



SMTS

PHELPS COUNTY DEVIATED FIXED- ROUTE STUDY

2022





SMTS TRANSPORTATION STUDY
PHELPS COUNTY FIXED-ROUTE
2022

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EXECUTIVE SUMMARY

Public Transportation is vitally important to the Meramec Region. It provides connection to jobs, schools, and other destinations, enabling residents with limited mobility options to travel, enhancing economic vitality, providing an alternate to single occupant driving on the most congested roadways, helping to accommodate growth in our communities and benefitting the quality of our environment.

A *deviated fixed-route* bus system is characterized by a designated travel route with set schedules and stops where passengers can board or deboard. Through evaluating public input from survey responses, as well as analyzing traffic and demographic data, the Meramec Regional Planning Commission (MRPC) was able to examine the feasibility of initiating a deviated fixed-route system.

Southeast Missouri Transportation Services (SMTS), a local public transportation provider, is committed to serving the Meramec region with quality service as they work towards their vision of a sustainable, valuable, public transportation system that helps the region thrive.

In 2019, SMTS began working with MRPC to establish a deviated fixed- route system in the city of Rolla, with routes connecting to Salem and St. James.

Using research based on demographics and socioeconomic data, as well as public input from survey responses, MRPC created a plan that outlines key opportunities and challenges, while designing the proposed deviated fixed-route bus system for SMTS. The following was reviewed and taken into consideration when conducting the study:

Demographics & socioeconomic data to define transit dependent populations within the study area

Area characteristics to ensure optimal bus routes and allow for reliable services to be provided

In-demand routes provided by public input surveys to offer transit services that residents will utilize

Potential office locations that would be a good fit to meet needs for a new SMTS location that includes areas for bus maintenance.

MRPC identified four detailed routes for SMTS to base their new route-system off. MRPC designed a deviated fixed-route, along with 3 options for a secondary route, to better meet the needs of residents in the study area. The main route, “*Bus A*”, will run a loop through the city of Rolla on the hour, and will begin at the designated boarding hub location.

The secondary route, “*Bus B*”, is intended to connect the cities of Salem and St. James to Rolla. Three secondary route options were identified by MRPC, each designed to drop-off and pick-up at the main boarding hub of the “*Bus A*” route so that riders coming into Rolla from Salem or St. James can also take advantage of the main deviated fixed-route loop.

The most efficient secondary route identified in the study was “*Bus B – Route III*”. No actual route was identified for Dent County. MRPC communicated with SMTS that the decision to initiate or utilize a secondary route from Salem to Rolla is up to them as they see fits. “*Bus B*” Route III is estimated to take 29.25 minutes to complete when factoring in 2 minutes per stop. This estimation includes both Always Stops and Request Stops. Routes will run much faster when Request Stops do not have to be fulfilled. . Route III incorporates both the main boarding hub from the Rolla deviated-fixed route loop, and Phelps Health hospital to allow riders to take advantage of both route systems to get to their preferred destinations, while also adding another option for medical appointments and walkable destinations near 10th Street and Bishop Avenue.

All routes were planned to include as many destinations as possible that were mentioned in responses from the public surveys, while also taking into consideration characteristics and demographics from the study area. To better identify the most efficient residential boarding/deboarding locations, MRPC compared survey responses in areas where concentrated low-income, senior and student housing exist within the study area. These boarding locations overlap with commercial drop-off spots, so that residents have multiple opportunities to board either bus and take full advantage of the deviated-fixed route.

MRPC was also able to review commercial lots available within the cities of Rolla and St. James to produce a list of options for fleet storage and office locations for a new SMTS headquarters, offering 12 different addresses and details of each listing. MRPC took into consideration SMTS’ need for fleet storage, bus maintenance, wash bay area, covered parking, and a small office space for employees when seeking these potential locations out in the area.

■ **SMTS' MISSION**

THE MISSION OF THE SOUTHEAST MISSOURI TRANSPORTATION SERVICE IS TO PROVIDE CLEAN, SAFE, & RELIABLE TRANSPORTATION IN AN EFFORT TO PROMOTE INDEPENDENCE AND TO IMPROVE THE QUALITY OF EVERYDAY LIFE FOR ALL CITIZENS, REGARDLESS OF THEIR PHYSICAL, MENTAL, OR FINANCIAL LIMITATIONS.



ABOUT SMTS:



ABOUT: SMTS is a non-governmental, non-profit general public passenger transportation service governed by a board of directors and administered by a full-time executive director. SMTS transportation services are available throughout South Central and Southeast Missouri. In 1980, SMTS began offering services to the general public.

Today SMTS provides a wide variety of “door-to-door” passenger transportation services to all age groups. Through donations, direct grants and contract partnerships – SMTS is Funded by a variety of sources. SMTS sponsors an annual campaign to raise money for new “replacement” vehicles. In past years, individuals, businesses, civic groups, and corporations have supported this effort. These donations are tax deductible.

HISTORY: In the late 1960’s, the need for improved transportation was recognized by local volunteer groups that worked together to organize a non-profit corporation to create SMTS.

Beginning with 3 vans, the group was able to serve the needs of the elderly and handicapped residents in Southeast Missouri. Since then, The original SMTS office was located in a room off a local café, where it remained for 12 years. SMTS moved to another café building, renting until they were able to buy the building in 1991. In late 1997, SMTS was able to purchase a building on Highway 72.



HISTORY: After a few years SMTS had grown and needed more room to accommodate additional vehicles and staff. With the aid of a Federal Earmark SMTS was able to purchase a building that offered a combination of both office and garage space - owned by an electric cooperative when the Coop built a new and larger facility at a different location. Fortunately, for SMTS, the building was located next door at 700 East Hwy 72. In July 2004, they made the move to their current location off Holloway Street. Since then, SMTS has grown into a fleet of 200 vehicles in a 21-county area.

INTRODUCTION

Quality public transportation services are reliable, frequent, fast, comfortable, accessible, consistent, convenient, affordable, safe, and service in-demand routes.

The objective of this study is to identify the most effective and practical deviated fixed-route bus service in the Phelps and Dent County urbanized areas through SMTS (*Southeast Missouri Transportation Services*).

A *deviated fixed-route* bus system is characterized by a designated travel route with set schedules and stops where passengers can board or deboard. Through evaluating public input from survey responses, as well as analyzing traffic and demographic data, the Meramec Regional Planning Commission (*MRPC*) was able to examine the feasibility of initiating a deviated fixed-route system in the city of Rolla, with possible routes connecting to Salem and St. James.

Public transit services improve the quality of life in our region by providing mobility to those who need or choose to use them. For public transit to appeal to residents and become a staple in their lifestyle choices, the service must be well-designed, overcome physical and socioeconomic barriers and meet the needs of the transit dependent residents who may rely on public transportation due to age, disability, income, or other related circumstances.

MRPC examined demographic and socioeconomic data for the designated study area to better determine transit dependent populations within the area. Students and residents in these communities were given the opportunity to provide input through surveys to better assess potential ridership, address community transit needs, and determine essential routes that would help to improve the quality of life for residents in the study area.

The results of this study have determined the feasibility of a one-hour loop deviated fixed-route bus service that would provide the most benefit to residents in the identified study area, while also implementing a 1 hour loop bus service connecting residents from Salem and St. James to the city of Rolla.

Specifics of these routes have been outlined in more detail throughout the report.



SMTS EXISTING ROUTES WITHIN PHELPS AND DENT COUNTIES:

SMTS ON DEMAND SERVICE

MAJORITY OF OPTIONS ARE MEDICALLY-BASED
www.morides.org

PHELPS AND DENT COUNTIES

LONG DISTANCE MEDICAL ROUTE SERVICES

LOCAL SERVICE

SPECIAL SERVICE



SMTS provides service to 21 counties in the state of Missouri as shown in the map above.

STOP TYPES:

TRANSFER STOP: Transfer Stop is a system where Bus A and Bus B meet every 30 minutes so riders may continue their destination on other routes when applicable. There is no charge when immediately transferring from one bus to the other, but the usual fare is collected when boarding a later bus, such as after shopping.

ALWAYS STOPS: In addition to the *Transfer Stops*, each of the routes has stops where SMTS will stop every time the bus makes the loop.

REQUEST STOPS: In addition to *Always Stops*, each of the routes also has specific stops where we will stop only by request to board or disembark there by request.

The rider may **ask the driver to disembark** at a Request Stop, **ask the driver to be picked up** at a later, scheduled Request Stop time on the same day, or the rider may **call the office** at least 30 minutes prior to scheduled Request Stop time and asked to be picked up.

DEVIATED STOPS: Riders may request to board or disembark the bus at safe, legal stops up to ¼ of a mile from published route lines. Request for Deviated Stops must be made at least one day in advance. Deviated Stops are available as capacity allows in order to maintain timely service on routes.

FEASIBILITY NEEDS + STUDY OBJECTIVES

The following feasibility needs, and study objectives were determined by SMTS (*Southeast Missouri Transportation Services*) for MRPC (*Meramec Regional Planning Commission*) to conduct the deviated fixed-route transportation study. These needs are outlined and addressed within the study:

DETERMINE THE MOST FEASIBLE DEVIATED FIXED-ROUTE SYSTEM FOR THE CITY OF ROLLA.

DEFINE SECONDARY ROUTE CONNECTING THE CITIES OF SALEM AND ST. JAMES TO THE CITY OF ROLLA.

HELP DETERMINE A LOCATION FOR THE SMTS BUS SHED/HEADQUARTERS THAT WOULD ALLOW FOR A SMALL OFFICE, BUS PARKING AND MAINTENANCE, AND A SMALL WASH BAY AREA.

PUBLIC TRANSIT FACTS

Every aspect of a community benefits from public transportation - individuals, families, communities, and businesses. In the United States, public transit is a lifeline for millions of Americans connecting them to people, places, and possibilities.

Public transit contributes to building thriving communities, creating jobs, easing traffic congestion, and promoting a cleaner environment. Investing in public transportation supports both local and national economies. In smaller, rural areas it is sometimes more difficult to recognize how public transportation positively builds and affects communities until compared to national statistics. Below is the most current public transportation statistics provided by the *American Public Transportation Association (APTA)*:



The amount of public transportation miles traveled by American passengers has increased by 10.2 billion miles since 1999.

Approximately 6,800 organizations provide public transit services in the United States. Public transportation organizations have become more widespread since the 90's in both rural and urban areas.

By taking public transit, a person may reduce their chances of getting into an accident by 90% - making it 10 times safer than driving an automobile.



Public transportation is a \$80 billion industry that employs more than 448,000 people.

Every \$1 invested in public transit generates \$5 in economic returns.

87% of trips on public transit have direct impact on local economy. Of all riders, 71% are employed. 7% are students.

50% of trips are to work. 37% support shopping trips and recreational spending.

Every \$1 billion invested in public transportation creates 50,000 jobs for U.S. citizens.



Public transportation's overall effects save the United States 6 billion gallons in gas annually.

A household can save nearly \$10,000 by taking public transportation and living with one less vehicle.

Communities that invest in public transit reduce the nation's carbon footprint by about 63 million metric tons.

Americans that utilize public transportation help to reduce gasoline emissions by 84%.

The average household spends 16 cents of every dollar earned on transportation - the largest U.S. expenditure next to housing.



45% of Americans do not have access to public transportation.

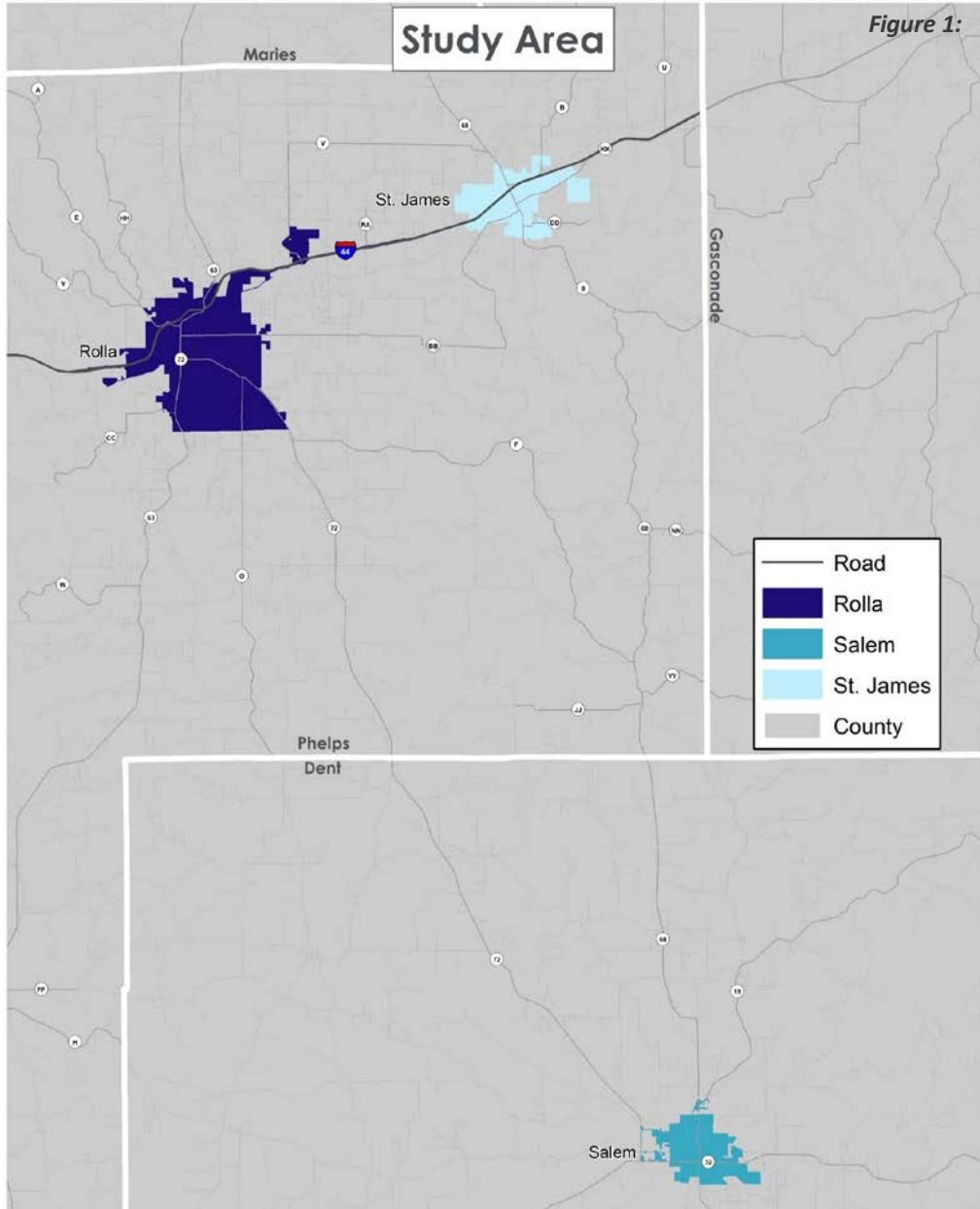
In 2019, Americans took 9.9 billion trips on public transportation & traveled 56.1 billion miles.

