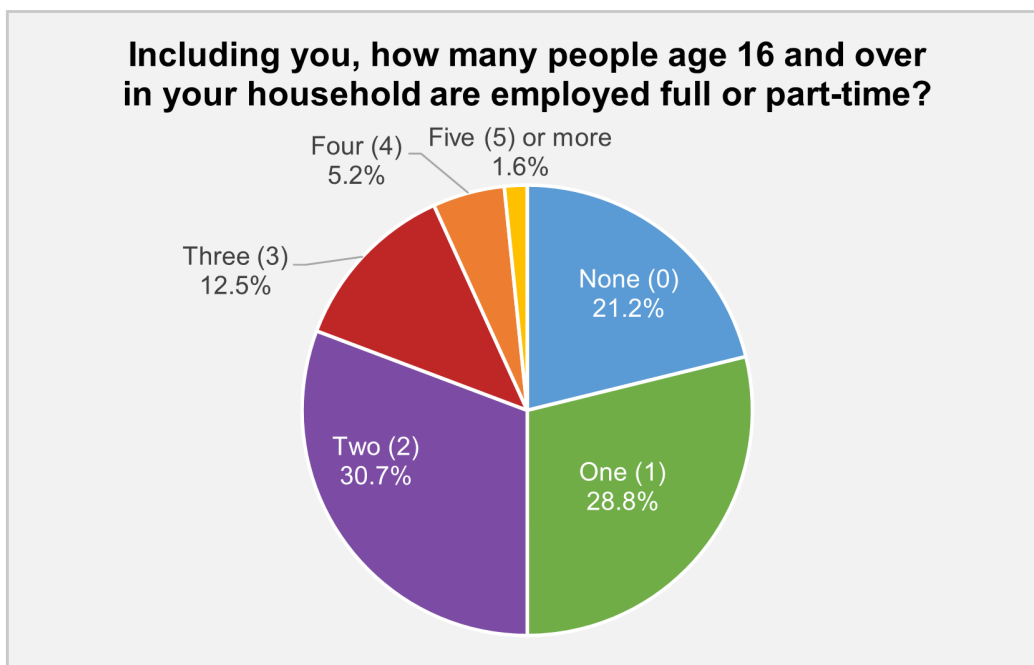
During the survey, some respondents, based on their prior answers related to student status and trip purpose, were asked in 2 questions if they (1) made a trip to school since they left home or (2) would make a trip to school before returning home. To the first question, 2.8 percent responded yes, 8.5 percent said no, and for the remaining 88.7 percent, the question was skipped as not applicable. To the second question, 1.3 percent said yes, 10.0 percent responded no, and for the remaining 88.7 percent, the question was skipped as not applicable.

Table 8: Response of riders to questions related to school-based trips

Response	Percentage
Did you go to school?	
Not Applicable	88.7%
Yes	2.8%
No	8.5%
Total	100.0%
Will you go to school?	
Not Applicable	88.7%
Yes	1.3%
No	10.0%
Total	100.0%

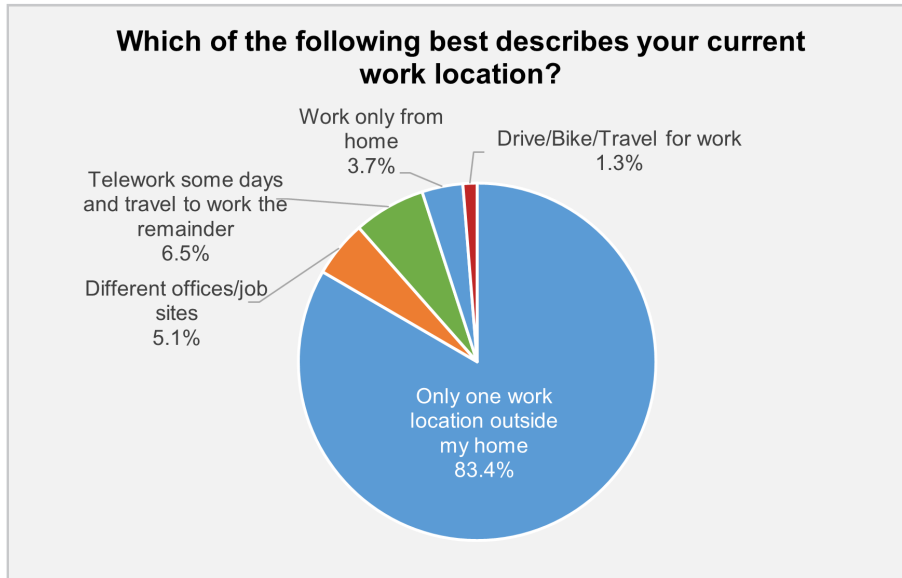
Number of people employed in household

Per ridership data, nearly 60 percent of riders had either one or two people employed full-time or part-time in their household, and around 21.2 percent of households didn't have any employed people in their household, including themselves or others.



Work location

Survey results show that 83.4 percent of employed riders reported that they only have one work location outside their home, 3.7 percent of riders responded they work from home and 6.5 percent reported they telework on some days and travel to work on other days. This indicates that people reliant on transit are less likely to have the option to work from home. Around 1.3 percent of riders said that they drive/bike/travel for work, which means they are involved in jobs that involve moving from one place to another on a daily basis such as a driver, a salesperson, or a delivery person.



Did you or will you make a trip to work since you left home?

During the survey, some respondents, based on their prior answers related to employment and trip purpose, were asked in 2 questions if they (1) made a trip to work since they left home or (2) would make a trip to work before returning home. To the first question, 2.0 percent said yes, 32.9 percent responded no, and for the remaining 65.1 percent, the question was skipped as not applicable. To the second question, 3.4 percent said yes, 31.6 percent responded no, and for the remaining 65.1 percent, the question was skipped as not applicable.

Table 9: Response of riders to questions related to work-based trips

Response	Percentage
Did you go to work today?	
Not Applicable	65.1%
Yes	2.0%
No	32.9%
Total	100.0%
Will you go to work today?	
Not Applicable	65.1%
Yes	3.4%
No	31.6%
Total	100.0%

TRIP PURPOSE AND ORIGIN/DESTINATION CHARACTERISTICS

This section talks about fixed route transit trip characteristics including the origin and destination of the trips, mode of transportation used to get to the buses and final destinations, time taken to get to the buses and final destinations, and system-to-system transfers. Trip information will help each transit agency understand how their systems are being used by their customers and can help determine enhancements to services. In this analysis, new variables were created from the results to describe the combination of origin and destination types.

