



# JEFFTRAN

## Comprehensive Operations Analysis Existing Conditions Report

August 2017





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## Executive Summary

This *Existing Conditions Report* is the first of two major deliverables for the JEFFTRAN Comprehensive Operations Analysis (COA). It provides detailed baseline data and analysis of existing services and routes provided by JEFFTRAN. This information will support recommendations on JEFFTRAN's routes, service and operating policies. These will be provided in the second and final major deliverable, the *Final Report and Recommendations*. The following paragraphs summarize the key findings of the *Existing Conditions Report*.

The System-wide Summary (**Section 2**) provides a high-level overview of JEFFTRAN's fares and service. It also provides a detailed demographic analysis of Jefferson City, as well as Cole and Callaway counties. It compares Jefferson City with two similar urban areas in Missouri (Joplin and Cape Girardeau). Key findings include that employment in Jefferson City is twice its working-age population. There are significant flows of workers to jobs in Jefferson City from outside of Jefferson City. Also, a very high proportion of workers in Jefferson City are government employees, consistent with the city's role as the Missouri state capital.

The Peer Systems Comparison (**Section 2.4**) concludes that JEFFTRAN's fixed route services are well-managed and have superior performance compared to its peer systems. However, its eligibility policies for Handi-Wheels (JEFFTRAN's complementary paratransit service to serve those who cannot use regular fixed route service) is far more generous than its peer systems. As a result, Handi-Wheels' operating costs are significantly higher than those for JEFFTRAN's peer systems. Bringing its eligibility determinations in compliance with the actual requirements of the Americans with Disabilities Act (ADA) would provide significant operating cost savings (at least a quarter to a third of a million dollars, annually) which could be reinvested in fixed route service.

A detailed assessment for each of JEFFTRAN's fixed routes is provided in **Section 4**. It includes individual route profiles which provide a detailed demographic breakdown of the populations served by each route. It also provides a detailed ridership assessment of each route. This assessment includes ridership by segment, by time of day and transfer activity from other routes. The Missouri Boulevard route is by far the best-used fixed route service. Its average daily ridership is more than twice that of any other route and its passengers served per route mile is three times that of any other route. **Section 4** also includes a running time assessment of each fixed route. This assessment found that while round-trip running times generally are adequate on fixed routes, that several routes have segments where scheduled running time is either too long or too short.

In **Section 5**, JEFFTRAN's bus fleet is evaluated using Federal Transit Administration (FTA) guidelines for the useful life of transit buses. It identified that procurement of new fixed route buses is a major priority in the next several years. **Section 5** documents JEFFTRAN's current capital plans, noting the recent award of a contract for Automatic Vehicle Location (AVL), Automatic Passenger Counter (APC) and Automatic Voice Annunciator (AVA) technology.

**Section 6** reviews JEFFTRAN's operator scheduling practices. This review found that JEFFTRAN's current practices allow management significant flexibility. No modifications to scheduling practices are recommended.

**Section 7** provides a JEFFTRAN managerial assessment, based upon interviews with management and staff. It found an organization whose employees are dedicated and loyal and who see themselves as

providing a valuable service to the community. At the same time, they believe there is a disconnect with the level of financial investment in JEFFTRAN and the implications of that in terms of hours and days of service which are perceived as inadequate.

**Section 8** documents the findings of a wide range of public input activities. These included six group stakeholder interviews, one general public meeting, an online survey of the general public and several bus operator and dispatcher interviews. A common theme from all these activities is that the present lack of evening and weekend fixed route service is a major shortcoming. This section also summarizes the findings of recent planning documents which pertain to this COA.



## 1. Introduction

This *Existing Conditions Report* is the first of two major deliverables for the JEFFTRAN Comprehensive Operations Analysis (COA). This report is a comprehensive review and analysis of the existing services and routes of JEFFTRAN, Jefferson City's public transit system. It includes both large amounts of information supplied by representatives of JEFFTRAN and the Capital Area Metropolitan Planning Organization (CAMPO), as well as significant original research conducted by Lochmueller Group. It provides a baseline assessment of JEFFTRAN's services, vehicles, facilities and policies. It also documents a wide range of public and stakeholder input.

This *Existing Conditions Report* provides the basis for recommended changes in JEFFTRAN's services, fares and operating policies. These recommendations will be provided in the *Final Report and Recommendations*, which is the other major deliverable for the JEFFTRAN COA.

Please refer to **Appendix G** for a glossary of transit related terms and acronyms used throughout the report.





## 2. System-wide Summary

The following sections provide an overview of JEFFTRAN's services and fare structure. Demographic profile summaries for Jefferson City, Cole County and Callaway County are also included. Additionally, a peer systems comparison is presented to compare JEFFTRAN with other similar transit systems.

### 2.1 Service Description

Jefferson City's transit system, JEFFTRAN, provides fixed route services, with complementary demand response service for the disabled. It is operated as a department of city government, within Jefferson City's Public Works Department.

JEFFTRAN provides fixed route service on six regular bus routes throughout the day and three special routes ("Tripper Routes") which operate only one trip daily. Each of the six regular routes has 17 trips per day with the first trip starting at 6:40 a.m., with subsequent trips every 40 minutes. The fixed route services cover the majority of Jefferson City and operate within the city limits. The three Tripper Routes operate between 3:00 p.m. and 4:20 p.m. The Tripper Routes are open to the general public, and primarily serve school students.

JEFFTRAN operates Monday through Friday, 6:40 a.m. to 5:45 p.m. year round. JEFFTRAN observes the following 10 holidays:

- New Year's Day
- Martin Luther King Jr. Day
- Truman Day<sup>1</sup>
- Memorial Day
- Independence Day
- Labor Day
- Veterans Day
- Thanksgiving Day
- Day after Thanksgiving
- Christmas Day

In addition to fixed route services for the general public, JEFFTRAN also provides door-to-door paratransit service, Handi-Wheels, to serve customers as required by the Americans with Disabilities Act (ADA). Such service is required by the Federal Transit Administration (FTA) to be offered to riders who are unable to use regular fixed route service. Pick up and drop off times are arranged between the rider and dispatcher. JEFFTRAN requests that Handi-Wheels passengers schedule rides at least one day in advance by calling the dispatch office. Handi-Wheels operates throughout the Jefferson City, so riders can request to be picked up or dropped off at any location within the city limits. The paratransit service operates during the same hours as regular route service.

**Table 2-1** below shows key summary statistics for JEFFTRAN from its 2016 National Transit Database (NTD) report. The statistics are shown for both fixed route and Handi-Wheels service. JEFFTRAN's 2016 NTD reporting year runs from November 1, 2015 to October 31, 2016.

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<sup>1</sup> Observed on May 8, or on nearest weekday if May 8 is a Saturday or Sunday.



Table 2-1: JEFFTRAN Summary Statistics for 2016

	Fixed Route	Handi-Wheels
Annual Ridership	248,944	50,464
Annual Revenue Miles	279,545	202,610
Annual Revenue Hours	16,619	14,724

## 2.2 Fares

JEFFTRAN offers single ride fares as well as multiple ride passes, as shown in **Table 2-2** below.

Table 2-2: Fare Table

Single Ride Fares	
Regular Fare (ages 6+)	\$1.00
Children (ages 0-5)	Free
Reduced/Half Fare	\$0.50
Multiple Ride Passes	
Adult Pass (20 Rides)	\$20.00
Student Pass (20 Rides)	\$18.00
Reduced/Half Fare Pass (20 Rides)	\$10.00
Handi-Wheels	
One way trip	\$2.00

The Regular Fare is \$1.00 for a one way trip. This includes free transfers if more than one route is needed to reach the passenger's destination. Children under the age of six ride free when accompanied by an adult. Riders are eligible for the Reduced/Half Fare if they are 60 years old or older, have a disability or are a Medicare cardholder. They must have a photo ID and submit an application at City Hall (320 East McCarty Street). The JEFFTRAN bus passes are available as 20 ride tickets. JEFFTRAN does not offer unlimited ride passes. To be eligible for the Student Pass, a valid student ID is required. The Handi-Wheels' fare is \$2.00 for a one way trip. JEFFTRAN drivers aid Handi-Wheels passengers as needed to board and alight the buses. If the Handi-Wheels passenger requires additional help, an attendant may ride at no additional cost.

## 2.3 City-wide Demographics

The following pages include demographic profile summaries for Jefferson City, Cole County and Callaway County (see **Figure 2-1**). Certain demographic statistics also include data for Cape Girardeau and Joplin for comparison purposes. Both the cities of Cape Girardeau and Joplin are in Missouri, comparable in size to Jefferson City and are not part of a larger metropolitan area. Below are the definitions and sources used for all of the demographic data. The same definitions and sources were used for the route profile summaries (**Section 4.2**).

### **Age (source: 2011-2015 ACS 5-year Estimates, Table B01001)**

Total Population: Total number of people in all age groups.

Age 0-19: Percentage of people 19 years old or younger.

Age 20-59: Percentage of people between the ages of 20 and 59.

Age 60+: Percentage of people 60 years of age or older.

### **Household Ownership (source: 2011-2015 ACS 5-year Estimates, Table B25003)**

Total Households: Total number of occupied housing units.

Owner Occupied: Percentage of housing units occupied by the owner of the unit.

Renter Occupied: Percentage of housing units occupied by the renter of the unit.

### **Race/Ethnicity (source: 2011-2015 ACS 5-year Estimates, Table B03002)**

White: Percentage of the population that is White, non-Hispanic.

Black: Percentage of the population that is Black or African American, non-Hispanic.

Nat Am/Alaska Nat: Percentage of the population that is Native American/American Indian or Alaska Native, non-Hispanic.

Asian: Percentage of the population with origins in any of the original peoples of the Far East, Southeast Asia or the Indian subcontinent, non-Hispanic.

Haw Pac Islander: Percentage of the population with origins in any of the original peoples of Hawaii, Guam, Samoa or other Pacific Islanders, non-Hispanic.

Other: Percentage of the population that is not categorized by any of the above categories, non-Hispanic.

2 or more races: Percentage of the population categorized by two or more of the above categories, non-Hispanic.

Hispanic/Latino: Percentage of the population that is Hispanic or Latino of any race.

### **Educational Attainment (source: 2011-2015 ACS 5-year Estimates, Table B15002)**

No HS Diploma/GED: Percentage of the population 25 years and over without a high school diploma, GED or equivalent.

HS Diploma/GED: Percentage of the population 25 years and over with a high school diploma, GED or equivalent, but no college degree.

College Degree: Percentage of the population 25 years and over with an Associate's degree, Bachelor's degree, Graduate or Professional degree.

### **Employment Status (source: 2011-2015 ACS 5-year Estimates, Table B23025)**

Employed: Percentage of the population 16 years and over, in the civilian labor force that are employed.

Unemployed: Percentage of the population 16 years and over, in the civilian labor force that are unemployed.

### **Household Income (source: 2011-2015 ACS 5-year Estimates, Table B19001)**

< \$25,000: Percentage of households with an annual income below \$25,000.

\$25,000-\$50,000: Percentage of households with an annual income between \$25,000 and \$50,000.



\$50,000-\$75,000: Percentage of households with an annual income between \$50,000 and \$75,000.

\$75,000-\$100,000: Percentage of households with an annual income between \$75,000 and \$100,000.

> \$100,000: Percentage of households with an annual income of \$100,000 or greater.

**Vehicles Ownership (source: 2011-2015 ACS 5-year Estimates, Table B25044)**

0 Vehicle Household: Percentage of occupied housing units with no vehicles available, including owned and rented vehicles.

1 Vehicle Household: Percentage of occupied housing units with 1 vehicle available, including owned and rented vehicles.

2 Vehicle Household: Percentage of occupied housing units with 2 vehicles available, including owned and rented vehicles.

3 Vehicle Household: Percentage of occupied housing units with 3 vehicles available, including owned and rented vehicles.

4 Vehicle Household: Percentage of occupied housing units with 4 vehicles available, including owned and rented vehicles.

5+ Vehicle Household: Percentage of occupied housing units with 5 or more vehicles available, including owned and rented vehicles.

**County to County Commuting Flows (source: 2009-2013 ACS 5-year Estimates, Table B25044)**

**Employment (source: 2014 Longitudinal Employer-Household Dynamics (LEHD))**

Total Employment: Total number of jobs in all employment categories. This includes all Primary and non-Primary jobs as well as Private and Federal jobs.

Retail Employment: Total number of jobs at retail businesses (NAICS sectors 44-45).

Service Employment: Total number of jobs at service businesses (NAICS sectors 72 & 81).

Government Employment: Total number of jobs at government agencies (NAICS sector 92).

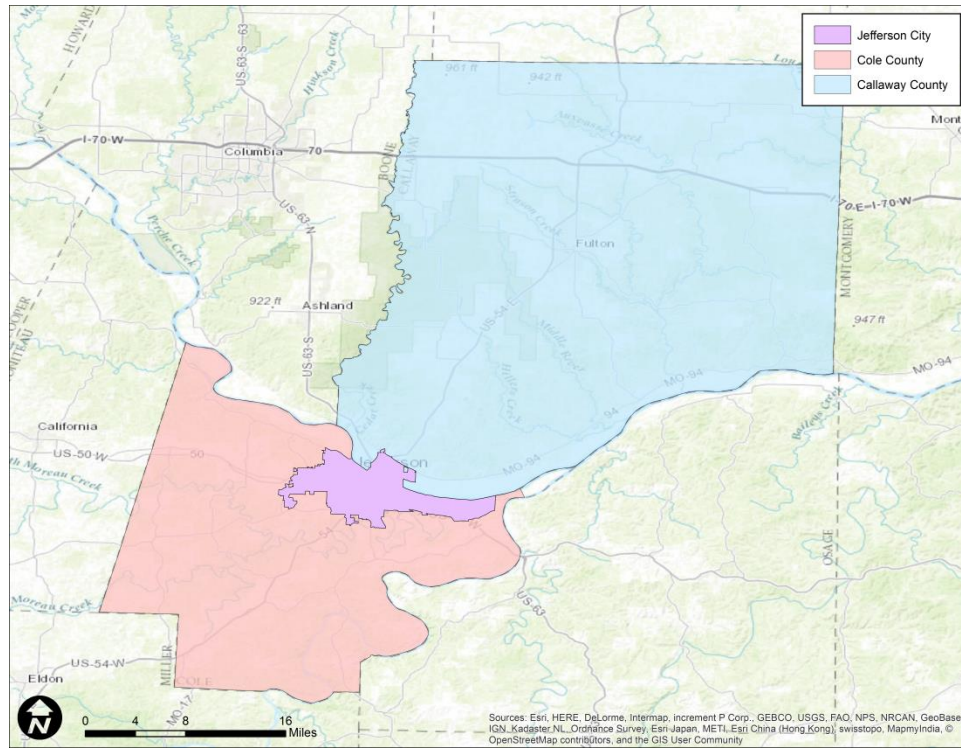
ACS 5-year Estimates available at: <https://factfinder.census.gov/>

Longitudinal Employer-Household Dynamics (LEHD) data available at: <https://lehd.ces.census.gov/> and <https://onthemap.ces.census.gov/>

The primary source of demographic data used in this report is the American Community Survey (ACS). It is administered by the U.S. Census Bureau to collect a wide range of demographic data. As of the writing of this report, the 2015 ACS data are the most current information available. The ACS replaced the “long form” questionnaires formerly sent to a proportion of households during each decennial census. The ACS generally provides more current data than the decennial census because it is administered on an ongoing basis. The latest 5-year ACS estimates were used in this report. These estimates average data over five consecutive years.



**Figure 2-1: Map of Jefferson City, Cole County and Callaway County**



**Table 2-3: Jefferson City, Cole County and Callaway County – Demographic Data**

Age	Total Population	Age 0-19	Age 20-59	Age 60+
Jefferson City	43,186	23.7%	56.7%	19.6%
Cole County	76,533	25.6%	54.9%	19.5%
Callaway County	44,566	25.4%	54.3%	20.3%

Households	Total Households	Owner Occupied	Renter Occupied
Jefferson City	16,884	58.4%	41.6%
Cole County	29,448	67.6%	32.4%
Callaway County	16,150	73.7%	26.3%

Race/Ethnicity	White	Black	Nat Am/Alaska Nat	Asian	Haw Pac Islander	Other	2 or more races	Hispanic/Latino
Jefferson City	73.8%	18.0%	0.5%	1.6%	0.1%	1.2%	2.4%	2.4%
Cole County	81.8%	11.5%	0.4%	1.1%	0.1%	0.7%	1.7%	2.7%
Callaway County	90.4%	3.7%	0.3%	0.8%	0.0%	0.2%	2.8%	1.9%



Educational Attainment*	No HS Diploma/GED	HS Diploma/GED	College Degree
Jefferson City	8.5%	50.5%	41.0%
Cole County	8.5%	52.0%	39.5%
Callaway County	14.3%	58.6%	27.1%
Cape Girardeau	11.3%	48.7%	40.0%
Joplin	11.8%	58.0%	30.2%

\*Highest level completed for those aged 25 and above

The percentage of the population in Jefferson City with a college degree is very high. These and other demographic statistics were compared to those for Joplin and Cape Girardeau. Joplin (50,150<sup>2</sup>) and Cape Girardeau (37,941<sup>2</sup>) are two other Missouri cities which are not part of a larger metropolitan area and which have populations comparable to Jefferson City (43,079<sup>2</sup>). The percentage of the population with a college degree in Jefferson City is significantly higher than Joplin's and slightly higher than Cape Girardeau's (which has a major university, Southeast Missouri State University). The percentage of people with no high school diploma or equivalent is also lower for Jefferson City than Cape Girardeau or Joplin.

Employment Status*	Employed	Unemployed
Jefferson City	94.9%	5.1%
Cole County	95.1%	4.9%
Callaway County	94.9%	5.1%

\*Includes only those in the labor force

Household Income	< \$25,000	\$25,000 - \$50,000	\$50,000 - \$75,000	\$75,000 - \$100,000	> \$100,000
Jefferson City	24.5%	27.1%	19.6%	13.2%	15.6%
Cole County	20.3%	25.9%	21.7%	14.2%	17.9%
Callaway County	24.3%	28.1%	21.7%	11.7%	14.2%

Vehicles Owned	0 Vehicle Household	1 Vehicle Household	2 Vehicle Household	3 Vehicle Household	4 Vehicle Household	5+ Vehicle Household
Jefferson City	9.4%	38.5%	37.5%	11.1%	2.7%	0.7%
Cole County	6.6%	32.1%	38.1%	16.0%	4.9%	2.2%
Callaway County	5.1%	32.3%	38.1%	15.4%	5.4%	3.6%

Employment	Total Employment	Retail Employment	Service Employment	Government Employment
Jefferson City	46,383	4,839	4,756	15,504
Cole County	52,850	5,154	5,198	18,560
Callaway County	15,558	1,336	1,532	1,205
Cape Girardeau	29,963	4,059	3,782	606
Joplin	43,125	5,796	5,491	578

<sup>2</sup> Populations from 2010 census.

**Table 2-3** shows that the working age population in Jefferson City is about 24,500. However, there are around 46,000 jobs in Jefferson City which is nearly double the working age population of the city. Many workers in Jefferson City come from areas in Cole County outside of Jefferson City, as well as from other nearby counties.

About a third of the employment in Jefferson City is in government, reflecting that Jefferson City is the Missouri state capital. Cape Girardeau and Joplin only have about 2% and 1% government employment, respectively, which is significantly less than Jefferson City.

**Table 2-4: County of Residence for Cole County Workers**

County of Residence	County of Work	Workers	Percentage
Cole County	Cole County	32,120	63.1%
Callaway County	Cole County	5,823	11.4%
Boone County	Cole County	3,028	6.0%
Osage County	Cole County	2,828	5.6%
Moniteau County	Cole County	2,114	4.2%
Miller County	Cole County	1,748	3.4%
Other	Cole County	3,218	6.3%
<b>Total Employment in Cole County</b>		<b>50,879*</b>	<b>100.0%</b>

*\*The discrepancy between the total employment in Cole County from **Table 2-3** and **Table 2-4** (52,850 and 50,879, respectively) is due to the fact that the data was collected in different years. Please refer to the beginning of this section for more details.*

More than one-third of people who work in Cole County live in another county.

**Table 2-5: Place of Work for Cole County Residence**

County of Residence	County of Work	Workers	Percentage
Cole County	Cole County	32,120	87.6%
Cole County	Boone County	1,570	4.3%
Cole County	Callaway County	1,133	3.1%
Cole County	Osage County	426	1.2%
Cole County	Moniteau County	336	0.9%
Cole County	Miller County	301	0.8%
Cole County	Other	779	2.1%
<b>Total Workers in Cole County</b>		<b>36,665</b>	<b>100.0%</b>

## 2.4 Peer Systems Comparison

Transit systems operate throughout the nation, in large cities and in small ones. Despite the vast differences in operating locations, a few key indicators can be used to evaluate the performance of transit systems. By comparing JEFFTRAN to peer systems throughout the nation, it can be determined if it is under-performing, over-performing or about average. Since JEFFTRAN provides two distinct services, i.e. fixed route and demand response services, they are analyzed separately. After analyzing each service type separately, the fixed route/demand response breakdown is also presented. The first step in conducting the peer comparison is selecting peer systems.



### 2.4.1 Peer Systems Selection

The Federal Transit Administration (FTA) requires any transit agency receiving federal funding to report transit related data and statistics via the National Transit Database (NTD) system. Every transit system has its own unique characteristics such as service type (fixed route, demand response, etc.), service area, service population, etc. which are documented in the NTD reports. The Urban Integrated National Transit Database (Urban iNTD) is a state-of-the-art tool developed by Florida Department of Transportation (FDOT) Transit Office<sup>3</sup>. Although FDOT originally created the tool, it was developed in conjunction with the FTA. The tool is designed to compare transit systems throughout the nation.

Urban NTD system data is included in the Urban iNTD database. The Urban iNTD calculates a Likeness score for potential peer systems. This score takes into account the unique characteristics of each transit system and is used to identify likely peer systems. The ranking was further reviewed to ensure relevant characteristics of the study system matched the peer systems. One criterion in particular that was researched extensively was the presence of transit systems in state capitals. The only such system identified is Jump Around Carson, located in the state capital Carson City, Nevada.

The five peer systems selected are listed below:

- Flint Hills Area Transportation – Manhattan, Kansas
- Greater Mankato Transit System – Mankato, Minnesota
- Jonesboro Economical Transportation System – Jonesboro, Arkansas
- Jump Around Carson – Carson City, Nevada
- Pine Bluff Transit – Pine Bluff, Arkansas

Flint Hills Area Transportation provides transit services in Manhattan, Kansas which has a population of 55,769<sup>4</sup>. It is comprised of four fixed routes within Manhattan and is operated by a not-for-profit board which receives funding from state, federal and local sources.

Greater Mankato Transit System (MTS) provides transit services in Mankato, Minnesota which has a population of 40,557<sup>4</sup>. It is comprised of four fixed routes and is operated as a department of City government.

Jonesboro Economical Transportation System (JETS) provides transit services in Jonesboro, Arkansas which has a population of 71,576<sup>4</sup>. It is comprised of five fixed routes and is operated as a department of City government.

Jump Around Carson (JAC) provides transit services in Carson City, Nevada which has a population of 54,482<sup>4</sup>. It is comprised of four fixed routes and is operated as a department of City government. It is the only transit system in a state capital that is comparable to JEFFTRAN.

Pine Bluff Transit (PBT) provides transit services in Pine Bluff, Arkansas which has a population of 46,228<sup>4</sup>. It is comprised of eight fixed routes and is operated as a department of City government.

These peer systems were reviewed with CAMPO (Capital Area Metropolitan Planning Organization) staff.

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<sup>3</sup> [http://www.ftis.org/urban\\_iNTD.aspx](http://www.ftis.org/urban_iNTD.aspx)

<sup>4</sup> Populations from 5 Year ACS Data – 2015.



## 2.4.2 Fixed Route Comparison

**Table 2-6** compares the averages of major fixed route operating statistics for JEFFTRAN with its five peer systems for the years 2011 through 2015. These are the five most recent years available in the Urban iNTD database. However, not all peer systems submitted complete data sets for the entire analysis period. Therefore, all available NTD data provided by the Federal Transit Agency (FTA) was used with the incomplete data being noted as appropriate.

**Table 2-6: Fixed Route Ridership and Operating Statistics – 2011 to 2015 NTD Average**

Transit System	Passenger Trips	Revenue Miles	Revenue Hours	Revenue	Total Operating Expenses
JEFFTRAN (MO)	280,805	281,681	17,309	\$144,950	\$1,377,836
Peer System Average	244,288	231,198	15,864	\$61,191	\$976,059
Flint Hills Area Transportation (KS)	262,560	259,319	20,211	\$27,841	\$606,948
Greater Mankato Transit System (MN)	623,565	242,961	19,494	\$110,617	\$1,600,288
Jonesboro Economical Transportation System (AR)	74,346	222,130	13,037	\$45,888	\$662,387
Jump Around Carson (NV)	181,029	183,995	14,212	\$64,992	\$729,668
Pine Bluff Transit (AR)	79,939	247,588	12,363	\$56,618	\$1,281,004

*Note: Flint Hills Area Transportation was missing all data from 2011 and 2012, while MTS, JETS and PBT were missing all 2011 data. Operating expense and revenue data was missing for 2012 for all transit systems. Flint Hills Area Transportation fixed route revenue data was not available for 2013, while MTS and JETS fixed route revenue data was not available for 2015.*

**Table 2-7** compares JEFFTRAN's fixed route operating ratios with its peers while **Figures 2-2 to 2-6** depict the comparisons graphically.

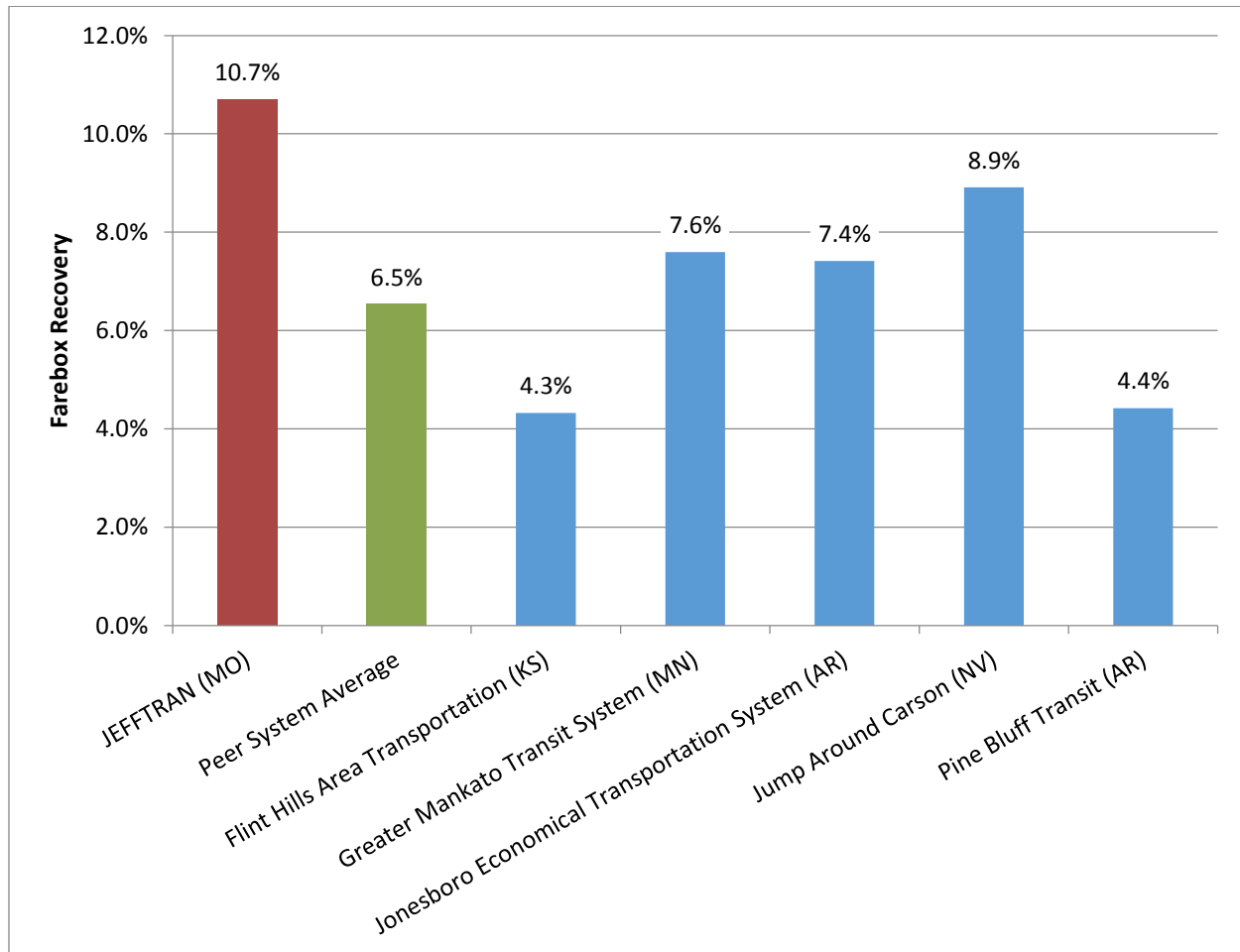
**Table 2-7: Fixed Route Ridership and Operating Ratios – 2011 to 2015 NTD Average**

Transit System	Farebox Recovery	Revenue/ Passenger Trip	Passenger Trips/ Revenue Hour	Cost/ Passenger Trip	Passenger Trips/ Capita
JEFFTRAN (MO)	10.7%	\$0.52	16.23	\$4.93	6.51
Peer System Average	6.5%	\$0.40	13.98	\$6.75	4.03
Flint Hills Area Transportation (KS)	4.3%	\$0.09	12.75	\$2.47	1.92
Greater Mankato Transit System (MN)	7.6%	\$0.16	32.30	\$2.24	11.83
Jonesboro Economical Transportation System (AR)	7.4%	\$0.65	5.65	\$8.42	1.44
Jump Around Carson (NV)	8.9%	\$0.36	12.74	\$4.06	3.32
Pine Bluff Transit (AR)	4.4%	\$0.73	6.47	\$16.58	1.63



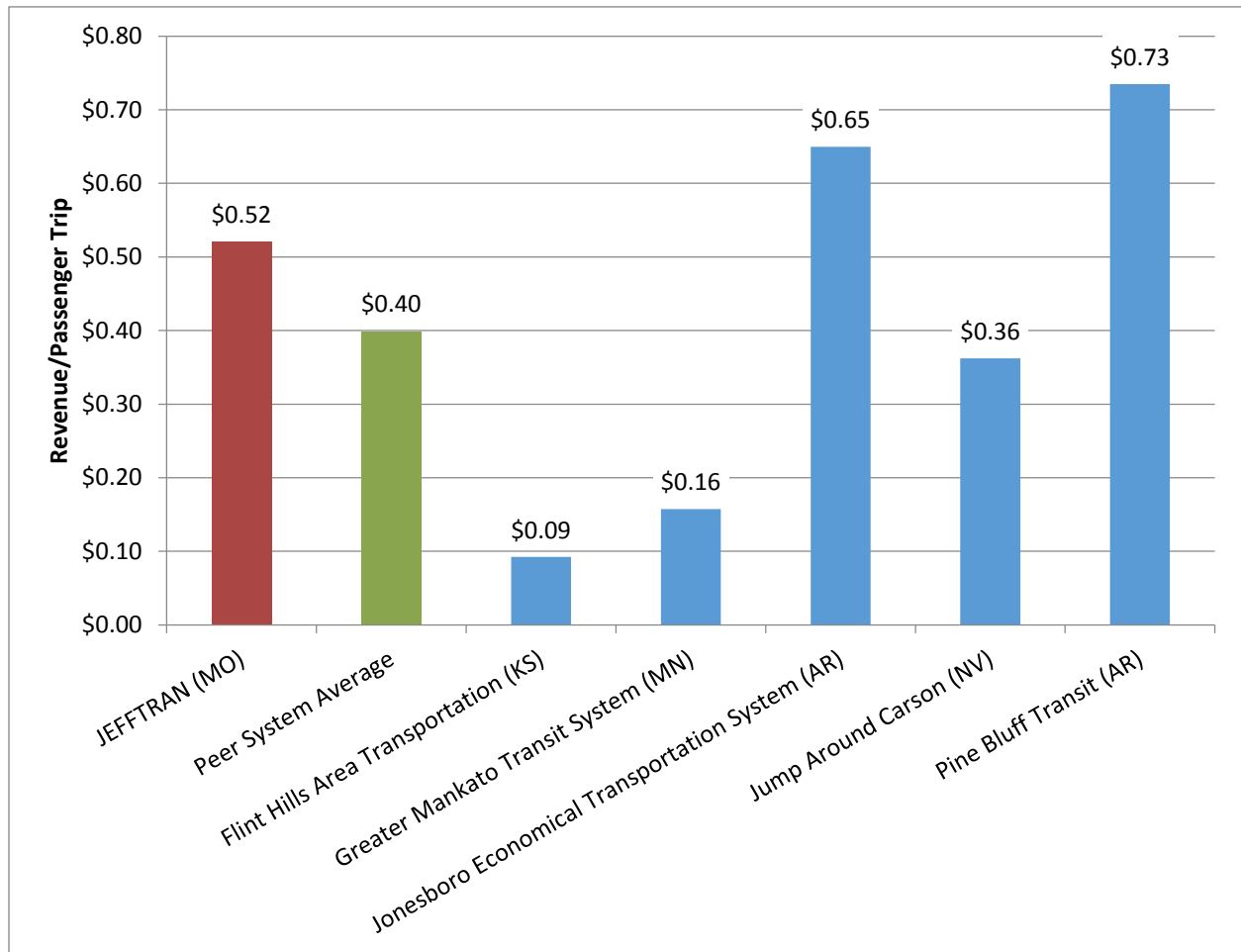
JEFFTRAN has the highest fixed route farebox recovery (farebox revenue as a percentage of operating cost) when compared to its peers, about 65% more than the average of its peer systems. This indicates that JEFFTRAN's fixed route services generate the largest amount of revenue per operating cost compared to its peers.

Figure 2-2: Fixed Route Peer Comparison – Farebox Recovery



JEFFTRAN's farebox revenue per passenger trip (averaging \$0.52/passenger trip during the five year analysis period) was higher than the average of its peer systems, although two peer systems had higher ratios. JEFFTRAN's current cash fare is \$1.00 for adults, with free transfers and \$0.50 for the reduced fare. Please refer to **Section 2.2** of this report for a more detailed breakdown of the fare structure.

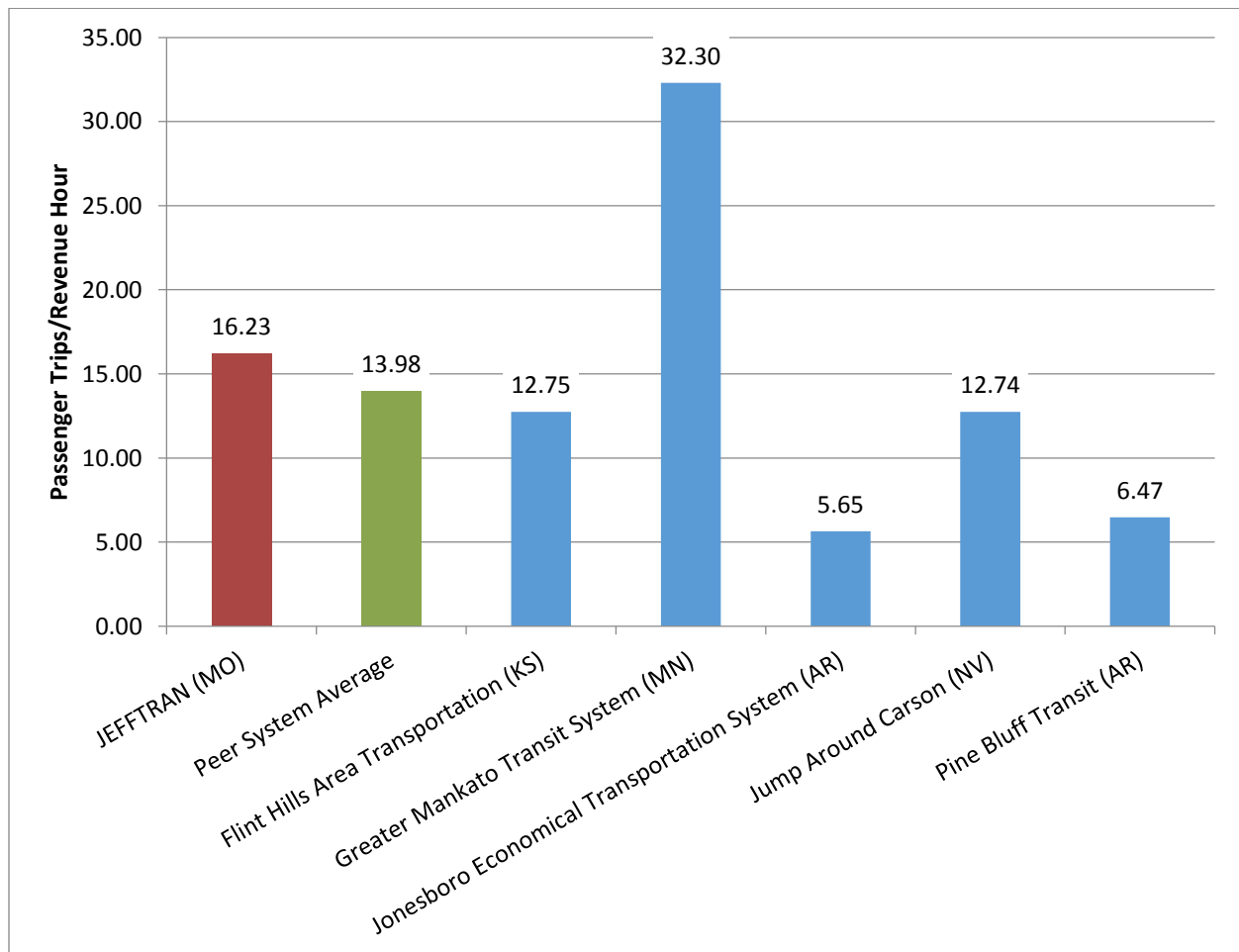
**Figure 2-3: Fixed Route Peer Comparison – Revenue/Passenger Trip**





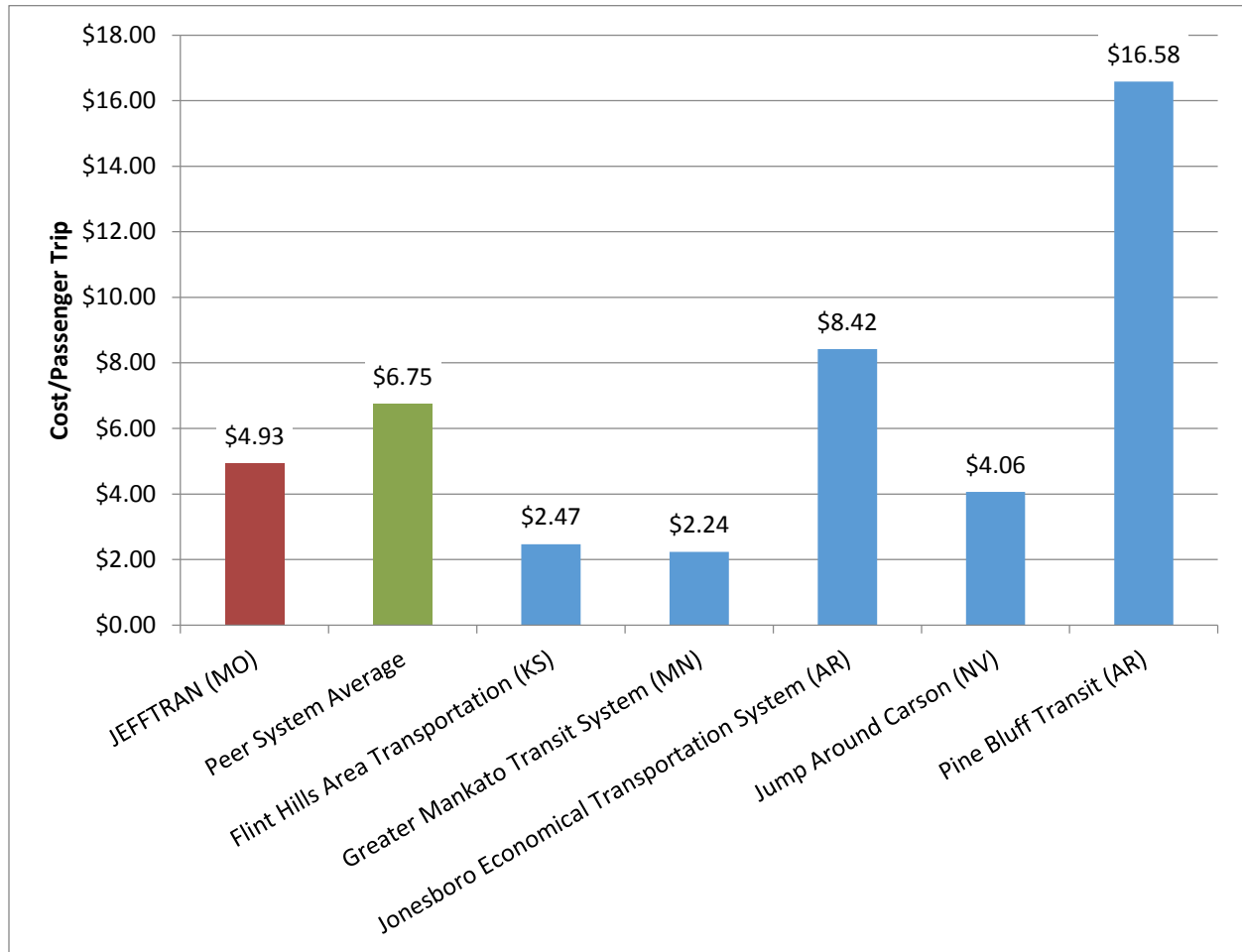
Passenger trips per revenue hour is a primary indicator of the efficiency of transit operations. Most operating costs are driven by vehicle hours of service. JEFFTRAN has the second highest ratio of passenger trips per revenue hour (16.2) of its peer systems and is higher than the average of its peer systems (14.0).

Figure 2-4: Fixed Route Peer Comparison – Passenger Trips/Revenue Hour



Cost per passenger trip is another indicator of the efficiency of JEFFTRAN's fixed route operations. It has lower cost per passenger trip than the average of its peer systems, although three peer systems have a lower ratio.

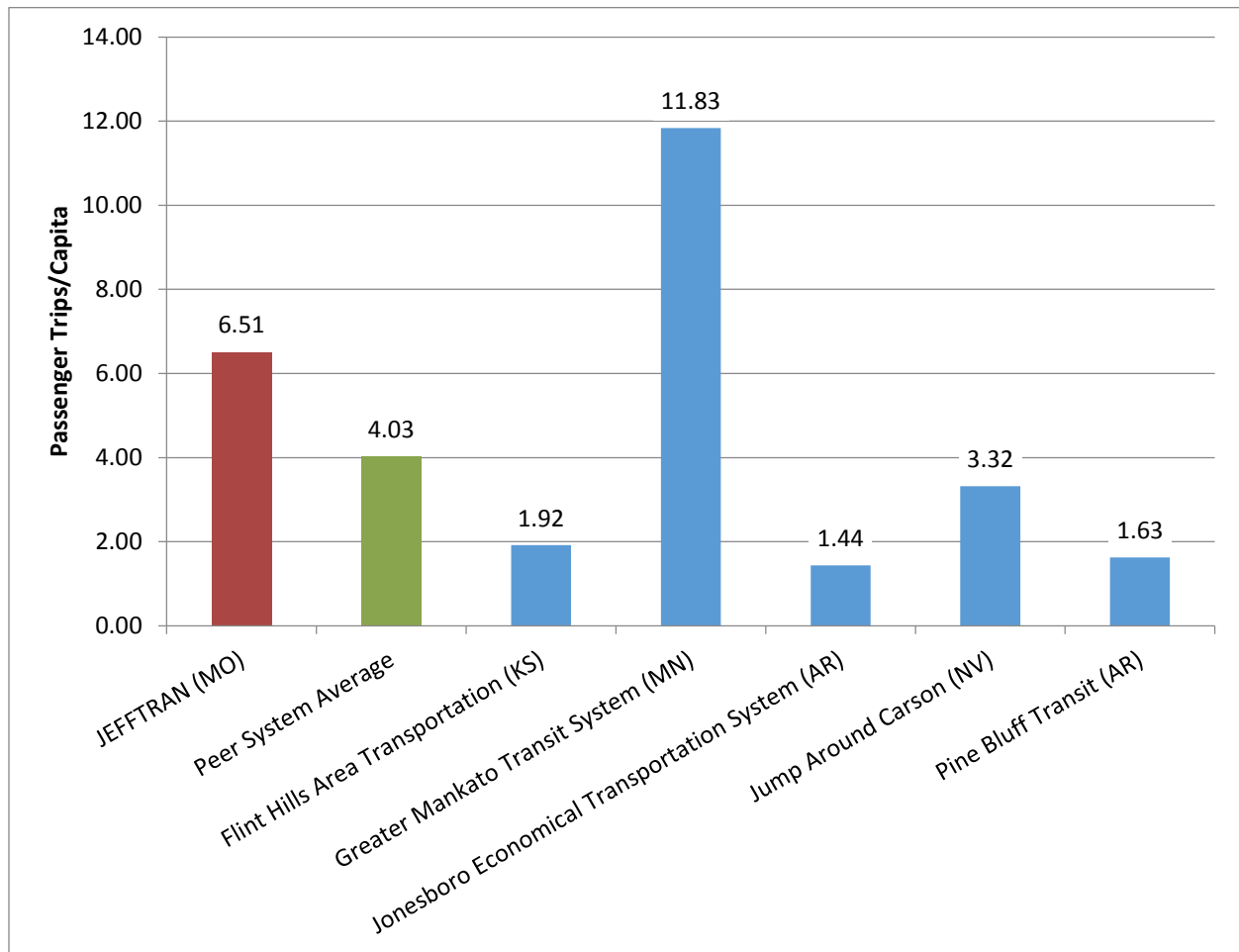
**Figure 2-5: Fixed Route Peer Comparison – Cost/Passenger Trip**





Passenger trips per capita show the number of annual trips on the fixed route system for each resident of the system's service area. JEFFTRAN has the second highest average passenger trips per capita (6.51), which is significantly greater than the average of its peer systems (4.03).

Figure 2-6: Fixed Route Peer Comparison – Passenger Trips/Capita



JEFFTRAN's fixed route operations compare favorably with its peer systems. It outperforms the average of its peer systems in all five categories and has the best or second best performance on three of the five categories.

Overall, this indicates that JEFFTRAN's management provides an effective level of cost control for fixed route operations. Performance on passenger trips per revenue hour also suggests there may be significant latent demand for added fixed route transit service.

### 2.4.3 Demand Response Comparison

**Table 2-8** compares the averages of major demand response operating statistics for JEFFTRAN with its five peer systems for the analysis period, 2011 through 2015. Not all peer systems submitted complete data sets for the entire analysis period. Therefore, all available NTD data provided by the Federal Transit Agency (FTA) was used with the incomplete data being noted as appropriate.

**Table 2-8: Demand Response Ridership and Operating Statistics – 2011 to 2015 NTD Average**

Transit System	Passenger Trips	Revenue Miles	Revenue Hours	Revenue	Total Operating Expenses
JEFFTRAN (MO)	56,524	217,150	14,918	\$58,289	\$918,558
Peer System Average	19,621	88,687	7,202	\$38,231	\$293,806
Flint Hills Area Transportation (KS)	57,756	247,020	16,944	\$106,970	\$603,749
Greater Mankato Transit System (MN)	9,887	45,805	4,462	\$27,207	\$234,448
Jonesboro Economical Transportation System (AR)	8,681	56,409	4,476	\$18,406	\$216,098
Jump Around Carson (NV)	17,723	63,655	7,314	\$31,174	\$340,902
Pine Bluff Transit (AR)	4,058	30,544	2,814	\$7,396	\$73,835

*Note: Flint Hills Area Transportation was missing all data from 2011 and 2012, while MTS, JETS and PBT were missing all 2011 data. Operating expense and revenue data was missing for 2012 for all transit systems. JETS and PBT demand response revenue data was not available for 2015.*

**Table 2-9** compares JEFFTRAN's demand response operating ratios with its peers while **Figures 2-7 to 2-11** depict the comparisons graphically.

