2019 County Connection On-Board Transit Survey

DRAFT REPORT

November 2019

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

EXECUTIVE SUMMARY

The Central Contra Costa Transit Authority (County Connection) conducted a 2019 Transit On-Board Survey in partnership with Metropolitan Transportation Commission (MTC). MTC contracted with ETC Institute to conduct the On-Board Survey of County Connection passengers. This report will provide an overview and detailed description of the 2019 Transit On-Board Survey process. The report covers the on-board survey results, survey methodology and administration, and the quality assurance/quality control data review process.

In addition to the full on-board survey conducted on weekdays, a sampling of weekend surveys were collected. The weekend data was summarized and is included in Appendix A.

OBJECTIVES

The primary objectives for the survey were as follows:

- Compile statistically accurate information about County Connection Passengers and how they use transit in the region.
- Generate reliable linked OD data to support computerized travel demand modeling and transportation network simulation activities for purposes of regional long-range transportation planning.
- Acquire demographic data to meet Title VI Civil Rights Act federal compliance requirements.

SURVEY METHODOLOGY SUMMARY

ETC Institute interviewers conducted the On-Board Survey on a representative sample of County Connection routes. The survey was conducted on both weekdays and weekends, using separate sampling plans and collection goals for each. The passenger-intercept interviews were completed using hand-held tablet personal computers (PC) upon which the online survey, created and developed by ETC Institute in cooperation with County Connection and MTC, was administered. Passengers were selected for participation using a random sampling application built into the survey program itself, and passenger responses were captured in real time. ETC Institute interviewers were required to adhere strictly to the random sampling protocol and were at no time permitted to exercise personal discretion with regard to the selection of survey participants.

For those passengers who elected to participate, the survey was administered in two uninterrupted sections: the first was designed to create a detailed record of the passenger's current one-way trip; the second to gather required demographic data. In the initial section, the tablet PC's survey mapping features allowed for geo-coding of addresses using information provided by the passenger. Passengers were able to see each on-screen map and confirm the accuracy of the trip data collected. At the end of the survey's first section, passengers were asked to confirm a comprehensive summary of their complete one-way trip. In the demographics section, passengers were offered the choice of physically selecting the answers themselves - actually pressing the options on the tablet PC screen - to ensure their privacy or providing the information for the interviewer to record their responses. Upon completion of the survey, minimal passenger contact information was collected, and passengers were thanked for their time and willingness to participate.

ETC Institute interviewers were available to answer passenger questions, the most common of which involved the need to ask for personal information, and how the information gathered would ultimately be used. Passengers were assured all information collected would be kept strictly confidential, that County Connection intended to use the information for research purposes designed to improve their system, and that the information would never be used for any commercial purpose.

TRANSIT TRIP CHARACTERISTICS

The following bullets describe weekday County Connection Passengers' transit trip characteristics:

- Half (49.77%) of all passenger trips surveyed were either home-to-work or work-to-home trips, while seventeen percent (16.59%) of all passenger trips involved either going to or coming from school (K-12 or College/University).

- Eighty-eight percent (87.51%) of passengers responding to the survey reported walking to access transit. Twelve percent (11.58%) reported using a vehicle of some sort, either driving or getting dropped off, to access transit.

- Fifty-one percent (50.71%) of all County Connection passengers had trips that did not require any transfers on any public transit to complete their one-way trip (using any agency's public transit). Forty-one percent required one transfer (41.34%), and eight percent required two or more transfers (7.95%).

TRANSIT RIDER PASS/PAYMENT CHARACTERISTICS

The following bullets describe weekday County Connection passengers' payment and fare characteristics:

- The majority of County Connection passengers indicated they used the "Adult" fare category for riding (70.34%), compared to the next highest, "Free" (23.63%).

- "By Clipper" was the most widely used fare payment type as indicated by passengers (78.23%), compared to the next highest, "By Cash or Paper" (20.54%).

- Nearly one quarter of respondents (23.63%) saw either a slight or significant improvement to County Connection services while thirty-two percent (32.03%) saw no change in County Connection services as a result of the major service changes implemented in March 2019.

TRANSIT RIDER PROFILE

The following bullets describe weekday County Connection passengers' demographics:

- Sixty-eight percent (67.75%) of County Connection passengers are employed.

- Eighteen percent (17.89%) of passengers indicated they were a student either part- or full-time at a college university, while an additional three percent (2.97%) indicated they were a K-12 student.

- Twenty-one percent (21.39%) of respondent's indicated they are under the age of 25.

- The race/ethnicity of County Connection passengers are: White (44.72%), Latino / Hispanic (18.76%), Black / African American (18.25%), Asian (14.42%), Hawaiian / Pacific Islander (2.09%), and Other (2.52%).

- Forty percent (39.94%) of County Connection passengers reported an annual household income of less than $50,000 and ten percent (9.92%) reported an annual household income of $75,000 or more.

- The majority of County Connection passengers get schedule information using the County Connection Website at forty-eight percent (47.93%).

2019 County Connection On-Board Transit Survey

CHAPTER 1.   ON-BOARD SURVEY RESULTS

The tables and figures listed below are based on linked weight factors unless listed otherwise.

TRAVEL CHARACTERISTICS

TYPES OF PLACES COUNTY CONNECTION PASSENGERS ARE COMING FROM

 Table 1-1 series below shows the types of places County Connection passengers are coming from. Based on the survey results, forty-nine percent (49.39%) of County Connection Passengers selected "Your HOME" for where their trip originated from. Another top choice was "Your usual WORKPLACE" with twenty-five percent (24.74%) of County Connection passengers. An additional seven percent (7.44%) of County Connection Passengers reported they were coming from "College or University (student only)".

Table 1-1: Types of Places County Connection Passengers are COMING FROM
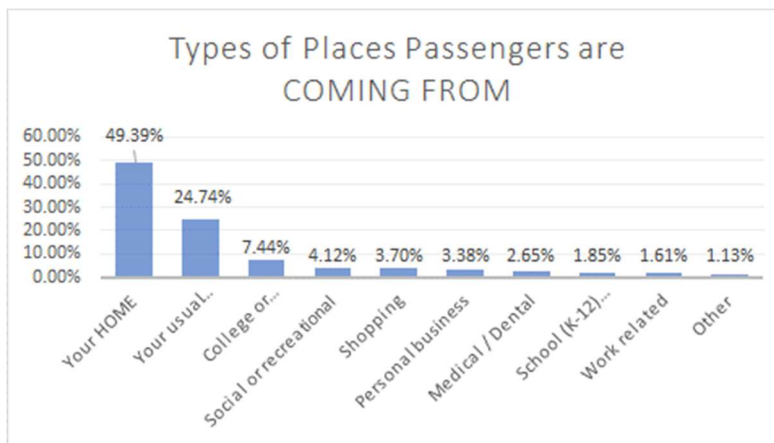
Types of Places Passengers are COMING FROM	Weight Factor (%)
Your HOME	49.39%
Your usual WORKPLACE	24.74%
College or University (student only)	7.44%
Social or recreational	4.12%
Shopping	3.70%
Personal business	3.38%
Medical / Dental	2.65%
School (K-12) (student only)	1.85%
Work related	1.61%
Other	1.13%
Grand Total	**100.00%**

HOW PASSENGERS ACCESS PUBLIC TRANSIT

How passengers first access public transit for their one-way trip by service type is shown in Table 1-2 series. A large majority of all County Connection passengers (87.51%) selected that they accessed public transit by "Walked all the way", compared to next highest (6.89%) of County Connection Passengers who reported "Was dropped off by someone - not a service".

Table 1-2: How Passengers Access Public Transit
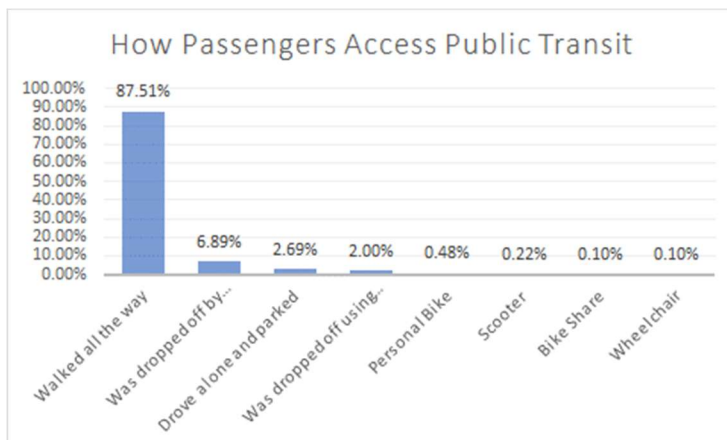
How Passengers Access Public Transit	Weight Factor (%)
Walked all the way	87.51%
Was dropped off by someone - not a service	6.89%
Drove alone and parked	2.69%
Was dropped off using Uber, Lyft, or similar service.	2.00%
Personal Bike	0.48%
Scooter	0.22%
Bike Share	0.10%
Wheelchair	0.10%
Grand Total	**100.00%**

TYPES OF PLACES COUNTY CONNECTION PASSENGERS ARE GOING TO

Table 1-3 series below shows the types of places County Connection passengers are going to. Based on the survey results, forty-two percent (42.27%) of County Connection passengers selected "Your HOME" for where they were headed on this trip. Another top choice was "Your usual WORKPLACE" with thirty percent (30.43%) of County Connection passengers.

Table 1-3: Types of Places County Connection Passengers are GOING TO
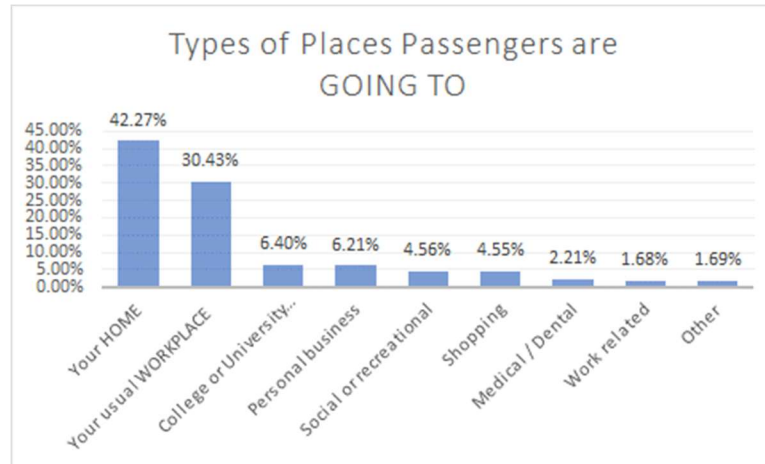
Types of Places Passengers are GOING TO	Weight Factor (%)
Your HOME	42.27%
Your usual WORKPLACE	30.43%
College or University (student only)	6.40%
Personal business	6.21%
Social or recreational	4.56%
Shopping	4.55%
Medical / Dental	2.21%
Work related	1.68%
Other	1.69%
Grand Total	**100.00%**

HOW PASSENGERS TRAVELED FROM TRANSIT TO THEIR FINAL DESTINATION

Table 1-4 series shows how passengers traveled from transit to their final destination. The majority of all transit passengers (88.69%) selected "Walk all the way" for their egress mode type to their final destination after using public transit, compared to the next highest (5.67%) of County Connection passengers that selected "Be picked up by someone – not a service".

Table 1-4: How Passengers Traveled from Transit to Their Final Destination
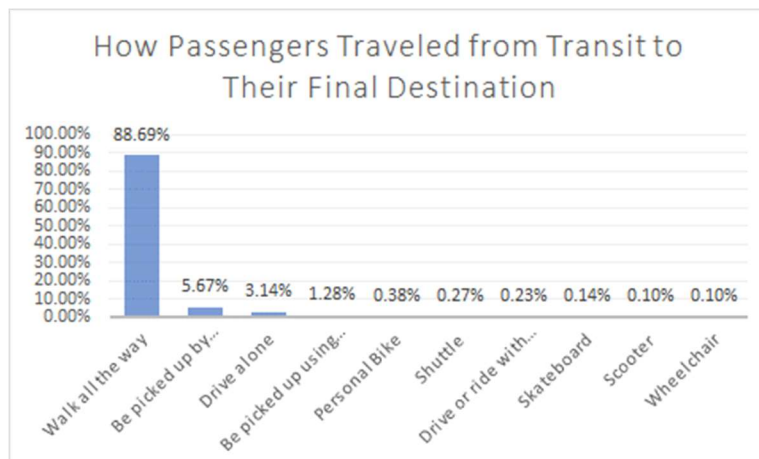
How Passengers Traveled from Transit to Their Final Destination	Weight Factor (%)
Walk all the way	88.69%
Be picked up by someone - not a service	5.67%
Drive alone	3.14%
Be picked up using Uber, Lyft, or similar service.	1.28%
Personal Bike	0.38%
Shuttle	0.27%
Drive or ride with others	0.23%
Skateboard	0.14%
Scooter	0.10%
Wheelchair	0.10%
Grand Total	**100.00%**

RESPONDENT'S TRIP PURPOSE

Table 1-5 series displays the trip purpose of County Connection passengers. Home-to-Work or Work-to-Home accounted for half (49.77%) of all trips completed on public transit. Those trips that account for either going to or coming from school account for seventeen percent (16.59%) of County Connection passengers.

Table 1-5: Respondent's Trip Purpose

Respondent's Trip Purpose	Weight Factor (%)
Home-Work	25.95%
Work-Home	23.82%
Home-Other	14.74%
Other-Home	12.88%
School-Home	8.43%
Home-School	6.12%
Other-Other	3.43%
Work-Other	1.76%
School-Other	1.11%
Other-Work	0.83%
Other-School	0.37%
School-Work	0.37%
School-School	0.09%
Work-School	0.09%
Grand Total	**100.00%**
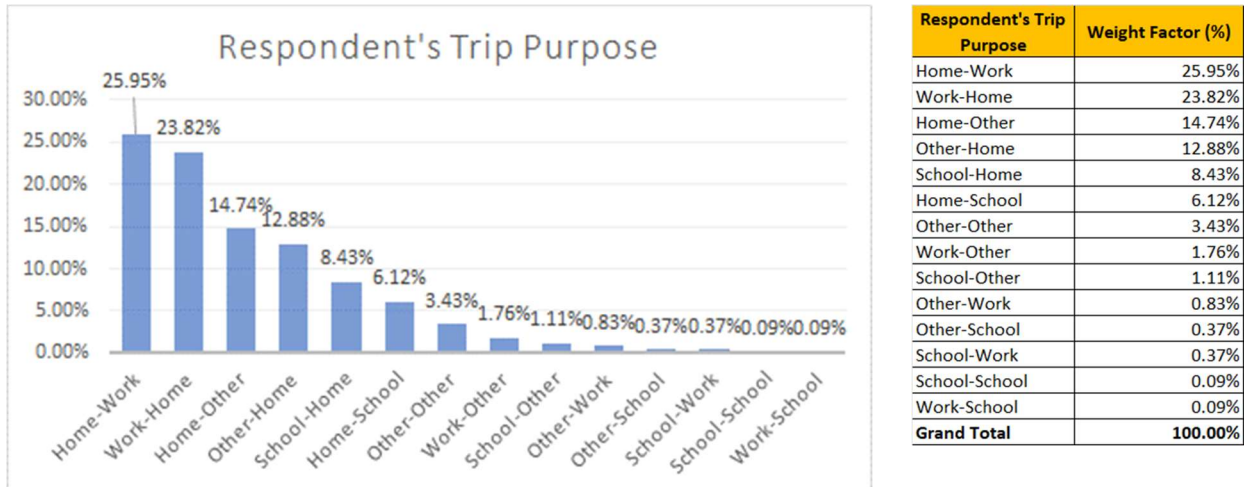
NUMBER OF TRANSFERS USED

Table 1-6 series shows the total number of transfers used in the one-way trip based on the unlinked weight factor. Over half of County Connection passengers (50.71) didn't use any transfers to make their current trip compared to forty-one percent (41.34%) passengers that used one transfer during their trip. The top four systems used for transfer from origin and to destination are: County Connection, BART, Tri Delta, and MUNI.

