

CENTRAL CONNECTICUT RAIL STUDY

TASK #7: SURVEY ANALYSIS REPORT



CONNECTICUT DEPARTMENT OF TRANSPORTATION
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Chapter 1. Introduction and Methodology

As part of the Central Connecticut Rail Study (CCRS), the Study Team surveyed both transit users and non-users in four locations along the Study Corridor through in-person intercept surveys. To reach a broader audience and identify major trip generators, the survey was also placed online and publicized to the general public and through major employers. The goal of these surveys was to gather data relating to travel patterns, mode preferences, and desired service improvements from transit users and non-users within the Study Corridor.

The online survey was available from October 9, 2012 to December 18, 2012. The intercept surveys were conducted at Waterbury Green and the Waterbury Metro-North Rail Station on October 9, 2012, and in New Britain and Bristol Plaza on October 10, 2012. Surveys were conducted during the morning and evening rush hours and midday. A total of 916 survey responses were collected, 526 (57.4%) of which were in-person intercept surveys.

Survey results were compiled into Microsoft Excel and were primarily analyzed using pivot-tables, filtering by factors such as location, mode, and trip type.

Chapter 2. Results

2.1 Mode Split

When survey respondents were asked what types of transportation they used on their trip that day (“On your trip today, from start to finish, what types of transportation did you use?”), about equal parts took the bus or drove alone (Figure 1). Equal distribution between bus and driving is a reflection of the fact that intercept surveys were conducted at transit hubs. Most of the drivers came from the online survey and from surveys done at Bristol Plaza.

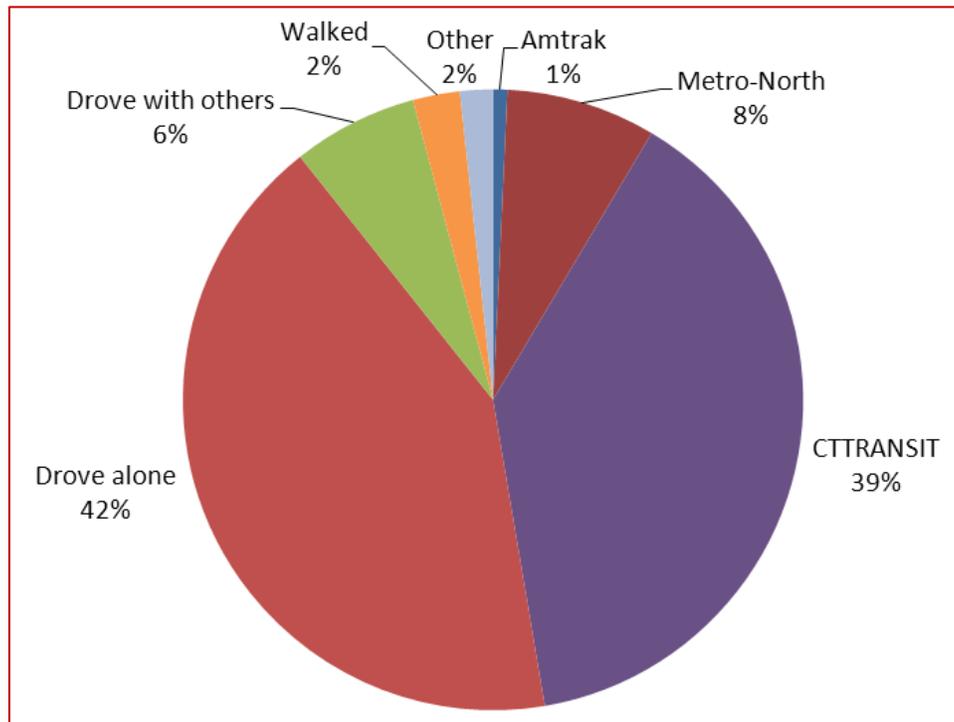


Figure 1: Mode Split

Trips were divided into categories based on origin, destination, and the purpose of the trip (Figure 2). The majority of trips taken for school (89%), recreation (54%), and medical reasons (95%) were by transit. Work (56%) and errand (61%) trips were predominately made by driving. The fact that school trips were so dominated by transit is not surprising, since the local schools and community colleges are well served by bus (Table 1).

