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## INTRODUCTION

In the Spring of 2005，the North Front Range Metropolitan Planning Organization（NFR MPO）and LSA Associates， Inc．conducted onboard transit surveys of bus passengers on the Fort Collins＇Transfort，Greeley The BUS，and the City of Loveland Transit（COLT）systems．These surveys were conducted as part of an ongoing，comprehensive data collection effort by the MPO to support regional transportation planning activities in the North Front Range．Results will be used in the upcoming update to the MPO＇s regional travel demand model and for operations planning，long－ range planning，performance analysis，and market evaluations．

All of the regular fixed routes of each system were surveyed．Surveys were conducted on the following dates：
－Fort Collins＇Transfort－Wednesday，March 30， 2005
－Loveland＇s COLT－Monday，April 4， 2005
－Greeley＇s The Bus－Wednesday，April 6， 2005


The North Front Range Metropolitan Planning Organization is designated under federal and state law as the responsible agency for coordinating and conducting long－range transportation planning for Colorado＇s North Front Range．Cities， counties，the Colorado Department of Transportation，and other agencies are represented on the MPO＇s Board of Directors and various technical advisory committees．They are responsible for developing the region＇s long－range transportation plan and short－range transportation improvement program．The 25 －year plan and 6－year program direct the expenditure of federal，state，and some local transportation funds into roadway，bicycle，transit，and other transportation facility and service investments．

Onboard transit surveys are conducted to collect origin－ destination，trip purpose，fare，transfer，and other transit ridership information and travel behavior based on existing services．Socioeconomic characteristics of the bus patrons were also collected．Ridership information was collected by the bus driver and made available in order to expand the survey results．

Surveys of this type are used to gather travel behavior information from current transit patrons．They support the MPO＇s efforts in building and maintaining an accurate regional travel demand model．Travel demand models are used to forecast travel conditions in the future， which in turn are used to identify future transportation needs and solutions to address them．

Transit surveys are traditionally conducted onboard． Survey attendants rode on the buses and introduced the survey to boarding patrons．Respondents were asked to

## Modeling Process

 complete the survey on the bus and leave it in a collection box or hand it to the attendant．If surveys could not be completed on the bus，the back of the survey form was printed with a postage－paid return mail address to give passengers the option of completing the form and dropping it in the mail at a later time．

This document has been prepared to describe the survey process and results of the 2005 NFR Onboard Transit Surveys. The information is organized into chapters that follow the sequence of activities involved in the survey and its analysis. Chapter 2 gives a brief description of the overall survey methodology and design including route selection, sampling procedure, and survey form preparation. Chapter 3 describes the survey preparation and conduct. Chapter 4 contains a summary of the steps taken to organize and clean the data, and Chapter 5 summarizes the findings from the survey.


## SURVEY DESIGN AND METHODOLOGY

## SURVEY METHODOLOGY

Several types of transit survey methods were reviewed for this effort，although only＂onboard＂techniques were considered appropriate because the onboard survey captures information from travelers on the way to their destination．In this manner，the onboard survey provides timely and accurate data that can be lacking with other methods．

Possible methodologies included having the bus drivers hand surveys to boarding passengers for completion by the patron，using attendants to interview and record responses from bus patrons，and surveyors handing surveys to patrons for completion．

The latter method was selected for several reasons．Asking the bus drivers to distribute surveys was deemed too burdensome in addition to their existing duties of recording boardings，taking fares，operating the bus，and others． Also，the drivers were unlikely to have the time to answer questions from passengers．Therefore，an attendant onboard the bus was required．

The attendant could either interview the passengers directly or distribute surveys to the passengers for them to complete．The latter，self－administered option was chosen because of the intensive resource requirements associated with onboard surveyors interviewing passengers．

Surveys were conducted on Monday or Wednesday，the highest ridership days for the three transit systems．To the extent possible，each route was surveyed in its entirety for a full day of operation．All of the services operated from roughly 6：00 am until early evening．

## ROUTE SELECTION



Some of the primary objectives of the onboard transit survey are to understand the travel patterns，reasons for riding transit，and trip purposes of people using the three transit systems in northern Colorado．The information that is obtained through the survey will be used to enhance and calibrate the mode choice process of the NFR MPO＇s regional travel demand model and permit an accurate validation of transit ridership．

For an onboard transit survey，a statistically significant number of bus trips and passengers need to be sampled to permit meaningful expansion of the data to represent all transit travel．A bus person trip is defined as the distinct， one－way movement of a bus rider from an origin to a destination，including the portions of the trip between the origin and the bus and the bus and the final destination．It may include more than one bus ride if the patron transfers between buses．The onboard transit survey was designed so that each survey form represents a bus person trip．


Based on the relatively low number of routes and ridership volumes of the three transit services of interest, the goal was to survey a large number of routes, bus trips and bus person trips. The survey encompassed complete operating days to obtain as much passenger trip information as realistically possible.

ALL ROUTES MAP


The survey was conducted on all daytime Transfort routes, including Routes I through 9, II, 14, 15, and the FoxTrot. There are no Routes 10, 12, or 13. Routes 91 and 92 were not surveyed because they have very limited operations and serve students at Lincoln Junior High and Poudre High Schools.

Both of Loveland's two routes and all of Greeley's six routes were surveyed for an entire day of operations. Appendix A contains route maps and schedules in effect on the survey date for each respective bus agency.

## DATA ELEMENTS AND SURVEY FORM DESIGN

The procedures used to develop the onboard transit survey methodology and the design of the survey form, or questionnaire, were based in part on experiences gained from previous survey efforts and a desire to maintain continuity with the 1999 Transfort Onboard Survey. Also, it was imperative to maintain as much consistency as possible between the surveys for each of the three transit systems. Some differences were allowed in order to accommodate differences in fares and specific requests of the transit operators.

The questionnaire was designed to elicit the desired information and be easy to understand and complete by the bus patrons. As is often the case, more and more information was desired during the survey planning discussions. The survey design process became a balancing act between retrieving as much information as possible while keeping the survey form to one page with reasonable font sizes.


The survey forms were unique for each transit system but similar in many ways. The front of the form included a short paragraph identifying the purpose of the survey and requesting that the bus rider complete the survey. A business reply mail window was also printed on the front of each survey to allow for completion and mailback of the survey at a later time. Finally, instructions for completing and returning the survey were included.

The back of the form contained the questionnaire. These were divided into three sections associated with the desired information as follows:

- trip information related to origin, trip purpose, access mode, and fare;
- trip information related to destination, purpose, and egress mode; and
- socioeconomic and personal information such as reasons for riding, frequency, age, income, work status, gender, and household size.

In addition to these sections, three questions were added to the Greeley survey that were not included in the Fort Collins or Loveland surveys. These related to the riders' opinions regarding the quality of the service and other attitudinal information. Finally, each survey contained space for the respondent to record additional comments. Surveys were prepared in English and Spanish. Appendix B contains survey forms in both languages for each of the bus systems.

The questionnaires were designed to fit on an $81 / 2$ inch by 11 inch sheet of paper folded twice so that the business reply mail information would appear on the front when folded. Each survey was printed with a serial number in order to keep track of the route and streamline the administering of the survey. The serial numbers also provided a unique tracking number for subsequent data editing and verification efforts.

## SAMPLE SIZE

It is not necessary to obtain interviews from all transit riders in order to draw reliable statistical inferences regarding their travel behavior. A sample can be selected and the information obtained from the sampled passengers can be used instead of collecting data from all passengers. The sampled passengers are then expanded mathematically to represent all passengers. The minimum number of surveys necessary to provide a statistically meaningful expansion is based upon sample statistics.

Normally, a statistical analysis of the population and desired statistical reliability would be employed to determine which passengers would receive surveys either by route, time of day, or other strata. However, due to the relatively low ridership numbers on bus routes in the North Front Range and the ease in which the surveys could be distributed, it was decided that virtually all boarding passengers on all daytime bus routes would be surveyed.

The statistical reliability desired for each route for this onboard transit survey is $\pm 10 \%$ error at the $95 \%$ confidence interval. Many of the routes are expected to meet these criteria because of the high number of surveys distributed and the relatively high response rates. However, due the low ridership on several of the routes, some of the routes were not expected to meet this goal. In any case, the desired error and confidence interval for each route is simply that, a desire. Since every boarding passenger received a survey form to complete, little can be done to increase response rates short of a significant and costly redesign of the survey methodology.

Several passengers returned incomplete or blank surveys. About 400 complete survey responses were needed for each route to yield the desired goal. With this amount, the statistical reliability is $\pm 9-10 \%$ at the $95 \%$ confidence interval. Some of the routes did not have this much daily ridership. Fewer returned complete surveys produce a higher amount of error.

Appendix B contains a complete description of the statistical calculations and a table showing the statistical validity for the $95 \%$ confidence interval at each location.


## PREPARATION AND CONDUCT OF THE SURVEY

## AGENCY COORDINATION

Coordination with representatives of the respective transit operators was a necessary part of the planning of the onboard surveys. Their participation and insight added a significant amount of value and efficiency to an otherwise complex effort. The MPO and consultant project managers met with the bus agencies at the onset of the project to establish working relationships and discuss topics such as ridership availability, advertising on buses, driver awareness of the survey, which routes to survey, and a litany of other items. Ongoing coordination throughout the survey process was conducted to refine issues such as the scheduling of survey attendants. The assistance of the bus agency representatives is much appreciated.

## PUBLICITY/ADVERTISING

Advertising the bus survey was not necessary for the general public since the survey was geared directly toward bus riders and was administered on the buses. However, it was important to raise awareness so that potential respondents understood that the survey was legitimate and supported by the transit service.

Each survey attendant was required to wear an official name tag printed associating them with the survey. In addition, bus drivers were briefed on the survey before it occurred. Posters were placed on the buses in advance of and on the day of the survey to further raise awareness and participation.


## STAFFING AND TRAINING

Staffing for the 2005 North Front Range Onboard Transit Surveys was provided by the MPO, consultant, and temporary workers hired through a local employment agency. The temporary workers filled the survey attendants positions and were managed by the MPO and consultant staffs. One survey attendant was placed on each bus throughout the day and replaced or rotated as necessary to maximize coverage and responses. The attendants distributed surveys and pencils to passengers as they boarded the bus, answered questions when necessary, and collected surveys as passengers departed.

Previous to boarding the buses, the survey attendants were provided with an overview of the purpose of the survey and trained on their specific duties. A short list of instructions was prepared for their reference.

## SUPERVISION AND DATA COLLECTION

During the planning stages of the survey, Mondays and Wednesdays were determined to be the days of highest ridership and were thus selected for the survey. The onboard transit surveys were conducted on separate days for each of the three transit systems as follows:

- Fort Collins' Transfort - Wednesday, March 30, 2005
- Loveland's COLT - Monday, April 4, 2005
- Greeley's The Bus - Wednesday, April 6, 2005

The transit systems start their day well before rush hour in order to accommodate as many passenger needs as possible, including work trips, school/university trips, and others. Therefore, the survey crew started early as well. Survey attendants and MPO and consultant staff arrived at a centralized location on the day of the survey about an hour before the buses began their runs. A brief training session was conducted and materials were distributed to the attendants. Several of the temporary staff worked on more than one survey, so subsequent training needs decreased with each survey.

To the extent possible, a survey attendant rode on every bus on every route. This worked well for the Greeley and Loveland systems, but an insufficient number of temporary staff arrived the morning of the Transfort survey. Therefore, the Fort Collins survey had to be closely managed to provide as much coverage on the highest ridership routes as possible. In hindsight, this decision was questioned by the project managers because obtaining the desired number of surveys on the high ridership routes was relatively easy whereas responses on the lower ridership routes were relatively scarce. It may have been more desirable to maximize staffing coverage on the lowest volume routes. In any case, the problem was largely confined to the morning shift and alleviated in the afternoon when additional staff was available.

The survey attendants generally rode behind or across from and behind the driver, distributing surveys and pencils to passengers as they boarded. The attendants were sometimes called upon to answer questions but not to a large extent. Based on comments from the survey attendants, questions were typically more curious in nature rather than clarifying questions regarding the questionnaire. Near the rear exit door of the bus was placed a signed cardboard box for respondents to return their questionnaires and pencils.

Attitudes and work habits varied significantly among the temporary workers. After the Transfort survey, specific attendants were asked to work on the other two surveys whereas others were not.

Lunches and snacks were provided to the survey attendants at centralized dwell points in the system which they ate on the bus. Breaks occurred at the dwell points. Attendants were instructed to notify the driver when taking a break.

Overall, the data collection effort was deemed successful and ran smoothly.

## DATA PROCESSING

The questionnaires that the surveyors collected were extensively sorted and reviewed before the data summaries could be prepared. This section presents a brief description of the steps followed to sort the questionnaires by bus trip and route, identify the type of bus service, edit and check the responses to each question, and factor the responses to represent the total number of riders on each route. Between the three transit systems, a total of 2,004 questionnaires were received. Transfort in Fort Collins accounted for $I, 47 I$ valid surveys received, The Bus in Greeley had 416 valid surveys returned, and COLT in Loveland had II7 valid surveys returned.

## DATA ENTRY AND EDITING

After the surveys were collected, they were entered into an Access databases for each transit system using a custom interface that mimicked the survey instrument. The data entry operators were trained on the interface and provided instructions how to address common issues that arose through the entry process. Such issues include someone writing in an option in an "other" category that already exists, or providing a common place name (such as CSU) instead of an address. The interface was designed to only allow users to enter data within fixed ranges, so minimal post-processing would be necessary.

After the surveys were entered, they were divided into three categories: I) no issues; 2) some concerns, partial data entered; and 3 ) many concerns, no data entered. The second and third groups were scrutinized by consultant staff. Since the data entry forms did not allow certain values for certain questions or multiple answers to certain questions, surveys with those errors were flagged by the data entry personnel for further staff review. Minor editing or clarifications were made by staff and the database entries for those surveys were added or completed.

Several data cleaning operations to the Access databases were made as a result of minor oversights made in the survey instrument design. In all three surveys, question 7 asked "How will you get from this bus to the place that you are going to?" One of the answers was "Transfer from" where it should have read "Transfer to." For the most part, respondents assumed this meant "Transfer to" and entered the route they were going to transfer to. However, in some cases, they entered the route they were currently on, or the same route that was entered in question 3, "How did you get to this bus?" To check this question, all responses to question 7 that indicated a transfer were reviewed, comparing the route that the survey was distributed on (available by cross-referencing the survey identification number) to the route identified on the "Transfer to" blank. In those cases that the current bus route and the transfer to blank were the same, the transfer to route number was deleted from the database. Responses that indicated two transfers (answering "transfer" to both question 3 and question 7), were also reviewed in detail and corrected where necessary.

A second issue that arose in The Bus and COLT surveys was that in question 5, "Where are you going to now?" the option choice "Doctor/Dentist" was inadvertently omitted. To address this issue, all surveys in which "other" was answered to question 5 were reviewed and any responses that identified "doctor," "dentist," "medical appointment" or something similar were re-classified as "Doctor/Dentist." Additional quality checks were made in the Access database and the data was cross-classified for further evaluation. Where problems were identified that could not be addressed through the Access database, the original survey form was located and the information verified. However, due to the data entry procedures and limitations on valid responses, such instances were rare.

## GEOCODING OF ORIGINS AND DESTINATIONS

Geocoding is the process of converting origin/destination information to physical locations. On the survey forms, Questions 2 and 6 requested origin and destination responses, respectively, in the form of a street address or crossstreets. Zip codes were also requested. Many respondents provided place names such as Colorado State University instead of addresses. These were converted to addresses in the database where possible. However, some place names such as Safeway could not be used due to multiple locations in close proximity to routes.

The address information was geocoded using TransCAD software which provided specific latitudes and longitudes for each origin and destination. The initial pass to geocode the addresses was conducted by the consultant, and the MPO conducted subsequent efforts to refine the database in order to maximize the number of geocoded samples. In some cases, this involved manually reviewing maps to identify the location. Results from the initial geocoding exercise conducted with the TransCAD software are shown in Table I.

## Table I <br> Initial Geocoding Results

|  | ORIGINS |  |  |  | DESTINATIONS |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SYSTEM | TOTAL <br> SURVEYS | SURVEYS <br> WITH <br> ADDRESS | INITIAL <br> NUMBER OF <br> GEOCODED <br> ADDRESSES | PERCENT <br> GEOCODED | TOTAL <br> SURVEYS | SURVEYS <br> WITH <br> ADDRESS | INITIAL <br> NUMBER OF <br> GEOCODED <br> ADDRESES | PERCENT <br> GEOCODED |
| Transfort | $1,47 \mathrm{I}$ | $\mathrm{I}, 295$ | $\mathrm{I}, 147$ | $89 \%$ | $\mathrm{I}, 47 \mathrm{I}$ | $\mathrm{I}, 224$ | $\mathrm{I}, 06 \mathrm{I}$ | $87 \%$ |
| Loveland | 117 | 90 | 73 | $8 \mathrm{I} \%$ | 117 | 70 | 50 | $71 \%$ |
| Greeley | 416 | 329 | 266 | $81 \%$ | 416 | 279 | 189 | $68 \%$ |
| Total | 2,004 | 1,714 | 1,486 | $87 \%$ | 2,004 | $\mathrm{I}, 573$ | $\mathrm{I}, 300$ | $83 \%$ |

Results from the initial geocoding exercise are encouraging and sufficient for origin-destination analysis. However, it would be desirable to increase the geocoded destinations for the Loveland and Greeley surveys above $80 \%$. The more labor-intensive efforts of the MPO to increase the number of geocoded samples yielded the results shown in Table 2.

Table 2
Final Geocoding Results

| SYSTEM | ORIGINS |  |  |  | DESTINATIONS |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total Surveys | SURVEYS WITH Address | FINAL Number of Geocoded Addresses | Percent Geocoded | Total SURVEYS | SURVEYS WITH Address | FINAL Number of Geocoded Addresses | Percent Geocoded |
| Transfort | 1,47 I | 1,295 | n/a | n/a | 1,47 I | 1,224 | n/a | n/a |
| Loveland | 117 | 90 | n/a | n/a | 117 | 70 | n/a | n/a |
| Greeley | 416 | 329 | n/a | n/a | 416 | 279 | n/a | n/a |
| Total | 2,004 | I,714 | n/a | n/a | 2,004 | 1,573 | n/a | n/a |

Note: Final geocoding was not complete at time of printing.
The maps shown in Figures I-3 identify the geocoded origin and destination locations for each of the surveys. This information will be valuable for use in enhancing and calibrating the mode choice module of the North Front Range Regional Travel Demand Model.

Figure I
Geocoded Survey Results for COLT Bus Service


Figure 2
Geocoded Survey Results for The Bus (Greeley) Service


Figure 3
Geocoded Survey Results for Transfort Service


Note: Figures I-3 are based on initial geocoding results and should be replaced with the final results when they become available.

## DATA EXPANSION

Expansion factors are necessary to provide a means of expanding the number of transit passengers for which interviews were obtained from the trips surveyed (i.e., the sample) to the total number of daily passengers (i.e., the population). The sample was aggregated by bus route and time of day (morning or afternoon) and expanded to the daily ridership. For the interlined routes, the two routes were expanded as one unit. Expansion factors were developed for the total usable number of records obtained during the survey.

Expansion factors were computed for each bus route (or combination of routes for interlined routes) according to the following formula in order to factor the number of valid surveys received during the survey period to the total daily ridership:

Daily Expansion Factor = S / P
where:
$\mathrm{S}=$ number of passengers (boardings) for time period (AM or PM)
$P=$ number of valid surveys received during time period (AM or $P M$ )
Only Transfort data was expanded by time period with the exception of Routes 3 and II due to insufficient AM responses. Due to availability of ridership data by time, survey results from The Bus and COLT were expanded based on daily ridership only.

Tables 3 through 5 summarize the expansion factors for each system.
Table 3
Transfort Expansion Factors by Route and Time of Day

|  | RIDERSHIP |  |  | SURVEY RESPONSES |  |  | EXPANSION FACTORS |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ROUTE | AM | PM | DAILY | AM | PM | DAILY | AM | PM | DAILY |
| $\mathrm{I} / \mathrm{I} 5$ | 426 | 673 | $\mathrm{I}, 099$ | 124 | 124 | 248 | 3.44 | 5.43 | 4.43 |
| 2 | 239 | 22 I | 460 | 169 | 92 | 26 I | 1.4 I | 2.40 | I .76 |
| 3 | 282 | 288 | 570 | 13 | 113 | 126 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | 4.52 |
| $4 / 6$ | 362 | 325 | 687 | 61 | 158 | 219 | 5.93 | 2.06 | 3.14 |
| 5 | 133 | 217 | 350 | 32 | 50 | 82 | 4.16 | 4.34 | 4.27 |
| 7 | 89 | 96 | 185 | 36 | 68 | 104 | 2.47 | I .4 I | I .78 |
| 8 | 209 | 214 | 423 | 39 | 23 | 62 | 5.36 | 9.30 | 6.82 |
| $9 / \mathrm{I} 4$ | 14 I | 187 | 328 | 38 | 38 | 76 | 3.7 I | 4.92 | 4.32 |
| II | 530 | 52 I | $\mathrm{I}, 05 \mathrm{I}$ | 0 | 159 | 159 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | 6.6 l |
| Foxtrot | 194 | 258 | 452 | 59 | 69 | 128 | 3.29 | 3.74 | 3.53 |

Table 4
COLT Expansion Factors by Route

| ROUTE | RIDERSHIP | SURVEY <br> RESPONSES | EXPANSION <br> FACTORS |
| :---: | :---: | :---: | :---: |
| Jitterbus | 214 | 78 | 2.74 |
| Tango | 77 | 39 | 1.97 |

Table 5
The Bus Expansion Factors by Route

| ROUTE | RIDERSHIP | SURVEY <br> RESPONSES | EXPANSION <br> FACTORS |
| :---: | :---: | :---: | :---: |
| $\mathrm{I} / 2$ | 192 | 3 I | 6.19 |
| $2 / \mathrm{I}$ | 173 | 83 | 2.08 |
| $3 / 4$ | 109 | 37 | 2.95 |
| $4 / 3$ | 123 | 59 | 2.08 |
| 5 | 417 | 18 I | 2.30 |
| 6 | 72 | 24 | 3.00 |

## TRANSFORT SURVEY SUMMARIES

This chapter summarizes the results of the Transfort Onboard Transit Survey conducted on March 30，2005．A questionnaire was distributed to persons boarding each of the Transfort routes to record specific population and travel characteristics，such as：

## Trip Characteristics

－Trip Purpose at Point of Trip Origin
－Mode Used to Access Transit
－Method of Fare Payment
－Trip Purpose at Point of Trip Destination
－Egress Mode to Final Destination
－Bus Usage per Week
－Qualitative Reasons for Using Transfort System
－Physical Location of Trip Origin
－Physical Location of Trip Destination
－Combined Origin and Destination Trip Purpose by Time of Day

## Socioeconomic Data

－Driver＇s License
－Gender of Rider
－Age of Rider
－Vehicles per Household
－Employment Status
－Household Occupancy
－Annual Household Income
The actual number of survey responses was expanded based on route ridership．All results presented here represent expanded data．All statistics are presented in table format accompanied with a short discussion of significant findings．

## TRIP ORIGIN PURPOSE

On the survey questionnaire, respondents were asked to identify the origin of their trip, or the place they were coming from when they received the survey. They were later requested to identify their destination, the next place they were going following receipt of the survey. The purpose at each origin and destination included ten categories: home, work, shopping, University/college, other school, hotel, doctor/dentist appointment, recreation, restaurant, and other (specify). Responses for the place of origin are presented in Table 6.

Table 6 Origin Purpose

| ORIGIN PURPOSE | FREQUENCY |
| :---: | :---: |
| Home | $51.1 \%$ |
| Work | $7.8 \%$ |
| Shopping | $2.0 \%$ |
| University/College | $25.9 \%$ |
| Other School | $6.0 \%$ |
| Hotel | $0.2 \%$ |
| Doctor/Dentist | $0.7 \%$ |
| Recreation | $0.9 \%$ |
| Restaurant | $0.6 \%$ |
| Other | $4.7 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0} \%$ |



As shown above, over half of all bus respondents stated that they began their trip from home. Over one-fourth of those surveyed recorded that University or College was their origin prior to receiving a questionnaire. Only 8\% responded that their trip began at a work location. Home, work, and school are typical trip ends for transit riders due to the regular schedule often associated with these activities.

TRANSFORT SURVEY SUMMARIES
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## MODE USED TO ACCESS BUS

The next question asked the respondent the mode of access used to get to the surveyed bus. This information is important to identify since its result has significant implications for promoting specific roadway, sidewalk, or bike lane enhancements. Further, walk trips can be analyzed to characterize the trip lengths and number of transfers taken by transit riders. Table 7 presents these findings.

Table 7
Bus Access Mode

| ACCESS MODE | FREQUENCY |
| :---: | :---: |
| Walk | $83.5 \%$ |
| Drove Car | $1.6 \%$ |
| Bicycle | $4.9 \%$ |
| Passenger in Car | $1.6 \%$ |
| Transferred from Bus | $7.2 \%$ |
| Other | $1.3 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



Bus Access Mode

SA

Not surprising, those surveyed stated that their primary means of access to the bus was walking (84\%). Bus transfers accounted for approximately $7 \%$ of responses. Almost $5 \%$ responded that they used a bicycle to access their surveyed bus route. Approximately $3 \%$ were either the driver or passenger of a motorized vehicle. Given the lack of formal park-and-ride lots, the automobile access to bus was not expected to account for a large portion of the bus access mode.

Of those that walked to access the bus, over one-third (35\%) walked one block or less. Over $90 \%$ of respondents that walked to the bus walked four blocks or less.

Table 8
Number of Blocks Walked to Access Bus

| NUMBER OF BLOCKS | FREQUENCY |
| :---: | :---: |
| $0-1$ | $35.3 \%$ |
| 2 | $32.6 \%$ |
| 3 | $15.6 \%$ |
| 4 | $7.5 \%$ |
| 5 | $4.6 \%$ |
| 6 | $1.7 \%$ |
| 7 | $2.0 \%$ |
| $8+$ | $0.7 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



## METHOD OF FARE PAYMENT

Understanding the method of payment can identify what type of rider used the Transfort system during the survey. The potential survey responses were categorized in a similar way to the standard Transfort fare categories.
Discounted passes may include 10 -ride tickets, monthly passes, and commuter passes. Annual discounted passes can also be purchased for seniors, disabled citizens, and Medicare cardholders. Table 9 summarizes the response to the question "What was your fare when you boarded this bus?"