**Table 2-9: Demand Response Ridership and Operating Ratios – 2011 to 2015 NTD Average**

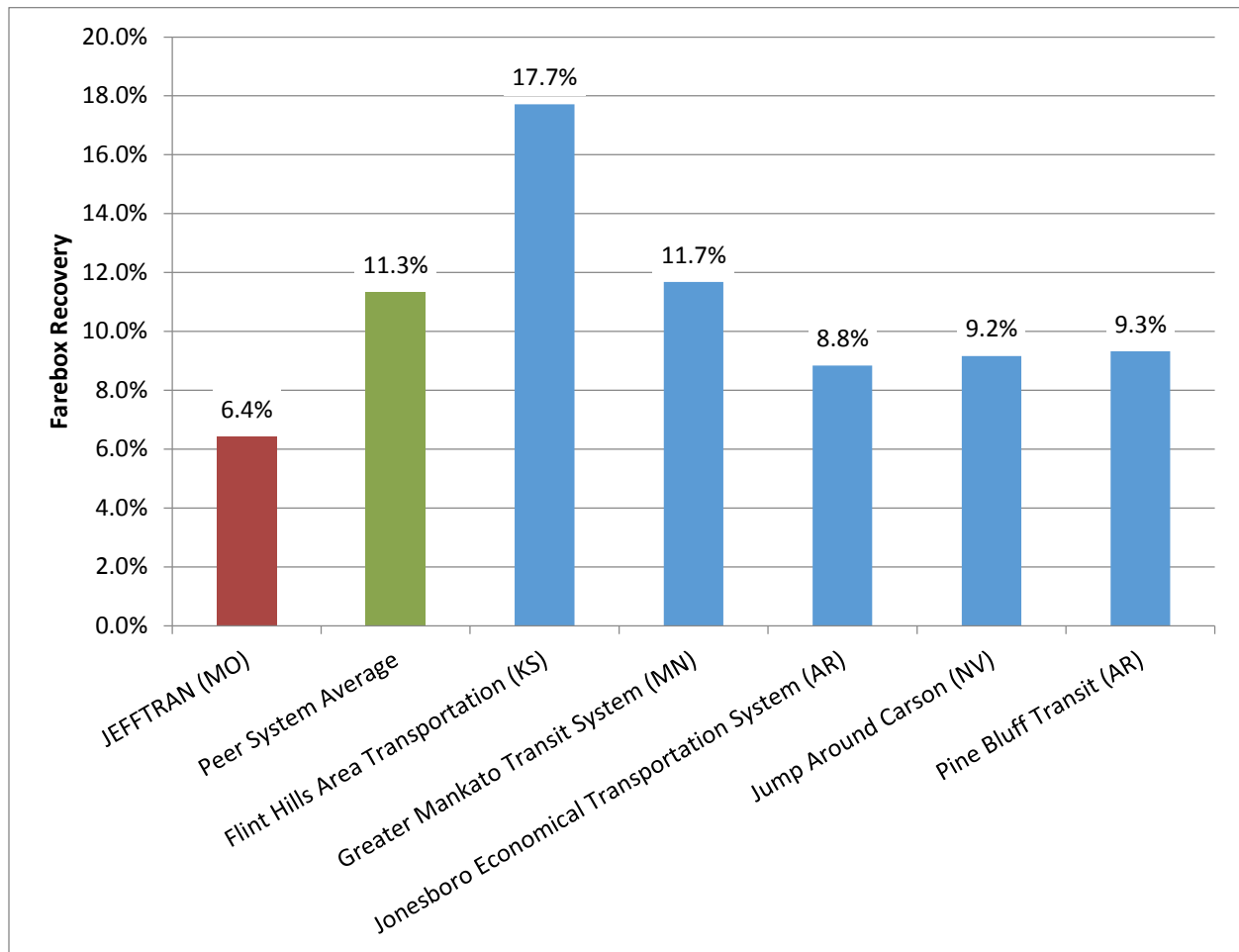
Transit System	Farebox Recovery	Revenue/ Passenger Trip	Passenger Trips/ Revenue Hour	Cost/ Passenger Trip	Passenger Trips/ Capita
JEFFTRAN (MO)	6.4%	\$1.04	3.79	\$16.37	1.31
Peer System Average	11.3%	\$2.06	2.30	\$19.37	0.24
Flint Hills Area Transportation (KS)	17.7%	\$1.90	3.44	\$10.75	0.42
Greater Mankato Transit System (MN)	11.7%	\$2.75	2.22	\$23.66	0.19
Jonesboro Economical Transportation System (AR)	8.8%	\$2.15	1.93	\$25.05	0.17
Jump Around Carson (NV)	9.2%	\$1.69	2.43	\$18.46	0.33
Pine Bluff Transit (AR)	9.3%	\$1.81	1.48	\$18.93	0.08





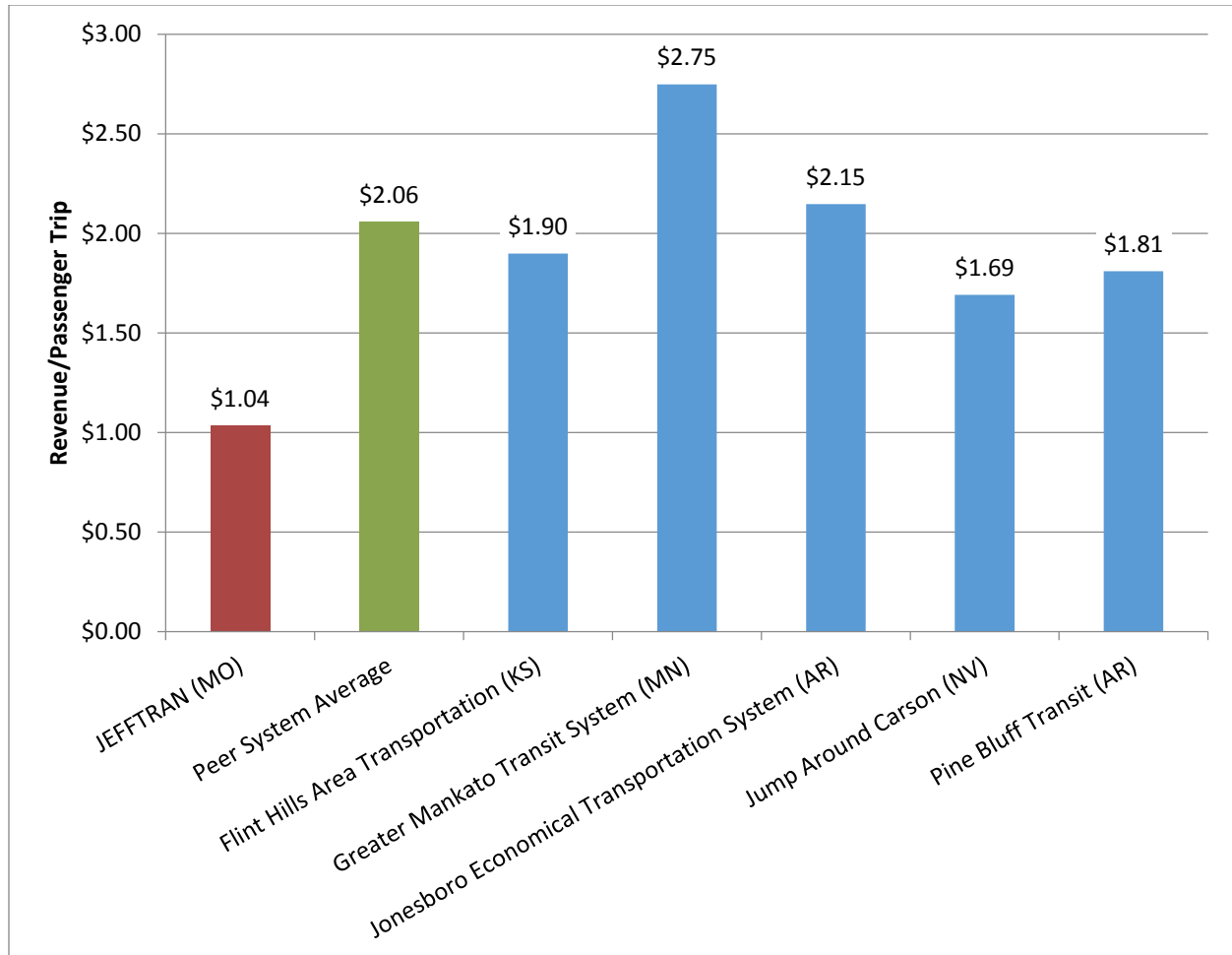
JEFFTRAN has the lowest demand response farebox recovery compared to its peers, close to half of the average of its peer systems. This is a significant variance compared with the fixed route farebox recovery ratio, which was about 65% more than the peer average.

Figure 2-7: Demand Response Peer Comparison – Farebox Recovery



JEFFTRAN's farebox revenue per passenger trip (\$1.04/passenger trip) is the lowest of its peer systems and is about half of the average (\$2.06/passenger trip).

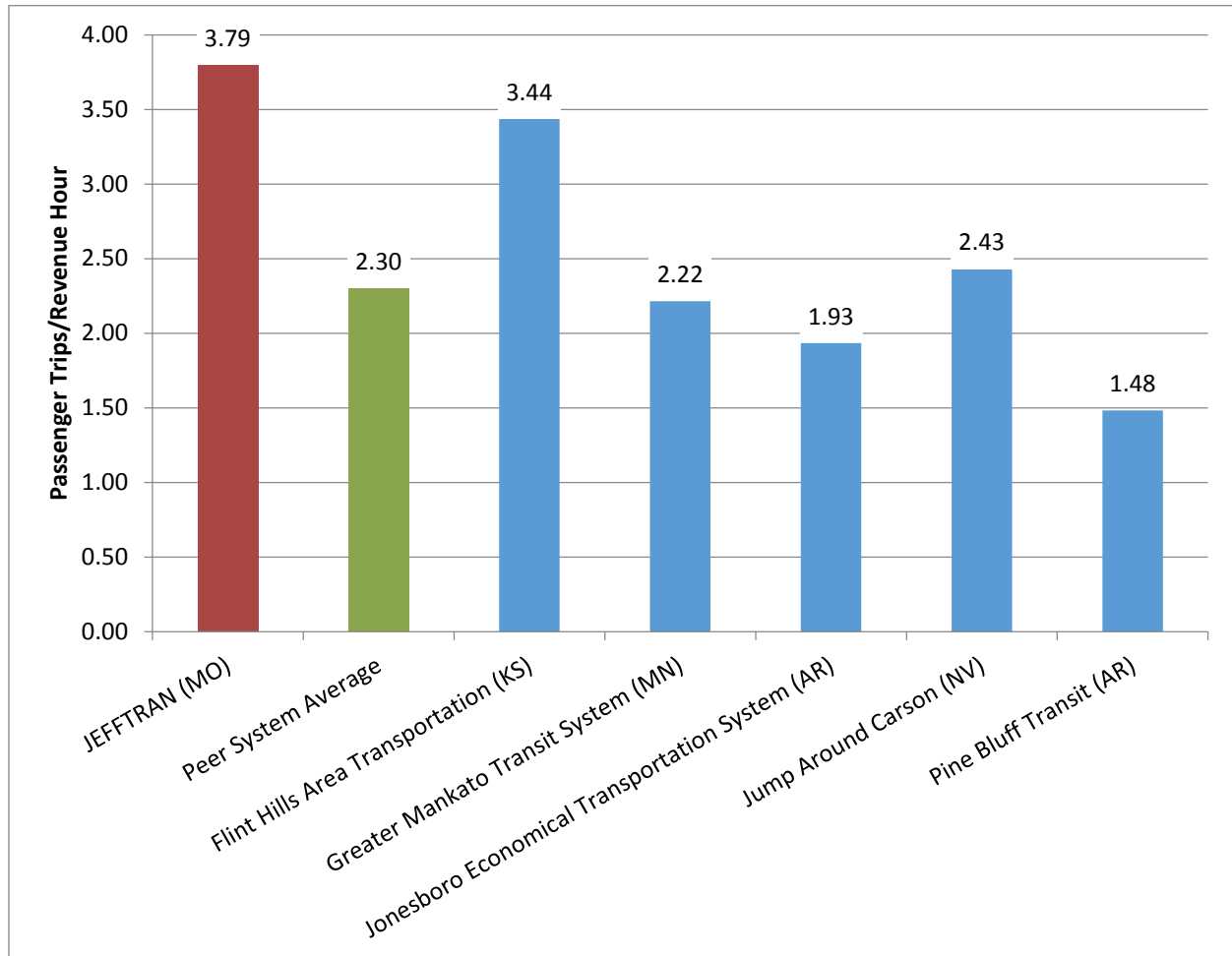
**Figure 2-8: Demand Response Peer Comparison –Revenue/Passenger Trip**





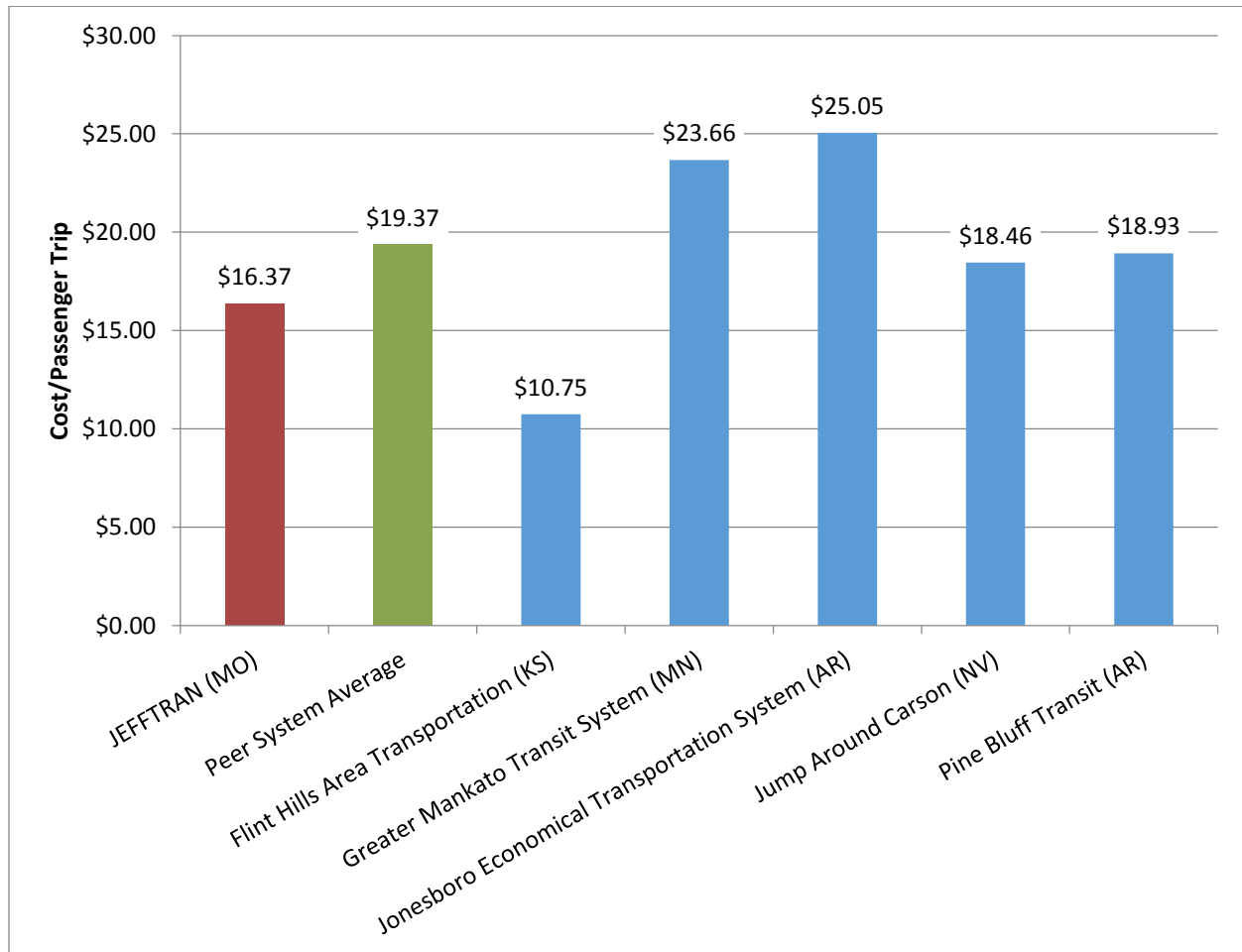
JEFFTRAN has the highest ratio of demand response passenger trips per revenue hour (3.79) of its peer systems. This indicates that JEFFTRAN has efficient dispatching practices in comparison with its peers.

Figure 2-9: Demand Response Peer Comparison – Passenger Trips/Revenue Hour



Cost per passenger trip is another indicator of the efficiency of JEFFTRAN's demand response operations. JEFFTRAN has a slightly lower cost per passenger than the average of its peer systems. This is due to the efficiency of dispatching practices (see previous discussion). However, overall operating expenses are high compared with the other peer systems.

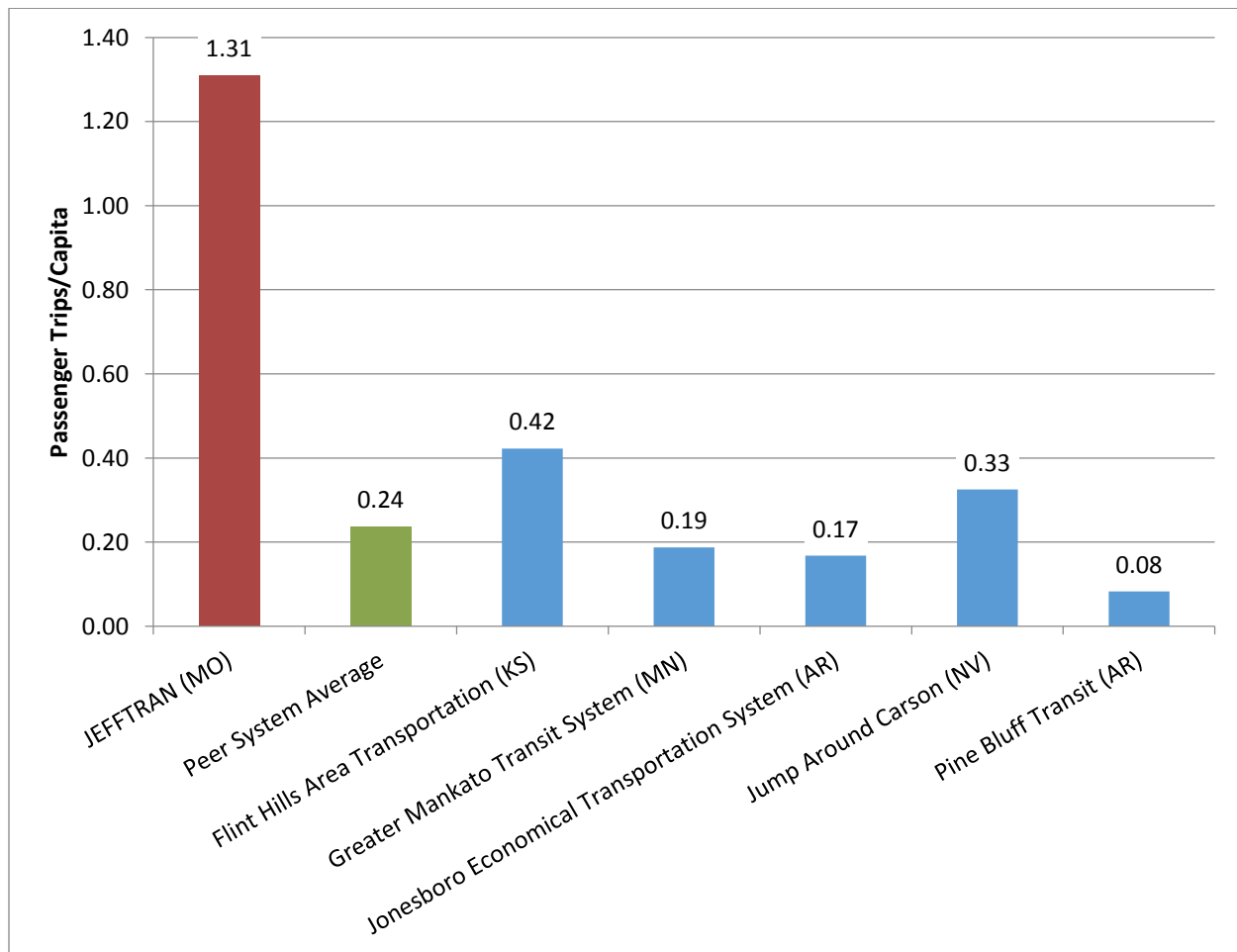
**Figure 2-10: Demand Response Peer Comparison – Cost/Passenger Trip**





**Figure 2-11** indicates that JEFFTRAN has the highest average passenger trips per capita (1.31). This is over five times greater than the average of its peer systems (0.24) and over three times greater than the next highest peer system, Flint Hills Area Transportation with a passenger trips per capita ratio of 0.42.

Figure 2-11: Demand Response Peer Comparison – Passenger Trips/Capita



Based on the preceding discussion, JEFFTRAN has the highest usage of demand response services relative to population compared with the peer systems. Not only does JEFFTRAN have the highest usage, but it is significantly higher. Its per capita usage is over three times greater than the next highest system and over five times greater than the average of the peer systems. **Table 2-10** below shows a comparison of demographic statistics for Jefferson City and the peer cities. Although Jefferson City has slightly higher elderly and disabled populations compared to the average of the peer cities, the difference is not significant enough to explain the excessively high use of demand response service.

**Table 2-10: Demographic Comparison to Peer Cities**

<b>Transit System Location</b>	<b>Total Population</b>	<b>% 65+</b>	<b>% Disabled</b>
Jefferson City, MO	43,186	13.7%	15.5%
<b>Average of Peer Cities</b>	<b>53,722</b>	<b>12.3%</b>	<b>14.5%</b>
Manhattan, KS	55,769	7.5%	7.8%
Mankato, MN	40,557	11.0%	9.0%
Jonesboro, AR	71,576	11.8%	15.6%
Carson City, NV	54,482	18.4%	21.4%
Pine Bluff, AR	46,228	12.9%	17.6%

*Source: 5 Year ACS Data – 2015 (Tables B01001 and S1810)*

Our conclusion is that this extremely high use of demand response service by JEFFTRAN riders is a reflection of its eligibility policies. JEFFTRAN management has acknowledged that its Handi-Wheels eligibility determinations have been broadly interpreted.

The Handi-Wheels eligibility application allows any of the following professionals to determine that a rider is unable to use JEFFTRAN's fixed route services: registered nurse, physician, social worker, psychologist, physical therapist, chiropractor, occupational therapist, speech pathologist, nurse practitioner, physician's assistant, mental health counselor, respiratory therapist, vocational rehabilitation counselor or recreation therapist employed by a medical facility. Many of these professionals lack medical qualifications to identify passenger eligibility under the Americans with Disabilities Act. It is our conclusion that these current eligibility determination policies allow many riders who do not satisfy FTA requirements for alternative service to use Handi-Wheels service. As a result, a large number of customers who could use fixed route service (at a cost of \$4.93 per trip) instead are determined eligible to use Handi-Wheels service (at a cost of \$16.37 per trip).

This use of Handi-Wheels by many more riders than JEFFTRAN's peer systems explains other trends. Serving additional riders causes JEFFTRAN's demand response operating expense to be significantly higher, resulting in the lowest farebox recovery among its peers. Other notable trends are reflected in subsequent paragraphs.



## 2.4.4 Fixed Route/Demand Response Breakdown

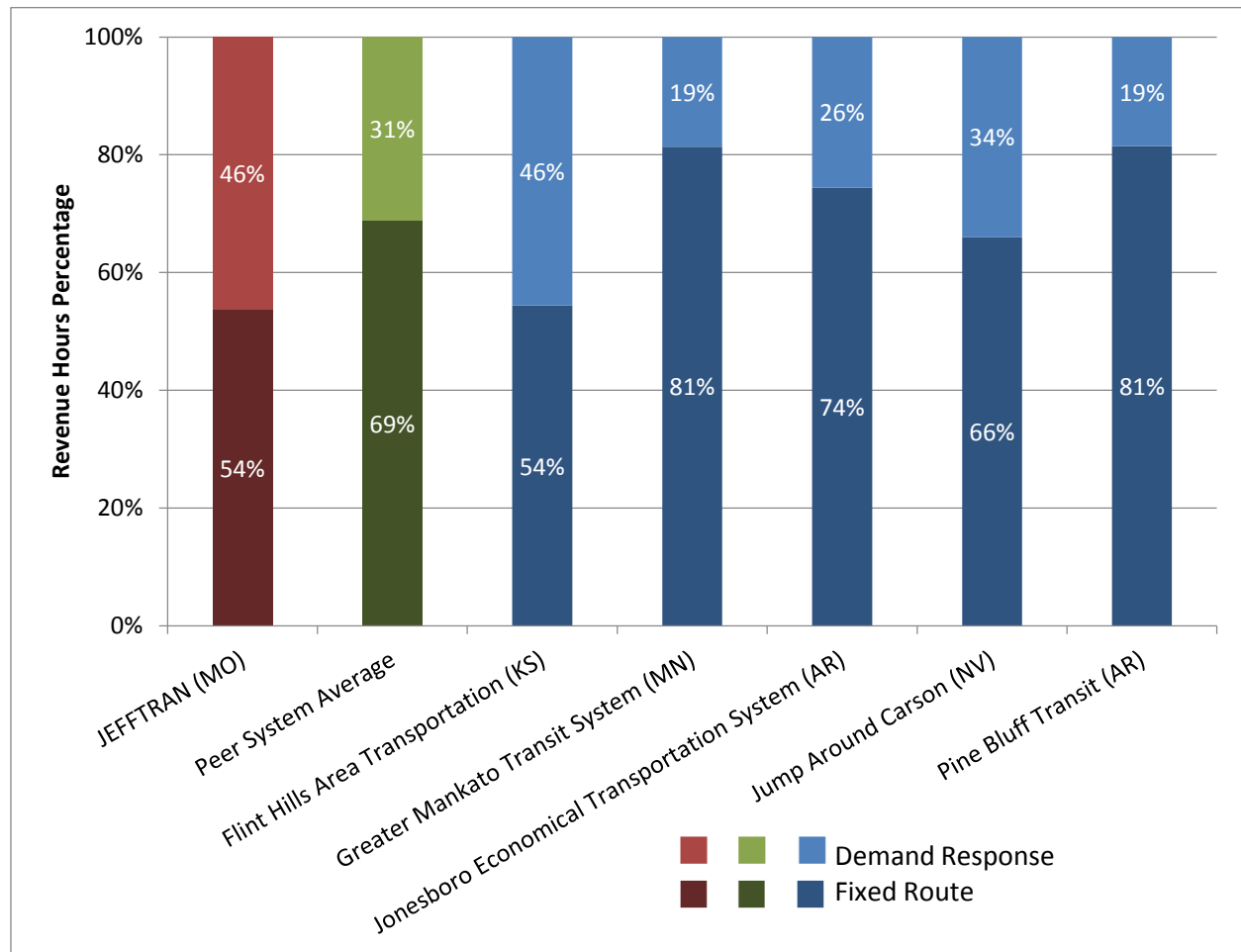
**Table 2-11** below shows JEFFTRAN's and its peer systems' breakdown for revenue hours and operating expense. For each transit system, the combined fixed route/demand response total is shown for revenue hours and operating expense with the percent allocated to each service type indicated as well. **Figures 2-12** and **2-13** illustrate the above mentioned comparison in graphical form.

**Table 2-11: Fixed Route/Demand Response Breakdown**

Transit System	Revenue Hours		Total Operating Expenses	
	Fixed Route	Demand Response	Fixed Route	Demand Response
JEFFTRAN (MO)	32,227 53.7%	46.3%	\$2,296,394 60.0%	40.0%
Peer System Average	23,065 68.8%	31.2%	\$1,269,865 76.9%	23.1%
Flint Hills Area Transportation (KS)	37,155 54.4%	45.6%	\$1,210,696 50.1%	49.9%
Greater Mankato Transit System (MN)	23,956 81.4%	18.6%	\$1,834,736 87.2%	12.8%
Jonesboro Economical Transportation System (AR)	17,513 74.4%	25.6%	\$878,485 75.4%	24.6%
Jump Around Carson (NV)	21,527 66.0%	34.0%	\$1,070,569 68.2%	31.8%
Pine Bluff Transit (AR)	15,177 81.5%	18.5%	\$1,354,839 94.6%	5.4%

Most operating costs are driven by vehicle hours of service. **Figure 2-12** below shows that JEFFTRAN allocates about 46% of its revenue hours to Handi-Wheels service which is nearly 50% more than the average of the other peer systems' allocation (31%) to demand response service.

**Figure 2-12: Fixed Route/Demand Response Revenue Hours Breakdown**

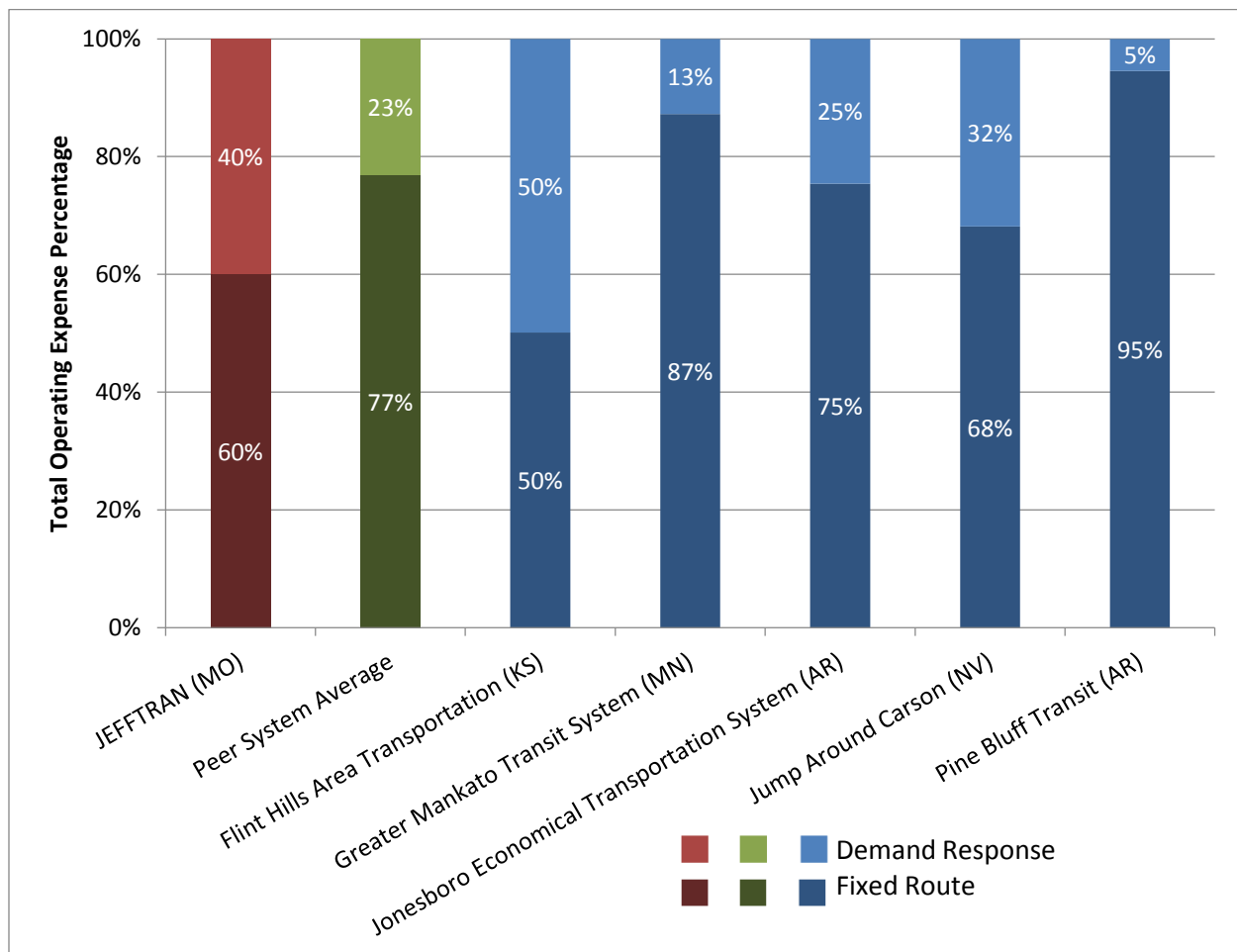






**Figure 2-13** indicates that JEFFTRAN's operating cost has a 40/60 split for demand response and fixed route services whereas the peer system average is a 23/77 operating expense split. This variance is very significant. The additional operating expense is the result of extending Handi-Wheels service to riders who may have some level of mobility limitation, but do not satisfy FTA eligibility requirements for alternative service. These funds could be utilized to enhance the fixed route services for the general population.

Figure 2-13: Fixed Route/Demand Response Operating Expense Breakdown



### 2.4.5 Summary of Funding Sources

Numerous NTD reports were researched to determine the various funding sources used by JEFFTRAN and its peer systems. **Tables 2-12** and **2-13** below show the funding breakdown for the average of NTD reporting years 2013 and 2014. Although system-wide totals were obtained, further breakdowns by service type (i.e. fixed route and demand response) were not available.

**Table 2-12: Funding Sources – Average of 2013 and 2014 NTD Reporting Years**

Transit System	Fare Revenue	Local Funds	State Funds	Federal Funds	Other Funds	Total
JEFFTRAN (MO)	\$208,500	\$846,686	\$22,855	\$941,005	\$63,231	\$2,082,276
Peer System Average	\$104,729	\$262,440	\$342,874	\$572,475	\$34,831	\$1,317,348
Flint Hills Area Transportation (KS)	\$122,854	\$257,468	\$176,831	\$559,573	\$88,551	\$1,205,276
Greater Mankato Transit System (MN)	\$137,912	\$147,323	\$987,766	\$374,487	\$28,583	\$1,676,069
Jump Around Carson (NV)	\$97,268	\$309,362	\$81,241	\$558,084	\$18,790	\$1,064,743
Pine Bluff Transit (AR)	\$60,885	\$335,607	\$125,658	\$797,757	\$3,399	\$1,323,306

*Note: Data for JETS was not included.*

**Table 2-13: Operating Funds Breakdown by Funding Sources (Average of 2013 and 2014 NTD Years)**

Transit System	Fare Revenue	Local Funds	State Funds	Federal Funds	Other Funds
JEFFTRAN (MO)	10.0%	40.7%	1.1%	45.2%	3.0%
Peer System Average	8.0%	19.9%	26.0%	43.5%	2.6%
Flint Hills Area Transportation (KS)	10.2%	21.4%	14.7%	46.4%	7.3%
Greater Mankato Transit System (MN)	8.2%	8.8%	58.9%	22.3%	1.7%
Jump Around Carson (NV)	9.1%	29.1%	7.6%	52.4%	1.8%
Pine Bluff Transit (AR)	4.6%	25.4%	9.5%	60.3%	0.3%

*Note: Data for JETS was not included.*

**Table 2-13** indicates that the percentage of total operating funds obtained from fare revenue is above the average for JEFFTRAN, which has the second highest percentage compared to its peer systems. JEFFTRAN also has the highest percentage of total operating funds from local funds, over double the average of the peer systems. The peer systems on average obtain 26% of their operating funds from state funding whereas JEFFTRAN only obtains about 1%. JEFFTRAN obtains a similar percentage of its operating funds from federal funds and other funding sources when compared to its peer systems.

### 2.4.6 Peer Systems Comparison Summary

The peer system comparison concluded that JEFFTRAN's fixed route operations compare favorably with its peer systems. It outperforms the average of its peer systems in all five categories and has the best or second best performance in three of the five categories. Performance on passenger trips per revenue hour also suggests there may be significant latent demand for added fixed route transit service.

The demand response peer comparison indicated that JEFFTRAN has over five times greater usage of demand response services relative to population than the average of the peer systems. This



extremely high use of demand response service by JEFFTRAN riders is a reflection of its liberally-administered eligibility policies. JEFFTRAN staff members have discussed their awareness of the Handi-Wheels' generous eligibility policies with Lochmueller Group. However, it is unlikely that the full implication of these eligibility policies has been clear until this recent report.

JEFFTRAN currently allocates 40% of its operating cost to demand response services. This is significantly more than its peer systems, which on an average spend 23% of their operating expense for demand response services. By redirecting some of these funds to enhance fixed route services, JEFFTRAN can greatly improve the quality of service to the general population.

### 3. Operating Cost Model

JEFFTRAN's recent National Transit Database (NTD) Annual Reports were used to determine operating cost allocations for JEFFTRAN's fixed route and Handi-Wheels service for the two most recent NTD reporting years (2015 and 2016). JEFFTRAN's NTD reporting year is from November 1 of the previous year to October 31 of the NTD reporting year. For example, the 2015 NTD report includes data from November 1, 2014 to October 31, 2015.

The operating cost models will be used for estimating the costs of new or modified services similar to those currently operated by JEFFTRAN (fixed route and demand response services). Unit costs for JEFFTRAN services are provided below. The worksheet showing the derivation of these unit costs is provided in **Appendix B**. All costs are allocated to total revenue hours operated and total operated revenue miles. The costs shown in the below table were allocated to the following categories.

- **Revenue Miles** – Vehicle maintenance costs (labor and parts) and fuel costs.
- **Revenue Hours** – All other operating costs.

**Table 3-1: JEFFTRAN Operating Cost Model**

	Fixed Route	Handi-Wheels
Cost/Revenue Hour	\$59.60	\$55.52
Cost/Revenue Mile	\$1.19	\$0.55



## 4. Route Assessments

JEFFTRAN provides service on six regular bus routes throughout the day and three special routes (“Tripper Routes”) which operate only one trip daily during the school year. On-board counts were conducted on Wednesday, March 29, 2017 and Thursday, March 30, 2017<sup>5</sup>. Ridership and boarding/alighting counts were collected by stop for each trip of every route including the Tripper Routes. In addition to these counts, transfers between routes were also collected. Lastly, actual bus arrival times were recorded at the major stops of each route (as specified in the route maps published by JEFFTRAN). These major stops were also used to break the routes into multiple segments for analysis purposes. It is important to note that the reported data is based on the counts which took place over a two day span. However, follow-up analyses normalize these counts to reflect typical year-round ridership on each route.

Jefferson City provided electronic files for digitized versions of each route. GIS tools along with the on-board counts were used to estimate segment/route lengths, passengers per mile, daily passenger-miles and other statistics. A few pertinent definitions are listed below.

- Route Segment: A subsection of a route between two major stops as specified in the route maps published by JEFFTRAN.
- Daily Passenger-Miles (Day of Count): The passenger-miles served by a particular route estimated from the on-board counts and files provided by Jefferson City in conjunction with GIS tools.
- Peak Load: The largest number of passengers on any bus throughout the day for a particular route or segment.

Five out of the six regular routes start and end at the transfer station (820 East Miller Street). The Capital Mall Route is the only route that does not stop at the transfer station. Missouri Boulevard is the only route that connects to Capital Mall. Passengers that transfer onto the Capital Mall Route must transfer from the Missouri Boulevard Route. The term “through-riding transfers” refers to passengers that transfer from any regular route through Missouri Boulevard to Capital Mall or vice versa.

Each of the six regular routes has 17 trips per day. Passengers may board a bus on one trip and alight on another trip. These riders are referred to as “through-riding passengers.” Riders often continue the route they board at one of the last inbound stops and disembark at a stop on the next trip. It should be noted that buses typically take different inbound and outbound routes near the bus transfer center.

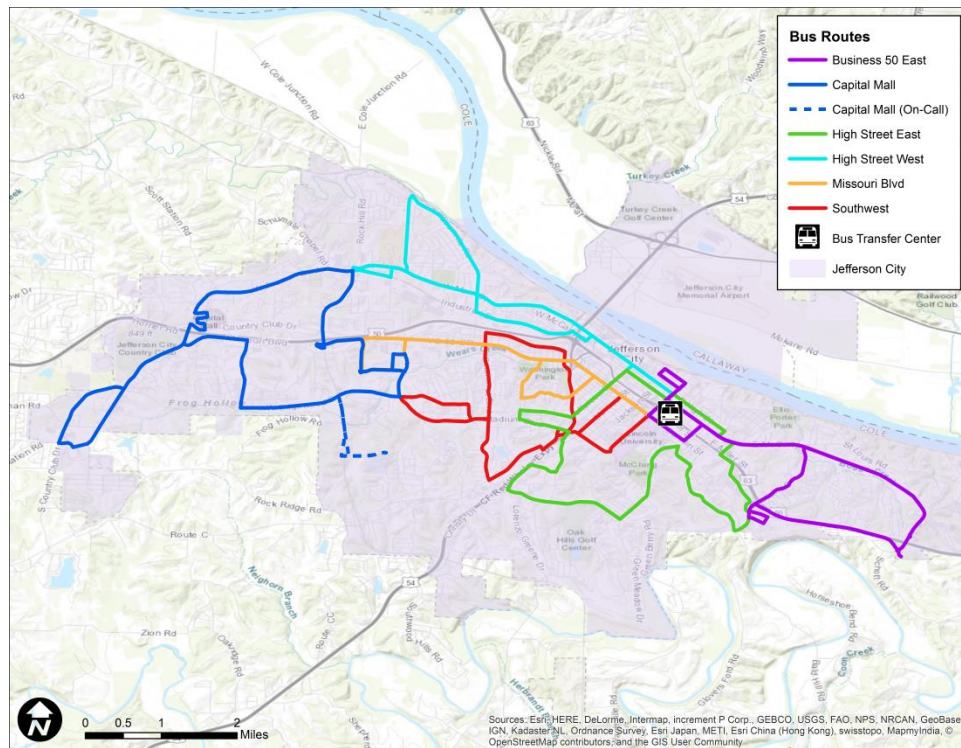
### 4.1 Overall Route Comparisons

As mentioned previously, JEFFTRAN provides service on six regular bus routes and three Tripper Routes shown in **Figures 4-1** and **4-2**. Please refer to **Appendix C** for the full size version of these figures.

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<sup>5</sup> JEFFTRAN recently awarded a contract to install APC (Automatic Passenger Counter) equipment. It is anticipated that the equipment will be operational by early 2018 which will allow on-board count data to be obtained routinely at no additional cost.

**Figure 4-1: JEFFTRAN Routes**



**Figure 4-2: Tripper Routes**

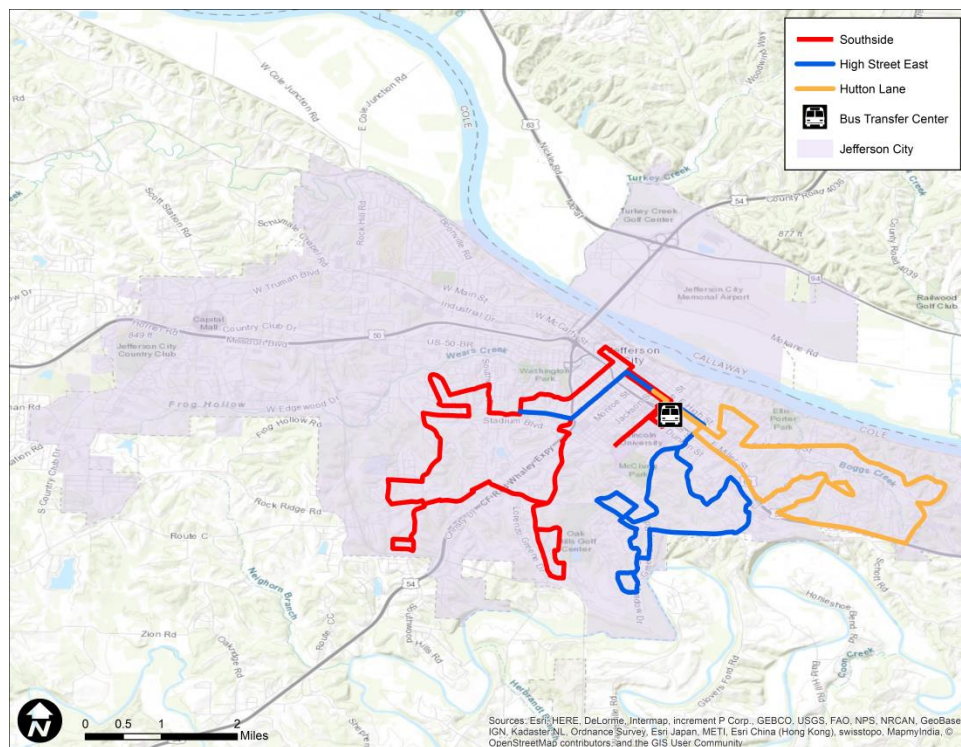






Table 4-1: JEFFTRAN Route Ridership Comparison

Route	Length (miles)	Count Date	Day of Count		Average 2016 Weekday	
			Daily Passenger-Miles	Daily Ridership	Daily Passenger-Miles	Daily Ridership
Business 50 East	11.6	3/29	636	131	845	174
Capital Mall	13.8	3/30	604	93	825	127
High Street East	11.3	3/29	408	78	518	99
High Street West	11.1	3/29 & 3/30	448	121	485	131
Missouri Boulevard	9.1	3/30	1,006	294	1,163	340
Southwest	10.4	3/30	224	51	404	92

**Table 4-1** above summarizes key information for each route. The on-board counts were conducted over a two day span, with some routes being surveyed on Wednesday, March 29, 2017 while other routes were surveyed on Thursday, March 30, 2017. The “Count Date” column specifies which day each route was surveyed.

The boarding and alighting count data was used to calculate daily passenger-miles and ridership for the specific day of the count. However, to better represent typical operating conditions throughout the year, the data was annualized to show daily averages for a typical weekday in 2016. The annual normalization calculations assume that the average trip lengths on the day of the count do not differ from those on a typical weekday in 2016.

Missouri Boulevard is by far the heaviest used route followed by Business 50 East. Missouri Boulevard served over double the number of riders on the day of the count than the next heaviest used route. Southwest is the least used route in terms of both ridership and passenger-miles served. Please refer to **Table 4-1** for complete details regarding the ridership and passenger-miles served by each route.

Table 4-2: JEFFTRAN Route Level Performance Statistics

Route	Daily Vehicle Miles	Daily Operating Cost	Cost/ Passenger	Passengers/ Hour	Passengers/ Route Mile	Passengers/ Vehicle Mile
Business 50 East	197	\$920.07	\$5.29	15.1	15.0	0.88
Capital Mall	228	\$926.56	\$7.30	11.5	9.2	0.56
High Street East	192	\$914.00	\$9.23	8.6	8.8	0.52
High Street West	189	\$909.95	\$6.95	11.4	11.8	0.69
Missouri Boulevard	155	\$869.49	\$2.56	29.6	37.4	2.20
Southwest	177	\$895.79	\$9.74	8.0	8.8	0.52

*Note: Passengers are based on average 2016 weekday ridership from **Table 4-1**.*

**Table 4-2** above shows additional route level performance statistics. Due to the large number of riders that Missouri Boulevard serves, it has the lowest cost per passenger as well as the highest passengers per hour, route mile and vehicle mile. Southwest has the highest cost per passenger as well as the lowest passengers per hour, route mile and vehicle mile.



## 4.2 Individual Route Profiles

The following pages include route profile summaries for each of the JEFFTRAN routes. Each page includes a map of the route with a  $\frac{1}{4}$  and  $\frac{1}{2}$  mile buffer around the route bus stops. Each page also includes demographic data for the area within the two buffer areas. The same definitions and sources were used as the city and county-wide demographic data.

Please refer to **Appendix C** for full size version of the maps included in this section of the report.





### 4.2.1 Business 50 East

The map below shows the Business 50 East route with a ¼ and ½ mile buffer area around the route bus stops. Following the map are tables showing demographic information within these buffer areas. Additional tables show ridership and running time information as well as route transfer information. It is important to note the on-call portion of the route which is served by the first trip of the day and is then “on-call” for the remainder of the day.

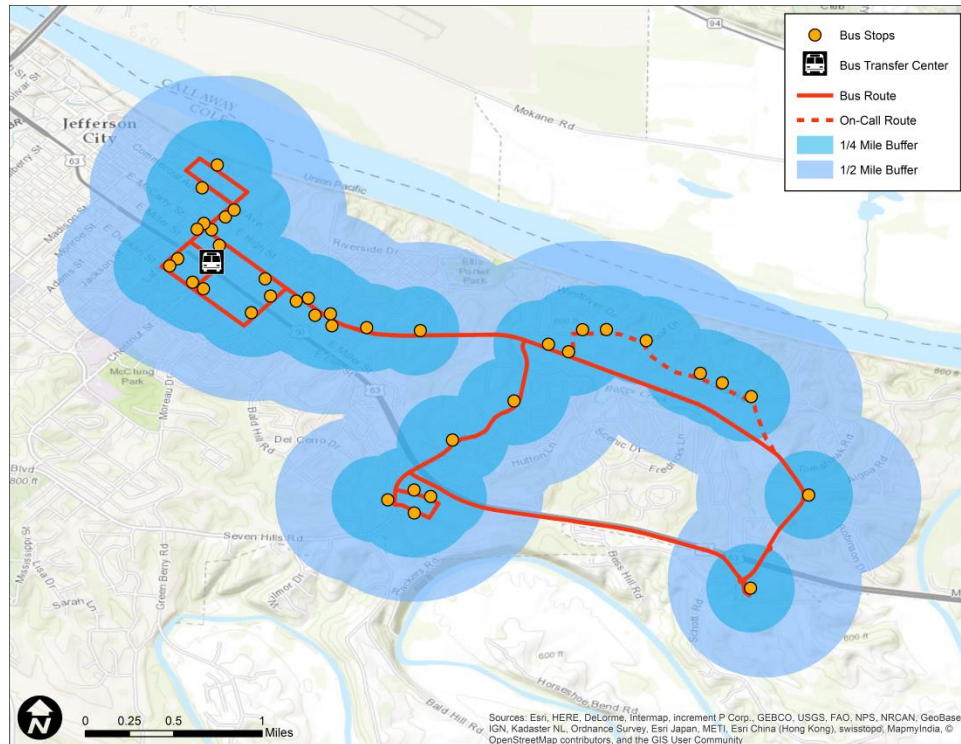


Table 4-3: Business 50 East – Route Demographic Tables

Age	Total Population	Age 0-19	Age 20-59	Age 60+
¼ Mile Buffer	4,218	32.0%	55.6%	12.4%
½ Mile Buffer	8,442	31.6%	54.7%	13.6%

Households	Total Households	Owner Occupied	Renter Occupied
¼ Mile Buffer	1,678	45.1%	54.9%
½ Mile Buffer	3,252	50.6%	49.4%

Race/Ethnicity	White	Black	Nat Am/Alaska Nat	Asian	Haw Pac Islander	Other	2 or more races	Hispanic/Latino
¼ Mile Buffer	64.2%	28.5%	0.1%	0.6%	0.0%	1.9%	2.3%	2.4%
½ Mile Buffer	64.6%	27.9%	0.2%	0.5%	0.0%	2.4%	2.1%	2.2%

Educational Attainment*	No HS Diploma/GED	HS Diploma/GED	College Degree
¼ Mile Buffer	8.8%	51.3%	39.9%
½ Mile Buffer	8.6%	51.9%	39.5%

*\*Highest level completed for those aged 25 and above*

Employment Status*	Employed	Unemployed
¼ Mile Buffer	87.5%	12.5%
½ Mile Buffer	89.2%	10.8%

*\*Includes only those in the labor force*

The unemployment rate for both the ¼ and ½ mile buffer are more than double the city's unemployment rate (5.1% from **Table 2-3**, page 15).

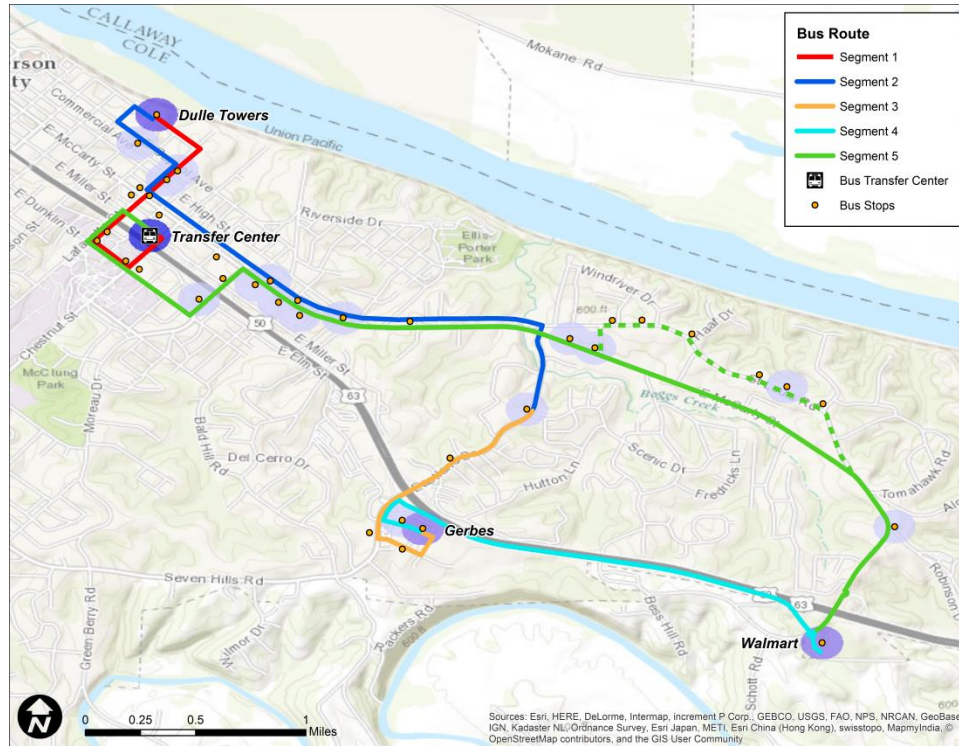
Household Income	< \$25,000	\$25,000 - \$50,000	\$50,000 - \$75,000	\$75,000 - \$100,000	> \$100,000
¼ Mile Buffer	29.4%	32.1%	20.5%	10.0%	8.0%
½ Mile Buffer	28.3%	32.1%	20.4%	9.8%	9.4%

Vehicles Owned	0 Vehicle Household	1 Vehicle Household	2 Vehicle Household	3 Vehicle Household	4 Vehicle Household	5+ Vehicle Household
¼ Mile Buffer	15.9%	41.8%	32.1%	8.7%	1.3%	0.1%
½ Mile Buffer	13.1%	40.2%	34.3%	10.3%	1.9%	0.3%

Employment	Total Employment	Retail Employment	Service Employment	Government Employment
¼ Mile Buffer	5,777	444	594	2,850
½ Mile Buffer	10,077	830	969	4,621



The following map indicates the high passenger boarding locations with the dark purple color. The darker the purple, the greater the number of passenger boardings. The transfer facility is the most heavily used bus stop, accounting for over a third of passenger boardings, followed by the stop at Dulle Towers which serves nearly 17% of boardings. Other prominent stops include the Gerbes Superstore as well as Walmart.