Table 1-6: Number of Transfers Used in The One-Way Trip

Total Number of Transfers	Weight Factor (%) (based on unlinked weight factor)
(0) None	50.71%
(1) One	41.34%
(2) Two	7.67%
(3+) Three or more	0.28%
Grand Total	**100.00%**
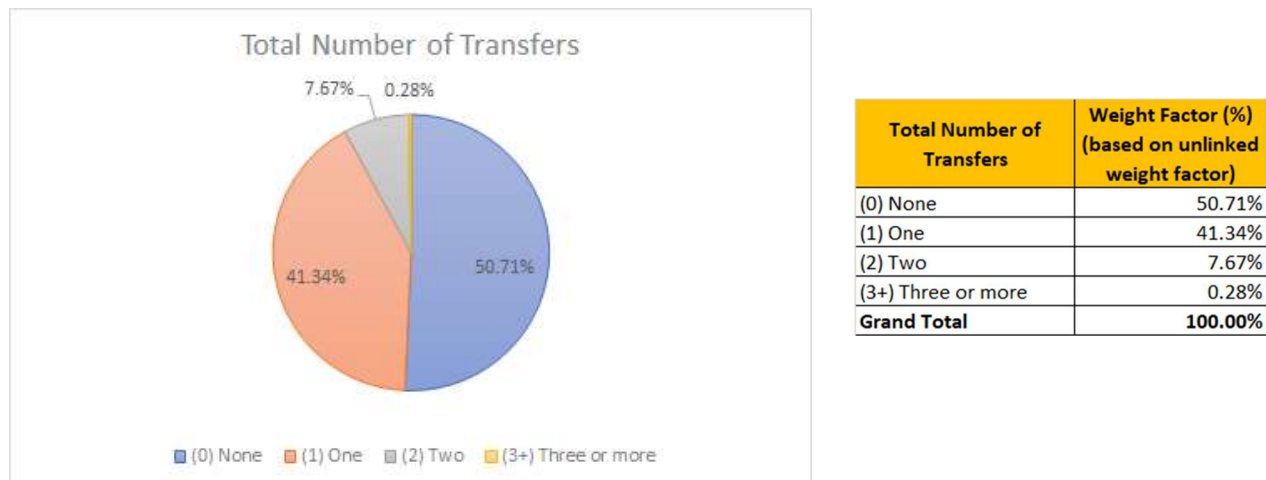
WEEKDAY PASS/PAYMENT CHARACTERISTICS

WHAT FARE CATEGORY DID YOU PAY

The Table 1-7 series illustrates the fare category used by County Connection passengers. The majority of County Connection passengers indicated they used the "Adult" fare category for riding (70.34%), compared to the next highest, "Free" (23.63%). An additional one percent (1.02%) County Connection passengers reported they paid for their fare in another way.

Table 1-7: Fare Category Type
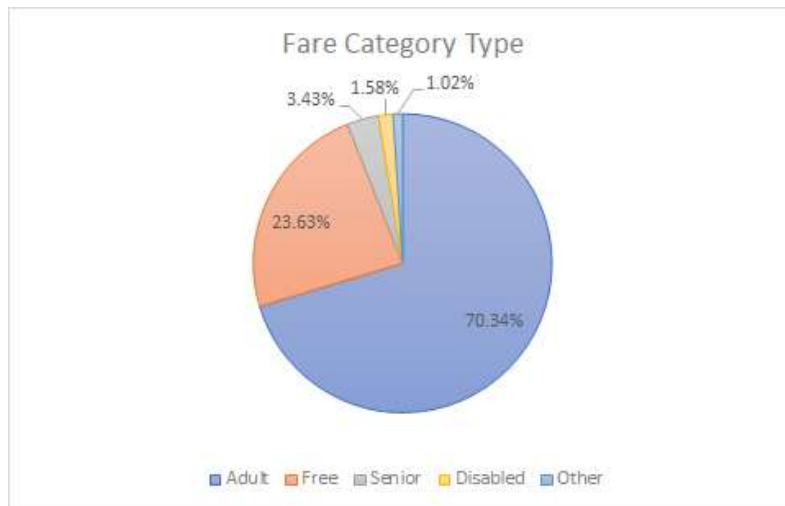
Fare Category	Weight Factor (%)
Adult	70.34%
Free	23.63%
Senior	3.43%
Disabled	1.58%
Other	1.02%
Grand Total	**100.00%**

HOW RESPONDENT PAID FOR THIS ONE-WAY TRIP

The Table 1-8 series shows the fare payment used by County Connection passengers. As shown in these visuals, "By Clipper" was the most widely used fare payment type as indicated by passengers (78.23%), compared to the next highest, "By Cash or Paper" (20.54%). An additional one percent of passengers (1.23%) indicated they pay by some other means.

Table 1-8: Fare Payment Type
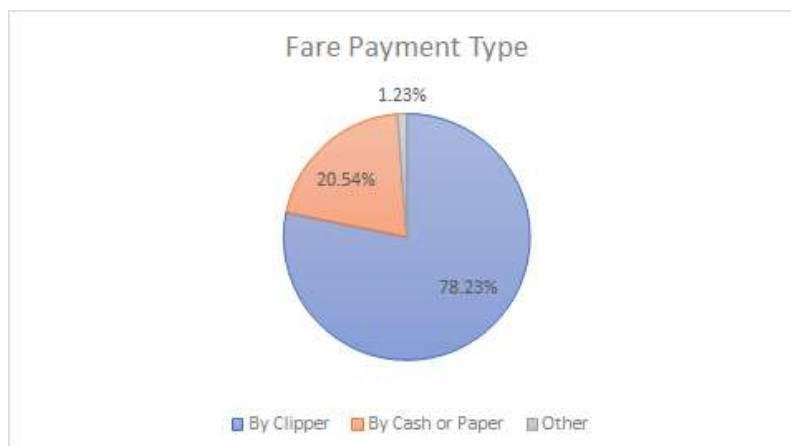
Fare Payment Type	Weight Factor (%)
By Clipper	78.23%
By Cash or Paper	20.54%
Other	1.23%
Grand Total	**100.00%**

SERVICE CHANGE

The Table 1-9 series shows how the 2019 service change affected passengers' experience using County Connection Transit. Based on respondent's responses, nearly one quarter of respondents (23.63%) saw either a slight or significant improvement to County Connection services. Thirty-two percent (32.03%) saw no change in County Connection services.

Table 1-9: Service Change
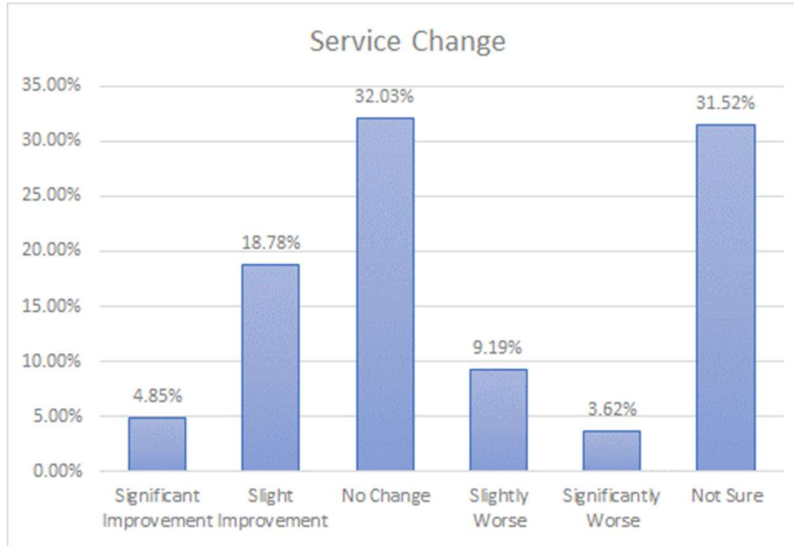
Service Change	Weight Factor (%) (based on unlinked weight factor)
Significant Improvement	4.85%
Slight Improvement	18.78%
No Change	32.03%
Slightly Worse	9.19%
Significantly Worse	3.62%
Not Sure	31.52%
Grand Total	**100.00%**

HOW RESPONDENT USUALLY GETS INFORMATION

The Table 1-10 series shows how County Connection passengers typically get bus schedule information. The majority of County Connection passengers get schedule information using the County Connection Website at forty-eight percent (47.93%). The next highest method passengers use to get bus schedule information is through a printed schedule (32.04%). The least used method County Connection passengers use to get schedule information is through Social Media (0.96%).

Table 1-10: Schedule Information
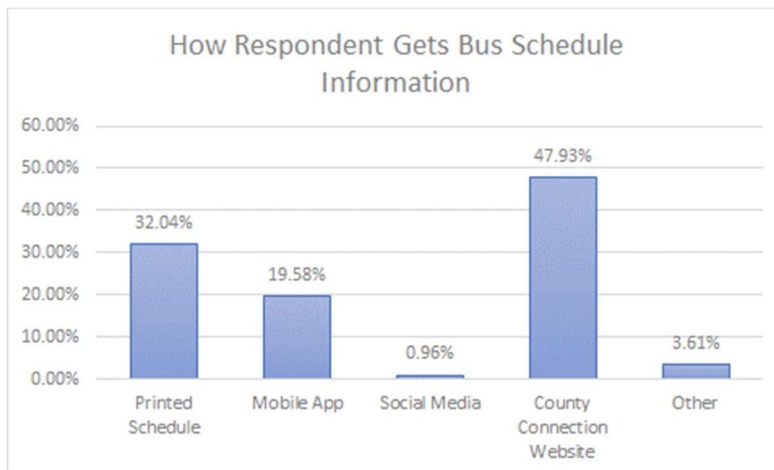
How Respondent Gets Bus Schedule Information	Weight Factor (%) (based on unlinked weight factor)
Printed Schedule	32.04%
Mobile App	19.58%
Social Media	0.96%
County Connection Website	47.93%
Other	3.61%

WEEKDAY HOUSEHOLD DEMOGRAPHICS

HOW MANY WORKING VEHICLES (AUTO OR MOTORCYCLES) ARE AVAILABLE TO YOUR HOUSEHOLD

The Table 1-11 series show the number of household vehicles for County Connection passengers' household. Twenty-two percent (21.87%) of County Connection Passengers indicated they are without a working vehicle in their household, compared to six percent (6.12%) of Passengers with three or more working vehicles in their household.

Table 1-11: Vehicle Availability
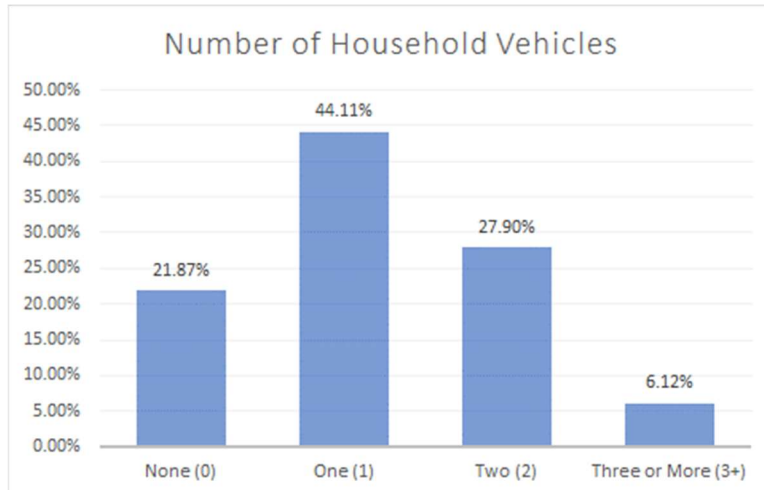
Number of Houseold Vehicles	Weight Factor (%)
None (0)	21.87%
One (1)	44.11%
Two (2)	27.90%
Three or More (3+)	6.12%
Grand Total	**100.00%**

INCLUDING YOU, HOW MANY PEOPLE LIVE IN YOUR HOUSEHOLD

The total number of household members for County Connection passengers' household is shown in the Table 1-12 series. Less than one quarter (11.77%) of County Connection passengers are only in a one-person household, compared to thirty-eight percent (38.37%) of passengers that indicate they live in a household of four or more members.

Table 1-12: Total Number of Household Members
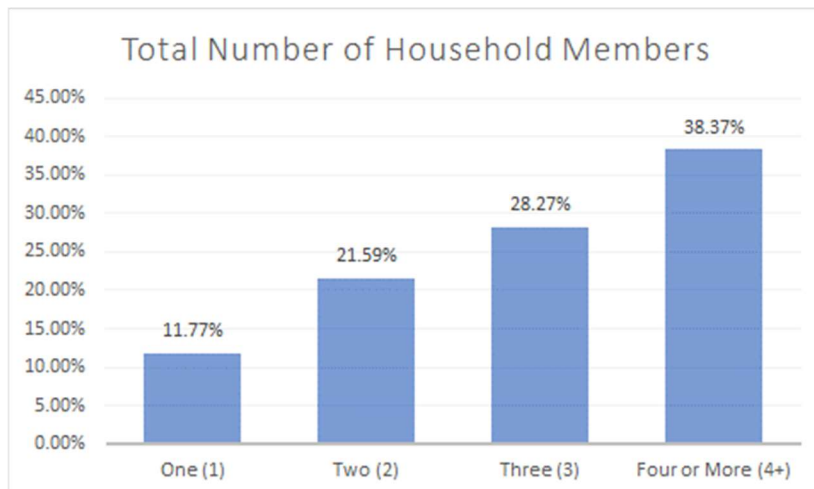
Total Number of Household Members	Weight Factor (%)
One (1)	11.77%
Two (2)	21.59%
Three (3)	28.27%
Four or More (4+)	38.37%
Grand Total	**100.00%**

INCLUDING YOU, HOW MANY ADULTS (AGE 16 AND OLDER) THAT ARE EMPLOYED FULL OR PART TIME LIVE IN YOUR HOUSEHOLD

The Table 1-13 series shows the number of employed household members for County Connection passengers' household. Only ten percent (9.55%) of respondents indicated they do not have any employed members in their household, including themselves, as compared to nineteen percent (18.63%) who have one member employed in their household and five percent (4.63%) who have four or more members employed in their household.

Table 1-13: Total Number of Employed Household Members
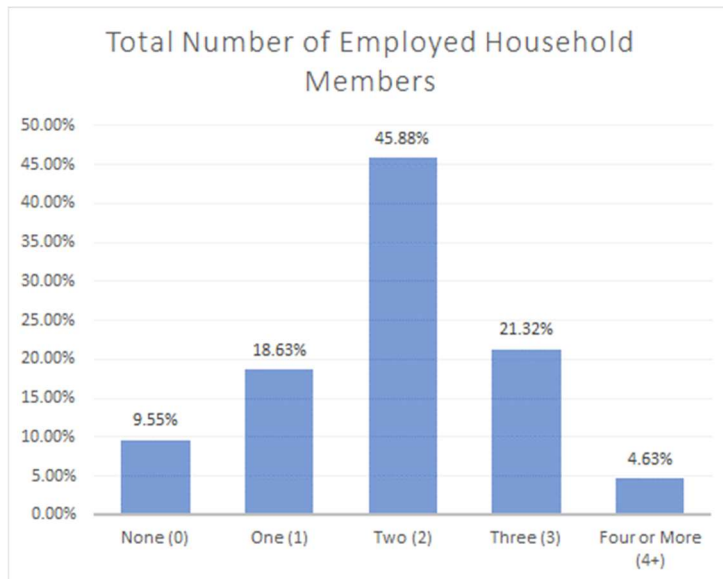
Total Number of Employed Household Members	Weight Factor (%)
None (0)	9.55%
One (1)	18.63%
Two (2)	45.88%
Three (3)	21.32%
Four or More (4+)	4.63%
Grand Total	**100.00%**

TOTAL ANNUAL HOUSEHOLD INCOME BEFORE TAXES

The Table 1-14 series shows the Total Annual Household Income for County Connection passengers' household excluding Refused. Forty-four percent of respondents (43.96%) indicated that their total annual household income was less than $35,000 while sixteen percent (15.95%) of respondent indicated having a total annual household income of $75,000 or more.