In the last ten years, there has been a 23% increase in the American population. Public transportation ridership has grown by 28%.

AREA CONDITIONS & CHARACTERISTICS

The area examined for this study includes Rolla, St. James, and Salem.

Chapter 3 highlights the conditions and characteristics of the examined study area summarizing area characteristics, current transit services, education, and travel statistics.



The intended deviated fixed-route for this area will be primarily focused on Rolla, with possible routes leading to St. James and Salem.

STUDY AREA

CHARACTERISTICS

The study area, consisting of Rolla, Salem, and St. James is predominately urbanized in nature, with rural unincorporated areas surrounding. Interstate 44 runs through St. James and Rolla, while Highway 72 connects Rolla and Salem. Additional state and local routes provide access between communities in the study area.

The intended deviated fixed-route for this area will be primarily focused on Rolla, with possible routes leading to St. James and Salem. The city of Rolla, located on the northwestern part of the study area, is the largest and most populated of the three communities and serves as the primary center of employment, shopping, recreation, healthcare, and higher education institutions – including the Missouri University of Science & Technology (*MS&T*) and East Central College (*ECC*).

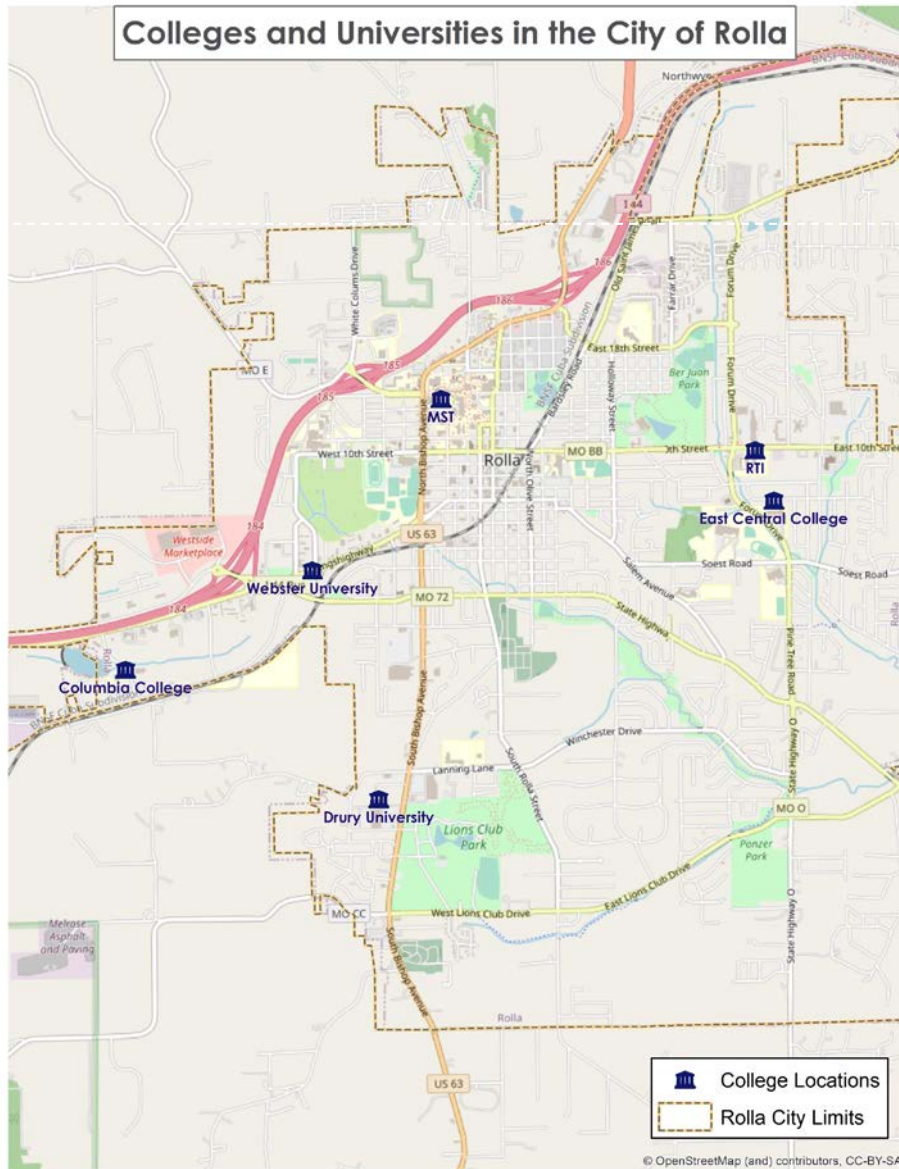
The other two communities are much smaller in size and exist in a more rural setting. When compared to the city of Rolla, both Salem and St. James have much more limited access to these services. Many of their residents spend a significant amount of time commuting back and forth or rely on transportation to Rolla to be able to utilize these amenities that may not be available in their area.

With access to reliable transportation to Rolla, residents of Salem and St. James are provided with options to attend appointments at 42 different medical clinics and health-related facilities, 14 gym or fitness amenities, 6 pharmacies, approximately 80 restaurants and dining locations, 8 grocery stores, 70+ retail stores to shop for basic essentials, clothing, electronics, pet, garden or farming supplies, automobile parts, home improvement items, or book an appointment at 1 of 33 hair or nails salons, day spas, barber shops, massage therapists, tattoo parlors, or estheticians in the area.

Not only do these businesses and services improve the quality of life for residents in the study area, but also provide opportunities for employment. Survey results indicated that many residents would utilize public transportation to travel to and from their place of employment.

Between 2018 and 2019, the employment rate in Rolla grew 0.862% from 8.12k employees to 8.19k employees. The most common employment sections being educational services, health care & social assistance, and retail trade, all of which were frequently requested as stops in the public survey results. More detail on employment in the study area can be found in Chapter 4, as well as survey results in Chapter 5.

STUDENT POPULATION IN THE CITY OF ROLLA



Rolla is home to six colleges, including the Missouri University of Science and Technology (MS&T), and branches of East Central College, Webster University, Columbia College, and Drury University. Both colleges and universities hold unique transportation needs for both students and staff. At universities, many students live on campus and while they may have a car, often choose to walk or bike to their destinations due to cost or limited parking options on campus. Other students may commute by car, or when available, use public transportation to get to and from classes. At community colleges, all students and staff commute as there is no on campus housing.

COLLEGE & UNIVERSITY PROFILES



MISSOURI UNIVERSITY OF SCIENCE & TECHNOLOGY

Total Enrollment: 7,241
On Campus-Housing Students: 6,419
Students Off-Campus: 822
Campus Location: 1201 N State Street



EAST CENTRAL COMMUNITY COLLEGE (ECC)

Total Enrollment: Unknown
On Campus-Housing Students: 0
Students Off-Campus: Unknown
Campus Location: 500 Forum Drive



ROLLA TECHNICAL INSTITUTE (RTI)

Total Enrollment: Unknown
On Campus-Housing : 0
Students Off-Campus: Unknown
Campus Location: 1304 E 10th Street



WEBSTER UNIVERSITY

Total Enrollment: 47
On Campus-Housing: 0
Students Off-Campus: Unknown
Campus Location: 1103 Kingshighway



COLUMBIA COLLEGE

Total Enrollment: 334 (in seat) students.
On Campus-Housing: 0
Students Off-Campus: Unknown
Campus Location: 550 Blues Lake Parkway



DRURY UNIVERSITY

Total Enrollment: 78 (in seat) students.
On Campus-Housing: 0
Students Off-Campus: Unknown
Campus Location: 1034 S Bishop Avenue

TRANSPORTATION NEEDS IN LOCAL COLLEGES & UNIVERSITIES

Colleges and universities have unique transportation needs. Public transportation reduces the need for parking and traditional infrastructure, minimizes impact on public infrastructure and adjacent neighborhoods, provides access and mobility to student residents without destroying the distinct feel and aesthetic of the campus, community, or surrounding neighborhoods, and helps to sustain environmental concerns.

Educational institutions value a walkable, green campus where buildings are close in proximity to help foster academic collaboration. Student parking lots break up campus landscape and occupy valuable space that could be dedicated to classrooms and student life activity.



The Missouri University of Science and Technology (MS&T) has six student parking lots spread across campus and downtown Rolla. Many students avoid feeding meters and the \$156 per-academic-year parking permit fees by seeking out public parking downtown. While most public parking spaces are fair game to Rolla residents, this creates parking shortage issues for local businesses and institutions during peak operating hours as some students leave their vehicle in lots for the full day. Students that can afford a parking pass, often get penalized for minor violations that could result in a parking ticket ranging from \$10-\$100. Between the six lots, there is limited space to accommodate current student and staff parking needs and lack of sufficient parking.

Even for students living off-campus, there are many residential rental units in the City of Rolla that do not provide free, reliable parking spaces for their tenants. In fact, there is an increasing number of students who do not bring a vehicle to college due to not having a safe, reliable place to keep their vehicle, as well as other factors such as environmental and economic concerns.

Other factors that influence students' likelihood to commute via public transportation include: the reliability that the bus will arrive on time consistently, physical safety features both during and surrounding their ride, bus stop location proximity, access to technology that will provide ride and bus schedule information via phone, immediate ride availability in case of emergencies, determine routes and stop schedules.

Among 214 national universities, 41.6% of students did not have their own vehicle and relied on public transportation services such as bus routes and uber, biking, or walking to get to and from class and off-campus activities. Having such a deviated fixed-route in the City of Rolla would be highly beneficial to the students and staff that do not have a vehicle on campus.

DEMOGRAPHICS

Chapter 4 reviews demographics for the study area highlighting general population data, poverty and economic figures, disability rates, and transportation statistics.

In the last 15 years, public transportation ridership has increased by 28% in the United States. Ridership tends to be higher for residents living in low-income households, high school, college and university students, those who do not own a vehicle or have a valid driver's license, and those who cannot drive due to factor such as disabilities, age, or citizenship status. (*American Public Transportation Association*).

When determining needs for public transportation in the study area, it is crucial to consider current trends and demographic data. Factors such as poverty levels, aging population, rising fuel prices, increasing urbanization, roadway expansions, college and university enrollment rates, changing consumer preferences, increase in disability rates, health and environmental concerns all play a huge part in our resident's desire to utilize public transportation.

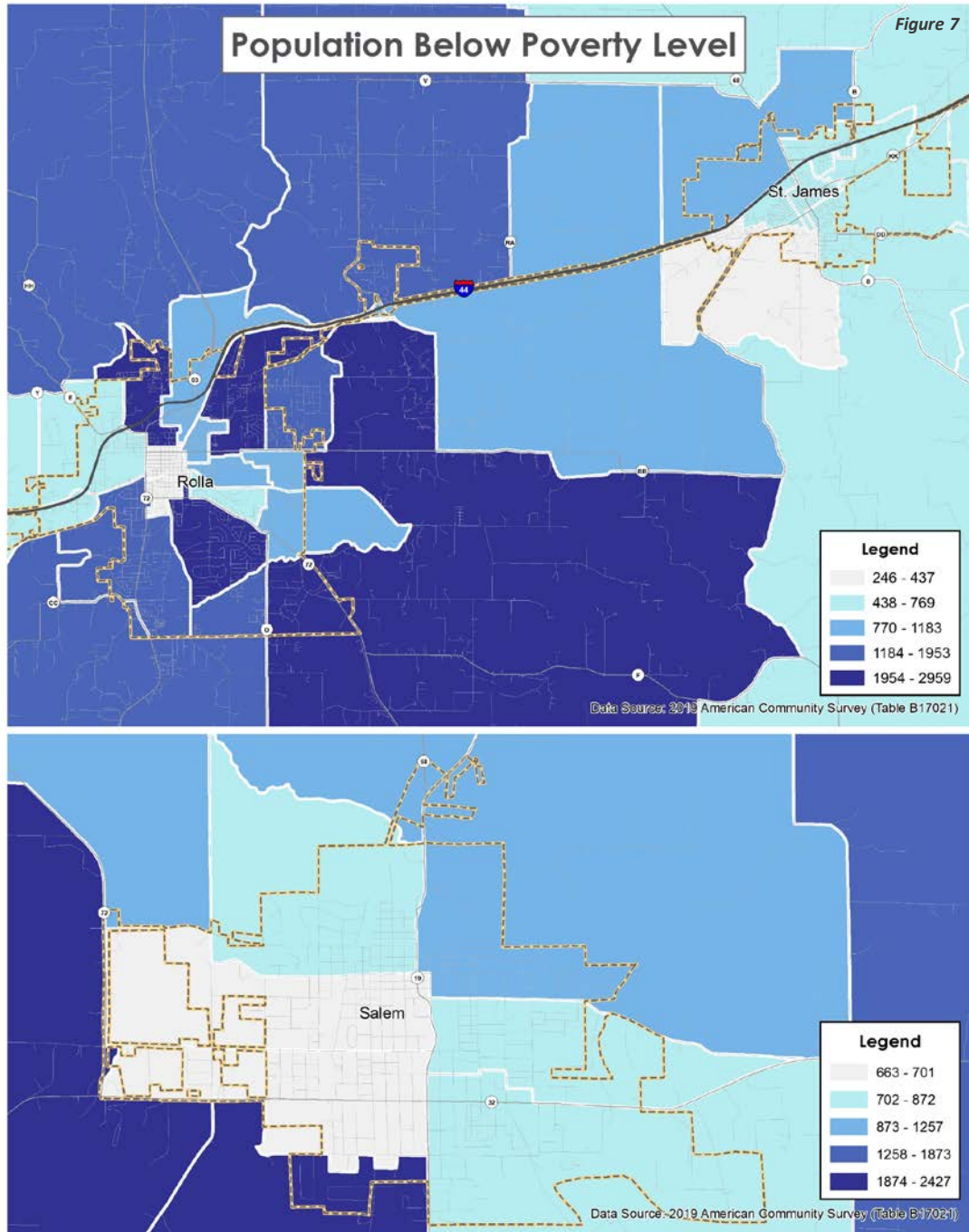
Resident's access to public transportation may also depend on factors such as their proximity to bus stops and boarding stations, quality of walking pathways required to reach those locations, and the type or frequency of transit service provided at those access points.

To bring more value to the deviated fixed-route system and public transportation in the study area, MRPC carefully reviewed survey results and demographic data to be able to provide the most efficient, resourceful, and feasible routes possible to meet the diverse needs of residents in the study area.

Although not requested in public survey responses, stops such as *Rolla Towers* and various senior living facilities, were included to help enhance the usability of the deviated fixed-route system as we determined that transportation needs were greater in dense areas of low-income, student, and aging populations.

