2017 KC STREETCAR AND MAIN STREET MAX ON-BOARD SURVEY METHODOLOGY REPORT

NOVEMBER 2017

PREPARED FOR:
KANSAS CITY STREETCAR AUTHORITY
KANSAS CITY AREA TRANSPORTATION AUTHORITY

SUBMITTED BY:
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TABLE OF CONTENTS

SECTION 1. SURVEY OVERVIEW

The 2017 KC Streetcar and Main Street MAX On-board Survey interviewed passengers on-board the Kansas City Streetcar and Main Street Max bus route in Kansas City, MO. The survey fieldwork occurred in Late August-October 2017. The survey consisted of the two major elements listed below:

- The On-to-Off (O2O) Survey identifies boarding to alighting paths on a given trip.
- The Origin-Destination (OD) Survey is detailed interview of riders conducted on-board the two routes. This set of data is expanded to the larger ridership population using automated passenger counter (APC) data provided by the KC Streetcar and KCATA and the On-to-Off (O2O) Counts data collected.

This report will provide an overview and detailed description of the 2017 KC Streetcar and Main Street Max On-board Survey. The report includes discussion on the Study Purpose/Background, the Survey Design, Sampling, and Administration Methodology. The report will also cover the quality control process before, during, and while processing the results of the survey.

ETC Institute is a nation-wide leader in performing the OD Surveys for the Federal Transit Administration (FTA) and has worked directly with FTA modeling and planning staff to establish the guidelines for OD methodologies. The methodology used for this survey is similar to those employed by ETC Institute in more than 30 intercept interview based collections conducted by ETC Institute since 2009. The procedures used for this survey were developed with extensive input from FTA following a national review of best practices in on-board survey research methods.

SURVEY DESIGN AND DEVELOPMENT PROCESS

The survey was developed through input from the client team, consultant team, and FTA after a review of existing data and data requirements for the Kansas City Streetcar Main Street Extension Study. The primary purpose of the survey was to better understand travel patterns, trip purpose, access modes, and general demographics of transit passengers in the Main Street corridor in order to assist with ridership forecasting and potential bus route modifications. The survey results will also be used as an evaluation measure of the first phase of the KC Streetcar that opened in 2016.

SURVEY INSTRUMENT

The OD Survey instrument and O2O process was designed to be administered in face-to-face interviews using tablets. It was developed in conjunction with FTA, the client team, and consultant team and is included in Appendix A.

SECTION 2. SAMPLING PROCEDURES

This chapter describes the procedures used for the sampling of transit riders. Three major areas are addressed by these procedures: (1) sampling goals, (2) methods for selecting survey participants, and (3) other techniques used to manage the sampling process.

SURVEY SAMPLING PLAN

The survey was tablet-based and focused on understanding the travel patterns, usage, and key characteristics of current riders. The OD sampling plan identified the number of surveys to be completed for each route by direction and time of day level. ETC Institute developed a sampling plan that would ensure the completion of the OD Survey with approximately 810 riders, or 7.5 percent, of the corridor's weekday riders. ETC Institute also developed a weekend sampling plan that would ensure the completion of the OD Survey with approximately 7.5 percent of ridership for each weekend service day (683 Saturday surveys and 577 Sunday surveys). Prior to the OD survey, O2O Counts were conducted base on a sampling plan designed to obtain completed surveys from a minimum of 20 percent of the daily weekday ridership on the KC Streetcar and Main Street MAX based on route, direction, and time period. The five time periods used for the sampling plan correspond to time periods that are used for regional travel demand forecasting.

Figure 1: Survey Ridership and Sampling Plan (O2O)

	AVERAGE WEEKDAY RIDERSHIP PER CLIENT - CLIENT UPDATES RIDERSHIP AND TIME PERIODS						O2O Goals (20%)					
LINE_DIRECTION	Early AM 3 AM - 6 AM	AM Peak 6 AM - 9 AM	Midday 9 AM - 3 PM	PM Peak 3 PM - 6 PM	Evening 6 PM - 2 AM	Directional Totals	Early AM 3 AM - 6 AM	AM Peak 6 AM - 9 AM	Midday 9 AM - 3 PM	PM Peak 3 PM - 6 PM	Evening 6 PM - 2 AM	Directional Totals
KC Streetcar [NB]	7	263	2028	563	585	3446	1	53	406	113	117	689
KC Streetcar [SB]	19	271	1384	515	621	2810	4	54	277	103	124	562
Main Street MAX [NB]	92	361	783	568	476	2187	18	72	157	114	95	456
Main Street MAX [SB]	78	404	808	588	380	2180	16	81	162	118	76	452

Figure 2: Survey Ridership and Sampling Plan (Weekday OD)

	AVERAGE WEEKDAY RIDERSHIP PER CLIENT - CLIENT UPDATES RIDERSHIP AND TIME PERIODS						Main Survey Goals (7.5%) Weekday Surveys					
LINE_DIRECTION	Early AM 3 AM - 6 AM	AM Peak 6 AM - 9 AM	Midday 9 AM - 3 PM	PM Peak 3 PM - 6 PM	Evening 6 PM - 2 AM	Directional Totals	Early AM 3 AM - 6 AM	AM Peak 6 AM - 9 AM	Midday 9 AM - 3 PM	PM Peak 3 PM - 6 PM	Evening 6 PM - 2 AM	Directional Totals
KC Streetcar [NB]	7	263	2028	563	585	3446	1	20	152	42	44	258
KC Streetcar [SB]	19	271	1384	515	621	2810	1	20	104	39	47	211
Main Street MAX [NB]	92	361	783	568	476	2187	7	27	59	43	36	171
Main Street MAX [SB]	78	404	808	588	380	2180	6	30	61	44	29	169

Figure 3: Survey Ridership and Sampling Plan (Weekend OD)

		AVERAGE SATURDAY/SUNDAY DAY RIDERSHIP PER CLIENT - CLIENT UPDATES RIDERSHIP AND TIME PERIODS						Main Survey Goals (7.5%) Weekend Surveys				
LINE_DIRECTION	DAY TYPE	AM Peak 5 AM - 9 AM	Midday 9 AM - 3 PM	PM Peak 3 PM - 6 PM	Evening 6 PM - 2 AM	Directional Totals	Route Totals	AM Peak 5 AM - 9 AM	Midday 9 AM - 3 PM	PM Peak 3 PM - 6 PM	Evening 6 PM - 2 AM	Directional Totals
KC Streetcar [NB]	SATURDAY	184	1,768	693	555	3,200	6,256	14	133	52	42	240
KC Streetcar [SB]	SATURDAY	133	1,714	701	508	3,056		10	129	53	38	229
Main Street MAX [NB]	SATURDAY	238	634	323	297	1,492	2,852	18	48	24	22	112
Main Street MAX [SB]	SATURDAY	256	623	290	192	1,360		19	47	22	14	102
LINE_DIRECTION		AM Peak 5 AM - 9 AM	Midday 9 AM - 3 PM	PM Peak 3 PM - 6 PM	Evening 6 PM - 2 AM	Directional Totals	Route Totals	AM Peak 5 AM - 9 AM	Midday 9 AM - 3 PM	PM Peak 3 PM - 6 PM	Evening 6 PM - 2 AM	Directional Totals
KC Streetcar [NB]	SUNDAY	122	1,962	644	266	2,994	5,868	9	147	48	20	225
KC Streetcar [SB]	SUNDAY	66	1,948	578	282	2,874		5	146	43	21	216
Main Street MAX [NB]	SUNDAY	157	350	213	229	950	1,823	12	26	16	17	71
Main Street MAX [SB]	SUNDAY	151	359	190	173	873		11	27	14	13	65

METHODS FOR SELECTING SURVEY PARTICIPANTS

For the survey, a random number generator was used to determine which passengers were asked to participate in the survey after boarding the vehicle. If six people boarded the vehicle, the tablet PC randomly generated a number from one to six. If the number generated was two, the second person who boarded the bus was asked to participate in the survey. If the answer was one, the first person was asked to participate in the survey, and so forth.

OTHER TECHNIQUES USED TO MANAGE THE SAMPLING PROCESS

Other techniques that were used to manage the sampling of bus riders are described below:

- **Daily Reviews of Performance** — ETC Institute's field supervisor reviewed each employee's data regarding the following items 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
- **Management of the Sample by Time of Day** — In addition to managing the total number of surveys that were completed for each route, ETC Institute also managed the number of surveys that were completed during each of the following five time periods: "Early AM" time period (before 6:00am), "AM Peak" time period (6:00-9:00am), "Midday" time period (9:00am -3:00pm), "PM Peak" time period (3:00pm-6:00pm), and "Evening" time period (6:00pm and later).

SECTION 3. SURVEY ADMINISTRATION METHODOLOGY

As interviewing staff are the key ingredient to the success of a project, ETC Institute conducted two major sessions throughout the data collection phases. The first major training was for the O2O counts and the second major training session was for the OD survey collection. There were additional training sessions conducted throughout the data collection process on an as needed basis but with smaller groups.

Training sessions focused on the study purpose and objectives, the survey instruments, scripts on how to respond to passengers' questions, how to use data collection tools, instructions on how to conduct themselves when working with the public, and safety training. The survey staff were instructed to understand that while they are not KCATA employees, they were representing KCATA while on KCATA vehicles or property and they needed to act in a manner that reflected positively.

ON-TO-OFF (O2O) PROCEDURE

The purpose of the O2O was to identify ridership patterns based on an individual's boarding and alighting locations which are used to help develop the sampling plan for the OD survey. This was accomplished by using ETC Institute's custom survey software with a GPS-equipped tablet PC to record the rider's latitude/longitude, time of usage, route used, and direction. Survey staff rode on routes and asked passengers as they boarded the route which stop the passenger was getting off at. Interviewers then selected the stops from a drop-down list from pre-existing list of route's stops for their designated route/direction. Fore the Streetcar, Interviewers were assigned individual sides of each car with two Interviewers per rail car.

PRIOR TO THE MAIN SURVEY ADMINISTRATION

Prior to the initiation of the full collection ETC met with HNTB Corporation to discuss items involved in the full collection:

- Meeting with HNTB Corporation staff to discuss route idiosyncrasies
- Discuss results from preliminary testing
- Provided an internal notice posting describing the collection, the vest, and the badge that the interviewers wear

MAIN SURVEY ADMINISTRATION PROCEDURE

INTERVIEW PROCEDURE

Surveys were collected on all routes shown in the sample plan using the tablets. Interviewers selected people for the survey in accordance with the sampling procedures described in Section 2 of this report.

Once an interviewer had selected a person for the survey, the interviewer:

- Approached the person who was selected and asked him or her to participate in the survey.
- If the person refused, the interviewer ended the survey.
- If the person agreed to participate, the interviewer asked the respondent if he/she had at least five minutes to complete the survey.

- If the person did not have at least five minutes on the bus, the interviewer asked the person to provide his/her name and phone number. A phone interviewer from ETC Institute's call center contacted the respondent and asked him/her to provide the information by phone.
- If the person spoke ONLY Spanish instead of English, the interviewer displayed a screen in either of these languages requesting a name and phone number and a call back was made to these individuals, similar to the "short-trip" riders. The primary ETC staff could speak some Spanish so this wasn't needed either.
- If the person had at least five minutes on the bus, the interviewer began administering the survey to the respondent as a face-to-face interview using a tablet.

SHORT TRIP ROUTE PROCEDURE

"Short trips" were defined as trips when the distance between the boarding and alighting locations was less than one mile. Interviewers were staffed on the route and interviewers were told to conduct the full interview even if the rider said that he/she did not have enough time to complete the survey. The interviewer would then get off the vehicle with the rider and complete the survey after getting off the vehicle. If this passenger didn't want to wait to finish the survey, a phone number was obtained by interviewer and ETC Institute's call center contacted the respondent and asked him/her to provide the information by phone.