The subsequent tables report the actual data collected on the day of the count. However, to better represent typical operating conditions throughout the year, an annual normalization factor may be multiplied to reflect a typical weekday in 2016. For Business 50 East, the annual normalization factor is 1.33 (174/131) based on **Table 4-1**.

**Table 4-4: Business 50 East – Ridership by Segment**

Segment	Start Location	Riders On	Riders Off	Average Riders on Bus	Peak Load	Segment Length	Passengers/Route Mile
1	Transfer Facility 820 E. Miller Street	49	4	3.6	11	1.2	22
2	10 Jackson St. @ Hamilton & Dulle Towers	31	37	3.3	13	2.6	13
3	Lewis & Clark Middle School	2	5	3.0	10	1.2	3
4	Gerbes Superstore on Eastland Dr.	13	16	2.8	10	2.1	7
5	Wal-Mart East	36	69	3.3	11	4.5	12
Total		131	131	3.2	13	11.6	11

*Note: Passengers per Route Mile are calculated as (Riders On + Riders Off) / (2\*Segment Length).*

As mentioned previously, each route was broken into multiple segments based on stops provided in JEFFTRAN's public schedules. The riders on/off columns indicate the number of riders that boarded/alighted the bus at any stop within the segment during the entire day that was surveyed. The "Average Riders on Bus" column indicates the average number of riders that would be on any bus for a particular segment. The "Peak Load" column refers to the largest number of passengers on any bus throughout the day for a particular segment.

**Table 4-5: Business 50 East – Ridership by Time Period**

Trip Start Time	Ridership	Trip Start Time	Ridership
6:40 a.m.	11	12:40 p.m.	8
7:20 a.m.	15	1:20 p.m.	10
8:00 a.m.	3	2:00 p.m.	6
8:40 a.m.	7	2:40 p.m.	15
9:20 a.m.	3	3:20 p.m.	16
10:00 a.m.	6	4:00 p.m.	9
10:40 a.m.	6	4:40 p.m.	8
11:20 a.m.	8	5:20 p.m.	3
12:00 p.m.	12	Total*	146

*\*Total is higher than previous table due to **through-riding passengers**. These passengers board the bus on its inbound trip to the transfer station and remain on the bus at the transfer station. Their final destination on the bus is at a stop somewhere on the outbound trip; these passengers board inbound buses as a matter of convenience.*

Also as mentioned earlier, each of the six regular routes has 17 different trips throughout the day. The trip start times are listed in the first column. The Ridership column indicates the total number of riders boarding the bus during the entire round trip including through-riding passengers. The best patronized trips are in the morning (7:20 a.m. trip) and afternoon (2:40 p.m. and 3:20 p.m. trips) followed by the midday (12:00 p.m. trip).

**Table 4-6: Business 50 East – Route Running Times**

Travel Time	Scheduled	Average	Max	Min
Segment 1	5.0	6.8	12.0	4.0
Segment 2	10.0	8.6	12.0	7.0
Segment 3	3.0	3.4	5.0	2.0
Segment 4	5.0	5.8	7.0	5.0
Segment 5	15.0	11.6	16.0	8.0
Total	38.0	36.1		

The scheduled bus times are appropriate based on observed running times.



Table 4-7: Business 50 East – Route Transfers

Transfer From	Number of Transfers	Percent of Total Riders
High St. West	8	6.1%
High St. East	5	3.8%
MO. Blvd.	14 (20)*	10.7% (15.3%)*
Southwest	3	2.3%
Capital Mall	6	4.6%
Business 50 E.	0	0.0%
Tripper	0	0.0%
Total	36	27.5%

\*Values in parentheses denote **through-riding transfers**. The larger number reflects 6 passengers from the Capital Mall Route which transfer to this route via the Missouri Boulevard Route.

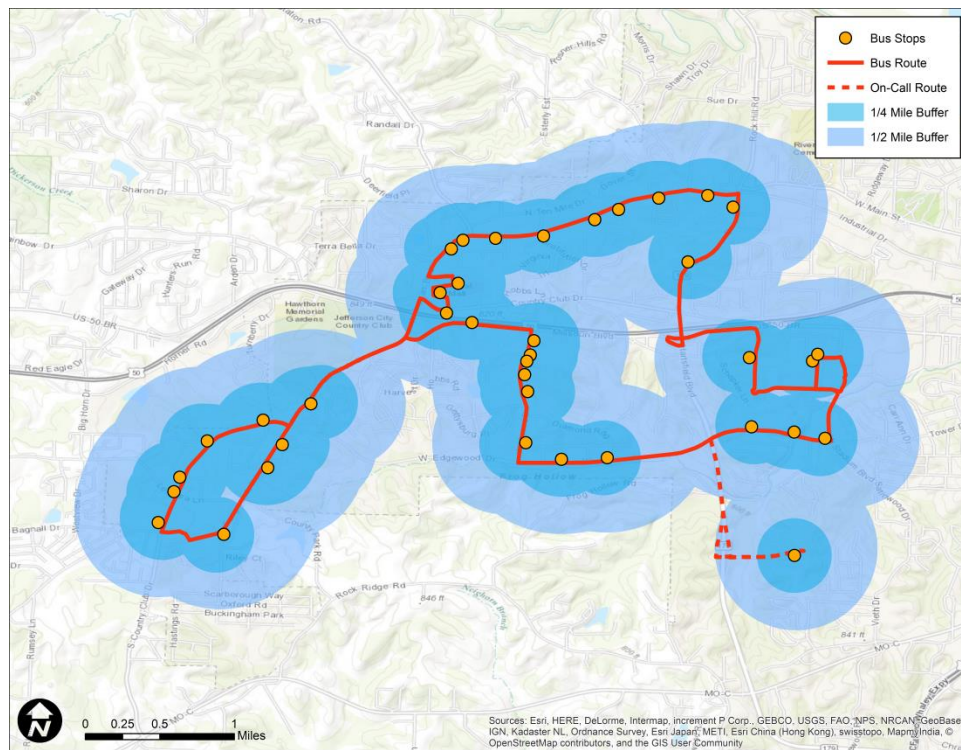
Over a quarter of all riders using this route transfer from another route. As mentioned previously, the only route that connects with Capital Mall is Missouri Boulevard. Therefore, any riders who transfer to/from Capital Mall excluding Missouri Boulevard are making a three-bus trip with two transfers. Although the pass-through transfer tickets were not collected, they did in fact occur and are taken into consideration with the through-riding transfers denoted in parentheses.



### 4.2.2 Capital Mall

The map below shows the Capital Mall route with a ¼ and ½ mile buffer area around the route bus stops. Following the map are tables showing demographic information within these buffer areas. Additional tables show ridership and running time information as well as route transfer information.

This route is unique in several aspects. First, it is the only route of the six non-Tripper routes that does not begin and end at the transfer station. Only the Missouri Boulevard route connects with Capital Mall. Second, the first trip of the day only serves half of the route taking approximately 20 minutes to complete. This puts Capital Mall on a slightly different schedule than the other routes with each new trip beginning 20 minutes earlier than the other routes. This allows for scheduled connections with the Missouri Boulevard route. The on-call portion of the route (serving St. Mary's Health Center) is served by the first trip of the day and is then "on-call" for the remainder of the day.



**Table 4-8: Capital Mall – Route Demographic Tables**

Age	Total Population	Age 0-19	Age 20-59	Age 60+
¼ Mile Buffer	2,461	20.3%	50.5%	29.3%
½ Mile Buffer	6,151	21.9%	51.3%	26.8%

Households	Total Households	Owner Occupied	Renter Occupied
¼ Mile Buffer	1,130	65.8%	34.2%
½ Mile Buffer	2,735	66.6%	33.4%



Race/Ethnicity	White	Black	Nat Am/Alaska Nat	Asian	Haw Pac Islander	Other	2 or more races	Hispanic/ Latino
¼ Mile Buffer	87.1%	6.8%	0.0%	1.1%	0.0%	0.0%	1.4%	3.5%
½ Mile Buffer	86.0%	7.6%	0.1%	1.4%	0.0%	0.0%	1.6%	3.4%

Educational Attainment*	No HS Diploma/GED	HS Diploma/GED	College Degree
¼ Mile Buffer	3.8%	43.5%	52.6%
½ Mile Buffer	4.0%	44.6%	51.3%

*\*Highest level completed for those aged 25 and above*

Employment Status*	Employed	Unemployed
¼ Mile Buffer	99.0%	1.0%
½ Mile Buffer	98.3%	1.7%

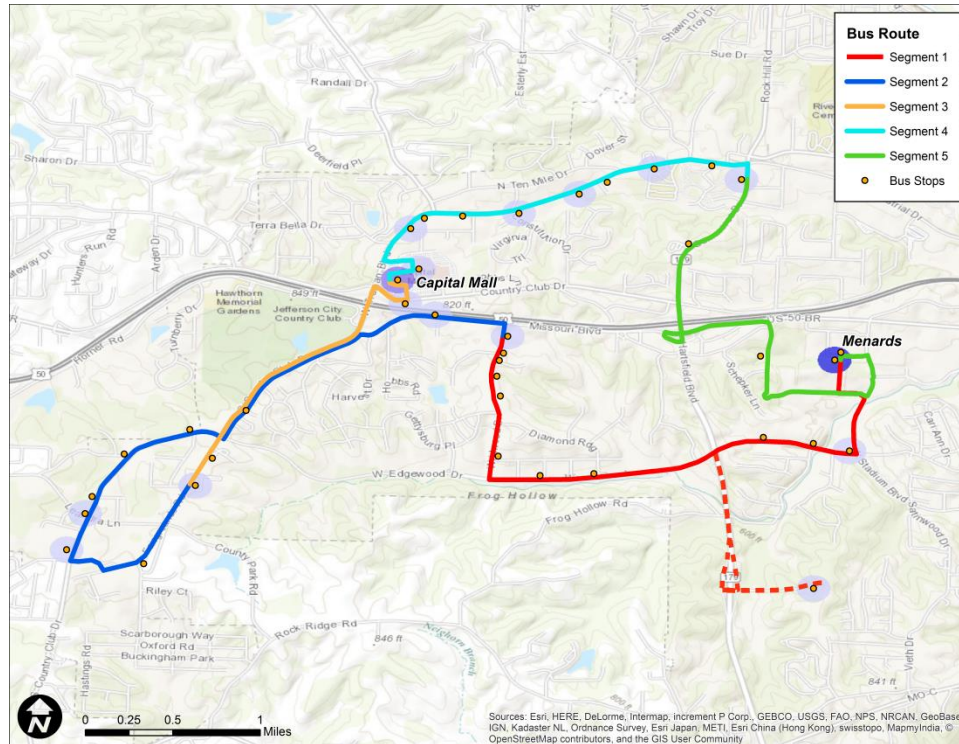
*\*Includes only those in the labor force*

Household Income	< \$25,000	\$25,000 - \$50,000	\$50,000 - \$75,000	\$75,000 - \$100,000	> \$100,000
¼ Mile Buffer	15.3%	18.6%	25.4%	13.8%	27.0%
½ Mile Buffer	14.3%	21.3%	25.2%	13.6%	25.6%

Vehicles Owned	0 Vehicle Household	1 Vehicle Household	2 Vehicle Household	3 Vehicle Household	4 Vehicle Household	5+ Vehicle Household
¼ Mile Buffer	4.0%	35.7%	40.5%	14.5%	3.5%	1.8%
½ Mile Buffer	3.7%	35.4%	41.2%	14.9%	3.2%	1.6%

Employment	Total Employment	Retail Employment	Service Employment	Government Employment
¼ Mile Buffer	7,050	1,258	846	1,970
½ Mile Buffer	13,067	2,191	1,549	3,679

The following map indicates the high passenger boarding locations with the dark purple color. The darker the purple, the greater the number of passenger boardings. The bus stop adjacent to the Menards development is the most heavily used bus stop, accounting for nearly half of passenger boardings. Second is the stop at Capital Mall at the East Food Court Entrance which serves nearly 14% of boardings.



The subsequent tables report the actual data collected on the day of the count. However, to better represent typical operating conditions throughout the year, an annual normalization factor may be multiplied to reflect a typical weekday in 2016. For Capital Mall, the annual normalization factor is 1.37 (127/93) based on **Table 4-1**.

**Table 4-9: Capital Mall – Ridership by Segment**

Segment	Start Location	Riders On	Riders Off	Average Riders on Bus	Peak Load	Segment Length	Passengers/Route Mile
1*	Menards	51	7	3.2	7	3.2	9
2	Wildwood Dr. @ Lowes Store Entrance	9	15	2.6	6	3.6	3
3	Thomas Jefferson Middle School	7	9	2.4	5	1.8	4
4	Capital Mall at East Food Court Entrance	24	23	2.5	6	2.3	10
5	Gerbes West @ Commerce Dr.	2	39	2.5	6	2.9	7
Total		93	93	2.7	7	13.8	7

\*Segment 1 excludes the On-Call portion of the route.

Note: Passengers per Route Mile are calculated as (Riders On + Riders Off) / (2\*Segment Length).





The most heavily used segment is the first one which includes the stop at the Menards development.

Table 4-10: Capital Mall – Ridership by Time Period

Trip Start Time	Ridership	Trip Start Time	Ridership
6:40 a.m.*	9	12:20 p.m.	5
7:00 a.m.	1	1:00 p.m.	4
7:40 a.m.	7	1:40 p.m.	7
8:20 a.m.	3	2:20 p.m.	7
9:00 a.m.	2	3:00 p.m.	5
9:40 a.m.	7	3:40 p.m.	8
10:20 a.m.	3	4:20 p.m.	10
11:00 a.m.	5	5:00 p.m.	7
11:40 a.m.	7	Total**	97

\*The 6:40 a.m. trip does not complete the full route.

\*\*Total is higher than previous table due to **through-riding passengers**. These passengers board the bus on its inbound trip to the transfer station and remain on the bus at the transfer station. Their final destination on the bus is at a stop somewhere on the outbound trip; these passengers board inbound buses as a matter of convenience.

The best patronized trips are in the morning (6:40 a.m. trip) and afternoon (4:20 p.m. trip).

Table 4-11: Capital Mall – Route Running Times

Travel Time	Scheduled	Average	Max	Min
Segment 1	8.0	8.7	13.0	7.0
Segment 2	4.0	8.8	13.0	7.0
Segment 3	8.0	5.1	8.0	4.0
Segment 4	6.0	7.0	11.0	5.0
Segment 5	9.0	7.2	17.0	5.0
Total	35.0	36.9		

The scheduled bus times are appropriate overall based on observed running times. However, Segment 2 of the route has insufficient scheduled running time (only 4 minutes are scheduled whereas it took 8.8 minutes on average) while Segment 3 has excessive schedule time (8 minutes are scheduled whereas it took 5.1 minutes on average). The variation in the scheduled and actual running times of these two segments balance each other out.

**Table 4-12: Capital Mall – Route Transfers**

Transfer From	Number of Transfers	Percent of Total Riders
High St. West	4	4.3%
High St. East	2	2.2%
MO. Blvd.	20 (41)*	21.5% (44.1%)*
Southwest	7	7.5%
Capital Mall	0	0.0%
Business 50 E.	8	8.6%
Tripper	0	0.0%
Total	41	44.1%

*\*Values in parentheses denote **through-riding transfers**. The larger number reflects 21 passengers transferring from the various routes to Capital Mall Route via the Missouri Boulevard Route.*

As mentioned previously, any transfers to/from Capital Mall can only occur via the Missouri Boulevard route. About 44% of all riders using this route transfer from another route.



### 4.2.3 High Street East

The map below shows the High Street East route with a ¼ and ½ mile buffer area around the route bus stops. Following the map are tables showing demographic information within these buffer areas. Additional tables show ridership and running time information as well as route transfer information.

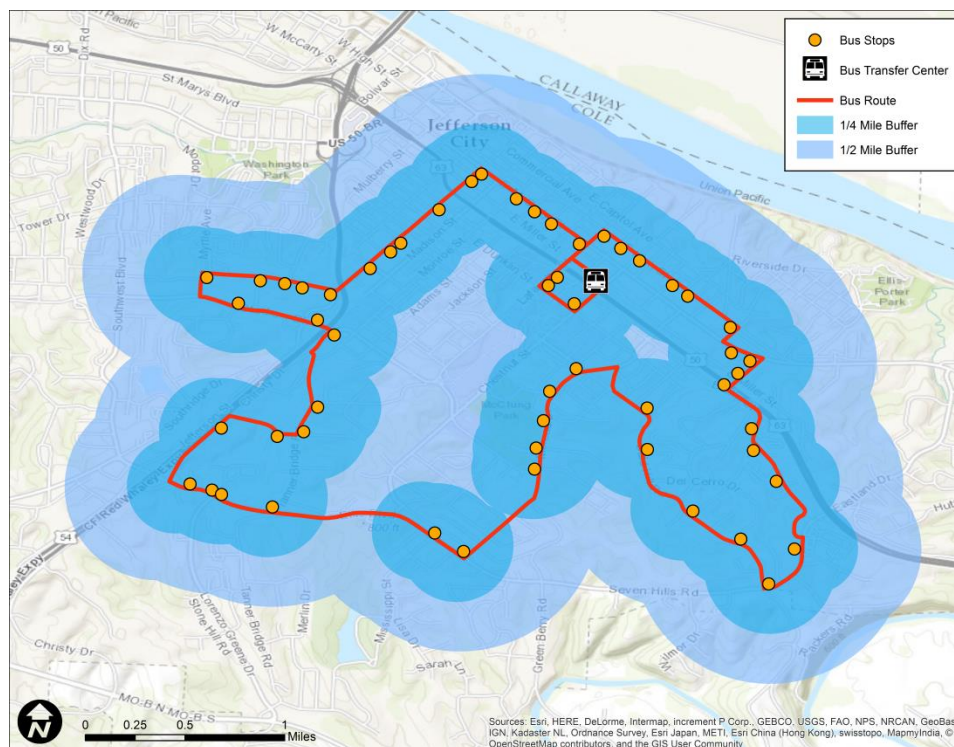


Table 4-13: High Street East – Route Demographic Tables

Age	Total Population	Age 0-19	Age 20-59	Age 60+
¼ Mile Buffer	8,166	29.1%	54.9%	16.0%
½ Mile Buffer	13,965	28.5%	55.3%	16.2%

Households	Total Households	Owner Occupied	Renter Occupied
¼ Mile Buffer	3,291	46.7%	53.3%
½ Mile Buffer	5,688	45.6%	54.4%

Race/Ethnicity	White	Black	Nat Am/Alaska Nat	Asian	Haw Pac Islander	Other	2 or more races	Hispanic/Latino
¼ Mile Buffer	60.8%	28.9%	0.5%	1.1%	0.1%	2.3%	1.4%	4.8%
½ Mile Buffer	62.6%	26.9%	0.5%	1.3%	0.1%	2.2%	1.7%	4.6%

Educational Attainment*	No HS Diploma/GED	HS Diploma/GED	College Degree
¼ Mile Buffer	7.3%	52.6%	40.1%
½ Mile Buffer	7.4%	52.0%	40.6%

*\*Highest level completed for those aged 25 and above*

Employment Status*	Employed	Unemployed
¼ Mile Buffer	91.0%	9.0%
½ Mile Buffer	91.1%	8.9%

*\*Includes only those in the labor force*

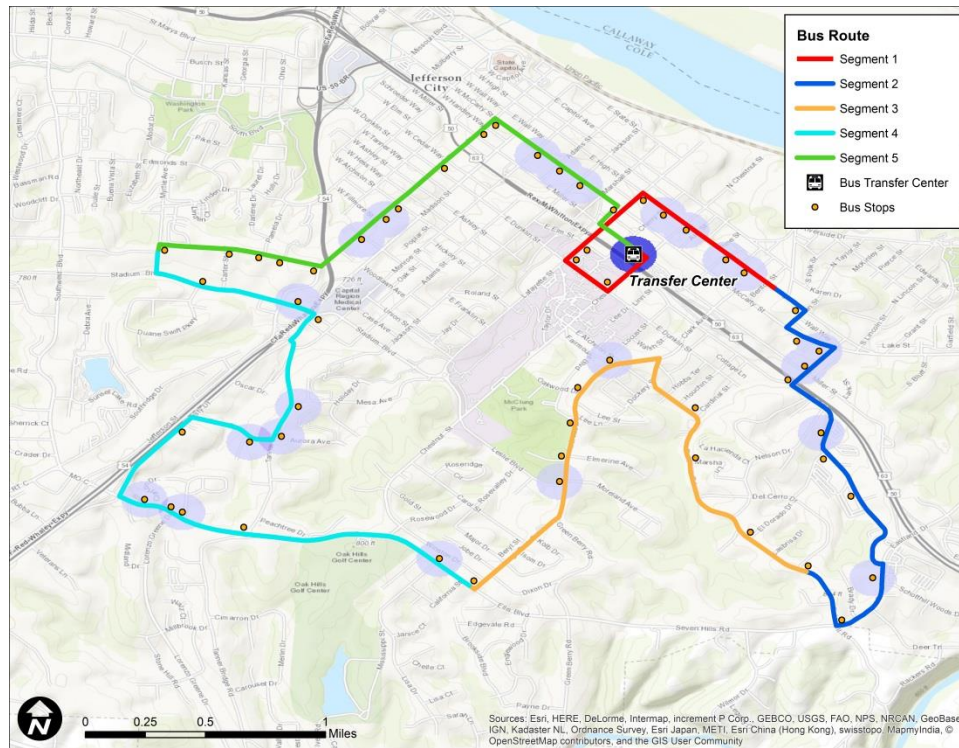
Household Income	< \$25,000	\$25,000 - \$50,000	\$50,000 - \$75,000	\$75,000 - \$100,000	> \$100,000
¼ Mile Buffer	34.9%	29.1%	17.4%	10.1%	8.5%
½ Mile Buffer	34.9%	28.6%	16.9%	10.4%	9.1%

Vehicles Owned	0 Vehicle Household	1 Vehicle Household	2 Vehicle Household	3 Vehicle Household	4 Vehicle Household	5+ Vehicle Household
¼ Mile Buffer	13.1%	43.6%	33.2%	8.1%	1.7%	0.3%
½ Mile Buffer	13.8%	43.3%	32.6%	8.1%	1.7%	0.4%

Employment	Total Employment	Retail Employment	Service Employment	Government Employment
¼ Mile Buffer	9,485	319	1,021	3,564
½ Mile Buffer	15,498	563	1,696	5,747



The following map indicates the high passenger boarding locations with the dark purple color. The darker the purple, the greater the number of passenger boardings. The transfer facility is the best patronized bus stop, accounting for about 44% of passenger boardings.



The subsequent tables report the actual data collected on the day of the count. However, to better represent typical operating conditions throughout the year, an annual normalization factor may be multiplied to reflect a typical weekday in 2016. For High Street East, the annual normalization factor is 1.27 (99/78) based on **Table 4-1**.

**Table 4-14: High Street East – Ridership by Segment**

Segment	Start Location	Riders On	Riders Off	Average Riders on Bus	Peak Load	Segment Length	Passengers/Route Mile
1	Transfer Facility 820 E. Miller Street	38	5	2.3	9	1.5	14
2	High St @ East Elementary School	4	6	2.1	8	2.2	2
3	1651 Bald Hill Rd	7	5	2.1	8	2.3	3
4	Ellis Blvd. @ Mississippi St.	20	19	2.2	8	3.0	7
5	Myrtle Ave. @ Swifts Hwy., SE Corner	9	43	2.0	7	2.2	12
Total		78	78	2.1	9	11.3	7

*Note: Passengers per Route Mile are calculated as (Riders On + Riders Off) / (2\*Segment Length).*

The first segment is slightly more patronized than the other segments of the route.

**Table 4-15: High Street East – Ridership by Time Period**

Trip Start Time	Ridership	Trip Start Time	Ridership
6:40 a.m.	3	12:40 p.m.	6
7:20 a.m.	12	1:20 p.m.	6
8:00 a.m.	2	2:00 p.m.	3
8:40 a.m.	1	2:40 p.m.	1
9:20 a.m.	2	3:20 p.m.	7
10:00 a.m.	3	4:00 p.m.	6
10:40 a.m.	6	4:40 p.m.	4
11:20 a.m.	4	5:20 p.m.	4
12:00 p.m.	13	Total*	83

\*Total is higher than previous table due to **through-riding passengers**. These passengers board the bus on its inbound trip to the transfer station and remain on the bus at the transfer station. Their final destination on the bus is at a stop somewhere on the outbound trip; these passengers board inbound buses as a matter of convenience.

The best patronized trips are in the morning (7:20 a.m. trip) and midday (12:00 p.m. trip).

**Table 4-16: High Street East – Route Running Times**

Travel Time	Scheduled	Average	Max	Min
Segment 1	7.0	4.8	8.0	3.0
Segment 2	7.0	6.2	7.0	5.0
Segment 3	5.0	5.4	7.0	4.0
Segment 4	9.0	8.9	13.0	7.0
Segment 5	7.0	7.5	10.0	6.0
Total	35.0	32.8		

Overall, the scheduled running times are slightly more than required based on observed running times. The first segment has excessive scheduled running times. This is undesired due to the fact that the bus would be running faster than the scheduled times, possibly causing riders to miss the bus even if they are present at the bus stop at the scheduled times. Additionally, this would continue through the entire route since the bus gets ahead of schedule early in the route.



Table 4-17: High Street East – Route Transfers

Transfer From	Number of Transfers	Percent of Total Riders
High St. West	10	12.8%
High St. East	0	0.0%
MO. Blvd.	9 (12)*	11.5% (15.4%)*
Southwest	2	2.6%
Capital Mall	3	3.8%
Business 50 E.	9	11.5%
Tripper	0	0.0%
Total	33	42.3%

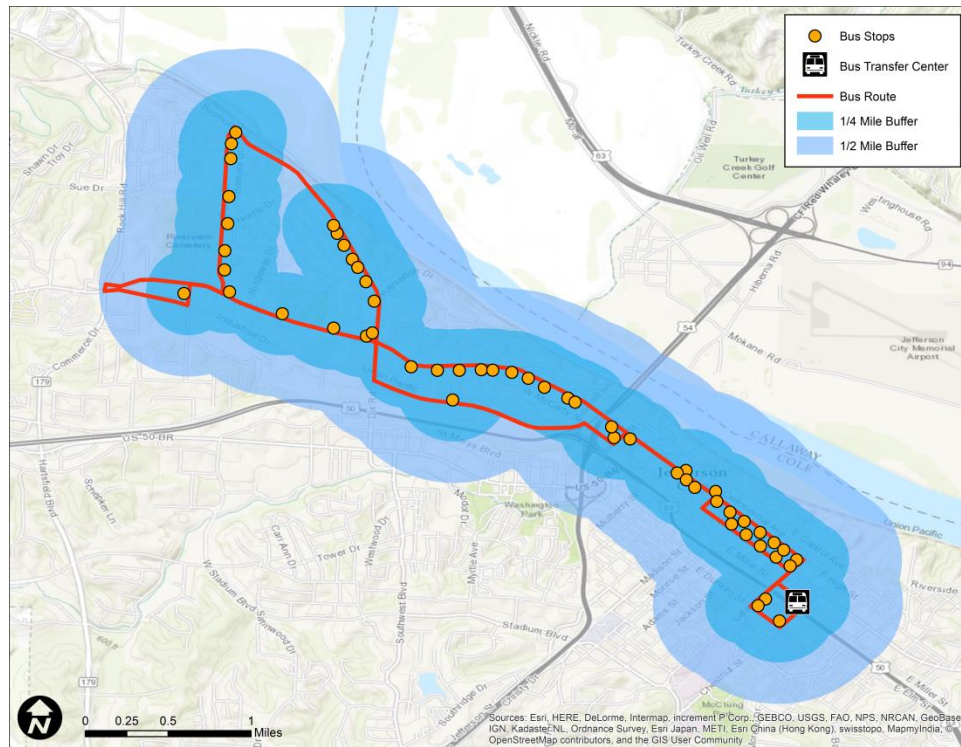
\*Values in parentheses denote **through-riding transfers**. The larger number reflects 3 passengers from the Capital Mall Route which transfer to this route via the Missouri Boulevard Route.

About 42% of riders transfer from another route.



#### 4.2.4 High Street West

The map below shows the High Street West route with a ¼ and ½ mile buffer area around the route bus stops. Following the map are tables showing demographic information within these buffer areas. Additional tables show ridership and running time information as well as route transfer information.



**Table 4-18: High Street West – Route Demographic Tables**

Age	Total Population	Age 0-19	Age 20-59	Age 60+
¼ Mile Buffer	6,674	26.5%	54.3%	19.2%
½ Mile Buffer	11,143	27.6%	53.9%	18.6%

Households	Total Households	Owner Occupied	Renter Occupied
¼ Mile Buffer	3,031	51.7%	48.3%
½ Mile Buffer	4,892	50.4%	49.6%

Race/Ethnicity	White	Black	Nat Am/Alaska Nat	Asian	Haw Pac Islander	Other	2 or more races	Hispanic/Latino
¼ Mile Buffer	76.8%	16.8%	0.5%	0.8%	0.0%	1.1%	2.6%	1.4%
½ Mile Buffer	72.2%	19.5%	0.6%	1.4%	0.0%	1.7%	2.7%	1.8%





Educational Attainment*	No HS Diploma/GED	HS Diploma/GED	College Degree
¼ Mile Buffer	7.3%	47.7%	45.0%
½ Mile Buffer	7.0%	47.7%	45.3%

\*Highest level completed for those aged 25 and above

Employment Status*	Employed	Unemployed
¼ Mile Buffer	90.9%	9.1%
½ Mile Buffer	91.7%	8.3%

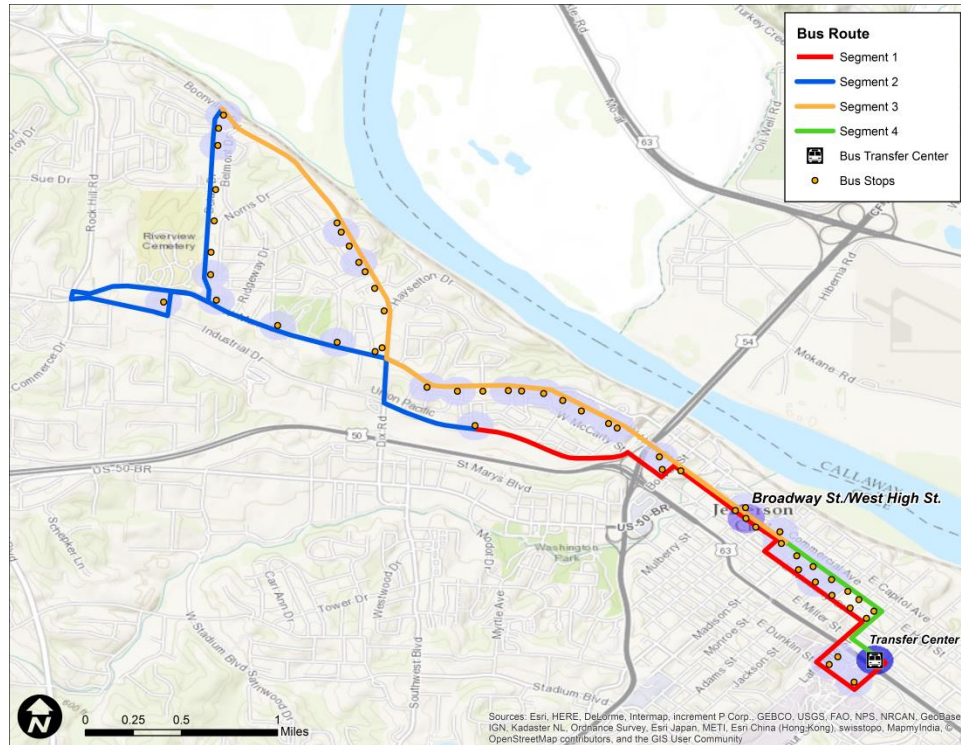
\*Includes only those in the labor force

Household Income	< \$25,000	\$25,000 - \$50,000	\$50,000 - \$75,000	\$75,000 - \$100,000	> \$100,000
¼ Mile Buffer	29.9%	31.4%	17.1%	10.9%	10.7%
½ Mile Buffer	31.1%	31.5%	16.0%	10.1%	11.3%

Vehicles Owned	0 Vehicle Household	1 Vehicle Household	2 Vehicle Household	3 Vehicle Household	4 Vehicle Household	5+ Vehicle Household
¼ Mile Buffer	17.3%	41.8%	32.2%	7.6%	1.1%	0.1%
½ Mile Buffer	15.0%	44.1%	32.1%	7.5%	1.0%	0.3%

Employment	Total Employment	Retail Employment	Service Employment	Government Employment
¼ Mile Buffer	9,657	258	962	5,187
½ Mile Buffer	15,723	707	1,694	7,354

The following map indicates the high passenger boarding locations with the dark purple color. The darker the purple, the greater the number of passenger boardings. The transfer facility is the most heavily used bus stop, accounting for about 37% of passenger boardings, followed by the stop at the intersection of Broadway Street/West High Street which serves nearly 17% of boardings.



The subsequent tables report the actual data collected on the day of the count. However, to better represent typical operating conditions throughout the year, an annual normalization factor may be multiplied to reflect a typical weekday in 2016. For High Street West, the annual normalization factor is 1.08 (131/121) based on **Table 4-1**.

**Table 4-19: High Street West – Ridership by Segment**

Segment	Start Location	Riders On	Riders Off	Average Riders on Bus	Peak Load	Segment Length	Passengers/Route Mile
1	Transfer Facility 820 E. Miller Street	63	29	3.0	11	2.9	16
2	1616 Industrial Dr	11	18	2.2	11	3.8	4
3	Boonville Rd. @ Belair Dr., SW Corner	33	25	2.1	8	3.5	8
4	Jefferson St. @ E. High ST., SE Corner	14	49	2.8	8	0.9	35
Total		121	121	2.4	11	11.1	11

*Note: Passengers per Route Mile are calculated as (Riders On + Riders Off) / (2 \* Segment Length).*

The first and last segments are more patronized than the other segments of the route.



Table 4-20: High Street West – Ridership by Time Period

Trip Start Time	Ridership	Trip Start Time	Ridership
6:40 a.m.	8	12:40 p.m.	7
7:20 a.m.	9	1:20 p.m.	6
8:00 a.m.	8	2:00 p.m.	5
8:40 a.m.	6	2:40 p.m.	12
9:20 a.m.	6	3:20 p.m.	13
10:00 a.m.	6	4:00 p.m.	10
10:40 a.m.	5	4:40 p.m.	12
11:20 a.m.	5	5:20 p.m.	5
12:00 p.m.	8	Total*	131

\*Total is higher than previous table due to **through-riding passengers**. These passengers board the bus on its inbound trip to the transfer station and remain on the bus at the transfer station. Their final destination on the bus is at a stop somewhere on the outbound trip; these passengers board inbound buses as a matter of convenience.

The best patronized trips are in the afternoon (2:40 p.m., 3:20 p.m., 4:00 p.m. and 4:40 p.m. trips).

Table 4-21: High Street West – Route Running Times

Travel Time	Scheduled	Average	Max	Min
Segment 1	10.0	10.0	17.0	5.0
Segment 2	10.0	10.5	13.0	8.0
Segment 3	10.0	9.8	13.0	7.0
Segment 4	5.0	4.7	6.0	2.0
Total	35.0	35.0		

The scheduled bus times are appropriate overall based on observed running times.

Table 4-22: High Street West – Route Transfers

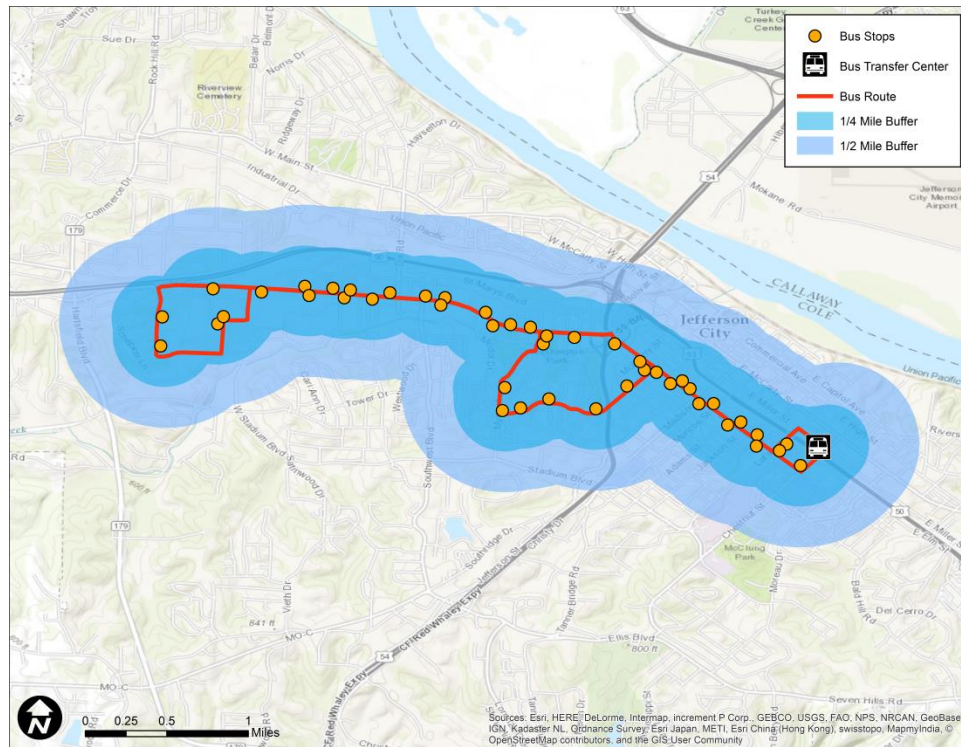
Transfer From	Number of Transfers	Percent of Total Riders
High St. West	0	0.0%
High St. East	6	5.0%
MO. Blvd.	9 (14)*	7.4% (11.6%)*
Southwest	8	6.6%
Capital Mall	5	4.1%
Business 50 E.	8	6.6%
Tripper	1	0.8%
Total	37	30.6%

\*Values in parentheses denote **through-riding transfers**. The larger number reflects 5 passengers from the Capital Mall Route which transfer to this route via the Missouri Boulevard Route.

About 31% of riders transfer from another route.

## 4.2.5 Missouri Boulevard

The map below shows the Missouri Boulevard route with a ¼ and ½ mile buffer area around the route bus stops. Following the map are tables showing demographic information within these buffer areas. Additional tables show ridership and running time information as well as route transfer information.



**Table 4-23: Missouri Boulevard – Route Demographic Tables**

Age	Total Population	Age 0-19	Age 20-59	Age 60+
¼ Mile Buffer	5,074	26.8%	56.4%	16.8%
½ Mile Buffer	10,212	27.7%	55.3%	17.0%

Households	Total Households	Owner Occupied	Renter Occupied
¼ Mile Buffer	2,382	26.1%	73.9%
½ Mile Buffer	4,440	35.8%	64.2%

Race/Ethnicity	White	Black	Nat Am/Alaska Nat	Asian	Haw Pac Islander	Other	2 or more races	Hispanic/Latino
¼ Mile Buffer	58.7%	27.9%	1.5%	3.6%	0.4%	1.7%	3.4%	2.7%
½ Mile Buffer	61.7%	26.4%	1.1%	2.7%	0.3%	2.2%	3.0%	2.8%



Educational Attainment*	No HS Diploma/GED	HS Diploma/GED	College Degree
¼ Mile Buffer	10.1%	52.9%	36.9%
½ Mile Buffer	8.9%	51.8%	39.3%

*\*Highest level completed for those aged 25 and above*

Employment Status*	Employed	Unemployed
¼ Mile Buffer	93.6%	6.4%
½ Mile Buffer	92.8%	7.2%

*\*Includes only those in the labor force*

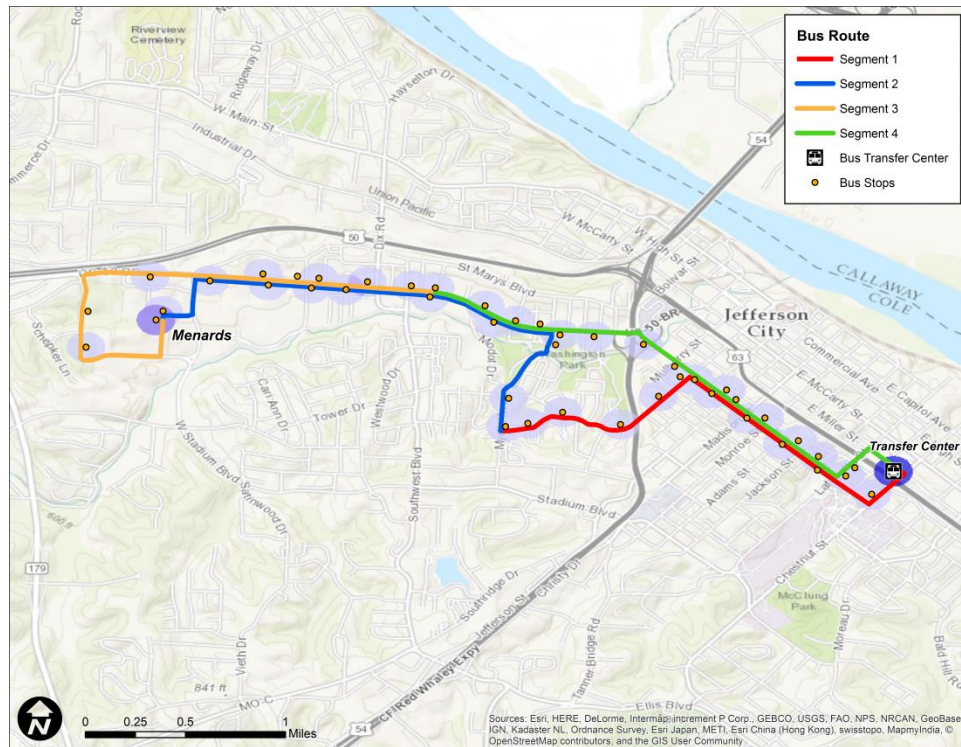
Household Income	< \$25,000	\$25,000 - \$50,000	\$50,000 - \$75,000	\$75,000 - \$100,000	> \$100,000
¼ Mile Buffer	48.0%	29.3%	11.2%	8.1%	3.4%
½ Mile Buffer	40.7%	29.7%	14.0%	8.6%	7.0%

Vehicles Owned	0 Vehicle Household	1 Vehicle Household	2 Vehicle Household	3 Vehicle Household	4 Vehicle Household	5+ Vehicle Household
¼ Mile Buffer	18.0%	56.1%	22.5%	2.0%	1.0%	0.5%
½ Mile Buffer	16.5%	49.1%	28.8%	4.0%	1.2%	0.4%

Employment	Total Employment	Retail Employment	Service Employment	Government Employment
¼ Mile Buffer	8,903	1,292	1,294	2,369
½ Mile Buffer	17,463	2,012	2,248	5,527



The following map indicates the high passenger boarding locations with the dark purple color. The darker the purple, the greater the number of passenger boardings. The transfer facility is the most heavily used bus stop, accounting for a third of passenger boardings, followed by the stop at Menards which serves nearly 16% of boardings.



The subsequent tables report the actual data collected on the day of the count. However, to better represent typical operating conditions throughout the year, an annual normalization factor may be multiplied to reflect a typical weekday in 2016. For Missouri Boulevard, the annual normalization factor is 1.16 (340/294) based on **Table 4-1**.

The passengers/route mile indicates that the Missouri Boulevard route is by far JEFFTRAN's best-patronized transit corridor. All other JEFFTRAN regular routes average between 5 and 11 passengers per route mile for the entire route. The Missouri Boulevard average is 32 passengers per route mile.

**Table 4-24: Missouri Boulevard – Ridership by Segment**

Segment	Start Location	Riders On	Riders Off	Average Riders on Bus	Peak Load	Segment Length	Passengers/Route Mile
1	Transfer Facility 820 E. Miller Street	145	31	7.5	16	2.2	40
2	1310 Linden Dr. - Hyder Apts.	46	73	7.2	14	2.4	25
3	Stonecreek Dr - Transfer Point	63	75	5.2	14	2.3	30
4	1709 Mo. Blvd.	40	115	6.2	17	2.3	34
Total		294	294	6.5	17	9.1	32

*Note: Passengers per Route Mile are calculated as (Riders On + Riders Off) / (2\*Segment Length).*



All segments of the route have high levels of patronage, compared with other JEFFTRAN routes.

**Table 4-25: Missouri Boulevard – Ridership by Time Period**

Trip Start Time	Ridership	Trip Start Time	Ridership
6:40 a.m.	20	12:40 p.m.	15
7:20 a.m.	15	1:20 p.m.	14
8:00 a.m.	14	2:00 p.m.	26
8:40 a.m.	15	2:40 p.m.	24
9:20 a.m.	12	3:20 p.m.	36
10:00 a.m.	16	4:00 p.m.	23
10:40 a.m.	18	4:40 p.m.	13
11:20 a.m.	31	5:20 p.m.	4
12:00 p.m.	17	Total*	313

*\*Total is higher than previous table due to **through-riding passengers**. These passengers board the bus on its inbound trip to the transfer station and remain on the bus at the transfer station. Their final destination on the bus is at a stop somewhere on the outbound trip; these passengers board inbound buses as a matter of convenience.*

The best patronized trips are in the midday (11:20 a.m. trip) and afternoon (2:00 p.m., 2:40 p.m., 3:20 p.m. and 4:00 p.m. trips).

**Table 4-26: Missouri Boulevard – Route Running Time**

Travel Time	Scheduled	Average	Max	Min
Segment 1	5.0	7.8	11.0	6.0
Segment 2	10.0	10.1	15.0	8.0
Segment 3	5.0	7.6	11.0	4.0
Segment 4	15.0	8.2	11.0	6.0
Total	35.0	33.8		

Overall, the scheduled running times are appropriate based on observed running times. However, Segments 1 and 3 require more time than scheduled (5 minutes scheduled for each but 7.8 and 7.6 minutes required, respectively), while Segment 4 requires less time than scheduled (15 minutes are scheduled whereas it took 8.2 minutes on average). The variation in the scheduled and actual running times of these segments balance each other out.

**Table 4-27: Missouri Boulevard – Route Transfers**

Transfer From	Number of Transfers	Percent of Total Riders	Through-Riding Transfers	Percent of Total Riders
High St. West	11	3.7%	15	5.1%
High St. East	8	2.7%	10	3.4%
MO. Blvd.	0	0.0%	0	0.0%
Southwest	2	0.7%	9	3.1%
Capital Mall	18	6.1%	34	11.6%
Business 50 E.	19	6.5%	27	9.2%
Tripper	1	0.3%	1	0.3%
Total	59	20.1%	96	32.7%

As mentioned previously, Missouri Boulevard is the only route that connects Capital Mall to the other routes. Therefore, many riders are “pass through” transfers that only use Missouri Boulevard to go to/from Capital Mall. These transfers are taken into consideration with the through-riding transfers’ column. Including these pass through transfers, about 33% of riders transfer from another route.





## 4.2.6 Southwest

The map below shows the Southwest route with a ¼ and ½ mile buffer area around the route bus stops. Following the map are tables showing demographic information within these buffer areas. Additional tables show ridership and running time information as well as route transfer information.

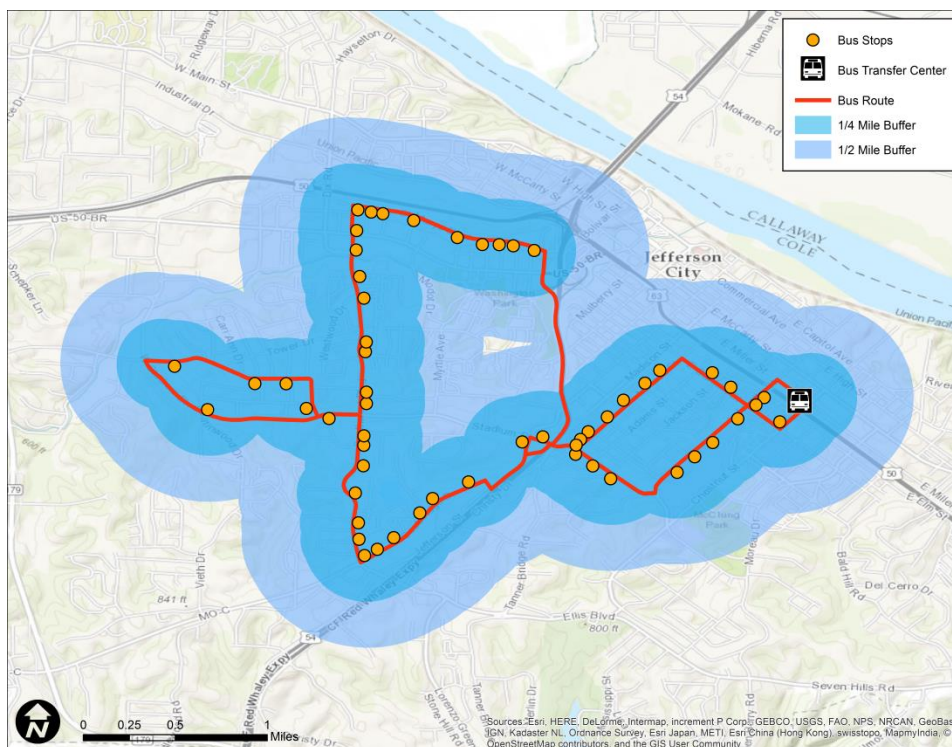


Table 4-28: Southwest – Route Demographic Tables

Age	Total Population	Age 0-19	Age 20-59	Age 60+
¼ Mile Buffer	8,163	27.0%	57.0%	16.0%
½ Mile Buffer	14,643	26.3%	56.3%	17.4%

Households	Total Households	Owner Occupied	Renter Occupied
¼ Mile Buffer	3,288	41.8%	58.2%
½ Mile Buffer	6,086	43.0%	57.0%

Race/Ethnicity	White	Black	Nat Am/Alaska Nat	Asian	Haw Pac Islander	Other	2 or more races	Hispanic/Latino
¼ Mile Buffer	61.5%	25.3%	0.8%	3.4%	0.3%	2.3%	3.1%	3.2%
½ Mile Buffer	65.8%	23.4%	0.8%	2.4%	0.2%	1.9%	2.7%	2.9%

Educational Attainment*	No HS Diploma/GED	HS Diploma/GED	College Degree
¼ Mile Buffer	8.0%	52.3%	39.7%
½ Mile Buffer	8.2%	53.2%	38.6%

*\*Highest level completed for those aged 25 and above*

Employment Status*	Employed	Unemployed
¼ Mile Buffer	93.9%	6.1%
½ Mile Buffer	93.4%	6.6%

*\*Includes only those in the labor force*

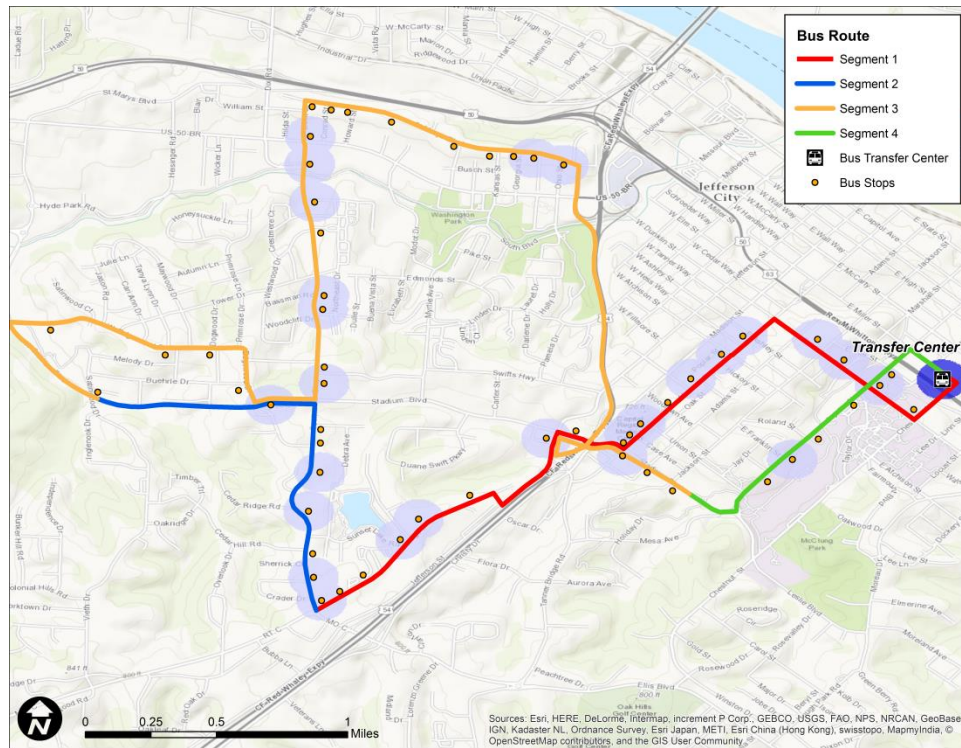
Household Income	< \$25,000	\$25,000 - \$50,000	\$50,000 - \$75,000	\$75,000 - \$100,000	> \$100,000
¼ Mile Buffer	35.2%	30.4%	16.0%	9.7%	8.6%
½ Mile Buffer	35.2%	30.0%	16.0%	10.4%	8.5%

Vehicles Owned	0 Vehicle Household	1 Vehicle Household	2 Vehicle Household	3 Vehicle Household	4 Vehicle Household	5+ Vehicle Household
¼ Mile Buffer	11.5%	48.7%	31.6%	6.7%	1.3%	0.3%
½ Mile Buffer	13.5%	45.1%	32.7%	6.7%	1.6%	0.4%

Employment	Total Employment	Retail Employment	Service Employment	Government Employment
¼ Mile Buffer	10,014	673	1,178	2,264
½ Mile Buffer	17,196	1,405	2,097	4,573



The following map indicates the high passenger boarding locations with the dark purple color. The darker the purple, the greater the number of passenger boardings. The transfer facility is the best patronized bus stop, accounting for about 31% of passenger boardings.