Table 1-14: Total Household Income (All system Passengers)
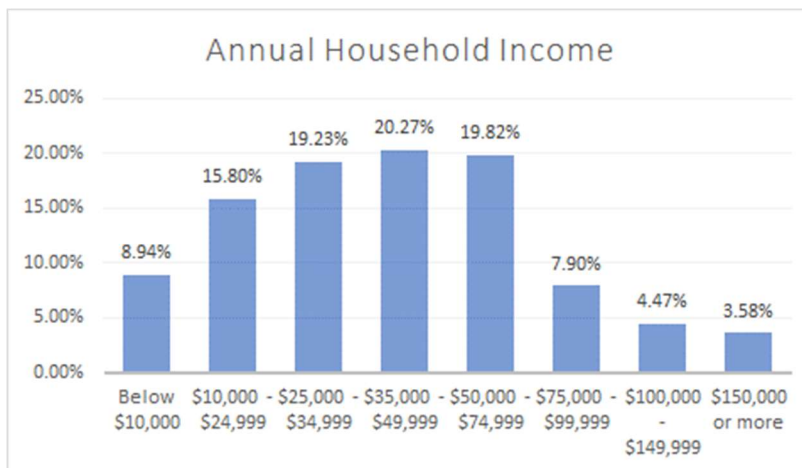
Annual Household Income	Weight Factor (%)
Below $10,000	8.94%
$10,000 - $24,999	15.80%
$25,000 - $34,999	19.23%
$35,000 - $49,999	20.27%
$50,000 - $74,999	19.82%
$75,000 - $99,999	7.90%
$100,000 - $149,999	4.47%
$150,000 or more	3.58%
Grand Total	**100.00%**

WEEKDAY RIDER DEMOGRAPHICS

EMPLOYMENT STATUS

The Table 1-15 series shows the employment status of County Connection passengers. Most County Connection passengers (67.75%) reported "Employed" for employment status, compared to thirty-two percent (32.25%) of County Connection passengers who indicated they were "Not Employed".

Table 1-15: Employment Status

Employment Status	Weight Factor (%)
Employed	67.75%
Not Employed	32.25%
Grand Total	**100.00%**

STUDENT STATUS

The Table 1-16 series shows the student status of County Connection passengers. The majority of respondents indicated they were "Not a student" at seventy-nine percent (78.96%) while eighteen percent (17.89%) indicated they were either part- or full-time College/University student, and 2.97% indicated they were a K-12th grade student.

Table 1-16: Student Status
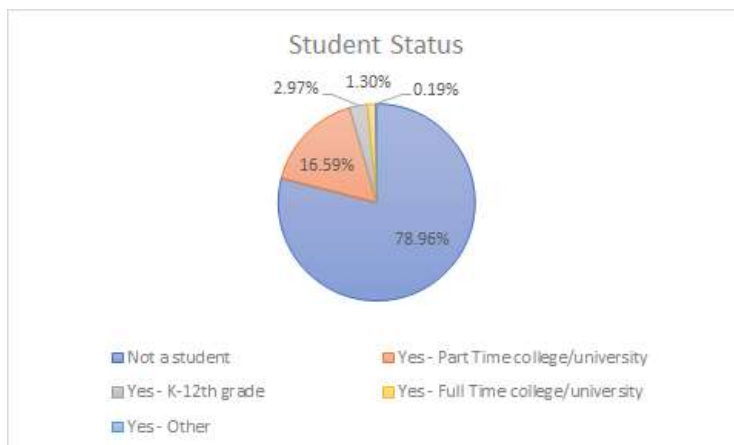
Student Status	Weight Factor (%)
Not a student	78.96%
Yes - Part Time college/university	16.59%
Yes - K-12th grade	2.97%
Yes - Full Time college/university	1.30%
Yes - Other	0.19%
Grand Total	**100.00%**

AGE OF TRANSIT RIDER

The Table 1-17 series shows the age of County Connection passengers. Just under one quarter (21.39%) of respondents indicated they were under the age of 25, and the majority of passengers indicated they were between the ages of 25 – 34.

Table 1-17: Age of Transit Rider
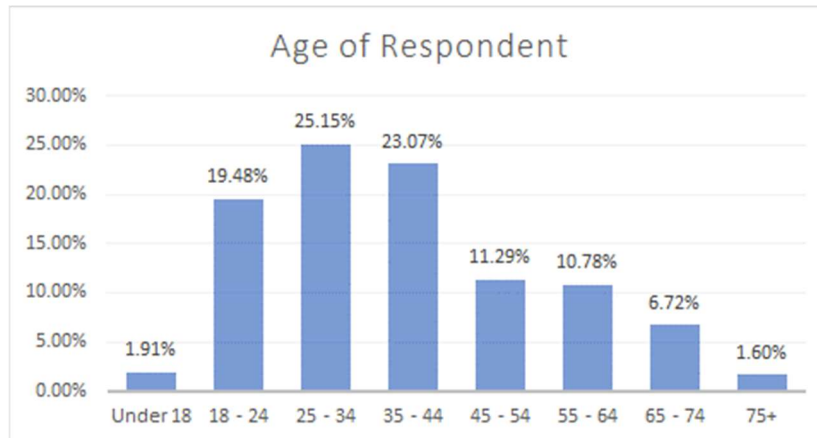
Age of Respondent	Weight Factor (%)
Under 18	1.91%
18 - 24	19.48%
25 - 34	25.15%
35 - 44	23.07%
45 - 54	11.29%
55 - 64	10.78%
65 - 74	6.72%
75+	1.60%
Grand Total	100.00%

WHAT IS YOUR GENDER

The gender of County Connection passengers is presented in the Table 1-18 series and indicates that the majority of County Connection passengers are female (55.33%) compared to male (44.67%).

Table 1-18: Gender of Transit Rider
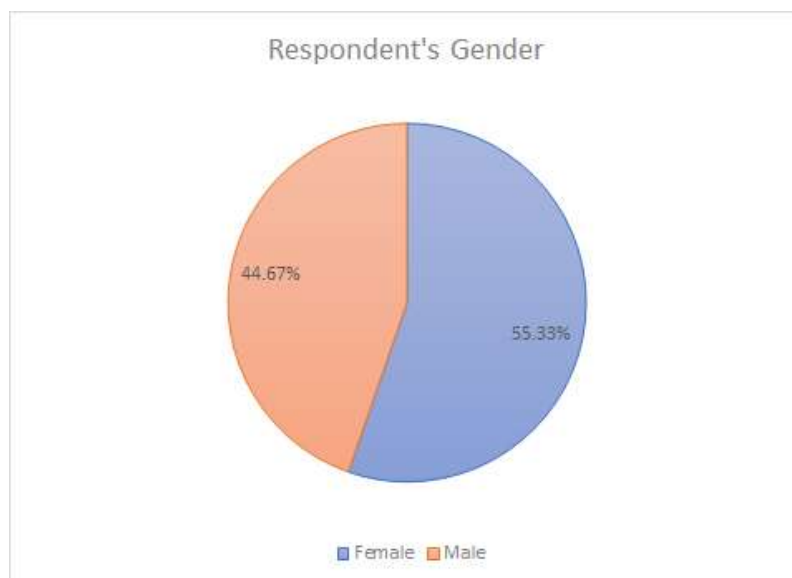
Respondent's Gender	Weight Factor (%)
Female	55.33%
Male	44.67%
Grand Total	100.00%

DO YOU SPEAK A LANGUAGE OTHER THAN ENGLISH AT HOME

Table 1-19 series shows whether County Connection passengers indicated they speak another language other than English at home more than half the time. Over half (69.14%) indicated they do not speak another language other than English at home, but of the thirty-one percent (30.86%) that indicated they do speak another language other than English at home, eighty percent (79.58%) indicated they speak English "Very well".

Table 1-19a: Transit Passengers That Speak Another Language Besides English At Home
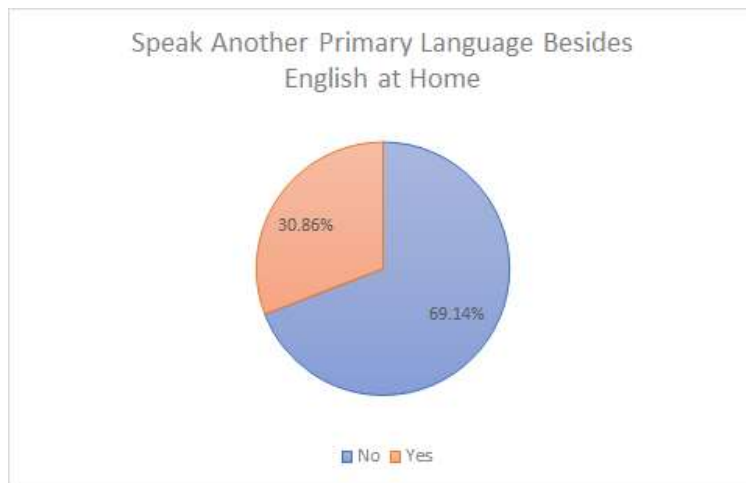
Speak Another Primary Language Besides English at Home	Weight Factor (%)
No	69.14%
Yes	30.86%
Grand Total	**100.00%**

Table 1-19b: IF YES: How well do you speak English?
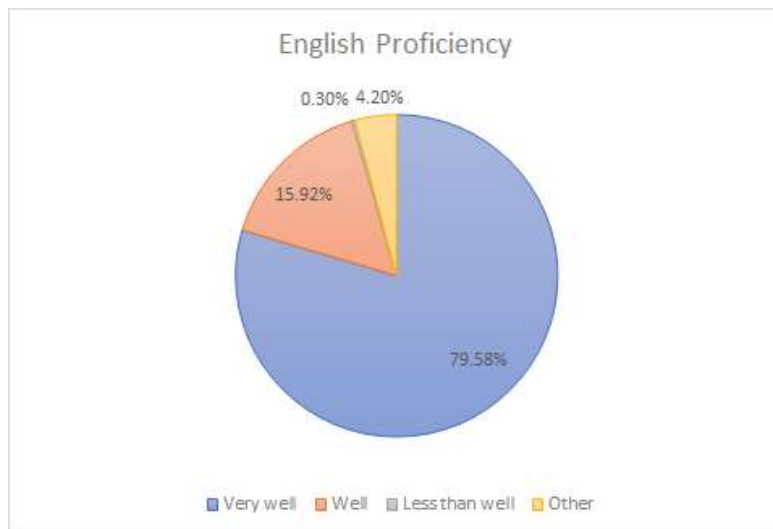
English Proficiency	Weight Factor (%)
Very well	79.58%
Well	15.92%
Less than well	0.30%
Other	4.20%
Grand Total	**100.00%**

RACE/ETHNICITY OF TRANSIT RIDER

The Table 1-20 series shows the race/ethnicity of County Connection passengers. The dominant race/ethnicity as indicated by County Connection passengers who were surveyed was "White" at forty-five percent (44.72%), with the next highest being "Latino/Hispanic" (18.76%), followed by "Black/African American" (18.25%).

Table 1-20: Race/Ethnicity of County Connection Passengers

(NOTE: Totals may not add up to exactly 100% as respondents were encouraged to select all that applied)
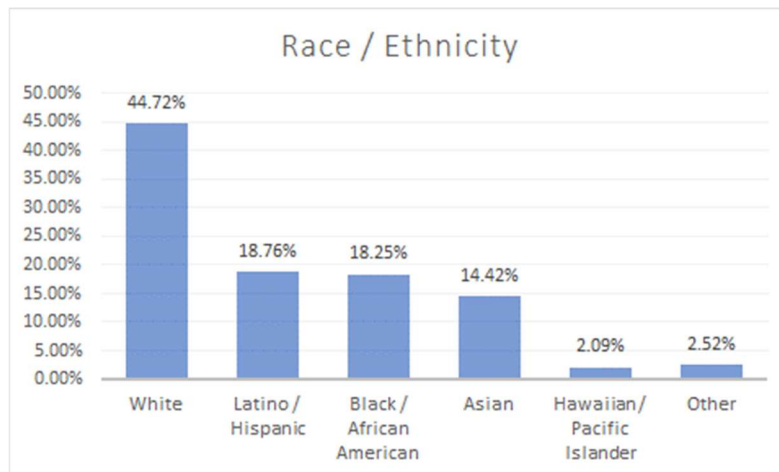
Race / Ethnicity	Weight Factor (%)
White	44.72%
Latino / Hispanic	18.76%
Black / African American	18.25%
Asian	14.42%
Hawaiian / Pacific Islander	2.09%
Other	2.52%
Grand Total	**100.00%**

CHAPTER 2. SURVEY METHODOLOGY

SAMPLING PLAN

To ensure that the distribution of completed surveys mirrored the actual distribution of County Connection Transit passengers who use the system, ETC Institute, County Connection, and MTC developed sampling goals during the weekdays, based on Monday – Friday average ridership. This was based on a sampling rate of 9.0% for each County Connection route. ETC Institute also developed a sampling plan that had a goal of obtaining 100 surveys on the weekend on a sample of County Connection routes. The time periods for the weekday/weekend collection of this Survey were as follows:

Figure 2-1: Project Time Periods

TIME PERIOD	TIME RANGE
EARLY	3:00am-5:00am
AM	5:01am-6:00am
AM PEAK	6:01am-10:00am
MID	10:01am-3:00pm
PM PEAK	3:01pm-7:00pm
EVE	7:01pm-10:00pm
LATE PM	10:01pm-1:00am

SAMPLING GOALS FOR OD SURVEY

ETC Institute, in corporation with County Connection, developed a sampling plan by utilizing the ridership provided by County Connection and a 9.0% sampling rate for each route/overall system, which equated to a goal of 1,070 weekday surveys to be collected. The weekend collection utilized a lower sampling rate for each route/overall system, which brought the goals for the weekend collection to 100 OD Surveys. A copy of the Weekend OD Sampling Goals & Completed Surveys can be found in Appendix A.

Weekday

Table 2-1 shows the goals and the actual number of completed surveys that were obtained by Route, Time Period, and Direction. The sampling plan for the OD Survey was designed to obtain completed surveys using the same sample rate of 9.0% for each of the bus routes operated by County Connection Transit.