LANGUAGE BIAS

The tablet-based methodology, with multilingual staff, and a call back option, improves the responses from non-English speaking respondents as described in the data collection task;

AFTER THE ADMINISTRATION OF THE MAIN SURVEY

Surveys submitted with tablets were reviewed by an ETC Supervisor in real-time using ETC Institute's survey program's on-line database to ensure that the following information had been provided:

- Type of place where the trip began
- Complete address where the trip began
- Mode of access to the transit system
- Boarding location
- Alighting location
- Mode of egress from the transit system
- Complete destination address
- Type of place where the trip ended
- Immediate transfer to and from current route

Once survey records were classified as ***field complete***, meaning all the required information had been collected, the records were forwarded to ETC Institute's SRRT (Survey Records Review Team). SRRT checks survey trip logic by being able to review the Main Survey's Origin-Boarding-Alighting-Destination on a single screen to begin the Quality Control Data Review Process. See Data Review Process in Section 4 for more information about SRRT and the Quality Control Data Review Process.

SECTION 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 team leaders and the Project Manager ensured that the survey was administered properly. Also, the use of the latest geocoding tools such as ETC Institute's Tablet PC survey with integrated real-time geocoding; ETC Institute Elvis editing program; and Caliper® Maptitude GIS Software all contributed to the high quality of geocoding accuracy that was achieved during this study.

The following sub-sections describe the QA/QC processes that were implemented after the data was collected:

PROCESS FOR IDENTIFYING COMPLETE RECORDS

To classify a survey as completed, the record must have contained all elements of the one-way trip for field completion. In addition to the required trip data questions, a survey must be also 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.

COMPLETE TRIP LOGIC PROCESSING CHECKS

ETC then conducted Processing data checks as the data collection occurred and through the immediate monitoring of the collection from the field. The first step in this process involved the application of a series of QA/QC tests. Some of the specific checks that were conducted during the preprocessing phase are listed below and included:

- Distance from the origin to the destination.
- Distance from the boarding to the alighting location.
- Distance from the origin to the boarding location relative to the mode of access and number of transfers.
- Distance from alighting location to the destination relative to the mode of egress and number of transfers.
- Ratio of the access distance to the boarding location relative to distance from the origin to the destination given the mode of access and number of transfers.
- Ratio of the egress distance from the alighting location relative to distance from the origin to the destination given the mode of access and number of transfers.
- Purpose of Trip relative to the person's employment and student status.
- Ensuring that transfers used prior and subsequent to the route surveyed the bus or rail route were possible.
- Ensuring that transfers from a bus or rail route were possible.
- Ensuring the time-of-day the survey was completed was reasonable given the published operating schedule for the route surveyed.

- Ensuring that the respondent did not list the same route as both a "transfer from" and a "transfer to" during their one-way trip.
- Checking to be sure the access mode was appropriate given the distance of travel from the trip origin to the place where the respondent initially accessed transit. (For example, if a rider reported that he/she accessed transit by car but the distance from his/her origin to the entry point for transit was less than 0.25 mile, the record would have been flagged for further review. Similarly, if a respondent reported that he/she walked to transit but the distance from the origin to transit was more than 2 miles, the record would have been flagged to check for a missing transfer since 2 miles or more is well beyond typical walk distance).
- Checking to ensure that the egress mode was appropriate given the distance of travel from place where the respondent exited the transit system to his/her destination.
- Reviewing the total distance the respondent traveled on transit compared to the distance the respondent traveled from the origin to the destination for his/her trip. (For example, if a respondent reported traveling 6 miles on transit in order to travel 0.5 mile from the origin to the destination for his/her trip, the record would have been flagged for further review. Similarly, if a respondent reported traveling just 1 mile on transit to complete a 10-mile trip, the records would have been flagged to check for a missing transfer).

Records that passed all the QA/QC tests described above were forwarded to ETC Institute's SRRT for a final visual review of the trip using the Visual Survey Editor Program (VSEP), which is described in the following sub-section.

Records that were flagged for further review were forwarded to the appropriate department based on the nature of the flag.

- Issues that involved address geocoding assignments were referred to ETC Institute's geocoding team.
- Issues that needed clarification of data were directed to ETC Institute's Call Center (if a phone number was available). The Call Center then contacted the respondent to retrieve additional information as needed.
- All other issues were directed to ETC Institute's SRRT for further review.

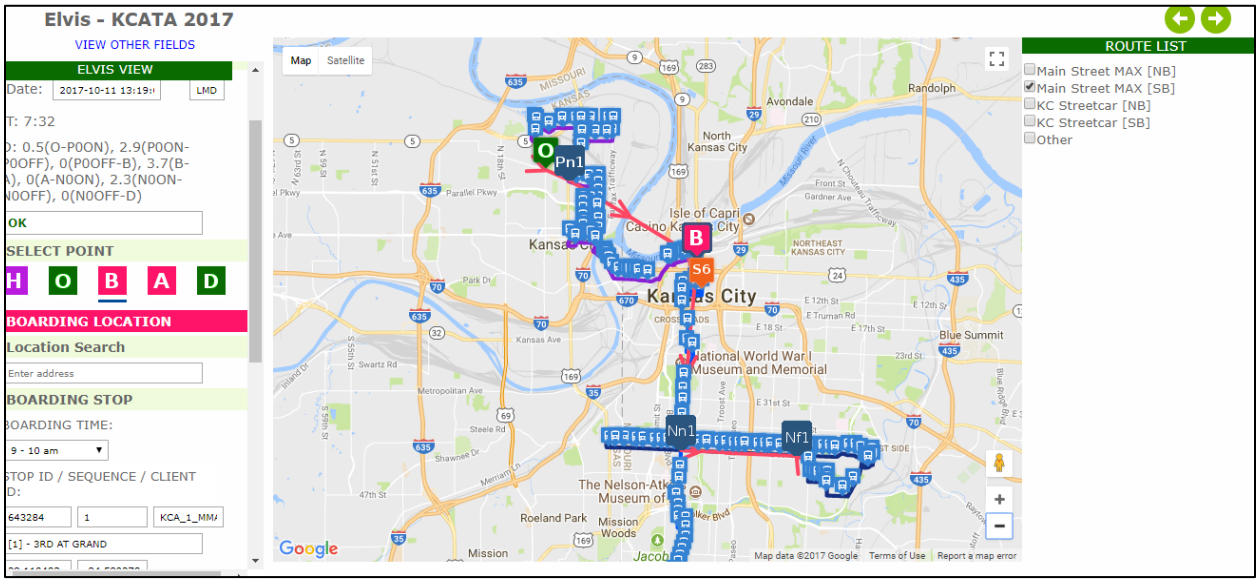
The department members then took one of the following actions:

- They corrected the deficiency in record and were then forwarded to the SRRT for a final visual inspection using the VSEP.
- Records that were complete but could have problems with the trip logic or other attributes of the trip were reclassified as PROBLEMATIC. This assignment removed the record from further consideration for the final survey database.

ONLINE VISUAL REVIEW TOOL (VSEP)

ETC Institute has 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 shows an example of the online visual review tool.

Figure 4: Online Visual Review Tool (Editable Version)



DATA VALIDATION

ETC Institute cross-referenced their O2O Survey with the client's APC data to generate weight factors base on concentrated ridership flow on a smaller segment to segment basis. ETC Institute than targeted their collection to reduce these micro segment weight factors to provide a better distribution among the routes.

SECTION 5. SURVEY DATA EXPANSION

When survey goals are created, they are typically based off a percentage of the average weekday ridership for the routes in the system. That is further broken down by time periods and directions. The time periods that are created (6am to 9am for example) are based off the specific needs of the client. 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 direction, and then multiplied by the sampling percentage. For "Circular" or "Loop" routes, the ridership is typically only broken down into time period as there are many riders that will board going in one direction but alight going the other direction due to the functionality of the route. This typically is also the case if there are directional routes where many riders travel through the terminus and alight going the opposite direction of initial boarding.

The purpose of developing survey 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. To further increase the specificity of the expansion process, segments were created by the client for each route. Stops were grouped into segments along that route so that boarding segments could be paired with alighting segments when creating the expansion factor.

SOURCES OF RIDERSHIP DATA AND SEGMENATION FOR EXPANSION

The Ridership data used to fine tune the collection and conduct the expansion was from APC Data from the timeframe between January and June 2017 for the Main Street Max and July 17, 2017- July 21, 2017. Segments were provided base on geographical regions in the city. Below are the segments for the two studies routes:

Figure 5: KCATA Segments

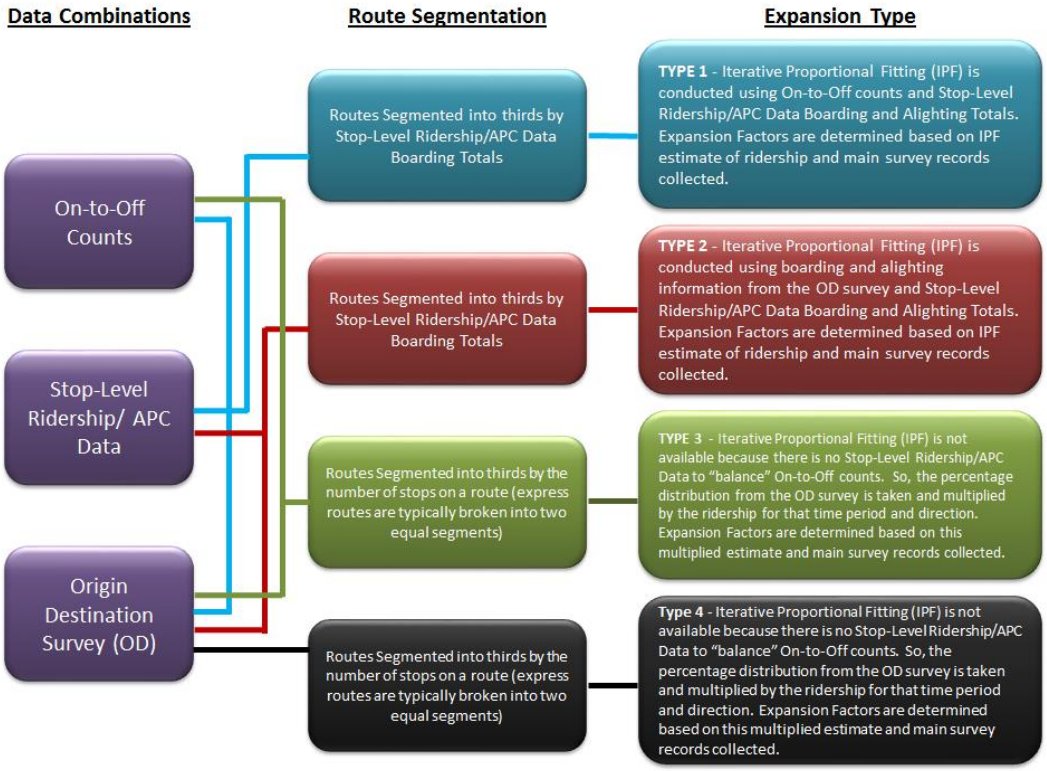
Route Name	Segment Number	Segment Name
Main Street MAX	1	Waldo Park & Ride
Main Street MAX	2	Wlado/Brookside
Main Street MAX	3	Plaza - Main south of Plaza
Main Street MAX	4	Midtown
Main Street MAX	5	Crown Center - Crossroads
Main Street MAX	6	Downtown - River Market