Table 9
Method of Fare Payment

| PAYMENT | FREQUENCY |
| :---: | :---: |
| $\$ 1.25$ | $9.2 \%$ |
| $\$ 1.00$ | $2.8 \%$ |
| $\$ 0.60$ | $1.1 \%$ |
| $\$ 0.50$ | $0.1 \%$ |
| Student Pass | $50.6 \%$ |
| Pass | $20.4 \%$ |
| Transfer | $1.1 \%$ |
| Free Fare | $\mathbf{1 4 . 6 \%}$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



Fare Paid

## 2005 NORTH FRONT RANGE ONBOARD TRANSIT SURVEY

Over half (5I\%) of all persons surveyed stated that they used their student pass to board the bus. This pass is paid for through CSU activity fees and as a result, any full-time student may ride free. Approximately $20 \%$ utilized a discounted pass to access Transfort service. These riders most likely comprise the working segment of the ridership. Those persons paying the $\$ 1.25$ fare ( $9 \%$ ) are most likely infrequent riders as they do not have a discounted pass. In total, $86 \%$ of riders used either a pass or were fare free. In comparing transfer data from Tables 7 and 9 , it was found that the difference is primarily due to the use of student passes in lieu of actual transfer tickets when transfers occurred.

## TRIP DESTINATION PURPOSE

Riders were also queried as to their final destination. Table 10 presents these findings:
Table 10 Destination Purpose

| DESTINATION PURPOSE | FREQUENCY |
| :---: | :---: |
| Home | $40.2 \%$ |
| Work | $13.2 \%$ |
| Shopping | $5.0 \%$ |
| University/College | $24.6 \%$ |
| Other School | $4.7 \%$ |
| Hotel | $0.1 \%$ |
| Doctor/Dentist | $\mathbf{1 . 1 \%}$ |
| Recreation | $2.4 \%$ |
| Restaurant | $\mathbf{1 . 1 \%}$ |
| Other | $7.4 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



Forty percent of responses stated that home was their destination. University/College accounted for one-fourth of destinations and work made up 13\%. Similar to the trip origin purpose, trip ends on the Transfort system tend to be home, work, or school.

## MODE USED FROM BUS TO DESTINATION

The mode in which bus passengers completed their trip is as equally important as understanding how they accessed the bus route. Table II presents the responses reported during the on-board survey:

Table II
Bus Departure Mode

| DEPARTURE MODE | PERCENT |
| :---: | :---: |
| Walk | $81.0 \%$ |
| Drove Car | $0.8 \%$ |
| Bicycle | $3.9 \%$ |
| Passenger in Car | $\mathrm{I} .1 \%$ |
| Bus Transfer | $\mathbf{1 1 . 8 \%}$ |
| Other | $\mathrm{I} .4 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



As would be expected, the walk mode accounted for over $80 \%$ of all responses for mode used to access their final destination. Over 10\% transferred from one bus to another bus. Less than $4 \%$ used bicycles to access their final destination. Less than $2 \%$ used some form of motorized vehicle (driver or passenger). These figures, as expected, are very similar to the bus access mode distribution shown in Table 7.

Of those that walked to access their destination, over half (54\%) walked one block or less. Almost $90 \%$ of respondents that walked to their destination walked four blocks or less.

Table 12
Number of Blocks Walked to Access Destinations

| NUMBER OF BLOCKS | FREQUENCY |
| :---: | :---: |
| $0-1$ | $54.3 \%$ |
| 2 | $20.1 \%$ |
| 3 | $9.6 \%$ |
| 4 | $5.5 \%$ |
| 5 | $3.5 \%$ |
| 6 | $2.1 \%$ |
| 7 | $1.3 \%$ |
| $8+$ | $3.5 \%$ |
| TOTAL | $100.0 \%$ |



## TRIP PURPOSE

The trip origin and destination responses were analyzed based on three separate time periods: AM, PM, and daily. The following tables show an origin-destination matrix of trip purpose by time period.

Table 13
AM Period Trip Purposes

| TO <br> FROM | HOME | WORK | SHOP | UNIV | SCHOOL | HOTEL | DR/DENT | REC | REST | OTHER | TOTAL |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Home | $0.0 \%$ | $26.3 \%$ | $4.0 \%$ | $32.0 \%$ | $9.4 \%$ | $0.0 \%$ | $2.3 \%$ | $1.2 \%$ | $0.9 \%$ | $7.5 \%$ | $0.0 \%$ |
| Work | $1.5 \%$ | $0.0 \%$ | $0.2 \%$ | $0.2 \%$ | $0.2 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.2 \%$ | $1.5 \%$ |
| Shop | $1.3 \%$ | $0.2 \%$ | $0.0 \%$ | $0.2 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $1.3 \%$ |
| University | $3.5 \%$ | $0.6 \%$ | $0.4 \%$ | $0.0 \%$ | $0.2 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.8 \%$ | $3.5 \%$ |
| School | $0.4 \%$ | $0.0 \%$ | $0.2 \%$ | $0.2 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.2 \%$ | $0.4 \%$ |
| Hotel | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.1 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ |
| Dr/Dentist | $0.7 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.2 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.7 \%$ |
| Recreation | $0.2 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.1 \%$ | $0.2 \%$ |
| Restaurant | $0.2 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.3 \%$ | $0.2 \%$ |
| Other | $\mathbf{I . 7 \%}$ | $\mathbf{I} .0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.4 \%$ | $0.0 \%$ | $0.8 \%$ | $1.7 \%$ |
| TOTAL | $\mathbf{9 . 6 \%}$ | $\mathbf{2 8 . 1} \%$ | $\mathbf{4 . 9 \%}$ | $\mathbf{3 2 . 6 \%}$ | $\mathbf{1 0 . 0 \%}$ | $\mathbf{0 . 1} \%$ | $\mathbf{2 . 3} \%$ | $\mathbf{I . 6 \%}$ | $\mathbf{0 . 9 \%}$ | $\mathbf{9 . 9 \%}$ | $\mathbf{9 . 6 \%}$ |

The North Front Range Regional Travel Model uses six primary trip purposes: Home-Based-Work (HBW), Home-Based-Shopping (HBS), Home-Based-University (HBU), Home-Based-Other (HBO), Work-Based-Other (WBO), and Other-Based-Other (OBO). The origin-destination matrix of trips can be aggregated into these primary purposes. For example, trips between home and work, regardless of whether home is the origin or destination are identified as HBW trips. As might be expected, during the AM peak hours these are an important trip purpose (28\%). Trips between home and University/College are considered HBU trips and are also an important trip purpose (36\%) substantiating earlier findings that CSU students are a large part of the Transfort ridership. Home-BasedOther trips account for $25 \%$ of trips. Table 14 identifies the various trip purposes and calculated rates for each time period.

Table 14
Trip Rates

| TRIP PURPOSE | AM | PM | DAILY |
| :---: | :---: | :---: | :---: |
| HBW | $27.8 \%$ | $11.5 \%$ | $16.2 \%$ |
| HBS | $5.3 \%$ | $4.2 \%$ | $4.2 \%$ |
| HBU | $35.5 \%$ | $50.3 \%$ | $48.8 \%$ |
| HBO | $24.5 \%$ | $20.2 \%$ | $20.3 \%$ |
| WBO | $2.7 \%$ | $5.2 \%$ | $4.0 \%$ |
| OBO | $4.2 \%$ | $8.6 \%$ | $6.5 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0} \%$ | $\mathbf{1 0 0 . 0} \%$ | $\mathbf{1 0 0 . 0} \%$ |

As a general rule, PM peak period trip purposes are somewhat less clustered in specific categories than are AM trips, but will be similar. As with the AM period, the dominant trip purpose is HBU (50\%). HBW trips comprise approximately $12 \%$ of PM peak period transit trips. Table 15 summarizes trip purpose responses during the PM peak period.

Table 15
PM Peak Period Trip Purposes

| TO <br> FROM | HOME | WORK | SHOP | UNIV | SCHOOL | HOTEL | DR/DENT | REC | REST | OTHER | TOTAL |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Home | $0.0 \%$ | $3.8 \%$ | $2.8 \%$ | $21.5 \%$ | $1.4 \%$ | $0.2 \%$ | $0.3 \%$ | $1.4 \%$ | $0.6 \%$ | $4.7 \%$ | $36.6 \%$ |
| Work | $\mathbf{7 . 7 \%}$ | $0.0 \%$ | $0.6 \%$ | $0.6 \%$ | $0.5 \%$ | $0.0 \%$ | $0.1 \%$ | $0.9 \%$ | $0.2 \%$ | $0.2 \%$ | $10.7 \%$ |
| Shop | $1.4 \%$ | $0.0 \%$ | $0.5 \%$ | $0.4 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.2 \%$ | $0.1 \%$ | $2.6 \%$ |
| University | $28.8 \%$ | $1.1 \%$ | $0.7 \%$ | $0.0 \%$ | $0.1 \%$ | $0.0 \%$ | $0.0 \%$ | $0.4 \%$ | $0.3 \%$ | $1.1 \%$ | $32.4 \%$ |
| School | $6.6 \%$ | $0.4 \%$ | $1.2 \%$ | $0.3 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.2 \%$ | $0.0 \%$ | $0.4 \%$ | $9.2 \%$ |
| Hotel | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.2 \%$ | $0.0 \%$ | $0.0 \%$ | $0.2 \%$ |
| Dr/Dentist | $0.6 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.6 \%$ |
| Recreation | $0.8 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.1 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.1 \%$ | $0.9 \%$ |
| Restaurant | $0.2 \%$ | $0.3 \%$ | $0.0 \%$ | $0.1 \%$ | $0.0 \%$ | $0.0 \%$ | $0.1 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.7 \%$ |
| Other | $3.5 \%$ | $0.3 \%$ | $0.6 \%$ | $0.3 \%$ | $0.2 \%$ | $0.0 \%$ | $0.2 \%$ | $0.2 \%$ | $0.0 \%$ | $0.9 \%$ | $6.1 \%$ |
| TOTAL | $\mathbf{4 9 . 6 \%}$ | $\mathbf{6 . 0} \%$ | $\mathbf{6 . 3} \%$ | $\mathbf{2 3 . 2 \%}$ | $\mathbf{2 . 2 \%}$ | $\mathbf{0 . 2 \%}$ | $\mathbf{0 . 7 \%}$ | $\mathbf{3 . 2 \%}$ | $\mathbf{1 . 3 \%}$ | $\mathbf{7 . 5 \%}$ | $\mathbf{1 0 0 . 0 \%}$ |

As mentioned above, the daily trips include all trips observed during Transfort's hours of operation. When the total daily trips are shown for all total hours of operation, the clustering among categories becomes more evenly distributed, offering a more complete picture of travel patterns for an average weekday on Transfort. Table 16 presents the daily trips by origin and destination.

Table 16
Daily Trip Purposes

| TO I <br> FROM | HOME | WORK | SHOP | UNIV | SCHOOL | HOTEL | DR/DENT | REC | REST | OTHER | TOTAL |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Home | $0.0 \%$ | $\mathbf{I I . 0 \%}$ | $2.9 \%$ | $24.5 \%$ | $3.8 \%$ | $0.1 \%$ | $0.9 \%$ | $1.2 \%$ | $0.7 \%$ | $5.3 \%$ | $50.5 \%$ |
| Work | $5.1 \%$ | $0.0 \%$ | $0.4 \%$ | $0.4 \%$ | $0.4 \%$ | $0.0 \%$ | $0.0 \%$ | $0.5 \%$ | $0.1 \%$ | $0.4 \%$ | $7.3 \%$ |
| Shop | $1.3 \%$ | $0.1 \%$ | $0.3 \%$ | $0.3 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.1 \%$ | $0.1 \%$ | $2.1 \%$ |
| University | $24.2 \%$ | $0.8 \%$ | $0.6 \%$ | $0.0 \%$ | $0.1 \%$ | $0.0 \%$ | $0.0 \%$ | $0.2 \%$ | $0.3 \%$ | $0.9 \%$ | $27.2 \%$ |
| School | $3.9 \%$ | $0.2 \%$ | $0.8 \%$ | $0.2 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.1 \%$ | $0.0 \%$ | $0.3 \%$ | $5.5 \%$ |
| Hotel | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.1 \%$ | $0.0 \%$ | $0.0 \%$ | $0.1 \%$ |
| Dr/Dentist | $0.6 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.1 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.6 \%$ |
| Recreation | $0.8 \%$ | $0.0 \%$ | $0.0 \%$ | $0.1 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.1 \%$ | $1.0 \%$ |
| Restaurant | $0.3 \%$ | $0.2 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.1 \%$ | $0.0 \%$ | $0.0 \%$ | $0.1 \%$ | $0.7 \%$ |
| Other | $2.8 \%$ | $0.5 \%$ | $0.3 \%$ | $0.2 \%$ | $0.1 \%$ | $0.0 \%$ | $0.1 \%$ | $0.2 \%$ | $0.0 \%$ | $0.7 \%$ | $5.0 \%$ |
| TOTAL | $\mathbf{3 9 . 0 \%}$ | $\mathbf{1 2 . 9 \%}$ | $\mathbf{5 . 3 \%}$ | $\mathbf{2 5 . 7 \%}$ | $\mathbf{4 . 5 \%}$ | $\mathbf{0 . 1 \%}$ | $\mathbf{1 . 1 \%}$ | $\mathbf{2 . 4 \%}$ | $\mathbf{1 . 2 \%}$ | $\mathbf{7 . 8 \%}$ | $\mathbf{1 0 0 . 0 \%}$ |

Over the entirety of Transfort's operating hours, HBW trips accounted for approximately 16\% of all transit trips.
HBU trips made up $49 \%$ of trips and HBO represented $20 \%$ of all trips.

## FREQUENCY OF TRANSIT USAGE

Understanding the frequency of transit usage is an important facet for identifying market segments. Identifying those persons and demographic characteristics that regularly use a particular service provides an opportunity to identify potential ridership.

Table 17
Frequency of Transit Usage

| TRANSIT USAGE | FREQUENCY |
| :---: | :---: |
| One Day / Week | $3.0 \%$ |
| Two Days / Week | $5.9 \%$ |
| Three Days / Week | $13.5 \%$ |
| Four Days / Week | $10.9 \%$ |
| Five Days / Week | $41.0 \%$ |
| Six Days / Week | $\mathbf{I 8 . 1 \%}$ |
| I to 3 Days / Month | $3.3 \%$ |
| First Time | $\mathbf{I} .2 \%$ |
| Other | $3.2 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



As presented in Table 17, current riders tend to use the Transfort bus system an average of five days per week. Over $40 \%$ of those surveyed responded that they rode the system on average for five days per week. Over I8\% stated they rode the bus system six days per week while almost II\% used the system three times per week. These findings are encouraging as well as expected because planning and modeling efforts are simplified when transit patronage is primarily from regular customers.

## REASONS FOR USING TRANSIT

Questions regarding the reasons behind the respondent's use of the bus system were also posed. The respondents were allowed to have multiple responses to this question so the total percentage exceeds $100 \%$. Further, most persons gave an average of two answers. Table 18 presents these findings.

Table 18
Stated Reasons for Riding Transfort

| REASON | PERCENT |
| :---: | :---: |
| Don't Drive | $35.2 \%$ |
| Bus is Economical | $36.9 \%$ |
| Car Not Available | $32.6 \%$ |
| Traffic is Bad | $10.7 \%$ |
| Bus is Convenient | $41.5 \%$ |
| Parking a Problem | $27.6 \%$ |
| Other | $7.4 \%$ |



Reasons for Riding Bus

Almost 42\% of riders stated that they used the Transfort system because it was convenient. Further, $37 \%$ said the bus was economical from a total transportation cost perspective. Additional reasons for riding the bus were that the respondent didn't drive ( $35 \%$ ) or that a car was not available ( $33 \%$ ). Traffic ranked very low as a reason to ride the bus, with only II\% of respondents citing that reason.

## DRIVER'S LICENSE STATUS

Lack of a valid driver's license is often a reason why persons use the bus system. One-third of the survey population stated that they did not possess a driver's license. This number of responses correlates very well with earlier statements regarding whether the person drives or has a vehicle available.

Table 19
Driver's License Status

| DRIVER'S <br> LICENSE? | FREQUENCY |
| :---: | :---: |
| Yes | $64.7 \%$ |
| No | $35.3 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



## GENDER OF TRANSIT RIDERS

Identifying the gender of the ridership is helpful in better understanding a person's propensity to use transit. This variable, in concert with other demographic characteristics, help describe the socioeconomic and demographic characteristics of current transit users and can identify other potential market areas. Table 20 summarizes the respondent's gender orientation:

Table 20
Gender of Transit Riders

| GENDER | FREQUENCY |
| :---: | :---: |
| Male | $52.6 \%$ |
| Female | $47.4 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



Contrary to national ridership statistics, more males responded to the questionnaire than females. Fifty-three percent of all respondents stated they were male while $47 \%$ were female.

## AGE OF TRANSIT RIDERS

The age of ridership can also help identify user groups. Those persons under driving age and the elderly have historically been the most recognized segment using public transportation. However, due to the nature of Fort Collins and the CSU Campus as well as the coverage of the bus system itself, these market segments may be less significant. Furthermore, the survey did not include the two limited school routes operated by Transfort. Table 21 presents these responses:

Table 21
Age of Transit Riders

| AGE | FREQUENCY |
| :---: | :---: |
| 6 to 15 | $6.3 \%$ |
| 16 to 25 | $60.6 \%$ |
| 26 to 59 | $29.7 \%$ |
| 60 and Over | $3.3 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



The majority of respondents fell within the 16 to 25 age category ( $61 \%$ ). These persons are of student age and may tend to be high school or university/college students. Thirty percent of respondents reported they were between 26 and 59. This segment would identify working age people using the bus system. Most interesting is the very low number of persons 60 and older (3\%) and ages 6 to 15 (6\%) that use Transfort. These percentages are atypical for most urbanized areas. One explanation for this phenomenon might be that the overabundance of students may be skewing these results. In addition, senior citizens may elect to use dial-a-ride services that were not included in this survey.

## VEHICLES AVAILABLE TO THE HOUSEHOLD

Vehicle ownership may reflect the potential number of captive riders using the bus system. If no vehicle is available, mobility options are reduced to carpooling with a person from another household, public transportation, or nonmotorized modes such as walking or bicycling. A summary of those responding to this question is presented below in Table 22.

Table 22
Number of Household Vehicles

| AVAILABLE VEHICLES | FREQUENCY |
| :---: | :---: |
| Zero Auto | $26.9 \%$ |
| One Auto | $32.6 \%$ |
| Two Autos | $\mathbf{1 8 . 6 \%}$ |
| Three or More Autos | $21.9 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



As shown above, persons residing in one-vehicle households represent the highest proportion of Transfort patrons (33\%), followed by zero-vehicle households (27\%). The proportion of persons in two and three or more vehicle households is $19 \%$ and $22 \%$, respectively.

## EMPLOYMENT STATUS OF TRANSIT RIDERS

Employment status is another descriptor of the ridership．This variable can be used as a comparative data check against those persons either traveling to or traveling from a work trip purpose．Further，the percentage of the student population segment can be cross－referenced to trip purpose and origin－destination location．This variable was allowed to have multiple responses and so the total exceeds $100 \%$ ．Table 23 presents these findings．

Table 23
Employment Status of Transit Riders

| EMPLOYMENT STATUS | FREQUENCY |
| :---: | :---: |
| Employed Full Time | $17.6 \%$ |
| Employed Part Time | $28.6 \%$ |
| Student | $61.9 \%$ |
| Retired | $2.2 \%$ |
| Work at Home | $2.0 \%$ |
| Not Employed Outside Home | $6.0 \%$ |
| Other | $3.7 \%$ |



Students provide the largest segment of Transfort＇s ridership（642）based upon total responses．This correlates well to the percent of riders age 6 to 25 （ $67 \%$ ）presented earlier．Persons employed either full－time or part－time account for $46 \%$ of the total population．Almost two－thirds（66\％）of those responding as＂employed part－time＂also reported they were categorized within the＂student＂population．Very few retired persons used Transfort（2\％） which is in agreement with the percentage of riders 60 and over（3\％）presented earlier．

## HOUSEHOLD SIZE

The number of persons residing within a household are typically cross－classified by household income and number of vehicles to estimate trip－making characteristics within travel demand models．Table 24 presents the percentage of persons per household reported during the on－board survey．

Table 24
Household Size

| PERSONS PER HOUSEHOLD | FREQUENCY |
| :---: | :---: |
| 1 | $18.0 \%$ |
| 2 | $27.1 \%$ |
| 3 | $21.2 \%$ |
| 4 | $19.2 \%$ |
| 5 | $6.8 \%$ |
| 6 | $4.3 \%$ |
| 7 | $1.0 \%$ |
| 8 | $0.2 \%$ |
| 9 | $0.2 \%$ |
| I0 or more | $2.0 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0} \%$ |



## 2005 NORTH FRONT RANGE ONBOARD TRANSIT SURVEY

As presented in the table, most participating households contain two, three, or four persons per household at 27\%, $21 \%$, and $19 \%$ respectively. Eighteen percent of all reporting households had only one occupant while households with five occupants accounted for approximately $7 \%$. Households that contained six or more persons accounted for approximately $8 \%$ of all those surveyed. The average number of persons per household is approximately 2.89 using only those households that contain 10 or fewer persons. Those households that contain more than 10 occupants were considered group housing such as dormitories, fraternity or sorority houses, or retirement housing.

## ANNUAL HOUSEHOLD INCOME

Similar in nature to the previous questions regarding age and employment status, annual household income can be correlated with transit user groups. Many persons who are restricted to a lower income may not be able to purchase or maintain an automobile. Further, a lower annual income may reflect that the average age of a population segment is over retirement age. This phenomenon may very likely reflect the concentration of students within Fort Collins employed part-time or on scholarship. These populations are thus strong candidates for public transportation. Table 25 provides a summary of these findings.

Table 25
Annual Household Income

| ANNUAL HOUSEHOLD INCOME | PERCENT |
| :---: | :---: |
| Less Than $\$ 10,000$ | $41.0 \%$ |
| $\$ 10,000$ to $\$ 20,000$ | $23.9 \%$ |
| $\$ 20,000$ to $\$ 30,000$ | $13.9 \%$ |
| $\$ 30,000$ to $\$ 40,000$ | $6.5 \%$ |
| $\$ 40,000$ to $\$ 60,000$ | $8.4 \%$ |
| Greater Than $\$ 60,000$ | $6.3 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0} \%$ |

As shown above, households with incomes less than $\$ 10,000$ comprise the largest percentage of transit users ( $41 \%$ ). Nearly one-fourth (24\%) of transit user households have annual incomes between $\$ 10,000$ and $\$ 20,000$. Almost 14\% of riders have annual incomes between $\$ 20,000$ and $\$ 30,000$.

## COLT SURVEY SUMMARIES

This chapter summarizes the results of the COLT Onboard Transit Survey conducted on April 4, 2005. A questionnaire was distributed to all persons boarding each of the routes to record specific population and travel characteristics, such as:

## Trip Characteristics

- Trip Purpose at Point of Trip Origin
- Mode Used to Access Transit
- Method of Fare Payment
- Trip Purpose at Point of Trip Destination
- Egress Mode to Final Destination
- Bus Usage per Week
- Qualitative Reasons for Using COLT System
- Physical Location of Trip Origin
- Physical Location of Trip Destination
- Combined Origin and Destination Trip Purpose by Time of Day


## Socioeconomic Data

- Driver's License
- Gender of Rider
- Age of Rider
- Vehicles per Household
- Employment Status
- Household Occupancy
- Annual Household Income

The actual number of survey responses was expanded based on route ridership. All results presented here represent expanded data. All statistics are presented in table format accompanied with a short discussion of significant findings.

## TRIP ORIGIN PURPOSE

On the survey questionnaire, respondents were asked to identify the origin of their trip, or the place they were coming from when they received the survey. They were later requested to identify their "destination", the next place they were going following receipt of the survey. The purpose at each origin and destination included ten categories: home, work, shopping, University/college, other school, hotel, doctor/dentist appointment, recreation, restaurant, and other (specify). Responses for the place of origin are presented in Table 26.

Table 26
Origin Purpose

| ORIGIN PURPOSE | FREQUENCY |
| :---: | :---: |
| Home | $68.4 \%$ |
| Work | $7.8 \%$ |
| Shopping | $1.9 \%$ |
| University/College | $0.0 \%$ |
| Other School | $16.2 \%$ |
| Hotel | $0.0 \%$ |
| Doctor/Dentist | $0.7 \%$ |
| Recreation | $1.7 \%$ |
| Restaurant | $1.7 \%$ |
| Other | $1.7 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



As shown above, the vast majority (68\%) of respondents stated that they began their trip from home. The next largest response was other school, with $16 \%$ recording that as their origin prior to receiving a questionnaire. Only $8 \%$ responded that their trip began from work and every other category received less than $2 \%$ of responses each. Home, work, and school are typical trip ends for transit riders due to the regular schedule often associated with these activities.

## MODE USED TO ACCESS BUS

The next question asked the respondent the mode of access used to get to the surveyed bus. This information is important to identify since its result has significant implications for promoting specific roadway, sidewalk, or bike lane enhancements. Further, walk trips can be analyzed to characterize the trip lengths and number of transfers taken by transit riders. Table 27 presents these findings.

Table 27
Bus Access Mode

| ACCESS MODE | FREQUENCY |
| :---: | :---: |
| Walk | $87.6 \%$ |
| Drove Car | $0.0 \%$ |
| Bicycle | $1.9 \%$ |
| Passenger in Car | $1.0 \%$ |
| Transferred from Bus | $9.6 \%$ |
| Other | $0.0 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



Bus Access Mode

Not surprising, those surveyed stated that their primary means of access to the bus was walking (88\%). Bus transfers accounted for $10 \%$ of responses. Only $2 \%$ responded that they used a bicycle to access their surveyed bus route and only I\% used a motor vehicle to access the bus, with none driving. Given the lack of formal park-and-ride lots, this result is not surprising.