Table 2-1: Weekday OD Sampling Goals & Completed Surveys

			RIDERSHIP		CCCTA SURVEY GOALS									SURVEYS COMPLETED								
RTE	DIR	TOWARD - END OF LINE	APC Dir Tot	APC RTE Tot	Early 300A-500A	AM 501A-600A	AM Peak 601A-1000A	Mid 1001A-300P	PM Peak 301P-700P	Eve 701P-1000P	Late PM 1001P-100A	DIR GOAL	RTE GOAL	Early 300A-500A	AM 501A-600A	AM Peak 601A-1000A	Mid 1001A-300P	PM Peak 301P-700P	Eve 701P-1000P	Late PM 1001P-100A	DIR GOAL	RTE GOAL
1	North	to Mitchell Park 'n Ride	200	341	0	0	5	8	5	0	0	18	31	0	0	5	4	4	0	0	13	29
1	South	to Rossmoor Shopping Center	141		0	0	4	5	4	0	0	13		0	0	8	4	4	0	0	16	
4	Loop	Broadway Plaza Loop	892	892	0	0	13	32	31	4	0	80	80	0	0	23	35	26	7	2	93	93
5	North	Creekside Loop	557	557	0	1	21	9	19	0	0	50	50	0	1	18	13	10	0	0	42	42
6	East	to Layfayett BART	274	518	0	1	8	6	9	1	0	25	47	0	0	6	3	2	1	0	12	40
6	West	to Orinda BART/Community Center	244		0	1	9	6	6	0	0	22		0	3	9	8	8	0	0	28	
7	Loop	Mitchell Park 'n Ride Loop	483	483	0	0	21	0	22	1	0	44	44	0	0	11	0	22	2	0	35	35
9	North	to Diablo Valley College	288	553	0	0	5	10	8	2	0	26	50	0	0	8	9	5	6	0	28	59
9	South	to Walnut Creek BART	265		0	1	5	10	6	2	0	24		0	2	9	9	4	7	0	31	
10	East	to Clayton Library	607	1171	0	1	11	18	20	4	1	55	105	0	1	14	22	19	13	1	70	116
10	West	to Concord BART	564		0	2	18	19	11	2	0	51		0	2	13	18	5	8	0	46	
11	East	to Concord BART	174	342	0	1	4	4	7	0	0	16	31	0	0	3	3	6	0	0	12	24
11	West	to Pleasant Hill BART	168		0	0	7	4	4	1	0	15		0	0	3	5	3	1	0	12	
14	North	to Concord BART	316	630	0	1	8	9	9	2	0	28	57	0	1	9	13	3	8	0	34	73
14	South	to Walnut Creek BART	314		0	0	10	10	7	2	0	28		0	0	13	14	7	5	0	39	
15	East	to Concord BART	257	515	0	1	4	11	6	0	0	23	46	0	1	1	11	6	0	0	19	40
15	West	to Pleasant Hill BART	259		0	1	8	9	4	1	0	23		0	1	3	12	4	1	0	21	
16	North	to Martinez AMTRAK	379	729	0	0	10	12	10	2	0	34	66	0	0	3	12	18	3	0	36	67
16	South	to Concord BART	349		0	1	7	15	7	1	0	31		0	1	4	15	8	3	0	31	
17	North	to North Concord/Martinez BART	166	285	0	0	5	3	5	1	0	15	26	0	0	2	3	7	0	0	12	26
17	South	to Concord BART	119		0	0	4	3	4	0	0	11		0	0	6	3	5	0	0	14	
18	North	to Martinez AMTRAK	224	434	0	0	5	8	6	2	0	20	39	0	0	7	10	5	2	0	24	44
18	South	to Pleasant Hill BART	210		0	1	6	9	3	0	0	19		0	1	3	12	4	0	0	20	
19	North	to Martinez AMTRAK	80	158	0	0	2	3	2	0	0	7	14	0	0	2	3	2	0	0	7	12
19	South	to Concord BART	77		0	0	1	4	2	0	0	7		0	0	1	2	2	0	0	5	
20	East	to Concord BART	583	1109	0	1	8	24	16	4	0	52	100	0	0	9	21	11	6	0	47	100
20	West	to Diablo Valley College	526		0	0	19	17	9	3	0	47		0	0	20	17	11	5	0	53	
21	North	to Walnut Creek BART	265	577	0	0	8	7	6	2	1	24	52	0	0	3	9	7	2	1	22	60
21	South	to San Ramon Transit Center	313		0	1	7	11	7	2	0	28		0	1	6	18	9	4	0	38	
28	East	to Diablo Valley College	173	360	0	1	4	6	3	1	0	16	32	0	0	2	8	4	1	1	16	26
28	West	to Martinez AMTRAK	188		0	1	5	7	3	1	0	17		0	0	2	7	1	0	0	10	
35	North	to San Ramon Transit Center	293	609	0	0	6	8	11	2	0	26	55	0	0	3	3	8	3	0	17	47
35	South	to Dublin/Pleasanton BART	316		0	1	11	10	7	0	0	28		0	0	5	12	11	2	0	30	
91X	East	Concord Commuter Express	73	73	0	0	3	0	4	0	0	7	7	0	0	3	1	3	0	0	7	7
92X	North	to Mitchell Park 'n Ride	100	189	0	0	4	0	5	0	0	9	17	1	0	4	0	4	0	0	9	18
92X	South	to Pleasanton ACE Train	89		0	1	3	0	4	0	0	8		0	1	3	0	5	0	0	9	
93X	East	to Antioch BART	75	170	0	0	0	0	7	0	0	7	15	0	0	0	0	7	0	0	7	16
93X	West	to Walnut Creek BART	96		3	3	3	0	0	0	0	9		3	3	3	0	0	0	0	9	
95X	North	to Walnut Creek BART	98	176	0	0	3	0	6	0	0	9	16	0	0	3	0	7	0	0	10	19
95X	South	to San Ramon Transit Center	78		0	0	2	0	5	0	0	7		0	0	3	1	5	0	0	9	
96X	North	to Walnut Creek BART	236	544	0	0	4	1	16	0	0	21	49	0	0	4	0	15	0	0	19	47
96X	South	to San Ramon Transit Center	308		0	2	20	1	5	0	0	28		0	2	20	1	5	0	0	28	
97X	North	to San Ramon Transit Center	60	105	0	0	5	0	1	0	0	5	9	0	0	5	0	1	0	0	6	10
97X	South	to Dublin/Pleasanton BART	45		0	0	1	0	3	0	0	4		0	0	1	0	3	0	0	4	
98X	North	to Martinez AMTRAK	198	379	0	0	5	6	4	0	0	15	28	0	0	4	4	4	0	0	12	24
98X	South	to Walnut Creek BART	181		0	1	5	5	3	0	0	14		0	1	4	3	4	0	0	12	
99X	Inbound - E	to North Concord/Martinez BART	23	54	0	0	1	0	1	0	0	2	5	0	0	1	0	1	0	0	2	5
99X	Outbound - W	to Martinez AMTRAK	32		0	0	1	0	1	0	0	3		0	0	1	0	2	0	0	3	
					3	24	327	331	343	41	2		1070	4	22	293	348	317	90	5		1079

SURVEY INSTRUMENT

The tablet PCs were the preferred survey method as the tablet PCs have on-screen mapping features that allows for real-time geocoding of addresses and places based off either address, intersection, or place searches based on feedback from respondents. The respondents can then confirm the geocoded location based on the on-screen map that shows the searched address/location via a Google Map indicator icon. In addition to using the mapping feature to collect the global positioning system coordinates of major survey locations (home address, origin address, destination address, boarding location and alighting location), the tablet PC also allows the interviewer to walk through each question with the respondent. This allows the interviewer to answer any questions as well as to ensure the quality of the data collected. The respondent can also press the answers to the questions directly on the tablet PC during the demographic section to allow for more privacy.

Respondents who did not have time to complete the survey during their bus trip were also given the option of providing their phone numbers for call back. Those who provided their phone numbers were then contacted by ETC Institute's call center to complete the survey. A version of the survey instrument can be found in Appendix B of this report. Records that were considered incomplete or did not provide adequate trip and demographic information were not used for expansion or included in the finalized dataset.

In addition to Tablet PC surveys, interviewers distributed and collected paper questionnaires on routes and coded responses for respondent entry. Each paper questionnaire that was used by ETC tracked the route and trip time. The paper surveys that were collected on these routes were then entered into the online database with the tablet PC Survey collection.

CHAPTER 3.   SURVEY ADMINISTRATION

LABOR RECRUITMENT AND TRAINING

Assembling a team of high-quality surveying staff was one of the most important steps in the OD administration process. ETC collaborated with a local staffing firm to provide interviewers for the OD Survey.

The training session focused on the survey purpose and objectives, the survey instrument, scripts on how to respond to passengers' questions, how to use data collection tools correctly, random sampling protocol, instructions on how to conduct themselves when working with the public, and safety training. Survey staff were instructed to understand that while they were not County Connection Transit employees, they were representing the agency while on transit vehicles or property, and they needed to act in a manner that reflected positively on County Connection at all times. There were additional training sessions conducted throughout the data collection process on an as-needed basis but with smaller groups.

Maximizing participation and legitimizing the survey among passengers depended on the public response to the survey staff. To support a good public image, ETC Institute imposed dress code standards that required survey staff to wear clean, appropriate clothing to present a casual, yet neat, appearance that ensured professionalism and comfort. Survey staff were provided with interviewer badges and vests which helped identify interviewers to County Connection staff and passengers to further legitimize their appearance.

TRAINING OD INTERVIEWERS

The ETC Institute Field Supervisor created the necessary training materials and conducted the OD training. The classroom training session included a PowerPoint presentation to explain the purpose and objectives of the survey, questionnaire content, interviewer procedures and requirements, random sampling protocol, survey logistics, how to maximize response rates (including difficult-to-survey passengers), and the data collection process in a step-by-step format. Other goals of the training included building interview staff confidence, helping interview staff feel that they are an important part of the survey's success, and helping them understand the importance of the survey and the long-term benefits to their community.

ETC Institute ensured that the training addressed the following details:

- Tips on intercepting/interacting with non-English speakers and passengers with limited English proficiency
- Cultural sensitivity
- Importance of understanding the intent of the questions
- Instructions on conveying the purpose of the survey to passengers
- Importance of adhering to our random sampling protocol at the outset of every survey
- Procedure for properly recording all refusals and completing a short observational assessment of the refusing passenger for internal purposes
- Importance of data confidentiality and instruction on how to address passenger concerns regarding same
- Overview of the County Connection system covering all topics covered in tablet questionnaire with route-specific instruction as needed

2019 County Connection On-Board Transit Survey

- How to handle passenger comments and complaints
- Safety training

Toward the end of training, interviewers conducted mock interviews using the survey tablets. This allowed ETC Institute staff to gauge each interviewer's comprehension of the survey instrument and provide feedback as needed. After the training, interviewers were tested on items discussed in training.

Following classroom training, applicants got a chance to conduct interviews under the supervision of an experienced ETC Institute supervisor. Supervisors oversaw interviewers and provided feedback on performance throughout the day.

Interviewers who were conducting the survey properly could go to the next phase of field training. Interviewers who needed more help but showed promise were asked to spend a second day in the field under direct supervision. Once an interviewer had demonstrated proficiency under direct supervision, he/she was given a field test during which the prospective interviewer conducted surveys on his/her own. During this period the interviewer's productivity and data quality were remotely assessed by ETC Institute's staff.

SURVEY ADMINISTRATION

SELECTION OF PARTICIPANTS

For the OD Surveys conducted by tablets, a random number generator was used to determine which passengers were asked to participate in the survey after boarding the surveying bus shown in Figure 3-1.

If four people boarded a bus, the tablet PC randomly generated a number from 1 to 4. If the answer was 2, the second person who boarded the bus was asked to participate in the survey. If the answer was 1, the first person was asked to participate in the survey, and so forth. The selection was limited to the first six people who boarded a bus or train at any given stop to ensure the interviewer could keep track of the passengers as they boarded.

Figure 3-1: OD Survey Random Number Generator

For example, if 20 people boarded a bus or train, the tablet PC program would randomly pick one of the first six people for the survey. If the interview is refused by the randomly selected passenger, then the passenger who boarded before the passenger selected would be attempted (**after** *if 1 was selected*).

Respondents who did not have time to complete the survey during their bus trip or who spoke a language other than the interviewers were given the option of providing their phone numbers to conduct the survey at another time. Those who provided their phone numbers for call back were then contacted by ETC Institute's call center to complete the survey. Those interviewers that did speak the foreign language of the passenger translated the English tablet PC version and indicated which language the interview was conducted in.

Data regarding survey refusals and surveys completed in a language other than English are provided in Appendix C.

The data collection for the project was administered during October 2019 through the beginning of November 2019. The OD Survey was conducted during both weekdays and weekends as early as 8:00am and continued as late as 8:00pm. The Weekend OD Survey was conducted on Saturdays and Sunday from 8:00am to 7:00pm.

IN-FIELD QUALITY ASSURANCE/QUALITY CONTROL

Each day, ETC Institute's Field Supervisor reviewed each employee's data regarding the following issues to assess whether the employee was conducting the survey properly:

- Distribution of surveys by demographics
- Distribution of surveys by trip characteristics
- Length of each survey in minutes
- Percentage of refusals
- Percentage of short trips

In addition to daily reviews of demographic responses, trip speed, etc. a comprehensive weekly report was created at the direction of the Field Supervisor which included a detailed itemized breakdown of each interviewer's performance for the week; specifically analyzing distribution of survey responses in relation to the norm. The weekly report was reviewed by all supervisory staff and discussed during a weekly meeting/conference call during which a corrective action plan was formulated in each case. A member of the supervisory team would be assigned each issue. That supervisor would take the corrective action then add a dated note to the weekly report describing in detail the remedial action taken. The same supervisor would be assigned to follow up on the issue with the interviewer in question during the current week. If the corrective plan did not prove successful the interviewer was removed from the schedule, either temporarily pending supplemental training or permanently where such action was deemed appropriate by the Field Supervisor.

ETC Institute's Field Supervisors routinely conducted spot checks on assigned bus routes and made frequent unannounced visits to stops and stations. Supervisors also utilized anonymous "secret shoppers" to pose as passengers on buses to check up on staff attitude, appearance, performance and compliance with ETC Institute rules and procedures. Also, Field Supervisors could verify if an interviewer was on their assigned route by viewing the displayed geographic locations of where the interviews were taking place as well as track productivity and data accuracy down to the second it occurred. These checks ensured data integrity and helped identify any interviewer who was falling short of our standards for field survey collection.

CHAPTER 4. DATA REVIEW PROCESS

Many of the processes described in previous sections of this report were essential elements of the overall quality assurance/quality control (QA/QC) process that was implemented throughout the survey administration process. The establishment of specific sampling goals and procedures for managing the goals ensured that a representative sample was obtained from each bus route. Training of interviewers and the high levels of oversight provided by the field manager and the field supervisors ensured that the survey was administered properly. Also, the use of the latest geo-coding tools such as ETC Institute's tablet PC survey with an embedded Google map search, ETC Institute Elvis program, and Caliper® Maptitude geographic information system (GIS) software, all of which contributed to the high quality of geo-coding accuracy that was achieved.

The following subsections describe the QA/QC processes that were implemented after the data was collected.

PROCESS FOR IDENTIFYING COMPLETE RECORDS

To classify a survey as being completed, the record must have contained all elements of the one-way trip. ETC Institute has classified required trip data as containing the complete answers to the following:

- Route/Direction
- Time of trip
- Transfers made
- Home address
- Origin address
- Destination address

- Origin type place
- Destination type place
- Access mode
- Egress mode
- Boarding location
- Alighting location

In addition to the required trip data questions, a survey must be marked as complete by the online survey program, which occurs only if the interviewer has navigated through every required question on the online survey instrument including demographic questions.

ONLINE VISUAL REVIEW TOOL

ETC Institute created an online visual review tool that allows for the review of all completed records within the database. This tool shows all components of each individual trip as well as a series of preprogrammed distance and ratio checks as described on subsequent pages. After directions were finalized, the next step was to run each record through the Speed/Distance/Time checks. Figure 4-1 shows an example of the online visual review tool.

Figure 4-1: Online Visual Review Tool (Editable Version)

2019 County Connection On-Board Transit Survey
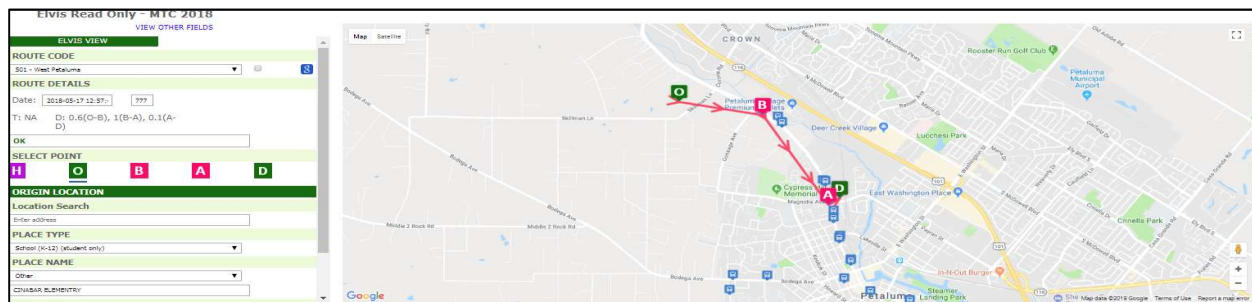
PRE-DISTANCE CHECKS

A series of distance and ratio checks are preprogrammed into the online visual review tool to allow for ETC Institute's Transit Review Team (TRT) to take a more systematic approach in reviewing complete records. The TRT process for editing surveys is described later in this section. **Note: The distance and ratio checks described were meant to alert the reviewer that closer evaluation was needed. It did not necessarily indicate that the record was inaccurate or unusable.**

The distances used for the checks were created using the great-circle distance formula that is based on a straight line from point A to point B that considers the curvature of the earth. Some of the distance checks ran are listed below:

- Access/Egress Mode Distance Check (distances from origin to boarding and alighting to destination).