Route Name	Stop Name	Segment Number	Segment Name
KC Streetcar	UNISTATIMAIN AT PERSHING	1	Union Station
KC Streetcar	CROSSROADS - MAIN AT 19TH ST	2	Crossroads
KC Streetcar	KAUFFMAN CENTER - MAIN AT 16TH ST	2	Crossroads
KC Streetcar	POWER & LIGHT - MAIN AT 14TH ST	3	14th & Main
KC Streetcar	METRO CENTER - MAIN AT 12TH ST NS	4	12th & Main
KC Streetcar	LIBRARY - MAIN AT 9TH ST	5	North Loop
KC Streetcar	NORTH LOOP - MAIN AT 7TH ST	5	North Loop
KC Streetcar	CITY MARKET - WALNUT AT 5TH ST	6	River Market
KC Streetcar	RIVER MARKET - NORTH 3RD ST AT GRAND	6	River Market
KC Streetcar	RIVER MARKET - NORTH 3RD ST AT GRAND	6	River Market

TYPES OF DATA EXPANSION

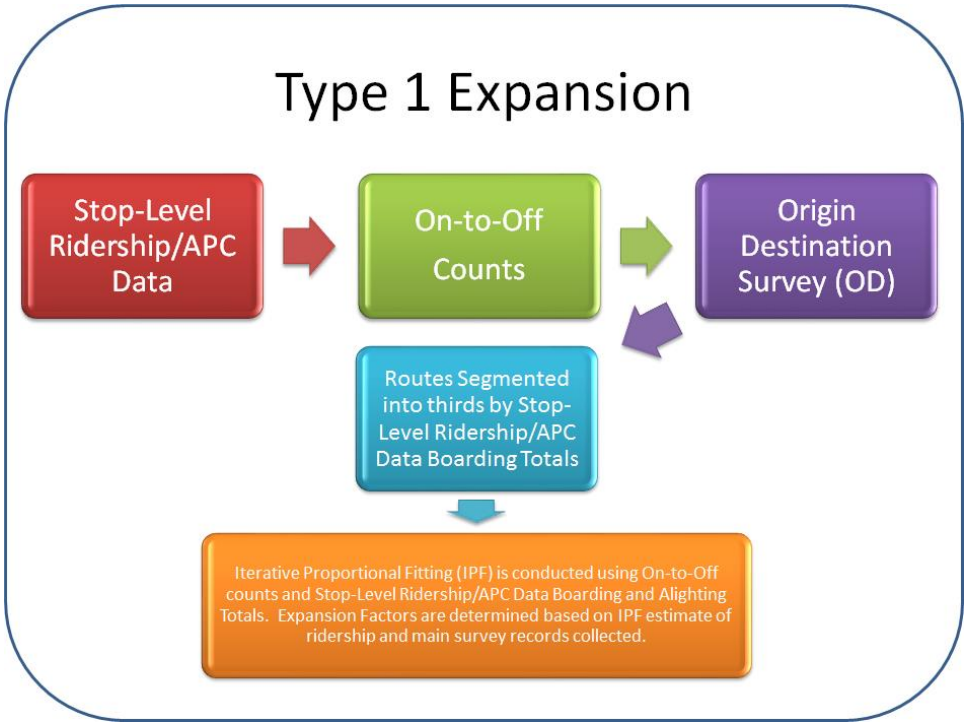
The type of bus data expansion conducted depended on the data available for the specific bus route. The three types of data that created the combinations that guided the type of expansion used were: Stop-Level Ridership/ APC Data (from Client/BA Counts collected by ETC Institute), On-to-Off Counts Data (collected by ETC Institute), and Origin-Destination (OD) Survey Data (collected by ETC Institute). Figure 6 below shows the data combinations, the corresponding route segmentation, and type of expansion used. Type 1 expansion was the only type used for this study.

Figure 6: Types of Data Expansion



TYPE 1 EXPANSION: ROUTES WITH STOP-LEVEL RIDERSHIP/ APC DATA, ON-TO-OFF COUNTS DATA, AND OD SURVEY DATA

Of the four types of bus expansion discussed, Type 1 expansion was the preferred method as it incorporated all three types of data that were available. Typically, On-to-Off data collection is reserved for more heavily traveled routes. These heavier ridership routes are also typically more likely to have available Stop-Level Ridership/ APC Data. This type of expansion was conducted on the more heavily traveled routes in the system and occurred after route stops were divided into three segments based on total boarding distribution by direction, as described previously. The segments were then appended to both the On-to-Off counts and OD data based on the boarding and alighting locations. The methodology for Type 1 expansion is as follows:



Type 1: Expansion Methodology for Routes with Stop-Level Ridership/ APC Data, On-to-Off Data and OD Survey Data

Once the segments were appended to the On-to-Off counts and OD survey databases, the records were ready for expansion. The process for how the data was expanded in Type 1 expansion is explained below:

Figure 7 shows the segmented results for the On-to-Off counts that was administered for a certain route, direction, and time period. Each row in the Table identifies the segment where passengers boarded the bus. The columns in the Table identify the segments where people alighted the bus. For example, 20 of the On-to-Off counts had riders board in segment 2 and alight in segment 3.

Figure 7: Data Expansion Table Results of On-to-Off Survey

TABLE 1: RESULTS OF THE ON-TO-OFF SURVEY				
Route: Example Eastbound (6am-9am)		ACTUAL RIDERSHIP COUNTS FROM THE ON/OFF SURVEY		
Segment	Total	1	2	3
1	60	5	15	40
2	45		25	20
3	10			10
Total	115	5	40	70

Figure 8 shows the distribution of the data in Figure 7 expressed as a percentage of all boardings for the specific time period and direction. Figure 8 was created by dividing each on-to-off cell in Figure 7 by the sum of all On-to-Off

counts in Figure 7, which is 115. For example, 20/115 (17.4%) of all trips boarded in segment 2 and alighted in segment 3 as shown in **Error! Reference source not found.**[JD1].

Figure 8: Bus Data Expansion Table Distribution of On-to-Off Count

TABLE 2: DISTRIBUTION OF THE ON-TO-OFF SURVEY				
Route: Example Eastbound (6am-9am)		PERCENTAGE DISTRIBUTION OF RIDERSHIP COUNTS FROM THE ON/OFF SURVEY		
Segment	Total	1	2	3
1	52.2%	4.3%	13.0%	34.8%
2	39.1%	0.0%	21.7%	17.4%
3	8.7%	0.0%	0.0%	8.7%
Total	100.0%	4.3%	34.8%	60.9%

The total APC ridership for the route, time period, and direction was applied to the on-to-off distribution percentages shown in Figure 8.

This produces an estimate of the ridership flow for the boarding segment to the alighting segment as shown in Figure 9. Applying the actual ridership of 320 creates an initial estimate of 56 trips (17.4% x 320) boarding in segment 2 and alighting in segment 3.

Figure 9: Bus Data Expansion Table Initial Estimate of Ridership Flows Between Segments

TABLE 3: INITIAL ESTIMATE OF RIDERSHIP FLOWS BETWEEN STATION (percentages in table 2 were applied to the total boardings for this time period in this direction)				
Route: Example Eastbound (6am-9am)		PROJECTED RIDERSHIP BASED ON THE ON-TO-OFF SURVEY		
Segment	Total	1	2	3
1	167	14	42	111
2	125	0	70	56
3	28	0	0	28
Total	320	14	111	195

In order to develop a more accurate estimate of the ridership flows between segments on each route, ETC Institute developed an Iterative Proportional Fitting (IPF) Algorithm to balance the differences between the ridership projected from the On-to-Off counts (shown in Figure 9) and the APC ridership for each segment (shown in Figure 10). The IPF process is described below:

Figure 10: Stop-Level Ridership/ APC Data

TABLE 4: BOARDINGS and ALIGHTINGS BY STATION				
Route: Example Eastbound (6am-9am)				
Average Weekday Ridership	Total	1	2	3
BOARDINGS	320	100	100	120
ALIGHTINGS	320	20	100	200
DIFFERENCE FROM PROJECTED				
BOARDINGS	0	-67	-25	92
ALIGHTINGS	0	6	-11	5

Step 1: Correction for the Boardings. The estimated ridership from the On-to-Off counts for each route (as shown in **Error! Reference source not found.**) was multiplied by the ratio of the actual boardings from Stop-Level Ridership/ APC Data for each segment by the estimated boardings for each segment. For example, if the actual boardings for Segment 1 were 120 and the estimated boardings were 100, each cell associated with Segment 1 would have been multiplied by 1.2 (120 / 100) to adjust the estimated boardings to actual boardings.

Step 2: Correction for the Alightings. Once the correction in Step 1 was applied, the estimated boardings would be equal to the actual boardings. However, the adjustment to the boardings total may have changed the alighting estimates. To correct the alighting estimates, the new values calculated in Step 1 were adjusted by multiplying the ratio of the actual alightings from the Stop-Level Ridership/ APC Data for each stop by the estimated alightings for each segment from Step 1. For example, if the actual alightings for Segment 2 were 220 and the estimated alightings from Step 1 were 200, each cell associated with Segment 2 would have been multiplied by 1.1 (220 / 200) to adjust the estimated alightings from Step 1 to actual alightings.

The processes described in Steps 1 and Steps 2 were repeated sequentially until the difference between the actual and estimated boardings and alightings was zero.

Figure 11 shows that after seven balancing iterations in this algorithm, there were no differences between the projected distribution and the actual boardings and alightings.

Figure 11: Iterative Balance Process

7th STEP of ITERATIVE BALANCING TO CORRECT DISTRIBUTION OF RIDERSHIP BY ALIGHTING Location					
Segment	Total	DIFFERENCE FROM ACTUAL BOARDINGS	1	2	3
1	100	0	20	32	49
2	100	0	0	68	32
3	120	0	0	0	120
Total	320	0	20	100	200
DIFFERENCE FROM ACTUAL ALIGHTINGS	0		0	0	0

7th STEP of ITERATIVE BALANCING TO CORRECT DISTRIBUTION OF RIDERSHIP BY ALIGHTING Location					
Segment	Total	DIFFERENCE FROM ACTUAL BOARDINGS	1	2	3
1	100	0	20	32	48
2	100	0	0	68	32
3	120	0	0	0	120
Total	320	0	20	100	200
DIFFERENCE FROM ACTUAL ALIGHTINGS	0		0	0	0

The final estimate for ridership flows is shown in

Figure 12.

Figure 12: Final Estimate of Ridership Flows between Stations

TABLE 6: FINAL ESTIMATE OF RIDERSHIP FLOWS BETWEEN STATIONS				
Route: Example Eastbound (6am-9am)				
Segment	Total	1	2	3
1	100	20	32	48
2	100	0	68	32
3	120	0	0	120
Total	320	20	100	200
DIFFERENCE FROM ACTUAL ALIGHTINGS	0	0	0	0

The actual number of OD records completed for each boarding to alighting segment pair is shown in Figure 13. To calculate the expansion factors, the final estimate of ridership between segments shown in

Figure 12 was divided by the actual number of OD records collected, as shown in Figure 13. This calculation produces the expansion factors shown in Figure 14. For example, the 32 estimated riders projected to board in segment 2 and alight in segment 3 were divided by the 10 OD records to produce an expansion factor of 3.15 to be applied to records who board in segment 2 and alighting in segment 3 as shown in Figure 14.