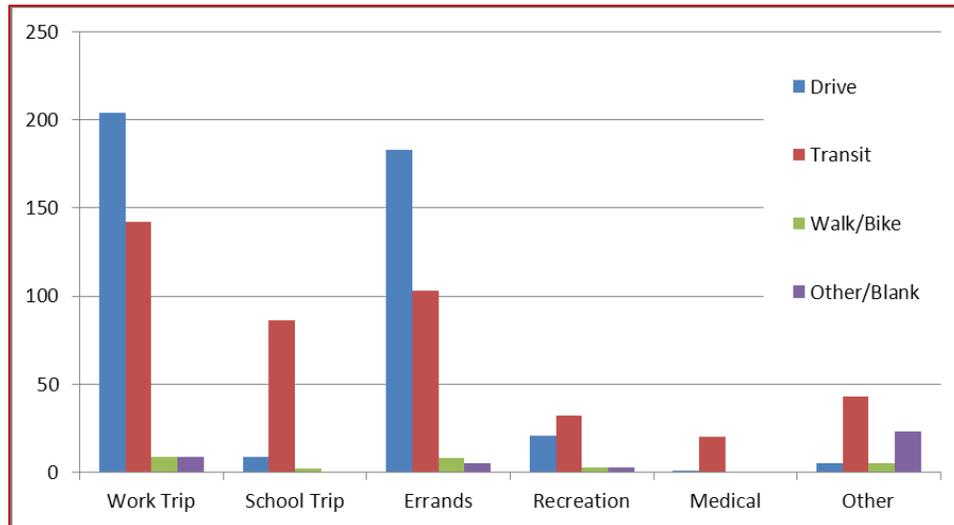


Figure 2: Trip Type by Mode

Table 1: Central Connecticut Schools Located Near Bus Lines

School	Location	Bus Routes
UCONN Waterbury	Waterbury Green	11, 12, 13, 15, 16, 18, 20, 22, 25, 26, 27, 28, 28, 31, 32, 33, 35, 36, 40, 42, 44, 45, 71, 81, J, T, T17, T49, T74, T47, T114
Enlightenment School	Waterbury Green	
Naugatuck Valley Community College	Waterbury	42
Kennedy High School / West Side Middle School	Waterbury	40
Holy Cross High School	Waterbury	36
Slade Middle School	New Britain	PB
Central Conn. State University / Charter Oak State College	New Britain	69, O, S
Crosby High School / Wallace Middle School	Cheshire	28, J
Cheshire High School	Cheshire	J
Newington High School	Newington	41
Tunxis Community College	Farmington	66, BL, C

When mode is broken out by origin, the vast majority of drivers were coming from Bristol, and most of the transit users began their trip in Waterbury and New Britain (Figure 3). Of those starting in Bristol, 86% drove, whereas transit accounted for 87% of people starting in Waterbury and 90% of those starting in New Britain. Origins that had less than 15 people (“All Others” in Figure 3) accounted for about one-fifth of the responses and had a 68% driving mode share. It is

worth noting that New York City represented only 3% of the destinations (similar to Hartford and Terryville) but had a 92% transit mode share.

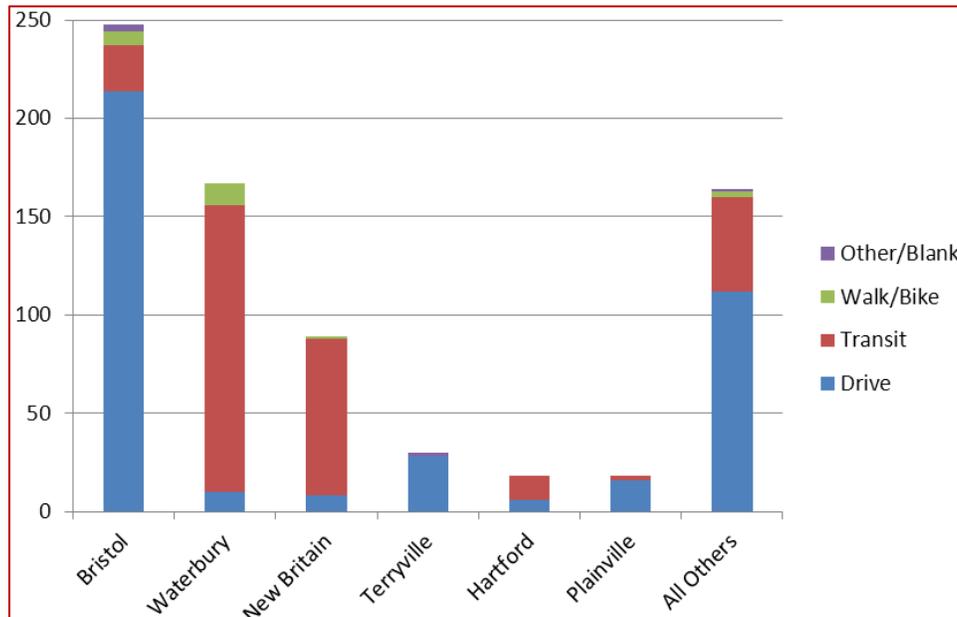


Figure 3: Mode by Trip Origin

2.2 Destinations

When people gave their destinations, they generally listed only the town name. Some respondents, however, gave an exact place name. The top three destinations named by respondents were Bristol Hospital, the Bristol Stop & Shop on Pine Street, and Naugatuck Valley Community College in Waterbury (Figure 4). All three of these destinations are served by only one bus line each: the BL (New Britain Transportation), PB (New Britain Transportation), and 42 (North East Transportation), respectively. All respondents traveling to Bristol Hospital said that they drove, while respondents destined for Naugatuck Valley Community College took transit. Those going to Stop & Shop were mixed, with about 80% driving and the rest taking transit or walking.

For the respondents that listed only general origins and destinations, a map was created to show the frequency of travel from one zip code to another (Figure 5). The most popular zip code to zip code trips were within Bristol, within Waterbury, and from Terryville (a village of Plymouth) to Bristol. The popularity of Bristol can in part be explained by the fact that Bristol Hospital and Stop & Shop, the two most popular destinations, are both within the 06010 zip code. Trips within Bristol and from Terryville to Bristol had a driving mode share of 88% and 94%, respectively. Trips within Waterbury had a 79% transit mode share.