Origin and Destination Place Types

The results for origin and destination place types for CHT are shown in the charts and tables below. Survey data shows that the largest share of riders were traveling between school and home. Other than traveling to school and home, riders were traveling for work (11 percent to 15 percent), shopping (2 percent to 3 percent), errands (3 percent to 4 percent), and social/recreational/eating (4 percent to 7 percent) purposes. Less than 1 percent of riders were involved in other tasks such as traveling to a Hotel/Convention Center, Airport, train/bus station to board Amtrak/Greyhound/etc., or any other trip.

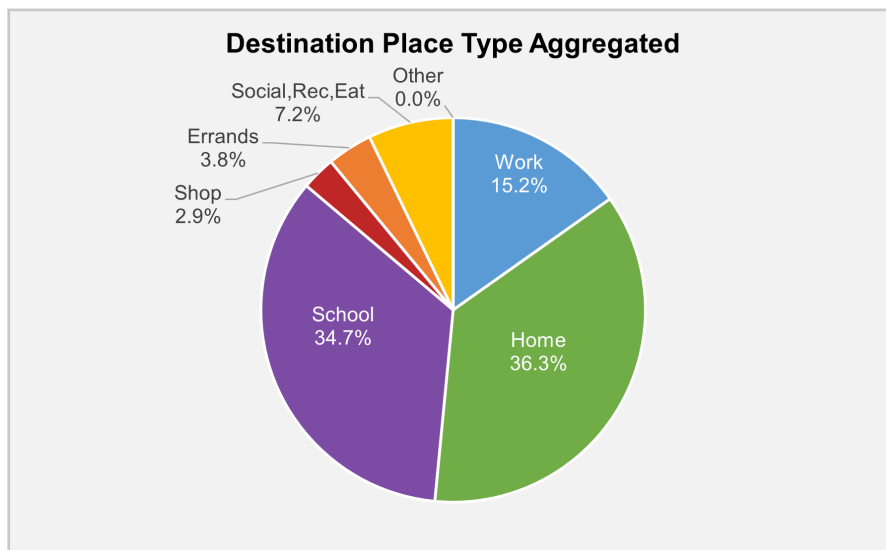
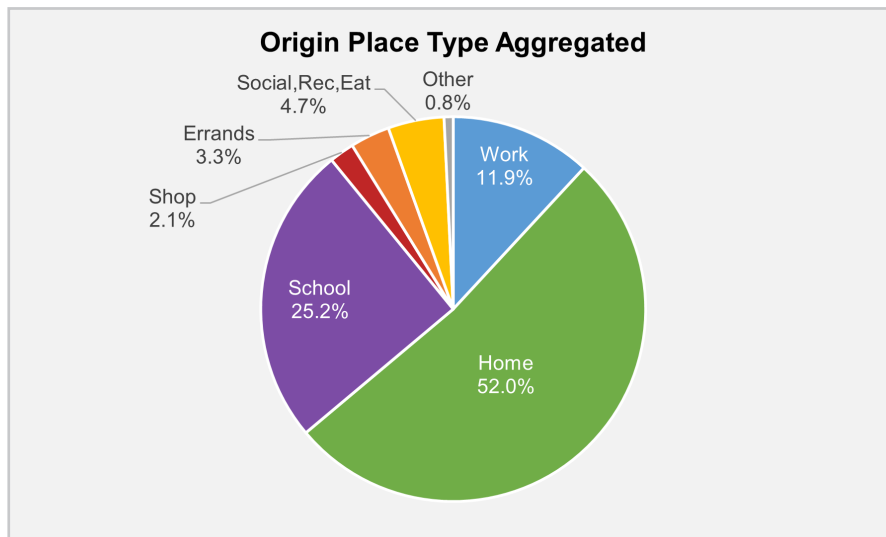


Table 10 summarizes home, work, and other trip purpose categories. The largest share of trips, 49.2 percent, were home-based school trips (home to school, or the reverse). 24.6 percent of riders made home-based work trips, 14.5 percent made home-based “other” trips, whereas the remaining 11.7 percent did not involve home (work-based other and other-based other trips). A “home-based” trip is one which includes home as the origin or destination, just as work-based has work as a trip end.

Table 10: Distribution of riders by trip purpose

Trip Purpose	Percentage
Home-Based Work	24.6%
Home-Based School	49.2%
Home-Based Other	14.5%
Work-based Other	2.1%
Other-based Other	9.6%
Total	100.0%

Table 11 shows the heat map for the distribution of origin and destination for all the riders. The highest number of trips were from home to school and vice versa. Home was the most common trip purpose for both origin and destination types.

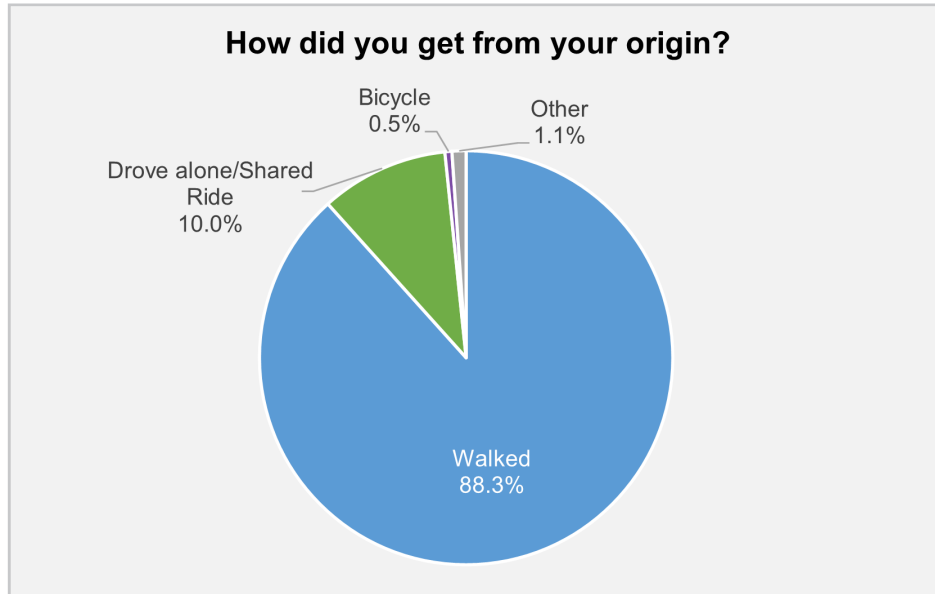
Table 11: Interaction between origin and destination place type