Figure 13: Number of Completed Surveys

TABLE 7: NUMBER OF COMPLETED SURVEYS

Route: Example Eastbound (6am-9am)

Segment	Total	1	2	3
1	32	3	9	20
2	17		7	10
3	8			8
Total	57	3	16	38

Figure 14: Weighting Factors

TABLE 8: WEIGHTING FACTORS

Route: Example Eastbound (6am-9am)

Segment	Total	1	2	3
1	3.13	6.67	3.50	2.42
2	5.88	0.00	9.78	3.15
3	15.00	0.00	0.00	15.00
Total	5.61	6.67	6.25	5.26

SECTION 6. SURVEY FINDINGS

This section highlights demographic and trip-related findings from the survey. The database used for the tables in this chapter were expanded based on weekday unlinked weight factors created during the data expansion process.

UNLINKED TRIPS VS. LINKED TRIPS

An unlinked passenger trip measures a trip as every time a passenger boards and alights a bus/train. A linked passenger trip is the entire trip from origin to destination on the transit system. Even if a rider makes several transfers during a one-way trip, the trip is counted as one linked trip on the system. For example, a rider making a single trip with a transfer in the middle counts as two unlinked trips versus one linked trip.

WEEKDAY SAMPLING (MARGIN OF ERROR TABLE)

In total, 1,214 completed weekday surveys were conducted. This total equates to a margin of error of +/- 2.7% (at the 95% confidence level). Although sampling goals were determined at the route level, the margin of error remained high for time periods with smaller ridership.

	Volume	Surveys Collected	95% CI	90% CI
KC Streetcar	**6357**	**642**	**± 3.7%**	**± 3.1%**
Early AM/AM Peak	478	79	±10.1%	±8.5%
Midday	2748	294	± 5.4%	± 4.5%
PM Peak	1293	140	± 7.8%	± 6.6%
Evening	1838	129	± 8.3%	± 7%
Main Street MAX	**4513**	**572**	**± 3.8%**	**± 3.2%**
Early AM/AM Peak	933	157	± 7.1%	± 6%
Midday	1589	242	± 5.8%	± 4.9%
PM Peak	1155	99	± 9.4%	± 7.9%
Evening	835	74	± 10.9%	± 9.1%
Grand Total	10870	1214	± 2.7%	± 2.2%

WEEKDAY RESULT TABLES

Table 15: Type of place respondent is coming from now

	KC Streetcar		Main Street MAX		Grand Total	
	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value
Your HOME	1566.1	24.64%	1716.9	38.04%	3282.9	30.20%
Your usual WORKPLACE	1388.4	21.84%	885.7	19.63%	2274.1	20.92%
Social, recreational or tourism	1269.9	19.98%	426.5	9.45%	1696.4	15.61%
Personal business	415.2	6.53%	661.4	14.65%	1076.6	9.90%
Dining / coffee	920.9	14.49%	99.6	2.21%	1020.5	9.39%
Shopping	200.6	3.16%	324.0	7.18%	524.6	4.83%
Your hotel	434.3	6.83%	32.3	0.72%	466.7	4.29%
Work related place (ie job site)	112.3	1.77%	94.1	2.08%	206.4	1.90%
College or University (students only)	34.3	0.54%	158.7	3.52%	193.0	1.78%
Medical / dental	8.3	0.13%	58.4	1.29%	66.7	0.61%
Escorting others (children, elderly)	6.7	0.10%	55.5	1.23%	62.2	0.57%
Grand Total	**6357.0**	**100.00%**	**4513.1**	**100.00%**	**10870.1**	**100.00%**

Table 16: Mode of access to transit

	KC Streetcar		Main Street MAX		Grand Total	
	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value
Walked	5506.4	86.62%	4299.4	95.27%	9805.8	90.21%
Drove or rode with others and parked	603.7	9.50%	58.1	1.29%	661.8	6.09%
Drove alone and parked	132.3	2.08%	69.9	1.55%	202.2	1.86%
Was dropped off by someone - not a service	68.0	1.07%	59.8	1.33%	127.8	1.18%
Personal Bike	27.4	0.43%	24.3	0.54%	51.7	0.48%
Was dropped off using Uber, Lyft, or similar service	19.3	0.30%	1.5	0.03%	20.7	0.19%
Grand Total	**6357.0**	**100.00%**	**4513.1**	**100.00%**	**10870.1**	**100.00%**

Table 17: Did respondent transfer FROM another bus BEFORE getting on this bus?

	KC Streetcar		Main Street MAX		Grand Total	
	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value
(0) None	6141.4	96.61%	3600.8	79.79%	9742.2	89.62%
(1) One	151.2	2.38%	891.8	19.76%	1043.0	9.60%
(2) Two	64.4	1.01%	20.4	0.45%	84.9	0.78%
Grand Total	**6357.0**	**100.00%**	**4513.1**	**100.00%**	**10870.1**	**100.00%**

Table 18: Type of place respondent is going to now

	KC Streetcar		Main Street MAX		Grand Total	
	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value
Your HOME	1571.9	24.73%	1301.9	28.85%	2873.8	26.44%
Your usual WORKPLACE	939.1	14.77%	1350.6	29.93%	2289.7	21.06%
Social, recreational or tourism	1467.8	23.09%	295.7	6.55%	1763.5	16.22%
Dining / coffee	1045.9	16.45%	253.1	5.61%	1299.0	11.95%
Personal business	416.7	6.55%	685.5	15.19%	1102.2	10.14%
Shopping	240.9	3.79%	212.1	4.70%	453.0	4.17%
Your hotel	361.3	5.68%	34.4	0.76%	395.7	3.64%
Work related place (ie job site)	238.2	3.75%	101.8	2.26%	340.0	3.13%
Medical / dental	42.0	0.66%	152.1	3.37%	194.2	1.79%
College or University (students only)	2.5	0.04%	125.9	2.79%	128.4	1.18%
Escorting others (children, elderly)	16.1	0.25%	0.0	0.00%	16.1	0.15%
Airport (passengers only)	14.5	0.23%	0.0	0.00%	14.5	0.13%
Grand Total	**6357.0**	**100.00%**	**4513.1**	**100.00%**	**10870.1**	**100.00%**

Table 19: Mode of egress from transit

	KC Streetcar		Main Street MAX		Grand Total	
	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value
Walk	5535.2	87.07%	4390.5	97.28%	9925.7	91.31%
Drive or ride with others	525.2	8.26%	13.7	0.30%	538.9	4.96%
Drive alone	243.1	3.82%	73.6	1.63%	316.7	2.91%
Personal Bike	25.0	0.39%	35.2	0.78%	60.2	0.55%
Dropped off by someone - not a service	28.5	0.45%	0.0	0.00%	28.5	0.26%
Grand Total	**6357.0**	**100.00%**	**4513.1**	**100.00%**	**10870.1**	**100.00%**

Table 20: Did respondent transfer TO another bus AFTER getting off this bus?

	KC Streetcar		Main Street MAX		Grand Total	
	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value
(0) None	6142.2	96.62%	3641.7	80.69%	9783.9	90.01%
(1) One	132.8	2.09%	828.9	18.37%	961.7	8.85%
(2) Two	82.0	1.29%	42.5	0.94%	124.4	1.14%
Grand Total	**6357.0**	**100.00%**	**4513.1**	**100.00%**	**10870.1**	**100.00%**

Table 21: Respondent's Trip purpose

	KC Streetcar		Main Street MAX		Grand Total	
	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value
HBW: Home-Based Work	1390.8	21.88%	1616.6	35.82%	3007.4	27.67%
NHB: Non-Home-Based	1818.1	28.60%	616.7	13.66%	2434.8	22.40%
HBSocRec: Home-Based Social/Recreational	1317.4	20.72%	467.0	10.35%	1784.4	16.42%
NHBW: Non-Home-Based Work	1019.0	16.03%	674.3	14.94%	1693.3	15.58%
HBS: Home-Based Shopping/Errands	335.8	5.28%	613.0	13.58%	948.8	8.73%
HBO: Home-Based Other	41.0	0.65%	322.1	7.14%	363.1	3.34%
NHBO: Non-Home-Based-Other	138.0	2.17%	203.3	4.51%	341.3	3.14%
excursion - trips made solely for the experience of streetcar	296.9	4.67%	0.0	0.00%	296.9	2.73%
Grand Total	**6357.0**	**100.00%**	**4513.1**	**100.00%**	**10870.1**	**100.00%**

Table 22: How respondent paid for their one-way trip

	Main Street MAX	
	Weighted Value	% Weighted Value
31-day pass	2010.2	44.54%
Cash	1691.6	37.48%
1-day pass	576.8	12.78%
Transfer	202.6	4.49%
3-day pass	31.8	0.71%
Grand Total	**4513.1**	**100.00%**

Table 23: Type of fare respondent paid

	Main Street MAX	
	Weighted Value	% Weighted Value
Free (Veteran)	193.9	4.30%
Full fare	3083.3	68.32%
KCMO Employee	273.7	6.06%
Metro Employee	54.4	1.20%
Reduced fare Disabled	215.7	4.78%
Reduced fare for youth	17.5	0.39%
Reduced fare Senior	289.1	6.41%
U-Pass (university pass)	385.6	8.54%
Grand Total	**4513.1**	**100.00%**

Table 24: If respondent indicated they used the Ride KC app to pay for their trip

	Main Street MAX	
	Weighted Value	% Weighted Value
No	3922.8	86.92%
Yes	566.2	12.55%
Unknown	24.1	0.53%
Grand Total	**4513.1**	**100.00%**

Table 25: If respondent indicated they would still ride the Streetcar if it was $1 per ride

	KC Streetcar	
	Weighted Value	% Weighted Value
No	2268.8	35.69%
Yes	4088.2	64.31%
Grand Total	**6357.0**	**100.00%**

Table 26: Number of Vehicles in respondents household

	KC Streetcar		Main Street MAX		Grand Total	
	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value
None (0)	1065.8	16.77%	2695.9	59.74%	3761.7	34.61%
One (1)	3183.8	50.08%	1290.0	28.58%	4473.8	41.16%
Two (2)	1787.6	28.12%	432.2	9.58%	2219.8	20.42%
Three (3)	202.9	3.19%	82.7	1.83%	285.6	2.63%
Four (4)	91.1	1.43%	0.0	0.00%	91.1	0.84%
Five or more (5+)	25.8	0.41%	12.2	0.27%	38.0	0.35%
Grand Total	**6357.0**	**100.00%**	**4513.1**	**100.00%**	**10870.1**	**100.00%**

Table 27: Could respondent have used one of these vehicles for this trip?

	KC Streetcar		Main Street MAX		Grand Total	
	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value
No	1160.9	21.94%	887.7	48.85%	2048.6	28.82%
Yes	4130.3	78.06%	929.4	51.15%	5059.7	71.18%
Grand Total	**5291.2**	**100.00%**	**1817.1**	**100.00%**	**7108.3**	**100.00%**

Table 28: Does respondent have a valid driver's license?

	KC Streetcar		Main Street MAX		Grand Total	
	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value
No	818.3	12.87%	1747.9	38.73%	2566.2	23.61%
Yes	5538.7	87.13%	2765.2	61.27%	8303.9	76.39%
Grand Total	**6357.0**	**100.00%**	**4513.1**	**100.00%**	**10870.1**	**100.00%**

Table 29: Number of members in respondent's household

	KC Streetcar		Main Street MAX		Grand Total	
	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value
One (1)	2217.7	34.89%	1698.0	37.62%	3915.7	36.02%
Two (2)	2236.4	35.18%	1315.2	29.14%	3551.5	32.67%
Three (3)	938.0	14.76%	753.4	16.69%	1691.4	15.56%
Four (4)	570.8	8.98%	504.4	11.18%	1075.2	9.89%
Five (5)	273.2	4.30%	134.2	2.97%	407.4	3.75%
Six or more (6+)	120.9	1.90%	107.9	2.39%	228.8	2.10%
Grand Total	**6357.0**	**100.00%**	**4513.1**	**100.00%**	**10870.1**	**100.00%**

Table 30: Including respondent, how many people (over age 16) in respondent household are employed full/part time?