The subsequent tables report the actual data collected on the day of the count. However, to better represent typical operating conditions throughout the year, an annual normalization factor may be multiplied to reflect a typical weekday in 2016. For Southwest, the annual normalization factor is 1.80 (92/51) based on **Table 4-1**.

**Table 4-29: Southwest – Ridership by Segment**

Segment	Start Location	Riders On	Riders Off	Average Riders on Bus	Peak Load	Segment Length	Passengers/Route Mile
1	Transfer Facility 820 E. Miller Street	31	14	1.4	6	2.8	8
2	Southridge Dr. @ Taco Bell Shelter	7	6	1.4	4	2.1	3
3	W. Edgewood @ W Stadium JCMG	12	20	1.2	4	4.4	4
4	Stadium Blvd. @ YMCA Dr.	1	11	1.0	3	1.2	5
Total		51	51	1.3	6	10.4	5

*Note: Passengers per Route Mile are calculated as (Riders On + Riders Off) / (2\*Segment Length).*

The first segment is somewhat better patronized than the other segments of the route.

**Table 4-30: Southwest – Ridership by Time Period**

Trip Start Time	Ridership	Trip Start Time	Ridership
6:40 a.m.	4	12:40 p.m.	4
7:20 a.m.	2	1:20 p.m.	8
8:00 a.m.	5	2:00 p.m.	5
8:40 a.m.	2	2:40 p.m.	4
9:20 a.m.	1	3:20 p.m.	5
10:00 a.m.	3	4:00 p.m.	3
10:40 a.m.	2	4:40 p.m.	3
11:20 a.m.	3	5:20 p.m.	1
12:00 p.m.	3	Total*	58

\*Total is higher than previous table due to **through-riding passengers**. These passengers board the bus on its inbound trip to the transfer station and remain on the bus at the transfer station. Their final destination on the bus is at a stop somewhere on the outbound trip; these passengers board inbound buses as a matter of convenience.

The best patronized trip is in the midday (1:20 p.m. trip).

**Table 4-31: Southwest – Route Running Time**

Travel Time	Scheduled	Average	Max	Min
Segment 1	7.0	9.2	13.0	7.0
Segment 2	9.0	5.5	8.0	4.0
Segment 3	10.0	13.9	20.0	10.0
Segment 4	9.0	4.6	6.0	3.0
Total	35.0	33.2		

Overall, the scheduled running times are appropriate based on observed running times. However, Segments 1 and 3 require more time than scheduled, while Segments 2 and 4 requires less time than scheduled. The variation in the scheduled and actual running times of the different segments balance each other out.



Table 4-32: Southwest – Route Transfers

Transfer From	Number of Transfers	Percent of Total Riders
High St. West	2	3.9%
High St. East	3	5.9%
MO. Blvd.	4 (6)*	7.8% (11.8%)*
Southwest	0	0.0%
Capital Mall	2	3.9%
Business 50 E.	5	9.8%
Tripper	0	0.0%
Total	16	31.4%

\*Values in parentheses denote **through-riding transfers**. The larger number reflects 2 passengers from the Capital Mall Route which transfer to this route via the Missouri Boulevard Route.

About 31% of riders transfer from another route.



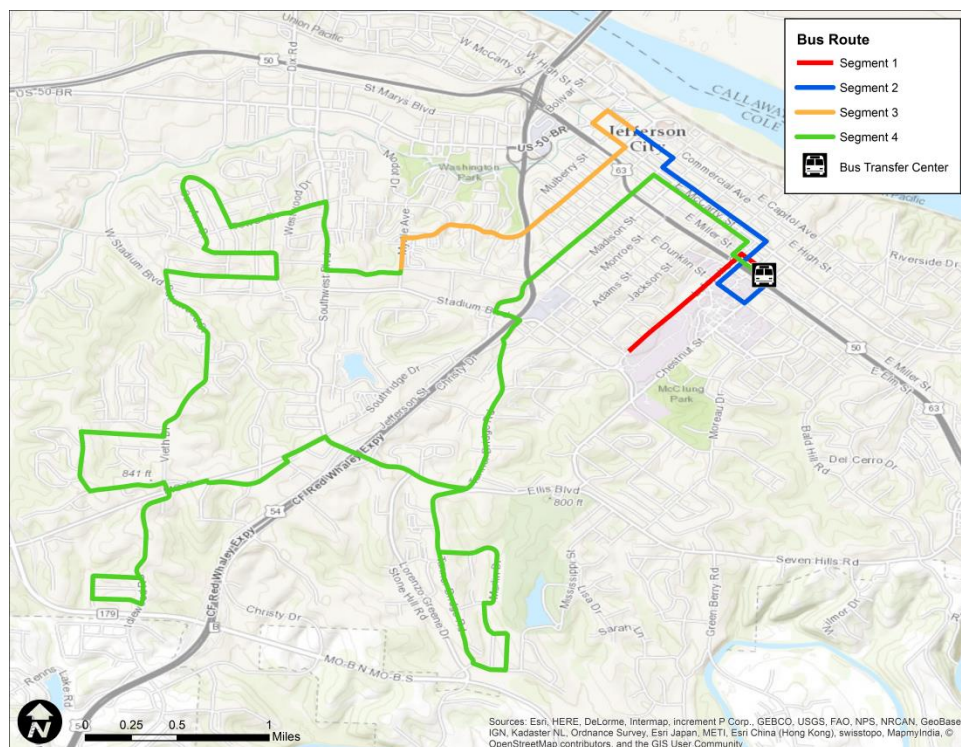
## 4.2.7 Trippers

JEFFTRAN provides service on three “Tripper Routes.” These routes are open to the public. Their routes and schedules are posted on the JEFFTRAN website<sup>6</sup>. These routes operate one daily trip, starting around 3:00 p.m. and ending at 4:00 p.m. (except the Southside Tripper which ends at 4:20 p.m.). The primary markets for each Tripper route are schools which are cited in each route description. Ridership counts were conducted on Thursday, March 30<sup>th</sup> for all three Tripper routes.

Although the Tripper Routes only operate one trip daily, they provide a valuable service to JEFFTRAN riders. Additionally, the schedules for these routes may become interconnected with those for a new express trip being considered for recommendation in the second major deliverable, the *Final Report and Recommendations*.

### Southside Tripper

The Southside Tripper route starts at J.C. High School on Lafayette Street and ends at the Transfer Facility. This route provides service to the following schools: J.C. High School, Simonsen 9<sup>th</sup> Grade Center, St. Peter’s School as well as Helias High School.



<sup>6</sup> [http://www.jeffersoncitymo.gov/government/transit/route\\_maps.php](http://www.jeffersoncitymo.gov/government/transit/route_maps.php)



**Table 4-33: Southside Tripper – Ridership by Segment**

Segment	Start Location	Riders On	Riders Off	Average Riders on Bus	Segment Length
1	J. C. High School, Lafayette Street	1	0	1.0	0.9
2	Transfer Facility 820 E. Miller Street	1	1	1.0	1.6
3	St. Peter's School 314 W. High St.	2	0	3.0	1.8
4	Helias High School - Myrtle @ Swifts Hwy	1	4	2.0	13.8
Total		5	5	1.9	18.1

**Table 4-34: Southside Tripper – Route Running Time**

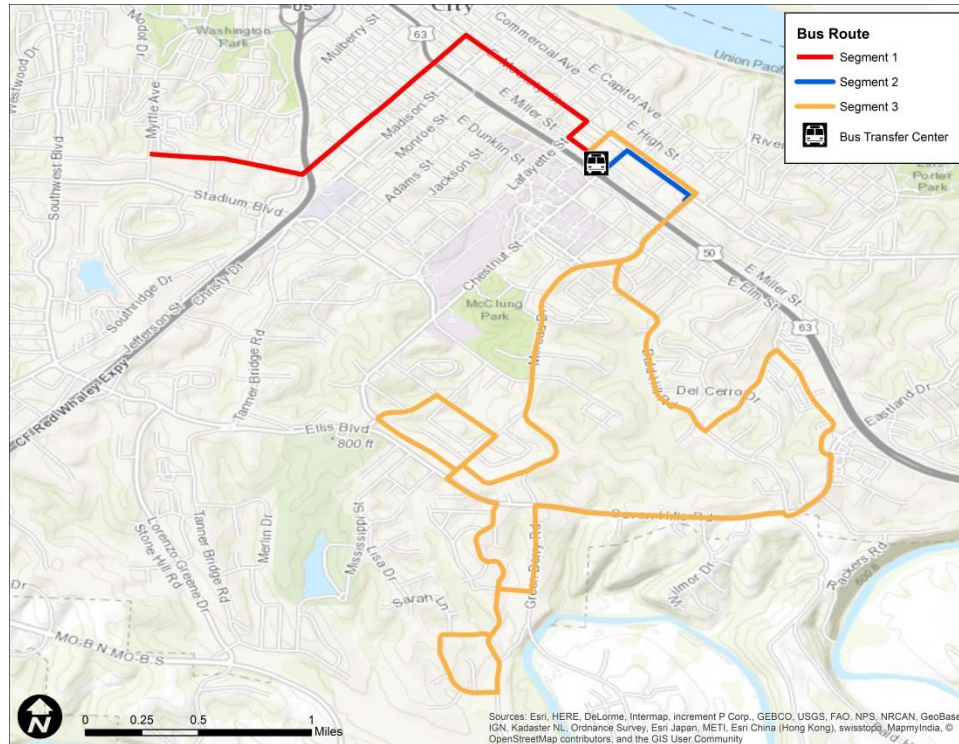
Time at	Scheduled	Actual
Time at Stop 1: J. C. High School, Lafayette Street	3:07 p.m.	2:47 p.m.
Time at Stop 2: Transfer Facility 820 E. Miller Street	3:15 p.m.	3:11 p.m.
Time at Stop 3: St. Peter's School 314 W. High St.	3:25 p.m.	3:25 p.m.
Time at Stop 4: Helias High School - Myrtle @ Swifts Hwy	3:25 p.m.	3:33 p.m.
Time at Stop 5: Transfer Facility 820 E. Miller Street	4:20 p.m.	3:58 p.m.

**Table 4-35: Southside Tripper – Route Transfers**

Transfer From	Number of Transfers
High St. West	0
High St. East	0
MO. Blvd.	1
Southwest	0
Capital Mall	0
Business 50 E.	0
Tripper	0
Total	1

## High Street East Tripper

The High Street East Tripper route starts at Helias High School and ends at the Transfer Facility. This route provides service to the following schools: Helias High School and Immaculate Conception School.



**Table 4-36: High Street East Tripper – Ridership by Segment**

Segment	Start Location	Riders On	Riders Off	Average Riders on Bus	Segment Length
1	Helias High School 1307 Swifts Hwy	2	0	2.0	2.2
2	Transfer Facility 820 E. Miller Street	1	2	1.0	0.5
3	Immaculate Conception School - 1208 E McCarty	10	11	7.0	9.5
Total		13	13	5.5	12.1

#### Table 4-37: High Street East Tripper – Route Running Time

Time at	Scheduled	Actual
Time at Stop 1: Helias High School 1307 Swifts Hwy	3:05 p.m.	2:55 p.m.
Time at Stop 2: Transfer Facility 820 E. Miller Street	3:15 p.m.	3:14 p.m.
Time at Stop 3: Immaculate Conception School - 1208 E McCarty	3:25 p.m.	3:24 p.m.
Time at Stop 4: Transfer Facility 820 E. Miller Street	4:00 p.m.	3:45 p.m.



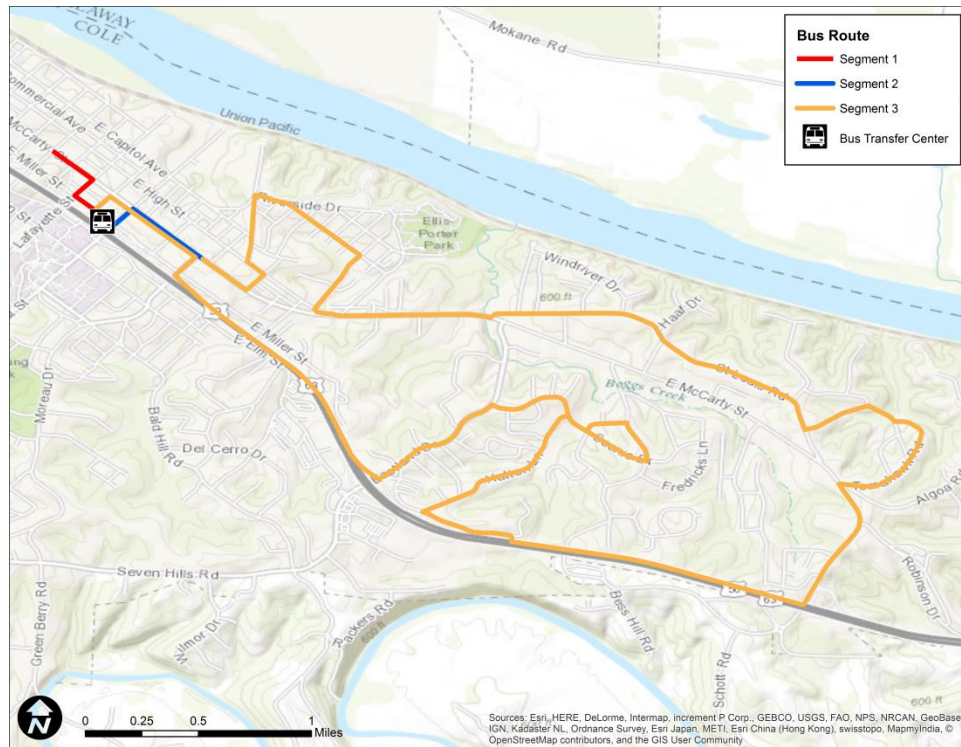


**Table 4-38: High Street East Tripper – Route Transfers**

Transfer From	Number of Transfers
High St. West	0
High St. East	0
MO. Blvd.	0
Southwest	0
Capital Mall	0
Business 50 E.	0
Tripper	0
Total	0

## Hutton Lane Tripper

The Hutton Lane Tripper route starts at Simonsen 9<sup>th</sup> Grade Center and ends at the Transfer Facility. This route provides service to the following schools: Simonsen 9<sup>th</sup> Grade Center and Immaculate Conception School.



**Table 4-39: Hutton Lane Tripper – Ridership by Segment**

Segment	Start Location	Riders On	Riders Off	Average Riders on Bus	Segment Length
1	Simonsen 9th Grade Center	0	0	0.0	0.4
2	Transfer Facility 820 E. Miller Street	2	0	2.0	0.5
3	Immaculate Conception School 1208 E McCarty	17	19	11.5	10.4
Total		19	19	10.0	11.3

**Table 4-40: Hutton Lane Tripper – Route Running Time**

Time at	Scheduled	Actual
Time at Stop 1: Simonsen 9th Grade Center	3:07 p.m.	3:06 p.m.
Time at Stop 2: Transfer Facility 820 E. Miller Street	N/A	3:20 p.m.
Time at Stop 3: Immaculate Conception School - 1208 E McCarty	3:25 p.m.	3:23 p.m.
Time at Stop 4: Transfer Facility 820 E. Miller Street	4:00 p.m.	3:48 p.m.



Table 4-41: Hutton Lane Tripper – Route Transfers

Transfer From	Number of Transfers
High St. West	0
High St. East	0
MO. Blvd.	0
Southwest	0
Capital Mall	0
Business 50 E.	0
Tripper	2
Total	2

## 5. Vehicle and Facility Description

### 5.1 State of Vehicles and Facilities

A well-thought-out and continuous capital replacement process is essential to the ongoing success and sustainability of JEFFTRAN. Introducing new equipment allows the Agency to take advantage of the latest tested technologies and their associated efficiencies, while replacing aging equipment helps maintain operating costs at reasonable levels.

JEFFTRAN has a total of 22 revenue vehicles in its current fleet with 12 transit coaches and 10 demand response mini-buses. **Table 5-1** below shows JEFFTRAN's vehicle roster.

**Table 5-1: JEFFTRAN – Vehicle Roster**

Year of Vehicle	Mileage	Seating Capacity	Model Number	Manufacturer	Type of Vehicle
2005	291,392	32	Low floor	Gillig 35 ft.	Transit Coach
2005	247,816	32	Low floor	Gillig 35 ft.	Transit Coach
2005	259,342	32	Low floor	Gillig 35 ft.	Transit Coach
2005	269,418	32	Low floor	Gillig 35 ft.	Transit Coach
2005	246,826	32	Low floor	Gillig 35 ft.	Transit Coach
2006	253,270	32	Low floor	Gillig 35 ft.	Transit Coach
2006	248,276	32	Low floor	Gillig 35 ft.	Transit Coach
2006	288,826	32	Low floor	Gillig 35 ft.	Transit Coach
2010	161,623	20	E450	Ford/Elkhart	Van/Van Mini Bus
2010	153,220	20	E450	Ford/Elkhart	Van/Van Mini Bus
2011	210,389	26	Low Floor	Gillig 29 ft.	Transit Coach
2011	230,042	26	Low Floor	Gillig 29 ft.	Transit Coach
2012	177,941	26	Low Floor	Gillig 29 ft.	Transit Coach
2012	168,351	26	Low Floor	Gillig 29 ft.	Transit Coach
2012	119,152	20	E450	Ford/Elkhart	Van/Van Mini Bus
2013	99,719	20	E450	Ford/Elkhart	Van/Van Mini Bus
2013	85,808	20	E450	Ford/Elkhart	Van/Van Mini Bus
2013	92,711	20	E450	Ford/Elkhart	Van/Van Mini Bus
2014	52,041	20	E450	Ford/Elkhart	Van/Van Mini Bus
2016	18,254	20	E450	Ford/Elkhart	Van/Van Mini Bus
2016	20,878	20	E450	Ford/Elkhart	Van/Van Mini Bus
2016	18,475	20	E450	Ford/Elkhart	Van/Van Mini Bus

*Note: Mileages are current as of October 31, 2016.*

The age of the vehicles in JEFFTRAN's fleet was compared with the Minimum Service Life categories for buses and vans as described in *Useful Life of Transit Buses and Vans (April 2007)*.<sup>7</sup> It provides FTA guidance on the minimum number of years or miles transit vehicles purchased with federal funds must be in service before they can be retired without financial penalty. This minimum number of years is often referred to as the "useful" life of a vehicle. Table ES-1 in the FTA report provides the following minimum service-life categories for JEFFTRAN's vehicles.

<sup>7</sup> Report no. FTA VA-26-7229-08.1. Prepared for FTA by Booz Allen Hamilton, McLean VA.



- **Heavy-Duty Large Bus (35 to 48 ft. length and 60 ft. artic, 27 to 40 seats)** – 12 years, 500,000 miles.
- **Heavy-Duty Small Bus (30 ft. length, 26 to 35 seats)** – 10 years, 350,000 miles.
- **Light-Duty Mid-Sized Bus (25 to 35 ft., 16 to 25 seats)** – 5 years, 150,000 miles.

The vehicles listed in the roster are compared with these useful life categories on the basis of the vehicles’ age and mileage. The vehicles’ age is compared with 2017, the year in which this report was prepared.

Eight of the 22 vehicles in the roster (the Gillig 35 ft. vehicles) are categorized in the Heavy-Duty Large Bus category. Three of the eight vehicles are within the 12 year useful life for this category, although they are only one year away from meeting the minimum life threshold. Four of JEFFTRAN’s vehicles (the Gillig 29 ft. vehicles) are categorized in the Heavy-Duty Small Bus category. All four of these vehicles are within the 10 year useful life for this category. The remaining 10 vehicles (the Ford/Elkhart vehicles) are categorized in the Light-Duty Mid-Sized Bus category. Seven of these 10 are within the five year useful life for this category. **Table 5-2** summarizes the comparison between JEFFTRAN’s bus fleet and industry standards.

**Table 5-2: JEFFTRAN’s Bus Fleet Comparison with Industry Standards**

Vehicle Type	Minimum Life (whichever comes first)		Total Number of Vehicles	Vehicles Within Useful Life
	Years	Miles		
Heavy-Duty Large Bus	12	500,000	8	3
Heavy-Duty Small Bus	10	350,000	4	4
Light-Duty Mid-Sized Bus	5	150,000	10	7

Recently, JEFFTRAN’s capital program has focused primarily on small bus (van) replacements. Only three of the 10 vans are beyond the minimum life threshold while the remaining seven have not yet reached their useful lives. However, three more vans are only one year away from meeting the minimum life threshold.

The opposite is true with fixed route transit coaches. Currently, almost sixty percent (60%) of JEFFTRAN’s fixed route fleet are eligible for retirement, with five buses being 12 years old. Another three buses are 11 years old and will meet the minimum life threshold next year. It should be noted the mileage on these transit coaches are relatively low compared to their age. However, the rate of replacement has not been high enough to maintain a reasonable average fleet age. The current replacement schedule is less than optimal if following the industry’s recommended 12 year replacement cycle.

It needs to be pointed out that these “useful life” thresholds do not represent a “mandatory” retirement threshold for transit vehicles. Rather, they represent a “minimum” life expectancy. The FTA report cited earlier (Table ES-2) provides the average retirement ages for these categories of transit vehicles, as shown in **Table 5-3** below.

**Table 5-3: FTA Useful Life and Average Retirement Age Thresholds**

<b>Bus Type</b>	<b>Useful Life</b>	<b>Average Retirement Age</b>
Heavy-Duty Large Bus	12 Years	15.1 Years
Heavy-Duty Small Bus	10 Years	*
Light-Duty Mid-Sized Bus*	5 Years	5.9 Years

*\*Average retirement age estimates for this vehicle category suffers from small sample issues.*

The FTA report’s summary abstract stated that “Transit agencies interviewed cited availability of capital funds for bus replacement as the primary determinant of retirement age.” Fleet age as well as the number of vehicles older than the “useful life” for each vehicle class need to be viewed in the context of maintenance practices and the availability of capital funding for fleet replacement.

An aging bus fleet and the planned bus replacement schedule affects the organization in numerous ways including system operating cost, operational flexibility, system reliability, public image and customer experience. Vehicle maintenance expenses generally increase with the aging of a bus. The number of hours spent on vehicle maintenance is likely to be directly proportional to the vehicle age. This creates day-to-day operating challenges with little room for error in maintaining and scheduling vehicles for service. Newer bus fleets are much less prone to breakdowns and component failures, resulting in less down-time and lower maintenance costs.

It is critical that JEFFTRAN address vehicle shortfall with an infusion of new buses to bring the fleet up to industry standards. Given that new diesel buses can cost approximately \$375,000 each and the average procurement time is between 24 to 36 months, emphasis should be given to replacing the older fixed route vehicles.



## 5.2 Capital Expenditure Plans

There are several illustrative JEFFTRAN capital expenditure projects in the region's long range transportation plan. However, projects are not officially moved into the Transportation Improvement Program (TIP) until the procurement process is completed with a finalized contract. **Table 5-4** below lists projects from CAMPO's TIP.

**Table 5-4: Capital Expenditure Plans**

Item	Description	Total	FTA	Local
1	Replace Obsolete Lighting in Bus Barn with Energy Efficient Lighting	\$ 10,000	\$ 8,000	\$ 2,000
2	Update Automatic Vehicle Location (AVL) equipment, purchase Automatic Passenger Counter (APC) equipment and purchase Automatic Voice Annunciation (AVA) equipment	\$ 275,000	\$ 220,000	\$ 55,000
3	Paratransit widebody cutaway bus replacement (2)	\$ 120,000	\$ 96,000	\$ 44,000
4	Upgrade/replace electronic fare card system	\$ 300,000	\$ 240,000	\$ 60,000
5	Design work for New Transit Passenger Transfer and Admin Facility	\$ 150,000	\$ -	\$ 150,000
6	Replace outdated bus video systems	\$ 60,000	\$ 48,000	\$ 12,000
7	Purchase new phone system	\$ 10,000	\$ 8,000	\$ 2,000
8	Replace low-floor minivan support vehicle	\$ 40,000	\$ 32,000	\$ 8,000
9	Transit facility improvements--roof and gutter replacement for CM, bus barn, wash facility	\$ 200,000	\$ 160,000	\$ 40,000
10	Transit facility improvements--overhead doors for CM and Bus Barn	\$ 95,000	\$ 76,000	\$ 19,000
11	Repair Transfer Facility Roof & Defective Windows (Bus Shelter)	\$ 12,000	\$ 9,600	\$ 2,400
12	Security camera upgrades	\$ 20,000	\$ 16,000	\$ 4,000
13	Public restroom upgrades	\$ 7,500	\$ 6,000	\$ 1,500
14	Purchase and install 4-6 bus shelters at various locations in Jefferson City	\$ 60,000	\$ 48,000	\$ 12,000
15	Purchase emergency back-up generator & switches	\$ 100,000	\$ 80,000	\$ 20,000
16	Replace current low-floor route buses with 30 ft. electric low floor buses for 2019 delivery (2)	\$ 1,200,000	\$ 960,000	\$ 240,000
17	Replace current low-floor route buses with 30 ft. electric low floor buses for 2021 delivery (3)	\$ 1,800,000	\$ 1,440,000	\$ 360,000
18	Purchase Paratransit software package	\$ 25,000	\$ 20,000	\$ 5,000
19	Construct new passenger transfer and administrative facility	\$ 3,000,000	\$ 2,400,000	\$ 600,000
20	Transit training facility rehab	\$ 50,000	\$ 40,000	\$ 10,000
21	JEFFTRAN lighted signs	\$ 10,000	\$ 8,000	\$ 2,000
22	Transit Traveler Information System (6-Transfer facility, LU Wellness Center, Capitol Mall, Both Wal-Marts, Eastland Convenient Food Mart)	\$ 60,000	\$ 48,000	\$ 12,000
23	Bike racks at passenger transfer facilities and selected bus stops	\$ 20,000	\$ 16,000	\$ 4,000
24	Security gates for transit storage, maintenance and fueling facilities	\$ 20,000	\$ 16,000	\$ 4,000
25	Inductive charging system for electric buses	\$ 100,000	\$ 80,000	\$ 20,000

*Note: Current as of February 15, 2016.*

Item 2 of **Table 5-4** above has recently been awarded to DoubleMap Inc.<sup>8</sup> This includes the installation of Automatic Vehicle Location (AVL) equipment, Automatic Passenger Counter (APC) equipment and Automatic Voice Annunciation (AVA) equipment.

Automatic Vehicle Location (AVL) systems provide real-time vehicle location information to a transit system's control center. With this information, the Agency can identify and mitigate service delays and disruptions. Accumulated AVL information can also provide a body of information that JEFFTRAN can use to identify and address recurring service problems. Additionally, AVL technology will give JEFFTRAN riders real time bus location information.

Much of the infrastructure which facilitates AVL can also be used for other applications such as Automatic Passenger Counter (APC) and Automatic Voice Annunciation (AVA) systems. APC systems provide boarding and alighting counts by location. With AVA systems, buses "know" their location and can provide automatic "next stop" announcements. This facilitates compliance with

<sup>8</sup> <http://www.newstribune.com/news/local/story/2017/jun/20/council-passes-several-transit-bills/678656/>

requirements of the Americans with Disabilities Act (ADA) as well as facilitating transit use for riders with visual and auditory difficulties.

These technologies will allow JEFFTRAN to automate important data analyses which must be done manually as of now. These systems will provide quantitative reports on passenger counts, on-time performance, passenger loads, NTD data and other critical performance information. Ultimately, this technology results in improved service planning, operating performance and customer service.

Currently, JEFFTRAN uses the Transportation Improvement Program (TIP) process to secure funding for new buses. Since the majority of buses are at or near their useful life, FTA 5309 discretionary funding and additional grant opportunities should be aggressively pursued.

New bus purchases are shown for 2019 (2) and 2021 (3). Potentially, these could be electric buses which are becoming more widely used. Jefferson City's topography and fleet standards need to be taken into consideration when upgrading the bus fleet.

A new administration facility and transit center was analyzed in depth in the 2010 Transit Feasibility study. They are included as a three million dollar investment in the list of capital expenditure plans. The 2010 study showed that the current facilities are crowded and outdated, and should be upgraded. This would also be beneficial for future service growth and expansion. A preferred site on East Miller Street across from the existing facility was recommended as the most flexible and cost effective solution. The new administrative & operations building would continue joint City fleet maintenance.

Additionally, the 2010 study recommended a new transit center to be built between Washington/ Broadway (south of McCarty) in downtown Jefferson City. The facility would have 10 bus bays along with possible parking. The new transit center would replace the current transfer location adjacent to the existing JEFFTRAN Administration building.

### 5.3 JEFFTRAN Facilities

Jefferson City currently operates multiple facilities at 820 East Miller Street. The administrative facility is home to offices, restrooms and the driver break room. The maintenance facility features eight bays which serve all Jefferson City vehicles and equipment except for the Parks and Recreation department. The maintenance facility serves equipment such as lawnmowers, chainsaws and weed eaters as well as transit, police and sanitation vehicles. The garage is open Monday through Friday while transit service is operating. JEFFTRAN also features a heated bus barn for vehicle storage along with a vehicle wash facility. These facilities are able to accommodate its current fleet for both parking and day-to-day repairs. **Figures 5-1 to 5-4** show these facilities.





Figure 5-1: JEFFTRAN Administrative Offices (Approximately 900 sq. ft. facility)



Figure 5-2: Central Maintenance Facility (Approximately 14,400 sq. ft. (160' X 90'))



**Figure 5-3: Bus Barn (Approximately 11,300 sq. ft.)**



**Figure 5-4: Wash Facility (Approximately 1,300 sq. ft.)**





The main transfer point is at 820 Miller Street adjacent to the Administrative office (**Figure 5-5**). This amenity includes an enclosed climate controlled shelter with Wi-Fi access. Additional transit shelters are found in various locations throughout the City, as shown in **Figure 5-6**.

Figure 5-5: Transfer Shelter (10' X 21' glass-enclosed shelter)



Figure 5-6: Bus Shelters throughout Jefferson City







## 6. Operator Work Schedules Assessment

JEFFTRAN enjoys a very high level of flexibility in assigning operator work shifts for both fixed route and Handi-Wheels service. Bus operators are not members of any collective bargaining unit. Management works with the bus operations staff and has the discretion as needed to assign operators to specific routes or to Handi-Wheels service.

Fixed route operators are assigned to routes using a combination of split shifts and midday drivers' work shifts which are approximately 3½ hours in length. Pull-out/pull-in schedules provided by JEFFTRAN show all fixed routes driven by an operator who both pulls the bus out for the first trip in the morning and pulls it in after the last trip in the afternoon. All work split shifts, with about a 3½ hour midday break. There is no spread premium paid for split shifts. The midday breaks on the fixed routes are worked by relief route drivers. They generally work relief runs on two of the fixed routes.

JEFFTRAN management has much more flexibility than most transit system in scheduling and assigning of operating personnel. No changes in the current work schedule assignment procedures are recommended at this time. Maintaining its current flexibility requires management retaining the good will and trust of the operating employees. See **Section 7** for further discussion; one of JEFFTRAN's strengths is the level of trust which employees have toward JEFFTRAN and its management.



## 7. Managerial Assessment

The consulting team conducted interviews with JEFFTRAN staff (including several operating employees) to gather important information which will contribute to the recommendations of this planning effort. Many interviews were one-on-one, while other interviews grouped two people with similar responsibilities. These interviews provided participants the opportunity to talk candidly about the culture, responsibilities and accountability within the Agency and to share their general thoughts and ideas about JEFFTRAN.

At the outset of each interview, the team explained the intention of individual anonymity of answers. Although staff interviews were confidential, important concepts emerged. A Strengths Weaknesses Opportunities Threats (SWOT) analysis was conducted. Organizing the qualitative findings of the interviews into a SWOT Analysis allows the organization to evaluate itself from a comprehensive perspective and to provide an accurate snapshot of the issues that currently influence JEFFTRAN.

### Summary of Observations

#### Strengths:

- Improved sense of teamwork and attentiveness to passengers
- Renewed commitment to customer service
- Solid loyalty to the agency from employees
- Rebranding of the image of the system (buses & uniforms)
- Strong maintenance program and pride in fleet (cleanliness)
- Affordable transportation for transit dependent riders
- Employee hours flexibility in regard to scheduling rules

#### Weaknesses:

- Declining ridership and limited span of service
- Long travel times for customers
- Not meeting employment shift times in evenings and weekends
- Little market research and marketing budget
- Lack of performance metrics for service evaluation
- Limited attraction of choice riders<sup>9</sup>
- The stigma that transit is only for those with no other options

#### Opportunities:

- Improve efficiency with revamped routing patterns
- Improve effectiveness and greater use of technology
- Promote transit as an economically valuable service to the community
- Expand private/public partnerships to increase ridership (Lincoln University, schools, businesses)
- Greater funding levels with potential grants and universal access
- Potential attraction of choice and millennial riders
- Develop new ways of delivering service (van pools, sharing)

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<sup>9</sup> The term “choice riders” refers to transit riders who have the option of using other modes of transportation but choose to use transit due to cost, convenience or other reasons.

**Threats:**

- Lack of funding and length of time to purchase new buses
- Restricted service area – limited to the city limits
- Dependence on city general revenue funding for operations
- Limited transit amenities (ADA accessible stops, shelters)
- First and last mile mobility challenges
- Risk adverse culture of transit
- Political will to implement necessary changes

**Findings**

Overall, employees were very open and honest about discussing the Agency. The interviews gave them an opportunity to think about strategic issues. JEFFTRAN's staff recognizes the challenges the system is facing and has a realistic view of the efforts which will be required to maintain and enhance the system in the future. A summary of each component of the SWOT analysis follows:

**Strengths**

Employees are dedicated and loyal. They appreciate investments in system resources. They believe they are providing a very valuable service to JEFFTRAN customers and the city as a whole.

**Weaknesses**

Levels of service (both days and hours, as well as frequencies) are marginal. Many needs are unmet, such that transit service appeals only to the transit-dependent. There is little likelihood of a significant increase in financial support.

**Opportunities**

There are opportunities to engage stakeholders in the community to provide added support for transit. Younger riders are more inclined to use transit. Technology holds great promise to increase transit usage. This study can provide very helpful recommendations to take advantage of these opportunities.

**Threats**

Flat funding levels and competing with many other city needs restricts the ability to take advantage of future opportunities. These funding issues are reflected in both capital and operating needs. There appears to be limited political appetite to address funding issues.

By addressing these issues, JEFFTRAN can be successful as it builds on its past and prepares for its future. Ultimately, it should be a goal of the organization to maximize system strengths while minimizing its weaknesses.



## 8. Input Summaries

This section summarizes the public involvement process and input received from community meetings that were held in March 2017. An important part of the system assessment is to reach a broad constituency within the community to solicit input on routes, schedules and service types. This will ensure that the community is involved, given ample opportunity to provide input and made aware that their issues have been heard and understood.

### 8.1 Stakeholder Interviews

Six stakeholder meetings were conducted during the week of March 27-29. All meetings were held at the John G. Christy Municipal Building in Jefferson City. These stakeholder meetings were about one hour in length and formatted as structured interviews based upon the specific interests of those participating in each interview. People were invited to participate in meetings with the following emphases: education, public officials, healthcare/social service organizations, transit advisory committee, employment/business organizations and a general meeting. While meetings were designated for those with common interests, invitees were encouraged to attend another stakeholder meeting if their schedule did not allow them to attend the one to which they were invited. Meeting sign-in sheets are included in **Appendix D** of this document.

Following is a summary of key statements made during each meeting:

#### Educational Institutions Meeting – March 27, 3:30 p.m. to 4:30 p.m.

- Crossing St. Joseph Catholic School property to get to employment locations is a concern to school officials.
- A stop is needed on Industrial Drive which is served by ADA accessible sidewalks.
- Missouri State School transportation funding is being reduced.
- The LINC is crucial for the community.
- Origins and destinations of riders would be useful data for planning purposes.
- Need weekend and evening service for Lincoln University students.
- Student passes are used frequently.
- Columbia College and William Woods University should be included in any educational pass program.
- Boys and Girls Club is a key attraction.
- After school care programs have potential to capture students.
- Summer pass marketed to age 17 and younger is under assessment.
- Transportation brings people together.
- Commercial development needs to be connected to educational institutions.

#### Public Officials Meeting – March 27, 5:30 p.m. to 6:30 p.m.

- Weekday service hours need to be expanded.
- Hours of service and weekend service need expanding.
- Funding transit is difficult due to overall budget constraints.
- City council must see the value of transit.
- Buses are affordable for transit dependent.



- Employment and transportation connection is important.
- Uber/Transportation Network Companies could become an option.
- Any fare increase must provide a net benefit.
- Reduced state worker ridership (along with loss of state funding for shuttle) was significant.
- State facilities still have parking issues.
- Hub-n-Spoke system could be developed.
- Changes to routes require public hearing and must meet environmental justice regulations along with Title VI (equity).
- Data driven decisions should be examined.
- Apache Flats which is outside city limits might need transit.
- Fringe areas of the city could use service.
- Social media can help with public relations.
- Upgraded bus stops are needed.
- Holts Summit has mentioned a desire to have service.
- High Street West – Livingston area eliminated in previous service change.
- Bike racks can leverage resources with other City planning projects.
- Transfer points with amenities are crucial for success.

#### **Healthcare and Social Service Organizations Meeting – March 28, 11:00 a.m. to 12:00 p.m.**

- Transportation is the number one barrier to getting people out of poverty.
- Evening and weekend service crucial.
- Schedules need to meet needs of customers.
- Scholastic and ALPLA are big employers.
- Industrial Drive needs upgrade in transit stops.
- Walking to amenities – bus stops need sidewalks.
- Students need service to 9:00 p.m.
- Transportation costs are big part of individual budgets.
- More service out Eastern part of city.
- Westview Heights might benefit from coverage.
- Market to millennials and choice riders.
- Private/Public Partnership create return on investment.
- Taxis being used for return trips.
- West Edgewood Urgent Care Center difficult to get to.
- Taxis/TNC/car sharing can be expensive.

#### **Public Transit Advisory Committee Meeting – March 28, 1:30 p.m. to 2:30 p.m.**

- Operators are caring, attentive, understanding.
- On-time performance of Handi-Wheels is positive.
- Hours need to be expanded – determine if all routes or specific routes.
- Free ride, day pass, park-n-rec programs are examples of awareness of transit.
- Upgraded technology should help with customer information.



- Riders feel safe – not afraid to ride.
- Good relationship with private schools with use of Tripper routes.
- Buses clean, branding good.
- Span of service is a weakness – more hours needed.
- Need reliable service to Scholastic & east industrial park.
- Transportation barrier to economic development.
- Enhance revenue with Private/Public Partnerships.
- Find common ground with businesses.
- Community must decide what kind of transit investment is desired.
- Need sustainable operating funding.
- Quality of life issue to capture choice riders.
- More regional services could be beneficial.
- Creative funding needs to be negotiated since there are more needs than resources.

#### **Employment and Business Organizations Meeting – March 29, 8:00 a.m. to 9:00 a.m.**

- Visitors Bureau schedules tours to Missouri State Prison Site. Work with hotels for transit information.
- Missouri State Prison Site parking is an issue.
- Transportation cost influences job choice.
- Taxi Cost – \$25 is expensive.
- Advertising on bus could bring more value.
- Shift times in the western part of the City do not match bus availability.
- Evening service is crucial.
- Special events could use transit.
- State shuttle for office employees was discontinued due to budget constraints.
- Salute to America, Living Windows festival are special events in community.
- State officials believe that downtown parking is adequate.
- On street parking meter is enforced downtown.
- State Master Plan Prison site creates new opportunities.
- Transit needs to meet second shift employment.
- Medical appointments take long time, creates issues with transportation.
- Span of service is a major concern.
- Regional services could be examined.

#### **General Meeting – March 29, 11:00 a.m. to 12:00 p.m.**

- University students need evening service.
- Major employers have shifts not being met by bus system.
- New development happening in west part of city.
- Work with Student Government at Lincoln University.
- Capital Mall route might have on-time performance issues.
- St. Mary Hospital is served 1-4 times a day.

- Boys Club & Wellness Center already has coverage.
- To cover Scholastic area east could take additional 12-15 minutes.
- Topography is a concern with electric vehicles along with battery life.
- Smaller vehicle fuel economy not that different, however, capacity is the concern.
- Shaking the stigma of transit with economic development opportunities.
- Target marketing and an education component needed.
- Save money with standardization of vehicle fleet.
- Examine smaller buses on routes.
- Fares increase was rejected recently.
- Coordination efforts with employers needed.
- A rising commuter market – express routes from lots should be investigated.
- Ride sharing, bike share are becoming more popular.
- Business will not move to City if workers cannot have transportation.

### Findings

A desire to contribute and a real civic mindedness were felt throughout the stakeholder interviews. A summary of the input received is as follows:

#### **Educational Institutions**

Several post-secondary schools (Lincoln University, Columbia College and William Woods University) are key markets for transit service. Student (both high school and college) need evening as well as weekend transportation. The Boys and Girls Club, as well as the LINC are key trip generators for students.

#### **Public Officials**

Public officials see the value of transit, as well as the needs for expanded hours of service evenings and weekends. At the same time, budget constraints make it difficult to increase transit funding. Fare increases may be acceptable, but need to be connected with visible benefits to JEFFTRAN users. Upgrades bus stops and other passenger amenities are a key need. There are needs to serve fringe areas of the city, as well as locations outside the city limits. Holts Summit was cited as a specific location which has expressed a desire for transit service to Jefferson City.

#### **Healthcare/Social Service Organizations**

A lack of transportation was cited as the “number one barrier” to lifting people out of poverty. In that regard, evening and weekend service is crucial. Many major employers (Scholastic and ALPLA were specifically cited) have staffing difficulties due to potential employees who lack transportation. Alternative means of service (such as shared taxi and Uber/Lyft) were cited as a possible return trip for those who can “get there” on transit but who cannot use transit to return home.

#### **Public Transit Advisory Committee**

Span of service (evenings and weekends) is a key concern. Such expanded service may be needed on just some (not all) routes. There needs to be more outreach to businesses to enhance transit revenues with public/private partnerships. Many aspects of transit service (it is safe; buses are clean



and well maintained) are positive. Upgraded technology is important to reaching out to more transit customers.

### **Employment and Business Organizations**

Evening service for employees is critical; this was stated repeatedly. Development at the Missouri State Prison Site will create many economic opportunities. State officials do not believe that the State of Missouri needs to resume its former role in subsidizing downtown parking shuttles for state employees; they believe downtown parking is adequate.

### **General Meeting**

The input at the general meeting largely reiterated input from the meetings focused on a single group of stakeholders. One additional input was that there was no support for any fare increases.

## **8.2 Public Meeting**

Input from a transit system's stakeholders is the foundation for determining what is working and what is perceived to be broken in the system. JEFFTRAN is no exception. The community meeting was advertised in multiple venues. An ad was placed in the News Tribune and a press release was also distributed in social media. Additionally, notification flyers were placed on buses to reach existing riders. Furthermore, the meetings were noticed via e-mail distribution lists.

The public meeting was held on March 28, 2017 between 3 p.m. and 6 p.m. at Jefferson City Administration building. This allowed people to use JEFFTRAN service to travel to and from the meeting. It started with an open house format, giving the public ample opportunity to review study materials and ask informal questions. From there, members of the community were able to provide their input and feedback. Comment forms also were made available as well as one-on-one interaction between customers and the project team. Approximately 30 people registered on the meeting attendance sheet.

The following is a summary of the comments obtained during the public meeting. Detailed comment forms and other public input are found in **Appendix E**.

### **Service Coverage and Frequency**

- Closer to Walmart, Menards, Lowes, social services, social security office, post office
- Need expanded bus service.
- East of town so that workers could get to businesses there.
- Evening and weekend hours needed.
- More service to Scholastic, Industrial park and Mall area.
- Increase number of routes eventually.
- Route through Lincoln's campus to major stops.
- Route to major factories/hospitals for shift workers plus weekend routes.
- Some interest in service to Holts Summit and Runge Nature Center.
- Longer hours of service to benefit businesses.
- Extended morning and evening hours, at least Saturday services.
- Reach all job sites in the City.

- Extend hours: weekdays 7 a.m. to 8 p.m. and weekends 8 a.m. to 5 p.m.
- Scholastic and neighborhood service for fast food shift workers.

### Facilities and Stops

- Shelters and accessibility are an issue.
- Low volume areas still might need shelter.
- More bus shelters and benches.
- Consider safety of certain crossings.
- Service needs shelters, bus stop signs.
- Wheelchair accessible stops at Herron as before and at previous Goodwill location. Not wheelchair accessible- Hough Park Road on Highway East, stops near Jefferson partially blocked by parked cars, not wheelchair accessible.
- Ken Locke Apartments need bus stop.

### Other Comments

- Transit needs to reach locations further out and with more service hours.
- Have brainstorming sessions to identify financial benefits and best ideas for transit.
- Create express route to Capital Mall and south.
- Longer hours on weekdays and weekends.
- Lincoln University needs more service for South Campus, Leslie Boulevard Strip Mall.
- Service to Halo House on Bennett Lane needed.
- Better hours, especially evenings and weekends to commercial areas for shopping.
- More direct connections from high density residential areas.
- Expand evening hours, revise route system so riders can easily get from major commercial, employment to residential neighborhoods.
- Bus from Columbia needs to come to Jefferson City.
- Put shelter at Capital Region Medical Center.
- Some customers forced to rely on taxis.
- Service limitation is a barrier and hurts employment and day care options.
- Transit dependent not able to shop on weekends.
- Public transit is for the common good.



Large displays (24" by 36") were prepared, showing an individual map of each JEFFTRAN route. Attendees were asked to write on these maps and/or affix post-it notes to the maps to provide input on specific routes. Their comments are listed below:

**Business 50 East Route:** Eastbound McCarty & Lafayette turn too tight. Stop sign is missing at St. Louis Road and McCarty.

**Capital Mall Route:** Provide service further west to Apache Flats. Shorter routes to meet work and school shifts along Fairgrounds Road.

**High Street East Route:** Stop on McCarty not ADA accessible. Need stop at Schulte's & Capital View post office. Keep stop at Hough Park.

**High Street West Route:** Provide service to Runge Nature Center without going to the mall.

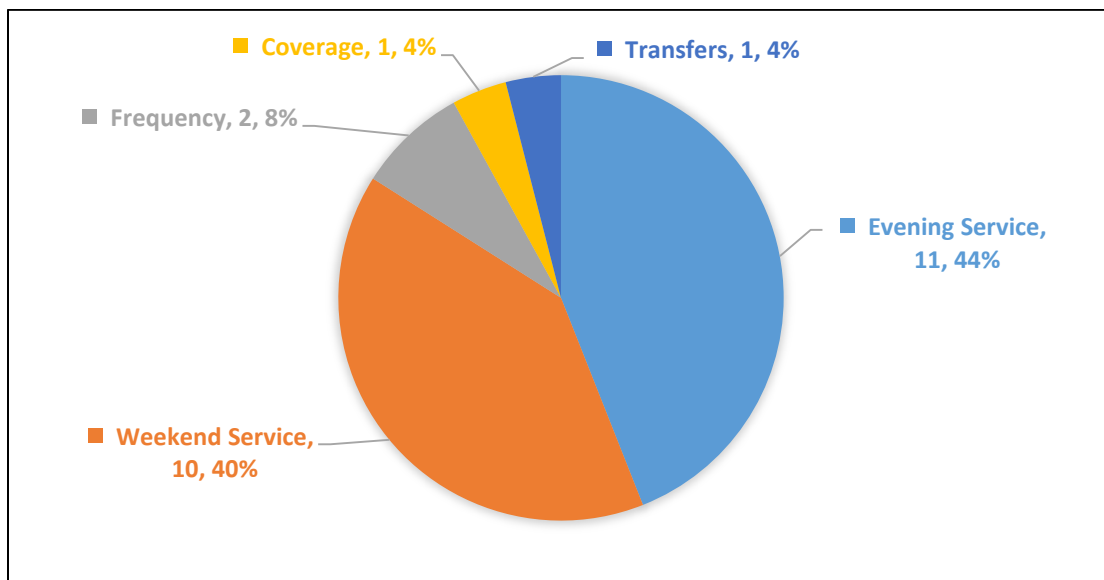
**Missouri Blvd. Route:** Stop closer to Menards. Very difficult to cross Missouri Boulevard. Stop at Dunklin and Linden unsafe.

**Southwest Route:** Need shelters on Oak Street and Capital Region Hospital. The bus stop at Jefferson City High School should be evaluated for wheelchair accessibility.

**General City Map:** Add express routes from Holts Summit. Trial period of free rides on the Fourth of July. Service to ABB electrical manufacturing facility.

Participants also provided feedback on service improvement priorities. **Figure 8-1** below illustrates the combined top two priorities of citizens that completed the public meeting form. The chart shows the total number of surveys and percentages for the combined top two priorities. Evening service was listed as a first or second priority by 44% of respondents and weekend service was first or second priority of 40% of respondents.