Of those that walked to access the bus，over one－third（38\％）walked one block or less．Eighty percent of respondents that walked to the bus walked four blocks or less．

Table 28
Number of Blocks Walked to Access Bus

| NUMBER OF BLOCKS | FREQUENCY |
| :---: | :---: |
| $0-1$ | $37.9 \%$ |
| 2 | $20.6 \%$ |
| 3 | $12.5 \%$ |
| 4 | $9.1 \%$ |
| 5 | $2.4 \%$ |
| 6 | $5.8 \%$ |
| 7 | $3.4 \%$ |
| $8+$ | $8.4 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



## METHOD OF FARE PAYMENT

Understanding the method of payment can identify what type of rider used the COLT system during the survey．The potential survey responses were categorized in a similar way to the standard COLT fare categories．Table 29 summarizes the response to the question＂What was your fare when you boarded this bus？＂

Table 29
Method of Fare Payment

| PAYMENT | FREQUENCY |
| :---: | :---: |
| $\$ 1.00$ | $21.7 \%$ |
| $\$ 0.50$ | $36.1 \%$ |
| Transfer | $7.9 \%$ |
| Pass | $31.9 \%$ |
| Free Fare | $2.5 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



Fare Paid

Over one－third（ $36 \%$ ）of respondents paid the $50 \Varangle$ fare available to seniors，people with disabilities and youths．
Almost one－third（ $32 \%$ ）of all persons surveyed stated that they used a pass to board the bus and an additional $22 \%$ of respondents paid the full $\$ 1.00$ fare．

## TRIP DESTINATION PURPOSE

Riders were also queried as to their final destination. Table 30 presents these findings:
Table 30 Destination Purpose

| DESTINATION PURPOSE | FREQUENCY |
| :---: | :---: |
| Home | $22.4 \%$ |
| Work | $21.3 \%$ |
| Shopping | $11.8 \%$ |
| Hotel | $0.0 \%$ |
| University/College | $1.0 \%$ |
| Other School | $26.0 \%$ |
| Doctor/Dentist | $2.0 \%$ |
| Restaurant | $0.0 \%$ |
| Recreation | $4.1 \%$ |
| Other | $\mathbf{1 1 . 6 \%}$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



One-fourth of respondents stated that other school was their destination. Home accounted for $22 \%$ of responses and work an additional $21 \%$. Trip ends on COLT tend to focus on the key destinations of home, work, and school.

## MODE USED FROM BUS TO DESTINATION

The mode in which bus passengers completed their trip is as equally important as understanding how they accessed the bus route. Table 31 presents the responses reported during the on-board survey:

Table 31
Bus Departure Mode

| DEPARTURE MODE | PERCENT |
| :---: | :---: |
| Walk | $86.1 \%$ |
| Drove Car | $1.9 \%$ |
| Bus Transfer | $8.4 \%$ |
| Bicycle | $0.9 \%$ |
| Passenger in Car | $1.6 \%$ |
| Other | $0.9 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



Mode from Bus to Destination

As would be expected, the walk mode accounted for very large portions ( $86 \%$ ) of all responses for mode used to access the respondent's final destination. Eight percent transferred to access their final destination. Less than $4 \%$ used some form of motorized vehicle (driver or passenger).

Of those that walked to access their destination, over one-third of respondents (36\%) walked one block or less. Over $80 \%$ of respondents that walked to their destination walked four blocks or less.

Table 32
Number of Blocks Walked to Access Destinations

| NUMBER OF BLOCKS | FREQUENCY |
| :---: | :---: |
| $0-1$ | $36.2 \%$ |
| 2 | $20.6 \%$ |
| 3 | $15.2 \%$ |
| 4 | $8.2 \%$ |
| 5 | $9.8 \%$ |
| 6 | $2.2 \%$ |
| 7 | $2.6 \%$ |
| $8+$ | $5.2 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



## TRIP PURPOSE

The trip origin and destination responses were analyzed based on a daily time period. The actual number of survey responses was expanded based on route ridership to arrive at a weighted estimate of the number of trips on an average day on the COLT system. The following table shows an origin-destination matrix of trip purpose.

Table 33
Trip Purposes

| $\begin{gathered} \text { TOI } \\ \text { FROM } \\ \hline \end{gathered}$ | HOME | WORK | SHOP | UNIV | SCHOOL | HOTEL | DR/DENT | REC | REST | OTHER | TOTAL |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Home | 0.0\% | 20.1\% | 7.4\% | 0.0\% | I.1\% | 27.4\% | 2.1\% | 0.0\% | 4.4\% | 7.4\% | 69.8\% |
| Work | 5.8\% | 0.0\% | 0.8\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 6.6\% |
| Shop | 1.1\% | 0.0\% | 1.1\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 2.1\% |
| University | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% |
| School | 11.2\% | 0.0\% | 3.7\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 3.2\% | 18.1\% |
| Hotel | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% |
| Dr/Dentist | 0.8\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.8\% |
| Recreation | 0.0\% | 1.1\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 1.1\% |
| Restaurant | 0.8\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.8\% |
| Other | 0.8\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.8\% |
| TOTAL | 20.4\% | 21.1\% | 12.9\% | 0.0\% | 1.1\% | 27.4\% | 2.1\% | 0.0\% | 4.4\% | 10.6\% | 100.0\% |

The North Front Range Regional Travel Model uses six primary trip purposes: Home-Based-Work (HBW), Home-Based-Shopping (HBS), Home-Based-University (HBU), Home-Based-Other (HBO), Work-Based-Other (WBO), and Other-Based-Other (OBO). The origin-destination matrix of trips can be aggregated into these primary purposes. For example, trips between home and work, regardless of whether home is the origin or destination are identified as HBW trips. As expected, these are an important trip purpose (26\%). Home-Based-Other trips accounted for $56 \%$ of all trips and HBS $8 \%$. Table 34 identifies the various trip purposes and calculated rates.

Table 34 Trip Rates

| TRIP PURPOSE | TRIP RATE |
| :---: | :---: |
| HBW | $25.9 \%$ |
| HBS | $8.4 \%$ |
| HBU | $0.0 \%$ |
| HBO | $55.9 \%$ |
| WBO | $1.8 \%$ |
| OBO | $8.0 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |

## FREQUENCY OF TRANSIT USAGE

Understanding the frequency of transit usage is an important facet for identifying market segments. Identifying those persons and demographic characteristics that regularly use a particular service provides an opportunity to identify potential ridership.

Table 35
Frequency of Transit Usage

| TRANSIT USAGE | FREQUENCY |
| :---: | :---: |
| One Day / Week | $7.4 \%$ |
| Two Days / Week | $6.7 \%$ |
| Three Days / Week | $6.5 \%$ |
| Four Days / Week | $\mathbf{1 4 . 0 \%}$ |
| Five Days / Week | $32.0 \%$ |
| Six Days / Week | $\mathbf{1 9 . 7 \%}$ |
| I to 3 Days / Month | $8.2 \%$ |
| First Time | $0.9 \%$ |
| Other | $4.4 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



Frequency of Transit Usage
As presented in Table 35, current riders tend to use COLT an average of five or six days per week. Thirty-two percent of those surveyed responded that they rode the system on average for five days per week. An additional $20 \%$ stated that they rode the bus six days per week. Approximately $14 \%$ used the system three times per week. These findings are encouraging as well as expected because planning and modeling efforts are simplified when transit patronage is primarily from regular customers.

## REASONS FOR USING TRANSIT

Questions regarding the reasons behind the respondent's use of the bus system were also posed. The respondents were allowed to have multiple responses to this question so the total percentage exceeds $100 \%$. Two-thirds of respondents cited only one reason for riding the bus.

Table 36
Stated Reasons for Riding COLT

| REASON | PERCENT |
| :---: | :---: |
| Don't Drive | $62.6 \%$ |
| Bus is Economical | $10.9 \%$ |
| Car Not Available | $41.1 \%$ |
| Traffic is Bad | $4.4 \%$ |
| Bus is Convenient | $22.4 \%$ |
| Parking a Problem | $2.8 \%$ |
| Other | $7.4 \%$ |



## Reasons for Riding Bus

The two largest responses to this question indicate the high number of transit dependent riders of COLT. Sixtythree percent of respondents indicated "I Don't Drive" as a reason for using the bus and $41 \%$ indicated that a car was not available. Eighty-five percent of respondents cited one or both of these reasons for riding the bus. Additional reasons for riding the bus include the bus is convenient (22\%) and the bus is economical (II\%). Traffic was a very low ranked reason for riding the bus, with $4 \%$ of the responses.

## DRIVER'S LICENSE STATUS

Lack of a valid driver's license is often a reason why persons use the bus system. One-third of the survey population stated that they did not possess a driver's license. This number of responses correlates very well with earlier statements regarding whether the person drives or has a vehicle available.

Table 37
Driver's License Status

| DRIVER'S LICENSE? | FREQUENCY |
| :---: | :---: |
| Yes | $29.2 \%$ |
| No | $70.8 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0} \%$ |



## GENDER OF TRANSIT RIDERS

Identifying the gender of the ridership is helpful in better understanding a person's propensity to use transit. This variable, in concert with other demographic characteristics, help describe the socioeconomic and demographic characteristics of current transit users and can identify other potential market areas. Table 38 summarizes the respondent's gender orientation:

Table 38
Gender of Transit Riders

| GENDER | FREQUENCY |
| :---: | :---: |
| Male | $42.6 \%$ |
| Female | $57.4 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0} \%$ |



Reflective of national ridership statistics, females use public transportation more than do males. Fifty-seven percent of all respondents stated they were female while $43 \%$ were male.

## AGE OF TRANSIT RIDERS

The age of ridership can also help identify user groups. Those persons under driving age and the elderly have historically been the most recognized segment using public transportation. Table 39 presents these responses:

Table 39
Age of Transit Riders

| AGE | FREQUENCY |
| :---: | :---: |
| 6 to 15 | $19.5 \%$ |
| 16 to 25 | $46.6 \%$ |
| 26 to 59 | $26.2 \%$ |
| 60 and Over | $7.8 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



The majority of respondents fell within the 16 to 25 age category (47\%). These persons are of student age and may tend to be high school or university/college students. Twenty-six percent of respondents reported they were between 26 and 59. This segment would identify working age people using the bus system. The 6 to 15 age group also had a large portion of respondents, with $20 \%$. The 60 and over age group accounted for $8 \%$ of responses.

## VEHICLES AVAILABLE TO THE HOUSEHOLD

Vehicle ownership may reflect the potential number of captive riders using the bus system．If no vehicle is available， mobility options are reduced to carpooling with a person from another household，public transportation，or non－ motorized modes such as walking or bicycling．A summary of those responding to this question is presented below in Table 40.

Table 40
Number of Household Vehicles

| AVAILABLE VEHICLES | FREQUENCY |
| :---: | :---: |
| Zero Auto | $28.3 \%$ |
| One Auto | $21.2 \%$ |
| Two Autos | $28.3 \%$ |
| Three or More Autos | $22.1 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0} \%$ |



As shown above，the distribution of auto－ownership is fairly evenly distributed．Zero－auto households and three－ auto households each accounted for $28 \%$ of responses．Three or more auto households accounted for $22 \%$ of responses and one－auto households accounted for $21 \%$ of respondents．

## EMPLOYMENT STATUS OF TRANSIT RIDERS

Employment status is another descriptor of the ridership. This variable can be used as a comparative data check against those persons either traveling to or traveling from a work trip purpose. Further, the percentage of the student population segment can be cross-referenced to trip purpose and origin-destination location. This variable was allowed to have multiple responses and so the total exceeds $100 \%$. Table 4 I presents these findings.

Table 41
Employment Status of Transit Riders

| EMPLOYMENT STATUS | FREQUENCY |
| :---: | :---: |
| Employed Full Time | $24.3 \%$ |
| Employed Part Time | $18.9 \%$ |
| Student | $52.3 \%$ |
| Retired | $4.9 \%$ |
| Work at Home | $0.0 \%$ |
| Not Employed Outside Home | $10.3 \%$ |
| Other | $3.2 \%$ |



Students provide the largest segment of COLT ridership, accounting for over half ( $52 \%$ ) of total responses. Persons employed either full-time or part-time account for $43 \%$ of the total population. Few retired persons used the bus (5\%) which is in agreement with the percentage of riders 60 and over ( $8 \%$ ) presented earlier.

## HOUSEHOLD SIZE

The number of persons residing within a household are typically cross-classified by household income and number of vehicles to estimate trip-making characteristics within travel demand models. Table 42 presents the percentage of persons per household reported during the on-board survey.

Table 42
Household Size

| PERSONS PER HOUSEHOLD | FREQUENCY |
| :---: | :---: |
| I | $\mathrm{I} .2 \%$ |
| 2 | $17.5 \%$ |
| 3 | $20.3 \%$ |
| 4 | $17.5 \%$ |
| 5 | $14.0 \%$ |
| 6 | $3.5 \%$ |
| 7 | $3.8 \%$ |
| 8 or more | $5.2 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0} \%$ |



As presented in the table, most participating households contain three persons per household at 20\%. Households with one, two and four occupants accounted for $18 \%$ of responses each. Households that contained six or more persons accounted for approximately I3\% of all those surveyed. The average number of persons per household is approximately 3.27 using only those households that contain 10 or fewer persons. Those households that contain more than 10 occupants were considered group housing such as dormitories or retirement housing.

## ANNUAL HOUSEHOLD INCOME

Similar in nature to the previous questions regarding age and employment status, annual household income can be correlated with transit user groups. Many persons who are restricted to a lower income may not be able to purchase or maintain an automobile. Further, a lower annual income may reflect that the average age of a population segment is over retirement age. These populations are thus strong candidates for public transportation. Table 43 provides a summary of these findings.

Table 43
Annual Household Income

| ANNUAL HOUSEHOLD INCOME | PERCENT |
| :---: | :---: |
| Less Than $\$ 10,000$ | $36.8 \%$ |
| $\$ 10,000$ to $\$ 20,000$ | $16.3 \%$ |
| $\$ 20,000$ to $\$ 30,000$ | $13.2 \%$ |
| $\$ 30,000$ to $\$ 40,000$ | $9.8 \%$ |
| $\$ 40,000$ to $\$ 60,000$ | $13.0 \%$ |
| Greater Than $\$ 60,000$ | $10.8 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0} \%$ |



As shown above, households with incomes less than $\$ 10,000$ comprise the largest percentage of transit users (37\%). An additional $16 \%$ of transit user households have annual incomes between $\$ 10,000$ and $\$ 20,000$ and $13 \%$ have annual incomes between $\$ 20,000$ and $\$ 30,000$.

## THE BUS SURVEY SUMMARIES

This chapter summarizes the results of the The Bus Onboard Transit Survey conducted on April 6, 2005. A questionnaire was distributed to all persons boarding each of the bus routes to record specific population and travel characteristics, such as:

## Trip Characteristics

- Trip Purpose at Point of Trip Origin
- Mode Used to Access Transit
- Method of Fare Payment
- Trip Purpose at Point of Trip Destination
- Egress Mode to Final Destination
- Bus Usage per Week
- Qualitative Reasons for Using The Bus System
- Physical Location of Trip Origin
- Physical Location of Trip Destination
- Combined Origin and Destination Trip Purpose by Time of Day


## Socioeconomic Data

- Driver's License
- Gender of Rider
- Age of Rider
- Vehicles per Household
- Employment Status
- Household Occupancy
- Annual Household Income

The actual number of survey responses was expanded based on route ridership. All results presented here represent expanded data. All statistics are presented in table format accompanied with a short discussion of significant findings.

## TRIP ORIGIN PURPOSE

On the survey questionnaire, respondents were asked to identify the origin of their trip, or the place they were coming from when they received the survey. They were later requested to identify their "destination", the next place they were going following receipt of the survey. The purpose at each origin and destination included ten categories: home, work, shopping, University/college, other school, hotel, doctor/dentist appointment, recreation, restaurant, and other (specify). Responses for the place of origin are presented in Table 44.

Table 44
Origin Purpose

| ORIGIN PURPOSE | FREQUENCY |
| :---: | :---: |
| Home | $59.0 \%$ |
| Work | $13.2 \%$ |
| Shopping | $3.8 \%$ |
| University/College | $5.2 \%$ |
| Other School | $5.8 \%$ |
| Hotel | $0.2 \%$ |
| Doctor/Dentist | $1.7 \%$ |
| Recreation | $1.1 \%$ |
| Restaurant | $0.9 \%$ |
| Other | $9.2 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



As shown above, over half ( $59 \%$ ) of all bus respondents stated that they began their trip from home. The next largest response was work, with over $13 \%$ recording that as their origin prior to receiving a questionnaire. Only 5\% responded that their trip began from University/College and another $6 \%$ from another type of school. Home, work, and school are typical trip ends for transit riders due to the regular schedule often associated with these activities.

THE BUS SURVEY SUMMARIES

## MODE USED TO ACCESS BUS

The next question asked the respondent the mode of access used to get to the surveyed bus. This information is important to identify since its result has significant implications for promoting specific roadway, sidewalk, or bike lane enhancements. Further, walk trips can be analyzed to characterize the trip lengths and number of transfers taken by transit riders. Table 45 presents these findings.

Table 45
Bus Access Mode

| ACCESS MODE | FREQUENCY |
| :---: | :---: |
| Walk | $86.0 \%$ |
| Drove Car | $0.5 \%$ |
| Bicycle | $2.3 \%$ |
| Passenger in Car | $3.0 \%$ |
| Transferred from Bus | $6.1 \%$ |
| Other | $2.0 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



Bus Access Mode

Not surprising, those surveyed stated that their primary means of access to the bus was walking (86\%). Bus transfers accounted for $6 \%$ of responses. Only $2 \%$ responded that they used a bicycle to access their surveyed bus route. Less than $4 \%$ were either the driver or passenger of a motorized vehicle. Given the lack of formal park-and-ride lots, the automobile access to bus was not expected to account for a large portion of the bus access mode.

Of those that walked to access the bus, over one-third of respondents (39\%) walked one block or less. Over $80 \%$ of respondents that walked to the bus walked four blocks or less.

Table 46
Number of Blocks Walked to Access Bus

| NUMBER OF BLOCKS | FREQUENCY |
| :---: | :---: |
| $0-1$ | $39.4 \%$ |
| 2 | $20.8 \%$ |
| 3 | $11.4 \%$ |
| 4 | $8.8 \%$ |
| 5 | $5.1 \%$ |
| 6 | $4.3 \%$ |
| 7 | $0.9 \%$ |
| $8+$ | $9.3 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



## METHOD OF FARE PAYMENT

Understanding the method of payment can identify what type of rider used the The Bus system during the survey. The potential survey responses were categorized in a similar way to the standard Bus fare categories. Discounted passes may include 10 -ride tickets, monthly passes, and commuter passes. Annual discounted passes can also be purchased for seniors, disabled citizens, and Medicare cardholders. Table 47 summarizes the response to the question "What was your fare when you boarded this bus?"

Table 47
Method of Fare Payment

| PAYMENT | FREQUENCY |
| :---: | :---: |
| $\$ 1.00$ | $25.7 \%$ |
| $\$ 0.50$ | $16.1 \%$ |
| $\$ 3.00$ Day Pas | $0.0 \%$ |
| Pass | $46.3 \%$ |
| Transfer | $1.4 \%$ |
| Free Fare | $10.4 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0} \%$ |



Almost half ( $46 \%$ ) of all persons surveyed stated that they used a pass to board the bus. Over one-fourth ( $26 \%$ ) of riders paid the full $\$ 1.00$ fare and an additional $16 \%$ of respondents paid the $50 \phi$ fare available to seniors, people with disabilities and youths. In total, $58 \%$ of riders used either a pass or were fare free.

## TRIP DESTINATION PURPOSE

Riders were also queried as to their final destination. Table 48 presents these findings:
Table 48 Destination Purpose

| DESTINATION PURPOSE | FREQUENCY |
| :---: | :---: |
| Home | $25.1 \%$ |
| Work | $19.7 \%$ |
| Shopping | $\mathbf{1 5 . 4 \%}$ |
| Hotel | $0.2 \%$ |
| University/College | $7.6 \%$ |
| Other School | $8.6 \%$ |
| Doctor/Dentist | $3.0 \%$ |
| Restaurant | $2.0 \%$ |
| Recreation | $2.5 \%$ |
| Other | $\mathbf{1 5 . 8 \%}$ |
| TOTAL | $\mathbf{1 0 0 . 0} \%$ |



One-fourth of respondents stated that home was their destination. Work accounted for an additional $20 \%$ and shopping 15\% of responses. Schools accounted for 16\% of responses, with University/College and other schools each accounting for approximately $8 \%$ of all responses. Trip ends on The Bus tend to be more scattered than would be expected and not focused primarily on home, work and school.

## MODE USED FROM BUS TO DESTINATION

The mode in which bus passengers completed their trip is as equally important as understanding how they accessed the bus route. Table 49 presents the responses reported during the on-board survey:

Table 49
Bus Departure Mode

| DEPARTURE MODE | PERCENT |
| :---: | :---: |
| Walk | $81.6 \%$ |
| Drove Car | $1.4 \%$ |
| Bus Transfer | $11.5 \%$ |
| Bicycle | $2.0 \%$ |
| Passenger in Car | $1.8 \%$ |
| Other | $1.7 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



Mode from Bus to Destination

As would be expected, the walk mode accounted for over $80 \%$ of all responses for mode used to access the respondent's final destination. Over 10\% transferred from one bus to another bus. Two percent used bicycles to access their final destination. Approximately $3 \%$ used some form of motorized vehicle (driver or passenger). These figures, as expected, are similar to the bus access mode distribution.

Of those that walked to access their destination, over $40 \%$ walked one block or less. Eighty-six percent of respondents that walked to their destination walked four blocks or less.

Table 50
Number of Blocks Walked to Access Destinations

| NUMBER OF BLOCKS | FREQUENCY |
| :---: | :---: |
| $0-1$ | $43.7 \%$ |
| 2 | $19.4 \%$ |
| 3 | $13.0 \%$ |
| 4 | $10.2 \%$ |
| 5 | $3.4 \%$ |
| 6 | $6.8 \%$ |
| 7 | $0.0 \%$ |
| $8+$ | $3.6 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



## TRIP PURPOSE

The trip origin and destination responses were analyzed based on a daily time period. The actual number of survey responses was expanded based on route ridership to arrive at a weighted estimate of the number of trips on an average day on The Bus system. The following table shows an origin-destination matrix of trip purpose.

Table 51
Trip Purposes

| TO <br> FROM | HOME | WORK | SHOP | UNIV | SCHOOL | HOTEL | DR/DENT | REC | REST | OTHER TOTAL |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Home | $0.0 \%$ | $14.9 \%$ | $\mathbf{I 2 . 2 \%}$ | $\mathbf{7 . 1 \%}$ | $7.5 \%$ | $0.3 \%$ | $2.3 \%$ | $1.8 \%$ | $2.0 \%$ | $11.0 \%$ | $59.1 \%$ |
| Work | $8.2 \%$ | $0.0 \%$ | $0.2 \%$ | $0.8 \%$ | $0.2 \%$ | $0.0 \%$ | $0.2 \%$ | $0.3 \%$ | $0.0 \%$ | $1.3 \%$ | $11.3 \%$ |
| Shop | $2.3 \%$ | $0.0 \%$ | $1.5 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.2 \%$ | $4.0 \%$ |
| University | $2.6 \%$ | $0.7 \%$ | $1.2 \%$ | $0.0 \%$ | $0.9 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.2 \%$ | $5.6 \%$ |
| School | $3.1 \%$ | $1.1 \%$ | $0.2 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.3 \%$ | $0.0 \%$ | $1.3 \%$ | $6.1 \%$ |
| Hotel | $0.0 \%$ | $0.0 \%$ | $0.3 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.3 \%$ |
| Dr/Dentist | $1.6 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $1.6 \%$ |
| Recreation | $0.2 \%$ | $0.3 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.2 \%$ | $0.0 \%$ | $0.7 \%$ |
| Restaurant | $1.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $1.0 \%$ |
| Other | $4.6 \%$ | $1.2 \%$ | $1.0 \%$ | $0.2 \%$ | $0.7 \%$ | $0.0 \%$ | $0.2 \%$ | $0.2 \%$ | $0.0 \%$ | $2.3 \%$ | $10.4 \%$ |
| TOTAL | $\mathbf{2 3 . 6 \%}$ | $\mathbf{1 8 . 2 \%}$ | $\mathbf{1 6 . 6 \%}$ | $\mathbf{8 . 1 \%}$ | $\mathbf{9 . 3} \%$ | $\mathbf{0 . 3 \%}$ | $\mathbf{2 . 7 \%}$ | $\mathbf{2 . 7 \%}$ | $\mathbf{2 . 2 \%}$ | $\mathbf{1 6 . 4 \%}$ | $\mathbf{1 0 0 . 0 \%}$ |

The North Front Range Regional Travel Model uses six primary trip purposes: Home-Based-Work (HBW), Home-Based-Shopping (HBS), Home-Based-University (HBU), Home-Based-Other (HBO), Work-Based-Other (WBO), and Other-Based-Other (OBO). The origin-destination matrix of trips can be aggregated into these primary purposes. For example, trips between home and work, regardless of whether home is the origin or destination are identified as HBW trips. As expected, these are an important trip purpose (23\%). Home-Based-Other trips accounted for $36 \%$ of all trips and HBS I4\%. Trips between home and University/College are HBU trips (I0\%). Table 10 identifies the various trip purposes and calculated rates.