	KC Streetcar		Main Street MAX		Grand Total	
	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value
None (0)	386.5	6.08%	699.5	15.50%	1086.1	9.99%
One (1)	2769.9	43.57%	2039.5	45.19%	4809.4	44.24%
Two (2)	2772.5	43.61%	1301.9	28.85%	4074.4	37.48%
Three (3)	321.6	5.06%	317.2	7.03%	638.8	5.88%
Four (4)	50.7	0.80%	112.1	2.48%	162.8	1.50%
Five (5)	38.2	0.60%	17.5	0.39%	55.7	0.51%
Six or more (6+)	17.6	0.28%	25.3	0.56%	42.8	0.39%
Grand Total	**6357.0**	**100.00%**	**4513.1**	**100.00%**	**10870.1**	**100.00%**

Table 31: Does respondent have a disability that limits your mobility?

	KC Streetcar		Main Street MAX		Grand Total	
	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value
No	5942.4	93.48%	3824.9	84.75%	9767.4	89.86%
Yes	414.6	6.52%	688.1	15.25%	1102.7	10.14%
Grand Total	**6357.0**	**100.00%**	**4513.1**	**100.00%**	**10870.1**	**100.00%**

Table 32: Age of respondent

	KC Streetcar		Main Street MAX		Grand Total	
	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value
under 18	21.5	0.34%	36.4	0.81%	57.9	0.53%
18-24	401.6	6.32%	517.2	11.53%	918.8	8.47%
25-34	2216.6	34.87%	1329.4	29.63%	3546.0	32.70%
35-44	1529.8	24.06%	777.5	17.33%	2307.3	21.28%
45-54	1195.1	18.80%	753.0	16.79%	1948.1	17.97%
55-64	727.5	11.44%	825.9	18.41%	1553.4	14.33%
65 & over	264.9	4.17%	246.7	5.50%	511.6	4.72%
Grand Total	**6357.0**	**100.00%**	**4486.0**	**100.00%**	**10843.0**	**100.00%**

Table 33: Respondent's gender

	KC Streetcar		Main Street MAX		Grand Total	
	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value
Female	2817.8	44.33%	1823.0	40.39%	4640.8	42.69%
Male	3488.9	54.88%	2659.7	58.93%	6148.6	56.56%
Other	50.3	0.79%	30.3	0.67%	80.7	0.74%
Grand Total	**6357.0**	**100.00%**	**4513.1**	**100.00%**	**10870.1**	**100.00%**

Table 34: Respondent's Ethnicity/Race

	KC Streetcar		Main Street MAX		Grand Total	
	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value
White alone, non Hispanic	3683.3	57.94%	1754.5	38.88%	5437.7	50.02%
African-American alone, non Hispanic	1310.7	20.62%	1972.0	43.69%	3282.7	30.20%
Hispanic, any race	599.4	9.43%	445.9	9.88%	1045.3	9.62%
Asian alone, non Hispanic	368.9	5.80%	102.1	2.26%	471.0	4.33%
Mixed race, non Hispanic	156.6	2.46%	92.5	2.05%	249.1	2.29%
Other, non Hispanic	122.5	1.93%	113.4	2.51%	235.9	2.17%
American Indian alone, non Hispanic	55.7	0.88%	31.2	0.69%	86.9	0.80%
Native Hawaiian or Pacific Islander alone, non Hispanic	59.8	0.94%	1.5	0.03%	61.4	0.56%
Grand Total	**6357.0**	**100.00%**	**4513.1**	**100.00%**	**10870.1**	**100.00%**

Table 35: Total annual household income

	KC Streetcar		Main Street MAX		Grand Total	
	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value
Below $10,000	544.9	8.57%	653.9	14.49%	1198.8	11.03%
$10,000-$24,999	589.1	9.27%	839.3	18.60%	1428.4	13.14%
$25,000-$34,999	598.6	9.42%	562.2	12.46%	1160.7	10.68%
$35,000-$39,999	334.3	5.26%	311.7	6.91%	646.0	5.94%
$40,000 - $49,999	243.8	3.84%	424.7	9.41%	668.5	6.15%
$50,000 - $59,999	271.1	4.26%	213.5	4.73%	484.5	4.46%
$60,000 - $74,999	186.2	2.93%	183.7	4.07%	369.9	3.40%
$75,000 - $99,999	288.3	4.54%	169.1	3.75%	457.4	4.21%
$100,000 - $149,999	275.0	4.33%	94.9	2.10%	370.0	3.40%
$150,000 - $199,999	150.9	2.37%	19.4	0.43%	170.3	1.57%
$200,000 or more	50.6	0.80%	15.8	0.35%	66.3	0.61%
Not provided	2824.3	44.43%	1024.8	22.71%	3849.1	35.41%
Grand Total	**6357.0**	**100.00%**	**4513.1**	**100.00%**	**10870.1**	**100.00%**

Table 36: Does respondent speak a language other than English spoken in home

	KC Streetcar		Main Street MAX		Grand Total	
	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value
No	5113.9	80.45%	3838.8	85.06%	8952.8	82.36%
Yes	1243.1	19.55%	674.2	14.94%	1917.3	17.64%
Grand Total	**6357.0**	**100.00%**	**4513.1**	**100.00%**	**10870.1**	**100.00%**

Table 37: How well did respondent speaks English

	KC Streetcar		Main Street MAX		Grand Total	
	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value
Very well	1106.7	89.03%	567.8	84.22%	1674.5	87.34%
Well	75.7	6.09%	59.1	8.77%	134.8	7.03%
Not well	23.8	1.92%	36.9	5.48%	60.7	3.17%
Not at all	0.0	0.00%	0.0	0.00%	0.0	0.00%
Unknown	36.9	2.96%	10.3	1.53%	47.2	2.46%
Grand Total	**1243.1**	**100.00%**	**674.2**	**100.00%**	**1917.3**	**100.00%**

Table 38: Respondent student status

	KC Streetcar		Main Street MAX		Grand Total	
	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value	Weighted Value	% Weighted Value
Not a student	6055.1	95.25%	4003.6	88.71%	10058.7	92.54%
Yes - Full Time college/university	126.1	1.98%	288.8	6.40%	414.8	3.82%
Yes - Part Time college/university	160.9	2.53%	207.8	4.60%	368.7	3.39%
Yes - vocational/technical/trade school	6.6	0.10%	11.5	0.25%	18.0	0.17%
Yes - K - 12 th grade	8.4	0.13%	1.4	0.03%	9.8	0.09%
Grand Total	**6357.0**	**100.00%**	**4513.1**	**100.00%**	**10870.1**	**100.00%**

WEEKEND RESULT TABLES

Table 39: Type of place respondent is coming from now

	KC Streetcar		Main Street MAX		Grand Total	
	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value
Your HOME	298.0	31.40%	89.0	38.03%	387.0	32.71%
Social, recreational or tourism	311.0	32.77%	48.0	20.51%	359.0	30.35%
Shopping	97.0	10.22%	32.0	13.68%	129.0	10.90%
Dining / coffee	116.0	12.22%	11.0	4.70%	127.0	10.74%
Your hotel	79.0	8.32%	7.0	2.99%	86.0	7.27%
Your usual WORKPLACE	13.0	1.37%	29.0	12.39%	42.0	3.55%
Personal business	25.0	2.63%	14.0	5.98%	39.0	3.30%
Work related place (ie job site)	8.0	0.84%	1.0	0.43%	9.0	0.76%
Medical / dental	1.0	0.11%	1.0	0.43%	2.0	0.17%
Airport (passengers only)	1.0	0.11%		0.00%	1.0	0.08%
Escorting others (children, elderly)	0.0	0.00%	1.0	0.43%	1.0	0.08%
College or University (students only)	0.0	0.00%	1.0	0.43%	1.0	0.08%
Grand Total	**949.0**	**100.00%**	**234.0**	**100.00%**	**1183.0**	**100.00%**

Table 40: Mode of access to transit

	KC Streetcar		Main Street MAX		Grand Total	
	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value
Walked	692.0	72.92%	198.0	84.62%	890.0	75.23%
Drove or rode with others and parked	175.0	18.44%	15.0	6.41%	190.0	16.06%
Drove alone and parked	60.0	6.32%	10.0	4.27%	70.0	5.92%
Was dropped off by someone - not a service	12.0	1.26%	5.0	2.14%	17.0	1.44%
Personal Bike	4.0	0.42%	4.0	1.71%	8.0	0.68%
Was dropped off using Uber, Lyft, or similar service	2.0	0.21%	2.0	0.85%	4.0	0.34%
Taxi	2.0	0.21%	0.0	0.00%	2.0	0.17%
BIKE SHARE	1.0	0.11%	0.0	0.00%	1.0	0.08%
Skateboard	1.0	0.11%	0.0	0.00%	1.0	0.08%
Grand Total	**949.0**	**100.00%**	**234.0**	**100.00%**	**1183.0**	**100.00%**

Table 41: Did respondent transfer FROM another bus BEFORE getting on this bus?

	KC Streetcar		Main Street MAX		Grand Total	
	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value
(0) None	923.0	97.26%	204.0	87.18%	1127.0	95.27%
(1) One	23.0	2.42%	28.0	11.97%	51.0	4.31%
(2) Two	3.0	0.32%	2.0	0.85%	5.0	0.42%
Grand Total	**949.0**	**100.00%**	**234.0**	**100.00%**	**1183.0**	**100.00%**

Table 42: Type of place respondent is going to now

	KC Streetcar		Main Street MAX		Grand Total	
	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value
Social, recreational or tourism	441.0	46.47%	66.0	28.21%	507.0	42.86%
Your HOME	153.0	16.12%	74.0	31.62%	227.0	19.19%
Dining / coffee	128.0	13.49%	29.0	12.39%	157.0	13.27%
Shopping	127.0	13.38%	18.0	7.69%	145.0	12.26%
Personal business	44.0	4.64%	21.0	8.97%	65.0	5.49%
Your hotel	31.0	3.27%	6.0	2.56%	37.0	3.13%
Your usual WORKPLACE	14.0	1.48%	15.0	6.41%	29.0	2.45%
Work related place (ie job site)	5.0	0.53%	1.0	0.43%	6.0	0.51%
Escorting others (children, elderly)	3.0	0.32%	2.0	0.85%	5.0	0.42%
Airport (passengers only)	2.0	0.21%	0.0	0.00%	2.0	0.17%
Medical / dental	0.0	0.00%	1.0	0.43%	1.0	0.08%
School K-12 (students only)	1.0	0.11%	0.0	0.00%	1.0	0.08%
College or University (students only)	0.0	0.00%	1.0	0.43%	1.0	0.08%
Grand Total	**949.0**	**100.00%**	**234.0**	**100.00%**	**1183.0**	**100.00%**

Table 43: Mode of egress from transit

	KC Streetcar		Main Street MAX		Grand Total	
	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value
Walk	828.0	87.25%	216.0	92.31%	1044.0	88.25%
Drive or ride with others	92.0	9.69%	9.0	3.85%	101.0	8.54%
Drive alone	15.0	1.58%	3.0	1.28%	18.0	1.52%
Dropped off by someone - not a service	4.0	0.42%	3.0	1.28%	7.0	0.59%
Personal Bike	3.0	0.32%	3.0	1.28%	6.0	0.51%
Dropped off using Uber, Lyft, or similar service	3.0	0.32%	0.0	0.00%	3.0	0.25%
Taxi	2.0	0.21%	0.0	0.00%	2.0	0.17%
BIKE SHARE	1.0	0.11%	0.0	0.00%	1.0	0.08%
Skateboard	1.0	0.11%	0.0	0.00%	1.0	0.08%
Grand Total	**949.0**	**100.00%**	**234.0**	**100.00%**	**1183.0**	**100.00%**

Table 44: Did respondent transfer TO another bus AFTER getting off this bus?