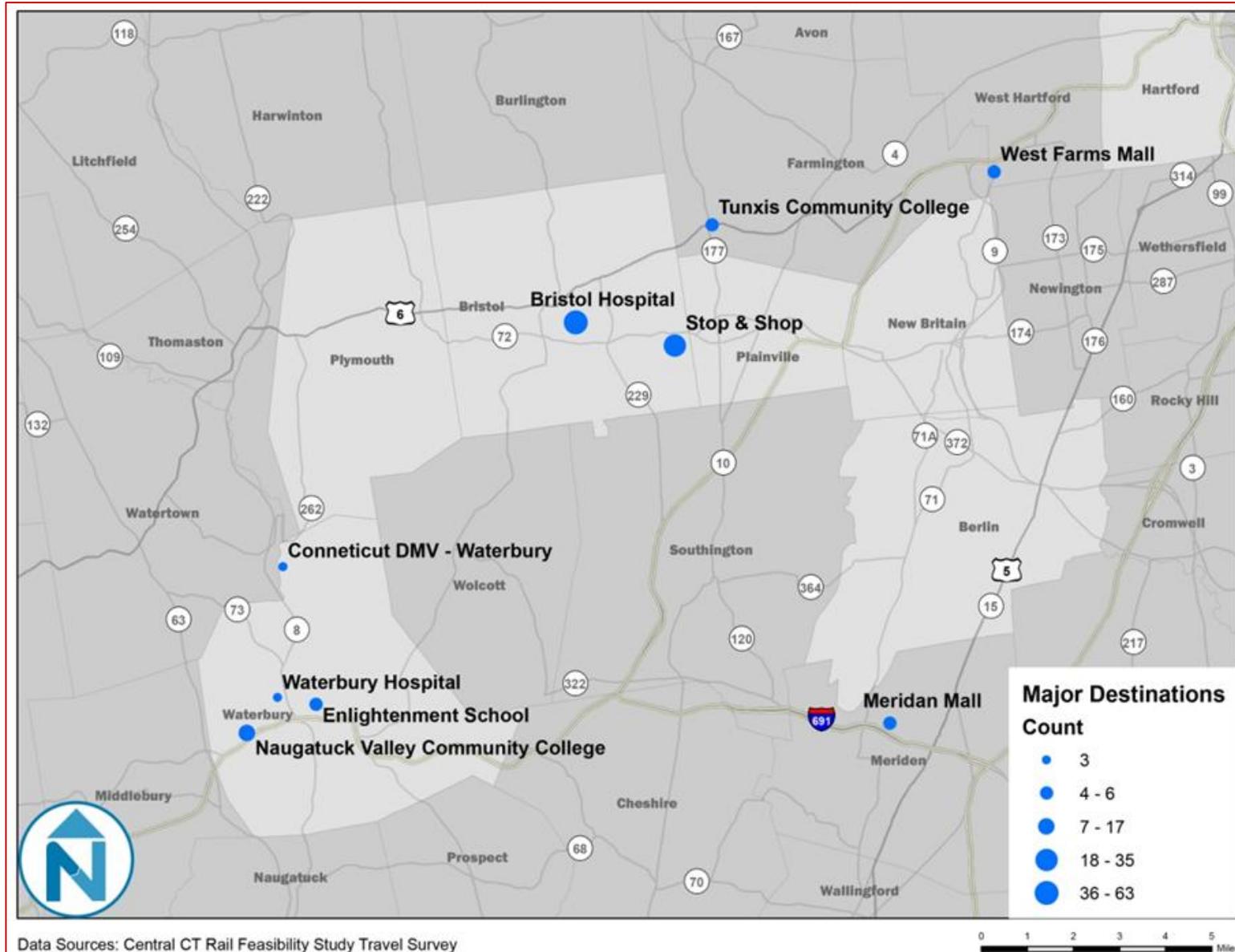


Figure 4: Major Destinations

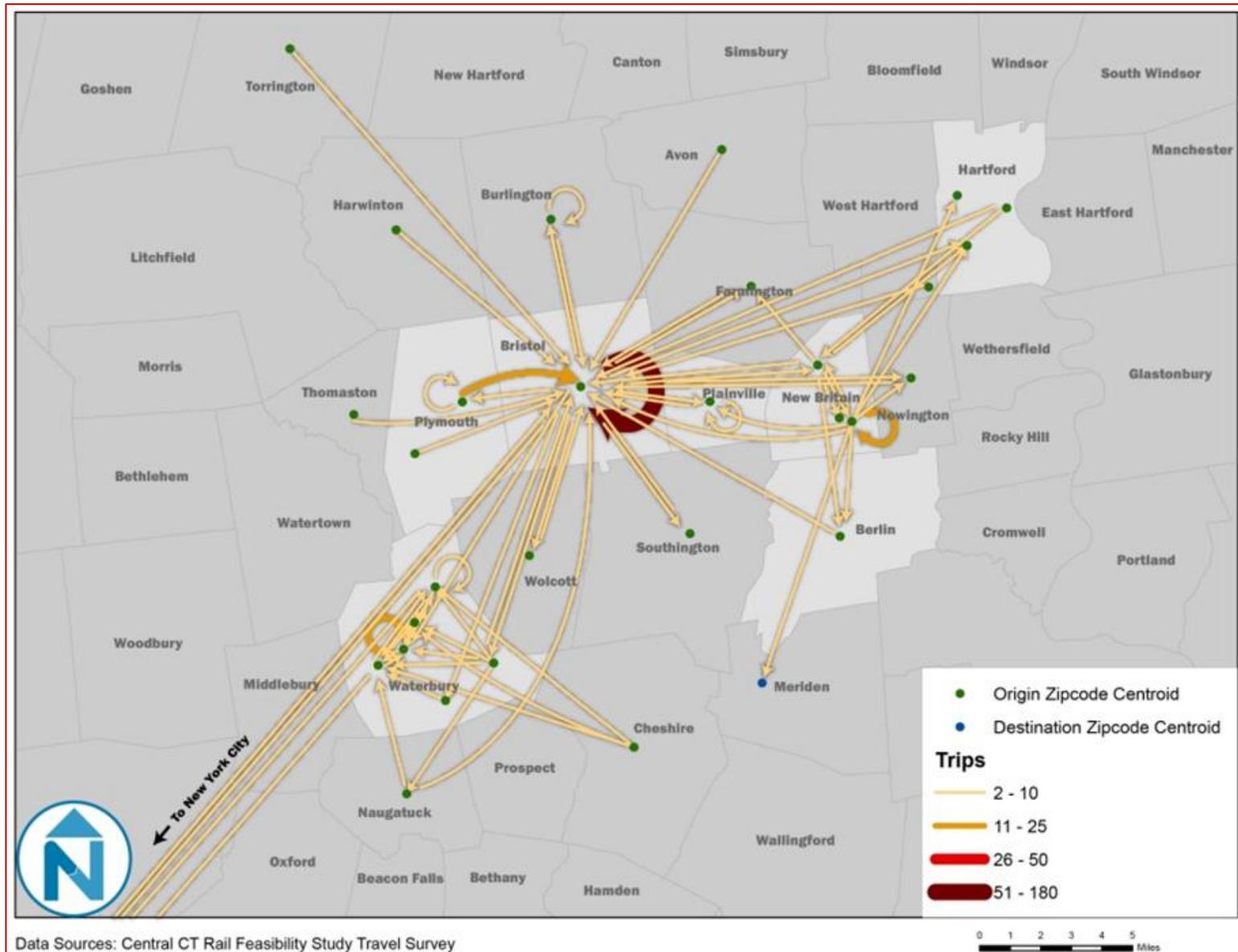


Figure 5: Zip Code to Zip Code Travel

2.3 Bus Riders

The survey asked bus riders to choose the type of service improvement they would most like to see (Figure 6). Respondents were given five choices, but about 3% provided their own responses and 5% said they had no complaints at all. No single choice garnered a majority; the most popular response was more frequent service (34%). The second most popular choice was for expanded service hours (23%). Other common desired improvements included expanded weekend service hours, more frequent weekend service, more time for transfers at hubs, more bus shelters, posting the schedule at bus stops, and providing ticket and change machines at hubs.

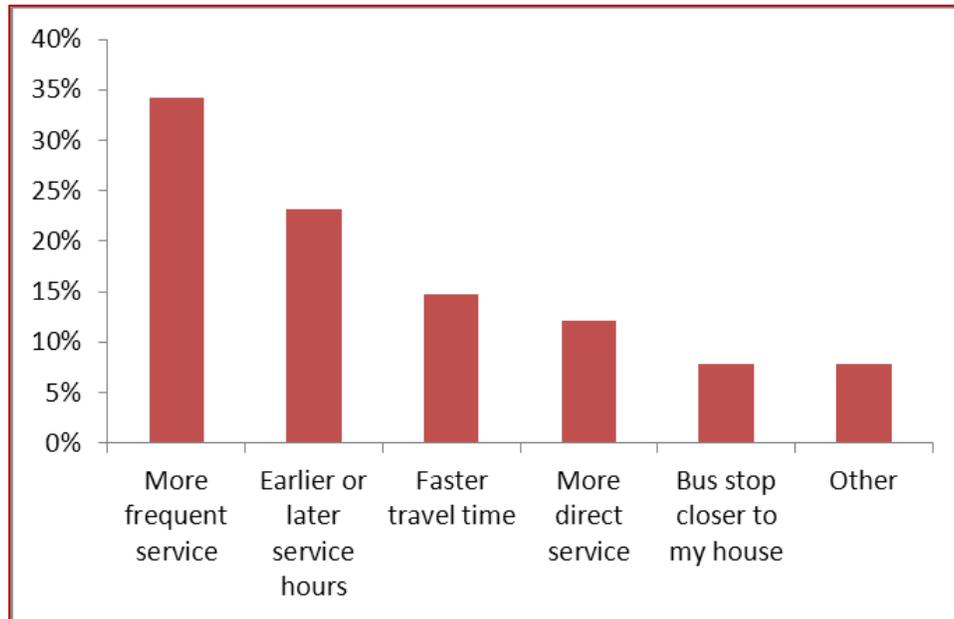


Figure 6: Most Desired Service Improvement among Bus Riders