More information on demographics for those populations are reviewed in more detail throughout this chapter.

POPULATION BELOW POVERTY LEVEL



In the map in Figure 7 displays the population concentration data of poverty levels for the study area. Compared to the statewide poverty rate of 12.9%, each community in the study area exceeds the average poverty rate for the state of Missouri, which is outlined in this chapter.

INCOME/POVERTY

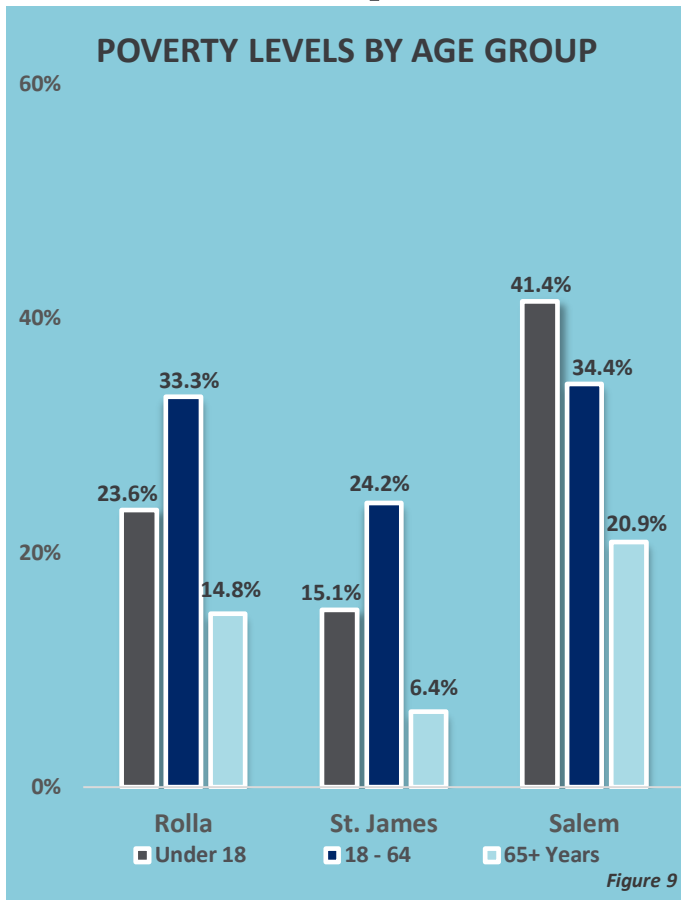
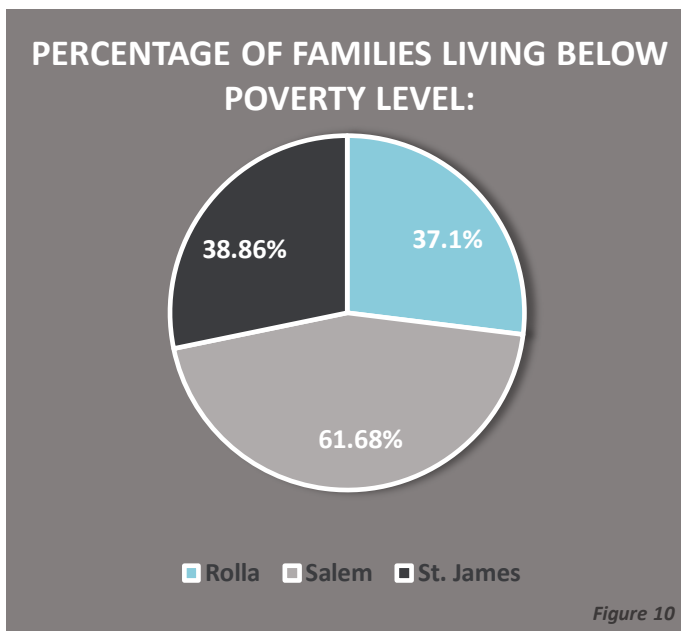


Figure 9 breaks down the percentage of residents living below poverty levels in the study area by age group and community. In Salem, minors below the age of 18 are affected most by poverty levels, while residents between the ages of 18-64 are affected most in Rolla and St. James. The age groups are divided by minor residents under the age of 18, residents between the ages of 18-64, which are thought to be the most economically active age group, and 65+ , who are generally thought to be the residents that are of retirement age.

Figures 10 and 11 show the percentage of families living below poverty level in the study area. 12.9% is the average percent of residents in the state of Missouri living below poverty level.

All three communities in the study area surpass the state’s average percentage. Rolla’s poverty level falls at 37.17%, Salem’s at 61.68%, and St. James 38.86%.

Figure 11 shows these numbers in greater detail. These percentages greatly exceed the average for Missouri resident’s living below poverty level.



POVERTY LEVELS FOR STUDY AREA

GEOGRAPHY	POPULATION IN POVERTY	% OF POPULATION
PHELPS COUNTY	9,293	20.85%
ROLLA CITY	7,704	37.71%
ST. JAMES CITY	1,366	33.86%
DENT COUNTY	3,204	20.57%
SALEM CITY	3,034	61.68%

Source: Missouri Census Data Center County Fact Sheet 2019 and ACS 2019 1-Year Estimates

Figure 11

Source: U.S. Census Bureau (2019)

INCOME/POVERTY

The average household income in the state of Missouri is \$57,409.

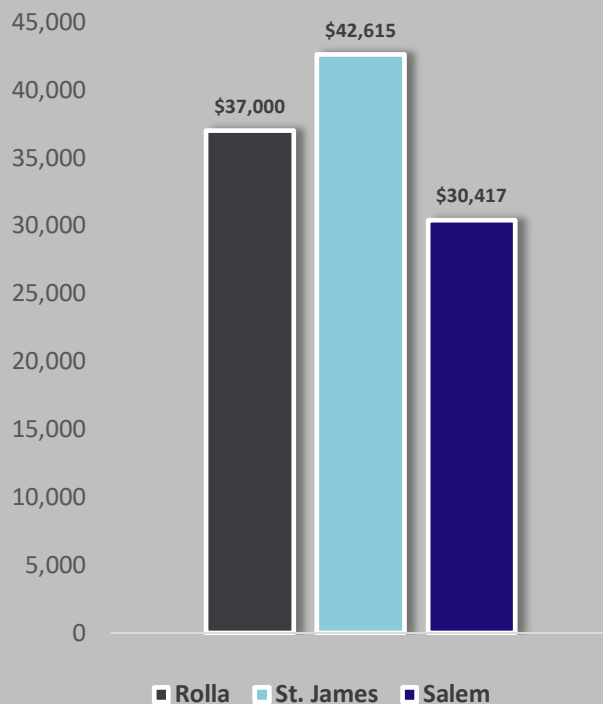
Figure 12 shows the median household income for all three locations in the study area.

The average household income in the state of Missouri is \$57,409. The median household income for the communities in the study area fall significantly below the state average with Rolla at (\$37,000), Salem (\$30,417), and St. James (\$42,615).

Figure 13 shows the percentage of unemployed residents for each city in the study area. While the national unemployment rate is 6%, the state of Missouri has an unemployment rate of 3.3%. All three cities in the study area slightly surpass the state average, but still are significantly lower than the national rate of unemployment.

Those living below the poverty level often rely on public transportation, as do those that are unemployed. Public transit systems can help unemployed residents who are in the process of seeking new employment opportunity confidently secure or hold jobs knowing they have a reliable source of transportation.

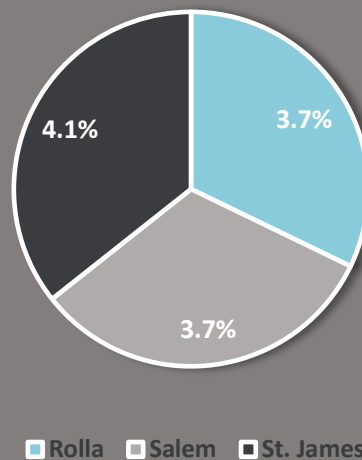
MEDIAN HOUSEHOLD INCOME



Source: U.S. Census Bureau (2019)

Figure 12

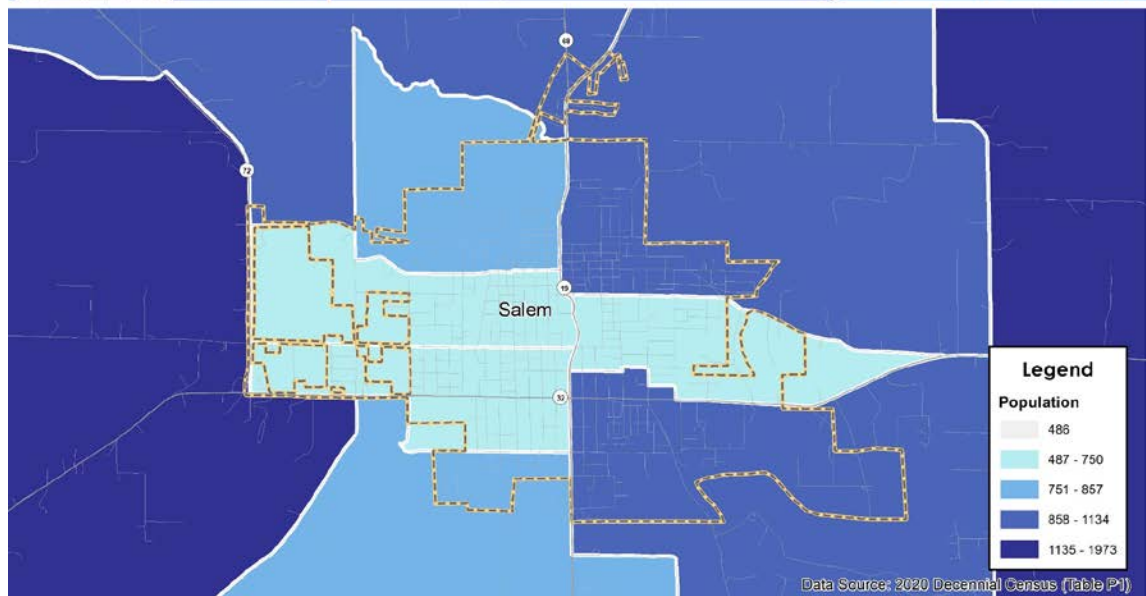
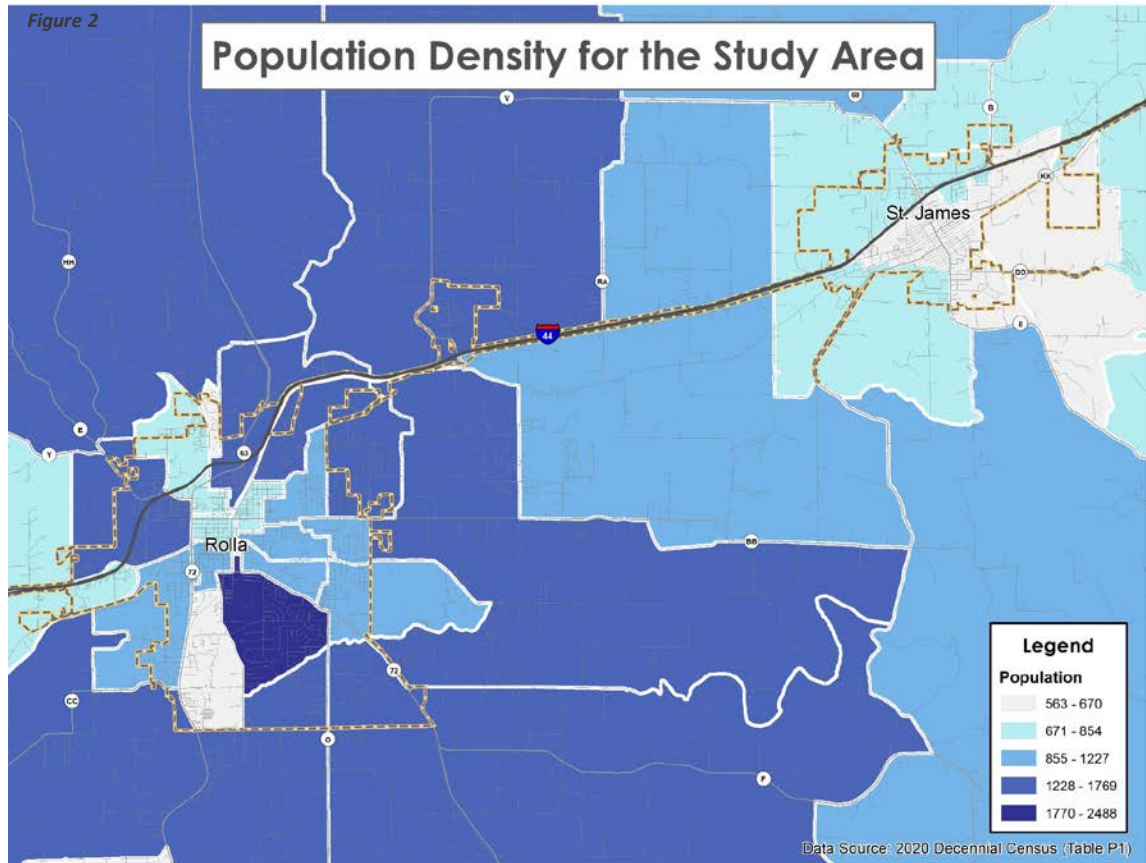
PERCENTAGE OF UNEMPLOYED POPULATION



Bureau of Labor Statistics (2021)

Figure 13

POPULATION DENSITY

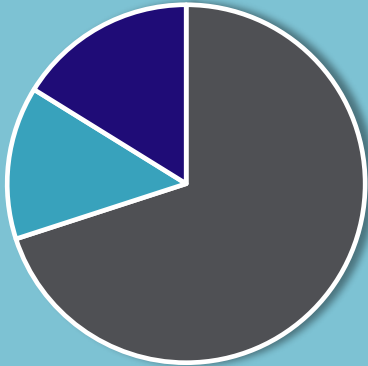


The above figure, *Figure 2*, shows the most densely populated areas in Rolla, Salem, and St. James. Rolla and St. James are in Phelps County, while Salem is in Dent County.

STUDY AREA POPULATION

STUDY AREA POPULATION

Figure 3



■ Rolla ■ St. James ■ Salem

The study area communities have a total of 28,486 residents. The largest town is Rolla (19,943 residents), followed by Salem (4,608 residents), and St. James (3,935 residents).