	KC Streetcar		Main Street MAX		Grand Total	
	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value
(0) None	925.0	97.47%	200.0	85.47%	1125.0	95.10%
(1) One	23.0	2.42%	31.0	13.25%	54.0	4.56%
(2) Two	1.0	0.11%	3.0	1.28%	4.0	0.34%
Grand Total	**949.0**	**100.00%**	**234.0**	**100.00%**	**1183.0**	**100.00%**

Table 45: Respondent's Trip purpose

	KC Streetcar		Main Street MAX		Grand Total	
	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value
NHB: Non-Home-Based	432.0	45.52%	48.0	20.51%	480.0	40.57%
HBSocRec: Home-Based Social/Recreational	317.0	33.40%	81.0	34.62%	398.0	33.64%
HBS: Home-Based Shopping/Errands	90.0	9.48%	43.0	18.38%	133.0	11.24%
excursion - trips made solely for the experience of streetcar	67.0	7.06%	6.0	2.56%	73.0	6.17%
HBW: Home-Based Work	19.0	2.00%	33.0	14.10%	52.0	4.40%
NHBW: Non-Home-Based Work	16.0	1.69%	12.0	5.13%	28.0	2.37%
NHBO: Non-Home-Based-Other	7.0	0.74%	6.0	2.56%	13.0	1.10%
HBO: Home-Based Other	1.0	0.11%	5.0	2.14%	6.0	0.51%
Grand Total	**949.0**	**100.00%**	**234.0**	**100.00%**	**1183.0**	**100.00%**

Table 46: How respondent paid for their one-way trip

	Main Street MAX	
	Unweighted Value	% Unweighted Value
Cash	143.0	61.11%
31-day pass	54.0	23.08%
1-day pass	27.0	11.54%
Transfer	9.0	3.85%
3-day pass	1.0	0.43%
Grand Total	**234.0**	**100.00%**

Table 47: Type of fare respondent paid

	Main Street MAX	
	Unweighted Value	% Unweighted Value
No	220.0	94.02%
Yes	13.0	5.56%
Refuse	1.0	0.43%
Grand Total	**234.0**	**100.00%**

Table 48: If respondent indicated they used the Ride KC app to pay for their trip

	Main Street MAX	
	Unweighted Value	% Unweighted Value
Free (Veteran)	8.0	3.42%
Full fare	203.0	86.75%
KCMO Employee	6.0	2.56%
Metro Employee	2.0	0.85%
Reduced fare Disabled	5.0	2.14%
Reduced fare Senior	8.0	3.42%
U-Pass (university pass)	2.0	0.85%
Grand Total	**234.0**	**100.00%**

Table 49: If respondent indicated they would still ride the Streetcar if it was $1 per ride

	KC Streetcar	
	Unweighted Value	% Unweighted Value
No	259.0	27.29%
Yes	690.0	72.71%
Grand Total	**949.0**	**100.00%**

Table 50: Number of Vehicles in respondents household

	KC Streetcar		Main Street MAX		Grand Total	
	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value
None (0)	95.0	10.01%	81.0	34.62%	176.0	14.88%
One (1)	293.0	30.87%	81.0	34.62%	374.0	31.61%
Two (2)	406.0	42.78%	63.0	26.92%	469.0	39.64%
Three (3)	109.0	11.49%	8.0	3.42%	117.0	9.89%
Four (4)	29.0	3.06%	0.0	0.00%	29.0	2.45%
Five or more (5+)	17.0	1.79%	1.0	0.43%	18.0	1.52%
Grand Total	**949.0**	**100.00%**	**234.0**	**100.00%**	**1183.0**	**100.00%**

Table 51: Could respondent have used one of these vehicles for this trip?

	KC Streetcar		Main Street MAX		Grand Total	
	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value
No	156.0	18.27%	61.0	39.87%	217.0	21.55%
Yes	698.0	81.73%	92.0	60.13%	790.0	78.45%
Grand Total	**854.0**	**100.00%**	**153.0**	**100.00%**	**1007.0**	**100.00%**

Table 52: Does respondent have a valid driver's license?

	KC Streetcar		Main Street MAX		Grand Total	
	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value
No	72.0	7.59%	62.0	26.50%	134.0	11.33%
Yes	877.0	92.41%	172.0	73.50%	1049.0	88.67%
Grand Total	**949.0**	**100.00%**	**234.0**	**100.00%**	**1183.0**	**100.00%**

Table 53: Number of members in respondent's household

	KC Streetcar		Main Street MAX		Grand Total	
	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value
One (1)	204.0	21.50%	48.0	20.51%	252.0	21.30%
Two (2)	357.0	37.62%	57.0	24.36%	414.0	35.00%
Three (3)	156.0	16.44%	73.0	31.20%	229.0	19.36%
Four (4)	132.0	13.91%	25.0	10.68%	157.0	13.27%
Five (5)	73.0	7.69%	26.0	11.11%	99.0	8.37%
Six or more (6+)	27.0	2.85%	5.0	2.14%	32.0	2.70%
Grand Total	**949.0**	**100.00%**	**234.0**	**100.00%**	**1183.0**	**100.00%**

Table 54: Including respondent, how many people (over age 16) in respondent household are employed full/part time?

	KC Streetcar		Main Street MAX		Grand Total	
	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value
None (0)	63.0	6.64%	22.0	9.40%	85.0	7.19%
One (1)	287.0	30.24%	105.0	44.87%	392.0	33.14%
Two (2)	501.0	52.79%	87.0	37.18%	588.0	49.70%
Three (3)	69.0	7.27%	19.0	8.12%	88.0	7.44%
Four (4)	18.0	1.90%	1.0	0.43%	19.0	1.61%
Five (5)	5.0	0.53%	0.0	0.00%	5.0	0.42%
Six or more (6+)	6.0	0.63%	0.0	0.00%	6.0	0.51%
Grand Total	**949.0**	**100.00%**	**234.0**	**100.00%**	**1183.0**	**100.00%**

Table 55: Does respondent have a disability that limits your mobility?

	KC Streetcar		Main Street MAX		Grand Total	
	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value
No	906.0	95.47%	226.0	96.58%	1132.0	95.69%
Yes	43.0	4.53%	8.0	3.42%	51.0	4.31%
Grand Total	**949.0**	**100.00%**	**234.0**	**100.00%**	**1183.0**	**100.00%**

Table 56: Age of respondent

	KC Streetcar		Main Street MAX		Grand Total	
	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value
under 18	7.0	0.74%	1.0	0.43%	8.0	0.68%
18-24	95.0	10.02%	27.0	11.54%	122.0	10.32%
25-34	297.0	31.33%	78.0	33.33%	375.0	31.73%
35-44	227.0	23.95%	68.0	29.06%	295.0	24.96%
45-54	165.0	17.41%	34.0	14.53%	199.0	16.84%
55-64	99.0	10.44%	23.0	9.83%	122.0	10.32%
65 & over	58.0	6.12%	3.0	1.28%	61.0	5.16%
Grand Total	**948.0**	**100.00%**	**234.0**	**100.00%**	**1182.0**	**100.00%**

Table 57: Respondent's gender

	KC Streetcar		Main Street MAX		Grand Total	
	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value
Female	463.0	48.79%	90.0	38.46%	553.0	46.75%
Male	479.0	50.47%	142.0	60.68%	621.0	52.49%
Refuse	7.0	0.74%	2.0	0.85%	9.0	0.76%
Grand Total	**949.0**	**100.00%**	**234.0**	**100.00%**	**1183.0**	**100.00%**

Table 58: Respondent's Ethnicity/Race

	KC Streetcar		Main Street MAX		Grand Total	
	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value
White alone, non Hispanic	690.0	72.71%	97.0	41.45%	787.0	66.53%
African-American alone, non Hispanic	128.0	13.49%	108.0	46.15%	236.0	19.95%
Hispanic, any race	60.0	6.32%	11.0	4.70%	71.0	6.00%
Asian alone, non Hispanic	24.0	2.53%	6.0	2.56%	30.0	2.54%
Mixed race, non Hispanic	20.0	2.11%	7.0	2.99%	27.0	2.28%
Other, non Hispanic	19.0	2.00%	1.0	0.43%	20.0	1.69%
American Indian alone, non Hispanic	4.0	0.42%	3.0	1.28%	7.0	0.59%
Native Hawaiian or Pacific Islander alone, non Hispanic	4.0	0.42%	1.0	0.43%	5.0	0.42%
Grand Total	**949.0**	**100.00%**	**234.0**	**100.00%**	**1183.0**	**100.00%**

Table 59: Total annual household income

	KC Streetcar		Main Street MAX		Grand Total	
	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value
Below $10,000	37.0	3.90%	26.0	11.11%	63.0	5.33%
$10,000-$24,999	47.0	4.95%	36.0	15.38%	83.0	7.02%
$25,000-$34,999	60.0	6.32%	32.0	13.68%	92.0	7.78%
$35,000-$39,999	55.0	5.80%	32.0	13.68%	87.0	7.35%
$40,000 - $49,999	77.0	8.11%	12.0	5.13%	89.0	7.52%
$50,000 - $59,999	90.0	9.48%	29.0	12.39%	119.0	10.06%
$60,000 - $74,999	101.0	10.64%	22.0	9.40%	123.0	10.40%
$75,000 - $99,999	98.0	10.33%	18.0	7.69%	116.0	9.81%
$100,000 - $149,999	110.0	11.59%	8.0	3.42%	118.0	9.97%
$150,000 - $199,999	41.0	4.32%	5.0	2.14%	46.0	3.89%
$200,000 or more	40.0	4.21%	0.0	0.00%	40.0	3.38%
Not provided	193.0	20.34%	14.0	5.98%	207.0	17.50%
Grand Total	**949.0**	**100.00%**	**234.0**	**100.00%**	**1183.0**	**100.00%**

Table 60: Does respondent speak a language other than English spoken in home

	KC Streetcar		Main Street MAX		Grand Total	
	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value
No	861.0	90.73%	223.0	95.30%	1084.0	91.63%
Yes	88.0	9.27%	11.0	4.70%	99.0	8.37%
Grand Total	**949.0**	**100.00%**	**234.0**	**100.00%**	**1183.0**	**100.00%**

Table 61: How well did respondent speaks English

	KC Streetcar		Main Street MAX		Grand Total	
	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value
Very well	78.0	88.64%	7.0	63.64%	85.0	85.86%
Well	6.0	6.82%	4.0	36.36%	10.0	10.10%
Not well	2.0	2.27%	0.0	0.00%	2.0	2.02%
Not at all	0.0	0.00%	0.0	0.00%	0.0	0.00%
Unknown	2.0	2.27%	0.0	0.00%	2.0	2.02%
Grand Total	**88.0**	**100.00%**	**11.0**	**100.00%**	**99.0**	**100.00%**

Table 62: Respondent student status

	KC Streetcar		Main Street MAX		Grand Total	
	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value	Unweighted Value	% Unweighted Value
Not a student	883.0	93.05%	220.0	94.02%	1103.0	93.24%
Yes - Full Time college/university	38.0	4.00%	7.0	2.99%	45.0	3.80%
Yes - Part Time college/university	19.0	2.00%	4.0	1.71%	23.0	1.94%
Yes - vocational/technical/trade school	1.0	0.11%	2.0	0.85%	3.0	0.25%
Yes - K - 12 th grade	8.0	0.84%	1.0	0.43%	9.0	0.76%
Grand Total	**949.0**	**100.00%**	**234.0**	**100.00%**	**1183.0**	**100.00%**

Figure 63: Paper Survey Instrument (Front Page)

(for office use only) Route: ____ Time: ____ am / pm Initials: ____ Direction: ____ Date: ____

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

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

What is your HOME ADDRESS: (please be specific, ex: 123 W. Main St):
(If you are visiting the KANSAS CITY area, please list the address where you are staying locally and your home Zip Code.