Origin \ Destination	Destination							Total
	Home	Work	School	Shop	Errands	Social, Rec, Eat	Other	
Home	0.0%	13.9%	30.1%	1.6%	2.2%	4.1%	0.0%	52.0%
Work	10.7%	0.4%	0.3%	0.1%	0.2%	0.3%	0.0%	11.9%
School	19.0%	0.6%	2.4%	1.0%	0.5%	1.6%	0.0%	25.2%
Shop	1.1%	0.0%	0.6%	0.0%	0.2%	0.2%	0.2%	2.1%
Errands	1.9%	0.1%	0.4%	0.2%	0.5%	0.4%	0.0%	3.3%
Social, Rec, Eat	2.9%	0.1%	0.9%	0.1%	0.1%	0.6%	0.0%	4.7%
Other	0.7%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.7%
Total	36.3%	15.2%	34.7%	2.9%	3.8%	7.2%	0.0%	100.0%

Note: Errands category includes Medical/Hospital Services and Personal Business. Shopping category includes all trips to a store to buy products, including groceries. School category includes College/ University (students only) and K-12 School (students only). Social, Recreational, Eating (Social, Rec, Eat) category includes Restaurant/Dining, Recreation/ Sightseeing/Sporting Event, and Social Visit (friends/relatives). Other includes Hotel/ Convention Center, Airport (passengers only), Greyhound/Amtrak/etc. (travelers only), Non-destination Trip, and other.

Origin transport – how did you get to the bus stop?

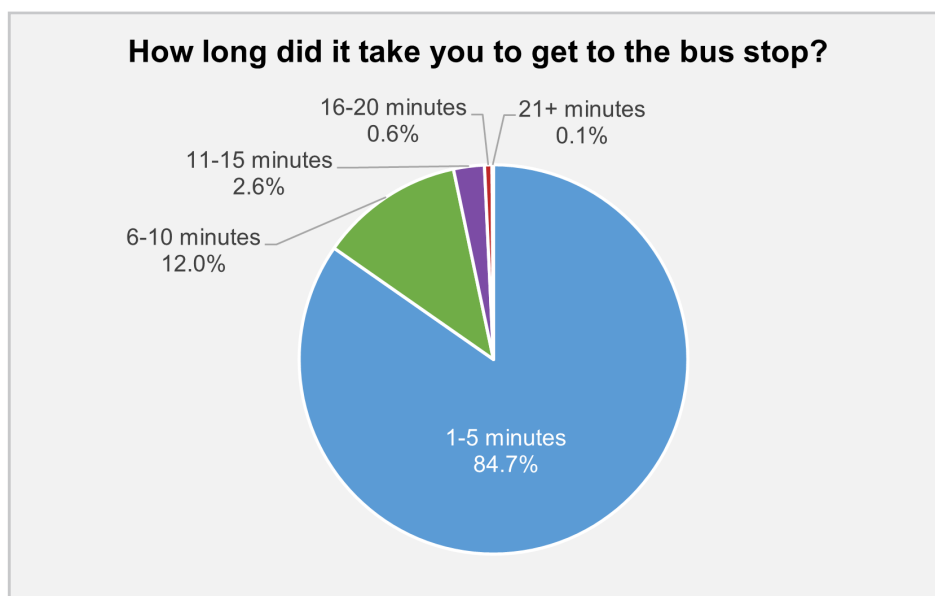
This section highlights the responses from riders when asked how they got to the bus for the start of their one-way trip. Overall, 88.3 percent of riders walked to cover the distance between the bus stop and their origin, 10.0 percent drove alone/shared a ride, 0.5 percent used a bicycle and 1.1 percent used other means of transportation such as a scooter, Uber/Lyft/taxi, or any other mode.



Note: Other mode of transport includes scooter and Uber/Lyft/taxi ride.

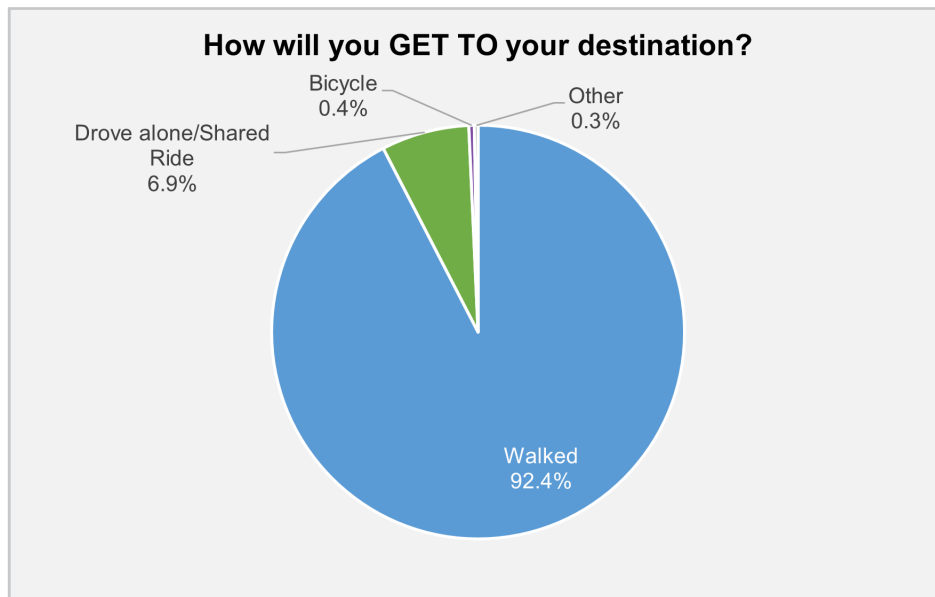
Time to origin – how long did it take you to get to the bus stop?

Ridership data shows that 84.7 percent of riders took only 1-5 minutes to reach the bus stop from their origin. Over 99 percent of this group walked to the bus stop, while less than 1 percent used bikes or scooters to reach their bus stop. 12.0 percent of riders took 6-10 minutes, 2.6 percent took 11-15 minutes, 0.6 percent took 16-20 minutes, and the remaining 0.1 percent took more than 20 minutes to reach the bus stop from their origin.



Destination mode - How will you get to your destination?