TOTAL HOUSING UNITS

🏠 **ROLLA** – 9,258 (8,117 Occupied/1,141 Vacant)

🏠 **SALEM** – 2,308 (2,028 Occupied/280 Vacant)

🏠 **ST. JAMES** – 1,751 (1,594 Occupied/157 Vacant)

AVERAGE FAMILY SIZE

👨👩👧 **ROLLA** – 2.83 members

👨👩👧 **SALEM** – 2.85 family members

👨👩👧 **ST. JAMES** – 2.8 members

MEDIAN GROSS RENT VALUE

🏠💰 **ROLLA** – \$737 per month

🏠💰 **SALEM** – \$508 per month

🏠💰 **ST. JAMES** – \$678 per month

Figure 3 highlights general population data for the study area. The study area includes the cities of Rolla, Salem, and St. James. Rolla and St. James are located in Phelps County, while Salem is in Dent County.

In total, the study area has a total of 28,486 residents between the three communities.

The largest community is Rolla with a population of (19,943 residents), followed by Salem (4,608 residents), and St. James (3,935 residents).

Since 2000, the population of the cities in the study area has grown by 3,561 residents, a 14.2% population increase. However, based on 2020 Decennial Census results, Rolla has seen a 6.56% growth in population in the last year and is currently growing at a rate of 0.66% per year.

POPULATION CHARACTERISTICS

General population projections show that over the next 20 years, the percentage of the region’s workforce is expected to decline as the large “baby boomer” population becomes older and hits retirement age or beyond. This age trend is important to note as the elderly are more likely to use public transit due to driving limitations that may increase as they age. Nationally, over 40% of the age population 75 and older do not drive themselves. Those that do drive, drive less frequently than those outside of this age group. Two thirds of drivers aged 75 and older drive less than 5,000 miles annually, and 60% do not drive at night.

As the elderly stop driving themselves due to physical limitations, they often turn to public transit to travel to stores, activities, and medical appointments. This was highly considered when determining a deviated fixed-route bus system for the area that would include potential stops at major shopping centers and medical facilities to meet these specific needs.

The Missouri Office of Administration, Budget and Planning Department, has predicted that by the year 2030, age 65 will represent more than 1/5 of all Missourians. The senior citizen population is expected to increase by 87% between 2000 and 2030, and approximately 1.4 million senior citizens in the United States.

On the other end of the age spectrum, surveys show that young adults are less and less likely to own or lease an automobile and are increasingly interested in other means of transportation to carry out activities in their everyday lives. The number of children under the age of 18 in Missouri is expected to increase but not as rapidly as the 18 and over population. Between 2000 and 2030, the number of children in Missouri are expected to increase by roughly 7%, while the 18 and over population will increase by nearly 25%.

As the younger age population continues to grow and they begin to seek out employment and secondary education at universities and colleges in the area, public transit will be an important factor for this age group when determining the route for this study to meet the needs of this age group as well. Public transit can even be so detrimental to their work or school experience, that it may influence where residents in this age group choose to live or work.

Figure 4

POPULATION AGE BY STUDY AREA

GEOGRAPHY	Under 5	5-17 Years	18-24 Years	25-34 Years	35-44 Years	45-54 Years	55-64 Years	65-84 Years	85 Years +
ROLLA	1,922	5,700	6,161	3,992	3,303	3,573	3,817	4,268	484
ST. JAMES	578	1,138	1,224	1,146	1,574	1,133	1,755	2,307	498
SALEM	827	2,326	833	1,578	1,553	1,773	2,272	2,474	438

Source: Missouri Census Data Center County Fact Sheet 2019 and ACS 2019 1-Year Estimates

POPULATION AGE

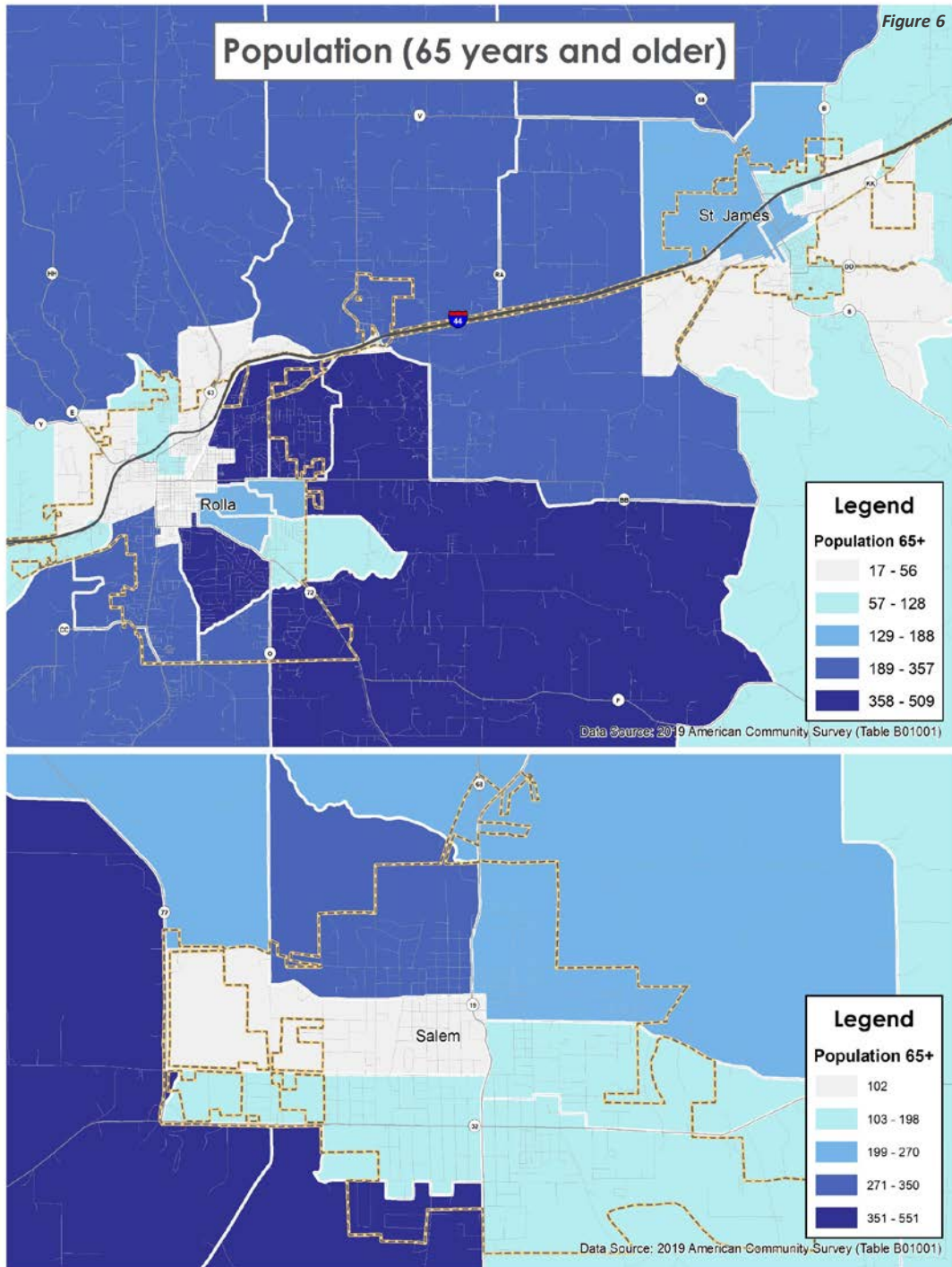
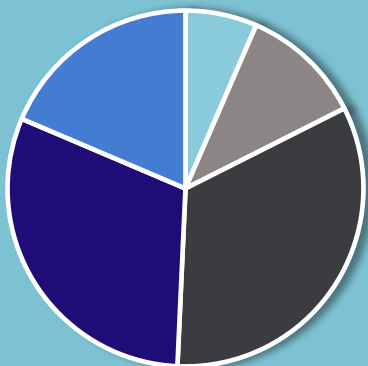


Figure 6 shows those most densely populated areas of gaining residents within the study area.

POPULATION AGE

STUDY AREA AGE GROUP:

Figure 5



- Under 5
- 5 to 14
- 15 to 29
- 30 to 59
- 60+

The communities in the study area have a total of 28,486 residents – the majority of residents falling into the age range of 15 to 29.

AVERAGE AGE BY COMMUNITY:

- ROLLA:** 26 years of age
- SALEM:** 46.6 years of age
- ST. JAMES:** 36.1 years of age

Figure 5 breaks down study area residents by age group. The total of residents in the study area amounts to 28,486. The densest age population being 15 to 29, while residents under the age of 5 account for the smallest age population in the study area.

The United States Census Bureau (2019) reports that the average age in the state of Missouri is 38.9 years. The average age of residents in Rolla is (26 years), Salem (46.6 years), and St. James (36.1 years). The average age in Rolla may be significantly lower due to the large population of college and university students.

When determining the most efficient routes for the study, MRPC looked at three major population groups: low-income households, college and university students, and senior citizens. Residents between the ages of 18-64, which are thought to be the most economically active age group, which account for recent high school graduates, college students, and low-income families. The age population group of 65+ years, are generally thought to be of retirement age. We also placed emphasis on the aging population's need for public transit services as fewer seniors choose to drive as they get older.

DISABLED POPULATION

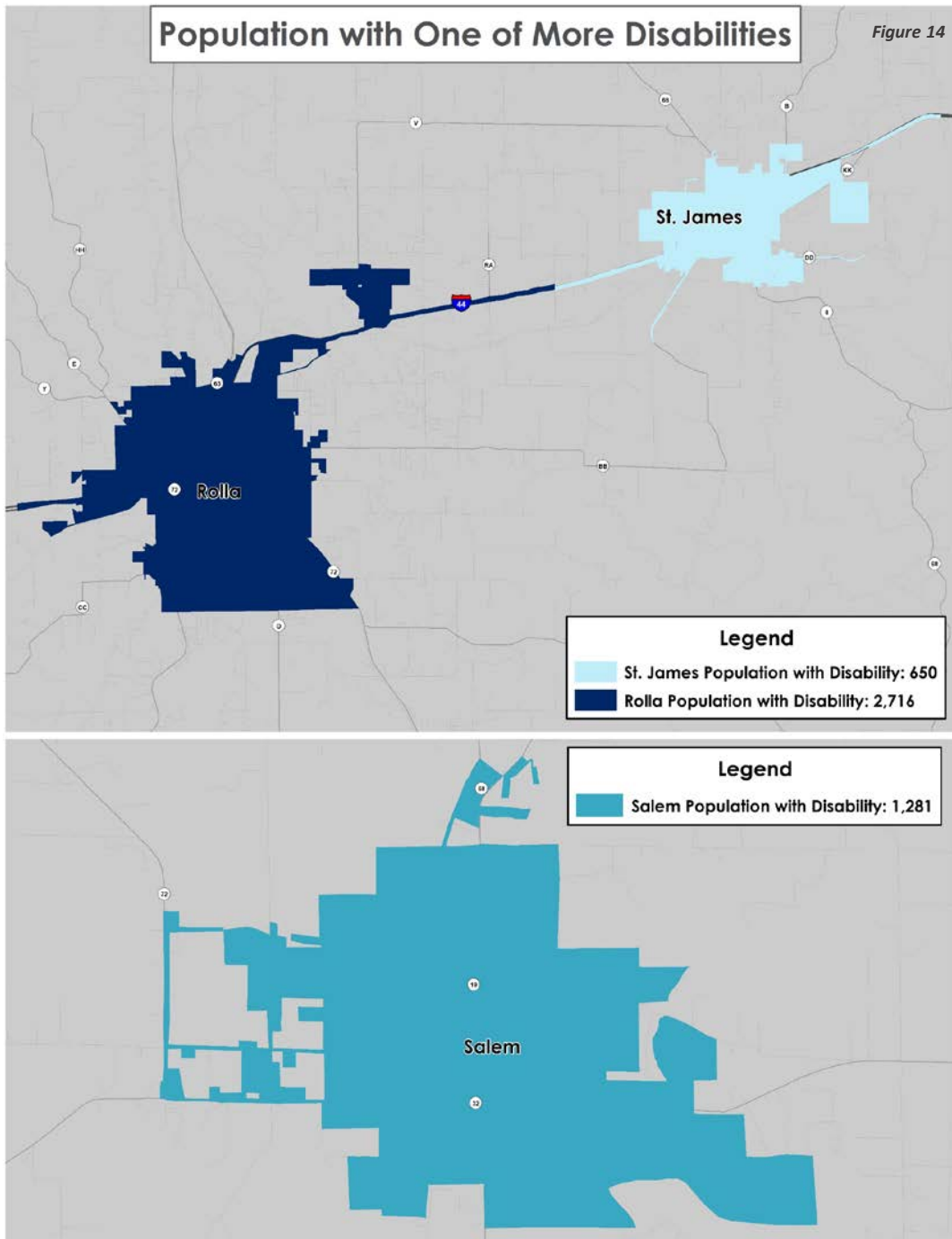


Figure 14 displays the amount of population with disabilities for each community in the study area.

DISABLED POPULATION

Affordable and reliable transportation allows people with disabilities access to important opportunities in education, employment, health care, housing, and community life. In the United States, adults with disabilities are twice as likely to have inadequate transportation as those who are able bodied. (31% vs 13%).

Transportation and mobility play key roles in the struggle for civil rights and equal opportunity in the disabled community. Of the nearly 2 million people with disabilities who never leave their homes, 560,000 never leave home because of transportation difficulties.

A total of 4,647 residents in the study area are among the disabled population. 17% of Rolla’s population is disabled (2,716 residents), 26.4% of Salem’s population (1,281 residents), and 17% of St. James population (650 residents) are all apart of the disabled community. Due to the significant number of residents with disabilities in the study area, and the increase of aging population, disability rates, and health concerns in the nation and our study area, MRPC incorporated several senior and assisted living facilities into the route to meet the needs of these residents.