When the responses were sorted by location, interesting differences were revealed (Figure 7). At Bristol Plaza, over half of people said that they wanted earlier or later service hours. In New Britain, people were about evenly split between more frequent service and expanded hours. At Waterbury Green, where passengers can wait over an hour for a bus during peak hours, riders said they wanted to see more frequent service.

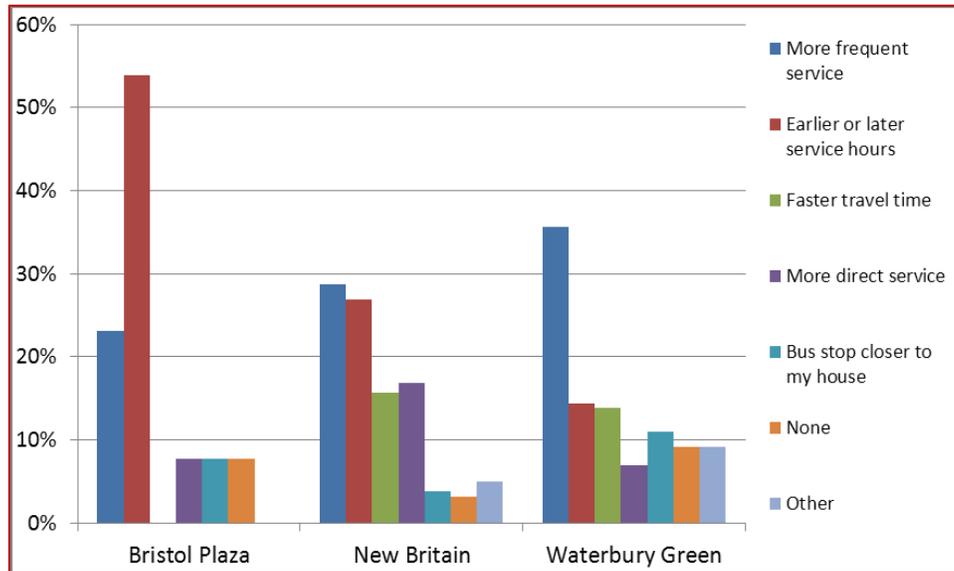


Figure 7: Desired Bus Improvements by Survey Location¹

For those who took transit, walking was by far the most popular way to get to and from the stop (92% and 95%, respectively). About 8% of respondents were either dropped off, drove and parked, or took a taxi to get to the transit stop at the beginning of their trip. Only 5% used those same means to get from the transit stop at the end of their trip to their final destination.