Table 52
Trip Rates

| TRIP PURPOSE | TRIP RATE |
| :---: | :---: |
| HBW | $23.1 \%$ |
| HBS | $14.4 \%$ |
| HBU | $9.7 \%$ |
| HBO | $35.5 \%$ |
| WBO | $6.3 \%$ |
| OBO | $11.0 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0} \%$ |

## FREQUENCY OF TRANSIT USAGE

Understanding the frequency of transit usage is an important facet for identifying market segments．Identifying those persons and demographic characteristics that regularly use a particular service provides an opportunity to identify potential ridership．

Table 53
Frequency of Transit Usage

| TRANSIT USAGE | FREQUENCY |
| :---: | :---: |
| One Day／Week | $3.8 \%$ |
| Two Days／Week | $8.7 \%$ |
| Three Days／Week | $11.8 \%$ |
| Four Days／Week | $10.8 \%$ |
| Five Days／Week | $26.9 \%$ |
| Six Days／Week | $24.6 \%$ |
| I to 3 Days／Month | $6.9 \%$ |
| First Time | $2.4 \%$ |
| Other | $4.2 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



Frequency of Transit Usage

As presented in Table 53，current riders tend to use The Bus an average of five or six days per week．Twenty－seven percent of those surveyed responded that they rode the system on average for five days per week．An additional $25 \%$ stated that they rode the bus six days per week．Approximately $12 \%$ used the system three times per week． These findings are encouraging as well as expected because planning and modeling efforts are simplified when transit patronage is primarily from regular customers．

## REASONS FOR USING TRANSIT

Questions regarding the reasons behind the respondent's use of the bus system were also posed. The respondents were allowed to have multiple responses to this question so the total percentage exceeds $100 \%$. Sixty percent of respondents cited only one reason for riding the bus.

Table 54
Stated Reasons for Riding The Bus

| REASON | PERCENT |
| :---: | :---: |
| Don't Drive | $54.9 \%$ |
| Bus is Economical | $23.8 \%$ |
| Car Not Available | $40.3 \%$ |
| Traffic is Bad | $4.3 \%$ |
| Bus is Convenient | $24.3 \%$ |
| Parking a Problem | $6.3 \%$ |
| Other | $7.9 \%$ |



Reasons for Riding Bus

The two largest responses to this question indicate the high number of transit dependent riders of The Bus. Fiftyfive percent of respondents indicated "I Don't Drive" as a reason for using the bus and $40 \%$ indicated that a car was not available. Seventy-seven percent of respondents cited one or both of these reasons for riding the bus. Additional reasons for riding the bus include the bus is convenient and the bus is economical, each accounting for $24 \%$ of responses. Traffic was the lowest ranked reason for riding the bus, with $4 \%$ of the responses.

## DRIVER'S LICENSE STATUS

Lack of a valid driver's license is often a reason why persons use the bus system. One-third of the survey population stated that they did not possess a driver's license. This number of responses correlates very well with earlier statements regarding whether the person drives or has a vehicle available.

Table 55
Driver's License Status

| DRIVER'S LICENSE? | FREQUENCY |
| :---: | :---: |
| Yes | $36.9 \%$ |
| No | $63.1 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0} \%$ |



## GENDER OF TRANSIT RIDERS

Identifying the gender of the ridership is helpful in better understanding a person＇s propensity to use transit．This variable，in concert with other demographic characteristics，help describe the socioeconomic and demographic characteristics of current transit users and can identify other potential market areas．Table 56 summarizes the respondent＇s gender orientation：

Table 56
Gender of Transit Riders

| GENDER | FREQUENCY |
| :---: | :---: |
| Male | $47.6 \%$ |
| Female | $52.4 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0} \%$ |



Reflective of national ridership statistics，females use public transportation more than do males．Fifty－two percent of all respondents stated they were female while $48 \%$ were male．

## AGE OF TRANSIT RIDERS

The age of ridership can also help identify user groups．Those persons under driving age and the elderly have historically been the most recognized segment using public transportation．Table 57 presents these responses：

Table 57
Age of Transit Riders

| AGE | FREQUENCY |
| :---: | :---: |
| 5 to 15 | $6.1 \%$ |
| 16 to 21 | $23.8 \%$ |
| 22 to 25 | $11.6 \%$ |
| 26 to 30 | $6.4 \%$ |
| 31 to 40 | $11.2 \%$ |
| 41 to 59 | $31.2 \%$ |
| 60 and Over | $9.9 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



The age of respondents did fall primarily to the younger and older age categories with a distinctly lower number of respondents in the middle age ranges．However，the oldest（ $60+$ ）and youngest（ 5 to 15 ）age groups received a relatively low number of responses．The largest age group of respondents was the 4 I to 59 age group with $31 \%$ of the responses．The 16 to 21 age group also had a high number of responses，with $24 \%$ ．These persons are of student age and may tend to be high school or university／college students．Persons 60 and older made up $10 \%$ of the responses and ages 5 to 15 made up 6\％．

## VEHICLES AVAILABLE TO THE HOUSEHOLD

Vehicle ownership may reflect the potential number of captive riders using the bus system. If no vehicle is available, mobility options are reduced to carpooling with a person from another household, public transportation, or nonmotorized modes such as walking or bicycling. A summary of those responding to this question is presented below in Table 58.

Table 58
Number of Household Vehicles

| AVAILABLE VEHICLES | FREQUENCY |
| :---: | :---: |
| Zero Auto | $41.5 \%$ |
| One Auto | $26.8 \%$ |
| Two Autos | $\mathbf{1 6 . 1 \%}$ |
| Three or More Autos | $\mathbf{1 5 . 6 \%}$ |
| TOTAL | $\mathbf{1 0 0 . 0 \%}$ |



As shown above, persons residing in zero-vehicle households represent the highest proportion of Bus patrons ( $42 \%$ ), followed by one-vehicle households ( $27 \%$ ). These values are to be expected and emphasize the need for reliable effective transit service for the transportation disadvantaged population. The proportion of persons in two and three or more vehicle households are $16 \%$ each.

## EMPLOYMENT STATUS OF TRANSIT RIDERS

Employment status is another descriptor of the ridership. This variable can be used as a comparative data check against those persons either traveling to or traveling from a work trip purpose. Further, the percentage of the student population segment can be cross-referenced to trip purpose and origin-destination location. This variable was allowed to have multiple responses and so the total exceeds $100 \%$. Table 59 presents these findings.

Table 59
Employment Status of Transit Riders

| EMPLOYMENT STATUS | FREQUENCY |
| :---: | :---: |
| Employed Full Time | $23.8 \%$ |
| Employed Part Time | $20.3 \%$ |
| Student | $30.7 \%$ |
| Retired | $6.7 \%$ |
| Work at Home | $4.3 \%$ |
| Not Employed Outside Home | $14.9 \%$ |
| Other | $4.6 \%$ |



Students provide the largest segment of The Bus' ridership (3I\%) based upon total responses. This correlates well to the percent of riders age 5 to 21 (30\%) presented earlier. Persons employed either full-time or part-time account for $43 \%$ of the total population. Few retired persons used The Bus ( $7 \%$ ) which is in agreement with the percentage of riders 60 and over ( $10 \%$ ) presented earlier.

## HOUSEHOLD SIZE

The number of persons residing within a household are typically cross-classified by household income and number of vehicles to estimate trip-making characteristics within travel demand models. Table 60 presents the percentage of persons per household reported during the on-board survey.

Table 60
Household Size

| PERSONS PER HOUSEHOLD | FREQUENCY |
| :---: | :---: |
| I | $27.6 \%$ |
| 2 | $24.5 \%$ |
| 3 | $14.2 \%$ |
| 4 | $11.8 \%$ |
| 5 | $13.0 \%$ |
| 6 | $4.1 \%$ |
| 7 | $2.0 \%$ |
| 8 or more | $2.8 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0} \%$ |



As presented in the table, most participating households contain one or two persons per household at 28 and $25 \%$, respectively. Fourteen percent of all reporting households had three occupants while households with four occupants accounted for $12 \%$ of responses and five occupant households accounted for $13 \%$ of responses. Households that contained six or more persons accounted for $9 \%$ of all those surveyed. The average number of persons per household is approximately 2.93 using only those households that contain 10 or fewer persons. Those households that contain more than 10 occupants were considered group housing such as dormitories or retirement housing.

## ANNUAL HOUSEHOLD INCOME

Similar in nature to the previous questions regarding age and employment status, annual household income can be correlated with transit user groups. Many persons who are restricted to a lower income may not be able to purchase or maintain an automobile. Further, a lower annual income may reflect that the average age of a population segment is over retirement age. These populations are thus strong candidates for public transportation. Table 61 provides a summary of these findings.

Table 61
Annual Household Income

| ANNUAL HOUSEHOLD INCOME | PERCENT |
| :---: | :---: |
| Less Than $\$ \mathbf{1 0 , 0 0 0}$ | $45.5 \%$ |
| $\$ 10,000$ to $\$ 20,000$ | $\mathbf{1 8 . 7 \%}$ |
| $\$ 20,000$ to $\$ 30,000$ | $14.9 \%$ |
| $\$ 30,000$ to $\$ 40,000$ | $7.1 \%$ |
| $\$ 40,000$ to $\$ 60,000$ | $9.4 \%$ |
| Greater Than $\$ 60,000$ | $4.5 \%$ |
| TOTAL | $\mathbf{1 0 0 . 0} \%$ |



As shown above, households with incomes less than $\$ 10,000$ comprise the largest percentage of transit users (46\%). An additional $19 \%$ of transit user households have annual incomes between $\$ 10,000$ and $\$ 20,000$ and $15 \%$ have annual incomes between $\$ 20,000$ and $\$ 30,000$.

## SATISFACTION WITH BUS SERVICE

Respondents were asked how satisfied they were with various aspects of the bus service. Respondents were asked to rate different aspects of service (hours of operation, available destinations, frequency of service, etc) on a range from very dissatisfied to very satisfied. Table 62 indicates the percent of respondents that ranked each aspect of service as somewhat satisfied or very satisfied, the two highest categories.

Table 62
Rider Satisfaction with Bus Service

| SERVICE ASPECT | VERY <br> SATISFIED | SOMEWHAT <br> SATISFIED | SATISFIED | VERY <br> DISSATISFIED |
| :---: | :---: | :---: | :---: | :---: |
| Hours of Operation | $26.5 \%$ | $28.9 \%$ | $28.4 \%$ | $14.7 \%$ |
| Available Destinations | $30.4 \%$ | $37.5 \%$ | $25.7 \%$ | $5.6 \%$ |
| Frequency of Service | $27.1 \%$ | $34.1 \%$ | $30.8 \%$ | $6.9 \%$ |
| Locations of Bus Stops | $33.6 \%$ | $36.2 \%$ | $23.7 \%$ | $5.2 \%$ |
| Ease of Transfers | $49.6 \%$ | $24.5 \%$ | $16.0 \%$ | $5.3 \%$ |
| Wait Time of Transfers | $36.8 \%$ | $32.9 \%$ | $19.8 \%$ | $5.6 \%$ |
| Helpfulness of Drivers | $75.5 \%$ | $13.9 \%$ | $7.9 \%$ | $1.9 \%$ |



For the most part, all aspects of services ranked well. The helpfulness of drivers received the most favorable responses with almost $90 \%$ of respondents being somewhat or very satisfied. Ease of transfers and the wait time of transfers also performed very well, with 74 and $70 \%$ favorable comments, respectively. Hours of operation received the least favorable response, with $56 \%$ of respondents being somewhat or very satisfied.

## FACTORS TO INCREASE USE OF THE BUS

Respondents were asked what factors would increase their use of The Bus. They were given several possible scenarios and asked if those would increase their usage. They could check multiple answers so the results will not add up to 100\%. The responses are shown in Table 63.

Table 63
Factors to Increase Use of The Bus

| FACTORS | FREQUENCY |
| :---: | :---: |
| Employer paid all or part of the fare | $6.7 \%$ |
| More frequent service | $41.1 \%$ |
| Earlier morning service | $21.2 \%$ |
| Later evening service | $44.1 \%$ |
| More information on evening demand response services | $7.8 \%$ |
| Assistance with trip planning | $4.2 \%$ |



Respondents identified that the biggest factor that would increase their use of The Bus was later evening service at $44 \%$. The next most identified factor was more frequent service (shorter headways) at $41 \%$. The remaining factors were considerably lower with earlier morning service at $21 \%$ and the remainder of factors at less than $10 \%$ each.

## REASONS FOR NOT USING THE BUS

Similar to the previous question, respondents were asked what factors contributed to them not using the bus when they didn't ride it. Several reasons were listed with check boxes and respondents could check multiple answers. The responses are shown in Table 64.

Table 64
Reasons for Not Using The Bus

| REASONS | FREQUENCY |
| :---: | :---: |
| Other Options | $33.1 \%$ |
| Too Many Transfers | $11.6 \%$ |
| Buses Take Too Long to Arrive at Bus Stop | $18.3 \%$ |
| Buses Take Too Long To Get to Destination | $20.5 \%$ |
| Buses do not go to Destination | $17.4 \%$ |
| Don't Like to Ride Bus | $2.7 \%$ |
| Don't Like Other Bus Riders | $2.5 \%$ |
| Other | $8.7 \%$ |



Reasons for Not Using the Bus

The most cited reason for not using the bus was that the respondent had other options available to them ( $33 \%$ ). Other reasons cited for not using the bus include buses taking too long to get to destination ( $21 \%$ ), buses taking too long to arrive at bus stop (18\%), and buses not going to destination (17\%).

## APPENDIX A - ROUTE MAPS AND SCHEDULES

## ALL ROUTES MAP




## ROUTE 1

Route operates Monday through Saturday year round
La ruta opera lunes por sábado todo el año.



## ROUTE 2

Route operates Monday through Saturday year round.
La ruta opera lunes por sábado todo año.

|  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ---- | ---- | 6:22 | 6:24 | 6:26 | 6:30 | 6:40 |
| 6:45 | 6:49 | 6:52 | 6:54 | 6:56 | 7:00 | 7:10 |
| 7:15 | 7:19 | 7:22 | 7:24 | 7:26 | 7:30 | 7:40 |
| 7:45 | 7:49 | 7:52 | 7:54 | 7:56 | 8:00 | 8:10 |
| 8:15 | 8:19 | 8:22 | 8:24 | 8:26 | 8:30 | 8:40 |
| 8:45 | 8:49 | 8:52 | 8:54 | 8:56 | 9:00 | 9:10 |
| 9:15 | 9:19 | 9:22 | 9:24 | 9:26 | 9:30 | 9:40 |
| 9:45 | 9:49 | 9:52 | 9:54 | 9:56 | 10:00 | 10:10 |
| 10:15 | 10:19 | 10:22 | 10:24 | 10:26 | 10:30 | 10:40 |
| 10:45 | 10:49 | 10:52 | 10:54 | 10:56 | 11:00 | 11:10 |
| 11:15 | 11:19 | 11:22 | 11:24 | 11:26 | 11:30 | 11:40 |
| 11:45 | 11:49 | 11:52 | 11:54 | 11:56 | 12:00 | 12:10 |
| 12:15 | 12:19 | 12:22 | 12:24 | 12:26 | 12:30 | 12:40 |
| 12:45 | 12:49 | 12:52 | 12:54 | 12:56 | 1:00 | 1:10 |
| 1:15 | 1:19 | 1:22 | 1:24 | 1:26 | 1:30 | 1:40 |
| 1:45 | 1:49 | 1:52 | 1:54 | 1:56 | 2:00 | 2:10 |
| 2:15 | 2:19 | 2:22 | 2:24 | 2:26 | 2:30 | 2:40 |
| 2:45 | 2:49 | 2:52 | 2:54 | 2:56 | 3:00 | 3:10 |
| 3:15 | 3:19 | 3:22 | 3:24 | 3:26 | 3:30 | 3:40 |
| 3:45 | 3:49 | 3:52 | 3:54 | 3:56 | 4:00 | 4:10 |
| 4:15 | 4:19 | 4:22 | 4:24 | 4:26 | 4:30 | 4:40 |
| 4:45 | 4:49 | 4:52 | 4:54 | 4:56 | 5:00 | 5:10 |
| 5:15 | 5:19 | 5:22 | 5:24 | 5:26 | 5:30 | 5:40 |
| 5:45 | 5:49 | 5:52 | 5:54 | 5:56 | 6:00 | 6:10 |
| 6:15 | 6:19 | 6:22 | 6:24 | 6:26 | 6:30 | 6:40 |



## ROUTE 3

Route operates Monday through Friday. Only when CSU is in session. See page 2 for CSU session dates. La ruta opera lunes por viernes. Todos tiempos son válido durante la sesión de CSU sólo. Vea página dos por fechas de sesión de CSU.



## ROUTE 4

Route operates Monday through Saturday year round.
La ruta opera lunes por sábado todo año.



## ROUTE 5

Route operates Monday through Saturday year round.
La ruta opera lunes por sábado todo año.



## ROUTE 6

Route operates Monday through Saturday year round.
La ruta opera lunes por sábado todo año.

| NORTHBOUND |  |  |  |  |  | SOUTHBOUND |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  | $\begin{aligned} & \text { 岂 } \\ & \text { 岂 } \\ & \text { Sbick } \end{aligned}$ |  |  |  |  |
| 1 | 2 | 3 | 4 | 5 | 6 | 6 | 5 | 4 | 3 | 2 |  |
| 6:15 | 6:20 | 6:22 | 6:26 | 6:31 | 6:40 | 6:45 | 6:52 | 6:57 | 7:00 | 7:03 | 7:10 |
| 7:15 | 7:20 | 7:22 | 7:26 | 7:31 | 7:40 | 7:45 | 7:52 | 7:57 | 8:00 | 8:03 | 8:10 |
| 8:15 | 8:20 | 8:22 | 8:26 | 8:31 | 8:40 | 8:45 | 8:52 | 8:57 | 9:00 | 9:03 | 9:10 |
| 9:15 | 9:20 | 9:22 | 9:26 | 9:31 | 9:40 | 9:45 | 9:52 | 9:57 | 10:00 | 10:03 | 10:10 |
| 10:15 | 10:20 | 10:22 | 10:26 | 10:31 | 10:40 | 10:45 | 10:52 | 10:57 | 11:00 | 11:03 | 11:10 |
| 11:15 | 11:20 | 11:22 | 11:26 | 11:31 | 11:40 | 11:45 | 11:52 | 11:57 | 12:00 | 12:03 | 12:10 |
| 12:15 | 12:20 | 12:22 | 12:26 | 12:31 | 12:40 | 12:45 | 12:52 | 12:57 | 1:00 | 1:03 | 1:10 |
| 1:15 | 1:20 | 1:22 | 1:26 | 1:31 | 1:40 | 1:45 | 1:52 | 1:57 | 2:00 | 2:03 | 2:10 |
| 2:15 | 2:20 | 2:22 | 2:26 | 2:31 | 2:40 | 2:45 | 2:52 | 2:57 | 3:00 | 3:03 | 3:10 |
| 3:15 | 3:20 | 3:22 | 3:26 | 3:31 | 3:40 | 3:45 | 3:52 | 3:57 | 4:00 | 4:03 | 4:10 |
| 4:15 | 4:20 | 4:22 | 4:26 | 4:31 | 4:40 | 4:45 | 4:52 | 4:57 | 5:00 | 5:03 | 5:10 |
| 5:15 | 5:20 | 5:22 | 5:26 | 5:31 | 5:40 | 5:45 | 5:52 | 5:57 | 6:00 | 6:03 | 6:10 |
| 6:15 | 6:20 | 6:22 | 6:26 | 6:31 | 6:40 | 6:45 | 6:52 | 6:57 | 7:00 | 7:03 | 7:10 |



## ROUTE 7

Routes highlighted in blue operate Monday through Friday during CSU session only.
Non-highlighted routes operate Monday through Saturday year round. See page 2 for CSU session dates.
Los tiempos de la ruta en azul corre el lunes por el viernes sólo cuándo CSU está en la sesión. Los tiepos de la ruta en blanco corre el lunes por el sábado todo año. Vea página dos por fechas de sesión de CSU.



## ROUTE 8

Route operates Monday through Saturday year round.
La ruta opera lunes por sábado todo año.

|  |  | $\omega \begin{aligned} & \text { L.C. DEPT. OF } \\ & \text { HUMAN SERVICES }\end{aligned}$ |  |  |
| :---: | :---: | :---: | :---: | :---: |
| 6:22 | 6:24 | 6:33 | 6:37 | 6:49 |
| 6:52 | 6:54 | 7:03 | 7:07 | 7:19 |
| 7:22 | 7:24 | 7:33 | 7:37 | 7:49 |
| 7:52 | 7:54 | 8:03 | 8:07 | 8:19 |
| 8:22 | 8:24 | 8:33 | 8:37 | 8:49 |
| 8:52 | 8:54 | 9:03 | 9:07 | 9:19 |
| 9:22 | 9:24 | 9:33 | 9:37 | 9:49 |
| 9:52 | 9:54 | 10:03 | 10:07 | 10:19 |
| 10:22 | 10:24 | 10:33 | 10:37 | 10:49 |
| 10:52 | 10:54 | 11:03 | 11:07 | 11:19 |
| 11:22 | 11:24 | 11:33 | 11:37 | 11:49 |
| 11:52 | 11:54 | 12:03 | 12:07 | 12:19 |
| 12:22 | 12:24 | 12:33 | 12:37 | 12:49 |
| 12:52 | 12:54 | 1:03 | 1:07 | 1:19 |
| 1:22 | 1:24 | 1:33 | 1:37 | 1:49 |
| 1:52 | 1:54 | 2:03 | 2:07 | 2:19 |
| 2:22 | 2:24 | 2:33 | 2:37 | 2:49 |
| 2:52 | 2:54 | 3:03 | 3:07 | 3:19 |
| 3:22 | 3:24 | 3:33 | 3:37 | 3:49 |
| 3:52 | 3:54 | 4:03 | 4:07 | 4:19 |
| 4:22 | 4:24 | 4:33 | 4:37 | 4:49 |
| 4:52 | 4:54 | 5:03 | 5:07 | 5:19 |
| 5:22 | 5:24 | 5:33 | 5:37 | 5:49 |
| 5:52 | 5:54 | 6:03 | 6:07 | 6:19 |
| 6:22 | 6:24 | 6:33 | 6:37 | 6:49 |



## ROUTE 9

Route operates Monday through Saturday year round.
La ruta opera lunes por sábado todo año.

|  |  |  |  |
| :---: | :---: | :---: | :---: |
| MONDAY THROUGH SATURDAY |  |  |  |
| 6:52 | 6:58 | 7:02 | 7:15 |
| 7:52 | 7:58 | 8:02 | 8:15 |
| 8:52 | 8:58 | 9:02 | 9:15 |
| 9:52 | 9:58 | 10:02 | 10:15 |
| 10:52 | 10:58 | 11:02 | 11:15 |
| 11:52 | 11:58 | 12:02 | 12:15 |
| 12:52 | 12:58 | 1:02 | 1:15 |
| 1:52 | 1:58 | 2:02 | 2:15 |
| 2:52 | 2:58 | 3:02 | 3:15 |
| 3:52 | 3:58 | 4:02 | 4:15 |
| 4:52 | 4:58 | 5:02 | 5:15 |
| 5:52 | 5:58 | 6:02 | 6:15 |

## ROUTE 11

Route operates Monday through Friday only when CSU is in session. See page 2 for CSU session dates. La ruta opers lunes por viernes durante la sesión de CSU sólo. Vea pagina dos por fechas de sesión de CSU.

|  | $\begin{aligned} & \frac{x}{4} \\ & \text { x } \\ & \text { 등를 } \end{aligned}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| 1 | 2 | 3 | 2 | 1 |
|  | -- | 6:58 | 7:00 | 7:06 |
| 7:10 | 7:16 | 7:18 | 7:20 | 7:26 |
| 7:30 | 7:36 | 7:38 | 7:40 | 7:46 |
| 7:50 | 7:56 | 7:58 | 8:00 | 8:06 |
| 8:10 | 8:16 | 8:18 | 8:20 | 8:26 |
| 8:30 | 8:36 | 8:38 | 8:40 | 8:46 |
| 8:50 | 8:56 | 8:58 | 9:00 | 9:06 |
| 9:10 | 9:16 | 9:18 | 9:20 | 9:26 |
| 9:30 | 9:36 | 9:38 | 9:40 | 9:46 |
| 9:50 | 9:56 | 9:58 | 10:00 | 10:06 |
| 10:10 | 10:16 | 10:18 | 10:20 | 10:26 |
| 10:30 | 10:36 | 10:38 | 10:40 | 10:46 |
| 10:50 | 10:56 | 10:58 | 11:00 | 11:06 |
| 11:10 | 11:16 | 11:18 | 11:20 | 11:26 |
| 11:30 | 11:36 | 11:38 | 11:40 | 11:46 |
| 11:50 | 11:56 | 11:58 | 12:00 | 12:06 |
| 12:10 | 12:16 | 12:18 | 12:20 | 12:26 |
| 12:30 | 12:36 | 12:38 | 12:40 | 12:46 |
| 12:50 | 12:56 | 12:58 | 1:00 | 1:06 |
| 1:10 | 1:16 | 1:18 | 1:20 | 1:26 |
| 1:30 | 1:36 | 1:38 | 1:40 | 1:46 |
| 1:50 | 1:56 | 1:58 | 2:00 | 2:06 |
| 2:10 | 2:16 | 2:18 | 2:20 | 2:26 |
| 2:30 | 2:36 | 2:38 | 2:40 | 2:46 |
| 2:50 | 2:56 | 2:58 | 3:00 | 3:06 |
| 3:10 | 3:16 | 3:18 | 3:20 | 3:26 |
| 3:30 | 3:36 | 3:38 | 3:40 | 3:46 |
| 3:50 | 3:56 | 3:58 | 4:00 | 4:06 |
| 4:10 | 4:16 | 4:18 | 4:20 | 4:26 |
| 4:30 | 4:36 | 4:38 | 4:40 | 4:46 |
| 4:50 | 4:56 | 4:58 | 5:00 | 5:06 |
| 5:10 | 5:16 | 5:18 | 5:20 | 5:26 |
| 5:30 | 5:36 | 5:38 | 5:40 | 5:46 |
| 5:50 | 5:56 | 5:58 | 6:0 | 6:06 |
| 6:10 | 6:16 | 6:18 | ---- | --- |



## ROUTE 14

Route operates Monday through Saturday year round.
La ruta opera lunes por sábado todo año.