- Origin to Destination Check (distance from origin to destination).

- Boarding and Alighting Distance Check (distance checks from boarding to alighting location).

PRE-RATIO CHECKS

After all transfer checks were completed, the next step in this process involved the application of a series of QA/QC Ratio Checks.

Three ratio checks were conducted for each record. First, the distance between boarding and alighting was divided by the distance between origin and destination. If the passenger had a high ratio, then the passenger was on the bus for an extensive time compared to the origin to destination distance. If the check created an extremely low ratio, the use of transit seemed unnecessary.

Second, the distance between origin and boarding was divided by the distance between origin and destination. If the passenger had a high ratio, the origin to boarding distance was excessive compared to the origin to destination distance.

Third, the distance between alighting and destination was divided by the distance between origin and destination. If the passenger had a high ratio, the alighting to destination distance was excessive compared to the origin to destination distance.

TRANSIT REVIEW TEAM

ETC Institute has a dedicated team whose priority is reviewing and editing completed records using an online visual review tool. The TRT reviewed all completed records collected for the survey, paying special attention to records that were automatically flagged via the automated distance checks. Typically, around 10 percent of all records receive an automatic flag. Prior to making edits to any survey, they first attempted to contact the respondent to clarify any questionable answer choices regarding the trip. If no contact was made, or if contact was not possible, which occurs for most cases, the Table 4-1 General Issues (on the following page) generally result in actions that allow about 30 percent of those records that are automatically flagged to be retained, or approximately 3 percent of all completed Surveys.

Table 4-1: General Issues

Issue	Description of Issue	Action
Origin/Destination Condition 1	Origin/Destination appears incorrect because the wrong location of a multiple-location organization was selected	If for example, an Origin/Destination appears illogical based on the college campus that was selected, but an appropriate campus of the same college does appear logical given the other points and answer choices of the trip, then the appropriate campus will be selected.
Origin/Destination Condition 2	Origin/Destination appears to have been geocoded to the incorrect city/state	If for example, an Origin/Destination appears illogical based on the city/state that was geocoded, but the address/intersection is logical within the trip if the city/state are changed. This occurs occasionally because the surveyor selects the wrong choice from the list of possible address choices that appear in the online survey instrument, then the appropriate address information will be inserted.
Access/Egress Mode	Access/Egress Mode seems illogical based on trip	If the access/egress mode involves the use of a vehicle and the distance from either origin to boarding or alighting to destination is less than 0.2 miles, then the access/egress mode is recoded to walk/walked and that change will be reflected in the database.
Directionality of Record	Boarding and alighting locations indicate that the trip is going in the opposite direction of what was selected by the surveyor	Change Direction of Route Selected and if necessary update boarding and alighting locations based on appropriate direction.

POST-PROCESSING ADDITIONAL CHECKS

After all records were reviewed by the TRT, the next step in this process involved the application of a series of QA/QC non-trip checks. Non-trip checks are described as anything not pertaining to the respondent's actual trip (i.e., demographic information).

Non-trip related checks included:

- Ensuring the respondents who indicated that they were employed also reported that at least one member of their household was employed
- Ensuring the time-of-day a survey was completed was reasonable given the published operating schedule for the route
- Ensuring that the appropriate fare type was used in response to the age of respondent
- Checking that there is a representative demographic distribution based on age, gender, and income status
- Removing any personal contact information used for quality control purposes during the data collection portion of the project to protect the anonymity of the respondents

Once all records had gone through the pre-processing and post-processing QA/QC checks, those that were deemed complete and usable were then used to update the completion report used by the field staff to ensure that all contractual goals had been met. After the final high-level review was completed, metadata (a codebook or data dictionary) was created to suitably explain the data in the database.

SURVEY WEIGHTING AND EXPANSION

County Connection surveys were expanded by route, time-of-day, and direction (RTD). The following sections describe the methodology that was used to develop the unlinked expansion factors. Unlinked expansion factor is based on passenger trips which counts each boarding as a separate trip regardless of transfers.

DATA EXPANSION OVERVIEW

When survey quantity goals are created, they are typically based upon a percentage of the average weekday ridership for the routes in the system and desired confidence levels. These are further broken down by time periods. The time periods that are created (e.g., 6 a.m. to 10 a.m.) are based off the specific needs of the County Connection System. Once a sample percentage is agreed upon, the goals for the survey collection are based off the ridership for each route by time period and then multiplied by the sampling percentage.

The purpose of developing survey quantity goals is to collect an appropriate number of survey records that will be expanded to represent the total average weekday ridership of each route by time period and direction. The expanding/weighting process balances any over/under representation in the survey database by any route/time-of-day/direction.

APPENDIX A
Weekend Travel Characteristics
## and Demographic Data

WEEKEND TRAVEL CHARACTERISTICS

The weekend data set for The Contra Costa County Transit Authority (County Connection) was not expanded, so the number and percentages in the charts and graphs below are based on the number of weekend surveys collected.

TYPES OF PLACES COUNTY CONNECTION PASSENGERS ARE COMING FROM

Error! Reference source not found.A-1 Series below shows the types of places County Connection passengers are coming from. Based on the survey results, thirty-seven percent (36.70%) selected "Your HOME" for where their trip originated from. Another top choice was "Your usual WORKPLACE" (27.52%), followed by "Social or Recreational" (17.43%).

Table A- 1: Types of Places County Connection Passengers are COMING FROM (Weekend)
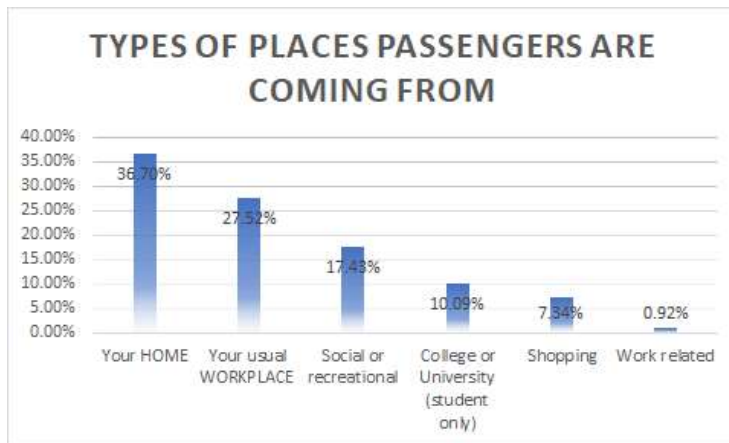
Types of Places Passengers are COMING FROM	Percentage
Your HOME	36.70%
Your usual WORKPLACE	27.52%
Social or recreational	17.43%
College or University (student only)	10.09%
Shopping	7.34%
Work related	0.92%
Grand Total	**100.00%**

HOW PASSENGERS ACCESS PUBLIC TRANSIT

How passengers first access public transit for their one-way trip by service type is shown in **Error! Reference source not found.**A-2 Series. A large majority of all County Connection passengers (93.58%) selected that they accessed public transit by "Walked all the way", compared to next highest (4.59%) of County Connection passengers who reported "Was dropped off by someone – not a service".

Table A- 2: How Passengers Access Public Transit (Weekend)
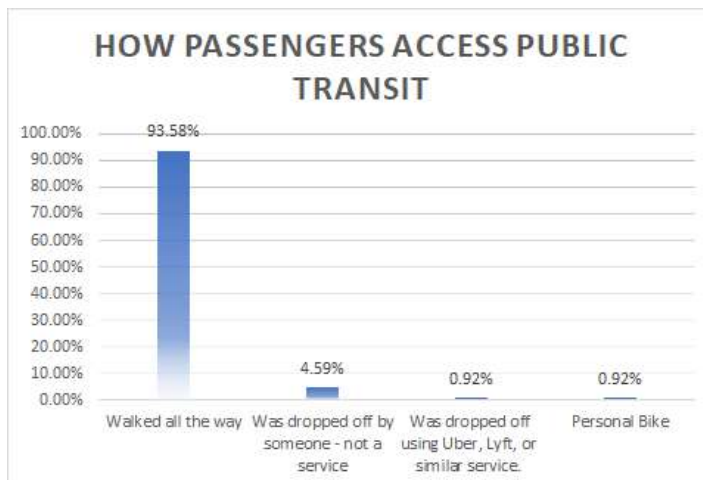
How Passengers Access Public Transit	Percentage
Walked all the way	93.58%
Was dropped off by someone - not a service	4.59%
Was dropped off using Uber, Lyft, or similar service.	0.92%
Personal Bike	0.92%
Grand Total	**100.00%**

TYPES OF PLACES COUNTY CONNECTION PASSENGERS ARE GOING TO

Error! Reference source not found.A-3 Series below shows the types of places County Connection passengers are going to. Based on the survey results, sixty-two percent (62.39%) of County Connection passengers selected "Your HOME" for where they were headed on this trip. Another top choice was "Social or recreational" (23.85%). An additional one percent (0.92%) indicated they were going somewhere "Work related".

*Table A- 3: Types of Places County Connection Passengers are GOING TO (Weekend)*
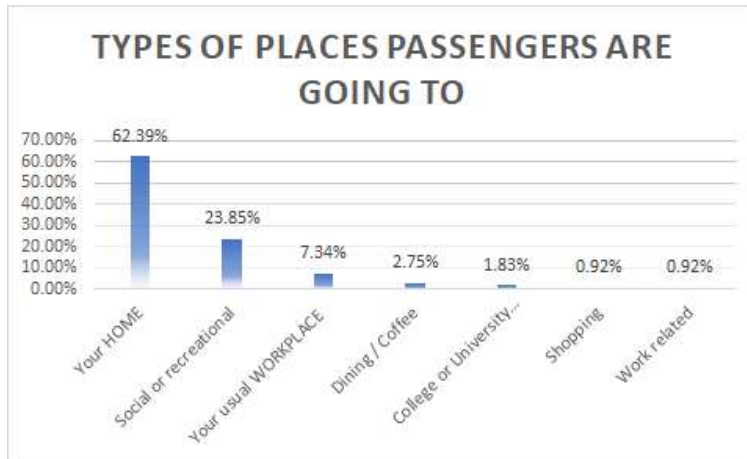
Types of Places Passengers are GOING TO	Percentage
Your HOME	62.39%
Social or recreational	23.85%
Your usual WORKPLACE	7.34%
Dining / Coffee	2.75%
College or University (student only)	1.83%
Shopping	0.92%
Work related	0.92%
Grand Total	**100.00%**

HOW PASSENGERS TRAVELED FROM TRANSIT TO THEIR FINAL DESTINATION

Error! Reference source not found.A-4 Series shows how passengers traveled from transit to their final destination. The majority of all transit passengers (86.24%) selected "Walk all the way" for their egress mode type to their final destination after using public transit, compared to the next highest (11.01%) of County Connection passengers that selected "Be picked up by someone – not a service".

Table A- 4: How Passengers Traveled from Transit to Their Final Destination (Weekend)
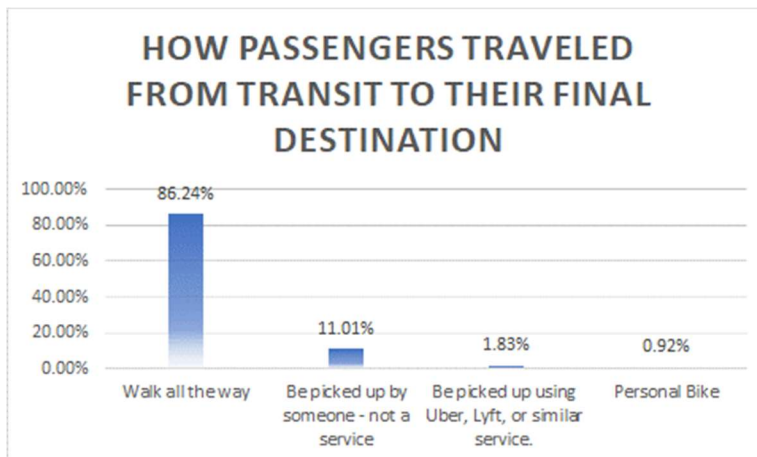
How Passengers Traveled from Transit to Their Final Destination	Percentage
Walk all the way	86.24%
Be picked up by someone - not a service	11.01%
Be picked up using Uber, Lyft, or similar service.	1.83%
Personal Bike	0.92%
Grand Total	**100.00%**

RESPONDENT'S TRIP PURPOSE

Table A-5 Series displays the trip purpose of County Connection passengers. Home – Other and Work – Home accounted for a majority of the trips taken by County Connection passengers over the weekend (55.04%). The least likely trip taken was Other – Other (0.92%).

Table A- 5: Respondent's Trip Purpose (Weekend)
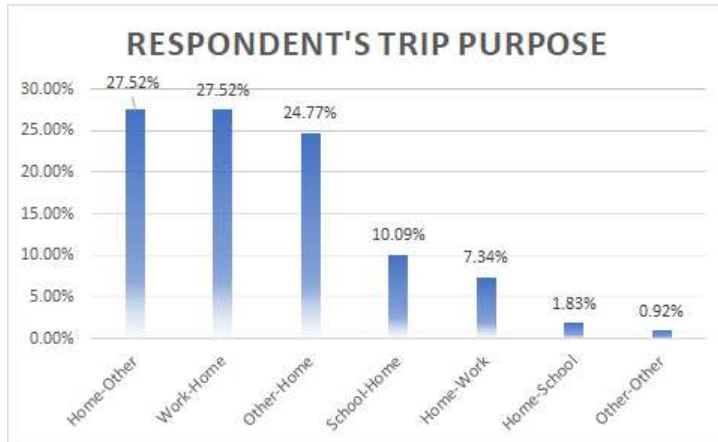
Respondent's Trip Purpose	Percentage
Home-Other	27.52%
Work-Home	27.52%
Other-Home	24.77%
School-Home	10.09%
Home-Work	7.34%
Home-School	1.83%
Other-Other	0.92%
Grand Total	**100.00%**

NUMBER OF TRANSFERS USED

Error! Reference source not found.A-6 Series shows the total number of transfers used in the one-way trip by County Connection passengers, which includes any transfer taken even if it is not an in-system transfer (i.e. BART). Most County Connection passengers (57.80%) used zero additional transfers to make their current trip, compared to, forty-one percent (41.28%) of County Connection passengers that used one additional transfers during their trip.

Table A- 6: Number of Transfers Used in the One-Way Trip (Weekend)

Total Number of Transfers	Percentage
(0) None	57.80%
(1) One	41.28%
(2) Two	0.92%
(3+) Three or more	0.00%
Grand Total	**100.00%**

WEEKEND PASS/PAYMENT CHARACTERISTICS

WHAT FARE CATEGORY DID YOU PAY

The **Error! Reference source not found.**A-7 Series illustrates the fare category used by County Connection passengers. The large majority of County Connection passengers uses the "Adult" fare category for riding (78.90%), compared to the next highest, "Free" (18.35%).