2.4 Drivers

The survey asked drivers to identify the factor that would most influence their decision to try some form of transit (Figure 8). Drivers were split into three categories: those who live within a five-minute walk of a transit stop, those who do not, and those who do not know if they do.² Of the 445 drivers who answered this question, about one in five (20%) said that they lived near transit. This group represents the strongest potential transit riders since they not only live near transit, but also know that they do.

For this group of drivers, the most commonly cited reason for why transit was not an attractive option was because it “does not run where I need it.” Also commonly cited was because it “does not run when I need it” and it “cannot accommodate a flexible schedule.” However, of this group, nearly 30% said that they would consider using transit if it were faster than driving. About another 20% said they would consider transit if it were cheaper than driving. Almost the same number of people identified increased gas prices as a potential motivation to try transit.

¹ Surveys from online and from the Waterbury Metro-North Rail Station were not included in Figure 7 because the vast majority of those transit users did not have any complaints about the bus service.

² Because respondents did not need to supply exact home addresses, their distance to a transit stop could not be verified. Even if a person mistakenly identified themselves as not living close to a transit stop when in fact they were within five-minute walk of a transit stop, however, their perception of distance shaped their opinions regarding transit service.

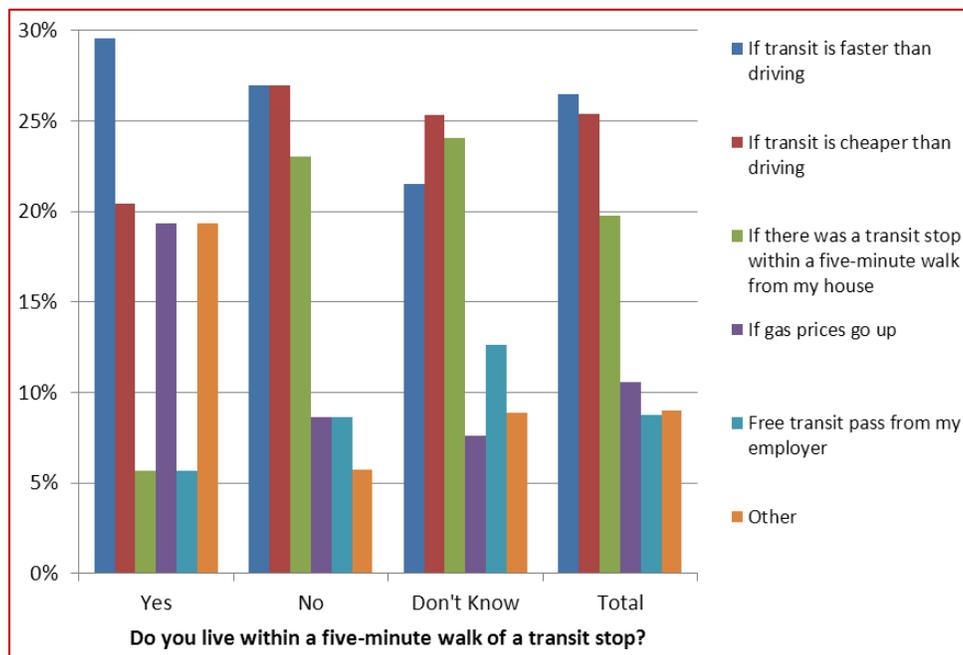


Figure 8: Factors That Would Influence Drivers to Try Transit, Based on Distance to Stop

For drivers that indicated that they do not live near transit, 23% said that if they did live near transit they would use it. An almost equal percentage of drivers who did not know if they lived near transit said the same thing. Overall, the most important factors that would influence people to use transit were if it was faster and cheaper than driving, and if they lived near a transit stop.

Drivers who did not live near a transit stop, or did not know if they did, were asked to rank three different transit service types, which are described in Table 2. The most popular was Option A, though Option B was not too far behind. Option C was clearly the least favorite, suggesting that frequency of service and fare are more important to potential riders than travel time. From this, frequency is the highest priority and travel time the least important factor.

Table 2: Hypothetical Transit Scenarios

Service Quality	Option A	Option B	Option C
Frequency	High	Medium	Low
Fare	Low	Medium	High
Travel Time	Slow	Medium	Fast
No. of Responses	132	122	74

Of the drivers that responded to the survey and gave origin-destination information, two-thirds started their trip in Bristol. Of this group, more than half of respondents do not live near a transit stop. When this group was asked what would influence their decision to take transit, about one-quarter each said if transit were faster, if it were cheaper, and if they lived near transit (Figure 9).