Figure 15 illustrates the proportion of disabled population for each city and county included in the study area:

Figure 15

PERCENTAGE OF DISABLED POPULATION IN STUDY AREA:

GEOGRAPHY	POPULATION DISABLED	% OF TOTAL POPULATION
PHELPS COUNTY	7,453	17%
ROLLA	2,716	13.8%
ST. JAMES	650	17%
DENT COUNTY	3,474	22.6%
SALEM	1,281	26.4%

SOURCE: ACS 2019 5-YEAR ESTIMATES

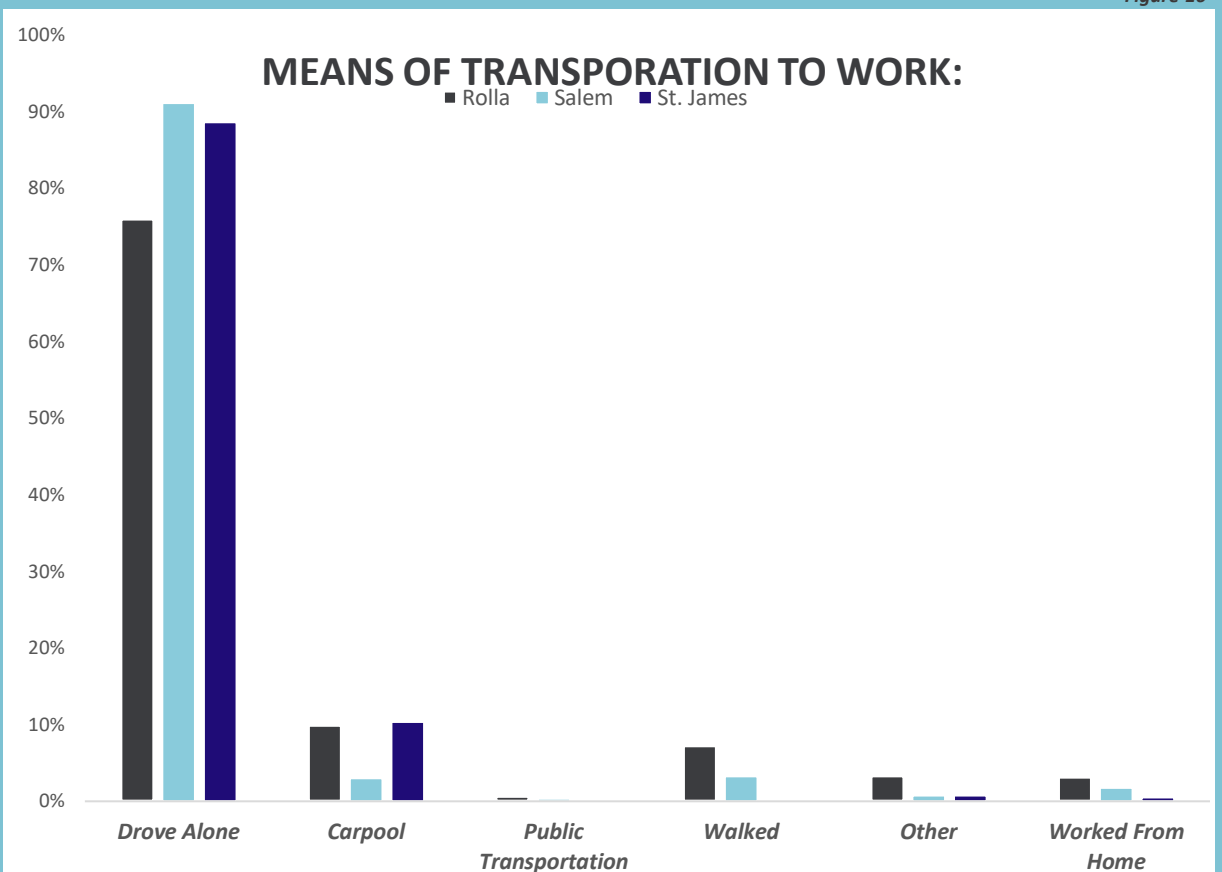
TRANSPORTATION PATTERNS

According to the 2019 U.S. Census Bureau American Community Survey, the majority (75.9%) of U.S. residents 16 years of age or older, drove alone to work each day.

Figure 16 breaks down the percentage of residents in the study area that opted for other means of transportation to work rather than driving alone.

70%, or most residents within the study area drove alone to work, 0.9% carpooled, 0.2% walked to work, and 0.002% took public transportation options.

Figure 16



Source: U.S. Census Bureau (2019)

TRAVEL PATTERNS

Some households in the study area do not have the option of driving themselves to and from work as they do not have access to a vehicle at home. In Rolla, 11.9% of the working population did not have access to vehicles at home, 11.8% in Salem, and 3.83% in St. James.

Those that do not have vehicular access at home, especially the working population, are likely to make use of public transportation either intermittently, or on a regular basis.

Figure 18 breaks down vehicle ownership statistics for the study area below:

When it comes to transportation, many households in the study area struggle with limited vehicular access due to the costs of car ownership and income.

The “*Driving Cost*” study conducted by AAA in 2021 found that on average, a United States resident can expect \$9,666 in car ownership expenses per year. Expenses related to owning a vehicle go beyond the monthly payment when considering maintenance, repairs, gas and insurance. Many families below the poverty level find that owning a reliable vehicle may be a hardship due to these expenses.

MEANS OF TRANSPORTATION TO WORK:

Figure 18

GEOGRAPHY	NO VEHICLE	1 VEHICLE AVAILABLE	2 VEHICLES AVAILABLE	3 OR MORE VEHICLES AVAILABLE
PHELPS COUNTY	486	3,617	8,113	6,281
ROLLA	469	2,160	3,349	1,710
ST. JAMES	0	275	1,003	624
DENT COUNTY	83	901	2,726	2,542
SALEM	47	482	938	467

Source: ACS 2019 5-Year Estimates

SURVEY RESULTS

MRPC conducted two surveys: one geared towards the responses of the general public, and the other developed to distribute to college students attending classes within the study area.

These surveys helped MRPC gain a better understanding of existing conditions and community needs, capability of the transit system, and help to determine the best route for a deviated fixed-route bus loop in the study area.

An online public survey was conducted from May 2021 to October 2021. The survey questions were designed to gather the same types of input from both local respondents and college students in the area to determine route feasibility in the study area. The survey was promoted through MRPC's website, on Missouri S&T's website, emailed to local colleges, and posted in the local newspapers.

The survey included questions about travel patterns, vehicle availability, disability status, and travel needs.

According to survey responses, most residents determined the need for stops within the same areas that MRPC identified the Rolla loop route for Bus A. Surveyors also had the opportunity to request specific stops. Their requests may be seen on PAGE 33. The survey was conducted so that respondents could identify their general area of residence, while also maintaining anonymity.

75% of survey respondents say they would utilize public transportation options if they were available in the study area. A majority of respondents indicated that the transit system would generally be used for shopping or traveling to work or class. 9.6% of all respondents do not have a reliable vehicle at home. 69% of college students owned or leased a vehicle, but 31% either did not bring that vehicle to college with them, or do not have access to a vehicle at all. 10% of all respondents do not have a valid driver's license, nor do they live in a home with someone who has a valid drivers license.

The top five most requested stops in Rolla were South Rolla (*near Walmart, JCPenney, & Hobby Lobby*), Westside Marketplace Shopping Center (*TJ Maxx, Ross, & Academy Sports*), Phelps Health Hospital, West Missouri S&T Campus (*Havener Center*) and East Rolla (*near Forum Plaza and Ber Juan Park*). Surveyors in St. James indicated the highest need for stops at St. James Winery, the Veteran's home, and downtown St. James, while Salem residents emphasized need for stops at Walmart, city hall, and the post office.

The questionnaire data provided positive feedback for a deviated fixed-route bus system that shows that the route would be utilized within the study area by both the general public and students. The results of the survey indicated the presence of factors strongly linked to the need of public transportation (*disability rates, low-income families, vehicle ownership, and travel statistics*) There is a high demand for both general residents and students to have a safe, reliable method of transportation that would help to improve their quality of life.

More detailed information about the input received is highlighted in the following pages.

75%

**OF RESPONDENTS
WOULD USE PUBLIC
TRANSPORTATION IF
IT WERE AVAILABLE**



69%

**OF COLLEGE
STUDENTS
OWN A
VEHICLE**

84.9%

**OF COLLEGE
RESPONDENTS
LIVE OFF
CAMPUS.**



39.7%

**OF RESPONDENTS
LIVE WITH AN
INDIVIDUAL WITH
AT LEAST ONE
DISABILITY**



10%

**OF RESPONDENTS
DO NOT RESIDE
WITH ANYONE THAT
HAS A VALID
DRIVER'S LICENSE**



31%

**OF COLLEGE
RESPONDENTS DO
NOT HAVE ACCESS
TO A RELIABLE
VEHICLE**

**STUDENT
COMMUTE:
59.5% WALKED
9.5% DROVE
2.4% UBERED**

9.6%

**OF SURVEYORS
DO NOT HAVE A
RELIABLE
VEHICLE AT HOME**

88.7%

**OF COLLEGE
STUDENTS ARE
EMPLOYED OFF
CAMPUS**

SURVEY RESULTS AT A GLANCE

REQUESTED STOPS (FROM SURVEY)

Route needs for the entire study area are highlighted on the map below (Figure 24). A detailed list of the requested stops can be found on the subsequent page.

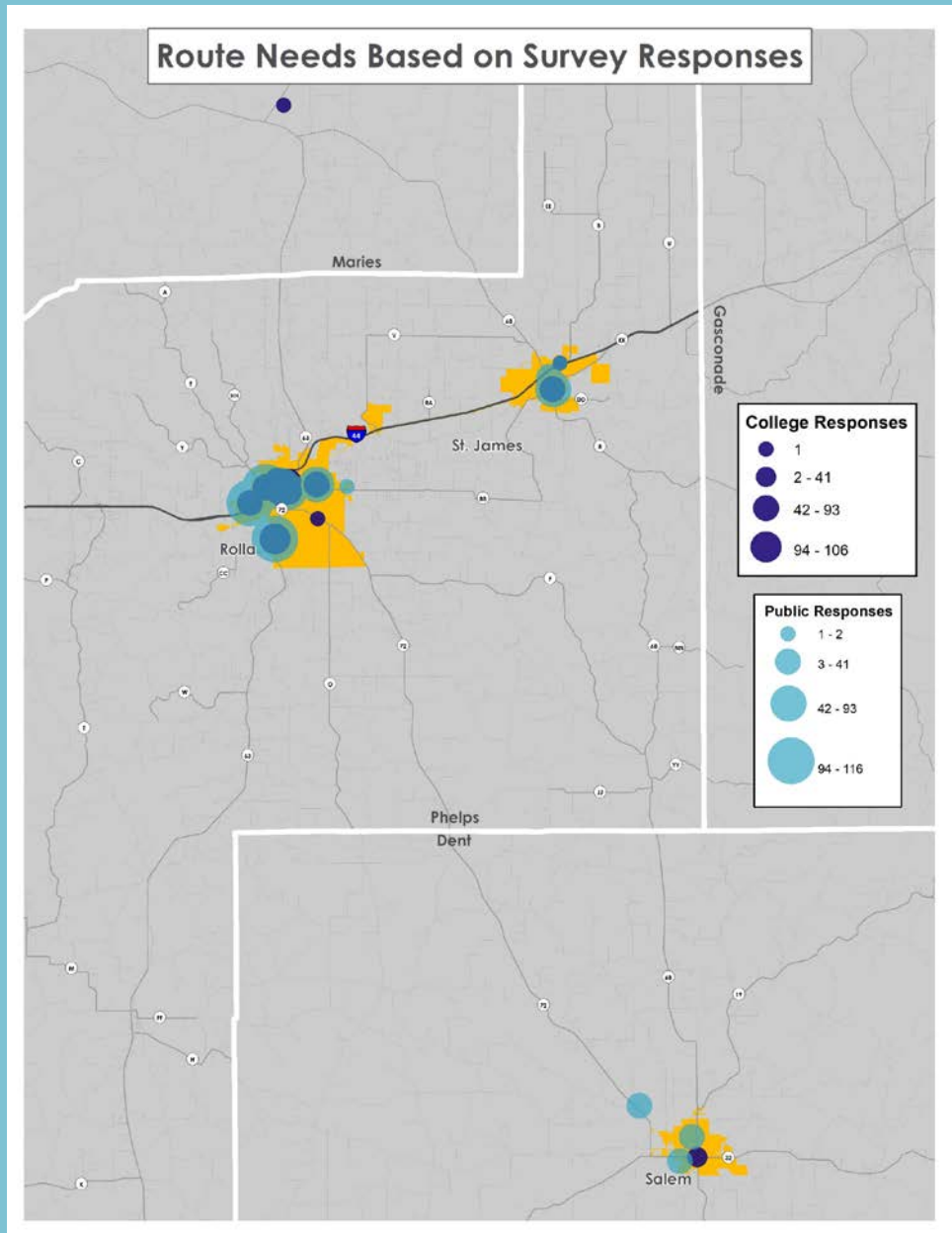


Figure 24

REQUESTED STOPS (*FROM SURVEY*)

Below are responses collected from both public and college surveys. Respondents had the opportunity to select locations from the survey list or type their own requests for bus route stops.

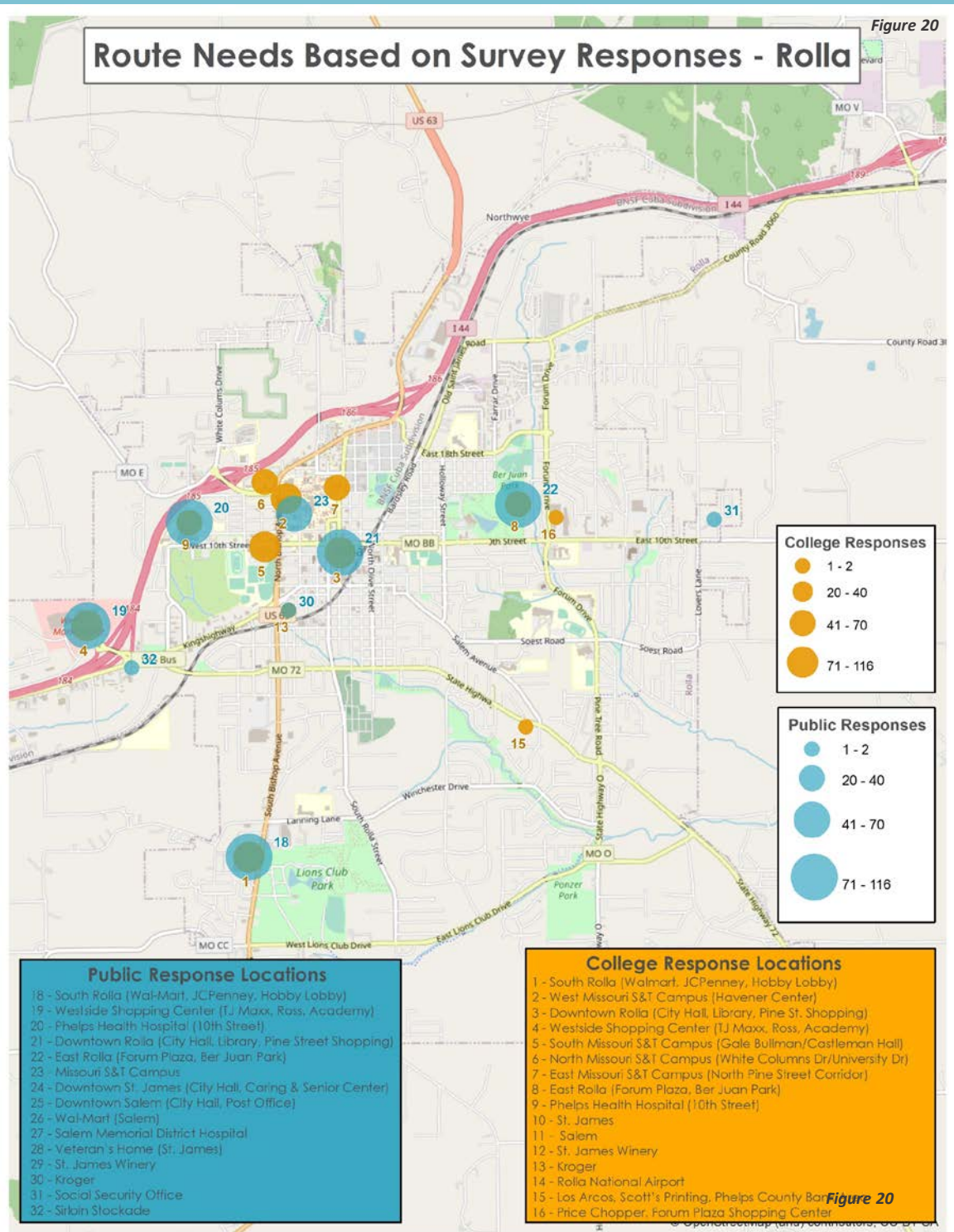
College Survey Responses:

South Rolla (Walmart, JCPenney, Hobby Lobby) – 106 responses
West Missouri S&T Campus (Havener Center) – 87 responses
Downtown Rolla (City Hall, Library, Pine St. Shopping) – 77 responses
Westside Shopping Center (TJ Maxx, Ross, Academy) – 72 responses
South Missouri S&T Campus (Gale Bullman/Castleman Hall) – 71 responses
North Missouri S&T Campus (White Columns Dr/University Dr) – 70 responses
East Missouri S&T Campus (North Pine Street Corridor) – 69 responses
East Rolla (Forum Plaza, Ber Juan Park) – 68 responses
Phelps Health Hospital (10th Street) – 60 responses
St. James – 42 responses
Salem – 22 responses
St. James Winery – 1
Kroger – 1
Rolla National Airport – 1
Los Arcos, Scott's Printing, Phelps County Bank Area -1
Price Chopper, Forum Plaza Shopping Center – 1

Public Survey Responses:

South Rolla (Wal-Mart, JCPenney, Hobby Lobby) – 116 responses
Westside Shopping Center (TJ Maxx, Ross, Academy) – 99 responses
Phelps Health Hospital (10th Street) – 95 responses
Downtown Rolla (City Hall, Library, Pine Street Shopping) – 93 responses
East Rolla (Forum Plaza, Ber Juan Park) – 75 responses
Missouri S&T Campus – 57 responses
Downtown St. James (City Hall, Caring & Senior Center, Jefferson St. Shopping) – 48 responses
Downtown Salem (City Hall, Post Office) – 41 responses
Wal-Mart (Salem) – 41 responses
Salem Memorial District Hospital – 39 responses
Veteran's Home (St. James) – 30 responses
St. James Winery – 2
Kroger – 1
Social Security Office – 1
Sirloin Stockade -1

ROUTE NEEDS BASED ON SURVEY RESULTS - ROLLA

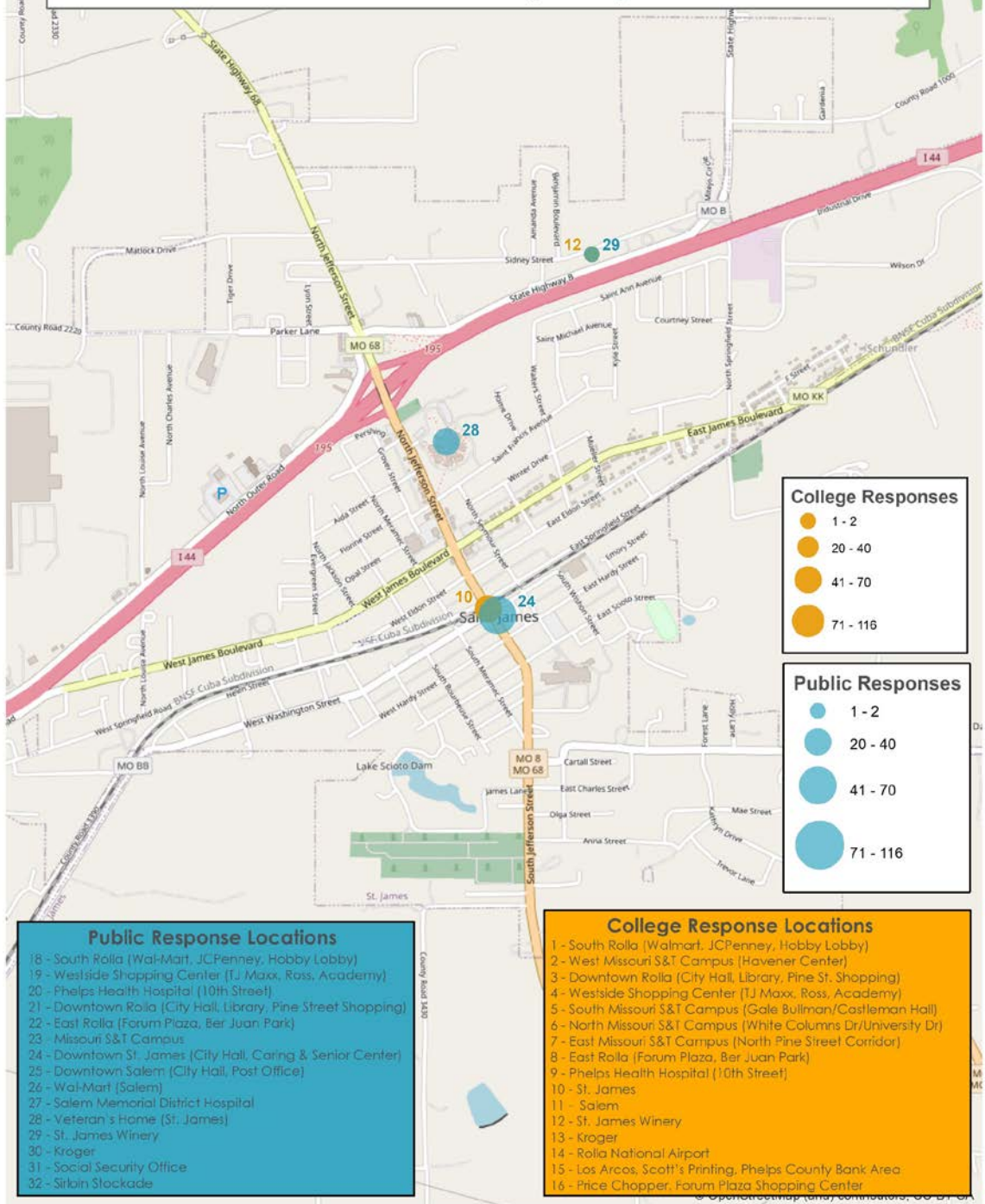


The above map, *Figure 20*, highlights route needs within the city of Rolla based on public input obtained from surveys. College survey responses are highlighted in orange, while general public responses are highlighted in blue. The most requested stops were South Rolla (Walmart & JCPenney), Westside Marketplace, Phelps Health Hospital & Downtown Rolla (near City Hall, the library & Pine Street)

ROUTE NEEDS BASED ON SURVEY RESULTS - ST JAMES

Figure 21

Route Needs Based on Survey Responses - St. James

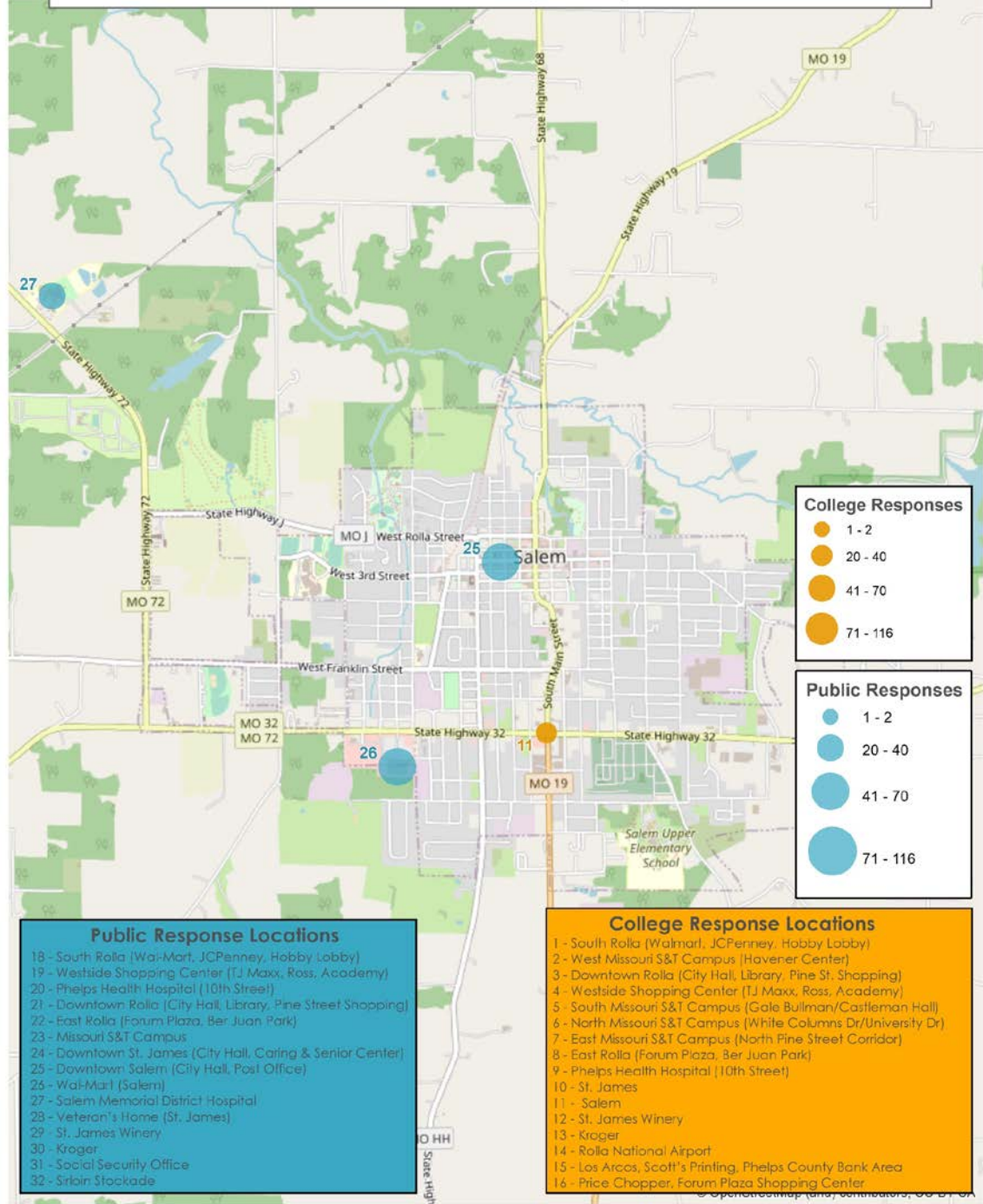


The above map, Figure 21, highlights route needs within the city of St. James based on public input obtained from the conducted surveys. College survey responses are highlighted in orange, and the general public responses are highlighted in blue. The most requested stops were St. James Winery, Downtown St. James and the Veteran's Home.

ROUTE NEEDS BASED ON SURVEY RESULTS – SALEM

Figure 22

Route Needs Based on Survey Responses - St. James



The above map, Figure 22, highlights route needs within the City of Salem based on public input obtained from the conducted surveys. College survey responses are highlighted in orange, and the general public responses are highlighted in blue. The most requested stops were Walmart and Downtown Salem (near City Hall and the post office).

DEVIATED FIXED-ROUTE

The deviated fixed-route is proposed to loop through the city of Rolla and is estimated to run 1 hour, 8 minutes, when accounting for both Always Stops and Request Stops. Without stopping at each request stop, the route is estimated to run about 50 minutes and 30 seconds. This route was driven by MRPC staff beginning at the designated boarding and drop-off hub, located in front of the parking lot of Four Rivers Community Health Center and Regal Forums.



In addition to “Bus A” traveling the main route through Rolla, initial analysis of the draft route determined that two loops would be required to uphold a viable schedule for riders in the study area to help connect Salem and St. James to the main route. This bus will be referred to as “Bus B”.

“Bus B” would initially pick up riders in Salem and bring them to Rolla as their first stop of the day. “Bus B” would then complete a short loop from St. James to Rolla throughout the day and then complete its course by taking one final route from Rolla to Salem at the end of the day. “Bus A” and “Bus B” will have routes that overlap so that riders can utilize both routes to get to their desired destinations.

MRPC has determined three possible options for the secondary route and has outlined them in this chapter. These routes are labeled Route I, Route II, and Route III.

Much like “Bus A” and its 1-hour deviated fixed-route, the route options for “Bus B” were driven on a loop to determine the average duration of each route, factoring in stops at 2-3 minutes per stop. MRPC staff has determined that Route III would likely be the best option for the “Bus B” route connecting the other cities to the main Rolla route.

EXISTING ROUTE DETAILS

SMTS currently operates two similar route services in St. Francois County and the Poplar Bluff Area. MRPC based the design of their deviated fixed-route off the existing SMTS routes to ensure usability and consistency. St. Francois and Poplar Bluff routes vary slightly in fare price and schedule. Between the two areas, MRPC formed fares and a schedule for the deviated-fixed route within the study area.

HOURS OF SERVICE:

* 7 am to as late as 8 pm, Monday – Friday

FARES:

- * All Day Pass: \$3
- * All Day Family Pass: \$6
- * Connect Single Ride: \$1
- * Prepaid Punch Cards are Available

REQUEST STOPS:

Request stops are specific locations that SMTS will stop only if a request to board or deboard has been made. These stops are along on the same route that always stops are designated.



DEVIATED STOPS:

Riders may request to board or deboard the bus at a safe, legal destination within up to $\frac{1}{4}$ a mile of published SMTS route lines. Deviated stop requested must be made at least one day in advance.