Figure 8-1: Improvement Priorities



### 8.3 Online Survey

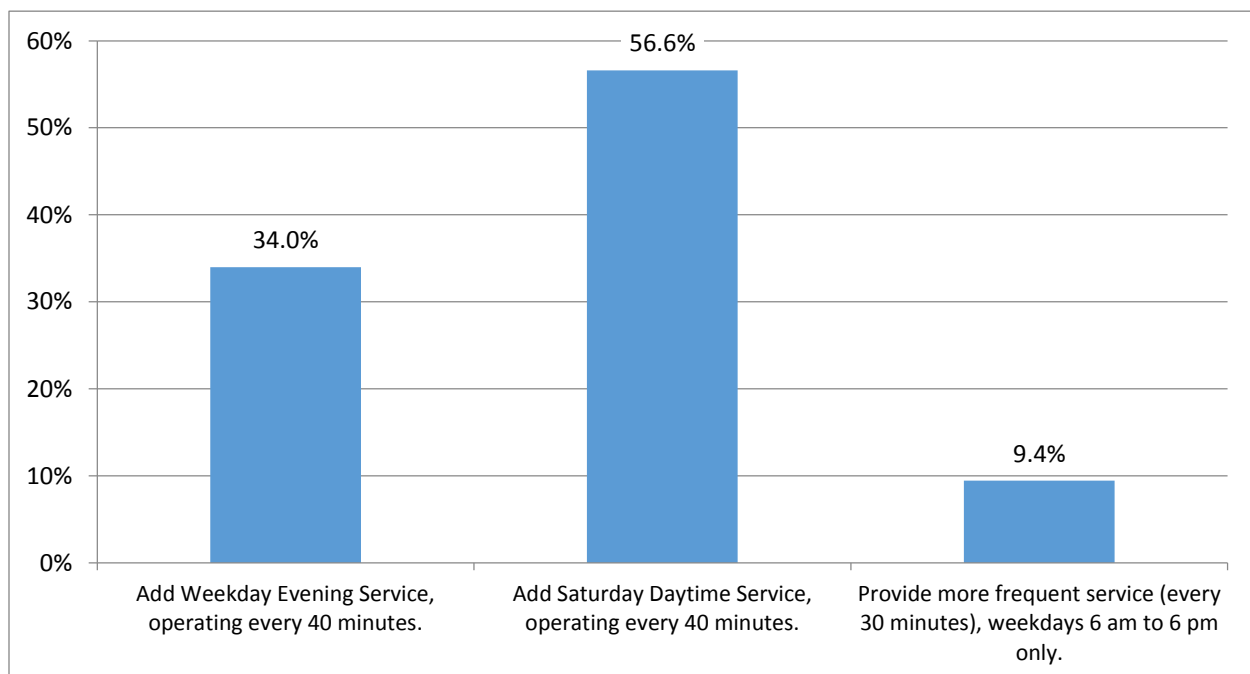
People were invited to take the online survey via Facebook posts, public notices/signs, promotional events and other avenues. CAMPO announced the opening of the survey with a Facebook post and also posted pictures of promotional events encouraging the public to complete the survey. Public signs were put on buses and other public places to inform the community about the survey. CAMPO held promotional events to help receive input from diverse demographic groups and to ensure that the public remains involved throughout the process. The events included giving away water and assisting the public in completing the online survey as well as paper versions of the survey.

The survey was available between Friday June 9, 2017 and Tuesday July 11, 2017. A total of 441 responses were received. The online survey directed respondents to answer some but not all of the questions in the survey depending upon their answer to the first question, “Do you live within the city limits of Jefferson City (south of the Missouri River)?” The respondents who reported living in Jefferson City were asked questions focusing on unmet needs and alternatives to expand days/hours of service. The respondents who reported living outside of Jefferson City were asked to reply to questions focusing on potential express service. All respondents were given the opportunity to provide general feedback via text comments.

Nearly two-thirds of the respondents reported living within the Jefferson City limits. Of the respondents living in Jefferson City, about 39% have used JEFFTRAN service within the last year (including Handi-Wheels service). Approximately 91% of these respondents reported that they primarily use the fixed route services while 9% reported that they primarily use Handi-Wheels.

When asked which alternative for expanded service they preferred, about 57% of respondents preferred to add Saturday daytime service, while about a third wanted to add weekday evening service, as shown in **Figure 8-2**.

**Figure 8-2: Online Survey – If JEFFTRAN expanded service, which option would you most like to see?**

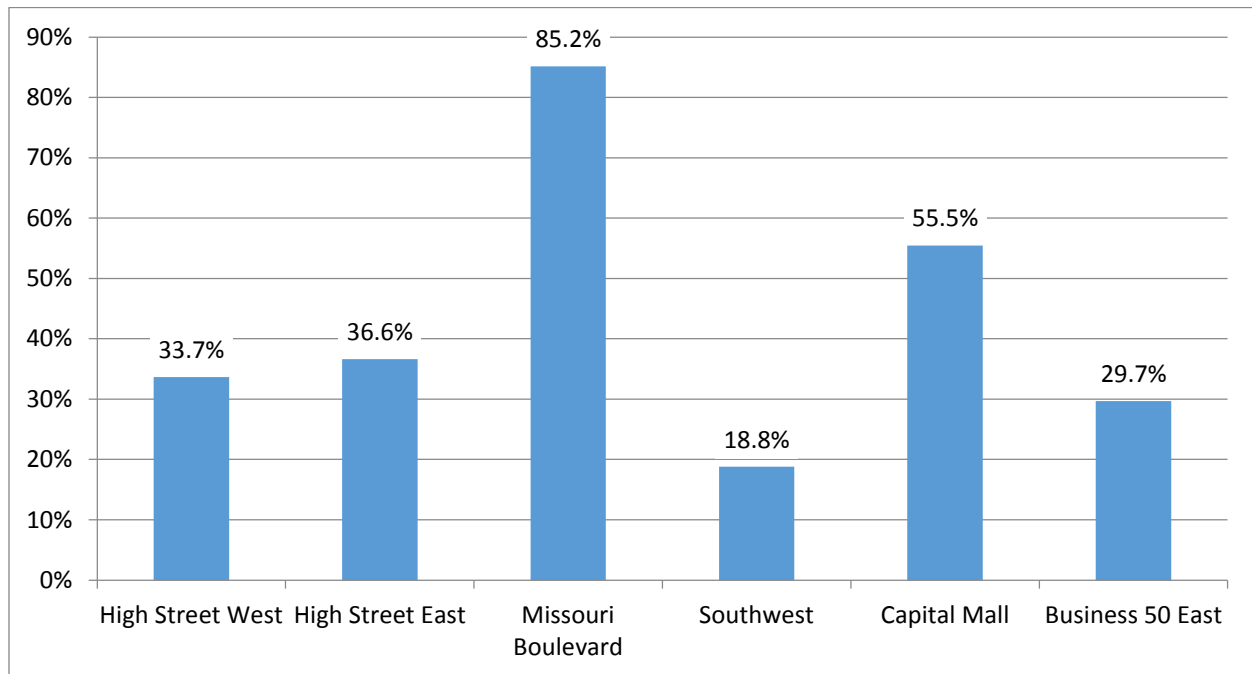






Missouri Boulevard was the route that the most respondents (85%) thought should be operated if Saturday service was added, as shown in **Figure 8-3** below. About 82% of respondents stated that they would be willing to pay higher fares for improved days/hours of service. However, nearly 40% of these respondents stated that they thought JEFFTRAN should only increase the fare to \$1.25 from the current \$1.00 fare (while keeping the senior/disability fare at \$0.50). Nearly a third of respondents reported that they thought JEFFTRAN should double their fares to \$2.00 for the regular fare and \$1.00 for the senior/disability fare.

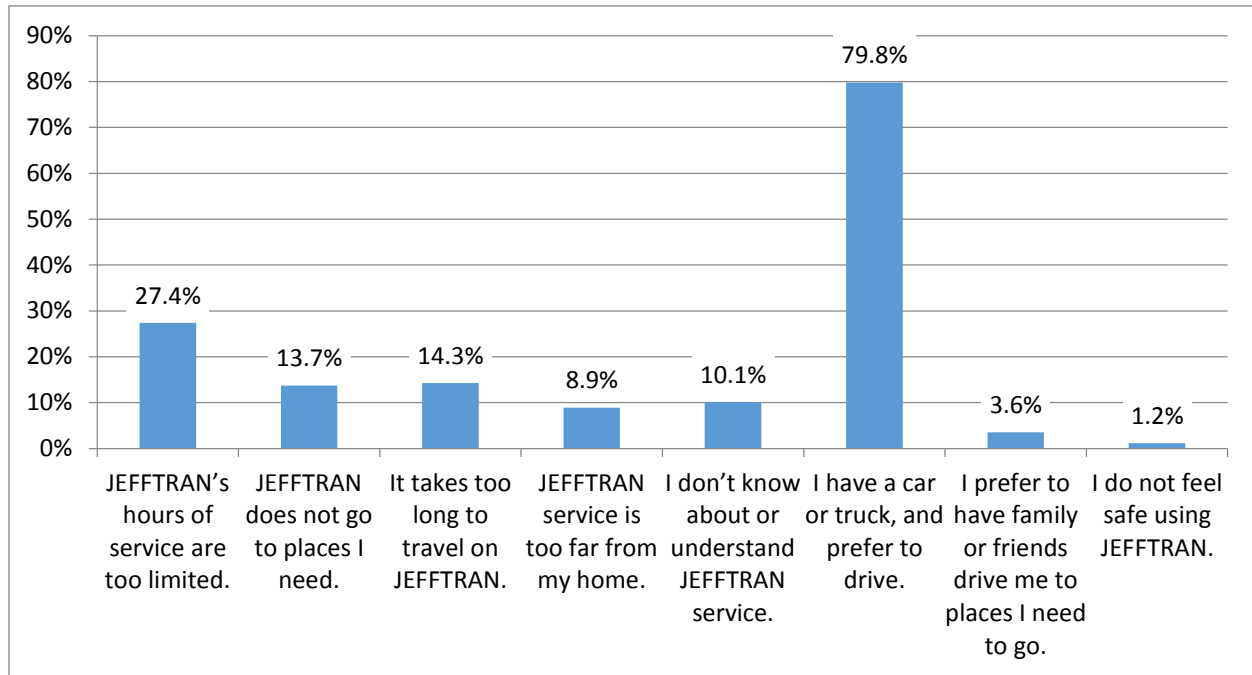
**Figure 8-3: Online Survey – If JEFFTRAN began to operate Saturday daytime service, on which routes would service be most needed?**



*Note: The total is greater than 100% since respondents could select multiple routes.*

The most cited reason (80% of respondents) for not using JEFFTRAN service within the last year is a preference for driving. The second most cited reason (27% of respondents) is that JEFFTRAN's hours of service are too limited, as shown in **Figure 8-4**. This represents a significant number of potential riders that may be attracted to using JEFFTRAN service if days/hours of service are expanded.

**Figure 8-4: Online Survey – Why haven't you used JEFFTRAN service within the last year?**



*Note: The total is greater than 100% since respondents could select multiple routes.*



Of the respondents that don't live in Jefferson City, about 31% live in Holts Summit. Over 80% of respondents who live outside Jefferson City work within Jefferson City. About half of those living outside of Jefferson City would consider using an express bus service to downtown Jefferson City. Of those, nearly half would use it one or two days per week, as shown below in **Figure 8-5**. About 35% of respondents would be willing to pay a \$2.00 one way fare for the express bus service, as shown below in **Figure 8-6**.

Figure 8-5: Online Survey – How often would you want to use bus service to Jefferson City?

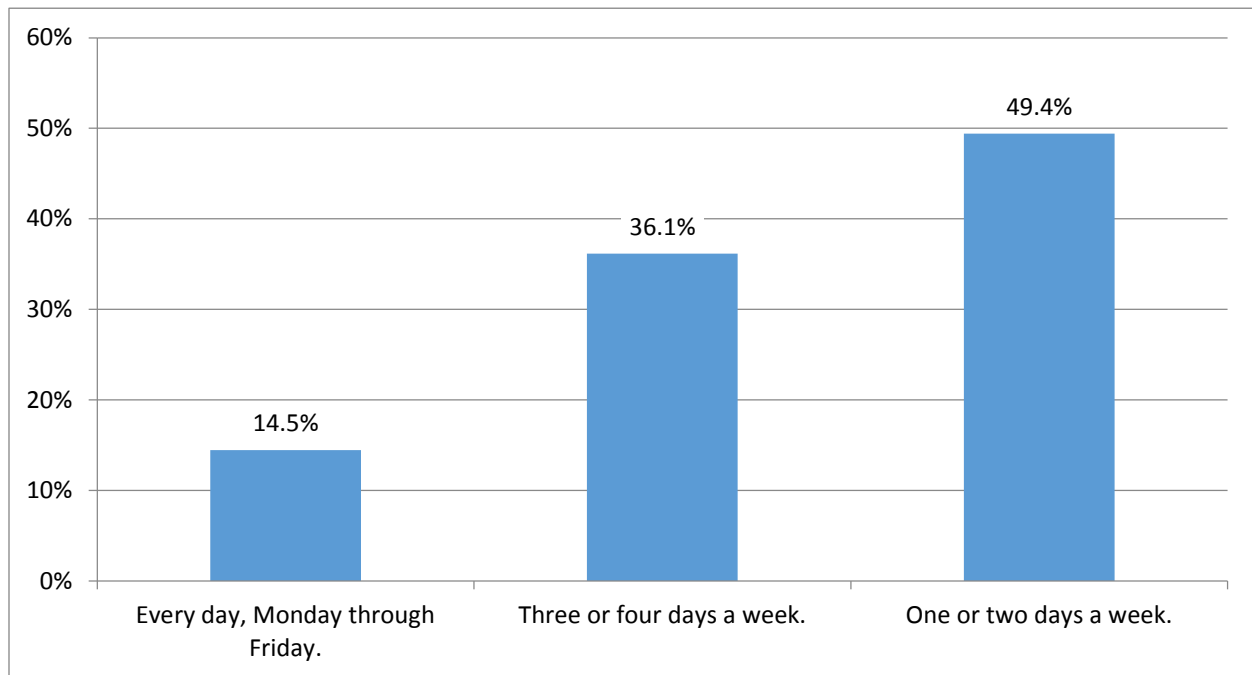
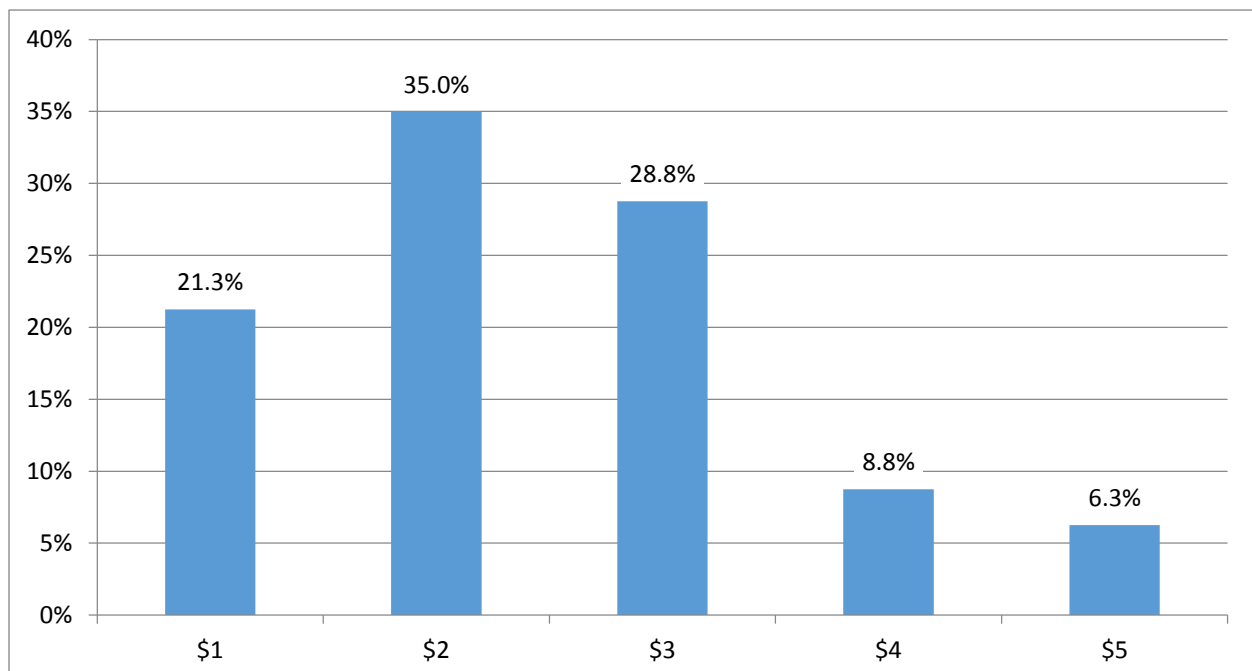


Figure 8-6: Online Survey – What is the highest one-way bus fare you would pay?



Please refer to **Appendix F** for detailed tabulations of responses to each question.

### **Summary of Comments**

Comments received through the JEFFTRAN online survey were in the following categories: passenger amenities, routes and schedules, fares/finances, public information, Handi Wheels service, quality of life and JEFFTRAN personnel. Of the 145 respondents who provided feedback -- with multiple comments-- routes and schedules were the subject of more comments than all other categories combined. The following is a summary of the comments received.

#### **Routes and Schedules**

Altogether, 91 comments concerning days and hours of service, new routes within Jefferson City and service outside of Jefferson City were submitted. The need to expand the hours of service was the comment most often made. In total, 65 respondents requested expanded hours during the week and/or weekend service. Some simply requested general expanded hours. Of the respondents, 41 requested evening hours, while 34 respondents requested weekend hours. One commenter stated, "Ridership would be greatly improved by adding weekend and evening service." Employment other than first shift, household errands and after-hours recreational events were listed as reasons for extending hours of service. Several specifically asked for late bus service on weekends for those drinking at bars. Several suggested buses run on holidays. Another suggested service to the industrial areas in east and west Jefferson City.

Some 28 respondents offered suggestions about adding new routes. For instance, one suggested routing a bus through Westview Heights, a neighborhood of 935 residents. "The current bus stop is too far away from almost everyone who lives here, so people will not use it." A couple suggested a route to the mall and one to the Runge Nature Center.

There were eight comments concerning adding routes to areas outside Jefferson City. Most of those requested service to Holts Summit.

#### **Fares and Finances**

Eight comments were submitted concerning fares and finances. More than one suggested obtaining smaller, more economical vehicles. Also, the availability of a multi-ride pass was suggested a couple of times. One questioned from where the funding for more transit would come. Several suggested keeping fares the same.

#### **JEFFTRAN Personnel**

Of the six comments pertaining to JEFFTRAN Personnel, they were mainly very positive. "Drivers are fantastic," one commented. Another said, "Great service." One commented that drivers should wait until the passengers are seated before accelerating.

#### **Public Information**

Public information received six comments. Several would like better technology, i.e., real-time GPS with a smart phone app. One suggested making routes and schedules more widely publicized to increase ridership. Another said the difficulty in understanding routes and schedules kept him from riding the bus. Another wants a way to track the bus.



### **Quality of Life**

Only four comments were submitted in this category. Comments included: clean buses, great service, some buses too cold and rude and vulgar riders.

### **Passenger Amenities**

Two suggested adding bicycle racks to the front of buses and one asked for specific bike fares and more bicycle routes along bus routes. One suggested bus stops have shelters to keep people out of the weather. Another suggested sidewalks.

### **Handi Wheels**

Just two comments were made concerning Handi Wheels. One stated the service was consistently late. Another said the services are excellent but should offer expanded hours.

## **8.4 Operator and Dispatcher Interviews**

Input was solicited through one-on-one and group meetings with five JEFFTRAN transit operation dispatchers and bus operators. The meetings were conducted on March 8 and March 27.

- Vehicle equipment upgrades have been positive.
- Smart cards would be an improvement.
- Selling passes on-board vehicles creates operator safety concerns.
- Layover times at transfer location need to be looked at.
- Missouri Blvd and Capital Mall heavily traveled routes.
- 30 minute headway matches up better than 40 minutes.
- Consider transfer points without coming downtown.
- Cannot get people home from second shift.
- Night and weekend service requests should be a priority.
- Concentrate on east-west routes.
- Transit amenities needed.
- Mall route is long.
- Running times could be adjusted.
- High Street East, High Street West and Southwest routes need to be examined.
- Place a transit center out west near growing areas.

## 8.5 Existing Plans Review

CAMPO identified existing plans to be reviewed to identify findings pertinent to the JEFFTRAN system assessment. Some documents address Jefferson City transit service only tangentially. Their descriptions are correspondingly brief.

Pertinent findings and recommendations from each study are listed below:

### **Holts Summit Preliminary Long Range Transportation Plan 2009, City of Holts Summit**

This plan is six pages long, with only a few sentences addressing transit. It mentioned that there is some interest in providing transit service to Holts Summit and then adding transit stops with amenities (Page 5).

### **Holts Summit Bicycle, Pedestrian and Transit Plan 2014. Mid-MO Regional Planning Commission**

Non-profits OATS and SERVE offer service to Holts Summit. OATS provides transportation without restrictions to age, disability or income for essential shopping, personal business, work and health care. It is a 501(c)3 corporation in 87 counties within Missouri (<http://www.oatstransit.org/>). SERVE provides transportation services to qualified elderly, disabled, low -income and youth (Page 3). It is a not-for-profit agency which also provides other social services within Callaway County (<https://serveinc.net/>).

There is a desire to have transit service from Holts Summit into Jefferson City. There are potential stops with shelters on 200 Summit Drive and 300 Karen Drive. A large portion of Holts Summit residents commute to Jefferson City for employment. According to the report, 95% of Holts Summit residents commute from the City for employment, with over 50% of these commuters travelling to Jefferson City or Cole County (Page 5).

### **Missouri Boulevard Safety Assessment 2016, CAMPO**

Missouri Boulevard is a high ridership route for JEFFTRAN. The lack of continuous sidewalk connectivity and access was raised as a concern. Additionally, safety issues of mid-block crossings of pedestrians to reach transit were highlighted (Page 6).

### **Capital Area Pedestrian & Bicycle Plan 2016, CAMPO**

This plan stressed the need to improve safety, connectivity and mobility in dealing with transportation infrastructure. Recommendations included improved connectivity to stops and pedestrian crossings. It also stated that potential transit service between Jefferson City and both Holts Summit and St. Martins should be examined (Page 44).

### **Coordinated Public Transit – Human Services Transportation Plan 2012, CAMPO**

A coordinated plan was mandated by the federal SAFETEA-LU legislation that required FTA 5310 funded agencies be included in locally-developed plan so that transportation is provided in a coordinated manner. This report documented the unmet needs of the elderly, disabled and low income.

Of the 42 agencies that responded to the study survey, 21 have their own vehicles, 13 of which have specially equipped vehicles. Six agencies provide reimbursements, vouchers or gas cards to their clients and seven agencies buy third party transportation services (Page 2).



JEFFTRAN provides fixed route service through most of Jefferson City. There remains a gap in the scope of coordination in transportation, employer and human service programs. Businesses and industries areas have work shifts throughout the 24 hour period but there are limited transportation options for those who work second and third shifts. Some agencies have program meetings that start after 5:00 p.m. and they have identified a need for more transportation options for their clients (Page 6). Recommended strategies included improved awareness of programs, better coordination among providers and a human services directory (Page 12).

**Figure 8-7** below lists the inventory of agencies with vehicles (Page 22).

**Figure 8-7: Inventory of Agencies with Vehicles**

Appendix 6: Inventory of Agencies with Vehicles					
Organization	Type	Population Served	Van/ Bus	Specially Equipped Vehicles	Auto
Algoa Correctional Center	State Agency	Penal		X	
Bridgeway Residential Care Facility	Private for Profit	Elderly, Disabled	X		
Capital Area Council for Special Services: Special Learning Center	Private not for Profit	Youth		X	
Carrco LLC EMT	Private for Profit	All		X	
Checker Cab	Private for Profit	General Public		X	X
Cole County Residential Services	Private not for Profit	Disabled	X	X	X
Firley YMCA	Private not for Profit	Elderly, Disabled, Low-Income, Youth, General public	X		
Fulton Presbyterian Manor	Private not for Profit	Elderly, Disabled	X		
Jefferson City Housing Authority	Municipal Corporation	Elderly, Disabled		X	
Jefferson City Nursing and Rehabilitation Center	Private for Profit	Elderly, Disabled		X	
Maplewood Residential Center	Private for Profit	Elderly, Disabled, Low-Income			X
Missouri Department of: Health and Senior Services	State Agency		X		
MoHealthNet	State Agency	Elderly, Disabled, Low-Income	X	X	X
New Horizons	Private not for Profit	Disabled	X		
OATS Inc.	Private not for Profit	All	X	X	X
Preferred Family Health Care	Private not for Profit	Counseling Clients	X		
ResCare HomeCare	Public/Private for Profit	Elderly, Disabled, Low-Income, Veterans, Youth			X
Riverview Nursing Center	Private for Profit	Elderly, Disabled, Low-Income		X	
Salvation Army Center of Hope	Private not for Profit	Elderly, Disabled		X	
SERVE	Private not for Profit	Elderly, Disabled, Low-Income, & Youth	X	X	
Villa Marie-A Stone Bridge Community	Private for Profit	Elderly, Disabled		X	

### Jefferson City Transit Development Plan 2006, TranSystems

This was a comprehensive analysis of the JEFFTRAN system. Existing transfer, operations, maintenance and storage facilities as well as all fixed routes and paratransit services were assessed for adequacy and effectiveness. Service alternatives were developed for the route network. The study included a transfer center evaluation, initiated in part due to interest in moving the transfer location. This stemmed from operational issues for some bus maneuvers at the previous site (intersection of Jefferson Street and High Street, adjacent to the southeast corner of the State Capitol grounds). This also would provide a sheltered waiting area for passengers. Solutions were identified and provided to address existing problems and develop creative and innovative alternatives for serving the community (Page 1).

The study considered extending service to areas such as Holts Summit and West along Route 50 where there is potential demand for public transportation and opportunities for possible expansion of service in the urbanized areas surrounding the City. Public involvement was a very important element. It included focus groups, public meetings and surveys to gather public input (Page 1).



The recommendations include reconfiguring the existing transit routes to move the transfer center to the administrative building at 620 West McCarty, extending the span of service by starting service approximately 30 minutes earlier in the morning and ending service approximately one hour later in the evening and implementing a fare increase from fifty cents to seventy-five cents (Page 39).

The recommendations noted the existing span of service was inadequate to serve many work trips. With service ending at 5:30 p.m. employees who either work a slightly later dayshift or cannot predict when they have to work later, cannot rely on using transit to get to work. In addition, this change is important for individuals who work outside the downtown area (Page 48).

Additional recommendations included:

- Low investment option – extend hours to 6:30 p.m., add downtown shuttle route, fare increase.
- Medium investment option – same as above plus Saturday & flex route service.
- High investment option – same as medium plus flex shuttles, 9 p.m. service and second downtown shuttle.

Other alternatives included the introduction of flex routes and shuttles. These investments would need increased funding from local revenue.

The plan recommended that the city move forward to increase the base fare to \$0.75 and that the city consider an additional fare increase within three years to increase the base fare to \$1.00 (Page 51).

### **JEFFTRAN Feasibility Study 2010, TranSystems**

This report documents the need for an upgraded administrative facility and transit center. It found that current space is outdated and inadequate. The current facility will not accommodate future growth.

A preferred site on East Miller Street across the street (to the north) from the existing facility would be the most flexible and cost effective solution. The new Administrative & Operations building would continue to offer joint Jefferson City vehicle and JEFFTRAN fleet maintenance. Additionally, a new transit center was recommended to be built between Washington/Broadway (south of McCarty) in downtown Jefferson City. The facility would have 10 bus bays along with possible parking. The new transit center would replace the current transfer location adjacent to the existing JEFFTRAN Administration building (Page 35).



## 9. Appendices

The subsequent pages contain the following appendices:

- Appendix A – Raw Count Data
- Appendix B – Operating Cost Model, Detailed Calculations
- Appendix C – Full Size Maps
- Appendix D – Meeting Sign-In Sheets
- Appendix E – Comment Forms and Other Public Input
- Appendix F – Online Survey Results
- Appendix G – Glossary of Terms and Acronyms

## 9.1 Appendix A – Raw Count Data

The raw count data is provided as excel files in the accompanying CD. There are three excel files included in this appendix:

- 1) Ridership Counts – Tabulates boarding and alighting counts by stop and trip for each route, including both regular and Tripper routes.
- 2) Route Running Times – Tabulates the scheduled and actual running times for each segment of every trip. This is done for regular and Tripper routes.
- 3) Transfers – Tabulates the numbers of transfers to a specific route from each of the other routes. This includes both the regular and Tripper routes.



## 9.2 Appendix B – Operating Cost Model, Detailed Calculations

This appendix shows the detailed calculations used to determine the operating cost allocations.

## Fixed Route

### Total Operating Cost

NTD Year (Nov 1 of previous year to  
Oct 31 of NTD Year)

2015	2016
\$1,356,266.00	\$1,327,140.00

### Fuel Cost

Calendar Year

Vehicle	2014	2015	2016
1	\$24,679.29	\$9,252.50	\$5,410.85
2	\$6,488.05	\$8,771.60	\$6,595.72
3	\$15,665.25	\$7,466.46	\$7,002.89
4	\$6,224.95	\$7,141.59	\$10,140.03
5	\$14,183.75	\$8,609.74	\$6,991.00
6	\$13,301.13	\$11,264.77	\$6,501.38
7	\$14,238.22	\$8,584.75	\$6,796.64
8	\$19,124.94	\$9,119.61	\$5,831.66
9	\$21,587.90	\$13,943.19	\$12,046.46
10	\$26,133.80	\$15,189.48	\$10,802.94
11	\$23,261.46	\$16,324.57	\$13,334.29
12	\$26,431.18	\$14,868.73	\$13,489.53
<b>Total</b>	<b>\$211,319.92</b>	<b>\$130,536.99</b>	<b>\$104,943.39</b>

### Maintenance Cost

Vehicle	2014 (Nov+Dec)	2015 Total	2015 Nov	2015 Dec	2016 Total	2016 Nov	2016 Dec
1	\$1,719.55	\$12,572.70	\$0.00	\$1,213.50	\$16,673.69	\$411.59	\$646.95
2	\$2,018.03	\$15,027.64	\$0.00	\$2,897.70	\$8,601.81	\$208.35	\$905.58
3	\$3,111.17	\$14,573.35	\$1,900.13	\$0.00	\$10,580.32	\$832.44	\$123.00
4	\$837.28	\$16,022.05	\$2,339.84	\$1,231.87	\$10,824.62	\$1,369.29	\$328.00
5	\$162.11	\$18,357.77	\$923.19	\$1,099.30	\$22,142.34	\$933.69	\$679.18
6	\$1,079.74	\$14,887.55	\$506.94	\$1,289.42	\$8,709.16	\$445.94	\$1,088.49
7	\$1,000.08	\$11,732.34	\$1,223.64	\$1,554.23	\$14,548.78	\$381.62	\$127.60
8	\$827.53	\$16,395.91	\$344.13	\$2,861.35	\$13,331.79	\$168.36	\$1,439.28
9	\$2,805.45	\$22,034.61	\$1,494.39	\$1,955.64	\$16,037.99	\$906.77	\$3,326.80
10	\$2,707.80	\$25,732.78	\$690.65	\$752.43	\$22,371.12	\$2,976.73	\$82.60
11	\$5,962.53	\$22,341.53	\$22.52	\$1,195.59	\$21,696.12	\$474.00	\$769.33
12	\$4,492.80	\$35,217.89	\$3,233.95	\$961.73	\$20,071.90	\$323.03	\$354.08
<b>Total</b>	<b>\$26,724.07</b>	<b>\$224,896.12</b>	<b>\$12,679.38</b>	<b>\$17,012.76</b>	<b>\$185,589.64</b>	<b>\$9,431.81</b>	<b>\$9,870.89</b>

## Handi-Wheels

### Total Operating Cost

NTD Year (Nov 1 of previous year to  
Oct 31 of NTD Year)

2015	2016
\$904,177.00	\$980,930.00

### Fuel Cost

Calender Year

Vehicle	2014 (Nov+Dec)	2015	2016
1	\$610.42	\$7,897.19	\$5,517.75
2	\$1,507.93	\$8,290.84	\$6,077.78
3	\$1,380.96	\$7,222.95	\$6,401.56
4	\$1,141.02	\$6,879.33	\$6,410.49
5	\$1,416.18	\$5,645.01	\$4,935.12
6	\$1,434.48	\$7,930.16	\$2,751.06
7	\$637.08	\$7,565.55	\$6,002.85
8			\$6,702.59
9			\$5,176.25
10			\$2,629.55
<b>Total</b>	<b>\$8,128.07</b>	<b>\$51,431.03</b>	<b>\$52,605.00</b>

### Maintenance Cost

Vehicle	2014 (Nov+Dec)	2015 Total	2015 Nov	2015 Dec	2016 Total	2016 Nov	2016 Dec
1	\$397.87	\$16,738.40	\$0.00	\$6,615.34	\$6,280.27	\$41.00	\$0.00
2	\$379.76	\$8,038.74	\$25.19	\$284.59	\$5,694.84	\$564.33	\$41.00
3	\$1,562.65	\$4,328.22	\$346.19	\$42.47	\$9,397.09	\$0.00	\$1,928.38
4	\$1,694.28	\$4,610.36	\$949.80	\$1,021.62	\$6,377.37	\$307.24	\$1,193.92
5	\$217.66	\$6,496.92	\$294.73	\$462.75	\$7,088.06	\$0.00	\$272.07
6	\$480.44	\$4,082.26	\$419.46	\$814.34	\$5,483.04	\$0.00	\$703.93
7	\$634.61	\$8,307.50	\$0.00	\$1,016.04	\$17,911.66	\$400.38	\$180.40
8					\$5,204.00	\$373.43	\$446.58
9					\$4,636.73	\$0.59	\$385.60
10					\$5,104.91	\$0.00	\$276.95
<b>Total</b>	<b>\$5,367.27</b>	<b>\$52,602.40</b>	<b>\$2,035.37</b>	<b>\$10,257.15</b>	<b>\$73,177.97</b>	<b>\$1,686.97</b>	<b>\$5,428.83</b>

Yellow cells are vehicles bought in March 2016.

	Fixed Route		Handi-Wheels	
	2015 NTD	2016 NTD	2015 NTD	2016 NTD
Fuel Cost	\$144,000.81	\$109,208.99	\$50,987.26	\$52,409.34
Maintenance Cost	\$221,928.05	\$195,979.08	\$45,677.15	\$78,354.69
Total Operating Cost	\$1,356,266.00	\$1,327,140.00	\$904,177.00	\$980,930.00
Vehicle Hour Related Expenses	\$990,337.14	\$1,021,951.93	\$807,512.59	\$850,165.97
Vehicle Mile Related Expenses	\$365,928.86	\$305,188.07	\$96,664.41	\$130,764.03
Revenue Hours	17,160	16,619	15,151	14,724
Revenue Miles	284,100	279,545	210,076	202,610

Total Modal Operating Cost =	X *	Total Revenue Hours +	Y *	Total Revenue Miles
2015 NTD Fixed Route	\$57.71		\$1.29	
2016 NTD Fixed Route	\$61.49		\$1.09	
Fixed Route Average	\$59.60		\$1.19	
2015 NTD Handi-Wheels	\$53.30		\$0.46	
2016 NTD Handi-Wheels	\$57.74		\$0.65	
Handi-Wheels Average	\$55.52		\$0.55	

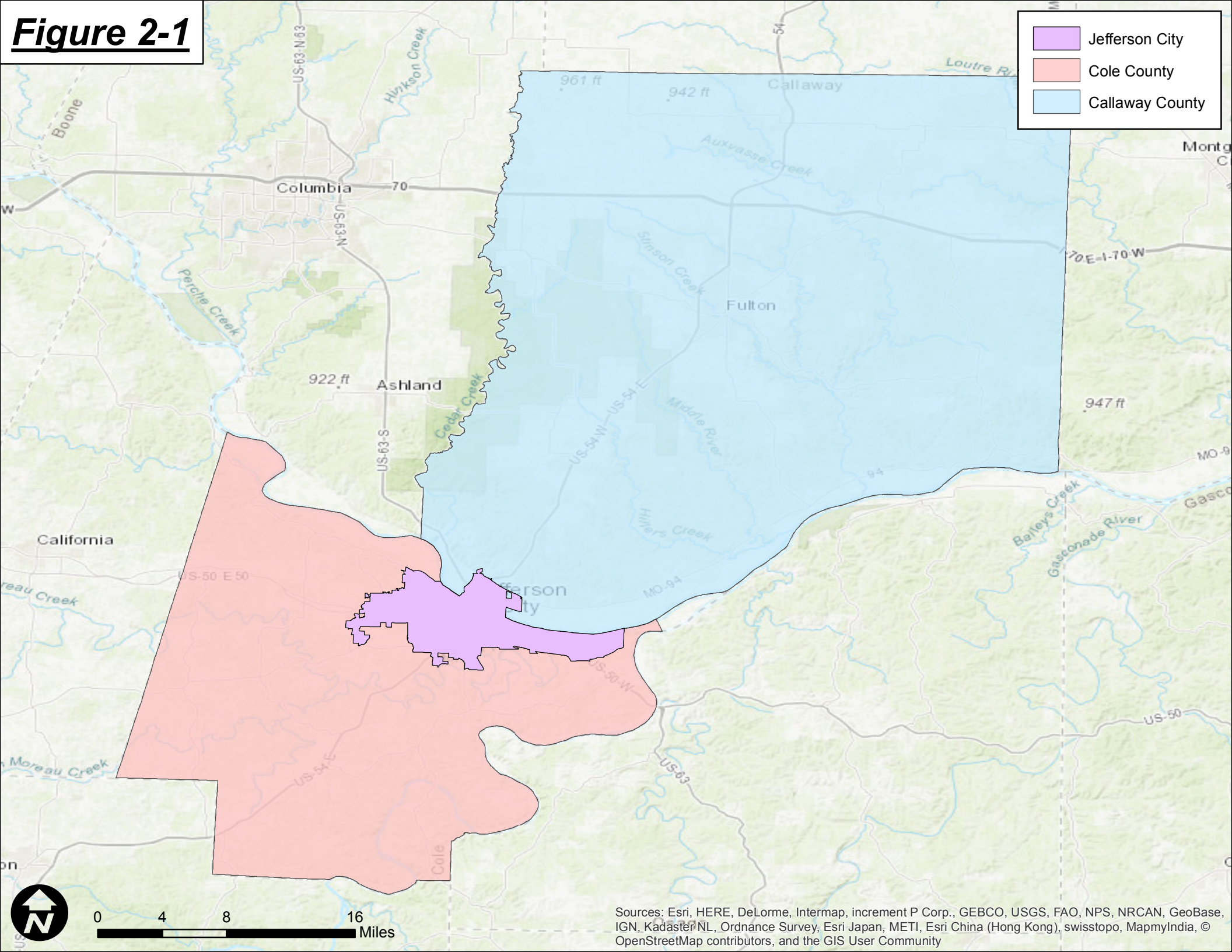




### 9.3 Appendix C – Full Size Maps

This appendix presents full size versions of maps that were included throughout the report.