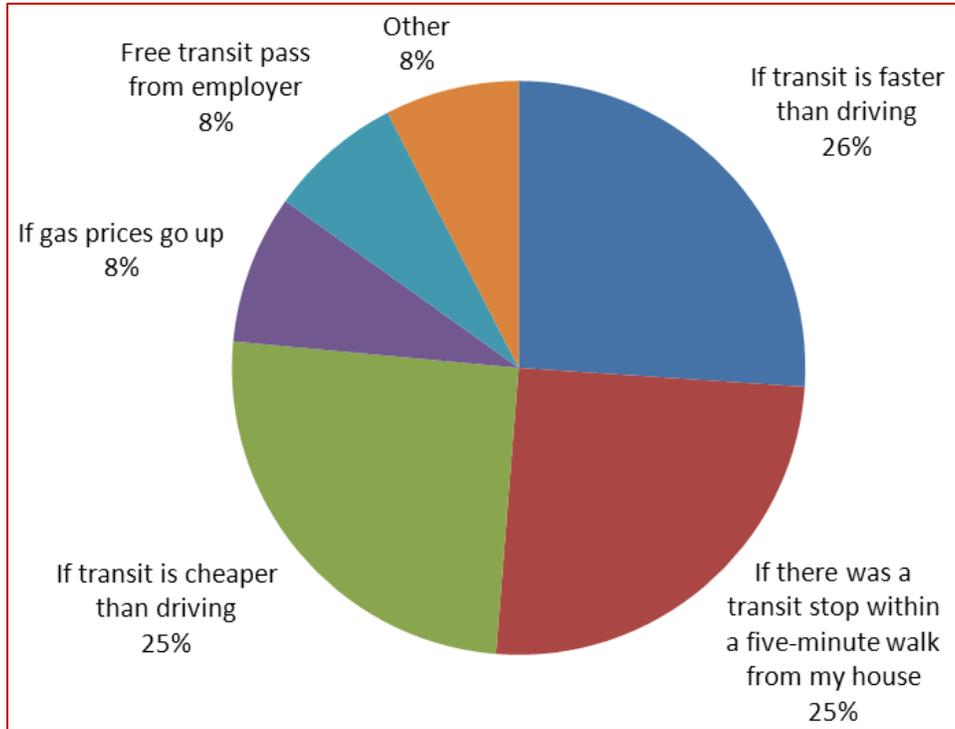


Figure 9: Influences for Drivers Who Do Not Live Near Transit

2.5 Trip Frequency

Survey respondents were asked how often they make the trip that they were on, and results were sorted by mode (Figure 10). Drivers made their trip daily more often (68%) than transit riders (51%). Transit was used more often for less frequent trips as compared with driving.

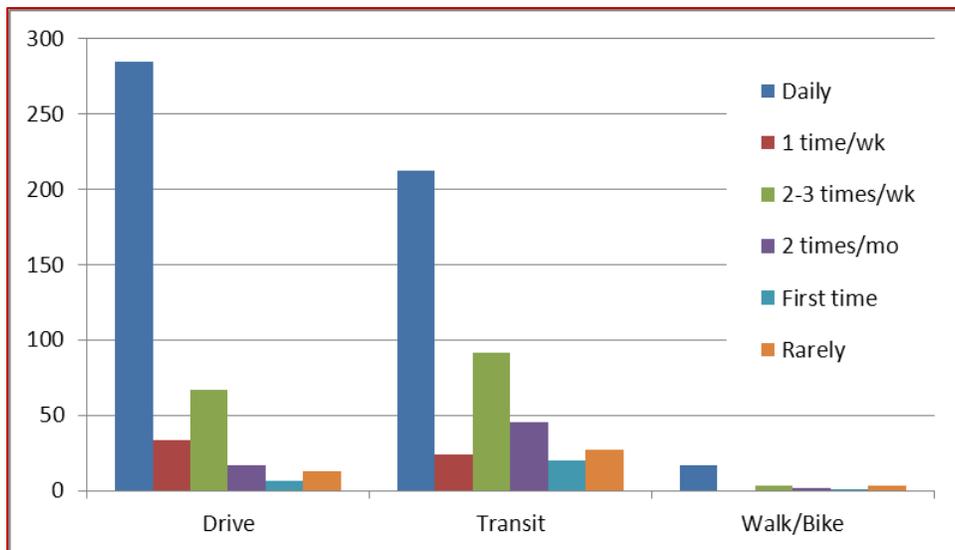


Figure 10: Trip frequency by mode

2.6 Results Summary

The modes used for the most popular trips and destinations depended heavily on the survey location. Thus, while 100% (63) of trips to Bristol Hospital and 80% (31) of trips to the Stop & Shop were made by driving, 100% (17) of trips to Naugatuck Valley Community College (NVCC) were made via transit. This difference can be explained by the fact that those who were travelling to NVCC responded to the survey at Waterbury Green while waiting for a bus. Furthermore, trips within Waterbury were mainly by transit (27, 79%), whereas trips within Bristol were mainly by driving (159, 88%).

Regardless of destination, the majority (518, 57%) of trips were daily with another 18% (163) of trips made two to three times per week. At least four of every five trips to Bristol Hospital and NVCC were daily, whereas at Stop & Shop trips were more spread out across the week and month, reflective of people's food shopping habits.

Daily drivers to Bristol Hospital were evenly split between the factors that would most influence their decision to try transit. The top choices were if transit were cheaper than driving and if their employer provided a free pass. For drivers who visit the hospital two to three times per week, the most important factor was if transit were cheaper than driving. For drivers to the Stop & Shop, the most important factor was the price of gas, regardless of how often they went shopping. When user cost is the primary factor, providing additional transit services cannot generally be expected to shift travelers. However, there may be a perception issue worth exploring with the CCRS Focus Groups, about the full cost of transit versus all individual costs associated with driving.

Current transit users are most interested in seeing more frequent service and expanded hours, especially on the weekends. Preferences varied depending on the survey location; Bristol Plaza preferred expanded service, while Waterbury Green preferred more frequent service. Focusing on these improvements may help to increase ridership.

Chapter 3. CCSU Student Survey

3.1 Source

A survey was conducted at Central Connecticut State University (CCSU) in New Britain, asking students about their mode choices. The results of the survey were provided to Nelson\Nygaard by the Central Connecticut Regional Planning Agency.

3.2 Results

In total there were 1,249 survey respondents, 35% of which traveled from New Britain to get to campus. The next most common origins were Newington and West Hartford, which represented only 4% of respondents each. The remainder of the students came from all over the region, with no single place holding a significant plurality.

The overall mode split skewed heavily towards driving (86%). Walking was the second most common mode among all students at 7% (see Figure 11). Students from New Britain had a lower driving mode share (69%) and a higher walking share (20%) as compared with all students. Students not from New Britain drove 95% of the time, meaning that nearly all of the students that took other modes were from New Britain. The bus, regardless of user origin, was not a frequent option despite the campus being served by three CTTRANSIT lines (69, O, and S) and a campus shuttle.