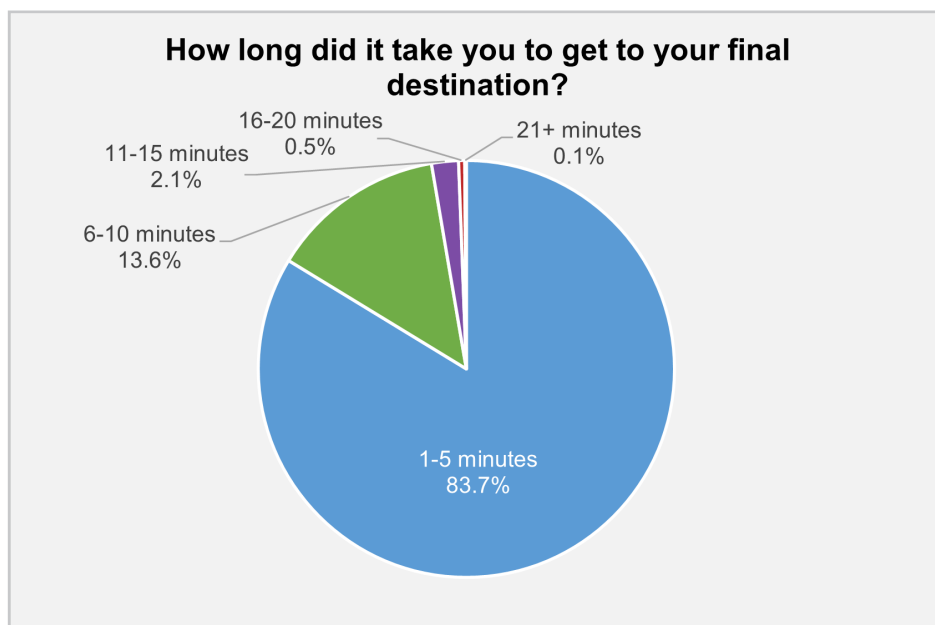
This section highlights the responses from riders when asked how they reached their destination from the bus stop. Overall, 97.8 percent of riders walked to cover the distance between the bus stop and their destination, 0.8 percent drove alone/shared a ride, 0.6 percent used a bicycle and 0.9 percent used other means of transportation such as a scooter, Uber/Lyft/taxi, or any other mode.



Note: Other mode of transport includes scooter and Uber/Lyft/taxi ride.

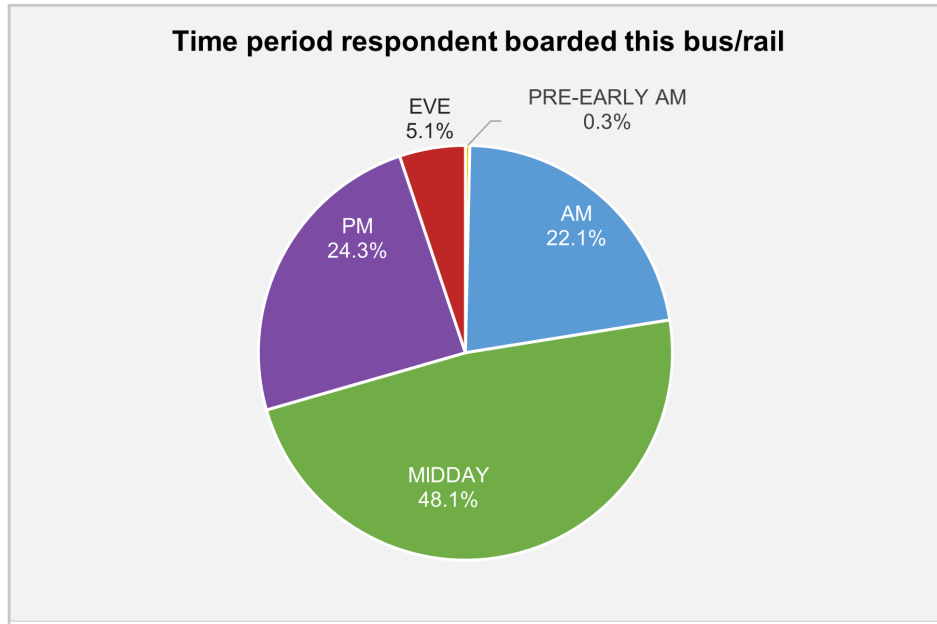
Time to destination - how long did it take you to get to your final destination?

Similar to the results for the time taken to reach the bus stop from the origin, the ridership data shows that 83.7 percent of the riders reported that it took only 1-5 minutes to reach their destination from the bus stop. The majority of riders (99 percent) who took only 1-5 minutes to reach their destination walked from the bus stop, while the remaining one percent used a bike or scooter. 13.6 percent of riders took 6-10 minutes, 2.1 percent took 11-15 minutes, 0.5 percent took 16-20 minutes, and the remaining 0.1 percent took more than 20 minutes to reach the bus stop from their origin.



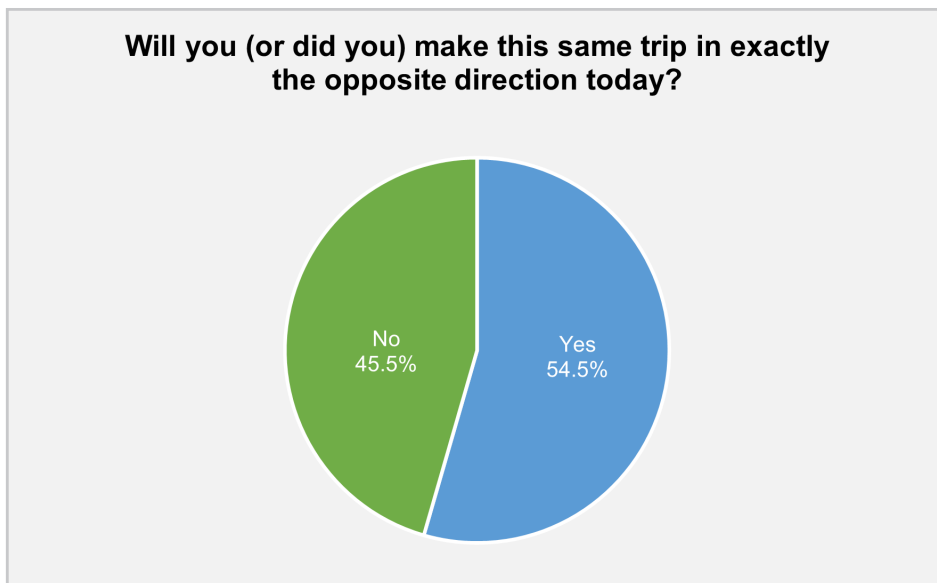
Time period respondent boarded this bus

The survey asked respondents what time they boarded the bus. The responses were categorized into five categories as shown in the chart below. 22.1 percent of riders boarded the bus during morning peak hours (“AM”) from 6:00 am to 8:59 am, whereas the largest share of respondents (48.1 percent) boarded the bus during mid-day (“MIDDAY”) which is from 9:00 am to 3:29 pm. There were 24.3 percent of respondents who boarded the bus during pre-evening hours (“PM”), from 3:30 pm to 6:29 pm, and 5.1 percent of respondents boarded the bus after 6:30 pm (“EVE”). There were only 0.3 percent of respondents who boarded the bus before 6:00 am (“PRE-EARLY AM”).