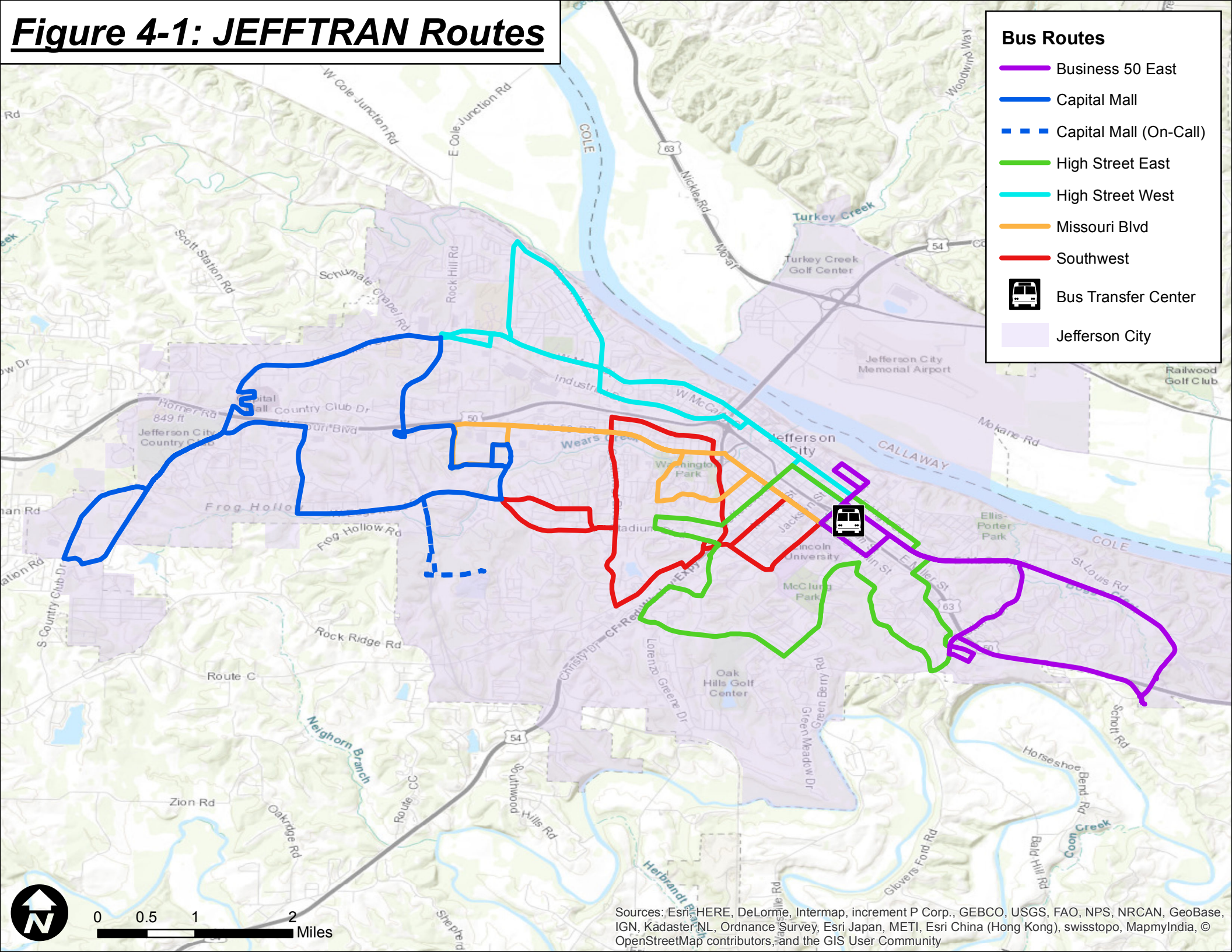
**Figure 2-1**



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

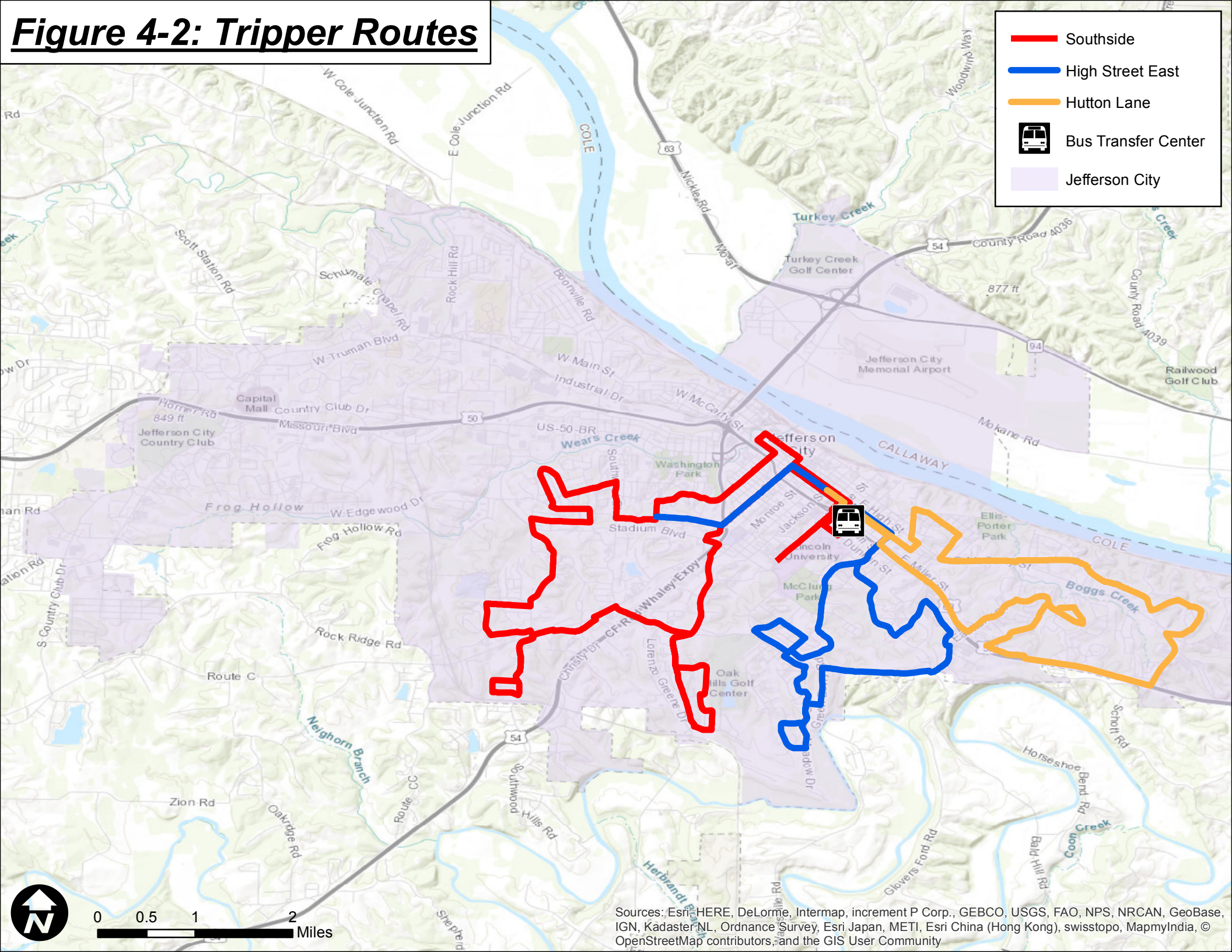


**Figure 4-1: JEFFTRAN Routes**






**Figure 4-2: Tripper Routes**





Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community





# Business 50 East


 Bus Stops

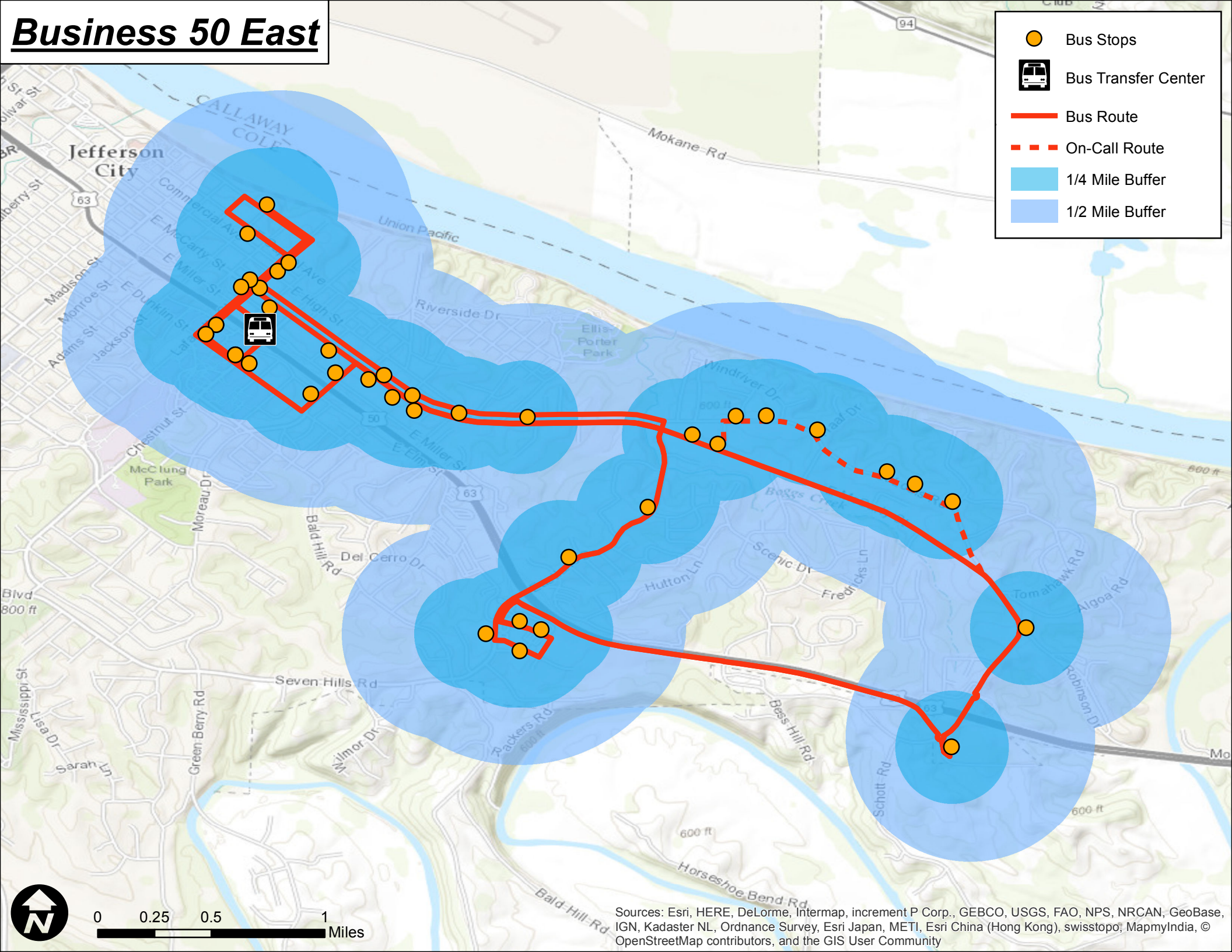
 Bus Transfer Center


 Bus Route

 On-Call Route

 1/4 Mile Buffer

 1/2 Mile Buffer





00.250.51

Miles

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



# Business 50 East

**Bus Route**


Segment 1


Segment 2

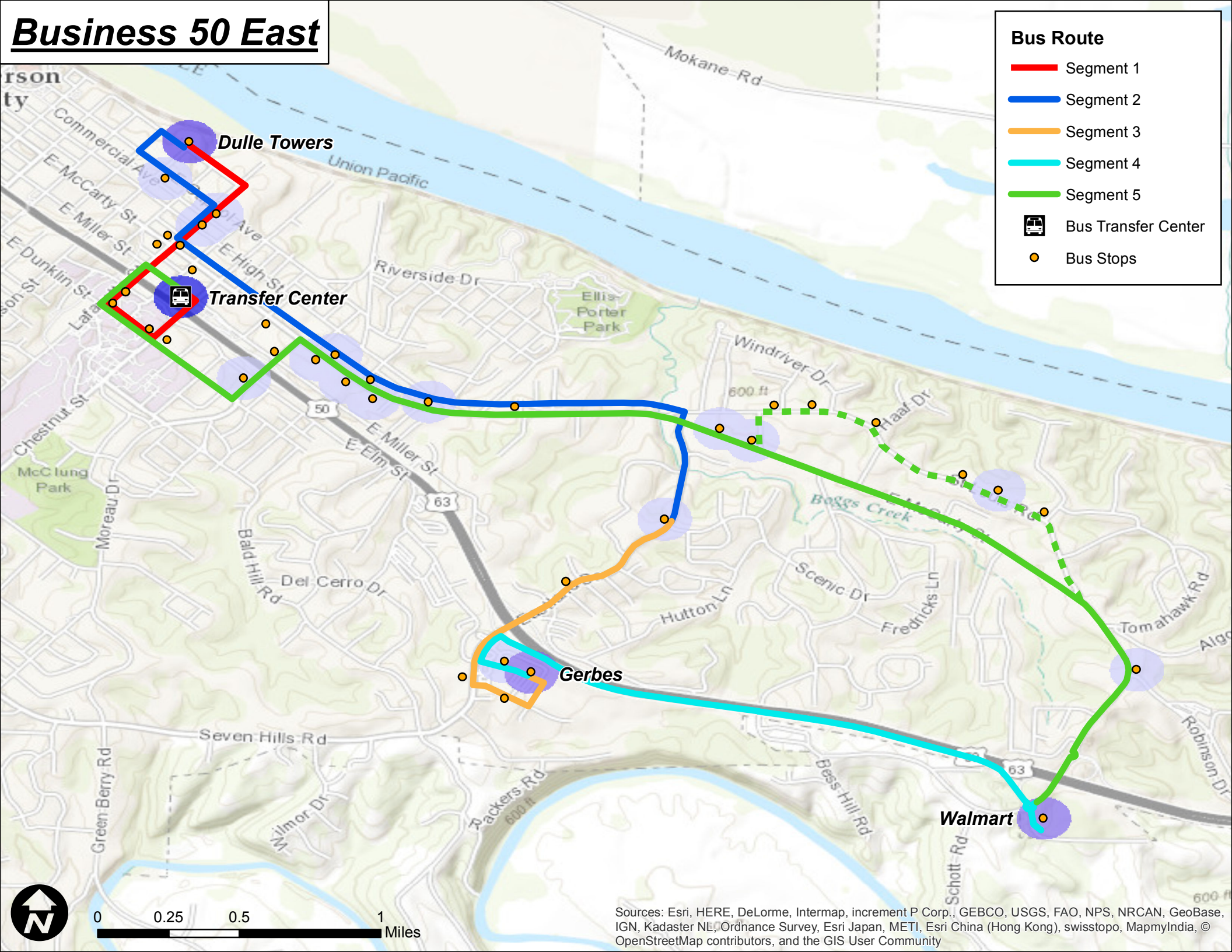
Segment 3

Segment 4

Segment 5

 Bus Transfer Center

 Bus Stops

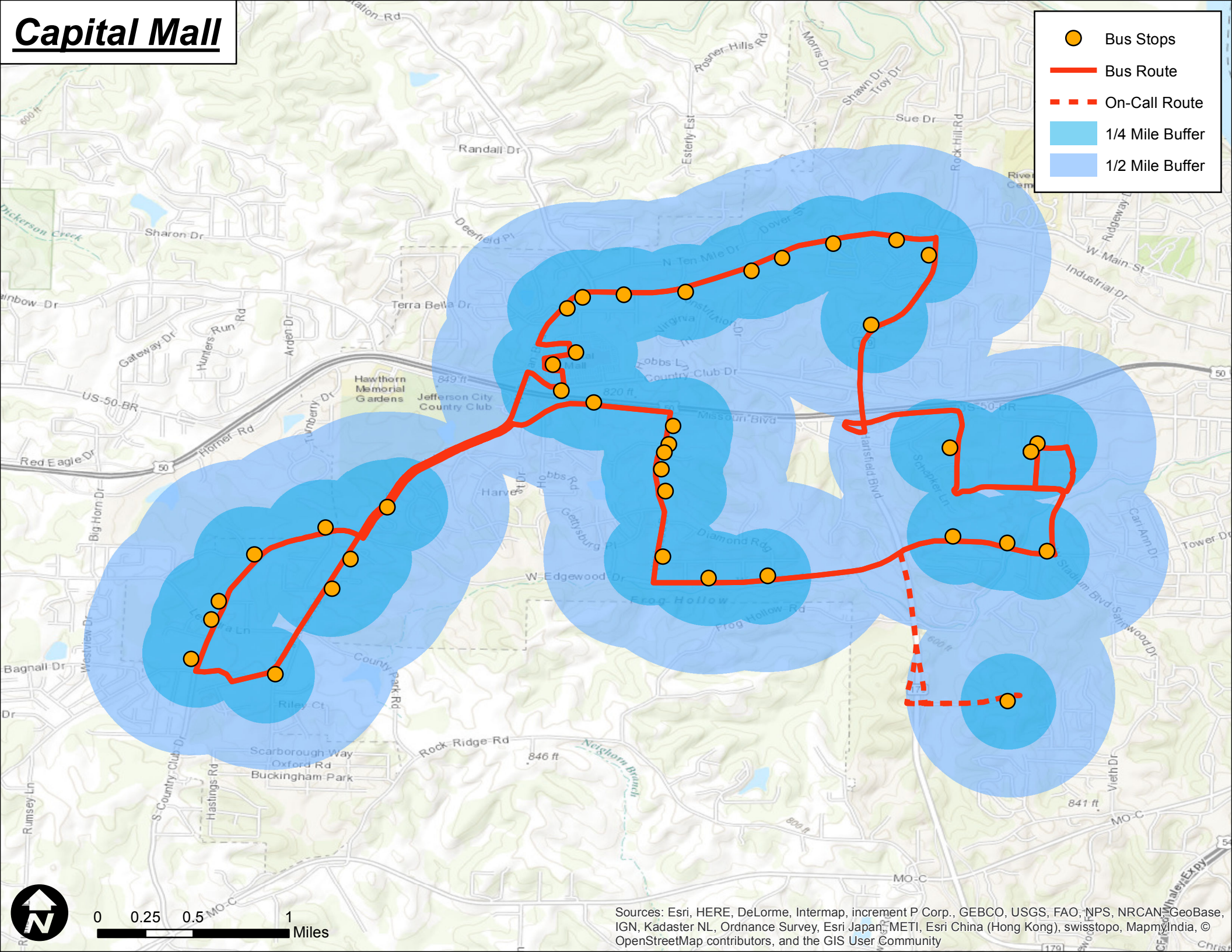


Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



# Capital Mall

- Bus Stops
- Bus Route
- - - On-Call Route
- 1/4 Mile Buffer
- 1/2 Mile Buffer



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



# Capital Mall

**Bus Route**

Segment 1

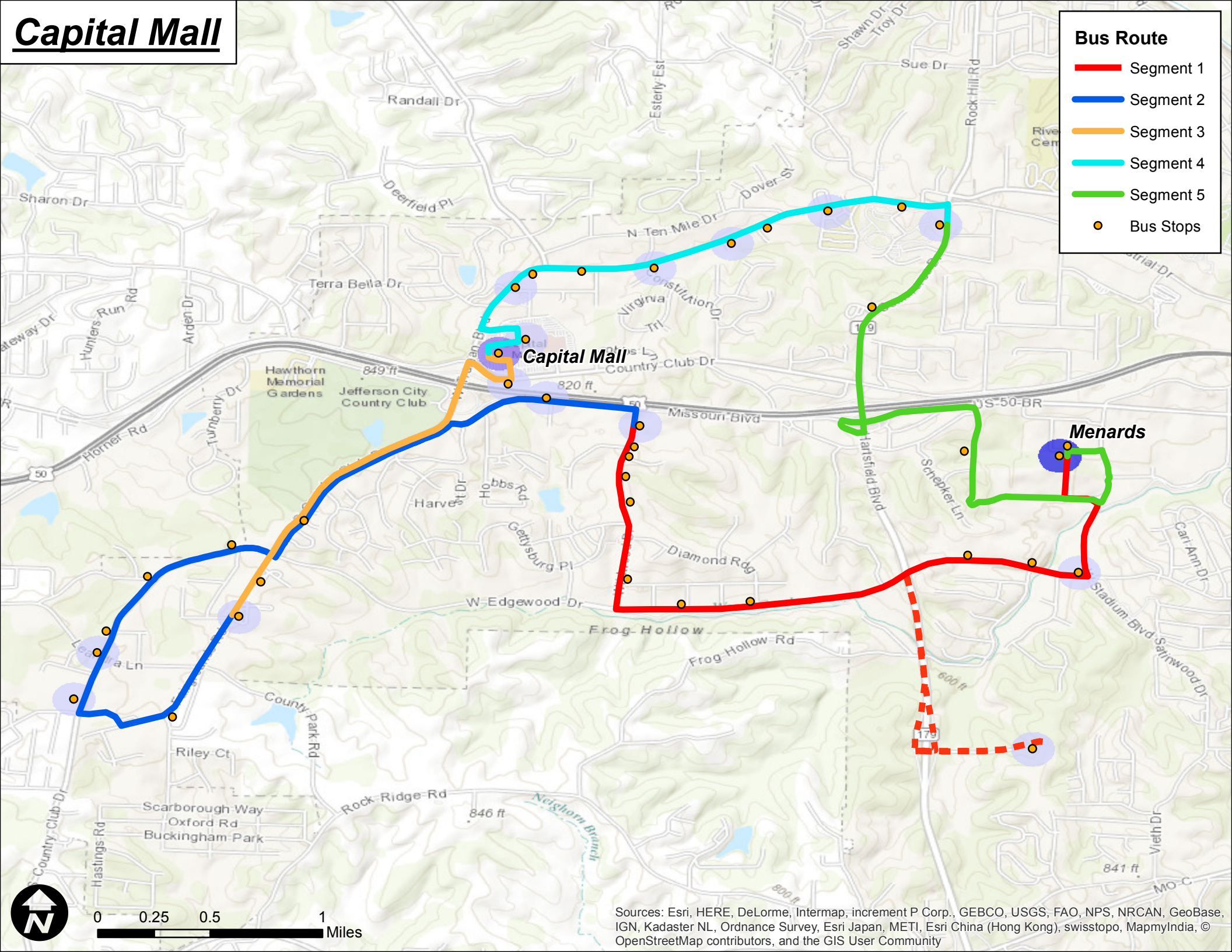
Segment 2

Segment 3

Segment 4

Segment 5


Bus Stops





Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community





# High Street East

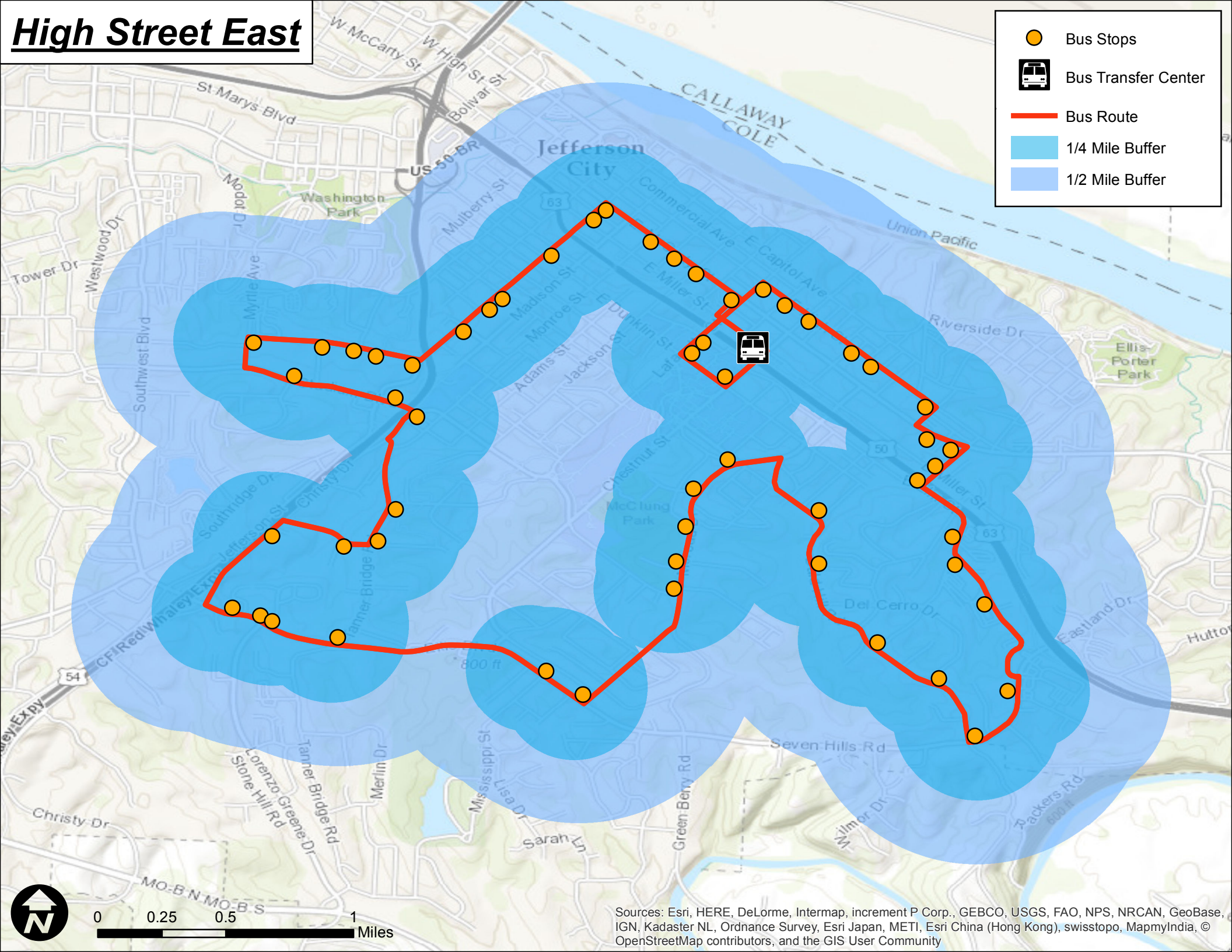
 Bus Stops

 Bus Transfer Center

 Bus Route

 1/4 Mile Buffer

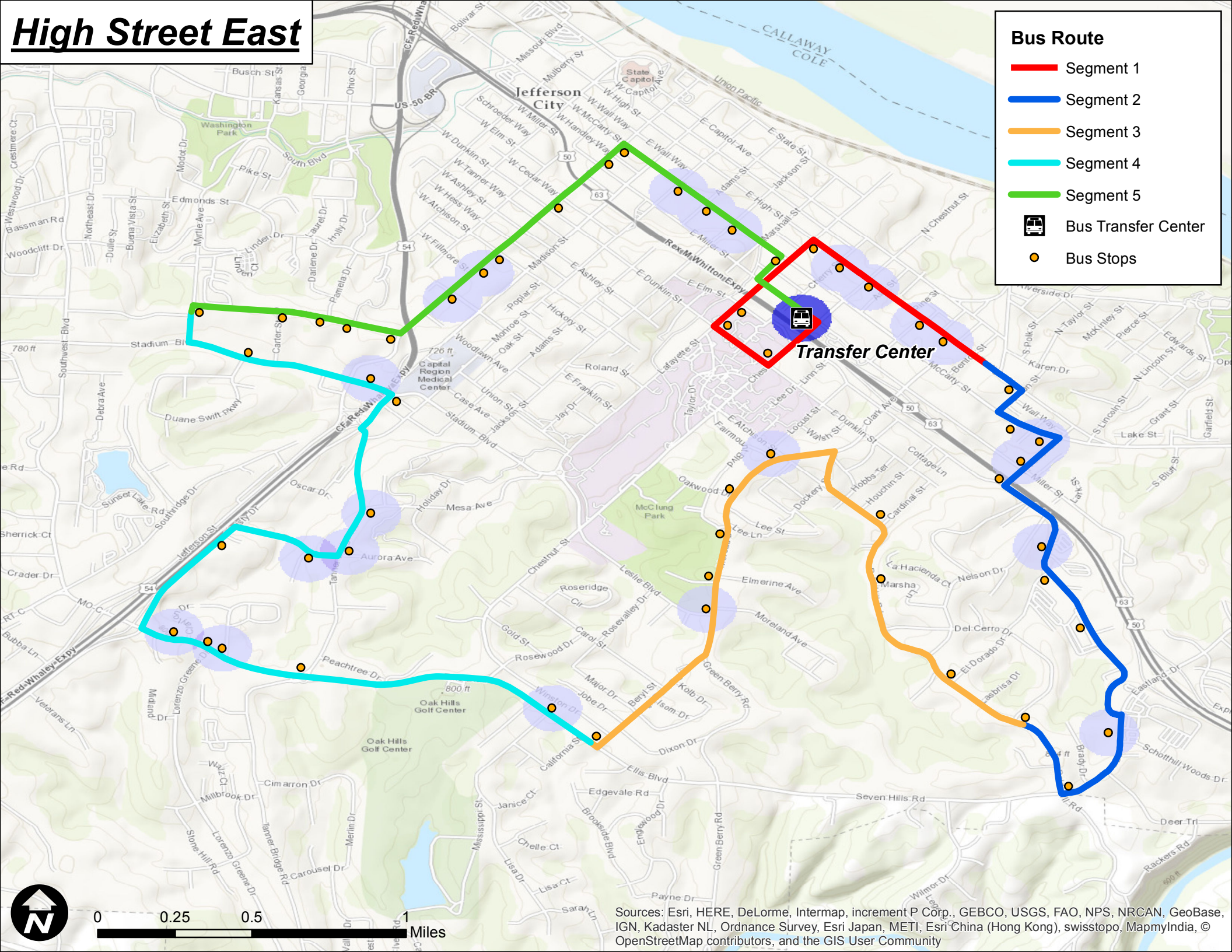
 1/2 Mile Buffer



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community




# High Street East





Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community





# High Street West

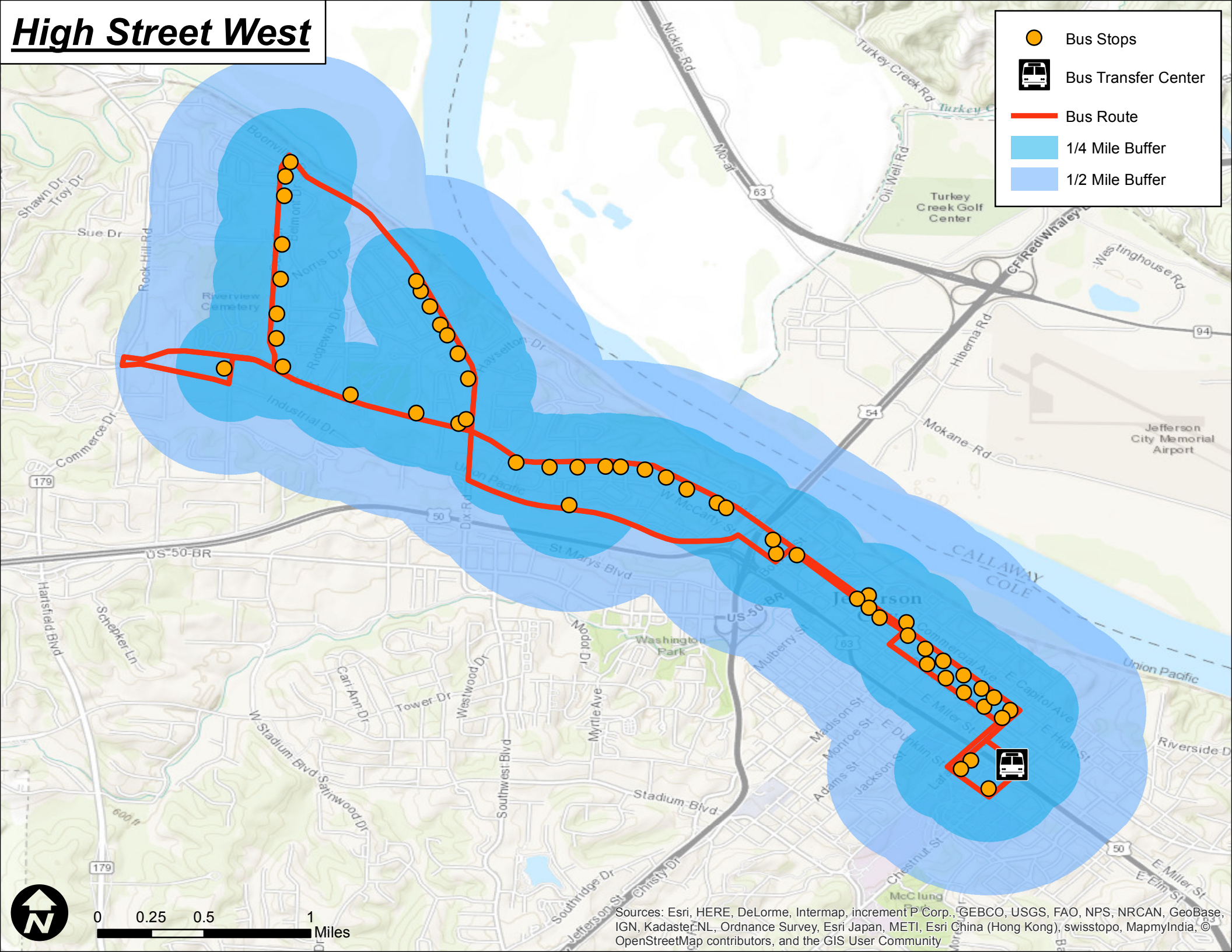
 Bus Stops

 Bus Transfer Center

 Bus Route

 1/4 Mile Buffer

 1/2 Mile Buffer



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



# High Street West

**Bus Route**

Segment 1

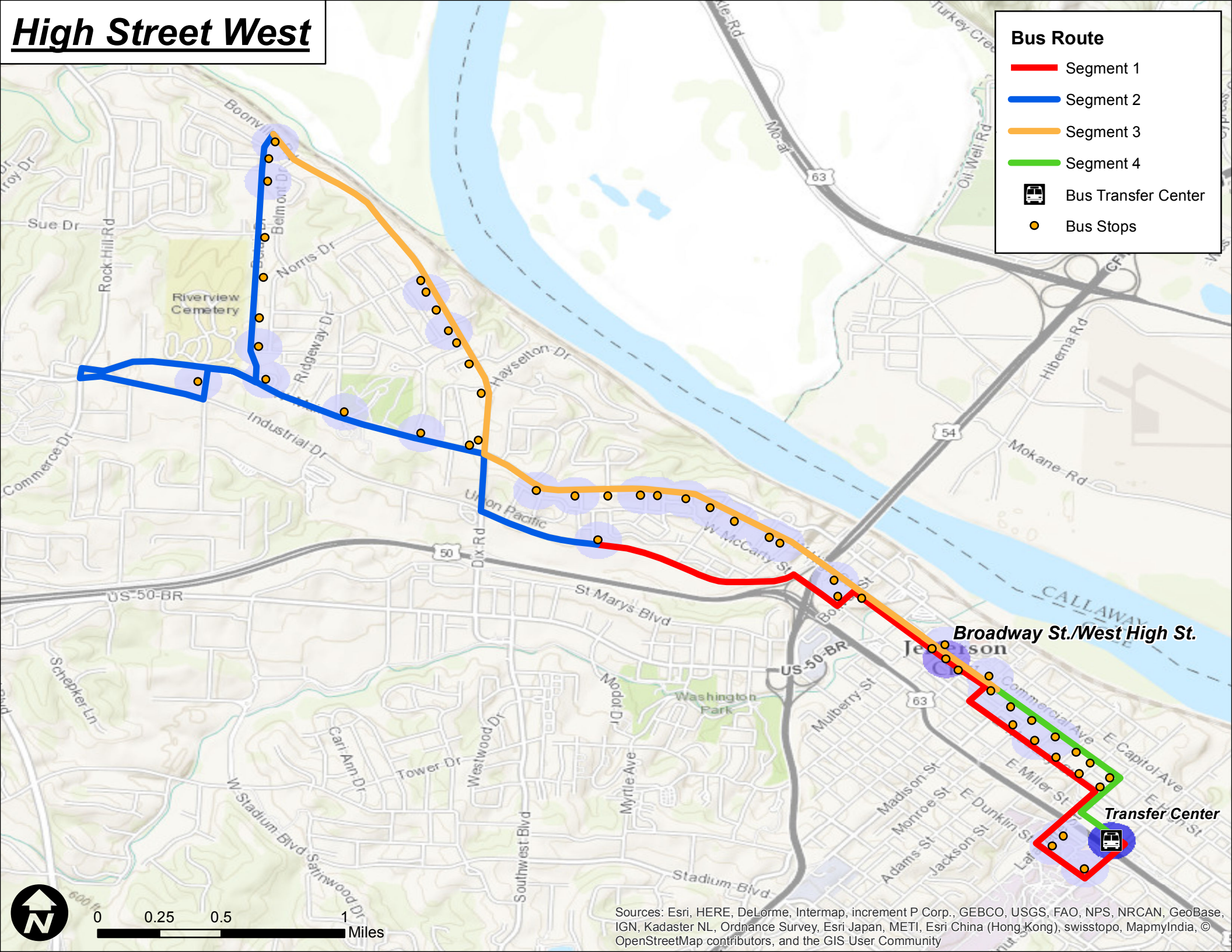
Segment 2

Segment 3

Segment 4

Bus Transfer Center


Bus Stops





Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community





# Missouri Boulevard

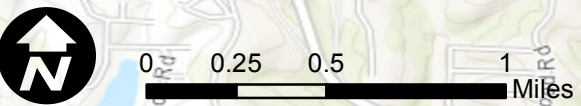
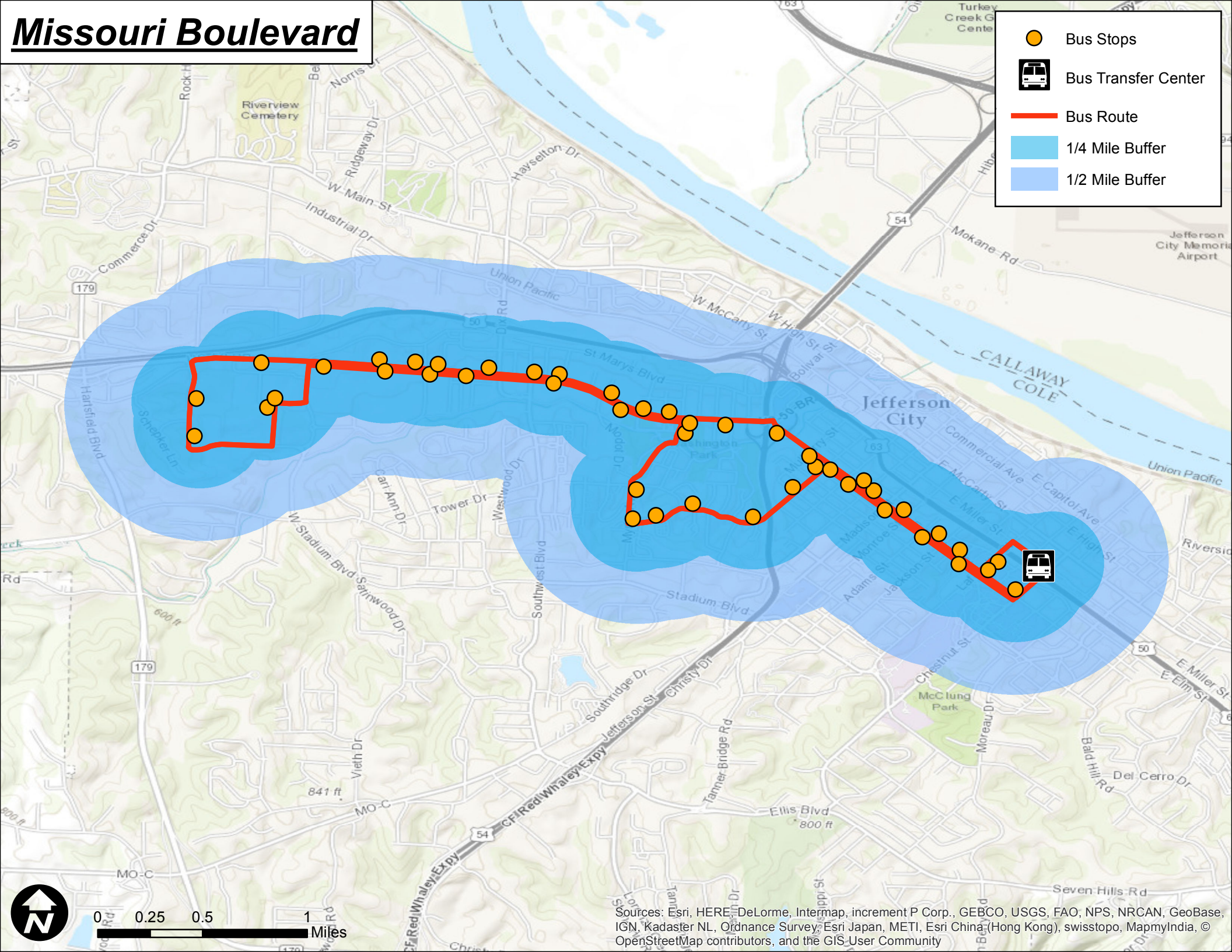
 Bus Stops

 Bus Transfer Center

 Bus Route

 1/4 Mile Buffer

 1/2 Mile Buffer



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



# Missouri Boulevard


**Bus Route**

Segment 1

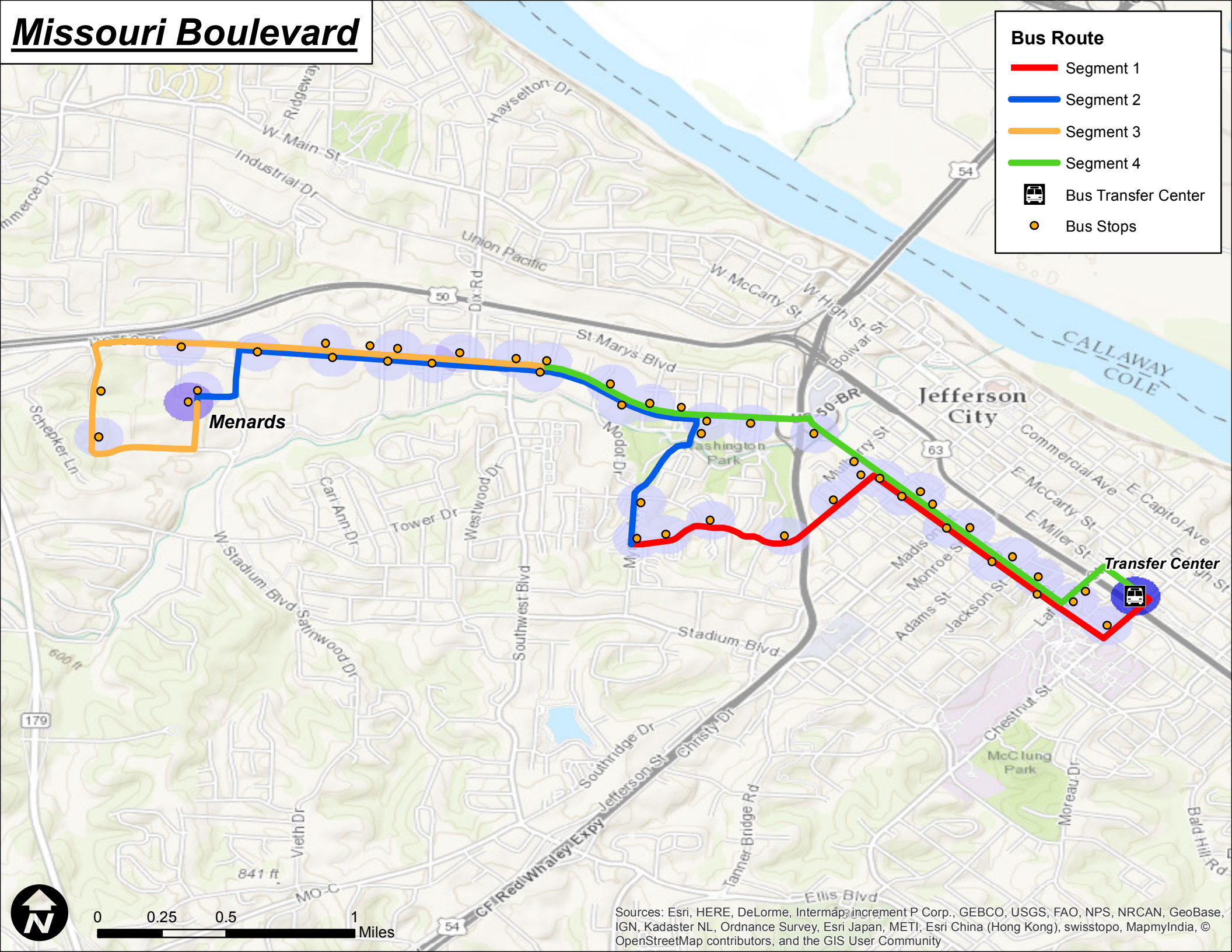
Segment 2

Segment 3

Segment 4

 Bus Transfer Center


Bus Stops





Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community





# Southwest

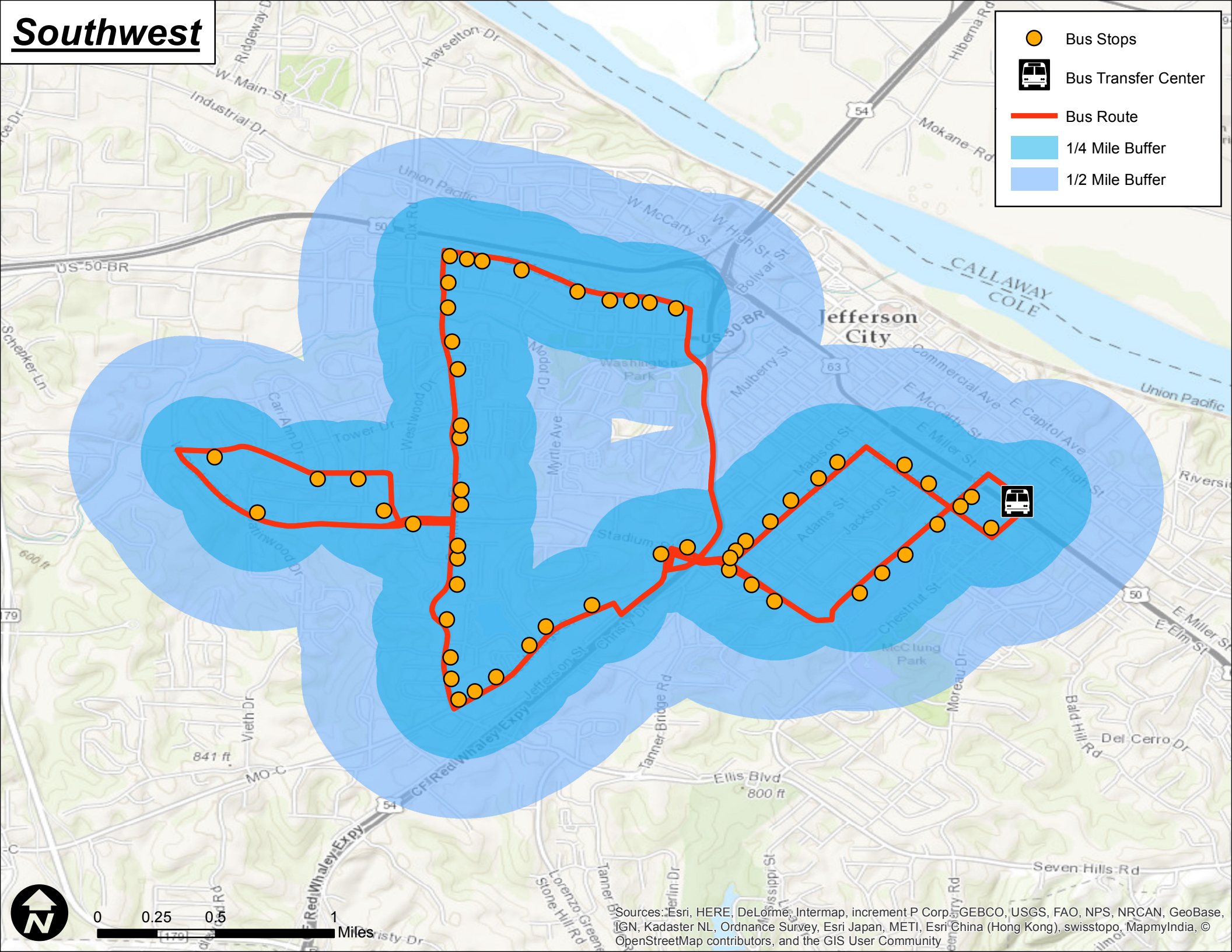
 Bus Stops

 Bus Transfer Center

 Bus Route

 1/4 Mile Buffer

 1/2 Mile Buffer





# Southwest

**Bus Route**

Segment 1

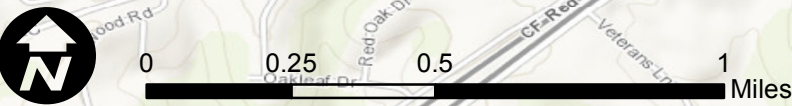
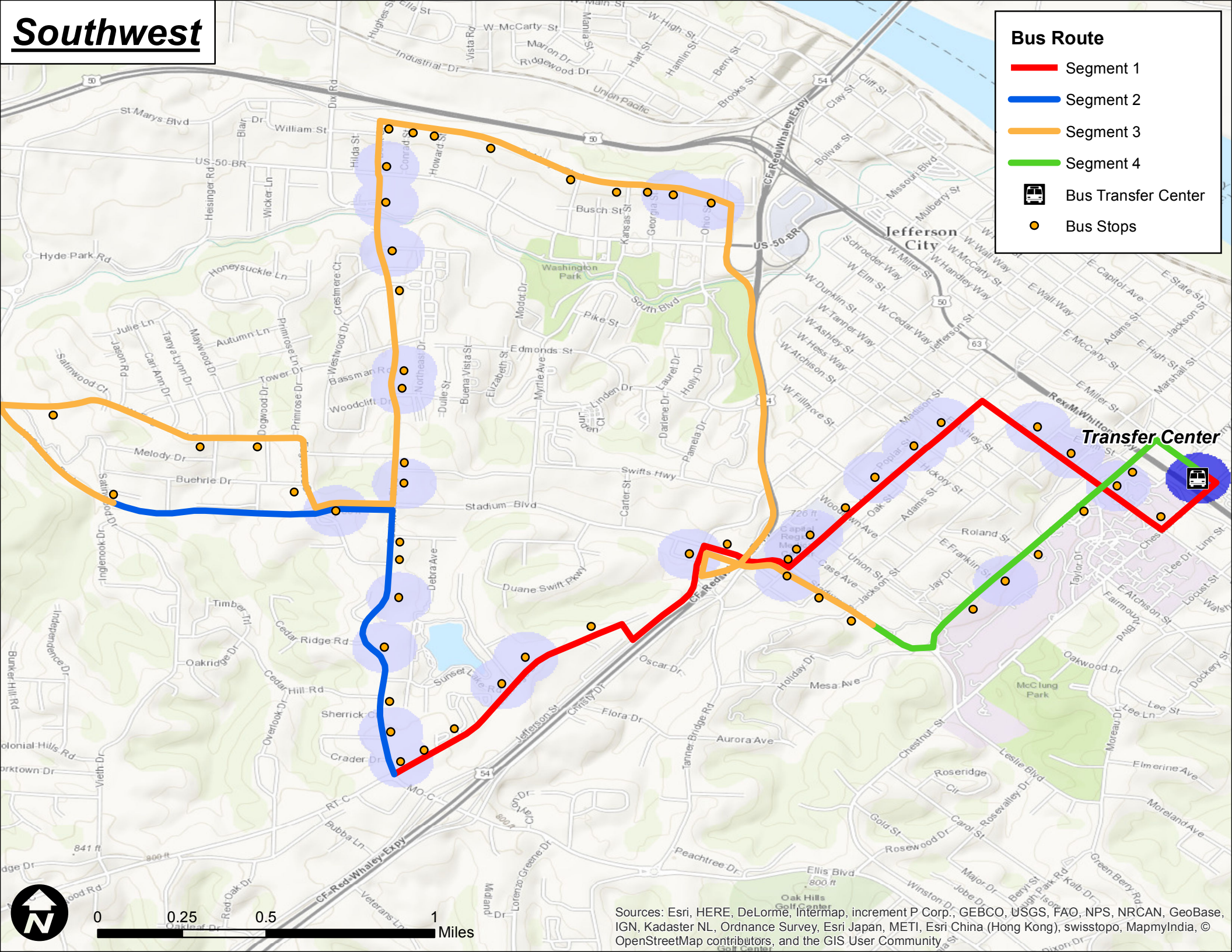
Segment 2

Segment 3

Segment 4

Bus Transfer Center

Bus Stops



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



# Southside Tripper


**Bus Route**

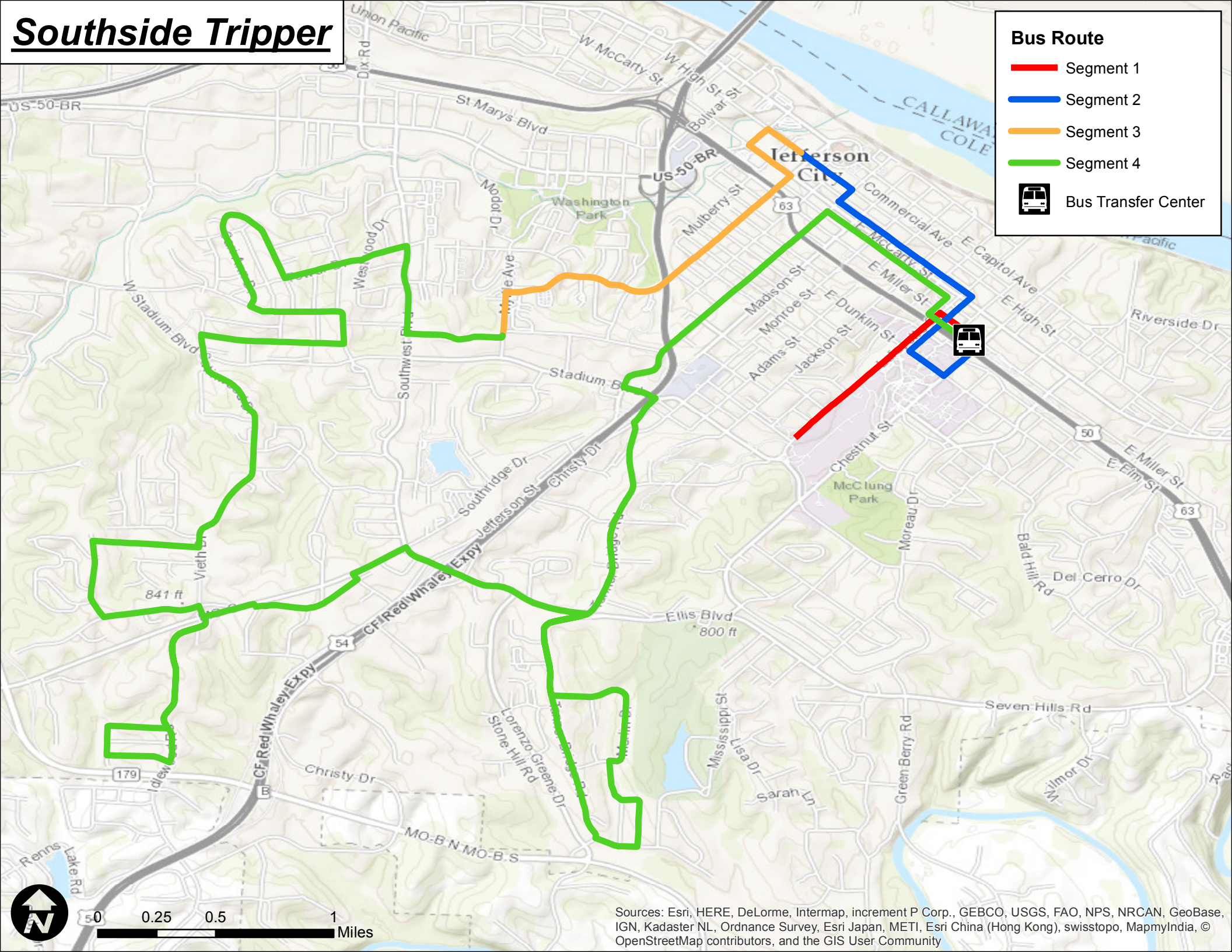
Segment 1

Segment 2

Segment 3

Segment 4

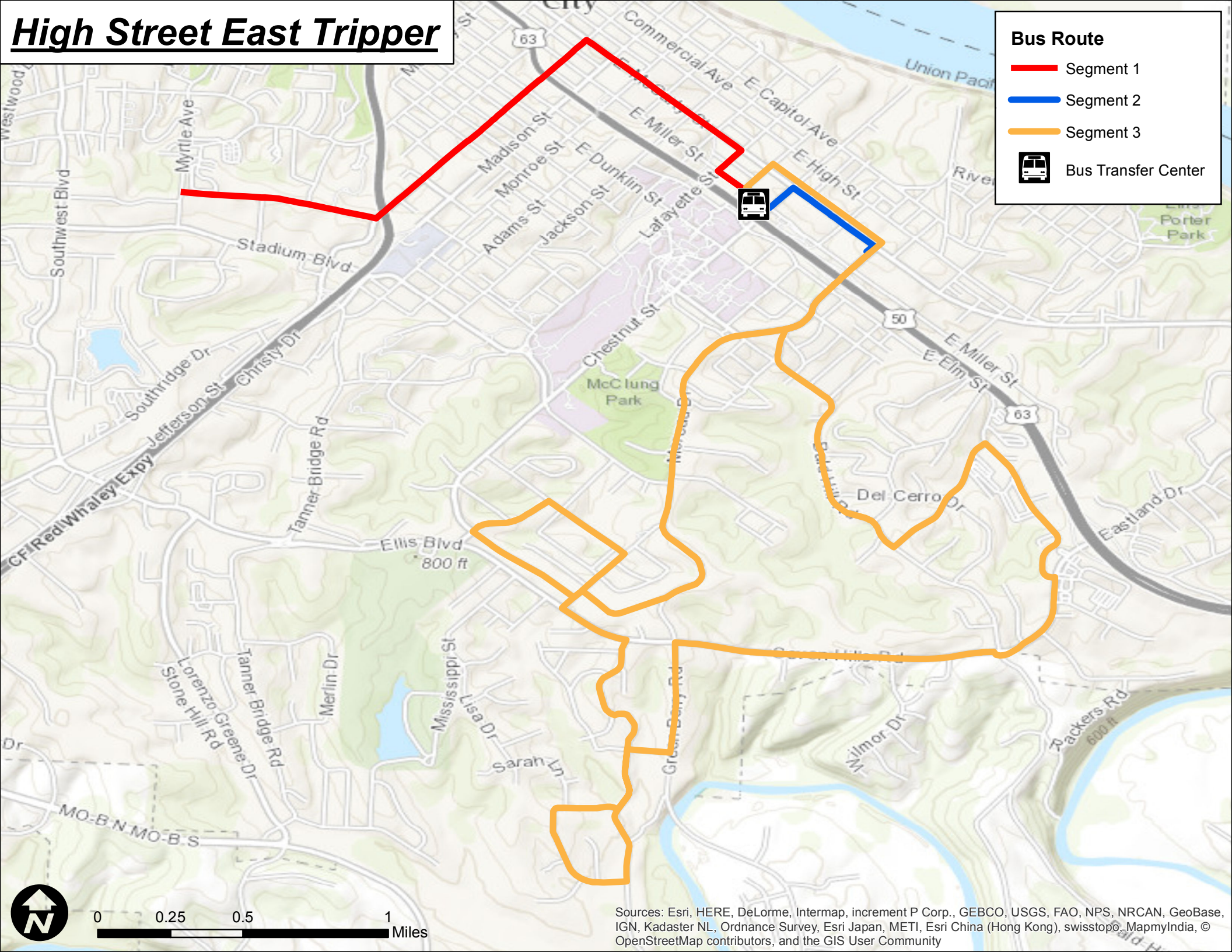
 Bus Transfer Center



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

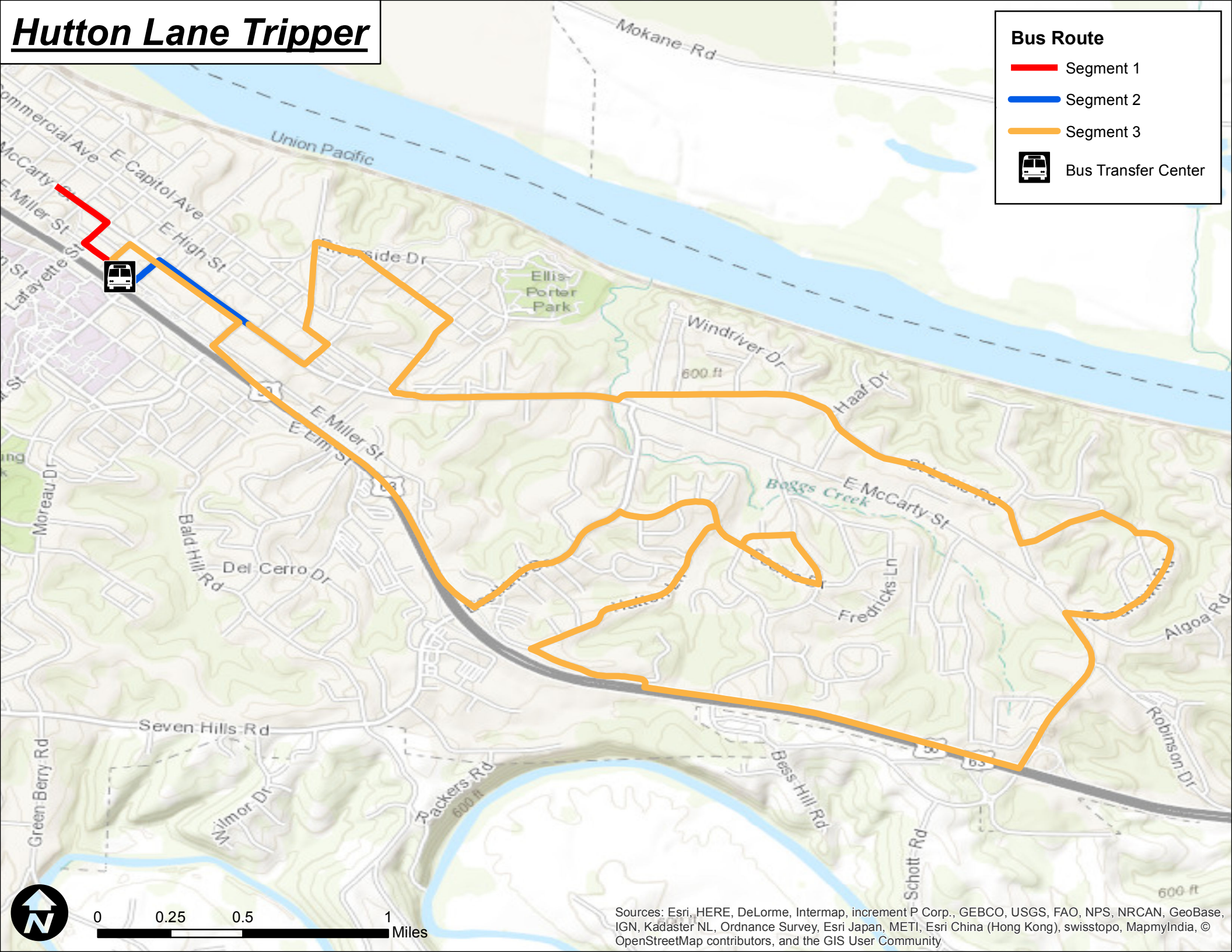


# High Street East Tripper





# Hutton Lane Tripper







## 9.4 Appendix D – Meeting Sign-In Sheets

This appendix provides the sign-in sheets from the various stakeholder interviews and public meetings.