Table A- 7: Fare Category Type (Weekend)
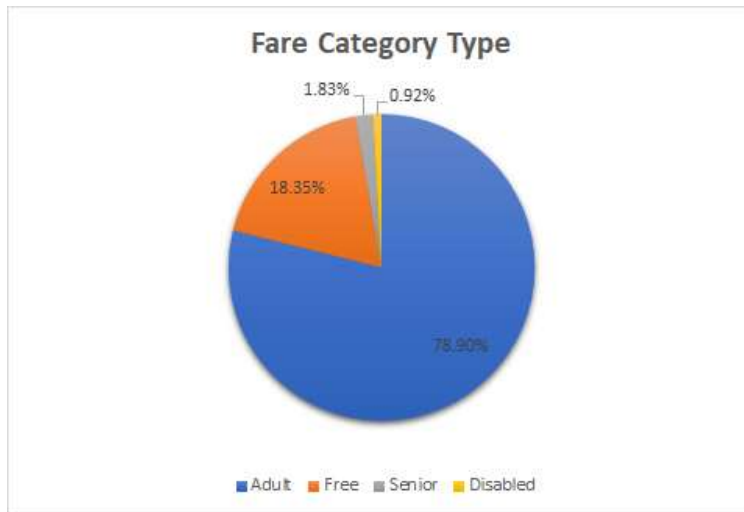
Fare Category Type	Percentage
Adult	78.90%
Free	18.35%
Senior	1.83%
Disabled	0.92%
Grand Total	**100.00%**

HOW DID YOU PAY FOR THIS ONE-WAY TRIP

The **Error! Reference source not found.**A-8 Series shows the fare payment used by County Connection passengers. As shown in these visuals, "By Clipper" was the most widely used fare payment type as indicated by passengers for County Connection (62.92%), compared to the next highest, "By Cash or Paper" (37.08%).

*Table A- 8: Fare Payment Type (Weekend)*

Fare Payment Type	Percentage
By Clipper	62.92%
By Cash or Paper	37.08%
Other	0.00%
Grand Total	**100.00%**

SERVICE CHANGE

The Table A-9 series shows how the 2019 service change affected passengers' experience using County Connection Transit. Based on respondent's responses, eighteen percent of respondents (18.35%) saw either a slight or significant improvement to County Connection services. Thirty-eight percent (37.61%) saw no change in County Connection services.

Table A- 9: Service Change (Weekend)
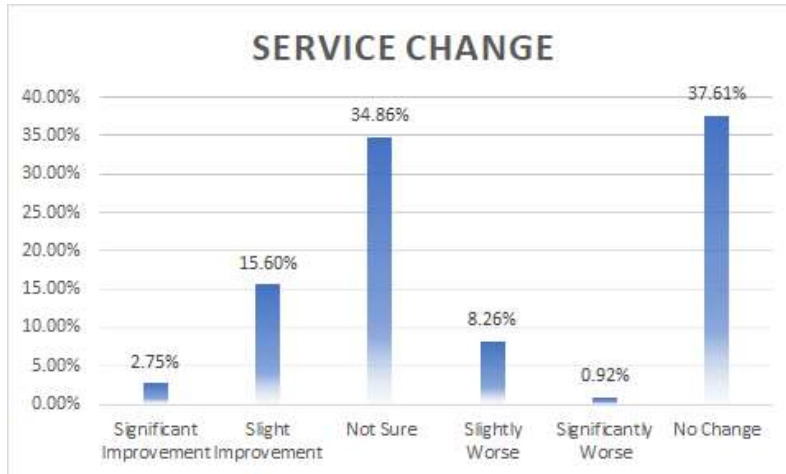
Service Change	Percentage
Significant Improvement	2.75%
Slight Improvement	15.60%
Not Sure	34.86%
Slightly Worse	8.26%
Significantly Worse	0.92%
No Change	37.61%
Grand Total	**100.00%**

HOW RESPONDENT USUALLY GETS INFORMATION

The Table A-10 series shows how County Connection passengers typically get bus schedule information. The majority of County Connection passengers get schedule information using the County Connection Website at sixty-one percent (61.47%). The next highest method passengers use to get bus schedule information is through a printed schedule (37.61%). The least used method County Connection passengers use to get schedule information is through Social Media.

Table A- 10: Schedule Information (Weekend)
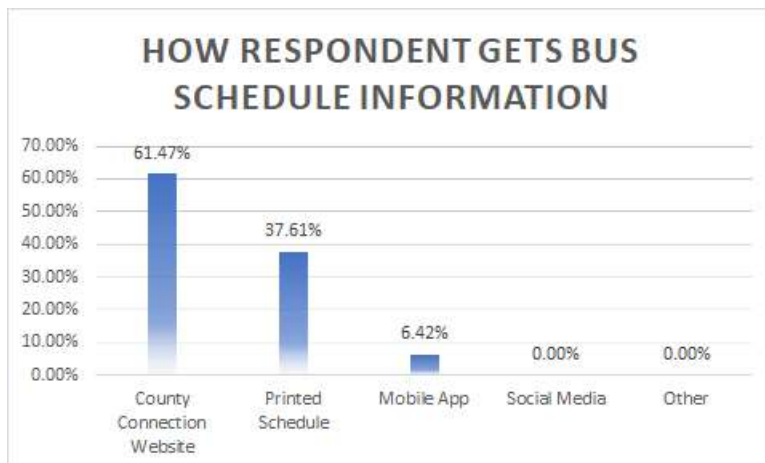
How Respondent Gets Bus Schedule Information	Percentage
County Connection Website	61.47%
Printed Schedule	37.61%
Mobile App	6.42%
Social Media	0.00%
Other	0.00%

WEEKEND HOUSEHOLD DEMOGRAPHICS

HOW MANY WORKING VEHICLES (AUTO OR MOTORCYCLES) ARE AVAILABLE TO YOUR HOUSEHOLD

The **Error! Reference source not found.**A-11 Series show the number of household vehicles for County Connection passengers' household.   Fifteen percent (14.68%) of County Connection passengers indicated they are without a working vehicle in their household, compared to sixty-two percent (62.39%) passengers with one working vehicle in their household, and twenty-two percent (22.02%) with two working vehicles in their household.

Table A- 11: Vehicle Availability (Weekend)
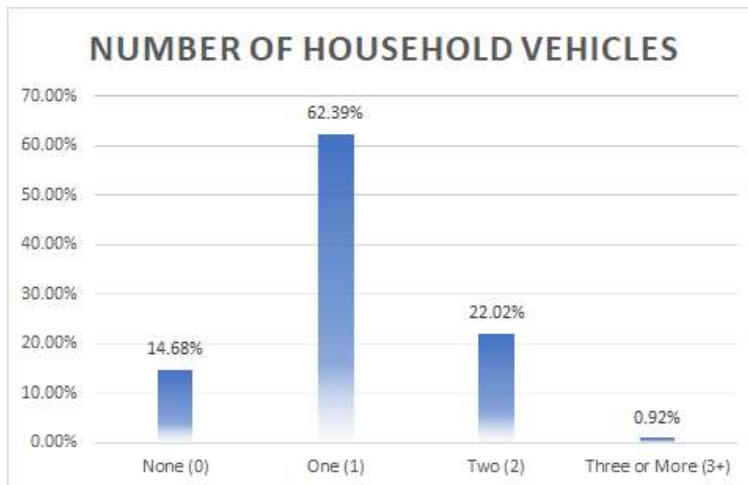
Number of Houseold Vehicles	Percentage
None (0)	14.68%
One (1)	62.39%
Two (2)	22.02%
Three or More (3+)	0.92%
Grand Total	**100.00%**

INCLUDING YOU, HOW MANY PEOPLE LIVE IN YOUR HOUSEHOLD

The total number of household members for County Connection passengers' household is shown in the **Error! Reference source not found.**A-12 Series. Eleven percent (11.01%) of County Connection passengers are in a one or two-member household, compared to over half (66.97%) of County Connection passengers that are in a four or more-person household.

Table A- 12: Total Number of Household Members (Weekend)
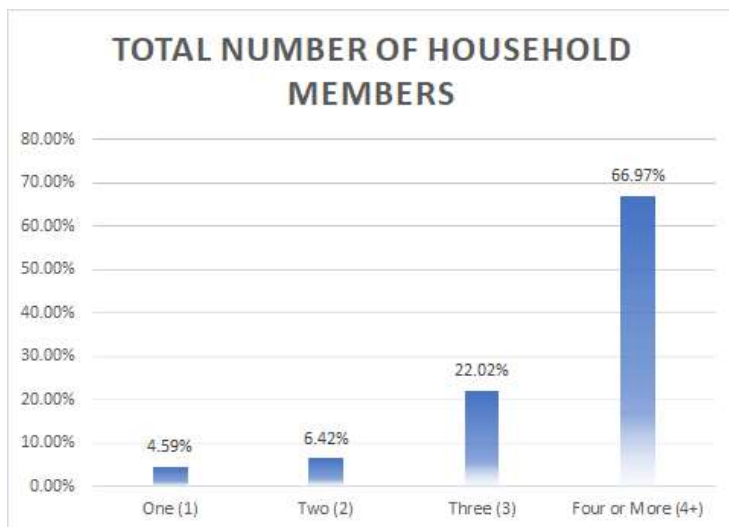
Total Number of Household Members	Percentage
One (1)	4.59%
Two (2)	6.42%
Three (3)	22.02%
Four or More (4+)	66.97%
Grand Total	**100.00%**

INCLUDING YOU, HOW MANY ADULTS (AGE 16 AND OLDER) THAT ARE EMPLOYED FULL OR PART TIME LIVE IN YOUR HOUSEHOLD

The **Error! Reference source not found.**A-13 Series shows the number of employed household members for County Connection passengers' household. The top employed household size category for County Connection passengers is three employed members in the household (46.79%), compared to thirty-two percent (32.11%) of County Connection passengers with two employed members in their household, and six percent (6.42%) of County Connection passengers with only one employed person in their household.

Table A- 13: Total Number of Employed Household Members (Weekend)
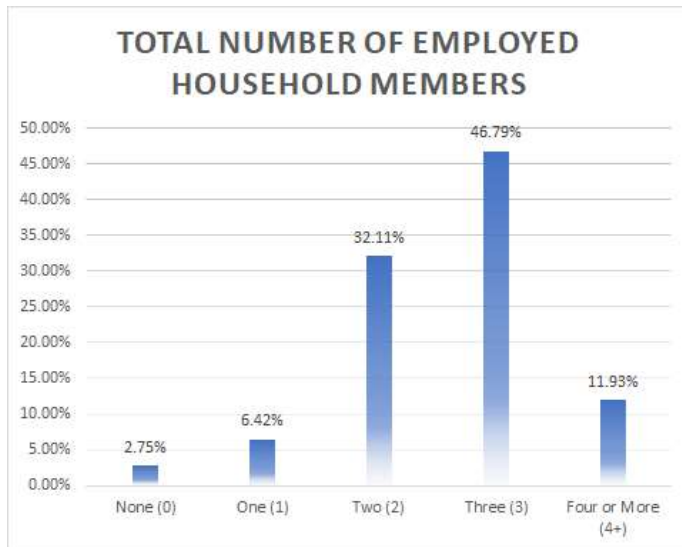
Total Number of Employed Household Members	Percentage
None (0)	2.75%
One (1)	6.42%
Two (2)	32.11%
Three (3)	46.79%
Four or More (4+)	11.93%
Grand Total	100.00%

WHICH OF THE FOLLOWING BEST DESCRIBES YOUR TOTAL ANNUAL HOUSEHOLD INCOME IN 2017 BEFORE TAXES

The **Error! Reference source not found.**A-14 Series shows the Total Annual Household Income for County Connection passengers' household. Just over one quarter (30.27%) of County Connection passengers indicated their household income to be below "$25,000", compared to three percent (2.75%) of County Connection passengers indicating their household income to be "$75,000" or greater.

Table A- 14: Total Household Income (Weekend)
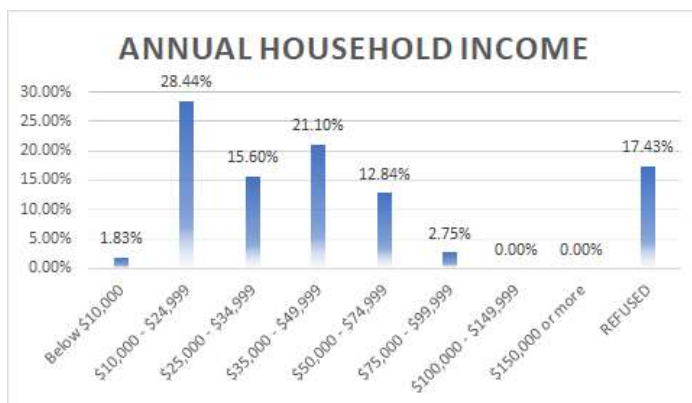
Annual Household Income	Percentage
Below $10,000	1.83%
$10,000 - $24,999	28.44%
$25,000 - $34,999	15.60%
$35,000 - $49,999	21.10%
$50,000 - $74,999	12.84%
$75,000 - $99,999	2.75%
$100,000 - $149,999	0.00%
$150,000 or more	0.00%
REFUSED	17.43%
Grand Total	100.00%

WEEKEND RIDER DEMOGRAPHICS

EMPLOYMENT STATUS

The Table A-15 Series shows the employment status of County Connection passengers. Three quarters (76.15%) of County Connection passengers indicated that they were employed while twenty-four percent (23.85%) of passengers indicated they were not employed.

Table A- 15: Employment Status (Weekend)

Employment Status	Percentage
Employed	76.15%
Not Employed	23.85%
Grand Total	**100.00%**

STUDENT STATUS

The **Error! Reference source not found.**A-16 Series shows the student status of County Connection passengers. Most County Connection passengers (76.15%) indicated that they were not a student, compared to twenty-four percent (23.85%) who indicated they were either a part- or full-time College/University student. No passengers surveyed on the weekend indicated they were a K-12 student.

Table A- 16: Student Status (Weekend)
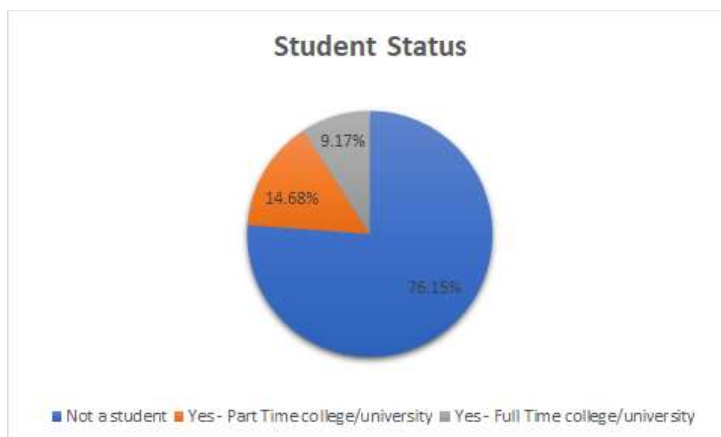
Student Status	Percentage
Not a student	76.15%
Yes - Part Time college/university	14.68%
Yes - Full Time college/university	9.17%
Grand Total	**100.00%**

AGE OF TRANSIT RIDER

The **Error! Reference source not found.**A-17 Series shows the age of County Connection Passengers. The majority of County Connection passengers were between the ages of 18 – 24 (38.53%), with the next highest age group of County Connection passengers being between the ages of 25 – 34 (36.70%).