|  | $\begin{gathered} \sum \\ \text { 잋 } \\ \underset{y}{3} \\ 2 \\ 2 \end{gathered}$ |  | $\begin{gathered} \sum_{d}^{Z} \\ \text { 을 } \\ \underset{3}{3} \\ 2 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: |
| MONDAY THROUGH SATURDAY |  |  |  |  |
| 6:20 | 6:24 | 6:33 | 6:40 | 6:51 |
| 7:20 | 7:24 | 7:33 | 7:40 | 7:51 |
| 8:20 | 8:24 | 8:33 | 8:40 | 8:51 |
| 9:20 | 9:24 | 9:33 | 9:40 | 9:51 |
| 10:20 | 10:24 | 10:33 | 10:40 | 10:51 |
| 11:20 | 11:24 | 11:33 | 11:40 | 11:51 |
| 12:20 | 12:24 | 12:33 | 12:40 | 12:51 |
| 1:20 | 1:24 | 1:33 | 1:40 | 1:51 |
| 2:20 | 2:24 | 2:33 | 2:40 | 2:51 |
| 3:20 | 3:24 | 3:33 | 3:40 | 3:51 |
| 4:20 | 4:24 | 4:33 | 4:40 | 4:51 |
| 5:20 | 5:24 | 5:33 | 5:40 | 5:51 |
| 6:20 | 6:24 | 6:33 | 6:40 | 6:51 |



## ROUTE 15

Route operates Monday through Saturday year round.
La ruta opera lunes por sábado todo año.

|  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| 1 | $2$ | 3 | 2 | 1 |
| 6:14 | 6:16 | 6:22 | 6:26 | 6:33 |
| 6:34 | 6:36 | 6:42 | 6:46 | 6:53 |
| 6:54 | 6:56 | 7:02 | 7:06 | 7:13 |
| 7:14 | 7:16 | 7:22 | 7:26 | 7:33 |
| 7:34 | 7:36 | 7:42 | 7:46 | 7:53 |
| 7:54 | 7:56 | 8:02 | 8:06 | 8:13 |
| 8:14 | 8:16 | 8:22 | 8:26 | 8:33 |
| 8:34 | 8:36 | 8:42 | 8:46 | 8:53 |
| 8:54 | 8:56 | 9:02 | 9:06 | 9:13 |
| 9:14 | 9:16 | 9:22 | 9:26 | 9:33 |
| 9:34 | 9:36 | 9:42 | 9:46 | 9:53 |
| 9:54 | 9:56 | 10:02 | 10:06 | 10:13 |
| 10:14 | 10:16 | 10:22 | 10:26 | 10:33 |
| 10:34 | 10:36 | 10:42 | 10:46 | 10:53 |
| 10:54 | 10:56 | 11:02 | 11:06 | 11:13 |
| 11:14 | 11:16 | 11:22 | 11:26 | 11:33 |
| 11:34 | 11:36 | 11:42 | 11:46 | 11:53 |
| 11:54 | 11:56 | 12:02 | 12:06 | 12:13 |
| 12:14 | 12:16 | 12:22 | 12:26 | 12:33 |
| 12:34 | 12:36 | 12:42 | 12:46 | 12:53 |
| 12:54 | 12:56 | 1:02 | 1:06 | 1:13 |
| 1:14 | 1:16 | 1:22 | 1:26 | 1:33 |
| 1:34 | 1:36 | 1:42 | 1:46 | 1:53 |
| 1:54 | 1:56 | 2:02 | 2:06 | 2:13 |
| 2:14 | 2:16 | 2:22 | 2:26 | 2:33 |
| 2:34 | 2:36 | 2:42 | 2:46 | 2:53 |
| 2:54 | 2:56 | 3:02 | 3:06 | 3:13 |
| 3:14 | 3:16 | 3:22 | 3:26 | 3:33 |
| 3:34 | 3:36 | 3:42 | 3:46 | 3:53 |
| 3:54 | 3:56 | 4:02 | 4:06 | 4:13 |
| 4:14 | 4:16 | 4:22 | 4:26 | 4:33 |
| 4:34 | 4:36 | 4:42 | 4:46 | 4:53 |
| 4:54 | 4:56 | 5:02 | 5:06 | 5:13 |
| 5:14 | 5:16 | 5:22 | 5:26 | 5:33 |
| 5:34 | 5:36 | 5:42 | 5:46 | 5:53 |
| 5:54 | 5:56 | 6:02 | 6:06 | 6:13 |
| 6:14 | 6:16 | 6:22 | 6:26 | 6:33 |
| 6:34 | 6:36 | 6:42 | 6:46 | 6:53 |


$36$

## FOX TROT

Route operates Monday through Saturday year round．
La ruta opera lunes por sábado todo año．

| SOUTHBOUND |  |  |  |  | NORTHBOUND |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { 岂 } \\ \text { 号俤 } \\ \text { 品 } \\ 2 \end{gathered}$ |  |  |  |  |  |  |  |
| 6：15 | 6：23 | 6：26 | 6：30 | 6：38 | 6：44 | 6：47 | 6：53 | 7：03 |
| 7：15 | 7：23 | 7：26 | 7：30 | 7：38 | 7：44 | 7：47 | 7：53 | 8：03 |
| 8：15 | 8：23 | 8：26 | 8：30 | 8：38 | 8：44 | 8：47 | 8：53 | 9：03 |
| 9：15 | 9：23 | 9：26 | 9：30 | 9：38 | 9：44 | 9：47 | 9：53 | 10：03 |
| 10：15 | 10：23 | 10：26 | 10：30 | 10：38 | 10：44 | 10：47 | 10：53 | 11：03 |
| 11：15 | 11：23 | 11：26 | 11：30 | 11：38 | 11：44 | 11：47 | 11：53 | 12：03 |
| 12：15 | 12：23 | 12：26 | 12：30 | 12：38 | 12：44 | 12：47 | 12：53 | 1：03 |
| 1：15 | 1：23 | 1：26 | 1：30 | 1：38 | 1：44 | 1：47 | 1：53 | 2：03 |
| 2：15 | 2：23 | 2：26 | 2：30 | 2：38 | 2：44 | 2：47 | 2：53 | 3：03 |
| 3：15 | 3：23 | 3：26 | 3：30 | 3：38 | 3：44 | 3：47 | 3：53 | 4：03 |
| 4：15 | 4：23 | 4：26 | 4：30 | 4：38 | 4：44 | 4：47 | 4：53 | 5：03 |
| 5：15 | 5：23 | 5：26 | 5：30 | 5：38 | 5：44 | 5：47 | 5：53 | 6：03 |
| 6：15 | 6：23 | 6：26 | 6：30 | 6：38 | 6：44 | 6：47 | 6：53 | 7：03 |




| From: Downtown Transfer Center To: AIMS College leaves at: <br> Arrives at: |  |  |  |  | From: AIMS College <br> To: Downtown Transfer Center leves ot: |  |  |  |  | Arrives ot: |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |
| WEEKくDAYS |  |  |  |  |  |  |  |  |  |  |
| 6:23AM | 6:27 | 6:37 | 6:45 | 6:50 | 6:50AM | 6:55 | 7:02 | 7:10 | 7:14 | 7:19 |
| 7:23 | 7:27 | 7:3 | 7:45 | 7:50 | 7:50 | 7:55 | 02 | 8:1 | 8:14 | 19 |
| 8:23 | 8:27 | 8:37 | 8:45 | 8:50 | 8:50 | 8:55 | 9:02 | 9:10 | 9:14 | 9:19 |
| 9:23 | 9:27 | 9:37 | 9:45 | 9:50 | 9:50 | 9:55 | 10:02 | 10:10 | 10:14 | 10:19 |
| 10:23 | 10:27 | 10:37 | 10:45 | 10:50 | 10:50 | 10:55 | 11:02 | 11:10 | 11:14 | 11:19 |
| 11:23 | 11:27 | 11:37 | 11: | 11:50 | 11:50 | 11:55 | 12:02PM | 12:10 | 12:14 | 12:19 |
| 12:23PM | 12:27 | 12:37 | 12: | 12:50 | 12:50 | 12:55 | 1:02 | 1:10 | 1:14 | 1:19 |
| 1:23 | 1:27 | 1:37 | 1:45 | :50 | :50 | 1:55 | 2:02 | 2:10 | 2:14 | 19 |
| 2:23 | 2:27 | 2:37 | 2:45 | 2:50 | 2:50 | 2:55 | 3:02 | 3:10 | 3:14 | 3:19 |
| 3:23 | 3:27 | 3:37 | 3:45 | 3:50 | 3:50 | 3:55 | 4:02 | 4:10 | 4:14 | 4:19 |
| 4:23 | 4:27 | 4:37 | 4:45 | 4:50 | 4:50 | 4:55 | 5:0 | 5:10 | 5:14 | 5:19 |
| 5:23 | 5:27 | 5:3 | 5:45 | 5:50 | 5:50 | 5:5 | 6:02 | 6:1 | 6:14 | 6:1 |
| SATURDAY |  |  |  |  |  |  |  |  |  |  |
| 9:23am | 9:27 | 9:37 | 9:45 | 9:50 | 9:50am | 9:55 | 10:02 | 10:10 | 10:14 | 10:19 |
| 10:23 | 10:27 | 10:37 | 10:45 | 10:50 | 10:50 | 10:55 | 11:02 | 11:10 | 11:14 | 11:19 |
| 11:23 | 11:27 | 11:37 | 11:45 | 11:50 | 11:48 | 11:55 | 12:02PM | 12:10 | 12:14 | 12:19 |
| 12:23PM | 12:27 | 12:37 | 12:45 | 12:50 | 12:48 | 12:55 | 1:02 | 1:10 | 1:14 | 1:19 |
| 1:23 | 1:27 | $1: 37$ | 1:45 | 1:50 | 1:48 | 1:55 | 2:02 | 2:10 | 2:14 | 2:19 |
| 2:23 | 2:27 | 2:37 | 2:4 | 2:50 | 2:48 | $2: 55$ | 3:02 | 3:10 | 3:14 | 3:19 |
| 3:23 | 3:27 | 3:37 | 3:45 | 3:50 | 3:48 | 3:55 | 4:02 | 4:10 | 4:1 | 4:19 |
| 4:23 | 4:27 | 4:37 | 4:45 | 4:50 | 4:48 | 4:55 | 5:02 | 5:10 | 5:14 | 5:19 |




Route 3

| From：Downtown Transfer Center $T_{0}$ ：Bittersweet Plaza <br> leaves ot： |  |  |  |  | From：Bittersweet Plaza To：Downtown Transfer Center |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 行亦 <br> 든 <br> ${ }^{\infty}$ <br> 少高 <br> 동응 |  |  |  |  |  |  |  |  | た <br> 든 <br> $\infty$ <br> 栄亮㐫 <br> 동응․ |
| WEEKCDAYS |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 6：35 AM | 6：40 |
|  |  | 7：09am | 7：13 | 7：16 | 7：22 | 7：26 | 7：29 | 7：35 | 7：40 |
| 8：00 | 8：05 | 8：09 | 8：13 | 8：16 | 8：22 | 8：26 | 8：29 | 8：35 | 8：40 |
| 9：00 | 9：05 | 9：09 | 9：13 | 9：16 | 9：22 | 9：26 | 9：29 | 9：35 | 9：40 |
| 10：00 | 10：05 | 10：09 | 10：13 | 10：16 | 10：22 | 10：26 | 10：29 | 10：35 | 10：40 |
| 11：00 | 11：05 | 11：09 | 11：13 | 11：16 | 11：22 | 11：26 | 11：29 | 11：35 | 11：40 |
| 12：00pm | 12：05 | 12：09 | 12：13 | 12：16 | 12：22險 | 12：26 | 12：29 | 12：35 | 12：40 |
| 1：00 | 1：05 | 1：09 | 1：13 | 1：16 | 1：22 | 1：26 | 1：29 | 1：35 | 1：40 |
| 2：00 | 2：05 | 2：09 | 2：13 | 2：16 | 2：22 | 2：26 | 2：29 | 2：35 | 2：40 |
| 3：00 | 3：05 | 3：09 | 3：13 | 3：16 | 3：22 | 3：26 | 3：29 | 3：35 | 3：40 |
| 4：00 | 4：05 | 4：09 | 4：13 | 4：16 | 4：22 | 4：26 | 4：29 | 4：35 | 4：40 |
| 5：00 | 5：05 | 5：09 | 5：13 | 5：16 | 5：22 | 5：26 | 5：29 | 5：35 | 5：40 |
| 6：00 | 6：05 | 6：09 | 6：13 | 6：16 | 6：22 | 6：26 | 6：29 |  |  |
| SATURDAY |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 9：35AM | 9：40 |
|  |  | 10：090M | 10：13 | 10：16 | 10：22 | 10：26 | 10：29 | 10：35 | 10：40 |
| 11：00 | 11：05 | 11：09 | 11：13 | 11：16 | 11：22 | 11：26 | 11：29 | 11：35 | 11：40 |
| 12：00PM | 12：05 | 12：09 | 12：13 | 12：16 | 12：22滑 | 12：26 | 12：29 | 12：35 | 12：40 |
| 1：00 | 1：05 | 1：09 | 1：13 | 1：16 | 1：22 | 1：26 | 1：29 | 1：35 | 1：40 |
| 2：00 | 2：05 | 2：09 | 2：13 | 2：16 | 2：22 | 2：26 | 2：29 | 2：35 | 2：40 |
| 3：00 | 3：05 | 3：09 | 3：13 | 3：16 | 3：22 | 3：26 | 3：29 | 3：35 | 3：40 |
| 4：00 | 4：05 | 4：09 | 4：13 | 4：16 | 4：22 | 4：26 | 4：29 | 4：35 | 4：40 |
| 5：00 | 5：05 | 5：09 | 5：13 | 5：16 | 5：22 | 5：26 | 5：29 |  |  |



|  | E® 5 |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | From：Greeley Mall <br> To：Weld County Health Dept． |  |  |  |  |  | From：Weld County Health Dept． To：Greeley Mall |  |  |  |  |
|  |  |  |  | 与旁 든 かっ妴 은 동흥 | 玄弯 돈 $\stackrel{\infty}{\infty}$蕅 동 응 |  |  |  |  |  |  |
|  | WEEKCDAYS |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | 6：44AM | 6：47 | 6：52 | 6：58 | 7：04 |
|  |  |  |  |  |  |  | 7：14 | 7：17 | 7：22 | 7：28 | 7：34 |
|  | 7：08aM | 7：14 | 7：20 | 7：28 | 7：30 | 7：38 | 7：44 | 7：47 | 7：52 | 7：58 | 8：04 |
|  | 7：38 | 7：44 | 7：50 | 7：58 | 8：00 | 8：08 | 8：14 | 8：17 | 8：22 | 8：28 | 8：34 |
|  | 8：08 | 8：14 | 8：20 | 8：28 | 8：30 | 8：38 | 8：44 | 8：47 | 8：52 | 8：58 | 9：04 |
|  | 8：38 | 8：44 | 8：50 | 8：58 | 9：00 | 9：08 | 9：14 | 9：17 | 9：22 | 9：28 | 9：34 |
|  | 9：08 | 9：14 | 9：20 | 9：28 | 9：30 | 9：38 | 9：44 | 9：47 | 9：52 | 9：58 | 10：04 |
|  | 9：38 | 9：44 | 9：50 | 9：58 | 10：00 | 10：08 | 10：14 | 10：17 | 10：22 | 10：28 | 10：34 |
|  | 10：08 | 10：14 | 10：20 | 10：28 | 10：30 | 10：38 | 10：44 | 10：47 | 10：52 | 10：58 | 11：04 |
|  | 10：38 | 10：44 | 10：50 | 10：58 | 11：00 | 11：08 | 11：14 | 11：17 | 11：22 | 11：28 | 11：34 |
|  | 11：08 | 11：14 | 11：20 | 11：28 | 11：30 | 11：38 | 11：44 | 11：47 | 11：52 | 11：58 | 12：04PM |
|  | 11：38 | 11：44 | 11：50 | 11：58 | 12：00 PM | 12：08 | 12：14 | 12：17 | 12：22 | 12：28 | 12：34 |
|  | 12：08 | 12：14 | 12：20 | 12：28 | 12：30 | 12：38 | 12：44 | 12：47 | 12：52 | 12：58 | 1：04 |
|  | 12：38 | 12：44 | 12：50 | 12：58 | 1：00 | 1：08 | 1：14 | 1：17 | 1：22 | 1：28 | 1：34 |
|  | 1：08 | 1：14 | 1：20 | 1：28 | 1：30 | 1：38 | 1：44 | 1：47 | 1：52 | 1：58 | 2：04 |
|  | 1：38 | 1：44 | 1：50 | 1：58 | 2：00 | 2：08 | 2：14 | 2：17 | 2：22 | 2：28 | 2：34 |
|  | 2：08 | 2：14 | 2：20 | 2：28 | 2：30 | 2：38 | 2：44 | 2：47 | 2：52 | 2：58 | 3：04 |
|  | 2：38 | 2：44 | 2：50 | 2：58 | 3：00 | 3：08 | 3：14 | 3：17 | 3：22 | 3：28 | 3：34 |
|  | 3：08 | 3：14 | 3：20 | 3：28 | 3：30 | 3：38 | 3：44 | 3：47 | 3：52 | 3：58 | 4：04 |
|  | 3：38 | 3：44 | 3：50 | 3：58 | 4：00 | 4：08 | 4：14 | 4：17 | 4：22 | 4：28 | 4：34 |
|  | 4：08 | 4：14 | 4：20 | 4：28 | 4：30 | 4：38 | 4：44 | 4：47 | 4：52 | 4：58 | 5：04 |
|  | 4：38 | 4：44 | 4：50 | 4：58 | 5：00 | 5：08 | 5：14 | 5：17 | 5：22 | 5：28 | 5：34 |
|  | 5：08 | 5：14 | 5：20 | 5：28 | 5：30 | 5：38 | 5：44 | 5：47 | 5：52 | 5：58 | 6：04 |
| （1） | 5：38 | 5：44 | 5：50 | 5：58 | 6：00 | 6：08 | 6：14 | 6：17 | 6：22 | 6：28 | 6：34 |
|  | 6：08 | 6：14 | 6：20 | 6：28 |  |  |  |  |  |  |  |
|  | 6：38 | 6：44 | 6：50 | 6：58 |  |  |  |  |  |  |  |
| （1T） | SATURDAY |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | 9：44AM | 9：47 | 9：52 | 9：58 | 10：04 |
|  |  |  |  |  |  |  | 10：14 | 10：17 | 10：22 | 10：28 | 10：34 |
|  | 10：08am | 10：14 | 10：20 | 10：28 | 10：30 | 10：38 | 10：44 | 10：47 | 10：52 | 10：58 | 11：04 |
|  | 10：38 | 10：44 | 10：50 | 10：58 | 11：00 | 11：08 | 11：14 | 11：17 | 11：22 | 11：28 | 11：34 |
|  | 11：08 | 11：14 | 11：20 | 11：28 | 11：30 | 11：38 | 11：44 | 11：47 | 11：52 | 11：58 | 12：04Pm |
|  | 11：38 | 11：44 | 11：50 | 11：58 | 12：00pm | 12：08 | 12：14 | 12：17 | 12：22 | 12：28 | 12：34 |
|  | 12：08 | 12：14 | 12：20 | 12：28 | 12：30 | 12：38 | 12：44 | 12：47 | 12：52 | 12：58 | 1：04 |
|  | 12：38 | 12：44 | 12：50 | 12：58 | 1：00 | 1：08 | 1：14 | 1：17 | 1：22 | 1：28 | 1：34 |
|  | 1：08 | 1：14 | 1：20 | 1：28 | 1：30 | 1：38 | 1：44 | 1：47 | 1：52 | 1：58 | 2：04 |
|  | 1：38 | 1：44 | 1：50 | 1：58 | 2：00 | 2：08 | 2：14 | 2：17 | 2：22 | 2：28 | 2：34 |
|  | 2：08 | 2：14 | 2：20 | 2：28 | 2：30 | 2：38 | 2：44 | 2：47 | 2：52 | 2：58 | 3：04 |
|  | 2：38 | 2：44 | 2：50 | 2：58 | 3：00 | 3：08 | 3：14 | 3：17 | 3：22 | 3：28 | 3：34 |
|  | 3：08 | 3：14 | 3：20 | 3：28 | 3：30 | 3：38 | 3：44 | 3：47 | 3：52 | 3：58 | 4：04 |
|  | 3：38 | 3：44 | 3：50 | 3：58 | 4：00 | 4：08 | 4：14 | 4：17 | 4：22 | 4：28 | 4：34 |
|  | 4：08 | 4：14 | 4：20 | 4：28 | 4：30 | 4：38 | 4：44 | 4：47 | 4：52 | 4：58 | 5：04 |
|  | 4：38 | 4：44 | 4：50 | 4：58 | 5：00 | 5：08 | 5：14 | 5：17 | 5：22 | 5：28 | 5：34 |
|  | 5：08 | 5：14 | 5：20 | 5：28 |  |  |  |  |  |  |  |
|  | 5：38 | 5：44 | 5：50 | 5：58 |  |  |  |  |  |  |  |



## Jitterbus

## Tango



| JTTERBUS |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{aligned} & \text { ©흔 } \\ & \text { 등 } \\ & \text {.ㅡㅡ릉 } \\ & 3 \end{aligned}$ |  |  |  |  | © ゅ 듷而兰 1 |
| 6：38 | 6：47 | 6：55 | 7：04 | 7：16 | 7：23 | 7：30 | 7：38 |
| 7：38 | 7：47 | 7：55 | 8：04 | 8：16 | 8：23 | 8：30 | 8：38 |
| 8：38 | 8：47 | 8：55 | 9：04 | 9：16 | 9：23 | 9：30 | 9：38 |
| 9：38 | 9：47 | 9：55 | 10：04 | 10：16 | 10：23 | 10：30 | 10：38 |
| 10：38 | 10：47 | 10：55 | 11：04 | 11：16 | 11：23 | 11：30 | 11：38 |
| 11：38 | 11：47 | 11：55 | 12：04 | 12：16 | 12：23 | 12：30 | 12：38 |
| 12：38 | 12：47 | 12：55 | 1：04 | 1：16 | 1：23 | 1：30 | 1：38 |
| 1：38 | 1：47 | 1：55 | 2：04 | 2：16 | 2：23 | 2：30 | 2：38 |
| 2：38 | 2：47 | 2：55 | 3：04 | 3：16 | 3：23 | 3：30 | 3：38 |
| 3：38 | 3：47 | 3：55 | 4：04 | 4：16 | 4：23 | 4：30 | 4：38 |
| 4：38 | 4：47 | 4：55 | 5：04 | 5：16 | 5：23 | 5：30 | 5：38 |
| 5：38 | 5：47 | 5：55 | 6：04 | 6：16 | 6：23 | 6：30 | 6：38 |


| TAMEO |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| （6） <br> ※ ㄷㅡㅡㅡㄹ <br> 7 |  |  | $\begin{aligned} & \text {.⿳亠二口犬口 } \\ & \text { 器 } \\ & \text { 嵒 } \\ & 4 \end{aligned}$ | $\begin{aligned} & \text { 든 } \\ & \frac{5}{3} \\ & 5 \end{aligned}$ |  |  | © <br> ふ 등 <br> 需： <br> 1 |
| 6：38 | 6：46 | 6：54 | 7：04 | 7：10 | 7：22 | 7：28 | 7：38 |
| 7：38 | 7：46 | 7：54 | 8：04 | 8：10 | 8：22 | 8：28 | 8：38 |
| 8：38 | 8：46 | 8：54 | 9：04 | 9：10 | 9：22 | 9：28 | 9：38 |
| 9：38 | 9：46 | 9：54 | 10：04 | 10：10 | 10：22 | 10：28 | 10：38 |
| 10：38 | 10：46 | 10：54 | 11：04 | 11：10 | 11：22 | 11：28 | 11：38 |
| 11：38 | 11：46 | 11：54 | 12：04 | 12：10 | 12：22 | 12：28 | 12：38 |
| 12：38 | 12：46 | 12：54 | 1：04 | 1：10 | 1：22 | 1：28 | 1：38 |
| 1：38 | 1：46 | 1：54 | 2：04 | 2：10 | 2：22 | 2：28 | 2：38 |
| 2：38 | 2：46 | 2：54 | 3：04 | 3：10 | 3：22 | 3：28 | 3：38 |
| 3：38 | 3：46 | 3：54 | 4：04 | 4：10 | 4：22 | 4：28 | 4：38 |
| 4：38 | 4：46 | 4：54 | 5：04 | 5：10 | 5：22 | 5：28 | 5：38 |
| 5：38 | 5：46 | 5：54 | 6：04 | 6：10 | 6：22 | 6：28 | 6：38 |

[^0]
## APPENDIX B—SURVEY FORMS/QUESTIONNAIRES

## Dear COLT Customer,

## City Of Loveland Transit

Please assist us with this survey of COLT riders! The survey on the inside of this form will help us find out the needs and concerns of our passengers. It will also help plan long-range transit needs in the city and throughout the North Front Range.

The survey only takes a few minutes to complete. It is best to fill out the survey on the bus and return it in one of the boxes by the doors of the bus. You can also mail it back if you can't complete it on the bus. Please fold and tape (no staples!) the form with the address showing and drop it in any mail box - postage is paid.

All answers are confidential. If you would like additional information, visit the website at www.nfrmpo.org and click on the 2005 Onboard Transit Survey.

Thank you for helping us make the COLT bus service better!

Si usted querría una versión española de esta inspección, pregunta por favor al asistente.