**Tuesday, March 28, 2017**  
**Boone-Bancroft Room #200**

[illegible]

**Monday, March 27, 2017**  
**Boone-Bancroft Room #200**

## Boone-Bancroft Room #200

[illegible]

**Monday, March 27, 2017**  
**Boone-Bancroft Room #200**

## Boone-Bancroft Room #200

[illegible]



**Capital Area Metropolitan Planning Organization  
JEFFTRAN System-Wide Assessment  
Business Stakeholders Meeting**

**Wednesday, March 29, 2017**  
**Boone-Bancroft Room #200**

[illegible]

**Capital Area Metropolitan Planning Organization  
JEFFTRAN System-Wide Assessment  
General Public Stakeholders Meeting**

**Wednesday, March 29, 2017**  
**Boone-Bancroft Room #200**

[illegible]

Capital Area Metropolitan Planning Organization  
JEFFTRAN System-Wide Assessment  
Public Stakeholders Meeting

Tuesday, March 28, 2017  
Boone-Bancroft Room #200

Name	E-Mail Address
Alicia Hombs	
KIRBY HOMBS	
MIKE Woolley	
Michelle Washington	
Tan Shadrick	
Amy Rogers	
Lindsay Buning	
Procan	
Justin Bellich	
JIM SKAZN	
Mike + Jane Lester	
Denise Stepp	
Leslie Korns	
Jayme <del>Robert</del>	
Cary Maloney	
Carlo, GRAHAM	
Lauren Henry	
Wayne <del>Lee</del>	
T. Lewis	
Kameha Underwood	
Vicki Schildmeyer	
Cynthia Quetsch	









## 9.5 Appendix E – Comment Forms and Other Public Input

This appendix provides comment forms and other input from the public. Full sized maps (24" by 36") were prepared for the Public Meeting. Attendees were asked to write on these maps and/or affix post-it notes to the maps to provide input. Scanned versions of the public involvement maps are included in the accompanying CD.

Please provide input on JEFFTRAN's routes, schedules and service. We want to hear your issues, concerns, suggestions, and needs. This feedback will provide JEFFTRAN with information to improve the productivity and cost-effectiveness of the bus system, providing better and more efficient service for passengers.

**Questions:**

*Mail Bus excessively long without passengers*

1. Which bus routes do you typically ride and where?

*High St E BLVD, Mall, Highway, SW  
Handic Wheels*

2. What improvements would you like to see on those routes?

*Wheelchair accessible stops honored  
Bus stop @ Herron on B/4 turn out to*

3. Are there areas and locations where you would like new bus service?

*Scholastics, Madine, all Scholastic  
neighbors, Fast Foods shift workers  
need employer supported trans  
public transportation for shift workers.*

On a scale of 1-6, please rate these potential improvements  
(1 being the highest priority and 6 being lowest priority).

Please make any additional comments on the back of this sheet.

*A lot of time wasted by driving to East Side transfer*

1 ☒ Easy Transfers between Routes

☐ Weekend Service

1 ☒ Coverage Area *needs to go to shift workers*

☐ Other *Herron on*

3 ☐ More Frequent Service

*no Blvd Rt*

☐ Later Evening Service

*Keep Hough Park Rd on East E Mainly  
stop near Jeffers on path partially blocked by  
parked cars not wheelchair accessible  
(over)*

Bus stop or Bench  
@ Goodwill not  
Wheel chair accessible

Sign @ Stadium for  
Bus Stop Y M C A not  
there last time ✓  
node, but had to switch  
to Indianwheel to be pushed  
up



Please provide input on JEFFTRAN's routes, schedules and service. We want to hear your issues, concerns, suggestions, and needs. This feedback will provide JEFFTRAN with information to improve the productivity and cost-effectiveness of the bus system, providing better and more efficient service for passengers.

**Questions:**

1. Which bus routes do you typically ride and where?

High St. W Lafayette to downtown

2. What improvements would you like to see on those routes?

3. Are there areas and locations where you would like new bus service?

**On a scale of 1-6, please rate these potential improvements (1 being the highest priority and 6 being lowest priority). Please make any additional comments on the back of this sheet.**

☒ 4 Easy Transfers between Routes

☒ 2 Weekend Service

☒ 5 Coverage Area

☐ Other \_\_\_\_\_

☒ 3 More Frequent Service

☒ 1 Later Evening Service

\_\_\_\_\_



Please provide input on JEFFTRAN's routes, schedules and service. We want to hear your issues, concerns, suggestions, and needs. This feedback will provide JEFFTRAN with information to improve the productivity and cost-effectiveness of the bus system, providing better and more efficient service for passengers.

**Questions:**

1. Which bus routes do you typically ride and where?

All of them. Most frequently Mo Blvd. Cap. Mall  
50 East Southwest

2. What improvements would you like to see on those routes?

Decentralize the whole process with hours and locations. Have brainstorming sessions with financial benefits with the best ideas.

3. Are there areas and locations where you would like new bus service?

HORTS Summit, Runge Nature Center, closer to Walnut, Menards, Levees, Social Services, food stamps office, 185 office, 185 office

On a scale of 1-6, please rate these potential improvements (1 being the highest priority and 6 being lowest priority).

Please make any additional comments on the back of this sheet.

☒ 4 Easy Transfers between Routes

☐ 1 Coverage Area

☒ 6 More Frequent Service

☒ 2 Later Evening Service

☒ 3 Weekend Service

☒ 5 Other safer locations

for sheltered and unsheltered stops.

Unlimited pass  
vers. 20 rides.

Please provide input on JEFFTRAN's routes, schedules and service. We want to hear your issues, concerns, suggestions, and needs. This feedback will provide JEFFTRAN with information to improve the productivity and cost-effectiveness of the bus system, providing better and more efficient service for passengers.

**Questions:**

1. Which bus routes do you typically ride and where?

To Christy Drive

2. What improvements would you like to see on those routes?

We need expanded bus service

3. Are there areas and locations where you would like new bus service?

East of town so that workers could get to so of the businesses there

**On a scale of 1-6, please rate these potential improvements (1 being the highest priority and 6 being lowest priority).**

**Please make any additional comments on the back of this sheet.**

4 ☒ Easy Transfers between Routes

2 ☒ Weekend Service

3 ☒ Coverage Area

☐ Other \_\_\_\_\_

5 ☒ More Frequent Service

☐ Later Evening Service



Please provide input on JEFFTRAN's routes, schedules and service. We want to hear your issues, concerns, suggestions, and needs. This feedback will provide JEFFTRAN with information to improve the productivity and cost-effectiveness of the bus system, providing better and more efficient service for passengers.

**Questions:**

1. Which bus routes do you typically ride and where?

Southwest, MO Blvd

2. What improvements would you like to see on those routes?

\* evening hours  
\* weekend hours

3. Are there areas and locations where you would like new bus service?

\* mall area  
\* scholastic area  
\* East side Jeffco

**On a scale of 1-6, please rate these potential improvements  
(1 being the highest priority and 6 being lowest priority).**

**Please make any additional comments on the back of this sheet.**

☒ 3 Easy Transfers between Routes

☒ 6 Weekend Service

☒ 6 Coverage Area

☐ Other \_\_\_\_\_

☒ 6 More Frequent Service

☒ 6 Later Evening Service

Please provide input on JEFFTRAN's routes, schedules and service. We want to hear your issues, concerns, suggestions, and needs. This feedback will provide JEFFTRAN with information to improve the productivity and cost-effectiveness of the bus system, providing better and more efficient service for passengers.

**Questions:**

1. Which bus routes do you typically ride and where?

2. What improvements would you like to see on those routes?

*I would like to see longer hours of service to benefit the businesses. Also, increased number of routes eventually.*

3. Are there areas and locations where you would like new bus service?

*A route through Lincoln's campus to major stops students need. A route to major factories/hospitals etc for shift workers. Weekend routes!*

**On a scale of 1-6, please rate these potential improvements (1 being the highest priority and 6 being lowest priority).**

**Please make any additional comments on the back of this sheet.**

☒ 5 Easy Transfers between Routes

☐ 1 Weekend Service

☒ 3 Coverage Area

☐ Other \_\_\_\_\_

☒ 4 More Frequent Service

☒ 2 Later Evening Service

*1+2 are about even for me!*



Please provide input on JEFFTRAN's routes, schedules and service. We want to hear your issues, concerns, suggestions, and needs. This feedback will provide JEFFTRAN with information to improve the productivity and cost-effectiveness of the bus system, providing better and more efficient service for passengers.

**Questions:**

1. Which bus routes do you typically ride and where?

*Currently I use Handi-Wheels due to lack of availability of services before 7 + after 5 to get to/from work.*

2. What improvements would you like to see on those routes?

*Extended morning + evening hours, at least Saturday services + consider safety of certain crossings.*

3. Are there areas and locations where you would like new bus service?

*South I 50 on Cap Mall route at Howard Center Building. Also create some type of express route to this area.*

**On a scale of 1-6, please rate these potential improvements (1 being the highest priority and 6 being lowest priority).**

**Please make any additional comments on the back of this sheet.**

☒ 5 Easy Transfers between Routes

☒ 2 Weekend Service

☒ 4 Coverage Area

\* ☒ 1 Other *Mornings before*

☒ 3 More Frequent Service

*7 -*

☒ 1 Later Evening Service */ Mornings*

Please provide input on JEFFTRAN's routes, schedules and service. We want to hear your issues, concerns, suggestions, and needs. This feedback will provide JEFFTRAN with information to improve the productivity and cost-effectiveness of the bus system, providing better and more efficient service for passengers.

**Questions:**

1. Which bus routes do you typically ride and where?

All of them and for all my travels.

2. What improvements would you like to see on those routes?

longer hours on work days and weekends

3. Are there areas and locations where you would like new bus service?

yes to reach all job sites in our city.

**On a scale of 1-6, please rate these potential improvements  
(1 being the highest priority and 6 being lowest priority).**

**Please make any additional comments on the back of this sheet.**

☒ Easy Transfers between Routes

☒ Weekend Service

☒ Coverage Area

☐ Other \_\_\_\_\_

☒ More Frequent Service

☒ Later Evening Service



Please provide input on JEFFTRAN's routes, schedules and service. We want to hear your issues, concerns, suggestions, and needs. This feedback will provide JEFFTRAN with information to improve the productivity and cost-effectiveness of the bus system, providing better and more efficient service for passengers.

**Questions:**

1. Which bus routes do you typically ride and where?

Handi-Wheels - Monday - Friday  
to and from work

2. What improvements would you like to see on those routes?

Extend hours - weekdays to 7:00/8:00 p.m.  
Weekends 8-5 would be helpful to assist

3. Are there areas and locations where you would like new bus service?

Weekdays - extended hours, weekend hours. Evenings and weekends, the only option (monopoly) is the local cab company which tends to be undependable on a consistent basis.

**On a scale of 1-6, please rate these potential improvements (1 being the highest priority and 6 being lowest priority).**

**Please make any additional comments on the back of this sheet.**

☐ Easy Transfers between Routes

☒ Weekend Service

☒ Coverage Area

☐ Other \_\_\_\_\_

☐ More Frequent Service

☒ Later Evening Service

Please provide input on JEFFTRAN's routes, schedules and service. We want to hear your issues, concerns, suggestions, and needs. This feedback will provide JEFFTRAN with information to improve the productivity and cost-effectiveness of the bus system, providing better and more efficient service for passengers.

**Questions:**

1. Which bus routes do you typically ride and where?

I don't ride the bus often but I want bus service available for the needy & handicapped

2. What improvements would you like to see on those routes?

Businesses will not move to JC if their work force does not have transportation to work

3. Are there areas and locations where you would like new bus service?

What will you close next for lack of funding the library. We are fast becoming a city no one wants to live in.

On a scale of 1-6, please rate these potential improvements (1 being the highest priority and 6 being lowest priority).

Please make any additional comments on the back of this sheet.

5 ☐ Easy Transfers between Routes

1 ☒ Weekend Service

3 ☒ Coverage Area

☐ Other \_\_\_\_\_

2 ☒ More Frequent Service

4 ☒ Later Evening Service



Please provide input on JEFFTRAN's routes, schedules and service. We want to hear your issues, concerns, suggestions, and needs. This feedback will provide JEFFTRAN with information to improve the productivity and cost-effectiveness of the bus system, providing better and more efficient service for passengers.

**Questions:**

1. Which bus routes do you typically ride and where?

I am not a frequent passenger on ~~the~~ Jefftran.

2. What improvements would you like to see on those routes?

I cannot specifically cite any improvements I would like to see

3. Are there areas and locations where you would like new bus service?

I believe Lincoln University needs <sup>more tailored service.</sup> ~~more service~~  
Lincoln University now owns South Campus, Levee Boulevard strip mall and is a joint owner of the newly erected Univ. These buildings lead to an influx of the need for service on campus. Routes should be reworked to accommodate the expanding needs of Lincoln University.

**On a scale of 1-6, please rate these potential improvements (1 being the highest priority and 6 being lowest priority).**

**Please make any additional comments on the back of this sheet.**

☐ Easy Transfers between Routes

☐ Weekend Service

☐ Coverage Area

☐ Other \_\_\_\_\_

☐ More Frequent Service

☐ Later Evening Service

Please provide input on JEFFTRAN's routes, schedules and service. We want to hear your issues, concerns, suggestions, and needs. This feedback will provide JEFFTRAN with information to improve the productivity and cost-effectiveness of the bus system, providing better and more efficient service for passengers.

**Questions:**

1. Which bus routes do you typically ride and where?

Regular routes to downtown when have car trouble

2. What improvements would you like to see on those routes?

3. Are there areas and locations where you would like new bus service?

Elizabeth Street

**On a scale of 1-6, please rate these potential improvements  
(1 being the highest priority and 6 being lowest priority).  
Please make any additional comments on the back of this sheet.**

☐ Easy Transfers between Routes

☒ Weekend Service

☐ Coverage Area

☒ Other bus shelters

☐ More Frequent Service

☒ Later Evening Service

Please provide input on JEFFTRAN's routes, schedules and service. We want to hear your issues, concerns, suggestions, and needs. This feedback will provide JEFFTRAN with information to improve the productivity and cost-effectiveness of the bus system, providing better and more efficient service for passengers.

**Questions:**

1. Which bus routes do you typically ride and where?

2. What improvements would you like to see on those routes?

3. Are there areas and locations where you would like new bus service?

*Need Service To Harko House on Bennett Ln at Full Capacity  
There will be 48 Teens That will need Riders To and From  
Work and Dr. Apt, etc.*

**On a scale of 1-6, please rate these potential improvements  
(1 being the highest priority and 6 being lowest priority).**

**Please make any additional comments on the back of this sheet.**

☐ Easy Transfers between Routes

☐ Weekend Service

☐ Coverage Area

☐ Other \_\_\_\_\_

☐ More Frequent Service

☐ Later Evening Service



Please provide input on JEFFTRAN's routes, schedules and service. We want to hear your issues, concerns, suggestions, and needs. This feedback will provide JEFFTRAN with information to improve the productivity and cost-effectiveness of the bus system, providing better and more efficient service for passengers.

**Questions:**

1. Which bus routes do you typically ride and where? *I represent the Pregnancy Help Center. We have several clients (new & pregnant mothers) that use the bus. They are limited in what jobs they can get*
2. What improvements would you like to see on those routes? *and how long it takes them to get their children to the daycare and get to their job because of bus services. Expanding services would help them get and keep jobs*
3. Are there areas and locations where you would like new bus service?

**On a scale of 1-6, please rate these potential improvements (1 being the highest priority and 6 being lowest priority). Please make any additional comments on the back of this sheet.**

☒ 4 Easy Transfers between Routes

☒ 1 Weekend Service

☒ 5 Coverage Area

☐ Other \_\_\_\_\_

☒ 3 More Frequent Service

☒ 2 Later Evening Service



Please provide input on JEFFTRAN's routes, schedules and service. We want to hear your issues, concerns, suggestions, and needs. This feedback will provide JEFFTRAN with information to improve the productivity and cost-effectiveness of the bus system, providing better and more efficient service for passengers.

**Questions:**

1. Which bus routes do you typically ride and where?

High Street East, Missouri, Capital Mall

2. What improvements would you like to see on those routes?

shelters & or w/seats

I identify on actual bus stop signs what bus stops there

3. Are there areas and locations where you would like new bus service?

**On a scale of 1-6, please rate these potential improvements  
(1 being the highest priority and 6 being lowest priority).  
Please make any additional comments on the back of this sheet.**

☒ Easy Transfers between Routes

☐ Coverage Area

☒ More Frequent Service

☒ Later Evening Service

☒ Weekend Service

☐ Other \_\_\_\_\_

OVER →

3/28/17

- Citizens who work beyond the end time of the transportation service are forced to either pay for a cab to get them home after work or make other arrangements that may not always be conducive for them.
- Citizens who need to shop & run errands after work & on the weekend are again forced to either use a cab or find other means to shop & run errands.
- Partner w/ local businesses & organizations where the bus stops to bring business to them should fund some of the cost of bus services.

Please provide input on JEFFTRAN's routes, schedules and service. We want to hear your issues, concerns, suggestions, and needs. This feedback will provide JEFFTRAN with information to improve the productivity and cost-effectiveness of the bus system, providing better and more efficient service for passengers.

**Questions:**

1. Which bus routes do you typically ride and where?

High Street East

2. What improvements would you like to see on those routes?

Better hours- especially evenings and weekend service at least to commercial areas for shopping.

3. Are there areas and locations where you would like new bus service?

more direct connections from high density residential areas to low-paying, entry-level employment opportunities.

**On a scale of 1-6, please rate these potential improvements (1 being the highest priority and 6 being lowest priority).**

**Please make any additional comments on the back of this sheet.**

☐ 3 Easy Transfers between Routes

☐ 1 Weekend Service

☐ 4 Coverage Area\*

☐ 5 Other Revised

☐ 6 More Frequent Service

Routes

☐ 2 Later Evening Service

\* Collaboration (or expansion) to areas outside the city limits, especially Holts Summit.



Please provide input on JEFFTRAN's routes, schedules and service. We want to hear your issues, concerns, suggestions, and needs. This feedback will provide JEFFTRAN with information to improve the productivity and cost-effectiveness of the bus system, providing better and more efficient service for passengers.

**Questions:**

1. Which bus routes do you typically ride and where?

*Business 50*

2. What improvements would you like to see on those routes?

*To turn left from Eastland on ~~Forest~~ <sup>Senior</sup>, then right on Hutton then right on Timber then left on Eastland. Several people would ride more.*

3. Are there areas and locations where you would like new bus service?

*yes to Columbia or at Ashland and a bus from Columbia come to J C or meet in Ashland. also later service & also on Saturdays*

*Has all papers been straightened out yet?*

On a scale of 1-6, please rate these potential improvements (1 being the highest priority and 6 being lowest priority).

Please make any additional comments on the back of this sheet.

☒ 6 Easy Transfers between Routes

☒ 3 Weekend Service

☒ 4 Coverage Area

☒ 1 Other *Go to Columbia*

☒ 5 More Frequent Service

☒ 2 Later Evening Service



Please provide input on JEFFTRAN's routes, schedules and service. We want to hear your issues, concerns, suggestions, and needs. This feedback will provide JEFFTRAN with information to improve the productivity and cost-effectiveness of the bus system, providing better and more efficient service for passengers.

**Questions:**

1. Which bus routes do you typically ride and where?

① BUSINESS 50 TO WALMART @ CAPITAL MALL TO DENTIST & DOLLAR TREE (3) HIGH ST. EAST TO FAMILY SUPPORT DIVISION (4) HIGH ST. WEST TO TRANSFER STATION (5) MISSOURI BLVD. TO GOODWILL & ALDI →

2. What improvements would you like to see on those routes?

A SHELTER AT CAPITAL REGION MEDICAL CENTER

3. Are there areas and locations where you would like new bus service?

**On a scale of 1-6, please rate these potential improvements (1 being the highest priority and 6 being lowest priority). Please make any additional comments on the back of this sheet.**

☒ Easy Transfers between Routes

☒ Weekend Service

☒ Coverage Area

☐ Other \_\_\_\_\_

☒ More Frequent Service

☒ Later Evening Service

⑥ SOUTHWEST TO DOCTORS

Please provide input on JEFFTRAN's routes, schedules and service. We want to hear your issues, concerns, suggestions, and needs. This feedback will provide JEFFTRAN with information to improve the productivity and cost-effectiveness of the bus system, providing better and more efficient service for passengers.

**Questions:**

1. Which bus routes do you typically ride and where?

---

---

2. What improvements would you like to see on those routes?

---

---

3. Are there areas and locations where you would like new bus service?

---

---

---

**On a scale of 1-6, please rate these potential improvements  
(1 being the highest priority and 6 being lowest priority).  
Please make any additional comments on the back of this sheet.**

☐ Easy Transfers between Routes

☐ Coverage Area

☐ More Frequent Service

☒ Later Evening Service

☒ Weekend Service

☐ Other \_\_\_\_\_

\_\_\_\_\_



People need reliable transportation to live their every-day lives and contribute to the growth and betterment of the community as a whole. That's why affordable and responsive public transportation is vital for any growing and expanding community. Lack of affordable transit limits low-income people to walking or begging others for rides. Accessible and effective public transit expands opportunities for ALL residents and visitors to a community. Cities and towns that lack dependable public transportation systems are very limited in how they can flourish and grow their economy.

I and other people of faith, who make up *Faith Voices for Jefferson City*, want a vital and flourishing community, not just for ourselves – but, because a vital community benefits EACH person who lives, works, or visits it. **Public transit is a common good.** Without a convenient way to connect to work, school, medical services, and commercial/ outlets, a person is isolated. They cannot contribute to the overall economy or experience a meaningful quality of life.

**The 2 essential improvements JEFFTRAN needs are:**

- Expanded evening hours so those employed in low-paying service industries have a reliable and safe way to and from work.
- A revised route system (possibly even variable during the day) so that riders can more easily get to and from major commercial, employment and residential neighborhoods.

This is not an exhaustive or refined list. However, these are fundamental changes needed to make the JEFFTRAN system work better for the current riders and attract additional riders. There are many constraints, and an improved system may require some trial and error to develop strategies that lead to long-term improvement for the Jefferson City community.

If the Jefferson City leaders, and the community as a whole, collaborate and devise a starting point for change they will be on the right path to having a better public transit system that enhances and contributes to a vital and flourishing community for all residents and visitors.

Vicki Schildmeyer



# HOUSING AUTHORITY

## *of the City of Jefferson, Missouri*

---



Cynthia Quetsch  
Executive Director

John S. Pletz  
General Counsel

March 28, 2017

The Housing Authority residents make use of both the regular busses and the Handi-Wheels. Many of our residents do not have cars and depend on public transportation for doctor's appointments, shopping and entertainment. We appreciate the service and commend the staff on their professionalism, concern for safety and courtesy to all who use the bus.

There is a bus stop directly in front of the Hyder Apartments, a senior living facility, which makes access to the bus convenient and safe. Many residents use walkers and having to get to the street, especially if on an incline, would be difficult. We strongly recommend that the stop remain where it currently is located.

There is a bus stop directly in front of Hamilton and Dulle Towers that gets frequent use by the tenants. We strongly recommend that the stop remain where it is currently located.

The residents of the Ken Locke Apartments do not use the regular bus very often as the bus stop is on Linden Drive at the bottom of a steep driveway that is difficult to walk up or down. There is no seating or shelter at that stop making waiting for the bus difficult for the elderly and disabled residents. Those residents rely on Handi-Wheels and are pleased with the service.

There are no bus stops in the public housing neighborhoods, but there are stops that adjoin them. As in any neighborhood some residents must walk several blocks to get to a bus stop. If the routes are altered it may be beneficial to consider a stop on Elizabeth or Buena Vista Streets on the west side of town and Elm and Chestnut on the east side.

Because our residents depend on public transportation they would like to see service on the weekends, or at least Saturdays, to enable them to participate in community events.

As our residents are low-income they appreciate the reasonableness of the cost to use the bus, and especially Handi-Wheels.

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### COMMISSIONERS

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Penny Rector  
Vice Chairman

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EQUAL  
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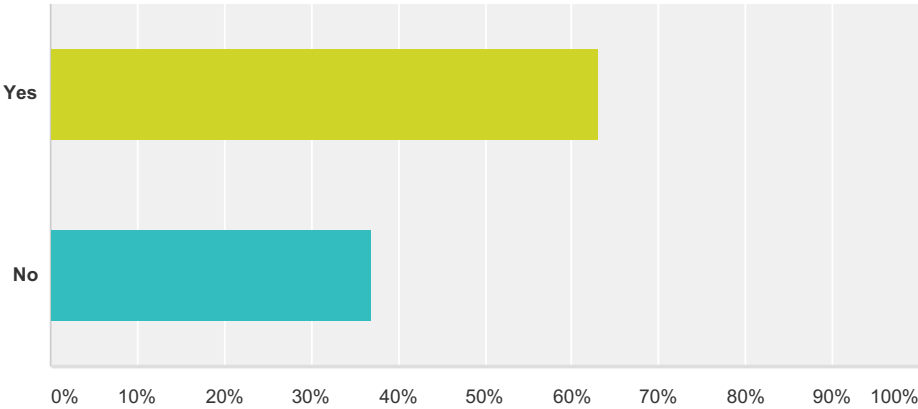
## 9.6 Appendix F – Online Survey Results

This appendix provides detailed tabulations of responses to each survey question.

The online survey directed respondents to answer some (but not all) of the questions in the survey depending upon their answer to Question 1, “Do you live within the city limits of Jefferson City (south of the Missouri River)?” There were 278 respondents who answered “Yes” to Question 1. They were asked to reply to Questions 2 through 24. There were 163 respondents who answered “No” to Question 1. They were asked to reply to Questions 25 through 35. All respondents had the opportunity to give general feedback via free text comments in Question 36.

Q1 Do you live within the city limits of Jefferson City (south of the Missouri River)?

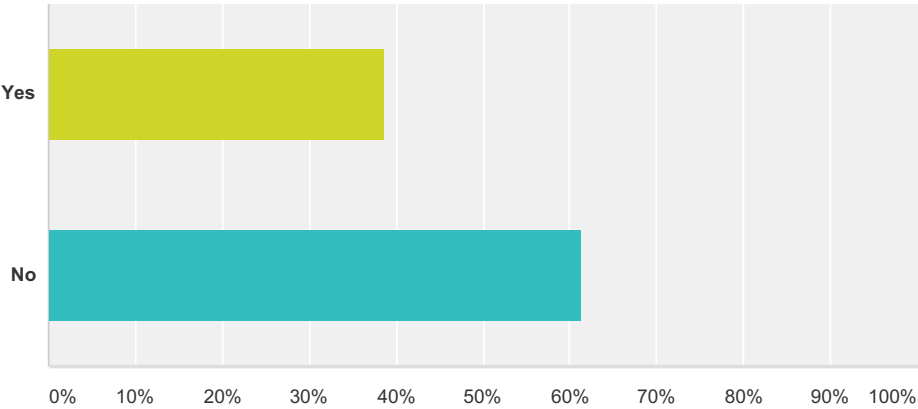
Answered: 441 Skipped: 0



Answer Choices	Responses	
Yes	63.04%	278
No	36.96%	163
Total		441

Q2 Have you used JEFFTRAN service (either fixed-route or Handi-Wheels) within the last year?

Answered: 279 Skipped: 162

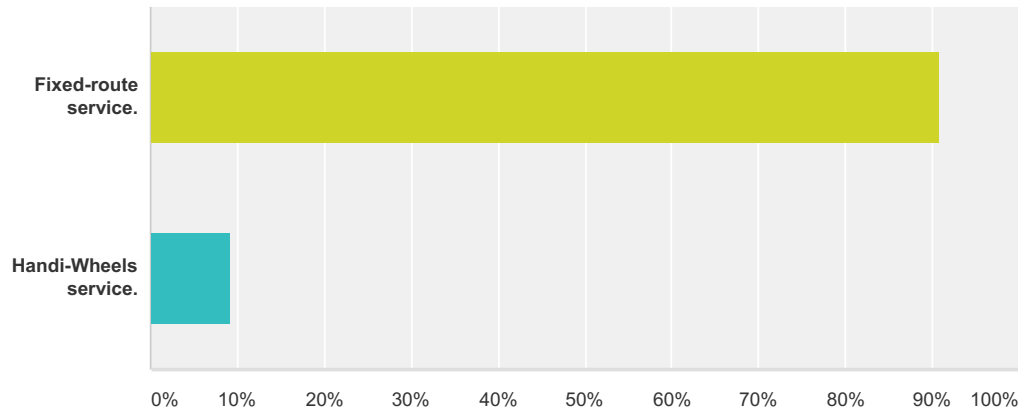


Answer Choices	Responses	
Yes	38.71%	108
No	61.29%	171
Total		279



Q3 Which JEFFTRAN service do you use most?

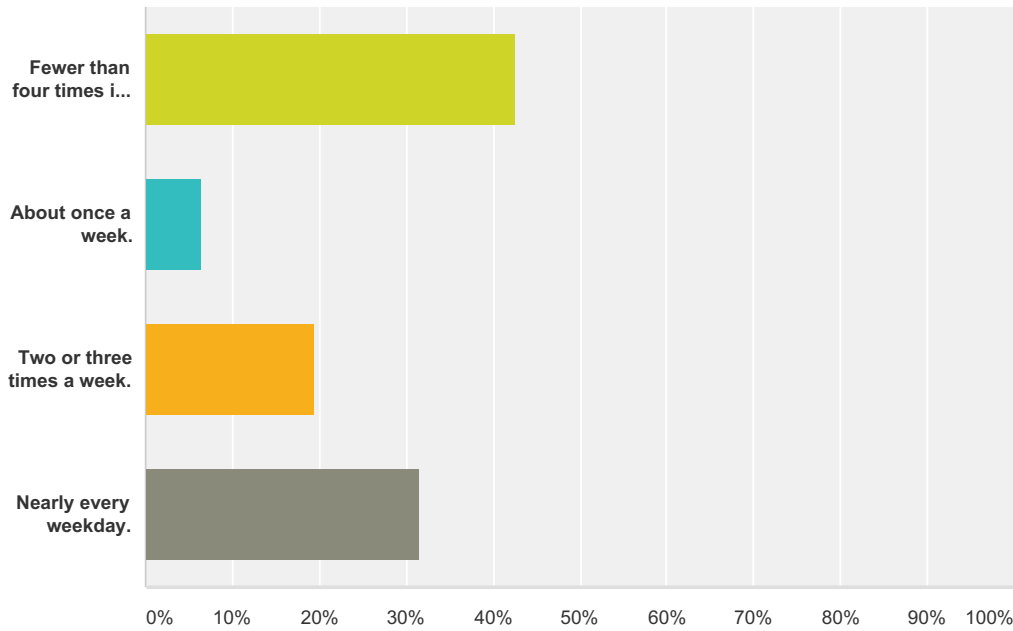
Answered: 108 Skipped: 333



Answer Choices	Responses
Fixed-route service.	90.74%98
Handi-Wheels service.	9.26%10
Total	108

Q4 How often have you used JEFFTRAN service within the last month?

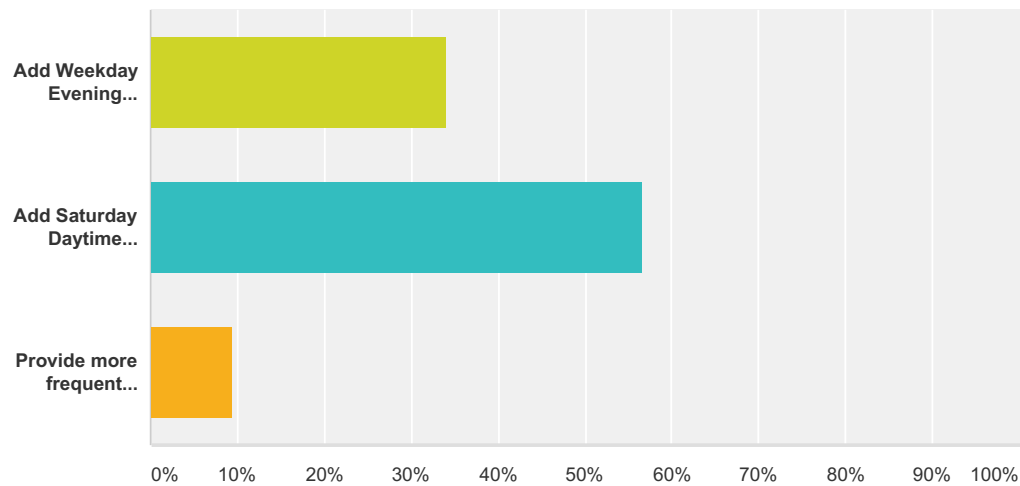
Answered: 108 Skipped: 333



Answer Choices	Responses	
Fewer than four times in the last month.	42.59%	46
About once a week.	6.48%	7
Two or three times a week.	19.44%	21
Nearly every weekday.	31.48%	34
Total		108

Q5 JEFFTRAN operates between about 6:40 am and 6:00 pm, weekdays only. If JEFFTRAN expanded service, which option would you most like to see?

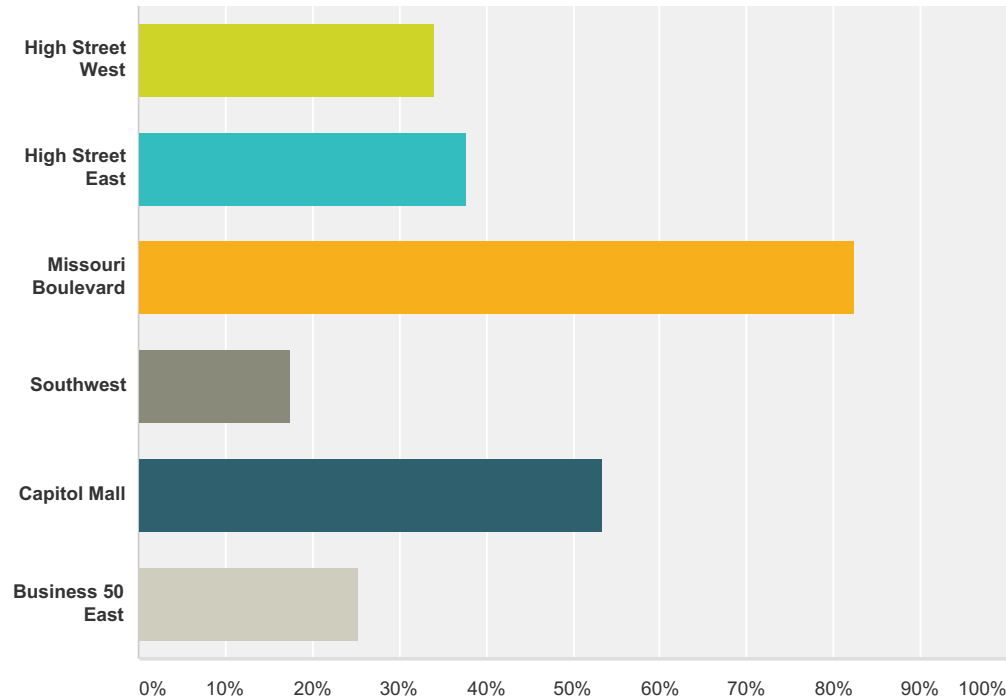
Answered: 106 Skipped: 335



Answer Choices	Responses	
Add Weekday Evening Service, operating every 40 minutes.	33.96%	36
Add Saturday Daytime Service, operating every 40 minutes.	56.60%	60
Provide more frequent service (every 30 minutes), weekdays 6 am to 6 pm only.	9.43%	10
Total		106

Q6 If JEFFTRAN began to operate weekday evening service, on which routes would service be most needed? Pick up to three.

Answered: 103 Skipped: 338

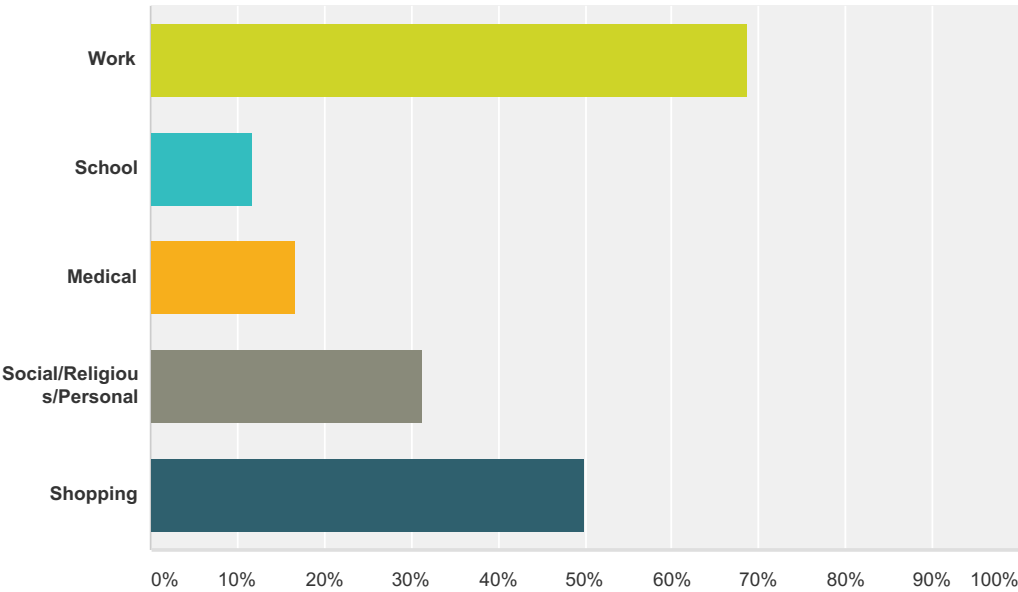


Answer Choices	Responses
High Street West	33.98%35
High Street East	37.86%39
Missouri Boulevard	82.52%85
Southwest	17.48%18
Capitol Mall	53.40%55
Business 50 East	25.24%26
Total Respondents: 103	



Q7 What kinds of travel would be better served by adding weekday evening service?  
Pick up to two.

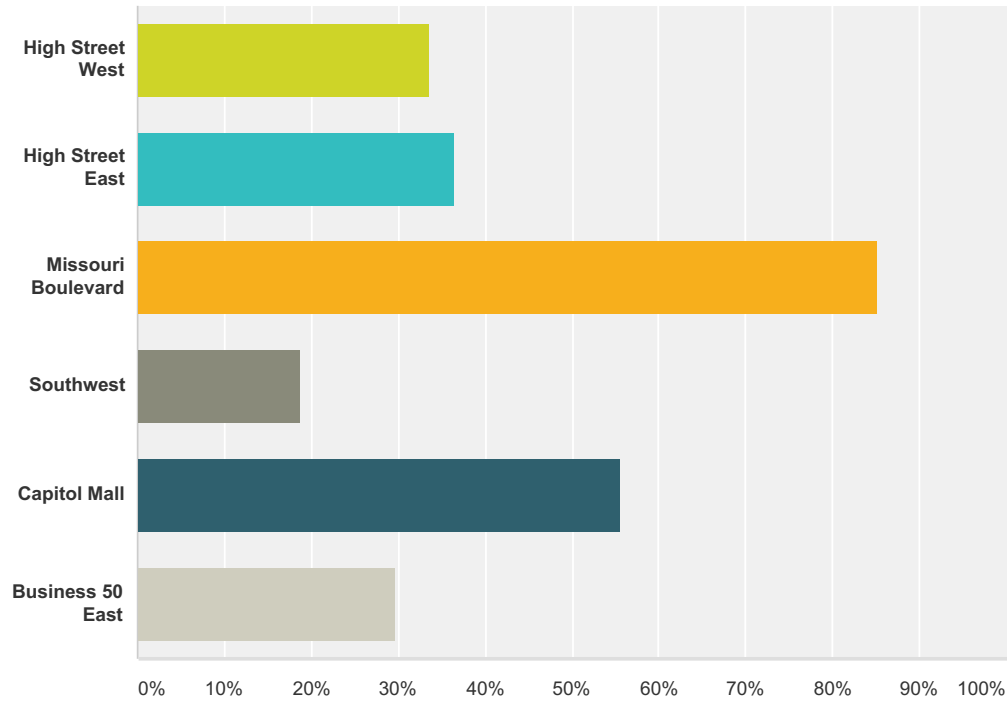
Answered: 102 Skipped: 339



Answer Choices	Responses	
Work	68.63%	70
School	11.76%	12
Medical	16.67%	17
Social/Religious/Personal	31.37%	32
Shopping	50.00%	51
Total Respondents: 102		

**Q8 If JEFFTRAN began to operate Saturday daytime service, on which routes would service be most needed? Pick up to three.**

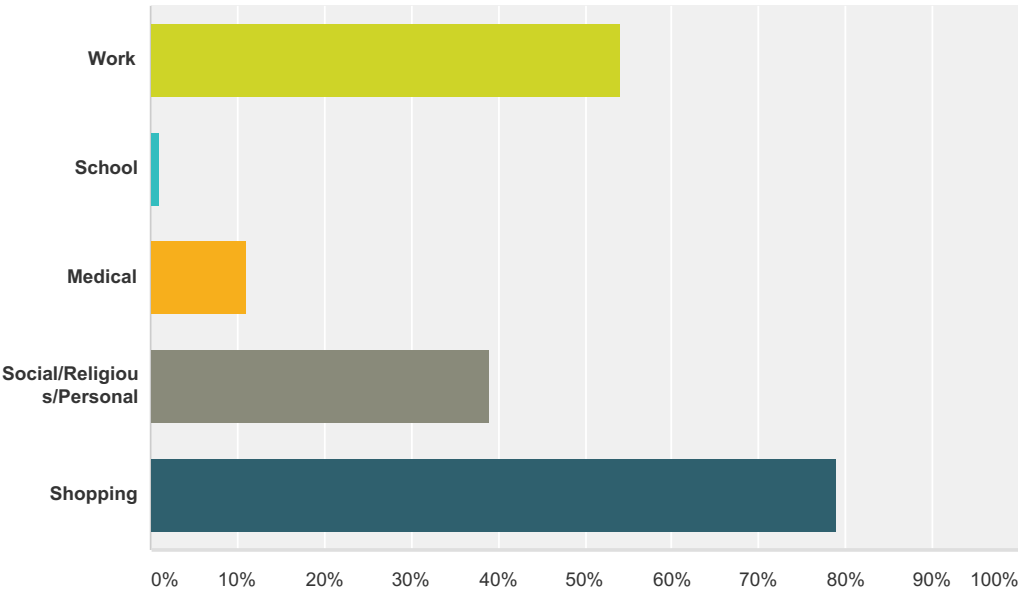
Answered: 101 Skipped: 340



Answer Choices	Responses	
High Street West	33.66%	34
High Street East	36.63%	37
Missouri Boulevard	85.15%	86
Southwest	18.81%	19
Capitol Mall	55.45%	56
Business 50 East	29.70%	30
<b>Total Respondents: 101</b>		

Q9 What kinds of travel would be better served by Saturday daytime service? Pick up to two.

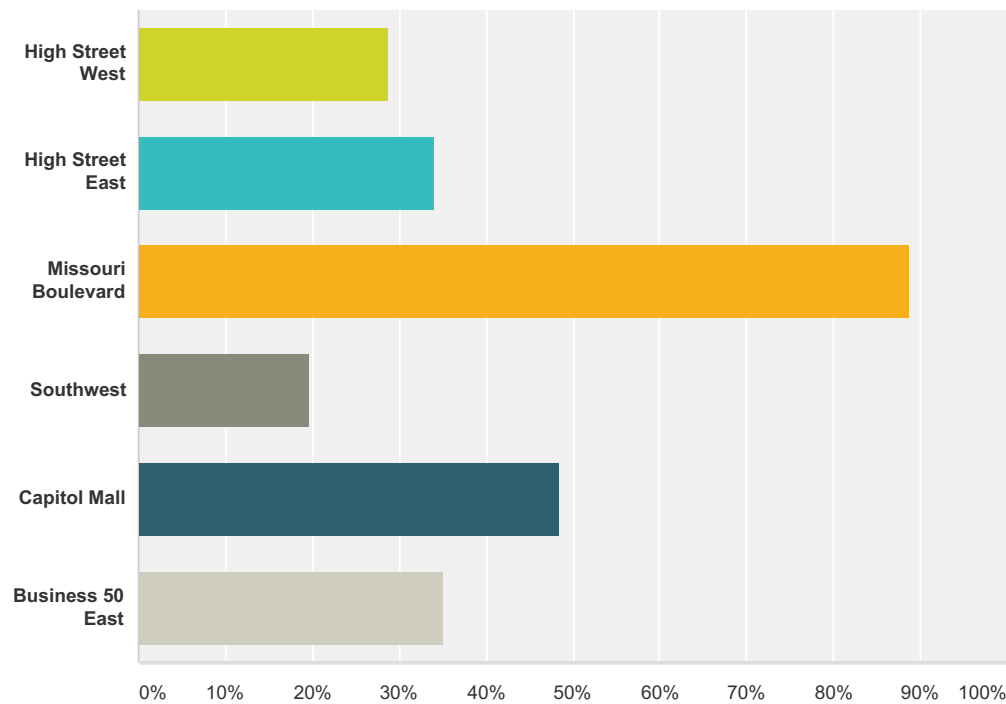
Answered: 100 Skipped: 341



Answer Choices	Responses	
Work	54.00%	54
School	1.00%	1
Medical	11.00%	11
Social/Religious/Personal	39.00%	39
Shopping	79.00%	79
Total Respondents: 100		

Q10 If JEFFTRAN began to operate weekday daytime service every 30 minutes (instead of the present 40 minutes), on which routes would more frequent service be most needed? Pick up to three.

Answered: 97 Skipped: 344

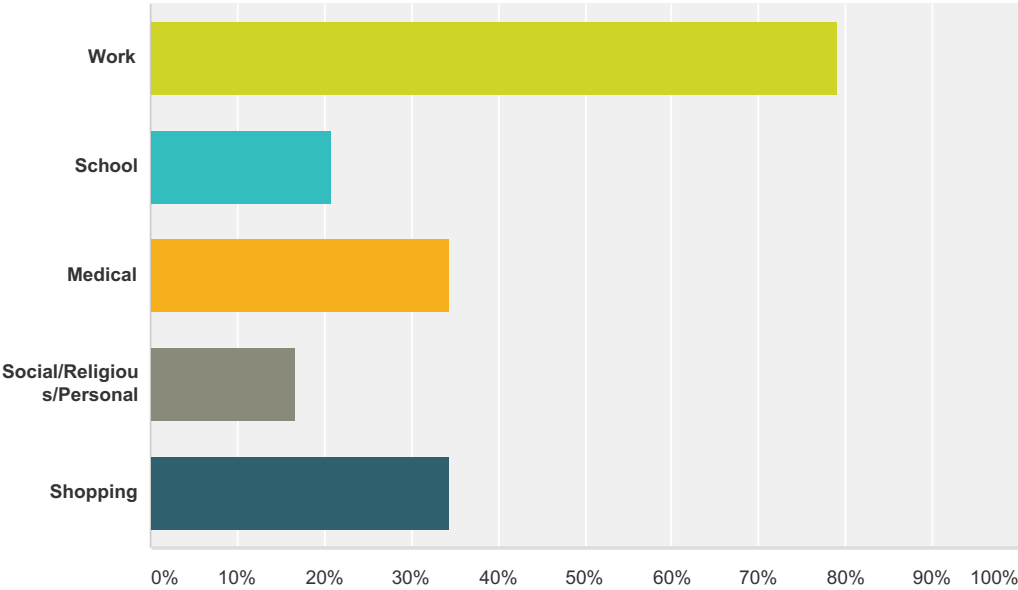


Answer Choices	Responses
High Street West	28.87%28
High Street East	34.02%33
Missouri Boulevard	88.66%86
Southwest	19.59%19
Capitol Mall	48.45%47
Business 50 East	35.05%34
Total Respondents: 97	



Q11 What kinds of travel would be better served by more frequent weekday daytime service? Pick up to two.

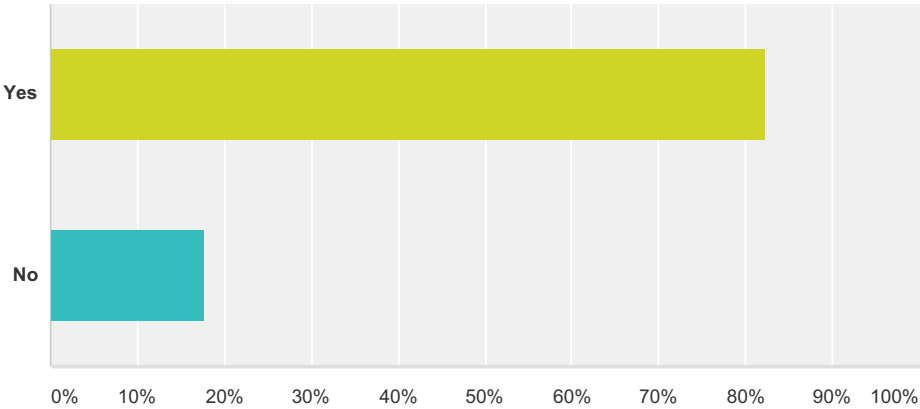
Answered: 96 Skipped: 345



Answer Choices	Responses	
Work	79.17%	76
School	20.83%	20
Medical	34.38%	33
Social/Religious/Personal	16.67%	16
Shopping	34.38%	33
Total Respondents: 96		

Q12 If JEFFTRAN improved its days or hours of service, would you be willing to pay higher fares?