Street Address ____ City ____ State ____ Zip Code ____ | *Visitors please provide home Zip Code* ____ Zip Code

COMING FROM?

1. What type of place are you COMING FROM NOW?
(the starting place for your one-way trip)
- O Your usual WORKPLACE
- O Work related place (ie job site)
- O Your **HOME** → *Go to Question #4*
- O Your hotel
- O Social, recreational or tourism
- O Shopping
- O School (K-12) (student only)
- O College or University (student only)
- O Airport (airline passenger only)
- O Medical / dental
- O Dining / coffee
- O Escorting others (children, elderly)
- O Personal business
- O Other: ____

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

____

3. What is the EXACT ADDRESS of this place? (OR intersection if you do not know the exact address:)

____

City: ____ State: ____ Zip: ____

4. How did you GET FROM the place in Question #1 TO THE VERY FIRST bus or streetcar you used for this one-way trip?
- O Walked all the way: how far did you walk? ____ blocks
- O BIKE → O *BIKE SHARE* O Personal Bike
- O Was dropped off using Uber, Lyft, or similar service (answer 4a)
- O Taxi (answer 4a)
- O Was dropped off by someone – not a service (answer 4a)
- O Drove alone and parked (answer 4a)
- O Drove or rode with others and parked (answer 4a)

4a. Where did you get ON the first bus or streetcar you used for this one-way trip (Write the nearest intersection / park-and-ride lot / streetcar station below):

____

5. Where did you get ON this bus/streetcar?
Please provide the nearest intersection / station name / park-and-ride lot:

GOING TO?

6. What type of place are you GOING TO NOW?
(the ending place for your one-way trip)
- O Your usual WORKPLACE
- O Work related
- O Your **HOME** → *Go to Question #9*
- O Your hotel
- O Social, recreational or tourism
- O Shopping
- O School (K-12) (student only)
- O College or University (student only)
- O Airport (airline passenger only)
- O Medical / dental
- O Dining / coffee
- O Escorting others (children, elderly)
- O Personal business
- O Other: ____

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

____

8. What is the EXACT ADDRESS of this place? (OR intersection if you do not know the exact address:)

____

City: ____ State: ____ Zip: ____

9. How will you GET TO your destination (listed in Question #6) after you get off the LAST bus or streetcar you will use for this one-way trip?
- O Walk all the way: how far did you walk? ____ blocks
- O BIKE → O *BIKE SHARE* O Personal Bike
- O Dropped off using Uber, Lyft, or similar service (answer 9a)
- O Taxi (answer 9a)
- O Dropped off by someone – not a service (answer 9a)
- O Drive alone (answer 9a)
- O Drive or ride with others (answer 9a)

9a. Where will you get off the last bus or streetcar you are using for this one-way trip (Write the nearest intersection / park-and-ride lot / streetcar station below):

____

10. Where will you get OFF this bus/streetcar?
Please provide the nearest intersection / station name / park-and-ride lot:

11. INCLUDING THIS BUS/STREETCAR, how many TOTAL BUSES/STREETCAR will you use to make THIS ONE-WAY TRIP?

O One, only this bus/streetcar O Two O Three O Four or more

11a. Please list the routes and/or streetcar stations in the exact order you use them for this one-way trip.

START → [ ] → [ ] → [ ] → [ ] → [ ] → **END**

1st route #/station | 2nd route/station | 3rd route/station | 4th route/ station | 5th route/ station

Figure 64: Paper Survey Instrument (Back Page)

OTHER INFORMATION ABOUT THIS TRIP(s)

11b. What is the primary purpose of the trip you are on now?
O to/from work O to/from school (K-12) O to/from personal business/appointments O tourism/sightseeing
O to/from seeking work O to/from medical appointment O to/from shopping
O excursion -trips made solely for the experience of streetcar O to/from entertainment (restaurants, museums, etc)
O to/from college (or other post high school classes)

12. What time did you BOARD this bus/streetcar? _____ : _____ **am / pm (circle one)**

13. Including YOU, how many people are traveling with you on this one way trip? _____ people

Other Information

14. How did you pay for this one-way trip?
O Cash O 3-day pass O Paper Transfer
O Mobile payment app O 31-day pass O Other _____
O 1-day pass O 31-day pass reduced fare

15. What type of fare did you pay?
O Full fare O Reduced fare Senior O Reduced fare Disabled O Reduced fare for youth
O Free (Veteran) O U-Pass (university pass)

15b. Would you continue to ride streetcar if there was a fare of $1.00 per trip? O Yes O No

ABOUT YOU AND YOUR HOUSEHOLD

15c. Do you have a valid driver's license? O Yes O No

16. How many working vehicles (auto or motorcycles) are available to your household? _____ vehicles
16a. [If #16 is more than NONE] Could you have used one of these vehicles for this trip? O Yes O No

17. Including YOU, how many people live in your household? _____ people

18. Including YOU, how many adults (age 16 and older) that are employed full or part time live in your household? _____ people

20. Are you a person with a disability? O Yes O No
20a. [If #20 is Yes] Which of the following types of disabilities apply, if any?
O Vision Impairment or Blindness O Hearing impairment O Mobility disability O declined
O Intellectual/cognitive impairment O Psychiatric disability O Other_____

21. What year were you born? _____

22. Are you of Hispanic, Latino, or Spanish Origin? O Yes O No

23. Are you? (check all that apply)
O American Indian / Alaska Native O Black/African American O Asian O Other Non White
O Native Hawaiian / Pacific Islander O White O Other: _____

24. What is your gender? O Male O Female O Other: _____

25. Which of the following BEST describes your TOTAL ANNUAL HOUSEHOLD INCOME in 2016 before taxes?
O Below $10,000 O $40,000 - $49,999 O $100,000 - $149,999
O $10,000-$24,999 O $50,000 - $59,999 O $150,000 - $199,999
O $25,000-$34,999 O $60,000 - $74,999 O $200,000 or more
O $35,000-$39,999 O $75,000 - $99,999 O Not provided

26. Do you speak a language other than English at home? O No O Yes - **Which language?** _____
IF YES: How well do you speak English? O Very Well O Well O Less than well O Not at all

19. Are you a student? (check the one response that BEST describes you)
O Not a student O Yes – Full Time college/university O Yes – K - 12th grade
O Yes – Part Time college/university O Yes – vocational/technical/trade school O Yes – other
19a. [If #19 is Yes] Please specify your college/university/school name:_____

WIN A PRIZE!!!!!

People who submit an accurately completed survey will be entered in a random drawing for a chance to win a $399 Vi gift card.

Name: _____
Phone Number: _____
E-mail address: _____

Figure 65: On-Line Survey Instrument (Route Selection)

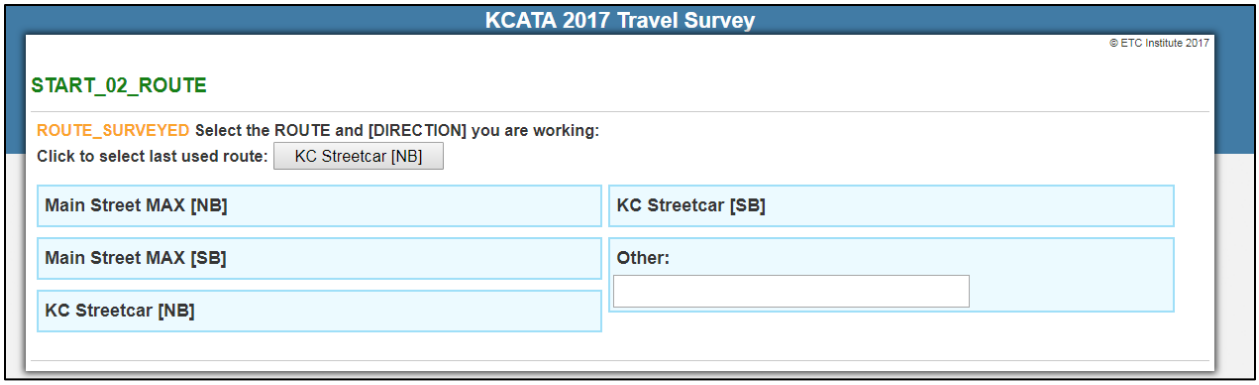


Figure 66: On-Line Survey Instrument (Origin Location Selection)

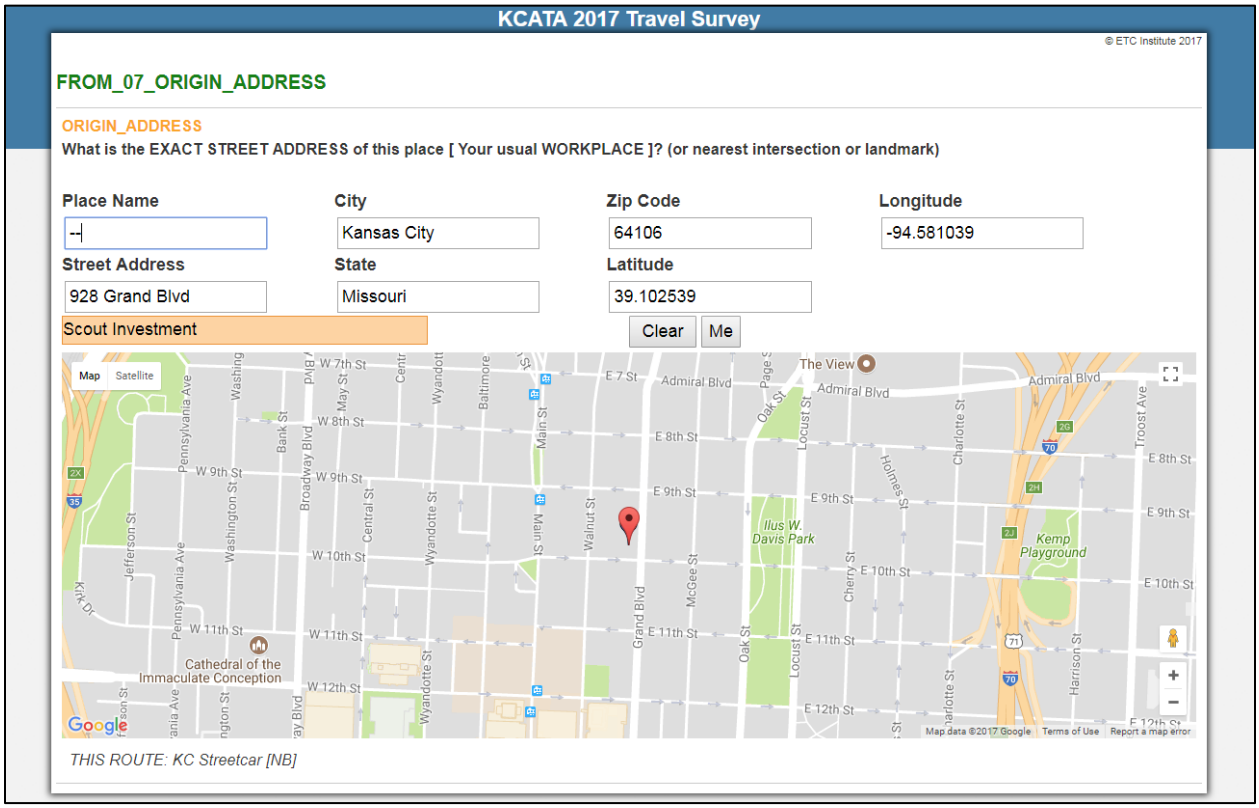


Figure 67: On-Line Survey Instrument (Destination Type Selection)