Table A- 17: Age of Transit Rider (Weekend)
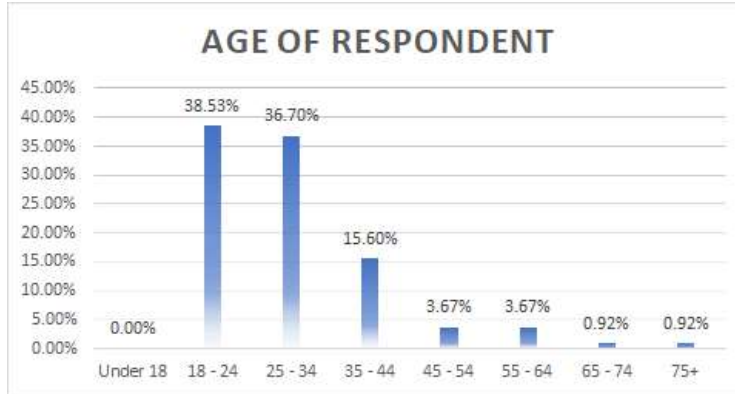
Age of Respondent	Percentage
Under 18	0.00%
18 - 24	38.53%
25 - 34	36.70%
35 - 44	15.60%
45 - 54	3.67%
55 - 64	3.67%
65 - 74	0.92%
75+	0.92%
Grand Total	**100.00%**

WHAT IS YOUR GENDER

The gender of County Connection Passengers is presented in the **Error! Reference source not found.**A-18 Series. Over half of County Connection Passengers (56.88%) indicated they were female, compared to (43.12%) who indicated they were male.

Table A- 18: Gender of Transit Rider (Weekend)
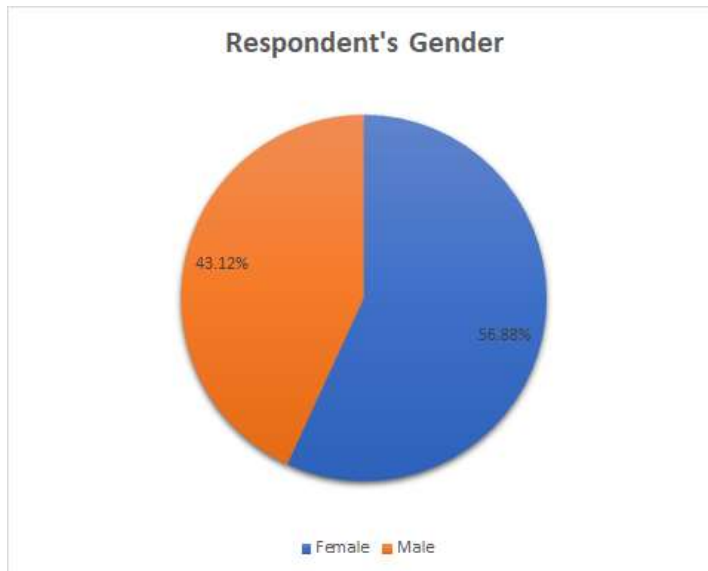
Respondent's Gender	Percentage
Female	56.88%
Male	43.12%
Grand Total	**100.00%**

DO YOU SPEAK A LANGUAGE OTHER THAN ENGLISH AT HOME

The language spoken at the home of County Connection passengers is displayed in the **Error! Reference source not found.**A-19 & A-20 Series. Just under one quarter (24.77%) of County Connection passengers indicated they spoke a language other than English at home. Of those County Connection passengers, nearly ninety percent (88.89%) indicated they speak English "Well" or "Very Well" as shown the second set of charts in the **Error! Reference source not found.**A-19 Series.

Table A- 19: Transit Passengers That Speak Another Language Besides English at Home (Weekend)
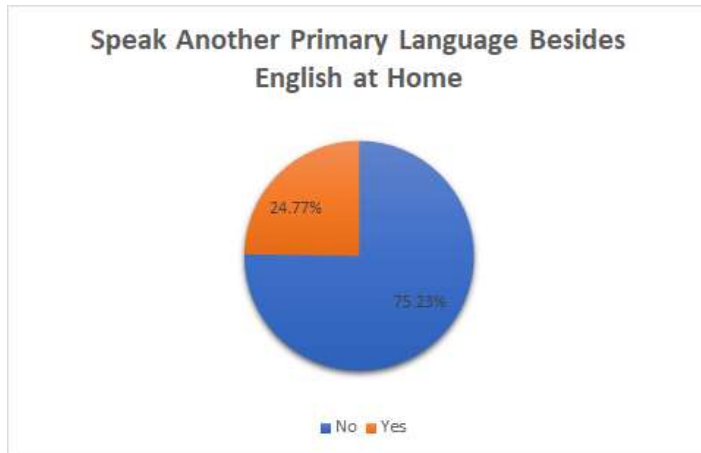
Speak Another Primary Language Besides English at Home	Percentage
No	75.23%
Yes	24.77%
Grand Total	**100.00%**

Table A- 20: IF YES: How well do you speak English? (Weekend)
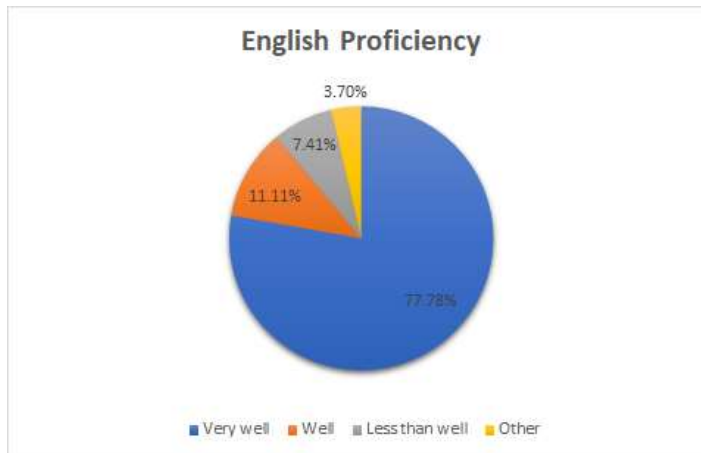
English Proficiency	Percentage
Very well	77.78%
Well	11.11%
Less than well	7.41%
Other	3.70%
Grand Total	**100.00%**

RACE/ETHNICITY OF TRANSIT RIDER

The **Error! Reference source not found.**A-21 Series shows the race/ethnicity of County Connection Passengers. County Connection Passengers were able to select from Latino / Hispanic, Black / African American, Asian, Native Hawaiian / Pacific Islander, White, or Other. Totals add up to more than 100% because respondents were encouraged to check all answers that applied. Forty-seven percent (46.79%) of County Connection Passengers indicated they were "White", compared to next highest (27.52%) of County Connection Passengers who reported "Black / African American".

Table A- 21: Race/Ethnicity of County Connection Passengers (Mark All That Apply) (Weekend)
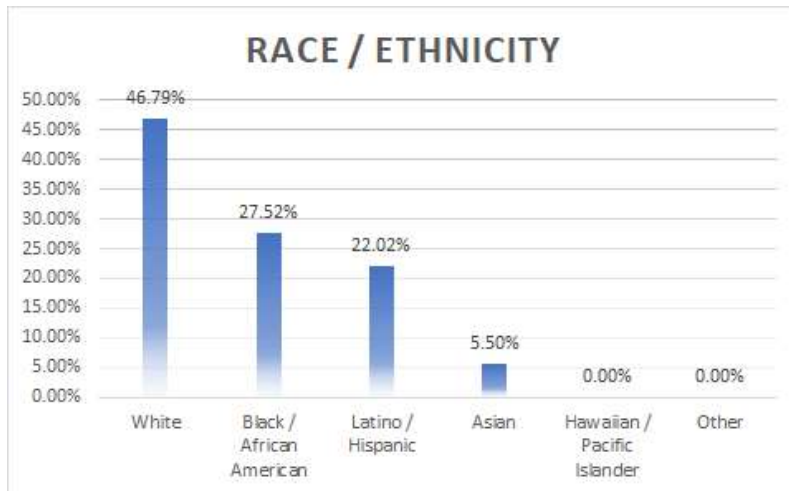
Race / Ethnicity	Percentage
White	46.79%
Black / African American	27.52%
Latino / Hispanic	22.02%
Asian	5.50%
Hawaiian / Pacific Islander	0.00%
Other	0.00%
Grand Total	**100.00%**

WEEKEND SAMPLING PLAN & COMPLETED SURVEYS

Below is the County Connection Weekend Sampling Plan and total number of completed surveys.

| CCCTA FALL 2019 OB SURVEY WEEKEND COMPLETION REPORT - UPDATED PRE-START 09.30.2019																					
			RIDERSHIP		CCCTA SURVEY GOALS									SURVEYS COMPLETED							
RTE	DIR	TOWARD - END OF LINE	APC Dir Tot	APC RTE Tot	Early 300A-500A	AM 501A-600A	AM Peak 601A-1000A	Mid 1001A-300P	PM Peak 301P-700P	Eve 701P-1000P	Late PM 1001P-100A	DIR GOAL	RTE GOAL	Early 300A-500A	AM 501A-600A	AM Peak 601A-1000A	Mid 1001A-300P	PM Peak 301P-700P	Eve 701P-1000P	Late PM 1001P-100A	DIR COMP	RTE COMP
4	Loop	Broadway Plaza Loop	964	964	0	0	2	0	11	7	0	20	20	0	0	2	0	18	0	0	20	20
6	East	to Layfayett BART	89	181	0	0	0	0	1	1	0	2	4	0	0	0	0	2	0	0	2	5
6	West	to Orinda BART/Community Center	92		0	0	1	0	1	1	0	2		0	0	1	0	2	0	0	3	
310	East	to Clayton Library	455	816	0	0	1	1	4	3	0	9	17	0	0	1	1	7	4	0	13	23
310	West	to Concord BART	361		0	0	2	1	3	2	0	7		0	0	2	1	4	3	0	10	
311	East	to Concord BART	233	435	0	0	1	0	3	1	0	5	9	0	0	1	0	3	0	0	4	10
311	West	to Walnut Creek BART/John Muir Med Ct	202		0	0	1	0	2	2	0	4		0	0	1	0	2	3	0	6	
314	East	to Concord BART	528	1039	0	0	2	0	5	4	0	11	21	0	0	2	0	5	4	0	11	20
314	West	to Diablo Valley College	511		0	0	2	0	6	3	0	10		0	0	2	0	5	2	0	9	
315	East	to Clayton Rd/Bel Air Drive	75	134	0	0	0	0	1	0	0	2	3	0	0	0	0	1	0	0	1	2
315	West	to Concord BART	59		0	0	0	0	1	0	0	1		0	0	0	0	1	0	0	1	
316	North	to Alhambra Ave/Walter Way	308	582	0	0	1	0	2	2	0	6	12	0	0	1	0	2	3	0	6	15
316	South	to Pleasant Hill BART	273		0	0	2	0	3	1	0	6		0	0	2	0	3	4	0	9	
320	East	to Concord BART	180	359	0	0	0	0	2	2	0	4	7	1	0	0	0	2	0	0	3	4
320	West	to Diablo Valley College	179		0	0	0	0	2	1	0	4		0	0	0	0	1	0	0	1	
321	North	to Walnut Creek BART	176	397	0	0	1	1	1	1	0	4	8	0	0	1	1	1	2	0	5	10
321	South	to San Ramon Transit Center	220		0	0	2	0	1	1	0	4		0	0	2	0	1	2	0	5	
				4907	0	0	16	3	49	32	0		100	1	0	18	3	60	27	0		109

County Connection

APPENDIX B
Online Survey Instrument

COUNTY CONNECT MTC CA OD 2019

The following surveys are available:

COUNTY CONNECT MTC CA OD 2019

English ▾

Please contact Administrator (support@etcinstitute.com) for further assistance.

COUNTY CONNECT MTC CA OD 2019

© ETC Institute 2019
7-4114
GPS

Q. Enter Interviewer's Initials

Please enter exactly 3 characters.

[   ] Start TEST Survey

Exit & Clear   Next >
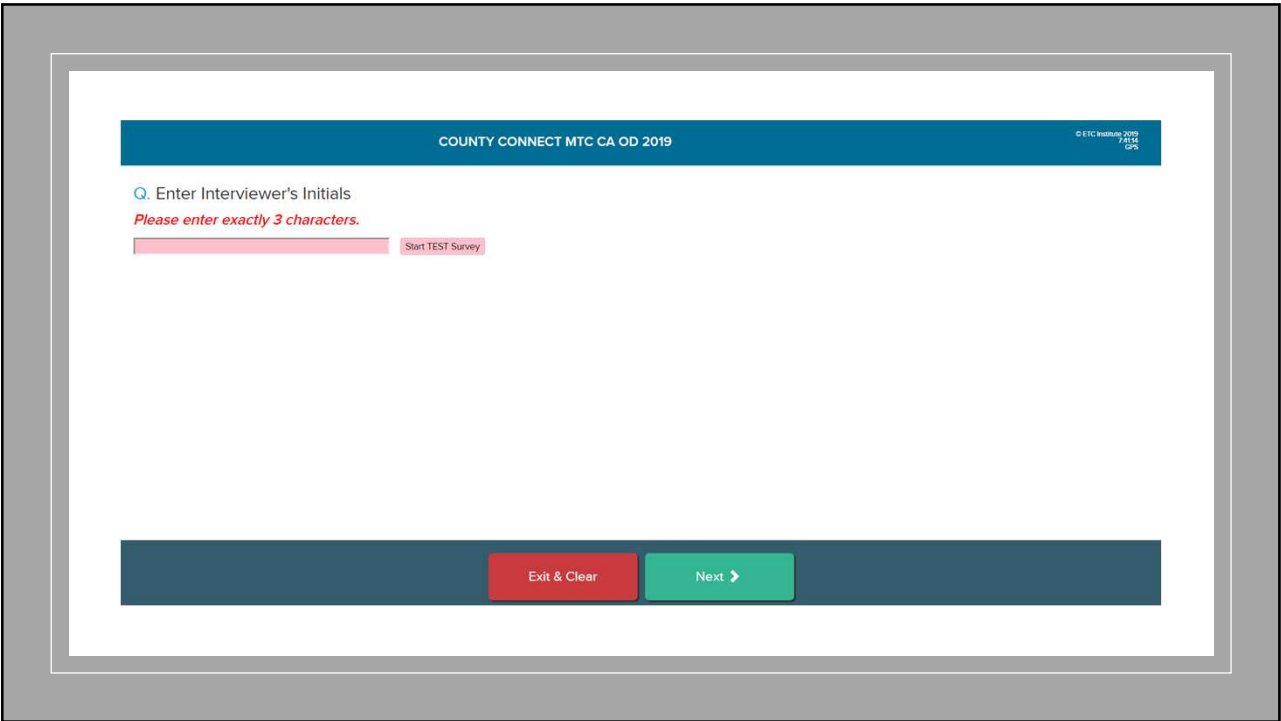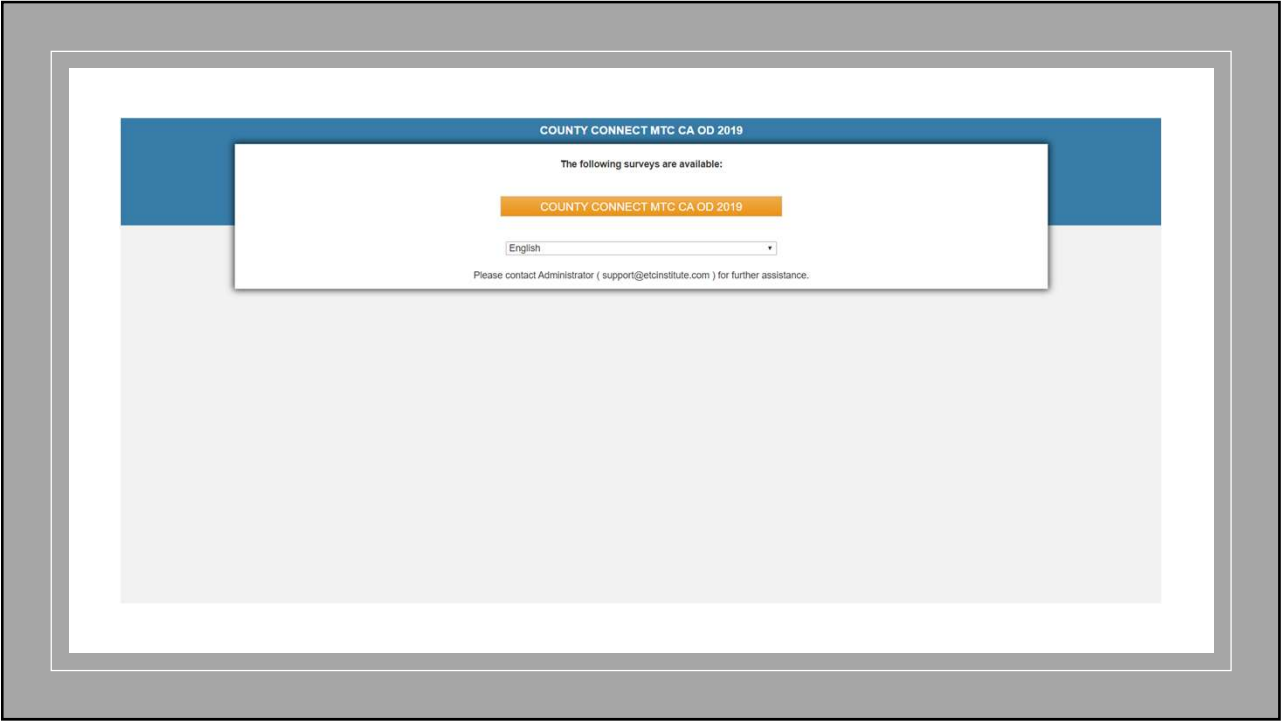
COUNTY CONNECT MTC CA OD 2019