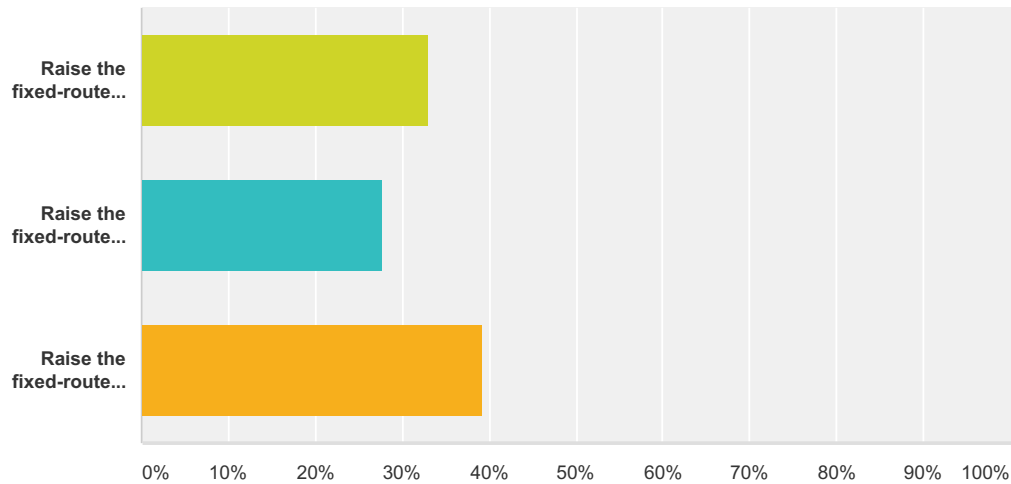
Answered: 96 Skipped: 345



Answer Choices	Responses	
Yes	82.29%	79
No	17.71%	17
Total		96

**Q13 JEFFTRAN bus fares are \$1, and 50 cents for senior citizens and the disabled. How much should JEFFTRAN raise its fares to help pay for the costs of added service?**

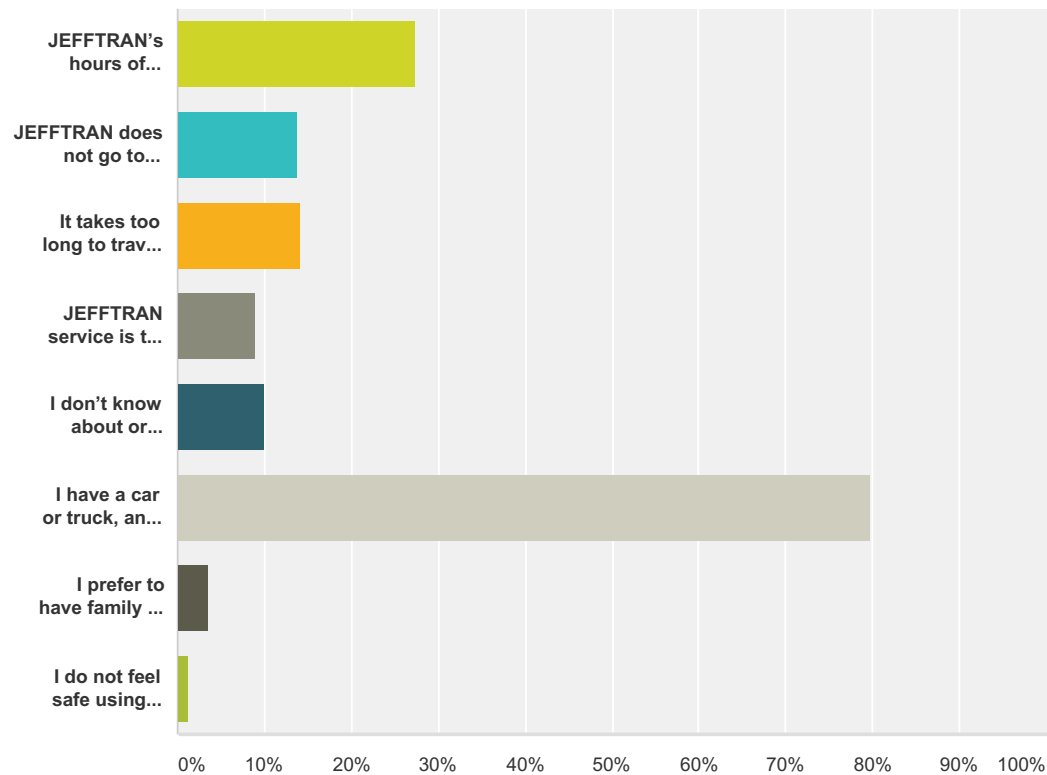
Answered: 79   Skipped: 362



Answer Choices	Responses	
Raise the fixed-route fare to \$2.00 for adults (\$1.00 for seniors and those with disabilities).	32.91%	26
Raise the fixed-route fare to \$1.50 for adults (\$.75 for seniors and those with disabilities).	27.85%	22
Raise the fixed-route fare to \$1.25 for adults (\$.50 for seniors and those with disabilities).	39.24%	31
Total	79	

### Q14 Why haven't you used JEFFTRAN service within the last year? Please check all which apply.

Answered: 168 Skipped: 273

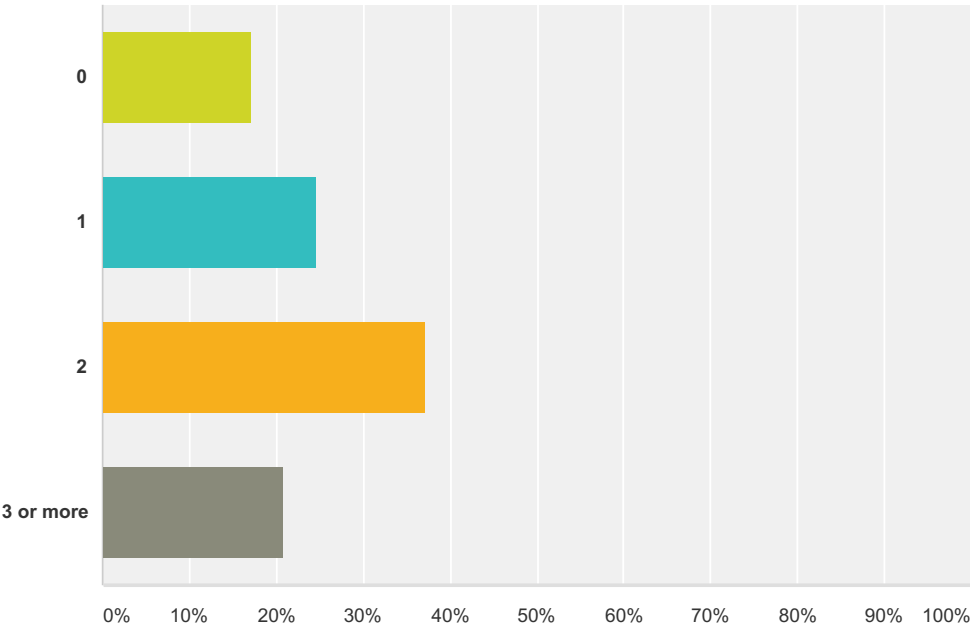


Answer Choices	Responses	
JEFFTRAN's hours of service are too limited.	27.38%	46
JEFFTRAN does not go to places I need.	13.69%	23
It takes too long to travel on JEFFTRAN.	14.29%	24
JEFFTRAN service is too far from my home.	8.93%	15
I don't know about or understand JEFFTRAN service.	10.12%	17
I have a car or truck, and prefer to drive.	79.76%	134
I prefer to have family or friends drive me to places I need to go.	3.57%	6
I do not feel safe using JEFFTRAN.	1.19%	2
Total Respondents: 168		



Q15 How many working vehicles does your household own?

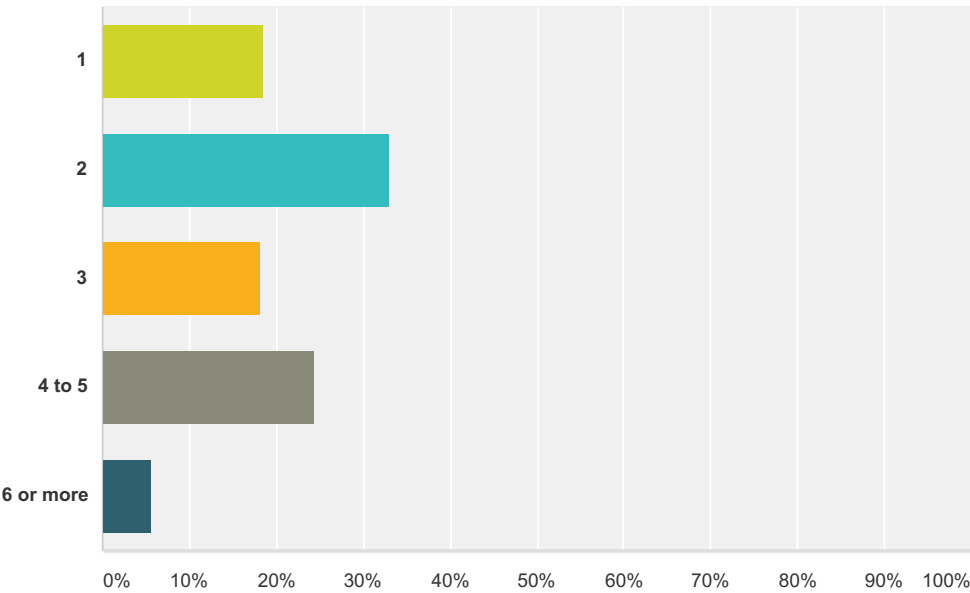
Answered: 263 Skipped: 178



Answer Choices	Responses	
0	17.11%	45
1	24.71%	65
2	37.26%	98
3 or more	20.91%	55
Total		263

Q16 How many people (including yourself) live in your household?

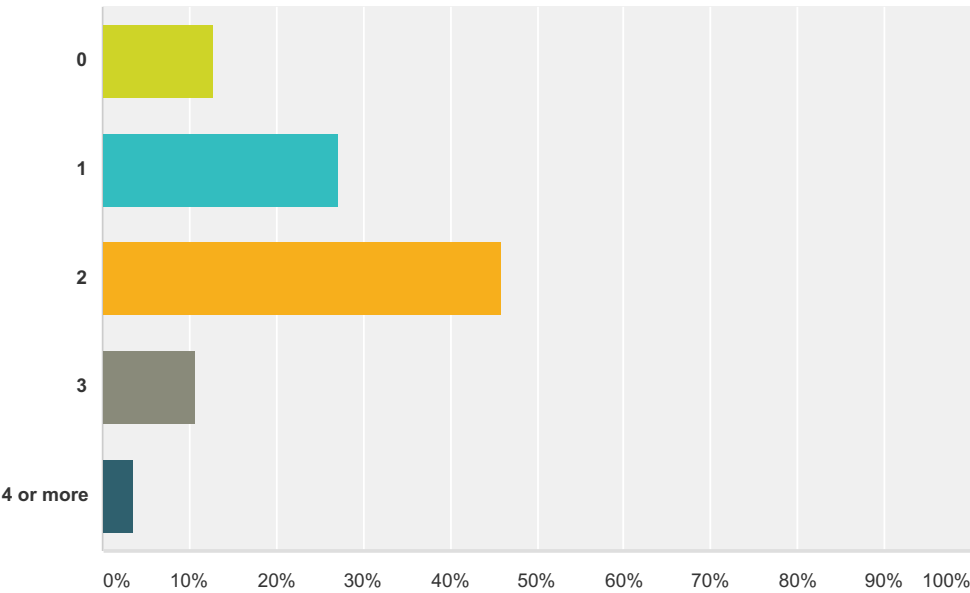
Answered: 263 Skipped: 178



Answer Choices	Responses	
1	18.63%	49
2	33.08%	87
3	18.25%	48
4 to 5	24.33%	64
6 or more	5.70%	15
Total		263

Q17 How many people in your household (including yourself) are employed?

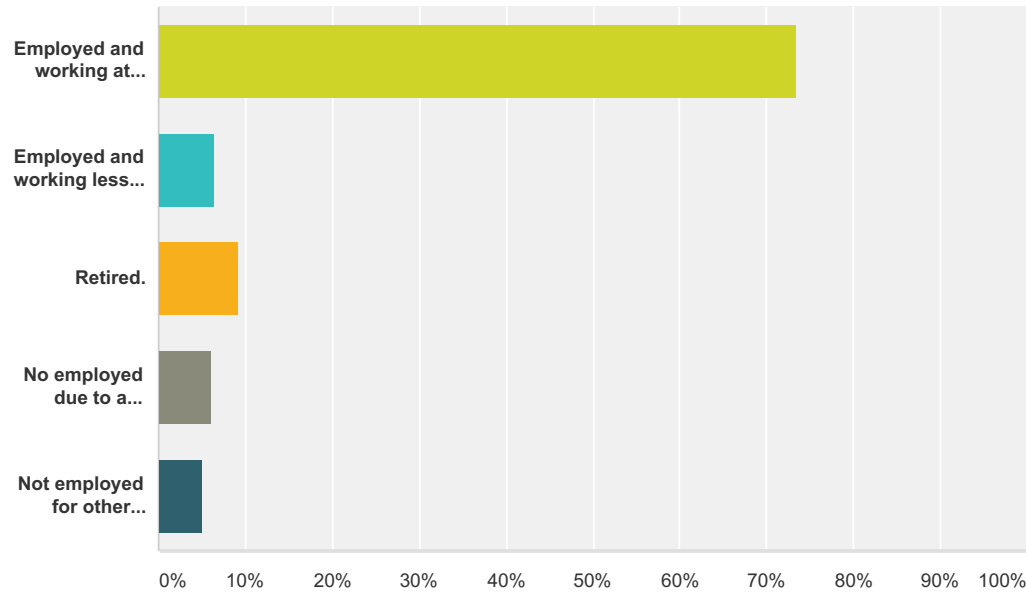
Answered: 261 Skipped: 180



Answer Choices	Responses	
0	12.64%	33
1	27.20%	71
2	45.98%	120
3	10.73%	28
4 or more	3.45%	9
Total		261

Q18 What is your employment status?

Answered: 263 Skipped: 178

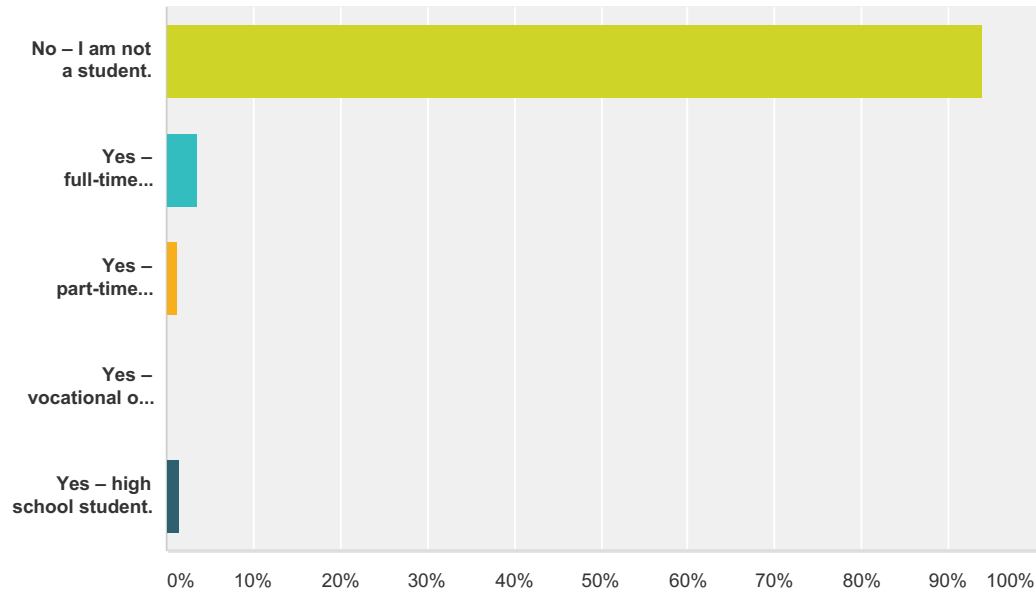


Answer Choices	Responses	
Employed and working at least 30 hours per week.	73.38%	193
Employed and working less than 30 hours per week.	6.46%	17
Retired.	9.13%	24
No employed due to a disability.	6.08%	16
Not employed for other reasons.	4.94%	13
Total		263



Q19 Are you currently a student?

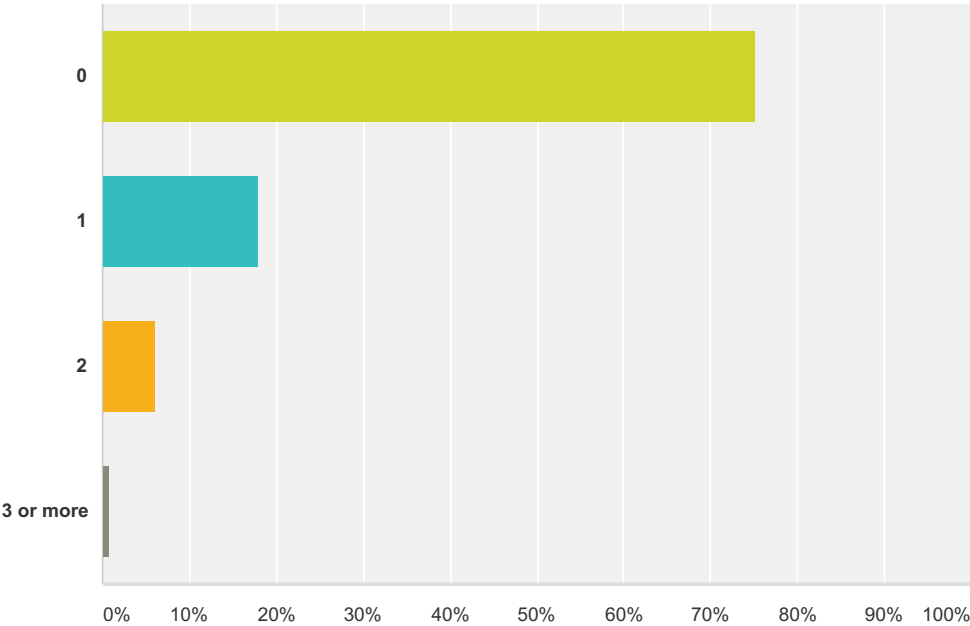
Answered: 261 Skipped: 180



Answer Choices	Responses	
No – I am not a student.	93.87%	245
Yes – full-time college student.	3.45%	9
Yes – part-time college student.	1.15%	3
Yes – vocational or trade school student.	0.00%	0
Yes – high school student.	1.53%	4
Total		261

Q20 In the fall of 2017, how many children will your household have in Grades 9 through 12?

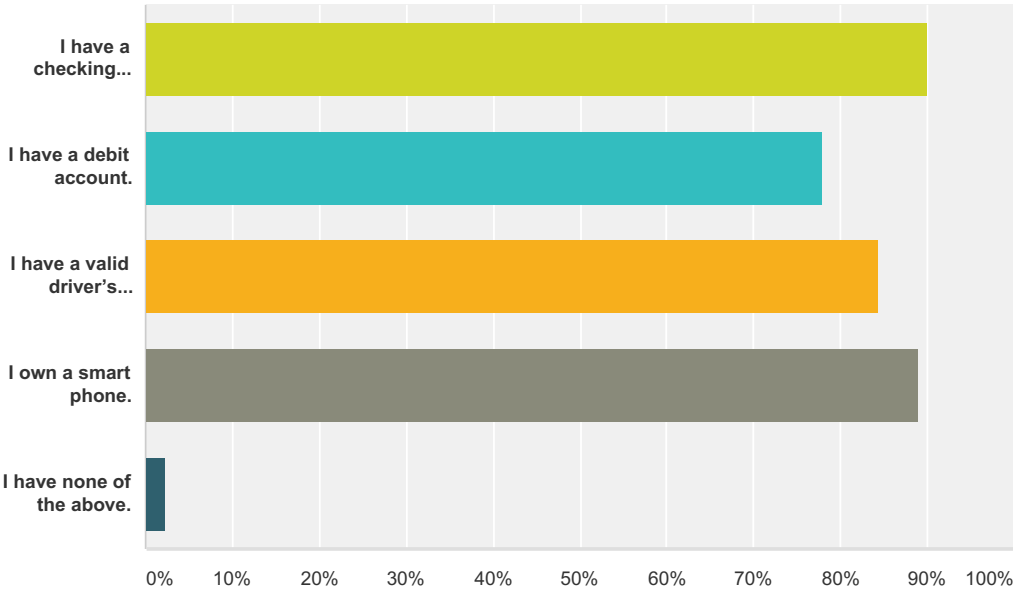
Answered: 262 Skipped: 179



Answer Choices	Responses	
0	75.19%	197
1	17.94%	47
2	6.11%	16
3 or more	0.76%	2
Total		262

Q21 Please check all that apply to you:

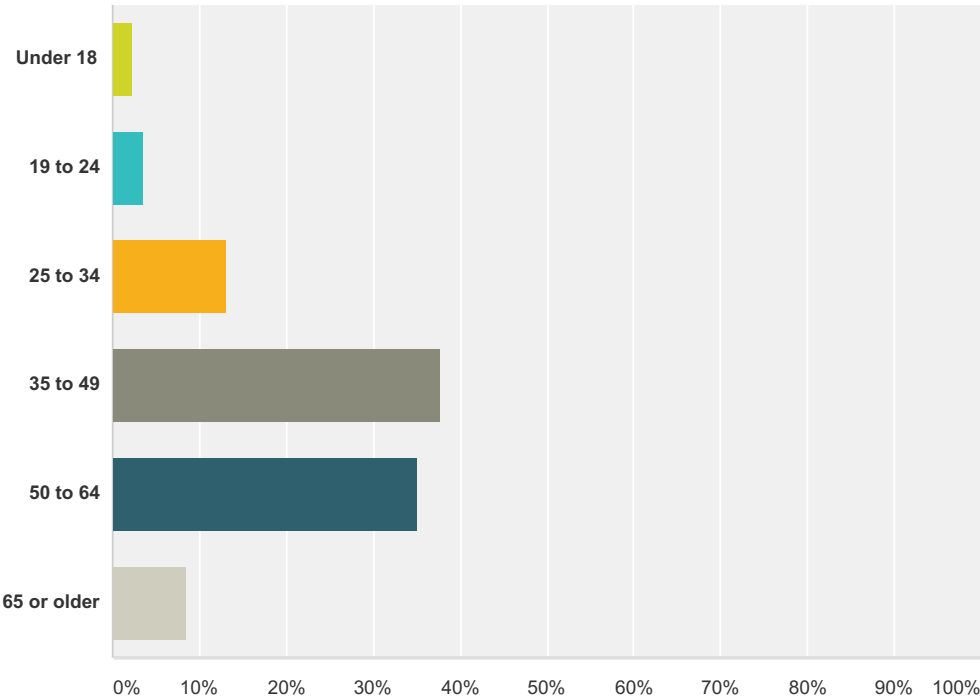
Answered: 262 Skipped: 179



Answer Choices	Responses	
I have a checking account.	90.08%	236
I have a debit account.	77.86%	204
I have a valid driver's license.	84.35%	221
I own a smart phone.	88.93%	233
I have none of the above.	2.29%	6
Total Respondents: 262		

Q22 Please tell us your age.

Answered: 260 Skipped: 181

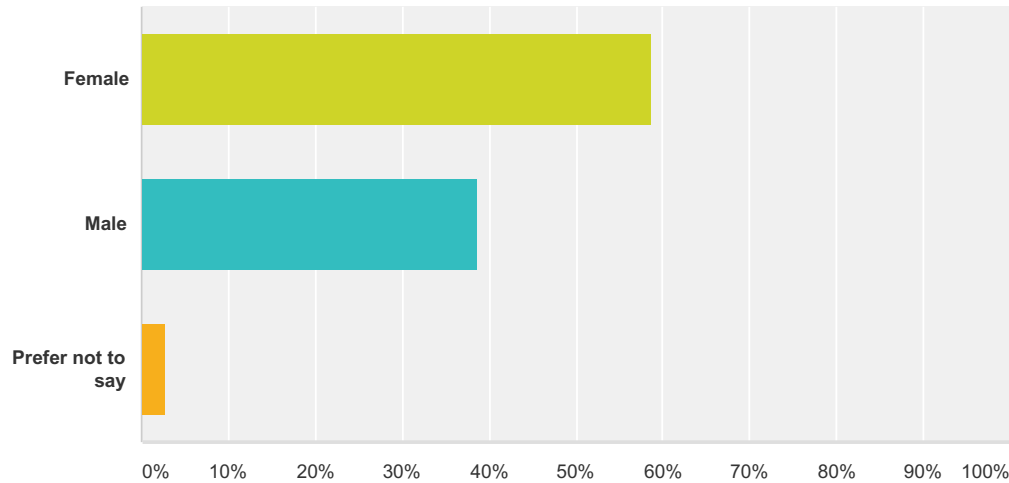


Answer Choices	Responses	
Under 18	2.31%	6
19 to 24	3.46%	9
25 to 34	13.08%	34
35 to 49	37.69%	98
50 to 64	35.00%	91
65 or older	8.46%	22
Total		260



Q23 Please tell us your gender.

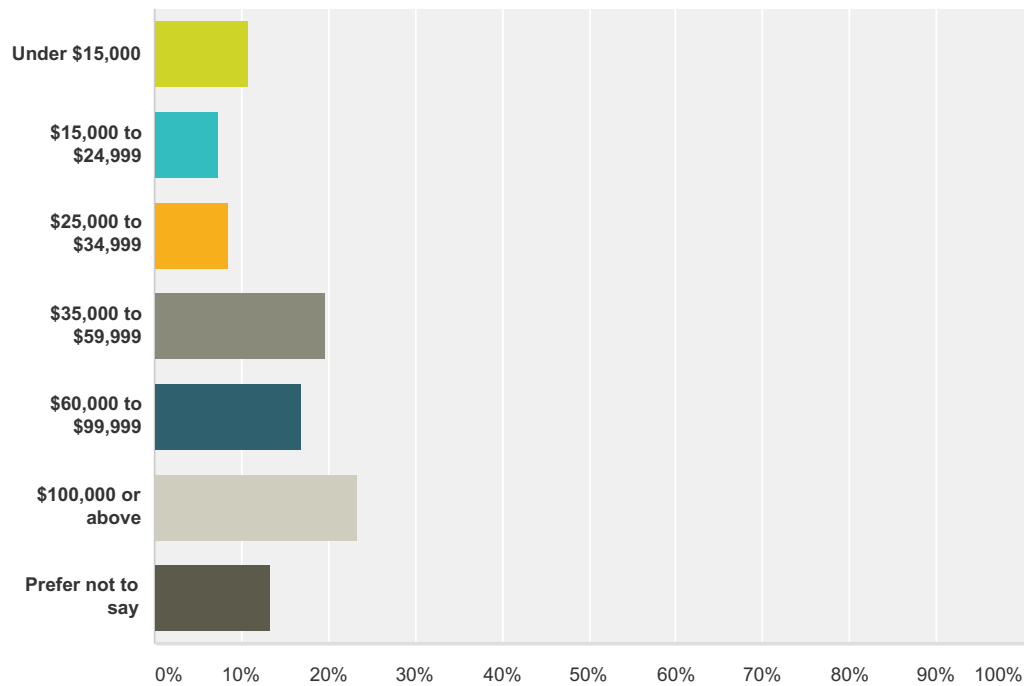
Answered: 259 Skipped: 182



Answer Choices	Responses	
Female	58.69%	152
Male	38.61%	100
Prefer not to say	2.70%	7
Total		259

## Q24 Please tell us your household income in 2016.

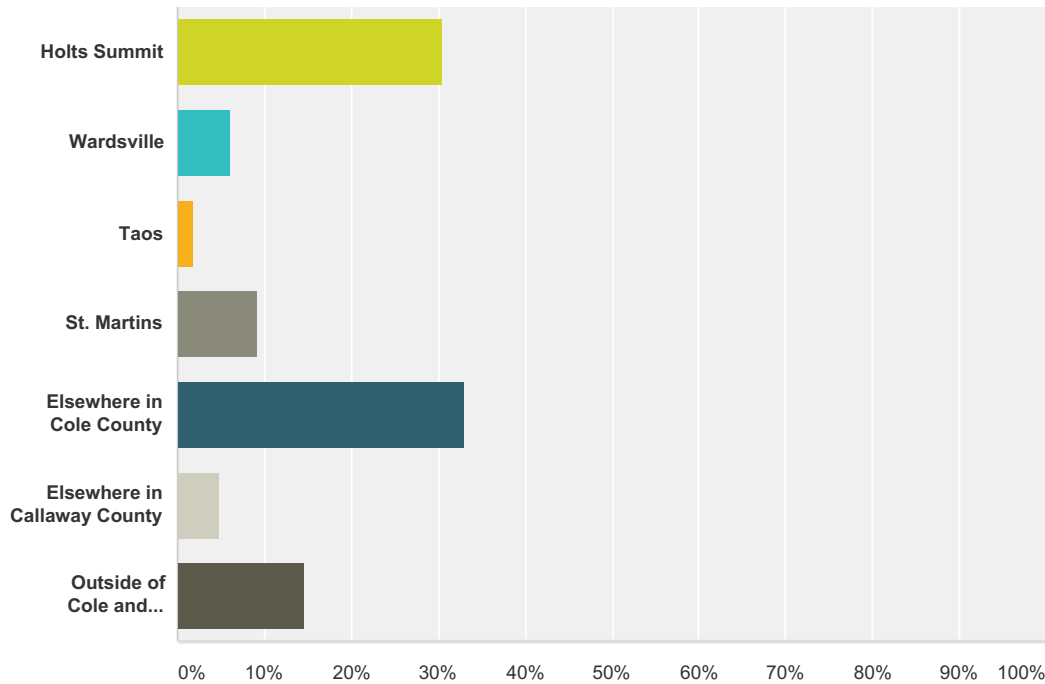
Answered: 260 Skipped: 181



Answer Choices	Responses	
Under \$15,000	10.77%	28
\$15,000 to \$24,999	7.31%	19
\$25,000 to \$34,999	8.46%	22
\$35,000 to \$59,999	19.62%	51
\$60,000 to \$99,999	16.92%	44
\$100,000 or above	23.46%	61
Prefer not to say	13.46%	35
<b>Total</b>		<b>260</b>

Q25 Where do you live?

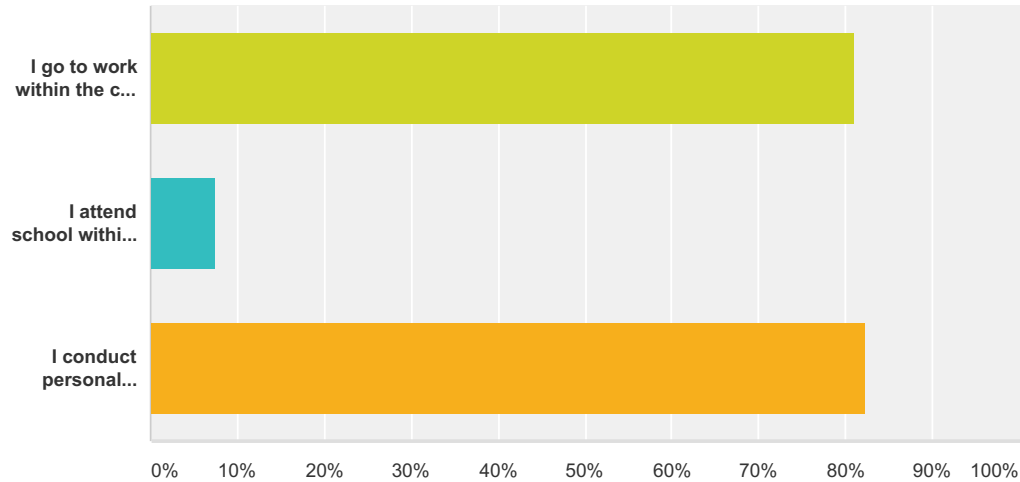
Answered: 164 Skipped: 277



Answer Choices	Responses	
Holts Summit	30.49%	50
Wardsville	6.10%	10
Taos	1.83%	3
St. Martins	9.15%	15
Elsewhere in Cole County	32.93%	54
Elsewhere in Callaway County	4.88%	8
Outside of Cole and Callaway counties	14.63%	24
Total		164

Q26 Do you do any of the following more than once a week? Please check all which apply.

Answered: 158 Skipped: 283

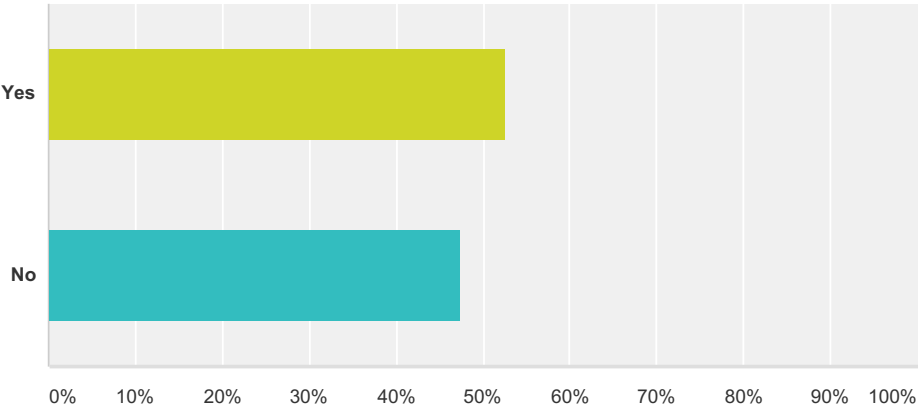


Answer Choices	Responses	
I go to work within the city limits of Jefferson City.	81.01%	128
I attend school within the city limits of Jefferson City.	7.59%	12
I conduct personal business within the city limits of Jefferson City.	82.28%	130
Total Respondents: 158		



**Q27 Would you consider using bus service from your community to downtown Jefferson City to make the trips you described in Question 3?**

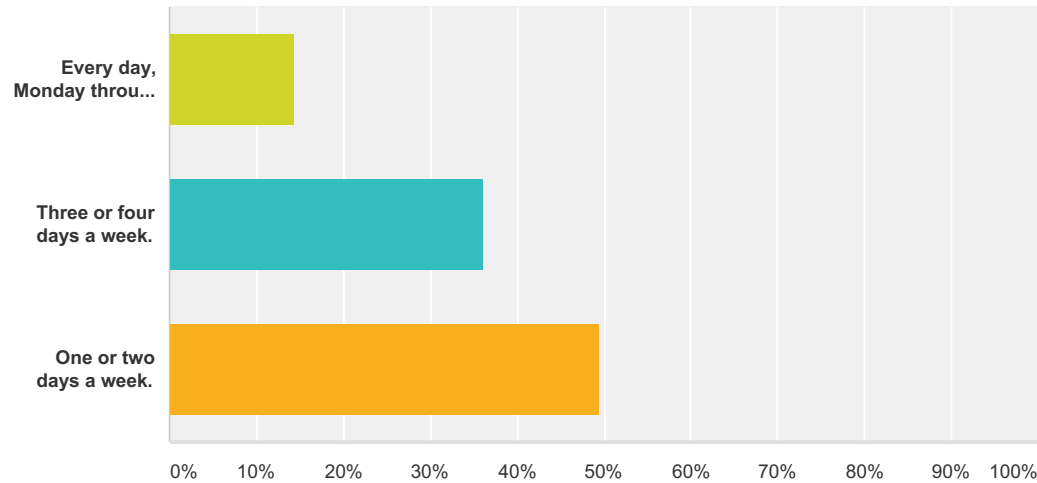
Answered: 158 Skipped: 283



Answer Choices	Responses	
Yes	52.53%	83
No	47.47%	75
Total		158

Q28 How often would you want to use bus service to Jefferson City?

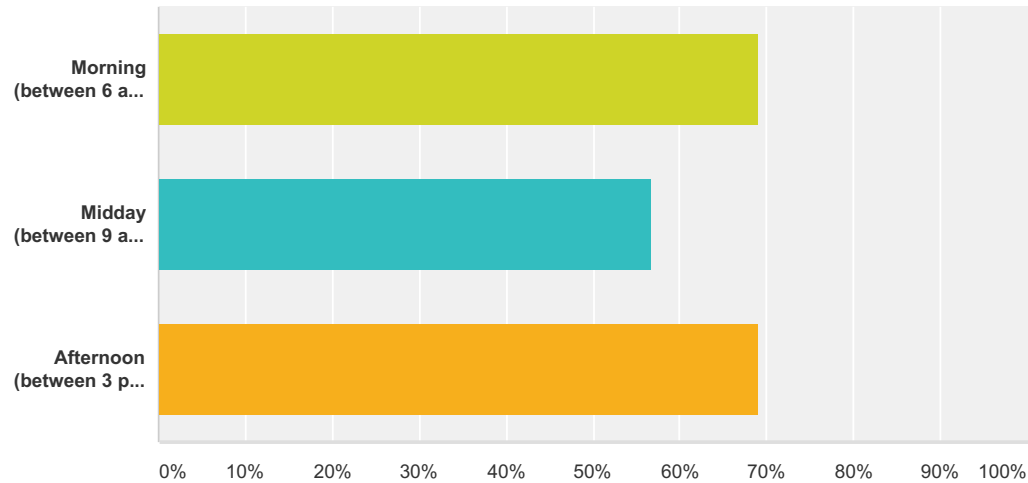
Answered: 83 Skipped: 358



Answer Choices	Responses	
Every day, Monday through Friday.	14.46%	12
Three or four days a week.	36.14%	30
One or two days a week.	49.40%	41
Total		83

Q29 What time of day would you use the bus? Please check all which apply.

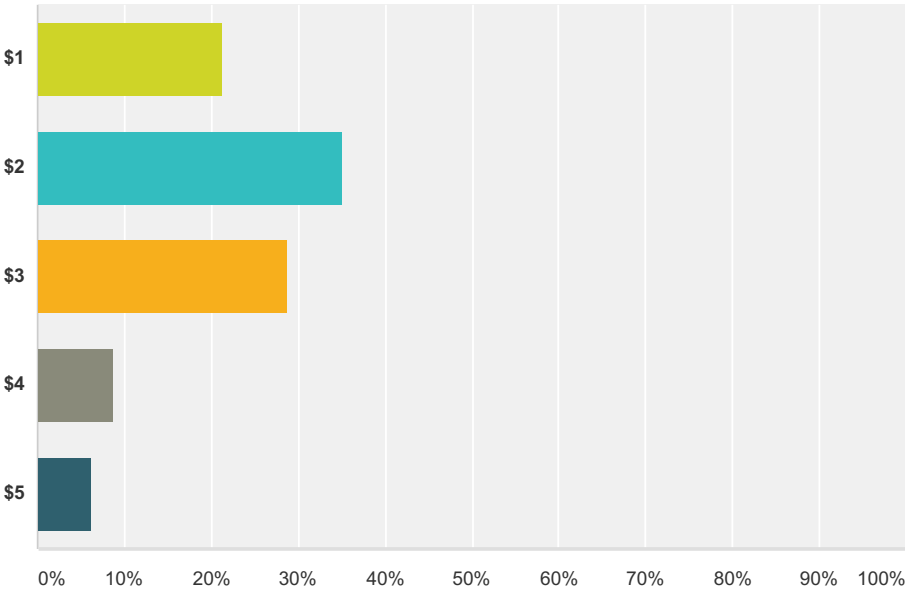
Answered: 81 Skipped: 360



Answer Choices	Responses	
Morning (between 6 a.m. and 9 a.m.).	69.14%	56
Midday (between 9 a.m. and 3 p.m.).	56.79%	46
Afternoon (between 3 p.m. and 6 p.m.).	69.14%	56
Total Respondents: 81		

Q30 What is the highest one-way bus fare you would pay?

Answered: 80 Skipped: 361

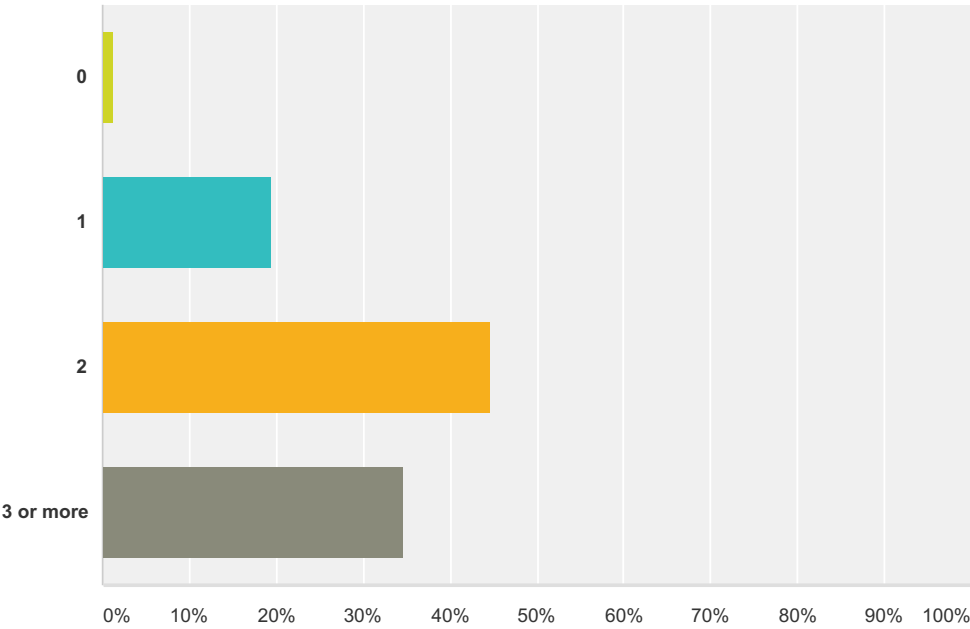


Answer Choices	Responses	
\$1	21.25%	17
\$2	35.00%	28
\$3	28.75%	23
\$4	8.75%	7
\$5	6.25%	5
Total		80



Q31 How many working vehicles does your household own?

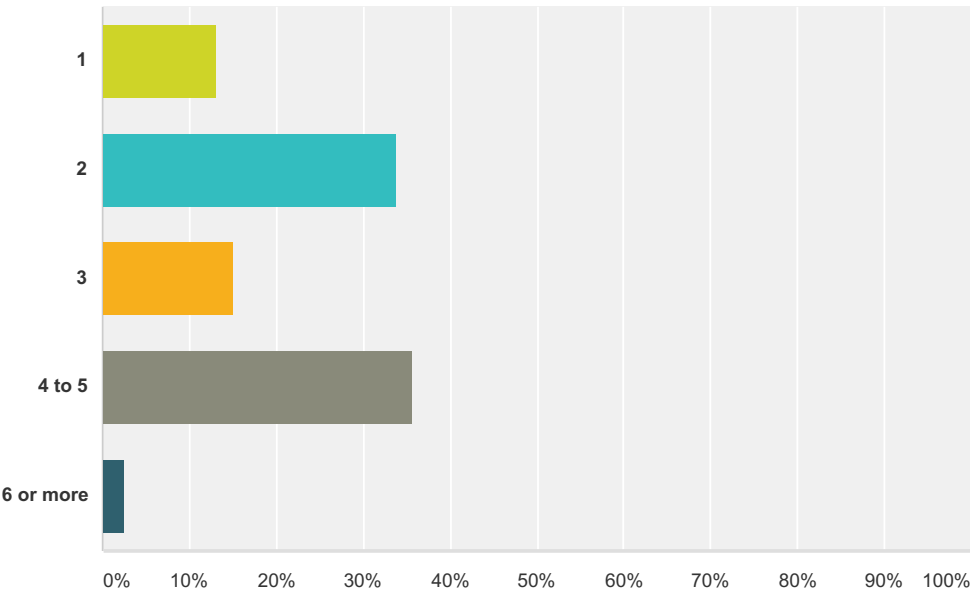
Answered: 159 Skipped: 282



Answer Choices	Responses	
0	1.26%	2
1	19.50%	31
2	44.65%	71
3 or more	34.59%	55
Total		159

Q32 How many people (including yourself) live in your household?

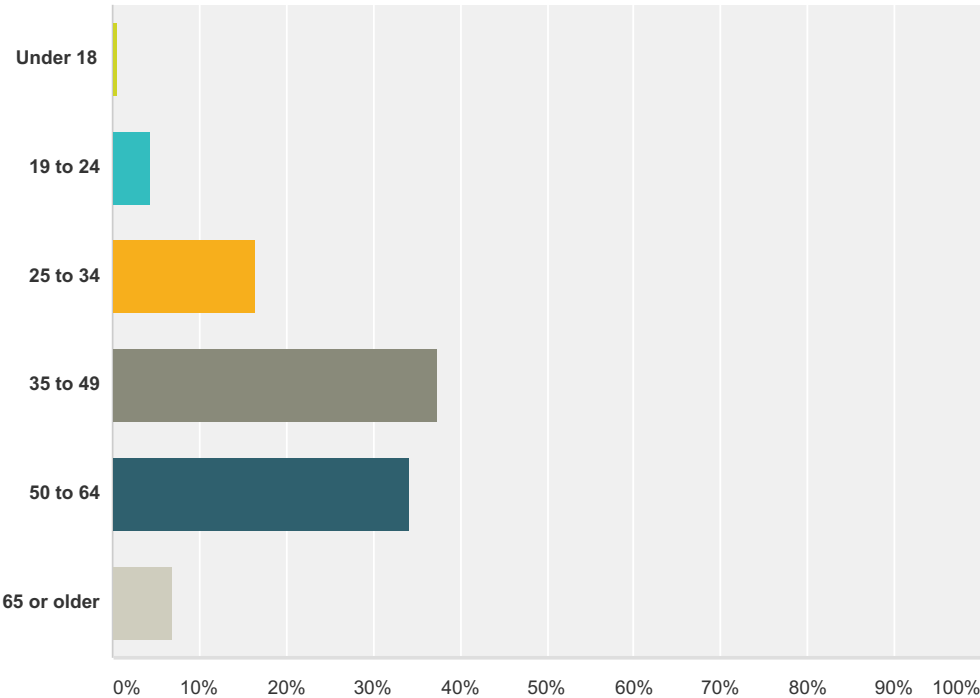
Answered: 160 Skipped: 281



Answer Choices	Responses	
1	13.13%	21
2	33.75%	54
3	15.00%	24
4 to 5	35.63%	57
6 or more	2.50%	4
Total		160

Q33 Please tell us your age.

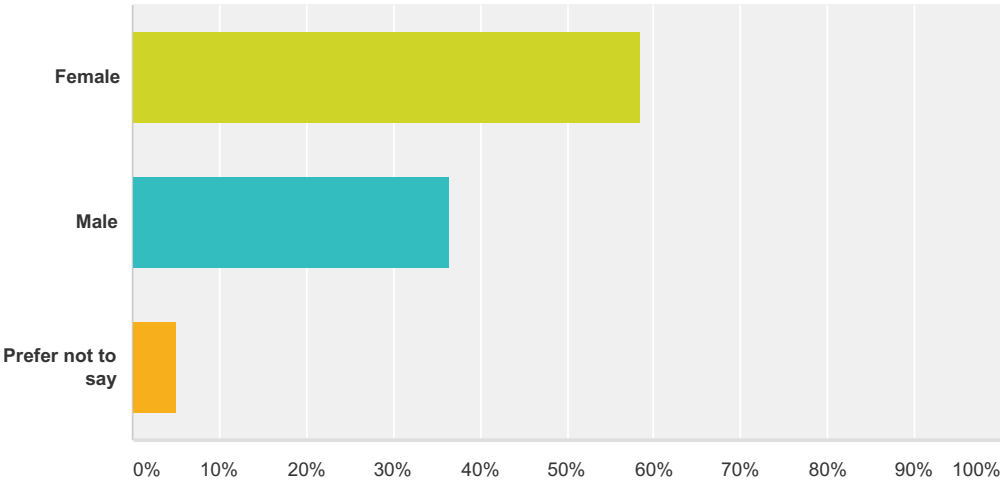
Answered: 158 Skipped: 283



Answer Choices	Responses	
Under 18	0.63%	1
19 to 24	4.43%	7
25 to 34	16.46%	26
35 to 49	37.34%	59
50 to 64	34.18%	54
65 or older	6.96%	11
Total		158

Q34 Please tell us your gender.

Answered: 159 Skipped: 282

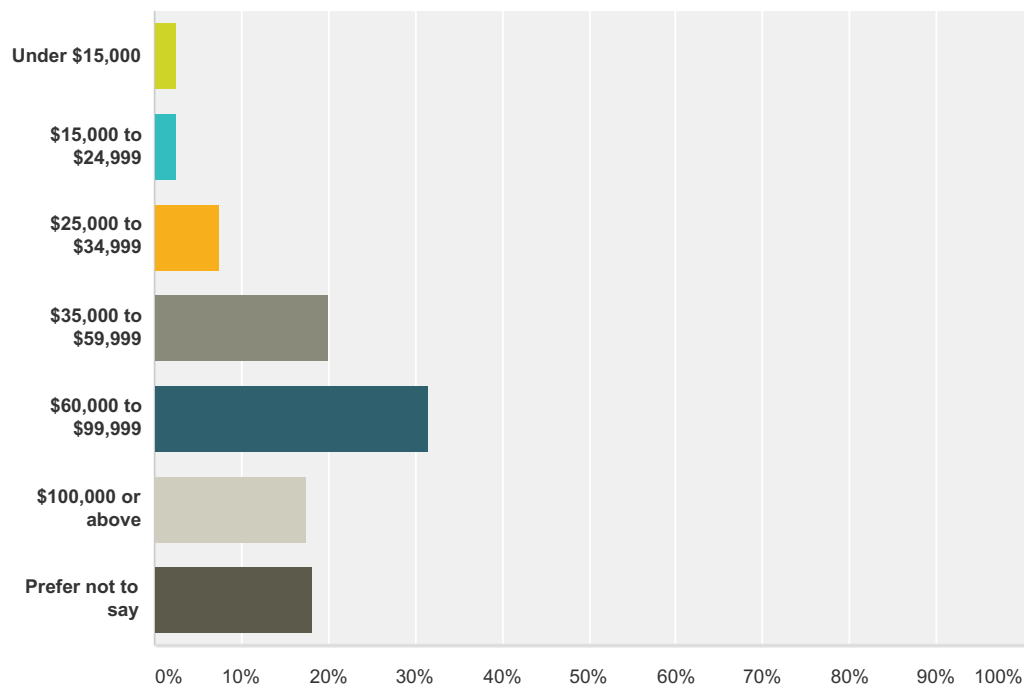


Answer Choices	Responses	
Female	58.49%	93
Male	36.48%	58
Prefer not to say	5.03%	8
Total		159



### Q35 Please tell us your household income in 2016.

Answered: 159 Skipped: 282



Answer Choices	Responses	
Under \$15,000	2.52%	4
\$15,000 to \$24,999	2.52%	4
\$25,000 to \$34,999	7.55%	12
\$35,000 to \$59,999	20.13%	32
\$60,000 to \$99,999	31.45%	50
\$100,000 or above	17.61%	28
Prefer not to say	18.24%	29
<b>Total</b>		<b>159</b>

**Q36 Please provide any additional input or comments in the space below. Thanks very much for your time and assistance.**

Answered: 145 Skipped: 296

## 9.7 Appendix G – Glossary of Terms and Acronyms

This appendix provides a glossary of transit related terms and acronyms.

Term/Acronym	Definition
ACS	American Community Survey – A survey administered by the U.S. Census Bureau to collect a wide range of demographic data. It is administered on an ongoing basis.
ADA	Americans with Disabilities Act – A civil rights law passed by Congress in 1990 which makes it illegal to discriminate against people with disabilities. To comply with the ADA, transit agencies are required to provide alternative service for those who cannot use fixed route service.
Alight	To disembark a transit vehicle.
Annual Normalization Factor	A numerical factor used to better represent typical ridership throughout the year. It is multiplied with the ridership results of on-board counts to obtain an annualized ridership count.
APC	Automatic Passenger Counter
AVA	Automatic Voice Annunciator
AVL	Automatic Vehicle Location
CAMPO	Capital Area Metropolitan Planning Organization
Choice Riders	Transit riders who have the option of using other modes of transportation but choose to use transit due to cost, convenience or other reasons.
COA	Comprehensive Operations Analysis
Daily Passenger-Miles	The passenger-miles served by a particular route estimated from the on-board counts and files provided by Jefferson City in conjunction with GIS tools.
Demand Response Service	A type of public transit service in which passengers are picked up and dropped off at locations and times they specify. Demand response services do not follow a specific route or schedule.
FDOT	Florida Department of Transportation
Fixed Route Service	A type of public transit service in which transit vehicles are scheduled to be at specific locations at scheduled times. Fixed route services operate along a specific route.
FTA	Federal Transit Administration
Headway/Interval	The time between vehicles moving in the same direction on a specific route, usually expressed in minutes.
NTD	National Transit Database
Peak Load	The largest number of passengers on any trip/bus throughout the day for a particular route or segment.
Regular Route	The six JEFFTRAN routes that run 17 trips daily. Namely: Business 50 East, Capital Mall, High Street East, High Street West, Missouri Boulevard and Southwest.
Route Segment	A subsection of a route between two major stops as specified in the route maps published by JEFFTRAN.



Term/Acronym	Definition
Second Shift	A set period of time that employees work which takes place after typical working hours (first shift). These employees are unable to utilize JEFFTRAN's services due to their working hours not matching JEFFTRAN's hours of service.
Through-Riding Passengers	Passengers who board a bus on one trip and alight on another trip.
Through-Riding Transfers	Passengers who transfer from any regular route through Missouri Boulevard to Capital Mall or vice versa.
TIP	Transportation Improvement Program
Trip	One complete circuit of a transit vehicle along its specific route, typically starting and ending at the Transfer Center. The six regular routes complete 17 trips daily while the tripper routes complete a single trip daily.
Tripper Route	The three JEFFTRAN routes that run one trip daily. Namely: Southside Tripper, High Street East Tripper and Hutton Lane Tripper.
Urban iNTD	Urban Integrated National Transit Database





411 N 10th Street, Suite 200  
St. Louis, Missouri 63101

5650 Mexico Road, Suite 2  
St. Peters, Missouri 63376

[lochgroup.com](http://lochgroup.com)