Same trip in the opposite direction

The respondents were asked if they would make the same trip in the opposite direction. This information highlights commuting patterns along routes and whether respondents use the same route on their return trip. 54.5 percent of respondents made or said that they would make the same trip in the opposite direction.



System-to-system Transfers

Riders were asked (1) how many bus transfers they took before boarding the bus on which the survey was conducted and (2) how many buses they would ride after they got off this bus. 93.7 percent of riders said they were not making any transfers and would reach directly to their destination from the origin.

Looking at the system-to-system transfers, a large share of the first transfers to/from CHT routes were made to/from CHT routes, followed by GoTriangle routes. The tables below show the distribution of riders making transfers from one system to another.

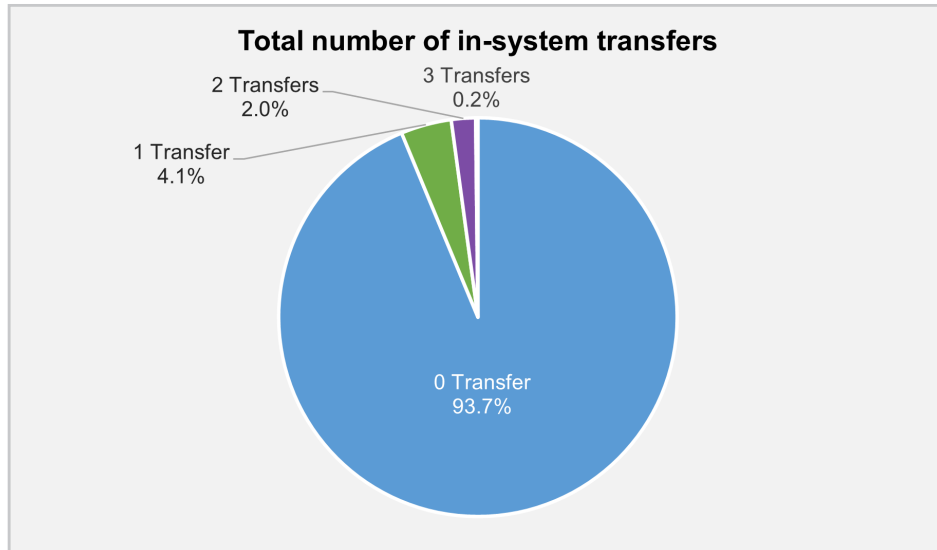


Table 12: System to System transfers for riders making only one transfer

Transfers to/from	Percentage
CHT	79.2%
GoTriangle	20.8%
Total	100.0%

Table 13: System to System transfers for riders making two transfers

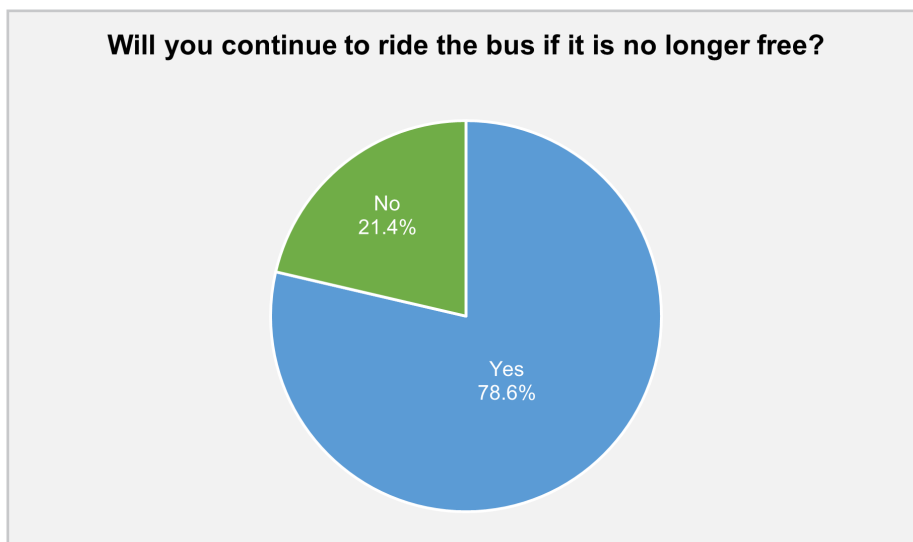
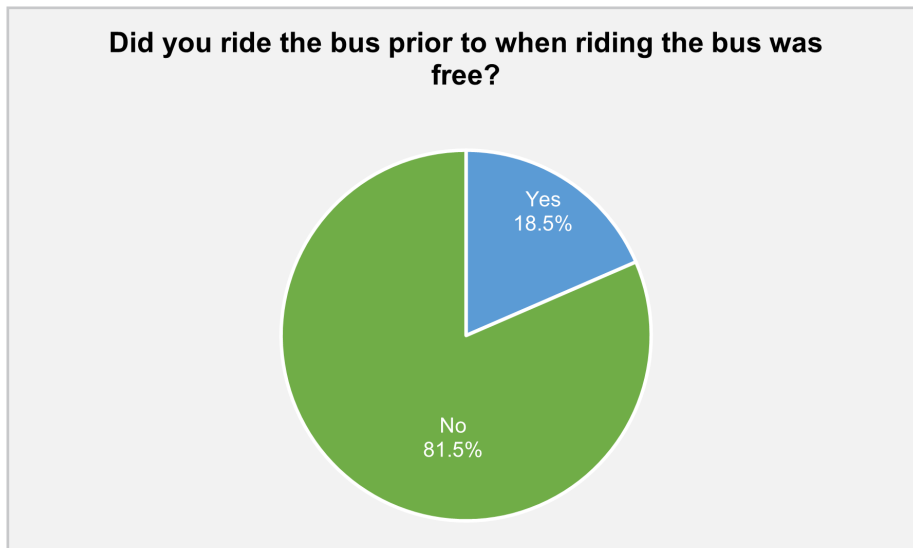
Transfers to/from	Percentage
GoTriangle - GoTriangle	60.0%
GoTriangle - GoDurham	40.0%
Total	100.0%

Other characteristics

This section discusses other characteristics like the use of the transit system during free fare service and the use of rideshare and bikeshare services. The responses to these questions will help CHT to understand their users' needs and the impacts of their services on their users.