© ETC Institute 2019
7:42:05
GPS

Q. Select the ROUTE and [DIRECTION] you are working:

1 - Rossmoor/Shadelands Northbound TO Mitchell Park 'n' Ride	35 - Dublin/Pleasanton BART/San Ramon Southbound TO Dublin/Pleasanton BART
1 - Rossmoor/Shadelands Southbound TO Rossmoor Shopping Center	91X - Concord Commuter Express Eastbound TO Concord BART
4 - Walnut Creek BART/Broadway Plaza	92X - Pleasanton ACE/Mitchell Dr Northbound TO Mitchell Park And Ride
5 - Walnut Creek BART/Creekside Dr	
6 - Lafayette BART/Orinda BART Eastbound TO Lafayette BART	92X - Pleasanton ACE/Mitchell Dr Southbound TO Pleasanton ACE Train
6 - Lafayette BART/Orinda BART Westbound TO Orinda BART/Community Center	93X - Walnut Creek BART/Antioch BART Eastbound TO Antioch BART
7 - Pleasant Hill BART/Shadelands	93X - Walnut Creek BART/Antioch BART Westbound TO Walnut Creek BART

Exit & Clear | ‹ Previous | Next ›

THIS ROUTE: 5 - Walnut Creek BART/Creekside Dr

© ETC Institute 2019
7:42:23
GPS

Q. Please choose a number between 1 and 6:

(1) (2) (3) (4) (5) (6)

3

⚠ THIS ROUTE: 5 - WALNUT CREEK BART/CREEKSIDE DR

Exit & Clear | ‹ Previous | Next ›

Screen 1

© ETC Institute 2019
7:42:41
GPS: OFF ●

Q.
Hello. My name is 999

We're doing a quick survey on transit services in the Bay Area. Do you mind if I ask you some questions about the trip you are making?

Survey data helps transit providers plan and provide bus service fairly for all customers, without regard to race, color, national origin, income, and language spoken or ability to speak English.

- **Yes I can participate in the survey (have 5 min+)**
- Yes (but no time for full survey)
- No (refused)
- Do not speak the interviewer's language

⚠ THIS ROUTE: 5 - WALNUT CREEK BART/CREEKSIDE DR

[Exit & Clear]   [◀ Previous]   [Next ▶]

Screen 2

THIS ROUTE: 5 - Walnut Creek BART/Creekside Dr

© ETC Institute 2019
7:42:58
GPS: OFF ●

Q. Are you a visitor to the Bay Area?

| Resident | Visitor |

[Exit & Clear]   [Save & Exit]   [◀ Previous]   [Next ▶]

47
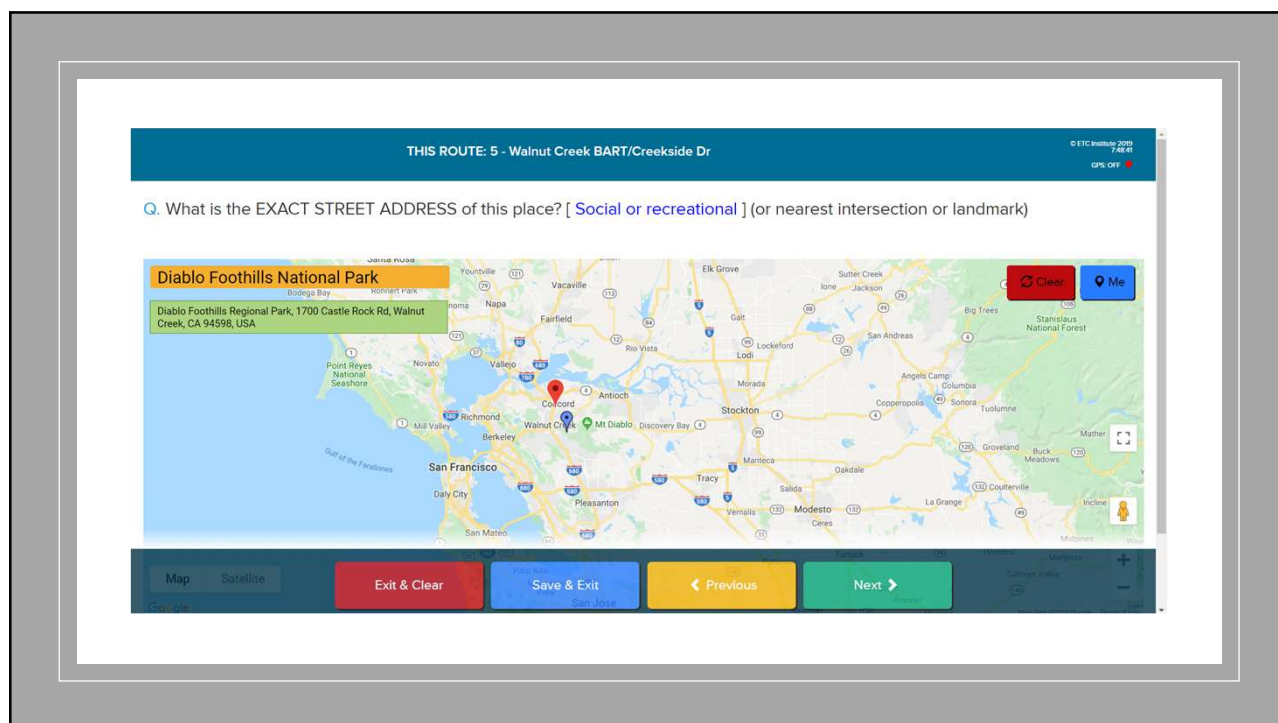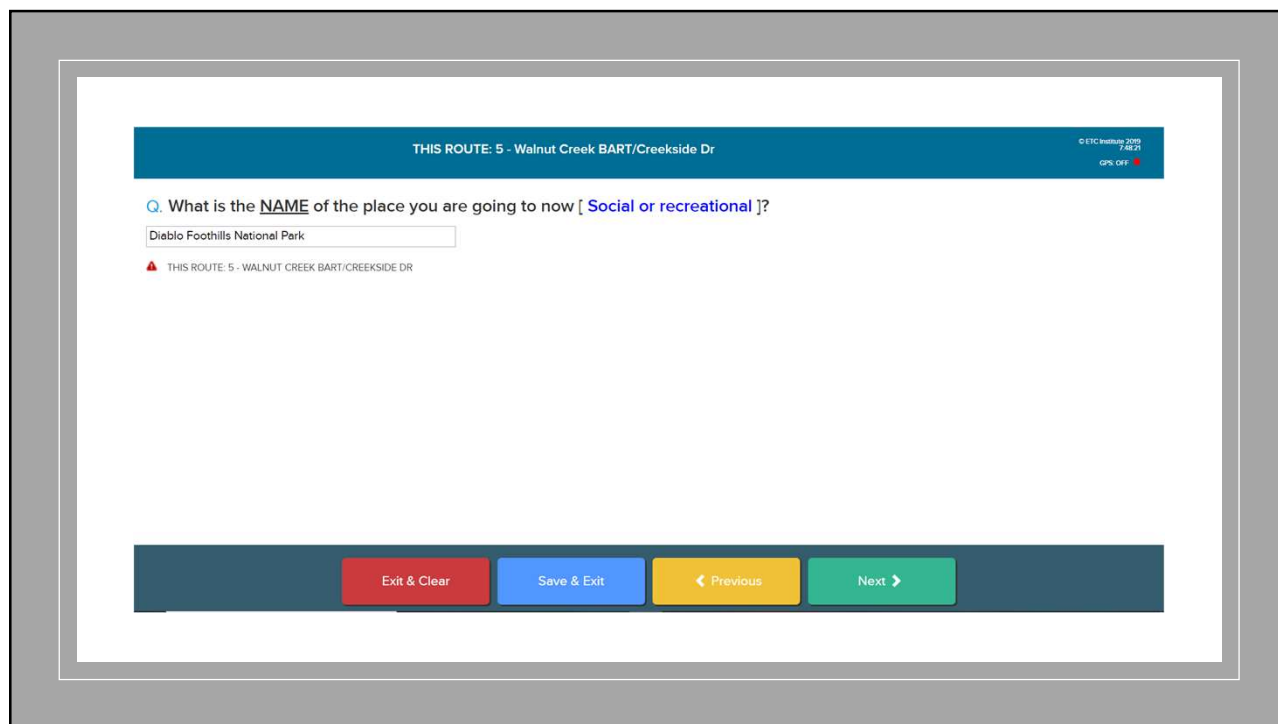
© ETC Institute 2019
7:49:03
GPS: OFF

Q. How many buses / trains will you ride AFTER you get off [5 - Walnut Creek BART/Creekside Dr] on your way to [Social or recreational]?

| (0) None | (1) One | (2) Two | (3) Three | (4+) Four or more |

Exit & Clear | Save & Exit | ❮ Previous | Next ❯

© ETC Institute 2019
7:50:34
GPS: OFF

Q. How will you GET TO your destination [Social or recreational] after you get off [5 - Walnut Creek BART/Creekside Dr] ?

Walk all the way	Be picked up by someone - not a service
Personal Bike	Drive alone
Bike Share	Drive or ride with others
Be picked up using Uber, Lyft, or similar service.	Other, please specify:
Taxi	

⚠ THIS ROUTE: 5 - WALNUT CREEK BART/CREEKSIDE DR

Exit & Clear | Save & Exit | ❮ Previous | Next ❯

48

Additional question(s) on this page include: "Will you (or did you) make this same trip using the same transit routes in exactly the opposite direction today?"

Slide 1:

Additional question(s) on this page include: "Q.CLIPPER *Choose one of the following answers"*

THIS ROUTE: 5 - Walnut Creek BART/Creekside Dr

753:45
GPS: OFF ■

Q. What fare category did you pay?

Adult		Free
Senior		Other:
Disabled		

Q. How did you pay for this one-way trip?
Choose one of the following answers

| By Clipper | By Cash or Paper | Other: |

Q. CLIPPER
Choose one of the following answers

Exit & Clear | Save & Exit | Save & Resume | ‹ Previous | Next ›

Slide 2:

THIS ROUTE: 5 - Walnut Creek BART/Creekside Dr

© ETC Institute 2019
754:35
GPS: OFF ■

Q. How did the March 2019 service changes affect your experience using County Connection?

| Significant Improvement | No Change | Significantly Worse |
| Slight Improvement | Slightly Worse | Not Sure |

Q. How do you typically get information and updates about your bus (schedules, arrival times)?

Printed schedule	County Connection website
Mobile App	Other:
Social Media	

Exit & Clear | Save & Exit | Save & Resume | ‹ Previous | Next ›

Additional question(s) on this page include: the name of the school attended

## Slide 1

THIS ROUTE: 5 - Walnut Creek BART/Creekside Dr

© ETC Institute 2019
7:57:41
GPS: OFF

Q. What year were you born?

1990

Q. Are you:

Latino / Hispanic	Native Hawaiian / Pacific Islander
Black / African American	White
Asian	Other
American Indian / Alaska Native	

Exit & Clear | Save & Exit | Save & Resume | ❮ Previous | Next ❯

Slide 2

THIS ROUTE: 5 - Walnut Creek BART/Creekside Dr

© ETC Institute 2019
7:57:58
GPS: OFF

Q. Which of the following BEST describes your TOTAL ANNUAL HOUSEHOLD INCOME in 2018 before taxes?

Below $10,000	$75,000 - $99,999
$10,000 - $24,999	$100,000 - $149,999
$25,000 - $34,999	$150,000 or more
$35,000 - $49,999	---
$50,000 - $74,999	

Exit & Clear | Save & Exit | Save & Resume | ❮ Previous | Next ❯

Additional question(s) on this page include: "In which language was this survey conducted?"

THIS ROUTE: 5 - Walnut Creek BART/Creekside Dr

7:50:17
GPS OFF

Q. **ADDITIONAL COMMENTS**

Q. Observed Gender:

Choose one of the following answers

Male

Female

Other

Other:

Exit & Clear   Save & Exit   Save & Resume   ❮ Previous   Submit

Q. In which language was this survey conducted?

APPENDIX C
Refusals & Surveys Completed in Language Other than English

SURVEY REFUSALS

The following tables represent the percentages of refusals by overall survey responses and various demographic data that is captured if a passenger refuses to complete the survey.

IF RESPONDENT HAS AT LEAST 5 MINUTES TO COMPLETE SURVEY

Error! Reference source not found.C-1 Series below shows the breakdown of respondents that indicated they did have at least 5 minutes to complete the survey (99.67%), the respondents that indicated they would like to refuse the survey (0.22%), and the respondents that would like to take the survey but didn't have enough time to complete it with the interviewer in person. As can be seen, nearly one hundred percent of respondents were able to complete the survey with the interviewer on the bus.

Table C- 1: If Respondent Has At Least 5 Minutes to Complete Survey

If Respondent Has at Least 5 Minutes to Complete Survey	Percentage
Yes I can participate in the survey (have 5 min+)	99.64%
No (refused)	0.22%
Yes (but no time for full survey)	0.14%
Grand Total	**100.00%**

OBSERVED AGE IF RESPONDENT REFUSED

Of those respondents that refused to take the survey, Table C-2 Series shows the breakdown of the observed ages of those respondents that refused. It was even across the board for all observed ages which is indicated by the low refusal rate from Table C-1.

Table C- 2: Observed Refusal Age

Observed Age if Refused	Percentage
25-34	33.33%
45-54	33.33%
65+	33.33%
Grand Total	**100.00%**

OBSERVED GENDER IF RESPONDENT REFUSED

Of those respondents that refused to take the survey, Table C-3 Series shows the breakdown of the observed gender of those respondents that refused. The majority of those passengers that refused the survey were male (66.67%) compared to female (33.33%).

Table C- 3: Observed Refusal Gender

Observed Gender if Refused	Percentage
Male	66.67%
Female	33.33%
Grand Total	**100.00%**

2019 County Connection On-Board Transit Survey

SURVEYS COMPLETED IN A LANGUAGE OTHER THAN ENGLISH

LANGUAGE SURVEY WAS COMPLETED IN

Error! Reference source not found.C-4 Series below shows the language the survey was completed in. The majority of surveys were completed in "ENGLISH" (99.86%), followed by less than one percent in "CANTONESE", and less than one percent in another language. The "Other" language chosen was "Mixed".

Table C- 4: Language Survey was Completed In

Language Survey was Completed In	Percentage
ENGLISH	99.86%
CANTONESE	0.07%
Other	0.07%
Grand Total	**100.00%**