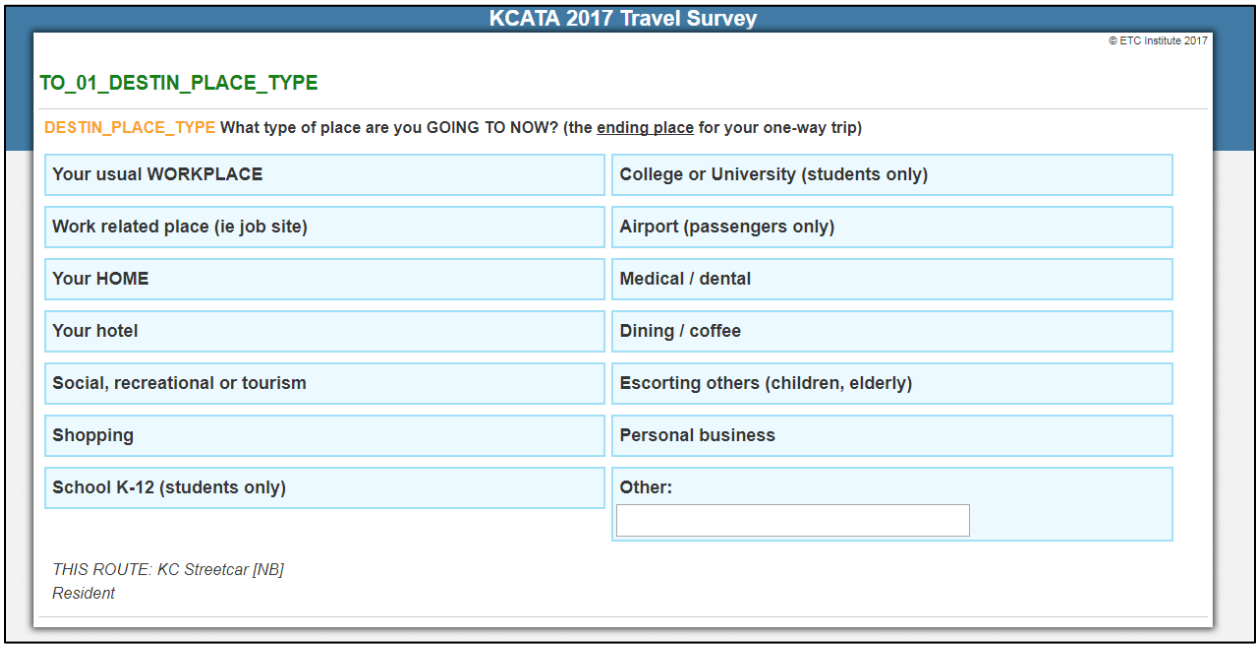


Figure 68: On-Line Survey Instrument (Boarding Location Selection)

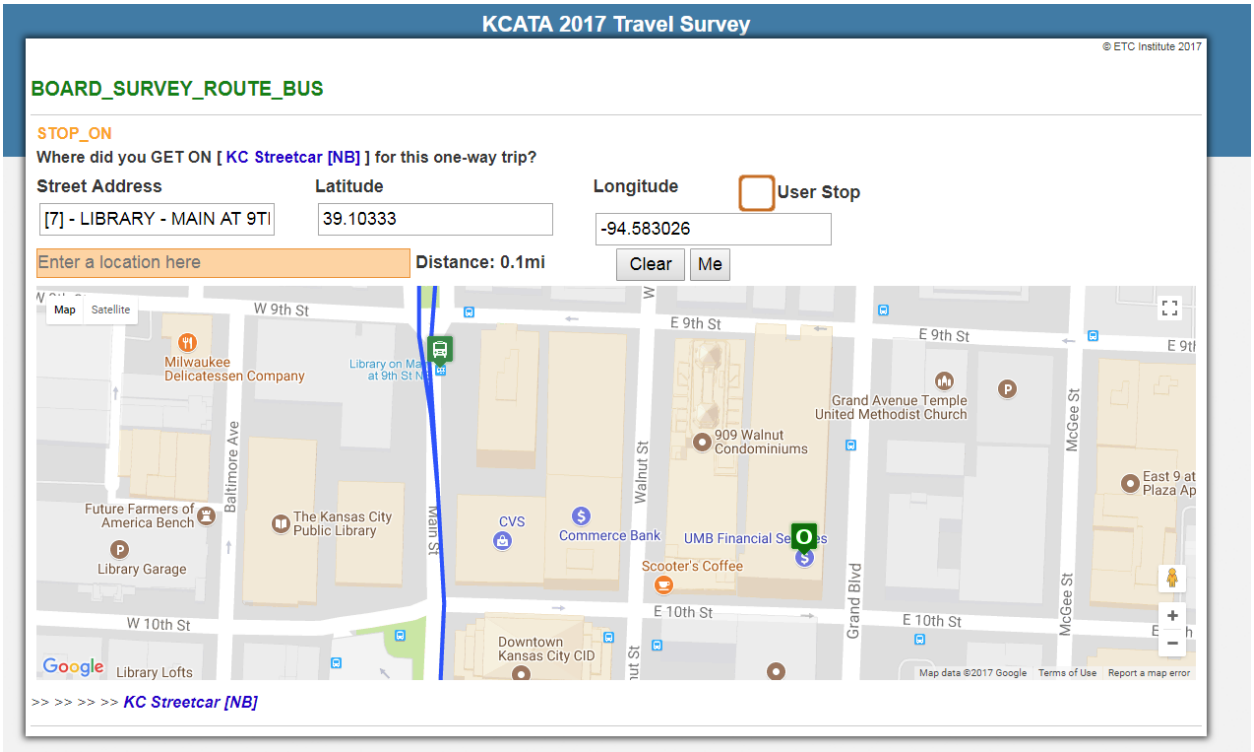


Figure 69: On-Line Survey Instrument (Demographic Selections Example #1)

KCATA 2017 Travel Survey

VISIT_COUNT_VH_PPL_HH

DRIVING_LICENSE Do you have a valid driver's license?

Choose one of the following answers

Yes	No

COUNT_VH_HH How many working vehicles (auto or motorcycles) are available to your household?

None (0)	Three (3)	Six (6)	Nine (9)
One (1)	Four (4)	Seven (7)	Ten or more (10+)
Two (2)	Five (5)	Eight (8)	

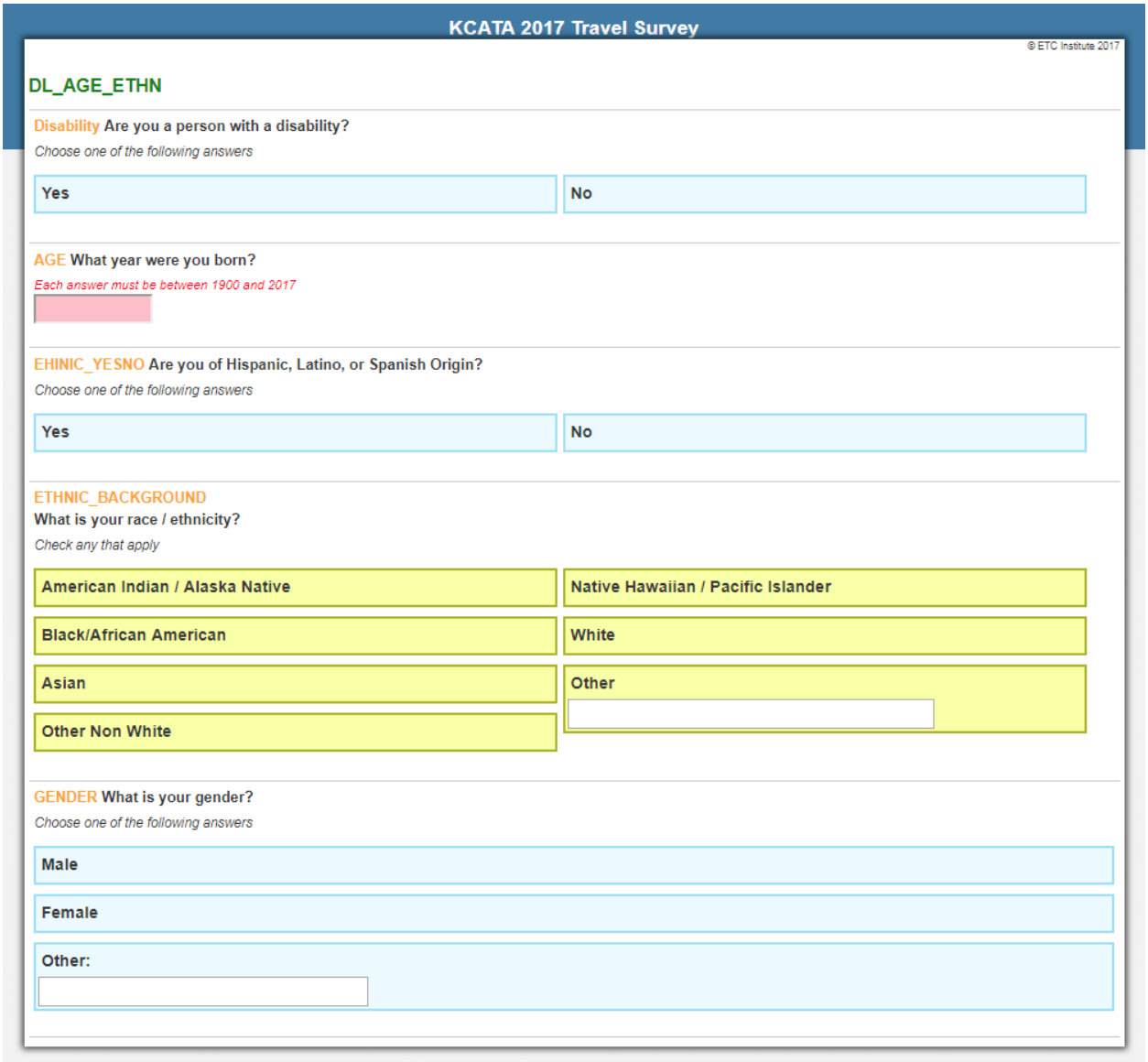
HH_SIZE Including YOU, how many people live in your household?

One (1)	Four (4)	Seven (7)	Ten or More (10+)
Two (2)	Five (5)	Eight (8)	
Three (3)	Six (6)	Nine (9)	

COUNT_WORKED_OUT_HH Including YOU, how many adults (age 16 and older) that are employed full or part time live in your household?

None (0)	Three (3)	Six (6)	Nine (9)
One (1)	Four (4)	Seven (7)	Ten or More (10+)
Two (2)	Five (5)	Eight (8)	

Figure 70: On-Line Survey Instrument (Demographic Selections Example #2)



KCATA 2017 Travel Survey

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DL_AGE_ETHN

Disability Are you a person with a disability?

Choose one of the following answers

Yes | No

AGE What year were you born?

Each answer must be between 1900 and 2017

EHINIC_YESNO Are you of Hispanic, Latino, or Spanish Origin?

Choose one of the following answers

Yes | No

ETHNIC_BACKGROUND

What is your race / ethnicity?

Check any that apply

American Indian / Alaska Native | Native Hawaiian / Pacific Islander

Black/African American | White

Asian | Other

Other Non White

GENDER What is your gender?

Choose one of the following answers

Male

Female

Other:

Figure 71: On-to-Off (O2O) Counts Instrument