Use of transit system during free fare service

While CHT has provided fare free service since 2002, and continues to provide fare free service, the regional survey included questions about riding fare free during the pandemic as CHT riders may transfer to and use other regional services which were charging fares prior to the pandemic. The responses to these questions are provided here and may reflect riders who are connecting to other regional services that have historically charged fares or even long-time riders of CHT service. Riders were asked (1) if they rode the bus prior to the implementation of fare free service and (2) if they would continue to ride the bus if it is no longer free. 81.5 percent of riders reported that they did not ride the bus before it was free. Of the 18.5 percent of riders who said they used the bus prior to when it was free, 46.2 percent said the free rides didn't influence their bus travel, and 31.1 percent reported that they completed many more trips after the introduction of fare free service. Moreover, of the 18.5 percent of riders who said they used the bus prior to when it was free, 78.6 percent of riders said they would continue to ride the bus even if it is no longer free.

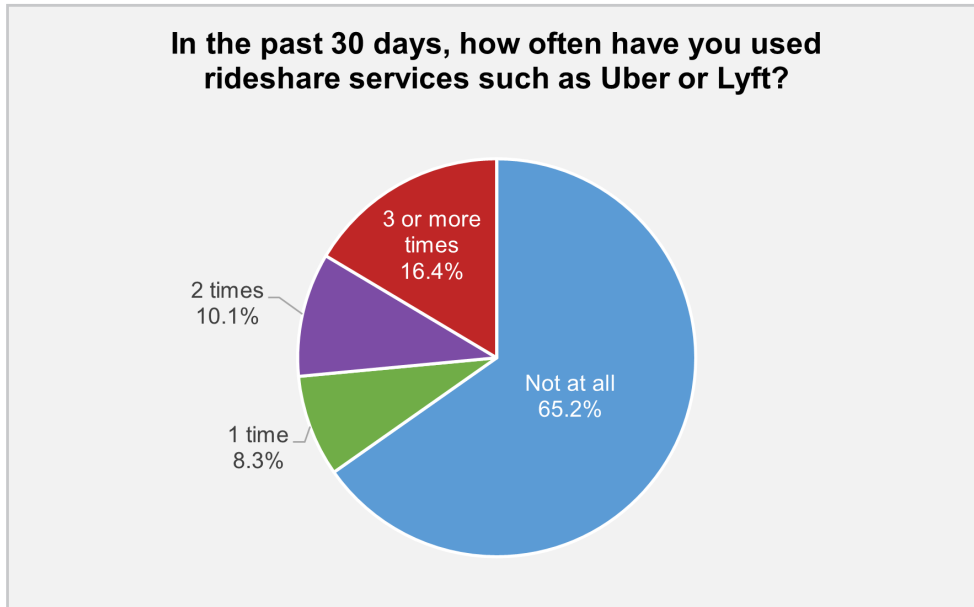


USE OF RIDESHARE AND BIKESHARE SERVICES

Riders were asked if they have used rideshare services such as Uber/Lyft and bikeshare or scooter share services such as Cardinal (formerly Citrix), Spin, or Lime in the past 30 days.

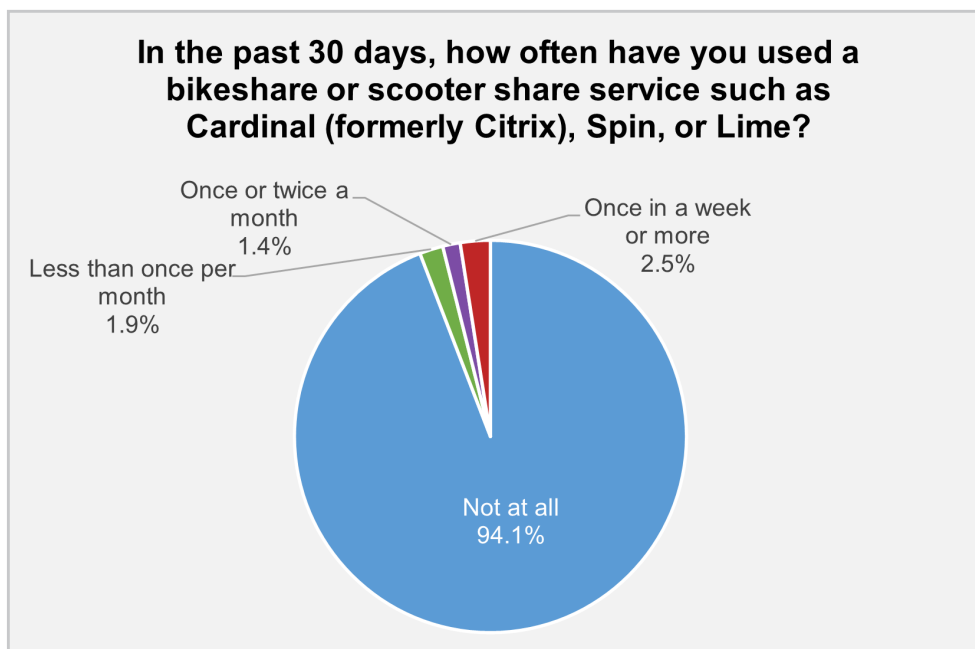
Use of rideshare services

The results for usage of rideshare services such as Uber or Lyft showed that 65.2 percent of riders reported that they did not use rideshare services at all in the past 30 days, while 34.8 percent of riders reported that they used it three or more times in the past 30 days.



Use of bikeshare or scooter share services

The results for the usage of bikeshare or scooter share services such as Cardinal, Spin, or Lime showed that 94.1 percent of riders did not use the bikeshare or scooter share services at all in the past 30 days.



What did you use to plan this trip?

Respondents were asked what they used to plan the trip. Most respondents (55.4 percent) said they did not do any trip planning, while about 28 percent used Google or Apple Maps.

Table 14: Trip Planning Method for Riders

Trip Planning	Percentage
Did not do any trip planning	56.4%
Google Maps	17.3%
Apple Maps	8.8%
Mobile App	8.3%
Transit Agency Online Trip Planner	5.8%
Used paper schedules	1.1%
Called Customer Service	0.3%
Other	2.1%
Total	100.0%

Conclusion

The CHT system was one of several agencies that participated in the 2023 Triangle region survey. A total of nine agencies participated in this survey: GoTriangle, GoDurham, GoRaleigh, GoCary, GoApex, CHT, OCTS, NCSU, and PART. A total of 19 CHT fixed bus routes were surveyed to compare ridership and origin-destination information along with information about transfers and cross-system travel. By understanding the characteristics of riders and their trips, CHT can make informed decisions that will continue to enhance short and long-range agency transit planning in the Chapel Hill and Carrboro area.