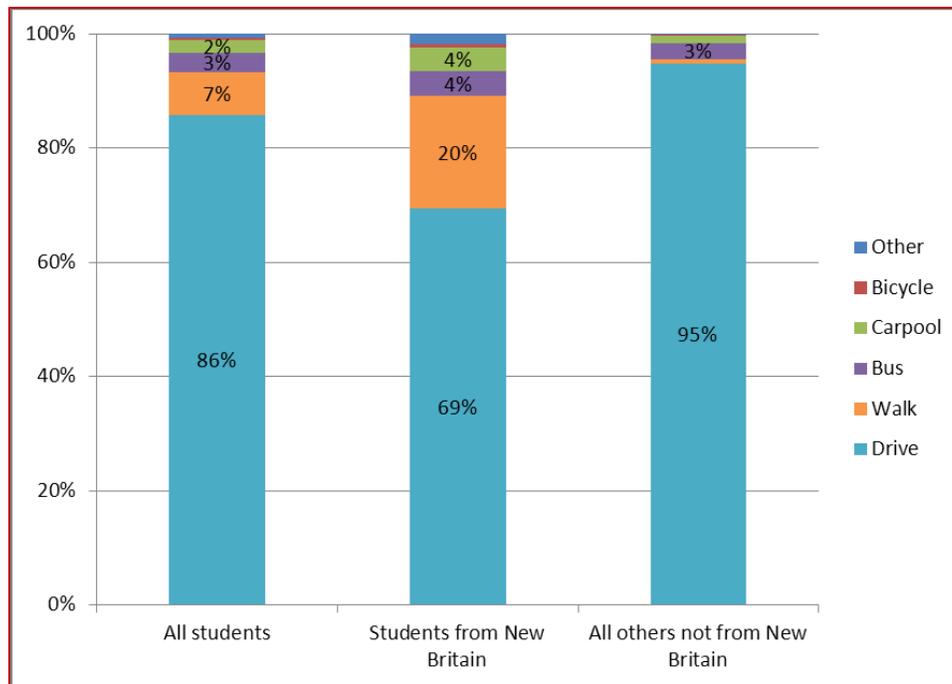


Figure 11: CCSU Mode Split

Students were also asked how often they bike, walk, bus, and carpool or whether they had considered those modes (see Figure 12). A large majority of people said that they have not and

would not consider biking (85%), walking (78%), or carpooling (79%). People were slightly more inclined to taking the bus at any point, though not necessarily regularly (33%) or consider taking the bus (23%). Only 7% of students said that they take the bus more than once a week. Students from New Britain were more likely to consider biking and walking as compared with students from further away. Carpooling was equally unpopular regardless of where the student was from.

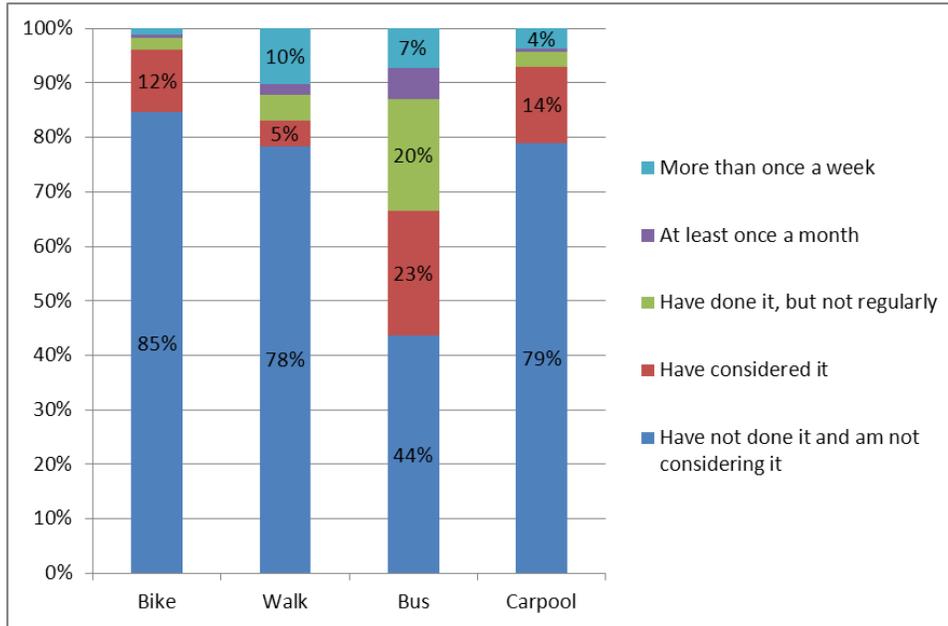


Figure 12: CCSU Consideration of Other Modes

Chapter 4. CTDOT Express Bus Survey

4.1 Source

The State of Connecticut Department of Transportation (CTDOT) conducted a survey on three Express Bus Routes to evaluate existing express bus service. Surveys were conducted onboard buses during the morning trip to Hartford. There were 237 respondents. Table 3 summarizes where and when the surveys were conducted.

Table 3: CTDOT Express Bus Survey Locations and Dates

Express Bus Route	Date	No. of completed surveys
2: Corbins/Farm Springs Express (CTTRANSIT)	September 11, 2012	60
24: Cheshire/Southington Express (Dattco, Inc.)	September 25, 2012	74
23: Bristol/Plainville Express (Dattco, Inc.)	September 20, 2012	103

4.2 Results

Respondents were asked 26 questions about their trip, including origin, destination, and what could make their trip better. About 30% of respondents started their trip in Bristol, and another 17% came from New Britain. Other common origins were Cheshire (9%), Southington (9%), and Plainville (5%).