ALWAYS STOPS:

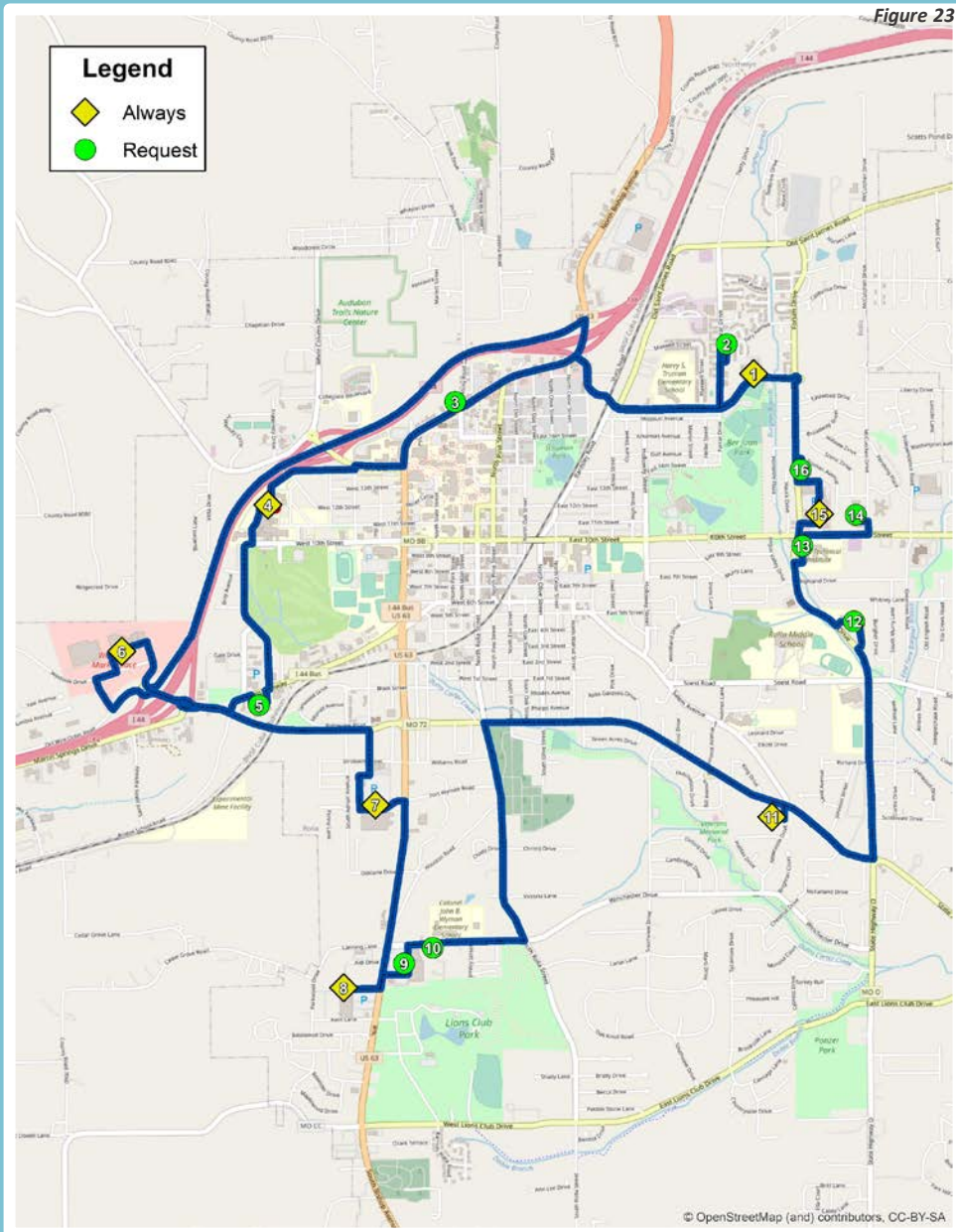
Always stops are locations that SMTS will stop at every time their bus makes a loop around a designated route.



BUS A

PROPOSED ROUTE

“BUS A” – ROLLA ROUTE (1 HOUR LOOP) SCHEDULE



MRPC has determined the most feasible deviated fixed-route system for the study area. The main deviated fixed-route, “Bus A”, is intended to run a loop route on the hour in the city of Rolla, while “Bus B” would connect the cities of St. James and Salem to Rolla with a 1-hour loop route system. Both routes are outlined in detail in the next section.

*An enlarged map can be found on page 94.

DEVIATED FIXED-ROUTE

“BUS A” – 1-HOUR LOOP SCHEDULE

START at the designated pick-up and drop-off hub located between *Four Rivers Community Health Center* and *Regal Forum Plaza*. (1081 East 18th Street & 1101 E 18th Street)

R on East 18th Street and **R** again onto Farrar Drive.

 at the corner of Tory Lane and Liam Court. Follow loop to make a **L** on Farrar Drive.

R on East 18th Street. Make another **L** to turn onto North Bishop Avenue.

R on Vichy Road. Enter parking lot from the south entrance to  at Colton’s Steakhouse.

R on North Bishop Avenue. Turn **L** on University Dr. and an immediate **R** on 14th Street.


 at Phelps Health Hospital. Go through parking lot and turn **R** on Asher Street. Make another **R** on 10th Street.

R on Fairground Road. Make another **L** onto Kingshighway at light.

R into the parking lot to  between Webster University and the MO Job Center. Circle through to stoplight to turn **L** onto Kingshighway.

R at 2nd roundabout take 1st exit to Westside Marketplace.  Between Ross and Academy.

L and follow through roundabout to Kingshighway. Turn **R** on South Walker Ave. Turn at the stop sign by KFC. Follow around to front of parking lot & in front of Walmart.

R onto South Bishop Avenue. Turn **R** into Southside Shoppers plaza to  between JCPenney and the License Bureau. Circle around and out of parking lot to continue route.

L on North Bishop Avenue. Make a quick **R** into plaza parking lot to  near Hobby Lobby, and Harbor Freight. Exit parking lot from side entrance. Turn **R** onto Lanning Lane.

 at Park Place Senior Apartments. Make a **L** on S Rolla Street and a **R** on Highway 72.

 at front entrance of Walmart. Turn **R** out of parking lot on South Bishop Avenue.

Key :  = REQUEST STOPS  = ALWAYS STOPS

Estimated Route Duration: 1 hr, 8 mins

DEVIATED FIXED-ROUTE (CONTINUED)

“BUS A” – 1-HOUR LOOP SCHEDULE

R into Highway 72 Center plaza.  in front of Los Arco's. Exit parking lot. Turn **R** on Highway 72. **L** on Pine Tree Road.

R into the parking lot at East Central College (ECC).  in front of the college entrance.

R onto Forum Drive.  at Rolla Technical Institute (RTI)

R on East 10th Street

L on McCutchen Drive

 at Apartments on McCutchen

R on East 10th Street and make a **R** into Forum Plaza.

 at Forum Plaza between Dickey Bub and Goodwill

R on Forum Drive **R** into the parking lot of Rolla Towers

 at Rolla Towers

R on Forum Drive, follow through round-a-bout to 2nd exit onto East 18th Street

END loop at pick-up and drop off hub located at Four Rivers Community Health Center & Regal Forum Cinema

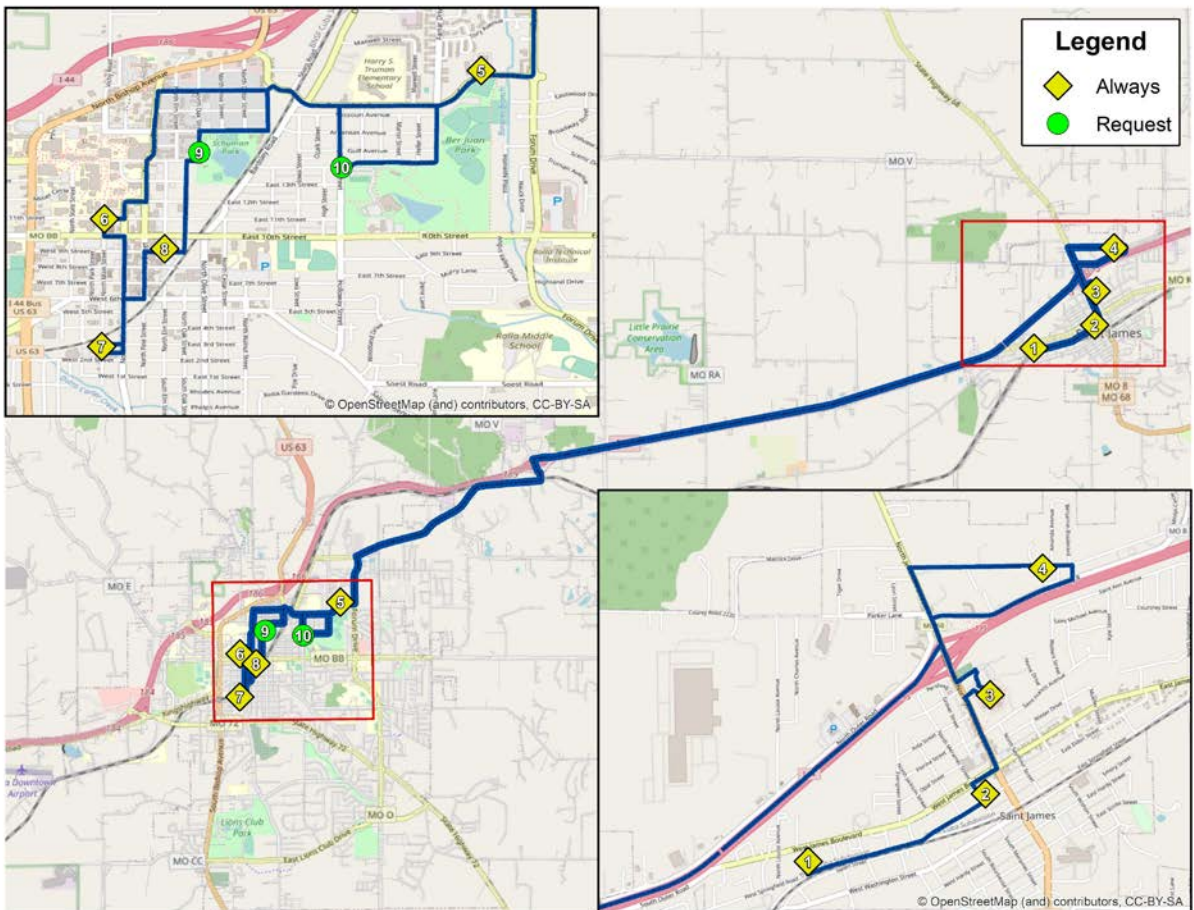
Key :  = REQUEST STOPS  = ALWAYS STOPS

BUS B

PROPOSED ROUTE

“BUS B” – ST. JAMES ROUTE I

In addition to “Bus A” traveling the 1-hour loop in Rolla, initial analysis of the draft route determined that two loops would be required to uphold a viable route to connect riders from Salem and St. James to the main deviated fixed-route in Rolla. The bus would initially pick up riders in Salem and bring them to Rolla, then completing a 1.5-hour loop from St. James to Rolla during the day. “Bus B” would complete its course by taking one final route from Rolla to Salem at the end of the day. MRPC has determined three options for a “Bus B” route. At this time, and based on decisions by SMTS, a specific location in Salem has not been identified for pick-up or drop-off.



**An enlarged map can be found on page 95*

“Bus B” Route I is estimated to take 28.75 minutes to complete when factoring in 2 minutes per stop. This estimation includes both Always Stops and Request Stops. Routes will run much faster when Request Stops do not have to be fulfilled. This route incorporates the main hub from the Rolla deviated fixed-route so that riders have more options to get to and from their preferred destinations.

“BUS B” – PICK-UP ROUTE

NOTE: This pick-up route has been determined to help shuttle St. James residents to Rolla. This route should be run before each suggested “Bus B” route loop in this chapter and has been included into each map for these routes. These pick-up locations were created based on survey results and the highest density areas for low-income and senior housing in downtown St. James.

“BUS B” – PICK-UP ROUTE

START on Tammy Lane and  at Senior Apartments located on left side of street.


 on West Springfield Street

 on Maramec Street

 at back of the Caring Center parking lot located at *113 W. Eldon Street* located on the right

 onto James Boulevard

 onto Jefferson Avenue

 turn right into Veteran’s Home located at *620 N. Jefferson*. Follow through to North entrance and stop by curb.

 on Jefferson Avenue

 on Sidney Street

 between Senior Apartments and Nursing Home located at *415 Sidney Street*

 on Benjamin Street

 on Highway B

 on Highway 68

 on I-44 towards Rolla to start the 1.5-hour loop

“BUS B” – ROUTE OPTION I

“BUS B” – ROUTE OPTION I

START loop by taking I-44 from St. James to Highway V and crossing over bridge.

R on Old. St. James Road

L on Forum Drive and follow through round-a-bout

R on 18th Street

STOP at the front of parking lot between Four Rivers Community Health Center & Regal Forum (1081 East 18th & 1101 Forum Drive)

R on 18th Street to exit the parking lot. A slight **L** will be made to stay on 18th Street.

L on Pine Street

R on 12th Street to access Rolla Street, then **R** again onto 11th Street.

STOP at 11th and Main Street. **L** on State Street. **L** on 8th Street. **STOP** at Rolla Post Office.

R on Rolla Street, cross the railroad tracks, then turn **R** again onto 3rd Street.

STOP at Phelps County Courthouse (200 N. Main Street), follow parking lot loop back to stop sign.

L on Rolla Street

R on 6th Street

L on Pine Street

R on 9th Street

STOP on the right side of the street near Rolla City Hall & the bandshell (901 N. Elm Street).

L on Oak Street

R on 14th Street

STOP at Schuman Park (103 East 14th Street)

R on 16th Street and **R** again onto 18th Street.

R on Holloway Street

L on 14th Street and **STOP** near 14th Street and Holloway Street near Ber Juan Park.

R on 18th Street and **L** back into FRCHC/Regal Forums (1081 East 18th & 1101 Forum Drive) parking lot for one final pick-up before heading back to I-44 East towards St. James.