Survey results for the CHT system provide key insights about ridership, demonstrating a significant student population using the transit system. 68.8 percent of CHT riders were students, both employed and unemployed. Correspondingly, most of the riders are from low-income households – 51.8 percent have incomes below \$50,000. Racial and ethnic data indicated that 44.0 percent of riders overall identified as White, 22.6 percent as Black/African American, and 16.7 percent as Asian. In terms of trip characteristics, most trips were centered around home and school, with minimal in-system transfers. Additionally, many of the riders were able to access the bus stops by walking in less than five minutes, showcasing the transit system’s efficient accessibility for its current riders.

The survey results will inform not only transit planning in Triangle region, but also will play a critical role in coordination among the transit providers (i.e., CAMPO, and DCHC-MPO) in developing an update to the regional transit model. These results will help provide the framework for future transportation planning initiatives. Survey data will be an important factor in understanding how transit is operating currently, and what the needs will be moving forward.

The survey was made possible by the collective and coordinated effort of each agency, including CHT, and the rider participants. Continuing this collaborative effort among the agencies and their riders will be key to developing a strong future for transit in the region.

Appendix A – Final Survey Instrument

2023 On-Board Transit Survey

(for office use only) Route Code: Dir: N S E W Time: am / pm Interviewer: Serial #:

Please take a few moments to help plan for your transit needs by filling out this survey.

All personal information will be kept strictly confidential and **WILL NOT** be shared or sold.

Please provide the city, state, and ZIP code of **your personal residence** (even if you do not live in Wake County) below.

Address/Intersection: _____ City: _____ State: _____ ZIP Code: _____

COMING FROM?

1. What type of place are you **COMING FROM NOW?** (the starting place for your one-way trip) (select one)

- Your usual Workplace/Place of Employment
- Other work-related place
- Social Visit (friends/relatives)
- Personal Business (bank, post office)
- College / University (students only)
- K-12 school (students only)
- Medical/Hospital Services
- Hotel/Convention Center
- Shopping
- Restaurant/Dining
- Recreation/Site Seeing/Sporting Event
- Airport (passengers only)
- Greyhound / Amtrak / etc. (travelers only)
- Your HOME
- Other: _____

2. What is the **NAME** of the place you are coming from now?

3. What is the **EXACT STREET ADDRESS** of this place? (**OR nearest intersection**)

City: _____ State: _____ ZIP: _____

4. How did you **GET FROM** the place described in Questions #1-3 **TO THE VERY FIRST bus / train you used for this one-way trip?**

- Walked - How many minutes? _____
- Used personal bike – How many minutes? _____
- Scooter – How many minutes? _____
- Rode in an Uber / Lyft / Taxi / etc. vehicle (answer 4a)
- Rode with others and was dropped off (answer 4a)
- Drove or rode with others and parked (answer 4a)
- Drove alone and parked (answer 4a)
- Other (specify): _____

4a. Where did you park/get dropped off **before the FIRST bus** you used for this one-way trip (Nearest intersection / Park & Ride lot below):

GOING TO?

5. What type of place are you **GOING TO NOW?** (the ending place for your one-way trip) (select one)

- Your usual Workplace/Place of Employment
- Other work-related place
- Social Visit (friends/relatives)
- Personal Business (bank, post office)
- College / University (students only)
- K-12 school (students only)
- Medical/Hospital Services
- Hotel/Convention Center
- Shopping
- Restaurant/Dining
- Recreation/Site Seeing/Sporting Event
- Airport (passengers only)
- Greyhound / Amtrak / etc. (travelers only)
- Your HOME
- Other: _____

6. What is the **NAME** of the place you are going to now?

7. What is the **EXACT STREET ADDRESS** of this place? (**OR nearest intersection**)

City: _____ State: _____ ZIP: _____

8. How will you **GET TO** the place described in Questions #5-7 after you get off the **VERY LAST bus / train you will use for this one-way trip?**

- Walked - How many minutes? _____
- Used personal bike – How many minutes? _____
- Scooter – How many minutes? _____
- Rode in an Uber / Lyft / Taxi / etc. vehicle (answer 8a)
- Rode with others and was dropped off (answer 8a)
- Drove or rode with others and parked (answer 8a)
- Drove alone and parked (answer 8a)
- Other (specify): _____

8a. Where will you **get your car/get picked up after the LAST bus** you are using for this one-way trip (nearest intersection / Park & Ride lot below):

9. Did you transfer FROM another bus **BEFORE** getting on this bus?

Yes No

10. Where did you **GET ON THIS bus?** Please provide the nearest intersection / Park & Ride lot:

11. Where will you **GET OFF THIS bus?** Please provide the nearest intersection / Park & Ride lot:

12. Will you transfer TO another bus **AFTER** getting off this bus?

Yes No

13. Please list the public transit route(s) in the **exact order** needed to complete this one-way trip.

START OF MY TRANSIT TRIP → → → **END OF MY TRANSIT TRIP**

1st Transit Route 2nd Transit Route 3rd Transit Route 4th Transit Route

14. What time did you GET ON this bus? _____ : _____ a.m. / p.m. (circle one) (programming time breaks: before 6:00am, every 30 minutes until end of AM peak (6:00 AM until 9:00 AM), hourly from 9:00AM to beginning of afternoon peak (3:30 PM), every 30 minutes from 3:30PM until end of PM peak (6:30 PM), hourly until end of service)
15. Will you (or did you) make this same trip in exactly the opposite direction today?
 Yes - At what time did/will you leave for this trip in the opposite direction? _____ am/pm No
16. Did you ride the bus prior to when riding the bus was free?
 Yes > How did free rides influence your travel on buses I completed many more trips I completed slightly more trips
 No (skip to Q18) No change I completed fewer trips
17. Will you continue to ride the bus if it is no longer free? Yes No
18. In the past 30 days, how often have you used rideshare services such as Uber or Lyft? not at all 1 2 3 or more
19. In the past 30 days, how often have you used a bikeshare or scooter share service such as Citrix, Spin, or Lime?
 not at all less than once per month once or twice a month 1 to 2 days per week 3 to 4 days per week 5 to 7 days per week