POSTAGE WILL BE PAID BY ADDRESSEE

LSA ASSOCIATES INC
132 W MOUNTAIN AVE
FORT COLLINS CO 80524-9843

Ilılıllanlı

## THANKYOU FOR YOUR HELP!!

## PLEASE PLACE COMPLEIED FORM IN REIURNBOX ATTHE DOOR, GIVEITTO ATIENDANT, OR MAILITBACK.

If you have already completed one of these forms on another bus, please CHECK HERE and CONTINUE filling out this questionnaire. Thank You.

|  | Where did you COME FROM before you got on the bus? (check one only) $\square$ Home $\quad \square$ Work $\quad \square$ Shopping $\square$ University/College $\square$ 0ther School $\quad \square$ Hotel $\quad \square$ Doctor/Dentist $\quad \square$ Recreation $\square$ Restaurant $\quad \square$ other $\quad$ (specify) |
| :---: | :---: |
| 2. What is the ADDRESS of that place? |  |
|  | Number Street (or intersecting streets) $\quad$ City $\quad$ Zip |
| 3. How did you get to THIS BUS? (check one only) $\square$ Walked $\qquad$ blocks Drove with $\qquad$ other passengers$\square$ Bicycled $\square$ Had Someone Drive Me $\square$ Transerred from $\qquad$ Bus Route No. $\square$ Other $\qquad$ (specify) |  |
| 4. What was your FARE when you boarded THIS BUS? (check one only) |  |
| 5. Where are you GOING TO now? (check one only) $\square$ Home $\square$ Work $\quad \square$ shopping $\square$ Hotel |  |
| 6. What is the ADDRESS of that place? |  |
|  | How will you get FROM THIS BUS to the place that you are GOING TO? (check ANY that apply) Walk $\qquad$ blocks Drive with $\qquad$ other passengers Transfer from $\qquad$ Bus Route No. $\square$ Bicycle $\square$ Have someone drive me Other $\qquad$ (specify) |
| 8. How OFTEN do you ride the bus? (check one only) $\square$ One Day/Wk $\quad \square$ Two Days/Wk $\square$ Three Days/Wk$\square$ Four Days/Wk Five Days/Wk $\square$ Six Days/Wk One-Three Days/Month $\square$ This is my First Time Other $\qquad$ |  |
|  | What are the MOST IMPORTANT reason(s) you ride the bus? (check ALL that apply) I Don't Drive Bus is Economical Car Not Available Traffic is Bad Bus is Convenient $\square$ Parking Problems 0ther $\qquad$ (specify) |
| 10. Do you have a valid DRIVERS LICENSE? $\square$ Yes $\square$ No |  |
| 11. I am: $\quad \square$ Male $\quad \square$ Female |  |
|  | My AGE is: $\quad \square 6$-15 $\quad \square$ 16-25 $\quad \square$ 26-59 $\quad \square 60+$ |
| 13. How many PERSONAL USE VEHICLES are kept at home for use by members of YOUR HOUSEHOLD? <br> (check one only) None $\square$ One Two Three or More |  |
|  | . 1 am $\qquad$ ? (check ALL that apply) $\square$ Retired Work at Home $\square$ $\square$ Not Employed Outside Home Other $\qquad$ (specify) |
| 15. How many PEOPLE live in your household, including yourself? |  |
|  | 6. The combined TOTAL ANNUAL INCOME of all members of my household is? $\square$ Less than $\$ 10,000$ per year $\$ 10,000-\$ 20,000$ per year $\$ 20,000-\$ 30,000$ per year $\$ 30,000-\$ 40,000$ per year $\$ 40,000$ - $\$ 60,000$ per year $\square$ More than $\$ 60,000$ per year |

17. Any COMMENTS on the current COLT bus service?

## Estimado cliente de COLT,

## City Of Loveland Transit

¡Por favor de ayúdenos con esta encuesta para pasajeros de COLT! La encuesta que se encuentra dentro de este formulario nos permitirá enterarnos de las necesidades y preocupaciones de nuestros pasajeros. También, ayudará a planear las necesidades de tránsito en la Ciudad y el Norte de Front Range.

Solo lleva unos minutos completarla. Sería mejor si usted pudiera completar la encuesta en el autobús y dejarla en una de las cajas cerca de las puertas de salida. Si no tiene tiempo, Ud. también puede enviarla por correo. Favor de doblarla y cerrar con cinta adhesiva (jno use grapas!) en el formulario con la dirección hacia fuera y depositarla en cualquier buzón - el franqueo está pago.

Todas las respuestas son confidenciales. Si quiere más información, visite el sitio de Internet www.nfrmpo.org y haga clic en el enlace 2005 Onboard Bus Survey (Encuesta a Bordo del Autobús 2005).
¡Muchas gracias por ayudarnos a mejorar el servicio de autobuses de COLT!


POSTAGE WILL BE PAID BY ADDRESSEE

LSA ASSOCIATES INC
132 W MOUNTAIN AVE
FORT COLLINS CO 80524-9843

# iiMUCHAS GRACIAS POR SU AYUDA!! 

## FAVOR DE DEJAR EL FORMULARIO TERMINADO EN LA CAJA JUNTO A LA PUERTA DE SALIDA, DEJARLO CON EL ENCARGADO DE LA ENCUESTA O ENVIARLO.

## Si Ud. ha terminado uno de estos formularios en otro autobús, favor de SELECCIONAR AQUI y SEGUIR completando este cuestionario. Gracias.

|  | ¿De dónde VIENE Ud. antes de subir a este autobús? (sólo seleccione uno) $\square$ Casa $\quad \square$ Trabajo $\quad \square$ Compras $\square$ Universidad $\quad \square$ Otra escuela $\quad \square$ Hotel $\quad \square$ Doctor/Dentista $\quad \square$ Recreación $\quad \square$ Restaurante $\quad \square$ Otra $\quad$ (especificar) |
| :---: | :---: |
| 2. ¿Cuál es la dirección de ese lugar? |  |
|  | Número $\quad$ Calle (olas calles que cruzan) $\quad$ Ciudad $\quad$ Código postal |
| 3. ¿Cómo Ud. Ilegó a este autobús? (Sólo seleccione uno) $\square$ Caminé___ cuadras $\square$ Manejé con___ otros pasajeros   <br> $\square$ Fui en bicicleta $\square$ Alguien me llevó $\square$ Transferí de____ Nro. de Ruta de Autobús $\square$ Otro___ (especificar) |  |
| 4. ¿Que PASAJE saco Ud. Al subir a ESTE AUTOBÚS? (sólo seleccione uno) |  |
|  | ¿Adónde va Ud. ahora? (sólo seleccione uno) $\square$ Casa $\square$ Trabajo $\square$ Compras $\square$ Hotel  <br> $\square$ Universidad $\square$ Otra escuela $\square$ Restaurante $\square$ Recreación $\square$ Otra |
|  | ¿Cuál es la dirección de ese lugar? $\begin{aligned} & \text { Número } \\ & \end{aligned}$ |
|  | ¿Cómo llegará DE ESTE AUTOBÚS al lugar adonde va Ud.? (seleccione TODO lo que corresponda) Caminando $\qquad$ cuadras $\square$ Manejando con $\qquad$ otros pasajeros $\square$ Me transferí de $\qquad$ Nro. de Ruta de Autobús $\square$ Bicicleta Tener alguien a pasar por mí en coche Otro $\qquad$ (especificar) |

8. ¿Con qué FRECUENCIA toma el autobús? (sólo seleccione uno) $\square$ Un día a la semana $\square$ Dos días a la semana
$\square$ Tres días a la semana $\square$ cuatro días a la semana $\square$ Cinco días a la semana $\square$ Seis días a la semana $\square$ Uno a tres días al mes
$\square$ Esta es mi primera vez $\square$ Otro
9. ¿Cuales son las razones MÁS IMPORTANTES para que Ud. tome el autobús? (selecciona TODOS que aplican) $\square$ No manejo $\square$ El autobús es económico $\square$ No tengo coche $\square$ El tráfico es malo $\square$ Me conviene el autobús $\square$ Problemas para estacionarse $\square$ Otro $\qquad$ (especificar)
10. ¿Tiene Ud. una licencia valida para conducir? $\quad$ Si $\quad \square$ No
11. Soy:
$\square$ Hombre
$\square$ Mujer
12. Tengo la edad de: $\square$ $\square$ 6-15
$\square 16-25$
$\square 26-59$
$\square 60+$
13. ¿Cuántos VEHICULOS DE USO PERSONAL hay en su casa para las personas que habitan en su hogar? (sólo seleccione uno) $\quad \square$ Ninguno $\quad \square$ Uno $\quad \square$ Dos $\quad \square$ Tres omás
14. Está ___ (selecciona TODO lo que corresponda) $\square$ Empleado de tiempo completo $\square$ Empleado de tiempo media jorn
$\square$ Estudiante $\quad$ Jubilado $\quad \square$ Trabajo en casa $\quad \square$ No tengo trabajo fuera de la casa $\square$ Otro $\qquad$
15. ¿Cuántas PERSONAS viven en su casa, incluyéndolo a Ud.?
16. Los ingresos anuales de TODAS LAS PERSONAS en su hogar son: $\square$ Menos de $\$ 10,000$ al año $\quad \square \$ 10,000-\$ 20,000$ al año
$\square \$ 20,000-\$ 30,000$ al año $\square \$ 30,000-\$ 40,000$ al año $\square \$ 40,000-\$ 60,000$ al año $\square$ Más de $\$ 60,000$ al año
17. ¿Tiene usted algún COMENTARIO sobre los servicios normales del COLT?

## Dear The BUS Customer,



Please assist us with this survey of The BUS riders! The survey on the inside of this form will help us find out the needs and concerns of our passengers. It will also help plan long-range transit needs in the city and throughout the North Front Range.

The survey only takes a few minutes to complete. It is best to fill out the survey on the bus and return it in one of the boxes by the doors of the bus. You can also mail it back if you can't complete it on the bus. Please fold and tape (no staples!) the form with the address showing and drop it in any mail box - postage is paid.

All answers are confidential. If you would like additional information, visit the website at www.nfrmpo.org and click on the 2005 Onboard Transit Survey.

Thank you for helping us make The BUS service better!

Si usted querría una versión española de esta inspección, pregunta por favor al asistente.

## 

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## LSA ASSOCIATES INC <br> 132 W MOUNTAIN AVE <br> FORT COLLINS CO 80524-9843


18. What would increase your use of The BUS? (check all that apply)
$\square$ Employer paid all or part of the fare
$\square$ More frequent service (a bus every 30 minutes on each route) $\square$ Earlier morning service
$\square$ Later evening service
$\square$ More information on evening demand response services
$\square$ Assistance with trip planning
19. When you do not use The BUS for a trip, what are your main reasons? (check all that apply)$\square$ I had other travel options
$\square$ Too many transfers to get to my destination
Buses take too long to arrive at my bus stop
Buses take too long to get to where I am going
Buses do not go to my destination
I do not like to ride the bus
Ido not like the other riders on the bus
Other
20. Any COMMENTS on the current The BUS service?

If you have already completed one of these forms on another bus, please CHECK HERE and CONTINUE filling out this questionnaire. Thank You.

7. How will you get FROM THIS BUS to the place that you are GOING TO? (check ANY that apply)
$\square$ Walk
Have someone drive me
$\square$ Drive with
$\qquad$ other passengers $\quad \square$ Transfer from (specify)
8. How OFTEN do you ride the bus? (check one only) $\square$ One Day/Wk $\square$ Two Days/Wk $\square$ Three Days/Wk $\square$ Four Days/Wk $\quad \square$ Five Days/Wk $\quad \square$ Six Days/Wk $\quad \square$ One-Three Days/Month $\square$ This is my First Time $\square$ Other
9. What are the MOST IMPORTANT reason(s) you ride the bus? (check ALL that apply)
$\square$ IDon't Drive
$\square$ Bus is Economical
$\square$ Other
$\square$
Car Not Available (specify)
$\square$ Traffic is Bad
$\square$ Bus is Convenient
$\square$ Parking Problems
10. Do you have a valid DRIVERS LICENSE? $\square$ Yes $\square$ No
11. I am: $\quad \square$ Male $\quad \square$ Female
12. My AGE is: $\quad \square 5-15 \quad \square 16-21 \quad \square 22-25 \quad \square 26-30 \quad \square 31-40 \quad \square 41-59 \quad \square 60+$
13. How many PERSONAL USE VEHICLES are kept at home for use by members of YOUR HOUSEHOLD? (check one only) $\square$ None $\quad \square$ One $\quad \square$ Two $\quad \square$ Three or More

| 14. I am $\quad$ ? (check ALL that apply) | $\square$ Employed Full Time | $\square$ Employed Part Time | $\square$ Student |
| :---: | :---: | :---: | :---: | :---: |
| $\square$ Retired | $\square$ Work at Home | $\square$ Not Employed Outside Home | $\square$ Other___(specify) |

15. How many PEOPLE live in your household, including yourself?
16. The combined TOTAL ANNUAL INCOME of all members of my household is?
$\square$ Less than $\$ 10,000$ per year
$\square \$ 40,000-\$ 60,000$ per year
$\square \$ 1$
$\$ 10,000-\$ 20,000$ per year
$\square \$ 20,000-\$ 30,000$ per year
$\square \$ 30,000-\$ 40,000$ per year
17. Please rate the service provided by The BUS:

|  | Very Satisfied | Somewhat Satisfied | Satisfied; but needs to improve | Very Dissatisfied | No Opinion |
| :--- | :--- | :--- | :--- | :--- | :---: |
| Hours of Operation |  |  |  |  |  |
| Available Destinations |  |  |  |  |  |
| Frequency of Service |  |  |  |  |  |
| Locations of Bus Stops |  |  |  |  |  |
| Ease of Transfers |  |  |  |  |  |
| Wait Time of Transfers |  |  |  |  |  |
| Helpfulness of Drivers |  |  |  |  |  |

## Estimado cliente de The BUS,

Le pedimos el favor de ayudarnos con esta encuesta de clientes de The BUS. La encuesta adjunta nos ayudará enterarnos de las necesidades y lo que afecta a nuestros pasajeros. También nos ayudará a hacer planes de transporte a largo plazo para la ciudad y por toda la zona norte al pie de la cordillera.

Sólo tomará unos minutos Ilenar esta encuesta. Sería mejor llenarla en el autobús y meterla en una de las cajas al lado de las puertas a la salida. También puede devolverla por correo si no puede llenarla en el autobús. Favor de doblarla con la dirección hacia afuera, sellarla con cinta adhesiva (ino use grapas!) y depositarla en cualquier buzón - franco de porte pagado.

Todas las respuestas son confidenciales. Si desea más información, visite la página de Internet www.nfrmpo.org y haga un clic en 2005 Onboard Bus Survey (Encuesta A Bordo del Autobús del 2005).

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## LSA ASSOCIATES INC

132 W MOUNTAIN AVE
FORT COLLINS CO 80524-9843



18. ¿Qué aumentaría su uso de The BUS (autobús)? 19. ¿Cuales son las razones para no usar The BUS
(Seleccione todos que aplican)El patrón paga todo 0 un parte de la tarifa
$\square$ Servicio más frecuente (un autobús cada 30 minutos en cada ruta)
$\square$ Servicio más temprano en la mañana Servicio más tarde en la noche
$\square$ Más información sobre los servicios de Evening Demand Response (Respuesta de Demanda de la Noche)
$\square$ Asistencia para planear un viaje del autobús
(autobús)? (Seleccione todos que aplican)Tuve otras opciones para viajar Demasiadas transferencias para llegar a mí destino $\square$ Tardan demasiado los autobuses para llegar a mí parada de autobús $\square$ Tardan demasiado los autobuses para llegar a dónde voy No van los autobuses a mí destino
No me gusta tomar el autobús
No me gusta los otros pasajeros del autobús Otra
19. ¿Tiene usted algún COMENTARIO sobre los servicios normales del The BUS?

## Si Ud. ha terminado uno de estos formularios en otro autobús, favor de SELECCIONAR AQUI y SEGUIR completando este cuestionario. Gracias.


4. ¿Que PASAJE saco Ud. Al subir a ESTE AUTOBÚS? (sólo seleccione uno)

7. ¿Cómo llegará DE ESTE AUTOBÚS al lugar adonde va Ud.? (seleccione TODO lo que corresponda)
$\square$ Caminando $\qquad$ cuadras $\square$ Manejando con $\qquad$ otros pasajeros $\square$ Me transferí de $\qquad$ Nro. de Ruta de Autobús
$\square$ BicicletaTener alguien a pasar por mí en coche $\quad \square$ Otro $\qquad$ (especificar)

| 8. ¿Con qué FRECUENCIA toma el autobús? (sólo seleccione uno) | $\square$ Un día a la semana | $\square$ Dos días a la semana |  |
| :--- | :--- | :--- | :--- |
| $\square$ Tres días a la semana | $\square$ Cuatro días a la semana $\quad \square$ Cinco días a la semana | $\square$ Seis días a la semana | $\square$ Uno a tres días al mes |
| $\square$ Esta es mi primera vez | $\square$ 0tro |  |  |

9. ¿Cuales son las razones MÁS IMPORTANTES para que Ud. tome el autobús? (selecciona TODOS que aplican)
$\square$ No manejo
$\square$ El autobús es económico
$\square$ No tengo coche
$\square$ El tráfico es malo
Me conviene el autobús
$\square$ Problemas para estacionarse Otro $\qquad$ (especificar)
10. ¿Tiene Ud. una licencia valida para conducir? $\square \mathrm{Si} \quad \square$ No
11. Soy

$\square$ Mujer
12. Tengo la edad de: $\quad \square 5$-15 $\quad \square$ 16-21 $\quad \square 22-25 \quad \square 26-30 \quad \square 31-40 \quad \square 41-59 \quad \square 60+$
13. ¿Cuántos VEHICULOS DE USO PERSONAL hay en su casa para las personas que habitan en su hogar? (sólo seleccione uno) $\square$ Ninguno $\quad \square$ Uno $\quad \square$ Dos $\quad \square$ Tres o más
14. Está ___ (selecciona TODO lo que corresponda) $\square$ Empleado de tiempo completo $\square$ Empleado de tiempo media jorn $\square$ Estudiante $\square$ Jubilado $\quad \square$ Trabajo en casa $\quad \square$ No tengo trabajo fuera de la casa $\quad \square$ Otro $\quad$ (especificar) 15. ¿Cuántas PERSONAS viven en su casa, incluyéndolo a Ud.?
15. Los ingresos anuales de TODAS LAS PERSONAS en su hogar son: $\square$ Menos de $\$ 10,000$ al año $\quad \square \$ 10,000-\$ 20,000$ al año $\square \$ 20,000-\$ 30,000$ al año $\square \$ 30,000-\$ 40,000$ al año $\square \$ 40,000-\$ 60,000$ al año $\square$ Más de $\$ 60,000$ al año
16. ¿Tiene usted algún COMENTARIO sobre los servicios normales del The BUS?

|  | Muy satisfecho | Más o menos satisfecho | Satisfecho, pero necesita mejorarse | Nada satisfecho | No hay comentario |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Las horas de operación |  |  |  |  |  |
| Los destinos disponibles |  |  |  |  |  |
| La frecuencia del servicio |  |  |  |  |  |
| Las locaciones de las paradas de <br> autobús |  |  |  |  |  |
| La facilidad para transferir |  |  |  |  |  |
| Tiempo de esperar para <br> transferir |  |  |  |  |  |
| Son serviciales los choferes |  |  |  |  |  |

Please assist us with this survey of Transfort riders! The survey on the inside of this form will help us find out the needs and concerns of our passengers. It will also help plan long-range transit needs in the City and throughout the North Front Range.

The survey only takes a few minutes to complete. It is best to fill out the survey on the bus and return it in one of the boxes by the doors of the bus. You can also mail it back if you can't complete it on the bus. Please fold and tape (no staples!) the form with the address showing and drop it in any mail box - postage is paid.

All answers are confidential. If you would like additional information, visit the website at www.nfrmpo.org and click on the 2005 Onboard Bus Survey.

Thank you for helping us make Transfort's bus service better!

Si usted querría una versión española de esta inspección, pregunta por favor al asistente.


POSTAGE WILL BE PAID BY ADDRESSEE

## LSA ASSOCIATES INC <br> 132 W MOUNTAIN AVE <br> FORT COLLINS CO 80524-9843



## THANKYOU FORYOUR HELP!!

## PLEASE PLACE COMPLEIED FORM IN REIURNBOX ATTHE DOOR, GIVE ITTO ATIENDANT, OR MAILITBACK.

## If you have already completed one of these forms on another bus, please CHECK HERE and CONTINUE filling out this questionnaire. Thank You.

1. Where did you COME FROM before you got on the bus? (check one only) $\quad \square$ Home $\quad \square$ Work $\quad \square$ Shopping

$\square$ University/College $\quad \square$ Other School $\quad \square$ Hotel $\quad \square$ Doctor/Dentist $\quad \square$ Recreation $\quad \square$ Restaurant $\quad \square$ other_
4. What was your FARE when you boarded THIS BUS? (check one only)
$\square \$ 1.25$
$\square \$ 1.00$
$\square 60$ ¢
$\square 50$ ¢
$\square$ Student Pass
$\square$ Pass
$\square$ Transfer
Free Fare
5. Where are you GOING TO now? (check one only) $\square$ Home $\quad \square$ Work $\quad \square$ Shopping $\quad$ Hotel
$\square$ University/College
$\square$ Other School

Restaurant

Recreation
$\square$ Other $\qquad$ (specify)
6. What is the ADDRESS of that place?
Number
7. How will you get FROM THIS BUS to the place that you are GOING TO? (check ANY that apply)
Walk $\qquad$ blocks$\square$ Drive with $\qquad$ other passengers
$\square$ Transfer from $\qquad$ Bus Route No. $\quad \square$ Bicycle
Have someone drive me
$\square$ other $\qquad$ (specify)
8. How OFTEN do you ride the bus? (check one only) $\square$ One Day/WkTwo Days/Wk $\square$ Three Days/Wk $\square$ Four Days/Wk $\quad \square$ Five Days/Wk $\quad \square$ Six Days/Wk $\quad \square$ One-Three Days/Month $\square$ This is my First Time $\square$ Other 9. What are the MOST IMPORTANT reason(s) you ride the bus? (check ALL that apply)
I Don't Drive
$\square$ Parking Problems
$\square$ Bus is Economical
$\square$ Other
$\square$ Car Not Available (specify)Traffic is Bad
$\square$ Bus is Convenient
10. Do you have a valid DRIVERS LICENSE?
$\square$ Yes $\square$ No
11. I am: $\square$ $\square$ Male Female
12. My AGE is:
$\square$ 6-15
$\square 16-25$
$\square$ 26-59 60+
13. How many PERSONAL USE VEHICLES are kept at home for use by members of YOUR HOUSEHOLD? (check one only)
$\square$ None $\square$ One $\square$ Two $\square$ Three or More
14. 1 am $\qquad$ ? (check ALL that apply)
$\qquad$
15. How many PEOPLE live in your household, including yourself? $\qquad$
16. The combined TOTAL ANNUAL INCOME of all members of my household is?

| $\square$ Less than $\$ 10,000$ per year | $\square \$ 10,000-\$ 20,000$ per year | $\square \$ 20,000-\$ 30,000$ per year |
| :--- | :--- | :--- |
| $\square \$ 40,000-\$ 60,000$ per year | $\square$ More than $\$ 60,000$ per year | $\square \$ 30,000-\$ 40,000$ per year |

17. Any COMMENTS on current Transfort service?

## Estimado cliente de Transfort,

¡Por favor de ayúdenos con esta encuesta para pasajeros de Transfort! La encuesta que se encuentra dentro de este formulario nos permitirá enterarnos de las necesidades y preocupaciones de nuestros pasajeros. También, ayudará a planear las necesidades de tránsito en la Ciudad y el Norte de Front Range.

Solo lleva unos minutos completarla. Sería mejor si usted pudiera completar la encuesta en el autobús y dejarla en una de las cajas cerca de las puertas de salida. Si no tiene tiempo, Ud. también puede enviarla por correo. Favor de doblarla y cerrar con cinta adhesiva (jno use grapas!) en el formulario con la dirección hacia fuera y depositarla en cualquier buzón - el franqueo está pago.

Todas las respuestas son confidenciales. Si quiere más información, visite el sitio de Internet www.nfrmpo.org y haga clic en el enlace 2005 Onboard Bus Survey (Encuesta a Bordo del Autobús 2005).
¡Muchas gracias por ayudarnos a mejorar el servicio de autobuses de Transfort!


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LSA ASSOCIATES INC
132 W MOUNTAIN AVE
FORT COLLINS CO 80524-9843

# FAVOR DE DEJAREL FORMULARIO TERMINADOENLACAJA JUNTO ALA PUERTA DE SALDA, DEJARLO CONEL ENCARGADO DELAENCUESTA OENMARLO. 

## Si Ud. ha terminado uno de estos formularios en otro autobús, favor de SELECCIONAR AQUI <br> $\square$ y SEGUIR completando este cuestionario. Gracias.


4. Que PASAJE saco Ud. Al subir a ESTE AUTOBÚS? (sólo seleccione uno)
$\square \$ 1.25$
$\square$
$\$ 1.00$
$\square 60 \mathrm{C}$
$\square 50 \mathrm{C} \quad \square$
Pase de estudiante $\quad \square$ Pase
Transferir
Pasaje gratis
$\begin{array}{lllll}\text { 5. Adónde va Ud. ahora? (sólo seleccione uno) } \quad \square \text { Casa } & \square \text { Trabajo } & \square \text { Compras } & \square \text { Hotel } \\ \square \text { Universidad } & \square \text { Otra escuela } & \square \text { Restaurante } & \square \text { Recreación } & \square \text { 0tra } \\ \end{array}$
6. Cuál es la dirección de ese lugar?
Número

Calle (o las calles que cruzan)
Ciudad
Código postal
7. Cómo llegará DE ESTE AUTOBÚS al lugar adonde va Ud.? (seleccione TODO lo que corresponda)
$\square$ Caminando $\qquad$ cuadras $\qquad$ Manejando con $\qquad$ otros pasajeros $\qquad$
$\qquad$ Nro. de Ruta de Autobús $\qquad$ BicicletaTener alguien a pasar por mí en coche $\quad \square$ Otro $\qquad$
8. Con qué FRECUENCIA toma el autobús? (sólo seleccione uno)
$\square$ Un día a la semanaDos días a la semana
$\square$ Tres días a la semana Cuatro días a la semanaCinco días a la semana $\square$ Seis días a la semana $\qquad$ Uno a tres días al mes Esta es mi primera vez $\square$ Otro
9. Cuales son las razones MÁS IMPORTANTES para que Ud. tome el autobús? (selecciona TODOS que aplican)
$\square$ No manejoEl autobús es económicoNo tengo coche $\square$ El tráfico es malo
$\square$ Me conviene el autobús Problemas para estacionarse Otro (especificar)
10. Tiene Ud. una licencia valida para conducir? $\square \mathrm{si} \quad \square$ No
11. Soy:
$\square$ Hombre
$\square$ Mujer
12. Tengo la edad de:
$\square$ 6-15
$\square 16-25$
$\square 26$-59
$\square 60+$
13. Cuántos VEHICULOS DE USO PERSONAL hay en su casa para las personas que habitan en su hogar? (sólo seleccione uno) $\square$ Ninguno $\square$ Uno $\square$ Dos $\square$ Tres omás
14. Está $\qquad$ (selecciona TODO lo que corresponda)

Empleado de tiempo completo
Empleado de tiempo media jorn
$\square$ Estudiante $\square$ Jubilado
$\square$ Trabajo en casa $\square$ No tengo trabajo fuera de la casa
$\square$ 0tro
$\qquad$ (especificar)
15. Cuántas PERSONAS viven en su casa, incluyéndolo a Ud.? $\qquad$
16. Los ingresos anuales de TODAS LAS PERSONAS en su hogar son: $\square$ Menos de $\$ 10,000$ al año $\quad \square \$ 10,000-\$ 20,000$ al año
$\square \$ 20,000-\$ 30,000$ al año $\square \$ 30,000-\$ 40,000$ al año $\square \$ 40,000-\$ 60,000$ al año $\square$ Más de $\$ 60,000$ al año
17. Tiene usted algún COMENTARIO sobre los servicios normales del Transfort?