Table 4 summarizes the most common response for three questions: By what means do you typically arrive at the bus stop?; What is the purpose of this trip?; and How frequently do you use this service? The answers to these questions were all skewed heavily towards a consistent pattern. The results show that overall people drive and park to get to the express bus, that the bus is overwhelmingly used to commute to work, and that most people who ride the bus use it every day. The only secondary pattern was for Cheshire/Southington frequency, where 30% of bus riders use the service three to four days per week in addition to the 64% who use it daily.

Table 4: Summary of Responses by Location

Express Bus Route	Drove alone and parked in lot to get to the bus	Work trip	Uses express bus daily
2: Corbins/Farm Springs Express (CTTRANSIT)	82%	95%	85%
24: Cheshire/Southington Express (Dattco, Inc.)	92%	97%	64%
23: Bristol/Plainville Express (Dattco, Inc.)	87%	97%	86%

The survey asked people to list their reasons for using the express bus service. Respondents were allowed to check as many boxes as applicable. The most popular response overall was the cost of parking (29%), followed closely by the cost of fuel (27%). To prolong the life of their automobile and because they dislike driving were equally important (15%). Figure 13 summarizes the responses by route. One notable difference between locations is that the cost of

parking was the most important reason for people using the Corbins/Farm Springs express by a significant rate (36%).

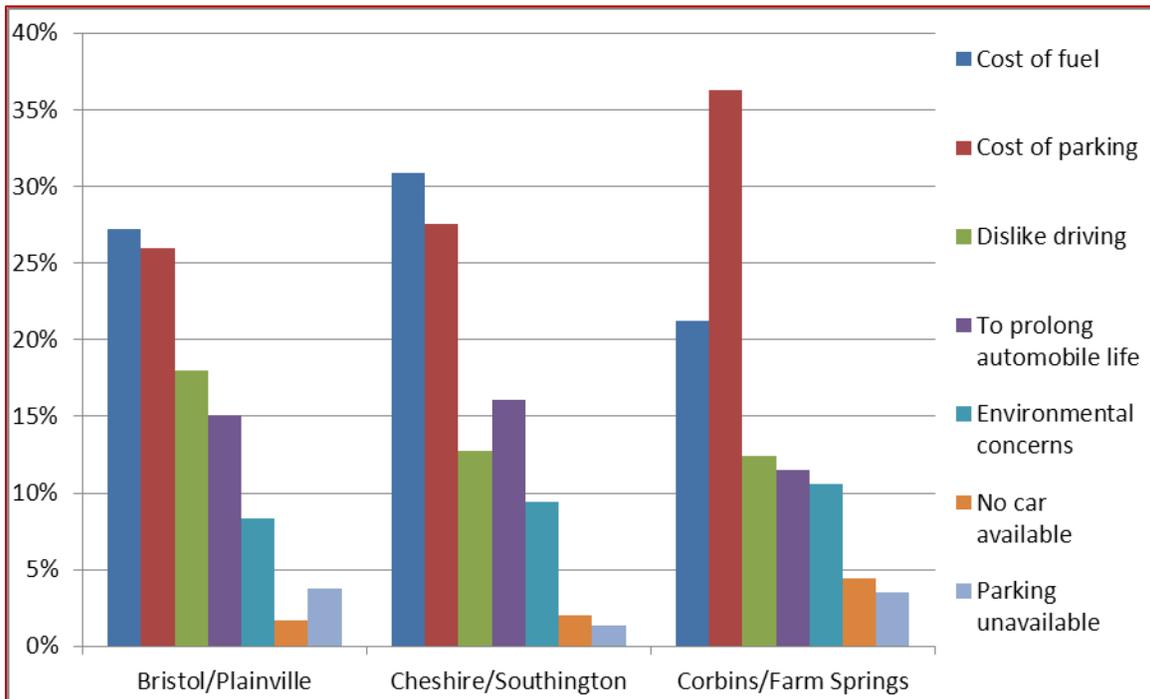


Figure 13: Primary Reasons for Using Express Bus Service

When asked how they had made their trip prior to taking the express bus, just over half of the respondents said that they had driven alone. Another 35% said that they did not make that trip before. When how they would travel if the service were not available, 79% said that they would drive alone.

When asked to rate the overall performance of the bus company, over 90% said that it was excellent or good. Common suggestions for improvement included increasing frequency, earlier and later service hours, adding midday buses, and extending service to Waterbury.

Chapter 5. Conclusions

Both the CCRS surveys and CCSU surveys had large populations from New Britain. In the CCRS surveys, transit accounted for about 90% of school trips and 100% of school trips that began in New Britain. In the CCSU survey, however, driving accounted for 86% of the mode share overall, and transit was only used by 20% of students coming from New Britain. This difference can be explained in part by the fact that many of the school trips in the CCRS survey were being taken by high school students, whereas all of the CCSU students are in college.

Like the CCRS survey, the CTDOT Express Bus survey asked transit users how they get to the bus stop. In the CCRS survey, 92% walked to the bus stop, whereas in the CTDOT survey 87% drove alone and parked. This reflects the different nature of a local bus that stops on the street versus an express bus whose origin is in a commuter parking lot.

The CTDOT survey has some important insights into preferences within the CCRS Study Corridor. The CTDOT survey showed that 51% of express bus riders had driven alone prior to taking transit. Furthermore, 79% said that they would drive alone if the service was no longer offered. This shows that the service is convenient and desirable and is an important tool in reducing automobile traffic. With a 90% favorability rating, the bus service is doing very well in the opinion of its riders.

The suggestions for improvements to bus service in the CCRS and CTDOT surveys were strikingly similar. Bus riders in both studies wanted to see earlier and later service hours and more frequent service. Despite the differences between local and express service, the message is clear that people want more service to increase convenience and reliability. In the CTDOT survey, Waterbury was identified as a location for additional transit service, which is an important location in the CCRS Corridor.