Demographics

20. How many vehicles (cars, trucks, or motorcycles) are available to your household? _____ vehicles
 23a. [If #23 is ONE OR MORE] Could you have used one of these vehicles to complete this trip? Yes No
21. Including YOU, how many people live in your household? _____ people
22. Including YOU, how many people age 16 and over live in your household? _____ people
23. Including YOU, how many people age 16 and over in your household are employed full/part-time? _____ people
24. What is your employment status? (check the one response that BEST describes you)
 Employed full-time (at least 35 hrs/wk) Employed part-time (less than 35 hrs/wk)
 Not currently employed, but seeking work Not currently employed, and not seeking work
 Retired Homemaker
25. [IF Employed in #27] Which of the following best describes your current work location?
 work only from home telework some days and travel to work the remainder only one work location outside my home
 drive/bike/travel for work (driver, sales, deliveries) work location is outside the home and regularly varies (different offices/job sites)
- IF YOU ARE EMPLOYED:**
- 25a. Did you make a trip to work since you left home? Yes No
- 25b. Will you make a trip to work before you arrive home? Yes No
- 25c. [If #25a or #25b is YES] Provide work name /address _____
26. What is your student status? (check the one response that BEST describes you)
 Not a student Yes – Full-time college/university Yes – Part-time college/university Yes - Other
 Yes – K - 8th grade Yes – 9th-12th grade Yes – Vocational/technical/trade school
- IF A STUDENT:**
- 26a. Did you make a trip to school (students ONLY) since you left home? Yes No
- 26b. Will you make a trip to school (students ONLY) before you will arrive home? Yes No
- 26c. [If #26a or #26b is YES] Provide school name _____
27. Do you have a valid driver's license? Yes No
28. In what year were you born? _____ year
29. What is your Race / Ethnicity? (check all that apply)
 American Indian / Alaska Native Asian Black / African American Hispanic/Latino Prefer Not to Say
 Native Hawaiian / PacificIslander White Other: _____
30. What is your gender? Male Female Another gender : Write in Optional _____ Prefer Not to Say
31. Which of the following BEST describes your TOTAL ANNUAL HOUSEHOLD INCOME in 2022 before taxes?
 less than \$10,000 \$20,000 - \$24,999 \$35,000 - \$39,999 \$50,000 - \$74,999 \$100,000 - \$149,999
 \$10,000 - \$14,999 \$25,000 - \$29,999 \$40,000 - \$44,999 \$75,000 - \$99,999 \$150,000 or more
 \$15,000 - \$19,999 \$30,000 - \$34,999 \$45,000 - \$49,999
32. Do you speak a language other than English at home? No Yes - Which language? _____
 32a. [If #32 = Yes] How well do you speak English? Very well Well Not very well Not at all
33. What did you use to plan this trip?
 Used paper schedules Called Customer Service Google Maps Apple Maps
 Mobile app (please list): _____ Transit Agency On-line Trip Planner
 Did not do any trip planning Other: _____
34. Would you be willing to participate in future transportation surveys? No Yes > Your Name: _____
 Phone Number: (____) _____ E-mail address: _____

ENTER TO WIN \$500

People who submit an accurately completed survey will be entered in a random drawing for one of FIVE \$500 cash prizes. You must provide your home address to be eligible.

Your Name: _____ Phone Number: (____) _____ E-mail address: _____
 Home Street Address: _____ City: _____ State: _____ ZIP Code: _____

Appendix B – Final Sampling Results and Percentage Targets

CHAPEL HILL TRANSIT OD SURVEY COLLECTION

Sort	Start	System	RTE #	RTE Name	Pub RTE #	OVER SAMPLE	O2O	LEP	TOT AVR	Survey Collection Goals	Surveys Collected	Completion Percentage
	10.23	Chapel Hill Transit	A	A		N	N		223	22	66	296%
	10.23	Chapel Hill Transit	CL	CL		N	N		429	43	71	166%
	10.23	Chapel Hill Transit	CM	CM		N	N		382	38	58	152%
	10.23	Carolina Livery	B	B		N	N		158	16	17	108%
	10.23	Chapel Hill Transit	CW	CW		N	N		350	35	53	151%
	10.23	Chapel Hill Transit	D	D		N	N		568	57	74	130%
	10.23	Carolina Livery	F	F		N	N		0	0	3	#DIV/0!
	10.23	Chapel Hill Transit	FCX	FCX		N	Y		1278	128	174	136%
	10.23	Chapel Hill Transit	G	G		N	N		34	3	4	118%
	10.23	Chapel Hill Transit	HS	HS		N	N		117	12	18	154%
	10.23	Chapel Hill Transit	J	J		N	Y		1639	164	310	189%
	10.23	Carolina Livery	JFX	JFX		N	N		469	47	22	47%
	10.23	Chapel Hill Transit	N	N		N	N		262	26	89	340%
	10.23	Chapel Hill Transit	NS	NS		N	Y		2344	234	288	123%
	10.23	Chapel Hill Transit	NU	NU		N	N		634	63	79	125%
	10.23	Chapel Hill Transit	RU	RU		N	Y		1078	108	126	117%
	10.23	Chapel Hill Transit	S	S		N	N		421	42	76	181%
	10.23	Chapel Hill Transit	T	T		N	N		132	13	18	136%
	10.23	Chapel Hill Transit	U	U		N	Y		1204	120	123	102%
	10.23	Carolina Livery	CCX	CCX		N	N		143	14	0	0%
Chapel Hill Transit TOTALS:									11865	1181	1669	141%

Appendix C – Sample Expansion / Data Weighting and Expansion

Data expansion refers to how the survey results from a representative sample of riders are expanded and applied to the full ridership numbers for analysis. The same sample data may be expanded by different methods for different purposes; for this report, the survey sample data was expanded based on total daily ridership.

Each participating transit agency provided the average daily ridership for each route. These numbers serve as the totals that the sample represents. For each route, the number of completed surveys was compared to the average daily ridership to create an expansion factor used to weight each individual completed survey for the route.

For example, if Route A has an average daily ridership of 115 people, and 25 surveys were completed, the ratio of completed surveys to the total ridership is 21.7%. The expansion factor is calculated by dividing the total ridership by the number of completed surveys; for Route A, 115 divided by 25 results in an expansion factor of 4.60.

Details on the sample expansion are included below.

Chapel Hill Transit

Route	Average Daily Ridership	Completed Surveys	Survey % Daily Ridership	Expansion Factor
A	223	66	29.6%	3.38
CL	429	71	16.6%	6.04
CM	382	58	15.2%	6.59
B	158	17	10.8%	9.29
CW	350	53	15.1%	6.60
D	568	74	13.0%	7.68
F	-	3	-	0.00
FCX	1,278	174	13.6%	7.34
G	34	4	11.8%	8.50
HS	117	18	15.4%	6.50
J	1,639	310	18.9%	5.29
JFX	469	22	4.7%	21.32
N	262	89	34.0%	2.94
NS	2,344	288	12.3%	8.14
NU	634	79	12.5%	8.03
RU	1,078	126	11.7%	8.56
S	421	76	18.1%	5.54
T	132	18	13.6%	7.33
U	1,204	123	10.2%	9.79
CCX	143	-	0.0%	-
System Total	11,865	1,669	14.1%	7.11

PREPARED FOR

Chapel Hill transit

PREPARED BY