## APPENDIX C - SAMPLE STATISTICS OF THE SURVEY

## STATISTICAL VALIDITY OF THE SURVEY SAMPLE SET

It is not necessary to obtain interviews from all bus riders in order to draw statistical inferences about the travelers using the Fort Collins, Greeley, and Loveland transit systems. A sample can be selected and the information obtained from the sample set instead of collecting data from all travelers on all buses. Typically, the sample rate depends on the sampling error which can be tolerated. However, since all boarding passengers were provided with a survey to complete, the sample rate is near $100 \%$ and the error becomes a function of the survey methodology and response rates.

There are two aspects to sampling error: the precision of the estimate and the confidence that one has regarding that precision. Given a proportion $p$ from the sample, it is necessary to know how well the sample estimate of $p$ represents the proportion that would have been obtained had all drivers been interviewed. Precision is measured by the standard error of the estimate of the proportion, $\sigma_{p}$. If $p$, the proportion, is equal to 0.5 and $\sigma_{p}$ is equal to 0.05 , the error is said to be plus or minus 0.05 .

The standard error of a proportion can be calculated. For example, it can be assumed that the proportion of drivers who live inside the study area needs to be known, and that from the sample, $50 \%$ are residents. The standard error of the estimate of $p$ is calculated as:

$$
\begin{equation*}
\sigma_{p}=\sqrt{\frac{p q}{n}} \tag{I}
\end{equation*}
$$

where:
$\sigma_{p}=$ standard error of the proportion $p$
$p=$ proportion of sampled items having a specific attribute
$q=1-p$
$n=$ number of elements sampled
Equation (I) can be rearranged to estimate the sample size required to obtain a desired standard error. Solving for $n$ yields:

$$
\begin{equation*}
n=\frac{p q}{\sigma_{p}^{2}} \tag{2}
\end{equation*}
$$

The above equation is actually for a sample drawn from an infinite universe. When the number of elements in the universe is finite, a finite correction factor is required to estimate the sample standard error:
$\sigma_{p}=\sqrt{\frac{p q}{n} \times \frac{m-n}{m-1}}$
where: $m=$ number of elements in the universe.

The term:
$\sqrt{\frac{m-n}{m-1}}$
represents the finite correction factor.
Solving for $n$ yields:
$n=\frac{p q m}{\sigma_{p}^{2}(m-1)+p q}$

In the case of the onboard transit survey, $m$ can represent passenger boardings on a particular route. The use of the finite correction factor can be illustrated by determining the required sample size without finite correction and with finite correction for a ridership volume ( $m$ ) of 50 passengers, a proportion ( $p$ ) of 0.5 , and a desired standard error $\left(\sigma_{p}\right)$ of 0.05 . Using equation (2) the required sample size is:
$\mathrm{n}=(0.5)(0.5) /(0.05)^{2}=100$
But, since $m=50$, it is impossible to have $n=100$. With the finite correction factor the required sample size is (using equation 4):

$$
\begin{gathered}
n=\frac{(0.5)(0.5)(50)}{\left((0.05)^{2}(50-1)\right)+((0.5)(0.5))} \\
=34
\end{gathered}
$$

The other aspect of sampling error is the confidence level. For one standard error of the estimate the confidence level is about $68 \%$. This means that if 100 independent samples of a population were taken, the sample proportion would be bounded by one standard error for 68 of the samples. In the case of the example above, this would mean that 68 times out of 100 , the sampled proportion would be bounded by the range of $0.5 \pm 0.05$, or in the range 0.45 to 0.55 . If greater confidence is desired, for example, about $95 \%$, the range could be specified to be about two standard errors (actually, the value is 1.96 standard errors). In the example this would yield a range of about 0.4 to 0.6 if the sample proportion were 0.5 .

The acceptable error (E) for a specified confidence level can be specified as:
$E=Z \sigma_{p}$
where: $Z=$ the number of standard deviations required for a specified confidence level.
Solving equation (5) for $\sigma_{p}$ and substituting in equation (2) results in the following:
$n=\frac{\left(Z^{2}\right) p q}{E^{2}}$

Equation (4) becomes:

$$
\begin{equation*}
n=\frac{Z^{2} p q m}{\left(E^{2}(m-1)+Z^{2} p q\right)} \tag{7}
\end{equation*}
$$

If it is assumed that $E$ is 0.05 , or $\pm 10 \%$ of the 0.5 proportion, and $Z$ is 2 for the $95 \%$ confidence interval, then equation (7) can be reduced to:
$n=\frac{400 m}{(m+399)}$

Assuming $Z$ is 2 , rather than I.96, will increase the confidence interval and slightly overestimate the required sample size.

In the example described above using the finite correction factor and assuming that a $95 \%$ confidence level is desired, the required number of samples can be estimated using equation (8):

$$
\begin{gathered}
n=\frac{(400)(50)}{(50+399)} \\
=45
\end{gathered}
$$

Thus, when the confidence level is increased from $68 \%$ to $95 \%$, the required number of samples increases about $33 \%$, from 34 to 45 , if the universe of trips is 50 . Note that for an infinite universe, the same increase in the confidence interval would quadruple the sample size (from 100 to 400 ).

In equations (6) and (7), the required number of samples for a specified error level is greatest when the term $p q$ is at a maximum. This occurs when $p=0.5$. Thus, the maximum number of samples required to estimate the proportion $p$ with a sampling error of $E$ or less at a specified level of confidence can be estimated by assuming a proportion, $p$, of 0.5 .

All patrons of the Transfort, COLT, and The Bus systems were asked to complete a survey questionnaire during the survey period. For the most part, all trips on all bus routes were attempted to be surveyed. Therefore, the statistical reliability is based on the response rates for complete, valid survey samples. Without interviewing each bus patron individually or making significant and costly changes to the survey methodology, it is difficult, if not impossible, to increase the number of survey samples and the resulting statistical reliability. Results are shown in the following table:

## Statistical Confidence Intervals - Transfort (Fort Collins)

| ROUTE <br> NUMBER | DAILY <br> BOARDINGS | COMPLETE <br> USEABLE <br> SURVEYS <br> RECEIVED | PERCENT OF <br> DAILY <br> BOARDINGS | 95\% <br> CONFIDENCE <br> INTERVAL FOR <br> 0.5 PROPORTION | \% ERROR FOR <br> 95\% <br> CONFIDENCE <br> INTERVAL |
| :---: | ---: | ---: | ---: | ---: | ---: |
| $1 / 15$ | 1,099 | 248 | $22.6 \%$ | 0.055 | $11.0 \%$ |
| 2 | 460 | 261 | $56.7 \%$ | 0.040 | $8.0 \%$ |
| 3 | 570 | 126 | $22.1 \%$ | 0.078 | $15.6 \%$ |
| $4 / 6$ | 687 | 219 | $31.9 \%$ | 0.055 | $11.0 \%$ |
| 5 | 350 | 82 | $23.4 \%$ | 0.096 | $19.2 \%$ |
| 7 | 185 | 104 | $56.2 \%$ | 0.065 | $13.0 \%$ |
| 8 | 423 | 62 | $14.7 \%$ | 0.117 | $23.4 \%$ |
| $9 / 14$ | 328 | 76 | $23.2 \%$ | 0.100 | $20.0 \%$ |
| 11 | 1,051 | 159 | $15.1 \%$ | 0.073 | $14.6 \%$ |
| Total | $\mathbf{5 , 1 5 3}$ | $\mathbf{I , 3 3 7}$ | $\mathbf{1 5 3 . 9}$ | $\mathbf{0 . 0 2 0}$ | $\mathbf{4 . 0 \%}$ |

## Statistical Confidence Intervals - COLT (Loveland)

$\left.\begin{array}{|c|r|r|r|r|r|}\hline \begin{array}{c}\text { ROUTE } \\ \text { NUMBER }\end{array} & \begin{array}{c}\text { DAILY } \\ \text { BOARDINGS }\end{array} & \begin{array}{c}\text { COMPLETE } \\ \text { USEABLE } \\ \text { SURVEYS } \\ \text { RECEIVED }\end{array} & \begin{array}{c}\text { PERCENT OF } \\ \text { DAILY } \\ \text { BOARDINGS }\end{array} & \begin{array}{c}\text { 95\% } \\ \text { CONFIDENCE } \\ \text { INTERVAL FOR } \\ \text { 0.5 PROPORTION }\end{array} & \begin{array}{c}\text { \% ERROR FOR } \\ \text { 95\% }\end{array} \\ \text { CONFIDENCE } \\ \text { INTERVAL }\end{array}\right]$

## Statistical Confidence Intervals - The Bus (Greeley)

| ROUTE <br> NUMBER | DAILY <br> BOARDINGS | COMPLETE <br> USEABLE <br> SURVEYS <br> RECEIVED | PERCENT OF <br> DAILY <br> BOARDINGS | 95\% <br> CONFIDENCE <br> INTERVAL FOR <br> 0.5 PROPORTION | \% ERROR FOR <br> 95\% <br> CONFIDENCE <br> INTERVAL |
| :---: | ---: | ---: | ---: | ---: | ---: |
| $1 / 2$ | 192 | 31 | $16.1 \%$ | 0.160 | $32.0 \%$ |
| $2 / 1$ | 173 | 83 | $48.0 \%$ | 0.079 | $15.8 \%$ |
| $3 / 4$ | 109 | 37 | $33.9 \%$ | 0.130 | $18.0 \%$ |
| $4 / 3$ | 123 | 59 | $48.0 \%$ | 0.094 | $18.8 \%$ |
| 5 | 417 | 181 | $43.4 \%$ | 0.055 | $11.0 \%$ |
| 6 | 72 | 24 | $33.3 \%$ | 0.160 | $32.0 \%$ |
| Total | $\mathbf{1 , 0 8 6}$ | $\mathbf{4 1 5}$ | $\mathbf{3 8 . 2 \%}$ | $\mathbf{0 . 0 3 8}$ | $\mathbf{7 . 6 \%}$ |

Note: The error reported is for the proportion of the population reporting a specific characteristic in the survey. For example, on a particular route, if .5 of the surveyed people had red hair, the error is + or -0.049 at the $95 \%$ confidence level (i.e., the confidence interval is 0.45 I to 0.549 ). The + or -0.049 can also be stated as $a+$ or $-9.8 \%$ error. Alternatively, some would report the proportion as $50 \%$ with an accuracy of + or -4.9 percentage points.

It should be emphasized that sample sizes determined from the methodology described above are based on limiting the sampling error associated with estimating the proportions of trips. These proportions can be of any type. The sample sizes are not based on limiting the sample error associated with determining, for example, the average trip length of transit trips. The sample error associated with that statistic will depend on the variation in the average trip length and the number of samples taken. Unfortunately, the variation for statistics such as average trip length is not known until the after data is collected. However, it is likely that the accuracy of many of the items required for model calibration (e.g., average trip length) will be dependent on samples from the full survey, not from each individual trip or route. Thus, the sample size and statistical validity for many of the items important for modeling will be quite large when using the entire unstratified sample set.

## APPENDIX D - DATABASE FORMAT AND FIELD DEFINITIONS

## TRANSFORT ONBOARD TRANSIT SURVEY

| FIELD | DESCRIPTION | DATA SOURCE | DATABASE FIELD NAME |
| :---: | :---: | :---: | :---: |
| 1 | Survey Number | Survey Number | DBID |
| 2 | Already completed survey | Survey Box \#I | Q0Completed |
| 3 | From Place Reason | Survey Question \#I | QIOrigin |
| 4 | From Place Reason Comment | Survey Question \#1 | QlOriginOther |
| 5 | From Place Street Number | Survey Question \#2 | Q2AddNum |
| 6 | From Place Street Direction | Survey Question \#2 | Q2AddIDir |
| 7 | From Place Street Name | Survey Question \#2 | Q2AddIStreet |
| 8 | From Place Street Designation | Survey Question \#2 | Q2AddIStType |
| 9 | From Place Intersecting Street Direction | Survey Question \#2 | Q2Add2Dir |
| 10 | From Place Intersecting Street Name | Survey Question \#2 | Q2Add2Street |
| 11 | From Place Intersecting Street Designation | Survey Question \#2 | Q2Add2StType |
| 12 | From Place City | Survey Question \#2 | Q2City |
| 13 | From Place State | Survey Question \#2 | Q2State |
| 14 | From Place Zip Code | Survey Question \#2 | Q2Zip |
| 15 | Mode from Origin to Bus | Survey Question \#3 | Q3ModeFrom |
| 16 | Number of Blocks if Walked to Bus | Survey Question \#3 | Q3WalkBlks |
| 17 | Number of Passengers in Car if Drove to Bus | Survey Question \#3 | Q3Pass |
| 18 | Bus Route if Transferred From Bus | Survey Question \#3 | Q3TransFrom |
| 19 | Other Mode to Bus Comment | Survey Question \#3 | Q3Other |
| 20 | Fare Paid to Ride Bus | Survey Question \#4 | Q4Fare |
| 21 | To Place Reason | Survey Question \#5 | Q5Dest |
| 22 | To Place Reason Comment | Survey Question \#5 | Q5DestOther |
| 23 | To Place Street Number | Survey Question \#6 | Q6ddNum |
| 24 | To Place Street Direction | Survey Question \#6 | Q6ddIDir |
| 25 | To Place Street Name | Survey Question \#6 | Q6ddIStreet |
| 26 | To Place Street Designation | Survey Question \#6 | Q6ddIStType |
| 27 | To Place Intersecting Street Direction | Survey Question \#6 | Q6dd2Dir |
| 28 | To Place Intersecting Street Name | Survey Question \#6 | Q6dd2Street |
| 29 | To Place Intersecting Street Designation | Survey Question \#6 | Q6dd2StType |
| 30 | To Place City | Survey Question \#6 | Q6City |
| 31 | To Place State | Survey Question \#6 | Q6State |
| 32 | To Place Zip Code | Survey Question \#6 | Q6Zip |
| 33 | Mode to Destination from Bus | Survey Question \#7 | Q7ModeTo |
| 34 | Number of Blocks if Walked from Bus | Survey Question \#7 | Q7WalkBlks |
| 35 | Number of Passengers in Car if Drove from Bus | Survey Question \#7 | Q7Pass |
| 36 | Bus Route if Transferred To Bus | Survey Question \#7 | Q7TransTo |
| 37 | Other Mode Free Response | Survey Question \#7 | Q7Other |
| 38 | Frequency of Riding Bus | Survey Question \#8 | Q8Often |
| 39 | Frequency of Riding Bus Comment | Survey Question \#8 | Q8OftenOther |
| 40 | Reason To Ride Bus: Don't Drive | Survey Question \#9 | Q9Drive |
| 41 | Reason To Ride Bus: Economical | Survey Question \#9 | Q9Econ |


| FIELD | DESCRIPTION | DATA SOURCE | DATABASE FIELD |
| :---: | :--- | :---: | :---: |
| NAME |  |  |  |
| 42 | Reason To Ride Bus: No Car Available | Survey Question \#9 | Q9Car |
| 43 | Reason To Ride Bus: Traffic is Bad | Survey Question \#9 | Q9Traffic |
| 44 | Reason To Ride Bus: Convenient | Survey Question \#9 | Q9Conv |
| 45 | Reason To Ride Bus: Parking Problems | Survey Question \#9 | Q9Parking |
| 46 | Reason To Ride Bus: Other Reason | Survey Question \#9 | Q9Other |
| 47 | Reason To Ride Bus: Other Reason Comment | Survey Question \#9 | Q9OtherReponse |
| 48 | Drivers License | Survey Question \#I0 | QIOLicense |
| 49 | Sex | Survey Question \#II | QIISex |
| 50 | Age Group | Survey Question \#I2 | Q12Age |
| 51 | Automobiles in Household | Survey Question \#I3 | QI3Vehicles |
| 52 | Employment Status: Employed Full-Time | Survey Question \#I4 | Q14AFullTime |
| 53 | Employment Status: Employed Part-Time | Survey Question \#I4 | QI4BPartTime |
| 54 | Employment Status: Student | Survey Question \#I4 | Q14CStudent |
| 55 | Employment Status: Retired | Survey Question \#I4 | Q14DRetired |
| 56 | Employment Status: Work at Home | Survey Question \#I4 | Q14EWorkAtHome |
| 57 | Employment Status: Not Employed Outside Home | Survey Question \#I4 | QI4FNotEmployed |
| 58 | Employment Status: Other | Survey Question \#I4 | QI4GOther |
| 59 | Employment Status: Other Comment | Survey Question \#I4 | Q14GOtherResponse |
| 60 | Number of People in Household | Survey Question \#I5 | QI5HHSize |
| 61 | Income Group of Household | Survey Question \#I6 | QI6Income |
| 62 | Additional Comments | Survey Question \#I7 | QI7Comments |
| 63 | Time/Date of Data Entry | Database Generated | TimeDate |

## NOTES:

I. Survey Number: Unique identifier for survey. Corresponds to route on which survey was distributed.
2. Already Completed Survey: Indicates whether the respondent has already completed a survey on another bus. If a $-I$ is shown, then yes, otherwise, no.
3. From Place Reason: The reason the respondent was at the previous location. Responses were coded as follows:

0 - Blank
I - Home
2 - Work
3 - Shopping
4 - University/College
5 - Other School
6 - Hotel
7 - Doctor/Dentist
8 - Recreation
9 - Restaurant
10-Other
4. From Place Reason Comment: Text field containing written responses when respondents were not able to place their reason in I of the 9 categories given in field 3 . Was only used if response to field 3 was 10 .

5-I4. From Place Address: Address of the previous location with each part broken up for geocoding. When respondents did not know the actual street number or did not want to give this information, the nearest intersecting streets where asked for. Key to suffix in field name is:

NUM - Street Number (200)
DIR - Street Direction (N,S,E,W,NE,...)
STREET - Actual street name (College, Harmony, ...)
TYPE - Designation (St, Ln, Dr, .....)
15. Mode from Origin to Bus: Mode of transit that the respondent used to get to the current bus. Responses were coded as follows:

0 - Blank
I - Walked $\qquad$ Blocks
2 - Drove with $\qquad$ other passengers
3 - Bicycled
4 - Rode with someone
5 - Transferred from $\qquad$ Bus
6 - Other
16. Number of Blocks if Walked to Bus: If respondent walked to the bus, this field is the number of blocks walked. It only applies if the answer to field I 5 is I .
17. Number of Passengers in Car if Drove to Bus: If respondent drove to the bus, this field is the number of passengers in the car. It only applies if the answer to field 15 is 2.
18. Bus Route if Transferred from Bus: If respondent transferred from another bus, this field is the bus route that he/she transferred from. It only applies if the answer to field 15 is 5 .
19. Other Mode to Bus Comment: If respondent used a different mode than identified in field 15 , this is that mode. It only applies if the answer to field 15 is 6 .
20. Fare Paid to Ride Bus: The fare that the respondent paid for this trip. Responses were coded as follows:

0 - Blank
I-\$1.25
2-\$1.00
3-60ф
4-50ф
5 - Student Pass
6 - Pass
7 - Transfer
8 - Free Fare
21. To Place Reason: The reason the respondent is going to the next location. Responses were coded as follows:

0 - Blank
I - Home
2 - Work
3 - Shopping
4 - University/College
5 - Other School
6 - Hotel
7 - Doctor/Dentist
8 - Recreation
9 - Restaurant
10 - Other
22. To Place Reason Comment: Text field containing written responses when respondents were not able to place their reason in I of the 8 categories given in field 24 . Was only used if response to field 24 was 9 .

23-32. To Place Address: Address of the previous location with each part broken up for geocoding. When respondents did not know the actual street number or did not want to give this information, the nearest intersecting streets where asked for. Key to suffix in field name is:
NUM - Street Number (200)
DIR - Street Direction (N,S,E,W,NE,...)
STREET - Actual street name (College, Harmony,...)
TYPE - Designation (St, Ln, Dr, ...)
33. Depart from bus mode: Mode of transit that the respondent will use from bus to get to the final destination. Responses were coded as follows:

0 - Blank
I - Walk___ Blocks
2 - Drive with $\qquad$ other passengers
3 - Transfer to $\qquad$ Bus
4 - Bicycle
5 - Have someone drive me
6 - Other
34. Number of Blocks if Walked to Bus: If respondent walked to the bus, this field is the number of blocks walked. It only applies if the answer to field 33 is I.
35. Number of Passengers in Car if Drove to Bus: If respondent drove to the bus, this field is the number of passengers in the car. It only applies if the answer to field 33 is 2.
36. Bus Route if Transferred from Bus: If respondent transferred from another bus, this field is the bus route that he/she transferred from. It only applies if the answer to field 33 is 5.
37. Other Mode to Bus Comment: If respondent used a different mode than identified in field 15 , this is that mode. It only applies if the answer to field 33 is 6 .
38. Frequency of Riding Bus: How often the respondent rides a bus. Responses are coded as follows:

0 - Blank
I - One day/week
2 - Two days/week
3 - Three days/week
4 - Four days/week
5 - Five days/week
6 - Six days/week
7 - One-three days/month
8 - This is my first time
9 - Other
39. Frequency of Riding Bus Comment: Text field containing written responses when respondents were not able to place their ride frequency in I of the 8 categories given in field 38 . Was only used if response to field 38 was 9 .

43-47. Ride Bus Reason: The most important reason the respondent rides the bus. Multiple responses were allowed so multiple fields were set up for this question. Each field represents a single possible response. For example field Q9Drive is for the response "Don't Drive." A -I in this field indicates the respondent marked this reason. Field Name suffix are coded as follows:

Drive - I Don't Drive
Econ - Bus is economical
Car - Car not available
Traffic - Traffic is bad
Conv - Bus is convenient
Parking - Parking a problem
Other - Other
47. Ride Bus Reason Comment: Text field containing written responses when respondents were not able to place their reason in I of the 6 categories given in fields 40-46 or wished to include an additional response. Was only used if response to field 46 was -1 .
48. Drivers License: Indicates whether the respondent has a drivers license. Responses are coded as follows:

0 - Blank
I - Yes
2 - No
49. Sex: Indicates whether the respondent was male or female. Responses are coded as follows:

0 - Blank
I - Male
2 - Female
50. Age Group: Indicates the age group of the respondent. Responses are coded as follows:

0 - Blank
1-6-15
2-16-25

3-26-59
4-60+
51. Automobiles in Household: Number of Automobiles, Vans, and Trucks available for personal use available to the household. Responses are coded as follows:

0-0
I-I
2-2
3 - 3 or more
99 - Blank
53-59. Employment Status: The employment status of the respondent. Multiple responses were allowed so multiple fields were set up for this question. Each field represents a single possible response. For example field QI4AFullTime is for the response "Employed full time." A -I in this field indicates the respondent marked this reason. Field Name suffix are coded as follows:

```
FullTime - Employed full time
PartTime - Employed part time
Student - Student
Retired - Retired
WorkAtHome - Work at Home
NotEmployed - Not employed outside home
Other - Other
```

59. Employment Status: Other Comment: Text field containing written responses when respondents were not able to place their reason in I of the 6 categories given in fields $52-58$ or wished to include an additional response. Was only used if response to field 58 was -1 .
60. Number of People in Household: Response is actual number of people residing in the household.
61. Income Group of Household: The Total Annual Income of all the members of the household. Responses are coded as follows:

0 - Blank
I - less than \$10,000 per year
2 - \$10,000-\$20,000 per year
3 - \$20,000-\$30,000 per year
4 - \$30,000 - \$40,000 per year
5 - \$40,000-\$60,000 per year
6 - More than $\$ 60,000$
62. Additional Comments: Free response comment field for any additional comments made by respondent.
63. Time/Date of Data Entry: Time and date that the record was last updated. Used for data entry monitoring and quality control checks.

## COLT ONBOARD TRANSIT SURVEY

| FIELD | DESCRIPTION | DATA SOURCE | DATABASE FIELD NAME |
| :---: | :---: | :---: | :---: |
| I | Survey Number | Survey Number | DBID |
| 2 | Already completed survey | Survey Box \#I | Q0Completed |
| 3 | From Place Reason | Survey Question \#I | QIOrigin |
| 4 | From Place Reason Comment | Survey Question \#I | QlOriginOther |
| 5 | From Place Street Number | Survey Question \#2 | Q2AddNum |
| 6 | From Place Street Direction | Survey Question \#2 | Q2AddIDir |
| 7 | From Place Street Name | Survey Question \#2 | Q2AddIStreet |
| 8 | From Place Street Designation | Survey Question \#2 | Q2AddIStType |
| 9 | From Place Intersecting Street Direction | Survey Question \#2 | Q2Add2Dir |
| 10 | From Place Intersecting Street Name | Survey Question \#2 | Q2Add2Street |
| 11 | From Place Intersecting Street Designation | Survey Question \#2 | Q2Add2StType |
| 12 | From Place City | Survey Question \#2 | Q2City |
| 13 | From Place State | Survey Question \#2 | Q2State |
| 14 | From Place Zip Code | Survey Question \#2 | Q2Zip |
| 15 | Mode from Origin to Bus | Survey Question \#3 | Q3ModeFrom |
| 16 | Number of Blocks if Walked to Bus | Survey Question \#3 | Q3WalkBlks |
| 17 | Number of Passengers in Car if Drove to Bus | Survey Question \#3 | Q3Pass |
| 18 | Bus Route if Transferred From Bus | Survey Question \#3 | Q3TransFrom |
| 19 | Other Mode to Bus Comment | Survey Question \#3 | Q3Other |
| 20 | Fare Paid to Ride Bus | Survey Question \#4 | Q4Fare |
| 21 | To Place Reason | Survey Question \#5 | Q5Dest |
| 22 | To Place Reason Comment | Survey Question \#5 | Q5DestOther |
| 23 | To Place Street Number | Survey Question \#6 | Q6ddNum |
| 24 | To Place Street Direction | Survey Question \#6 | Q6ddIDir |
| 25 | To Place Street Name | Survey Question \#6 | Q6ddIStreet |
| 26 | To Place Street Designation | Survey Question \#6 | Q6ddIStType |
| 27 | To Place Intersecting Street Direction | Survey Question \#6 | Q6dd2Dir |
| 28 | To Place Intersecting Street Name | Survey Question \#6 | Q6dd2Street |
| 29 | To Place Intersecting Street Designation | Survey Question \#6 | Q6dd2StType |
| 30 | To Place City | Survey Question \#6 | Q6City |
| 31 | To Place State | Survey Question \#6 | Q6State |
| 32 | To Place Zip Code | Survey Question \#6 | Q6Zip |
| 33 | Mode to Destination from Bus | Survey Question \#7 | Q7ModeTo |
| 34 | Number of Blocks if Walked from Bus | Survey Question \#7 | Q7WalkBIks |
| 35 | Number of Passengers in Car if Drove from Bus | Survey Question \#7 | Q7Pass |
| 36 | Bus Route if Transferred To Bus | Survey Question \#7 | Q7TransTo |
| 37 | Other Mode Free Response | Survey Question \#7 | Q7Other |
| 38 | Frequency of Riding Bus | Survey Question \#8 | Q8Often |
| 39 | Frequency of Riding Bus Comment | Survey Question \#8 | Q8OftenOther |
| 40 | Reason To Ride Bus: Don't Drive | Survey Question \#9 | Q9Drive |
| 41 | Reason To Ride Bus: Economical | Survey Question \#9 | Q9Econ |
| 42 | Reason To Ride Bus: No Car Available | Survey Question \#9 | Q9Car |
| 43 | Reason To Ride Bus: Traffic is Bad | Survey Question \#9 | Q9Traffic |
| 44 | Reason To Ride Bus: Convenient | Survey Question \#9 | Q9Conv |


 E=

| FIELD | DESCRIPTION | DATA SOURCE | DATABASE FIELD NAME |
| :---: | :---: | :---: | :---: |
| 45 | Reason To Ride Bus: Parking Problems | Survey Question \#9 | Q9Parking |
| 46 | Reason To Ride Bus: Other Reason | Survey Question \#9 | Q9Other |
| 47 | Reason To Ride Bus: Other Reason Comment | Survey Question \#9 | Q9OtherReponse |
| 48 | Drivers License | Survey Question \#10 | QloLicense |
| 49 | Sex | Survey Question \#II | QIISex |
| 50 | Age Group | Survey Question \#12 | QI2Age |
| 51 | Automobiles in Household | Survey Question \#13 | QI3Vehicles |
| 52 | Employment Status: Employed Full-Time | Survey Question \#14 | Q14AFullTime |
| 53 | Employment Status: Employed Part-Time | Survey Question \#14 | Q14BPartTime |
| 54 | Employment Status: Student | Survey Question \#14 | Q14CStudent |
| 55 | Employment Status: Retired | Survey Question \#14 | Q14DRetired |
| 56 | Employment Status: Work at Home | Survey Question \#14 | QI4EWorkAtHome |
| 57 | Employment Status: Not Employed Outside Home | Survey Question \#14 | QI4FNotEmployed |
| 58 | Employment Status: Other | Survey Question \#14 | QI4GOther |
| 59 | Employment Status: Other Comment | Survey Question \#14 | QI4GOtherResponse |
| 60 | Number of People in Household | Survey Question \#15 | Q15HHSize |
| 61 | Income Group of Household | Survey Question \#16 | QI6Income |
| 62 | Additional Comments | Survey Question \#17 | Ql7Comments |
| 63 | Time/Date of Data Entry | Database Generated | TimeDate |

## NOTES:

I. Survey Number: Unique identifier for survey. Corresponds to route on which survey was distributed.
2. Already Completed Survey: Indicates whether the respondent has already completed a survey on another bus. If a -I is shown, then yes, otherwise, no.
3. From Place Reason: The reason the respondent was at the previous location. Responses were coded as follows:

0 - Blank
I - Home
2 - Work
3 - Shopping
4 - University/College
5 - Other School
6 - Hotel
7 - Doctor/Dentist
8 - Recreation
9 - Restaurant
10-Other
4. From Place Reason Comment: Text field containing written responses when respondents were not able to place their reason in I of the 9 categories given in field 3 . Was only used if response to field 3 was 10 .

5-I4. From Place Address: Address of the previous location with each part broken up for geocoding. When respondents did not know the actual street number or did not want to give this information, the nearest intersecting streets where asked for. Key to suffix in field name is:

NUM - Street Number (200)
DIR - Street Direction (N,S,E,W,NE,...)
STREET - Actual street name (College, Harmony,...)
TYPE - Designation (St, Ln, Dr, .....)
15. Mode from Origin to Bus: Mode of transit that the respondent used to get to the current bus. Responses were coded as follows:

0 - Blank
I - Walked $\qquad$ Blocks
2 - Drove with $\qquad$ other passengers
3 - Bicycled
4 - Rode with someone
5 - Transferred from $\qquad$ Bus
6 - Other
16. Number of Blocks if Walked to Bus: If respondent walked to the bus, this field is the number of blocks walked. It only applies if the answer to field I 5 is I .
17. Number of Passengers in Car if Drove to Bus: If respondent drove to the bus, this field is the number of passengers in the car. It only applies if the answer to field 15 is 2.
18. Bus Route if Transferred from Bus: If respondent transferred from another bus, this field is the bus route that he/she transferred from. It only applies if the answer to field I5 is 5.
19. Other Mode to Bus Comment: If respondent used a different mode than identified in field 15 , this is that mode. It only applies if the answer to field I 5 is 6 .
20. Fare Paid to Ride Bus: The fare that the respondent paid for this trip. Responses were coded as follows:

0 - Blank
I-\$1.25
2-\$1.00
3-60申
4-50¢
5 - Student Pass
6 - Pass
7 - Transfer
8 - Free Fare
21. To Place Reason: The reason the respondent is going to the next location. Responses were coded as follows:

0 - Blank
I-Home
2 - Work
3 - Shopping

4 - University/College
5 - Other School
6 - Hotel
7 - Doctor/Dentist
8 - Recreation
9 - Restaurant
8 - Other
22. To Place Reason Comment: Text field containing written responses when respondents were not able to place their reason in I of the 8 categories given in field 24 . Was only used if response to field 24 was 9 .

23-33. To Place Address: Address of the previous location with each part broken up for geocoding. When respondents did not know the actual street number or did not want to give this information, the nearest intersecting streets where asked for. Key to suffix in field name is:
NUM - Street Number (200)
DIR - Street Direction (N,S,E,W,NE,...)
STREET - Actual street name (College, Harmony,...)
TYPE - Designation (St, Ln, Dr, ...)
34. Depart from bus mode: Mode of transit that the respondent will use from bus to get to the final destination. Responses were coded as follows:

0 - Blank
I - Walk $\qquad$ Blocks
2 - Drive with $\qquad$ other passengers
3 - Transfer to $\qquad$ Bus
4 - Bicycle
5 - Have someone drive me
6 - Other
35. Number of Blocks if Walked to Bus: If respondent walked to the bus, this field is the number of blocks walked. It only applies if the answer to field 33 is I.
36. Number of Passengers in Car if Drove to Bus: If respondent drove to the bus, this field is the number of passengers in the car. It only applies if the answer to field 33 is 2.
37. Bus Route if Transferred from Bus: If respondent transferred from another bus, this field is the bus route that he/she transferred from. It only applies if the answer to field 33 is 5 .
38. Other Mode to Bus Comment: If respondent used a different mode than identified in field 15 , this is that mode. It only applies if the answer to field 33 is 6 .
39. Frequency of Riding Bus: How often the respondent rides a bus. Responses are coded as follows:

0 - Blank
I - One day/week
2 - Two days/week
3 - Three days/week
4 - Four days/week
5 - Five days/week

6 - Six days/week
7 - One-three days/month
8 - This is my first time
9 - Other
40. Frequency of Riding Bus Comment: Text field containing written responses when respondents were not able to place their ride frequency in I of the 8 categories given in field 38 . Was only used if response to field 38 was 9 .

43-47. Ride Bus Reason: The most important reason the respondent rides the bus. Multiple responses were allowed so multiple fields were set up for this question. Each field represents a single possible response. For example field Q9Drive is for the response "Don't Drive." A -I in this field indicates the respondent marked this reason. Field Name suffix are coded as follows:

Drive - I Don't Drive
Econ - Bus is economical
Car - Car not available
Traffic - Traffic is bad
Conv - Bus is convenient
Parking - Parking a problem
Other - Other
47. Ride Bus Reason Comment: Text field containing written responses when respondents were not able to place their reason in I of the 6 categories given in fields 40-46 or wished to include an additional response. Was only used if response to field 46 was -1 .
48. Drivers License: Indicates whether the respondent has a drivers license. Responses are coded as follows:

0 - Blank
I - Yes
2 - No
49. Sex: Indicates whether the respondent was male or female. Responses are coded as follows:

0 - Blank
I - Male
2 - Female
50. Age Group: Indicates the age group of the respondent. Responses are coded as follows:

0 - Blank
1-6-15
2-16-25
3-26-59
4-60+
51. Automobiles in Household: Number of Automobiles, Vans, and Trucks available for personal use available to the household. Responses are coded as follows:

0-0
1-1
2-2
3 - 3 or more
99 - Blank
53-59. Employment Status: The employment status of the respondent. Multiple responses were allowed so multiple fields were set up for this question. Each field represents a single possible response. For example field QI4AFullTime is for the response "Employed full time." A -I in this field indicates the respondent marked this reason. Field Name suffix are coded as follows:

FullTime - Employed full time
PartTime - Employed part time
Student - Student
Retired - Retired
WorkAtHome - Work at Home
NotEmployed - Not employed outside home
Other - Other
59. Employment Status: Other Comment: Text field containing written responses when respondents were not able to place their reason in I of the 6 categories given in fields $52-58$ or wished to include an additional response. Was only used if response to field 58 was -1 .
60. Number of People in Household: Response is actual number of people residing in the household.
61. Income Group of Household: The Total Annual Income of all the members of the household. Responses are coded as follows:

0 - Blank
I - less than \$10,000 per year
2 - \$10,000-\$20,000 per year
3 - \$20,000-\$30,000 per year
4 - \$30,000 - \$40,000 per year
5 - \$40,000-\$60,000 per year
6 - More than $\$ 60,000$
62. Additional Comments: Free response comment field for any additional comments made by respondent.
63. Time/Date of Data Entry: Time and date that the record was last updated. Used for data entry monitoring and quality control checks

## THE BUS ONBOARD TRANSIT SURVEY

| FIELD | DESCRIPTION | DATA SOURCE | DATABASE FIELD NAME |
| :---: | :---: | :---: | :---: |
| I | Survey Number | Survey Number | DBID |
| 2 | Already completed survey | Survey Box \#1 | Q0Completed |
| 3 | From Place Reason | Survey Question \#I | QIOrigin |
| 4 | From Place Reason Comment | Survey Question \#I | QIOriginOther |
| 5 | From Place Street Number | Survey Question \#2 | Q2AddNum |
| 6 | From Place Street Direction | Survey Question \#2 | Q2AddIDir |
| 7 | From Place Street Name | Survey Question \#2 | Q2AddIStreet |
| 8 | From Place Street Designation | Survey Question \#2 | Q2AddIStType |
| 9 | From Place Intersecting Street Direction | Survey Question \#2 | Q2Add2Dir |
| 10 | From Place Intersecting Street Name | Survey Question \#2 | Q2Add2Street |
| 11 | From Place Intersecting Street Designation | Survey Question \#2 | Q2Add2StType |
| 12 | From Place City | Survey Question \#2 | Q2City |
| 13 | From Place State | Survey Question \#2 | Q2State |
| 14 | From Place Zip Code | Survey Question \#2 | Q2Zip |
| 15 | Mode from Origin to Bus | Survey Question \#3 | Q3ModeFrom |
| 16 | Number of Blocks if Walked to Bus | Survey Question \#3 | Q3WalkBlks |
| 17 | Number of Passengers in Car if Drove to Bus | Survey Question \#3 | Q3Pass |
| 18 | Bus Route if Transferred From Bus | Survey Question \#3 | Q3TransFrom |
| 19 | Other Mode to Bus Comment | Survey Question \#3 | Q3Other |
| 20 | Fare Paid to Ride Bus | Survey Question \#4 | Q4Fare |
| 21 | To Place Reason | Survey Question \#5 | Q5Dest |
| 22 | To Place Reason Comment | Survey Question \#5 | Q5DestOther |
| 23 | To Place Street Number | Survey Question \#6 | Q6ddNum |
| 24 | To Place Street Direction | Survey Question \#6 | Q6ddIDir |
| 25 | To Place Street Name | Survey Question \#6 | Q6ddIStreet |
| 26 | To Place Street Designation | Survey Question \#6 | Q6ddIStType |
| 27 | To Place Intersecting Street Direction | Survey Question \#6 | Q6dd2Dir |
| 28 | To Place Intersecting Street Name | Survey Question \#6 | Q6dd2Street |
| 29 | To Place Intersecting Street Designation | Survey Question \#6 | Q6dd2StType |
| 30 | To Place City | Survey Question \#6 | Q6City |
| 31 | To Place State | Survey Question \#6 | Q6State |
| 32 | To Place Zip Code | Survey Question \#6 | Q6Zip |
| 33 | Mode to Destination from Bus | Survey Question \#7 | Q7ModeTo |
| 34 | Number of Blocks if Walked from Bus | Survey Question \#7 | Q7WalkBlks |
| 35 | Number of Passengers in Car if Drove from Bus | Survey Question \#7 | Q7Pass |
| 36 | Bus Route if Transferred To Bus | Survey Question \#7 | Q7TransTo |
| 37 | Other Mode Free Response | Survey Question \#7 | Q7Other |
| 38 | Frequency of Riding Bus | Survey Question \#8 | Q8Often |
| 39 | Frequency of Riding Bus Comment | Survey Question \#8 | Q8OftenOther |
| 40 | Reason To Ride Bus: Don't Drive | Survey Question \#9 | Q9Drive |
| 41 | Reason To Ride Bus: Economical | Survey Question \#9 | Q9Econ |
| 42 | Reason To Ride Bus: No Car Available | Survey Question \#9 | Q9Car |
| 43 | Reason To Ride Bus: Traffic is Bad | Survey Question \#9 | Q9Traffic |
| 44 | Reason To Ride Bus: Convenient | Survey Question \#9 | Q9Conv |


| FIELD | DESCRIPTION | DATA SOURCE | DATABASE FIELD NAME |
| :---: | :---: | :---: | :---: |
| 45 | Reason To Ride Bus: Parking Problems | Survey Question \#9 | Q9Parking |
| 46 | Reason To Ride Bus: Other Reason | Survey Question \#9 | Q9Other |
| 47 | Reason To Ride Bus: Other Reason Comment | Survey Question \#9 | Q9OtherReponse |
| 48 | Drivers License | Survey Question \#10 | QIOLicense |
| 49 | Sex | Survey Question \#II | QIISex |
| 50 | Age Group | Survey Question \#12 | QI2Age |
| 51 | Automobiles in Household | Survey Question \#13 | QI3Vehicles |
| 52 | Employment Status: Employed Full-Time | Survey Question \#14 | QI4AFullTime |
| 53 | Employment Status: Employed Part-Time | Survey Question \#14 | Q14BPartTime |
| 54 | Employment Status: Student | Survey Question \#14 | Q14CStudent |
| 55 | Employment Status: Retired | Survey Question \#14 | Q14DRetired |
| 56 | Employment Status: Work at Home | Survey Question \#14 | Ql4EWorkAtHome |
| 57 | Employment Status: Not Employed Outside Home | Survey Question \#14 | Q14FNotEmployed |
| 58 | Employment Status: Other | Survey Question \#14 | QI4GOther |
| 59 | Employment Status: Other Comment | Survey Question \#14 | QI4GOtherResponse |
| 60 | Number of People in Household | Survey Question \#15 | Q15HHSize |
| 61 | Income Group of Household | Survey Question \#16 | Ql6Income |
| 62 | Bus Service Rating: Hours of Operation | Survey Question \#17 | QI7A |
| 63 | Bus Service Rating: Available Destinations | Survey Question \#17 | Q17B |
| 64 | Bus Service Rating: Frequency of Service | Survey Question \#17 | QI7C |
| 65 | Bus Service Rating: Locations of Bus Stops | Survey Question \#17 | QI7D |
| 66 | Bus Service Rating: Ease of Transfers | Survey Question \#17 | QI7E |
| 67 | Bus Service Rating: Wait Time of Transfers | Survey Question \#17 | QI7F |
| 68 | Bus Service Rating: Helpfulness of Drivers | Survey Question \#17 | QI7G |
| 69 | Factors to Increase Use of Bus: Employer Paid all or Part of Fare | Survey Question \#18 | QI8Employer |
| 70 | Factors to Increase Use of Bus: More Frequent Service | Survey Question \#18 | Q18MoreFrequent |
| 71 | Factors to Increase Use of Bus: Earlier Morning Service | Survey Question \#18 | Q18Earlier |
| 72 | Factors to Increase Use of Bus: Later Evening Service | Survey Question \#18 | QI8Later |
| 73 | Factors to Increase Use of Bus: More Info on Evening Demand Response Services | Survey Question \#18 | Q18Morelnfo |
| 74 | Factors to Increase Use of Bus: Assistance with Trip Planning | Survey Question \#I8 | QI8Assistance |
| 75 | Reasons for Not Using Bus: Other Travel Options | Survey Question \#19 | Q19OtherOptions |
| 76 | Reasons for Not Using Bus: Too many transfers | Survey Question \#19 | Q19ManyTransfers |
| 77 | Reasons for Not Using Bus: Buses take too long to arrive at my destination | Survey Question \#19 | Q19LongArrive |
| 78 | Reasons for Not Using Bus: Buses take too long to get to where I am going | Survey Question \#19 | Q19LongTravel |
| 79 | Reasons for Not Using Bus: Buses do not go to my destination | Survey Question \#19 | Q19NoDestination |
| 80 | Reasons for Not Using Bus: I do not like to ride the bus | Survey Question \#19 | Q19NotLikeBus |


| FIELD | DESCRIPTION | DATA SOURCE | DATABASE FIELD <br> NAME |
| :---: | :--- | :---: | :---: |
| 81 | Reasons for Not Using Bus: I do not like the other <br> riders on the bus | Survey Question \#19 | Q19NotLikeRiders |
| 82 | Reasons for Not Using Bus: Other | Survey Question \#19 | Q19Other |
| 83 | Reasons for Not Using Bus: Other Comment | Survey Question \#19 | Q19OtherResponse |
| 84 | Additional Comments | Survey Question \#20 | Q20Comments |
| 85 | Time/Date of Data Entry | Database Generated | TimeDate |

## NOTES:

I. Survey Number: Unique identifier for survey. Corresponds to route on which survey was distributed.
2. Already Completed Survey: Indicates whether the respondent has already completed a survey on another bus. If a $-I$ is shown, then yes, otherwise, no.
3. From Place Reason: The reason the respondent was at the previous location. Responses were coded as follows:

0 - Blank
I - Home
2 - Work
3 - Shopping
4 - University/College
5 - Other School
6 - Hotel
7 - Doctor/Dentist
8 - Recreation
9 - Restaurant
10-Other
4. From Place Reason Comment: Text field containing written responses when respondents were not able to place their reason in I of the 9 categories given in field 3 . Was only used if response to field 3 was 10 .

5-14. From Place Address: Address of the previous location with each part broken up for geocoding. When respondents did not know the actual street number or did not want to give this information, the nearest intersecting streets where asked for. Key to suffix in field name is:

NUM - Street Number (200)
DIR - Street Direction (N,S,E,W,NE,...)
STREET - Actual street name (College, Harmony,...)
TYPE - Designation (St, Ln, Dr, .....)
15. Mode from Origin to Bus: Mode of transit that the respondent used to get to the current bus. Responses were coded as follows:

0 - Blank
I - Walked $\qquad$ Blocks
2 - Drove with $\qquad$ other passengers
3 - Bicycled

4 - Rode with someone
5 - Transferred from $\qquad$ Bus
6 - Other
16. Number of Blocks if Walked to Bus: If respondent walked to the bus, this field is the number of blocks walked. It only applies if the answer to field I5 is I.
17. Number of Passengers in Car if Drove to Bus: If respondent drove to the bus, this field is the number of passengers in the car. It only applies if the answer to field 15 is 2.
18. Bus Route if Transferred from Bus: If respondent transferred from another bus, this field is the bus route that he/she transferred from. It only applies if the answer to field 15 is 5 .
19. Other Mode to Bus Comment: If respondent used a different mode than identified in field 15 , this is that mode. It only applies if the answer to field I 5 is 6 .
20. Fare Paid to Ride Bus: The fare that the respondent paid for this trip. Responses were coded as follows:

0 - Blank
I-\$1.25
2-\$1.00
3-60¢
4-50¢
5 - Student Pass
6 - Pass
7 - Transfer
8 - Free Fare
21. To Place Reason: The reason the respondent is going to the next location. Responses were coded as follows:

0 - Blank
I - Home
2 - Work
3 - Shopping
4 - University/College
5 - Other School
6 - Hotel
7 - Doctor/Dentist
8 - Recreation
9 - Restaurant
8 - Other
22. To Place Reason Comment: Text field containing written responses when respondents were not able to place their reason in I of the 8 categories given in field 24 . Was only used if response to field 24 was 9.

23-34. To Place Address: Address of the previous location with each part broken up for geocoding. When respondents did not know the actual street number or did not want to give this information, the nearest intersecting streets where asked for. Key to suffix in field name is:

23-35.
NUM - Street Number (200)
DIR - Street Direction (N,S,E,W,NE,...)
STREET - Actual street name (College, Harmony, ...)
TYPE - Designation (St, Ln, Dr, ...)
36. Depart from bus mode: Mode of transit that the respondent will use from bus to get to the final destination. Responses were coded as follows:

0 - Blank
I - Walk $\qquad$ Blocks
2 - Drive with $\qquad$ other passengers
3 - Transfer to $\qquad$ Bus
4 - Bicycle
5 - Have someone drive me
6 - Other
37. Number of Blocks if Walked to Bus: If respondent walked to the bus, this field is the number of blocks walked. It only applies if the answer to field 33 is I.
38. Number of Passengers in Car if Drove to Bus: If respondent drove to the bus, this field is the number of passengers in the car. It only applies if the answer to field 33 is 2.
39. Bus Route if Transferred from Bus: If respondent transferred from another bus, this field is the bus route that he/she transferred from. It only applies if the answer to field 33 is 5.
40. Other Mode to Bus Comment: If respondent used a different mode than identified in field 15 , this is that mode. It only applies if the answer to field 33 is 6 .
41. Frequency of Riding Bus: How often the respondent rides a bus. Responses are coded as follows:

0 - Blank
I - One day/week
2 - Two days/week
3 - Three days/week
4 - Four days/week
5 - Five days/week
6 - Six days/week
7 - One-three days/month
8 - This is my first time
9 - Other
42. Frequency of Riding Bus Comment: Text field containing written responses when respondents were not able to place their ride frequency in I of the 8 categories given in field 38 . Was only used if response to field 38 was 9 .

43-47. Ride Bus Reason: The most important reason the respondent rides the bus. Multiple responses were allowed so multiple fields were set up for this question. Each field represents a single possible response. For example field Q9Drive is for the response "Don't Drive." A -I in this field indicates the respondent marked this reason. Field Name suffix are coded as follows:

Drive - I Don't Drive
Econ - Bus is economical
Car - Car not available
Traffic - Traffic is bad
Conv - Bus is convenient
Parking - Parking a problem
Other - Other
48. Ride Bus Reason Comment: Text field containing written responses when respondents were not able to place their reason in I of the 6 categories given in fields 40-46 or wished to include an additional response. Was only used if response to field 46 was -1 .
49. Drivers License: Indicates whether the respondent has a drivers license. Responses are coded as follows:

0 - Blank
I - Yes
2 - No
50. Sex: Indicates whether the respondent was male or female. Responses are coded as follows:

0 - Blank
I - Male
2 - Female
51. Age Group: Indicates the age group of the respondent. Responses are coded as follows:

0 - Blank
1-6-15
2-16-25
3-26-59
4-60+
52. Automobiles in Household: Number of Automobiles, Vans, and Trucks available for personal use available to the household. Responses are coded as follows:

$$
\begin{aligned}
& 0-0 \\
& 1-1 \\
& 2-2 \\
& 3-3 \text { or more } \\
& 99 \text { - Blank }
\end{aligned}
$$

53-59. Employment Status: The employment status of the respondent. Multiple responses were allowed so multiple fields were set up for this question. Each field represents a single possible response. For example field QI4AFullTime is for the response "Employed full time." A -I in this field indicates the respondent marked this reason. Field Name suffix are coded as follows:

FullTime - Employed full time
PartTime - Employed part time
Student - Student

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Retired - Retired
WorkAtHome - Work at Home
NotEmployed - Not employed outside home
Other - Other
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60. Employment Status: Other Comment: Text field containing written responses when respondents were not able to place their reason in I of the 6 categories given in fields $52-58$ or wished to include an additional response. Was only used if response to field 58 was -1 .
61. Number of People in Household: Response is actual number of people residing in the household.
62. Income Group of Household: The Total Annual Income of all the members of the household. Responses are coded as follows:

0 - Blank
I - less than $\$ 10,000$ per year
2 - \$10,000-\$20,000 per year
3 - \$20,000 - \$30,000 per year
4 - \$30,000-\$40,000 per year
5 - \$40,000 - \$60,000 per year
6 - More than $\$ 60,000$
63. Additional Comments: Free response comment field for any additional comments made by respondent.
64. Time/Date of Data Entry: Time and date that the record was last updated. Used for data entry monitoring and quality control checks.


[^0]:    5：38 last complete loop／6：38 is last stop