Key:  = REQUEST STOPS  = ALWAYS STOPS

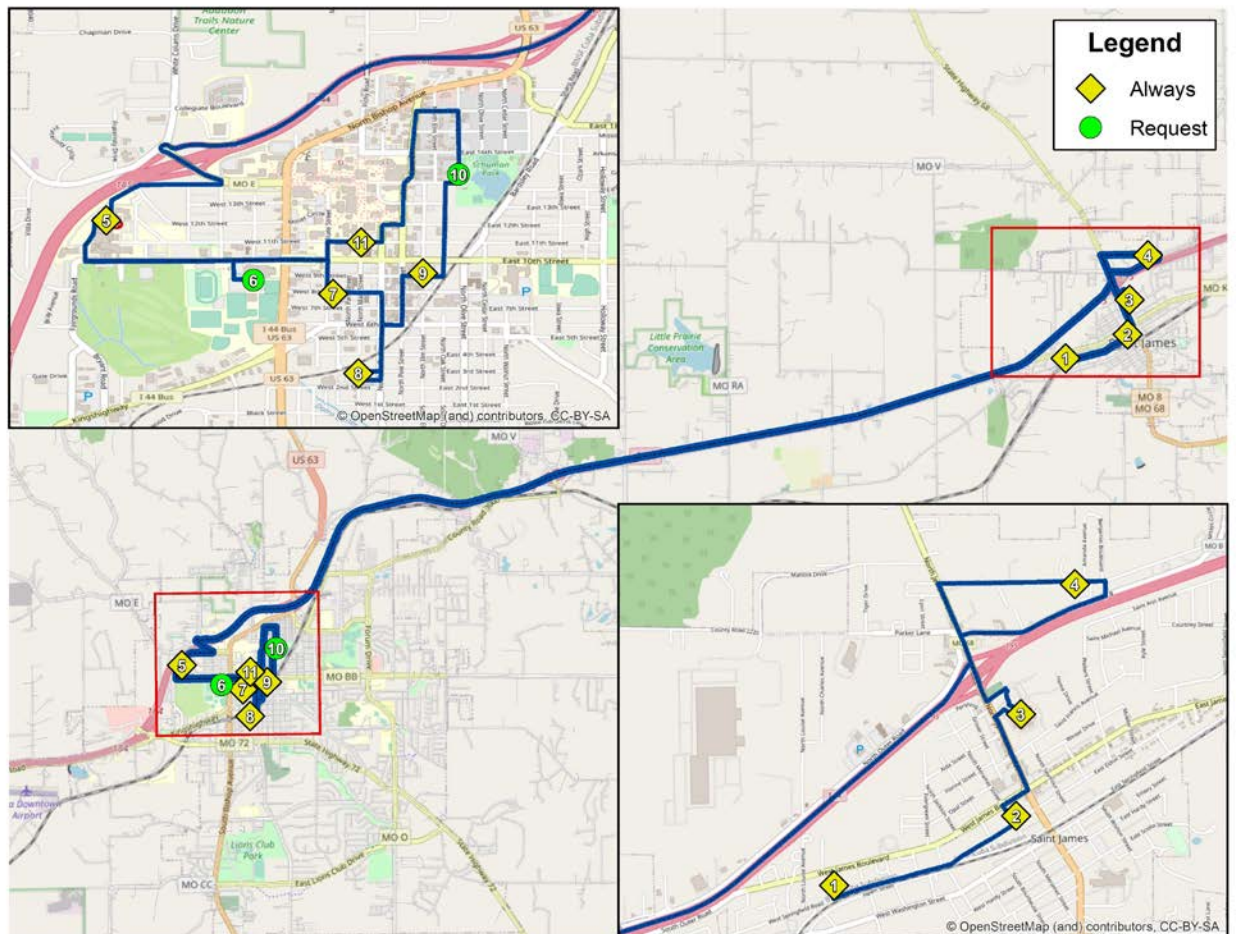
Estimated Route Duration: 28.75 minutes

BUS B

PROPOSED ROUTE

“BUS B” – ST. JAMES ROUTE II

“Bus B” Route II is estimated to take 28.5 minutes to complete when factoring in 2 minutes per stop. This estimation includes both Always Stops and Request Stops. Routes will run much faster when Request Stops do not have to be fulfilled. Route II incorporates stops at Phelps Health Hospital to allow riders to take advantage of seeking medical care while also giving them the opportunity to enjoy downtown Rolla.









*An enlarged map can be found on page 96

BUS B – ROUTE OPTION II

“BUS B” – ROUTE OPTION II

START loop by taking I-44 to University Dr. exit. Follow round-a-bout to overpass.

- R** on Poole Avenue and an immediate **R** onto 14th Street through hospital parking lot.
-  at Phelps Health Hospital (*1000 W. 10th Street*) – suggested pick-up areas are near the Delbert Day Cancer Center and by Emergency Room drive-up circle.
- L** on 10th Street
- R** on State Street
- L** on 8th Street
-  at Rolla Post Office (*501 W. 8th Street*)
- R** on Rolla Street, cross the railroad tracks, then turn **R** again onto 3rd Street.
-  at Phelps County Courthouse (*200 N. Main Street*), follow parking lot loop back to stop sign.
- L** on Rolla Street
- R** on 6th Street
- L** on Pine Street
- R** on 9th Street
-  on the right side of the street near Rolla City Hall & the bandshell (*901 N. Elm Street*).
- L** on Oak Street
- R** on 14th Street
-  at Schuman Park (*103 East 14th Street*)
- L** on 18th Street and **L** again on Pine Street.
- R** on 12th Street and then **R** onto 11th Street.
-  at 11th and Main Street.
- L** on State Street
- R** on 10th Street, **R** into Phelps Health Hospital parking lot, and **R** back onto 14th St.
- L** on Poole Street , and then make another **L** onto University Drive.
- R** on I-44 East towards St. James.

Key :  = REQUEST STOPS  = ALWAYS STOPS

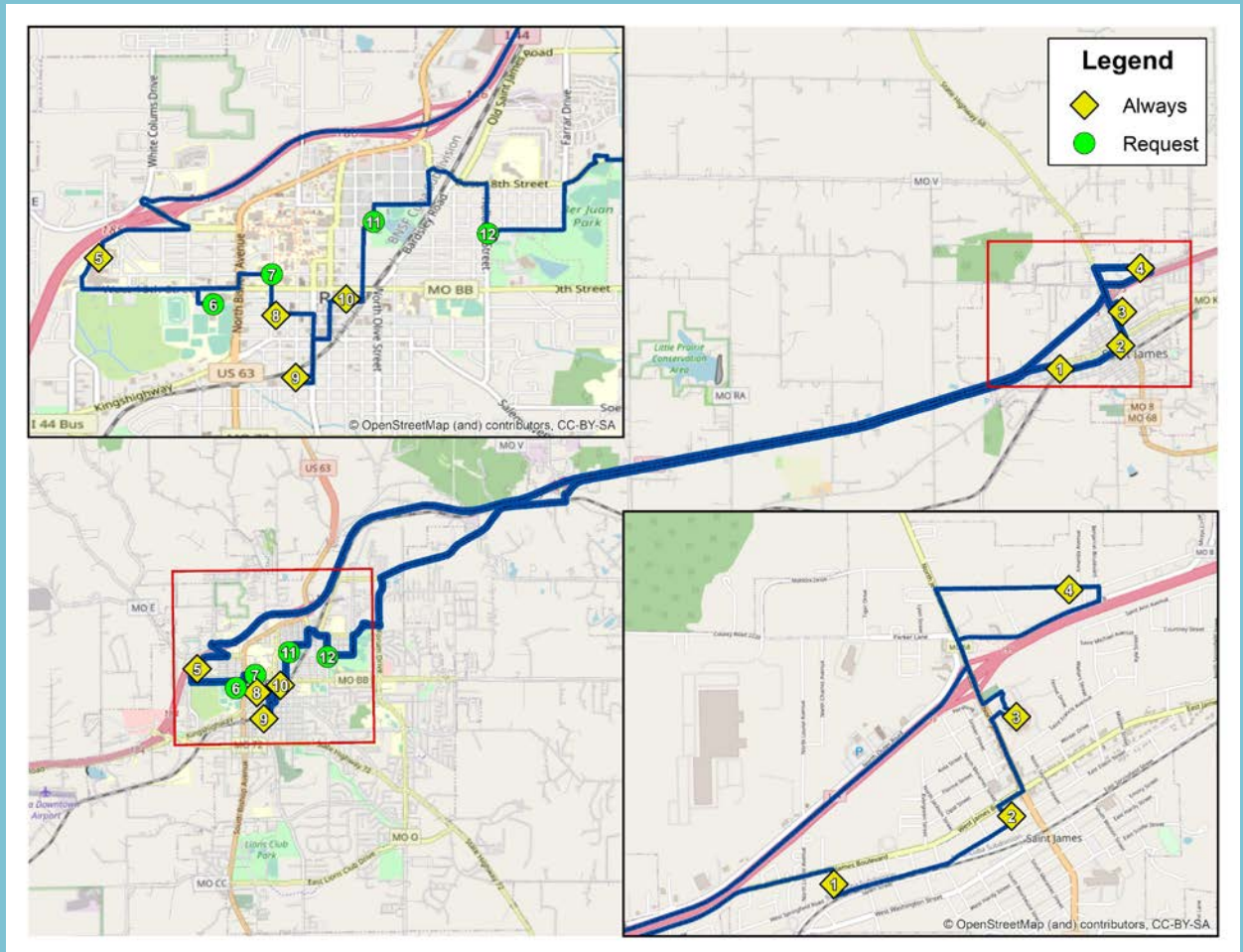
Estimated Route Duration: 28.5 minutes

BUS B

PROPOSED ROUTE

“BUS B” – ST. JAMES ROUTE III

“Bus B” Route III is estimated to take 29.25 minutes to complete when factoring in 2 minutes per stop. This estimation includes both Always Stops and Request Stops. Routes will run much faster when Request Stops do not have to be fulfilled. Route III incorporates both the main boarding hub from the Rolla deviated-fixed route loop, and Phelps Health hospital to allow riders to take advantage of both route systems to get to their preferred destinations, while also adding another option for medical appointments and walkable destinations near 10th Street and Bishop Avenue.



*An enlarged map can be found on page 97

BUS B – ROUTE OPTION III

“BUS B” – ROUTE OPTION III

START loop by taking I-44 from St. James to University Dr. Exit. Follow round-a-bout to overpass.

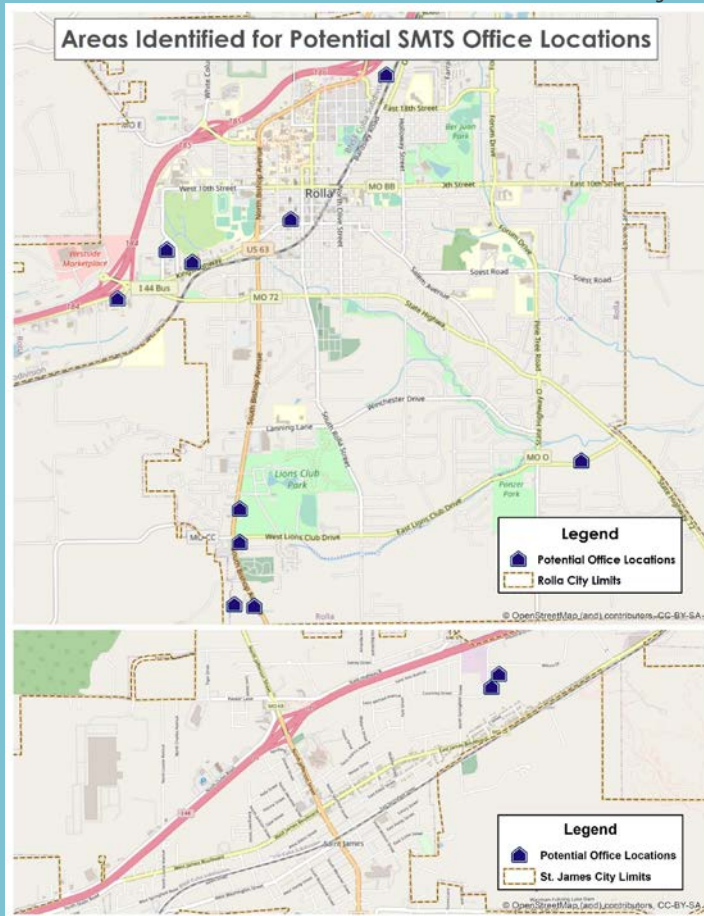
- R** on Poole Avenue and an immediate **R** onto 14th Street through hospital parking lot.
- STOP** at Phelps Health Hospital (1000 W. 10th Street) – suggested pick-up areas are near the Delbert Day Cancer Center or by Emergency Room drive-up circle.
- L** on 10th Street
- L** on Bishop Avenue
- R** on 11th Street
- STOP** at 11th and Main Street
- R** on State Street
- L** on 8th Street
- STOP** at Rolla Post Office (501 W. 8th Street)
- R** on Rolla Street, cross the railroad tracks, then turn **R** again onto 3rd Street.
- STOP** at Phelps County Courthouse (200 N. Main Street), follow parking lot loop back to stop sign.
- L** on Rolla Street
- R** on 6th Street
- L** on Pine Street
- R** on 9th Street
- STOP** on the right side of the street near Rolla City Hall & the bandshell (901 N. Elm Street).
- L** on Oak Street
- R** on 14th Street
- STOP** at Schuman Park (103 East 14th Street)
- R** on 16th Street and **R** again onto 18th Street.
- R** on Holloway Street
- L** on 14th Street and **STOP** near 14th Street and Holloway Street near Ber Juan Park.
- R** on 18th Street and **L** back into FRCHC/Regal Forums (1081 East 18th & 1101 Forum Drive) parking lot before taking I-44 East to St. James.

Key: **STOP** = REQUEST STOPS **STOP** = ALWAYS STOPS

Estimated Route Duration: 29.25 minutes

PROPOSED OFFICE LOCATIONS

Figure 23



MRPC was able to determine twelve potential locations that would be a good fit based on SMTS' needs for parking, office area, wash bay, and bus storage. The current location on Holloway Street in Rolla has limited office and parking space, with no availability for maintenance or washing of buses. After consultation with SMTS staff, those locations with "*" were determined preferred locations approved by SMTS.

Locations Identified:

- | | |
|------------------------------|------------------------------|
| 1. 1915 Sharps Road* | 7. 1409 Martin Springs Drive |
| 2. 106 Juliene Street | 8. 1384 South Bishop Ave |
| 3. 204 Fairgrounds Road* | 9. 606 Park Street |
| 4. 1203 South Bishop Ave | 10. 1325 South Bishop Ave* |
| 5. 1372 South Bishop Ave | 11. 1 Industrial Drive* |
| 6. 207 East Lion's Club Dr.* | 12. 2 Industrial Drive* |

***1915 SHARP RD.**

**CURRENT USE: CITY OF ROLLA'S PUBLIC WORK DEPARTMENT
MAINTENANCE SHED & ROLLA ANIMAL SHELTER BUILDING**

PARCEL ID: 71-09-1.0-01-002-006-003.000

LOT SIZE: 8.58 ACRES

ACCOUNT NUMBER: 6258

ZONING: G-I (GOVERNMENT AND INSTITUTIONAL)

**PROPERTY FEATURES: OFFICE BUILDING, SHED INTENDED FOR LARGE
VEHICLES & MAINTENANCE, COVERED PARKING & FULL PARKING AREA**



106 JULIENE ST.

CURRENT USE: FORMER AUTOMATIC CAR WASH/SELF-SERVICE

PARCEL ID: 71-09-1.0-11-002-006-017.00

LOT SIZE: 0.53 ACRES

ACCOUNT NUMBER: 07850.00

ZONING: C-2 (GENERAL RETAIL) & C-3 (HIGHWAY COMMERCIAL)

**PROPERTY FEATURES: LARGE PARKING AREA, ROOM TO BUILD
SMALL OFFICE SPACE, FORMER CAR WASH STRUCTURE MAY BE
IDEAL FOR WASH BAY AREA. PROPERTY NEXT TO IT IS ALSO VACANT
AND FOR SALE FOR THE OPTION OF EXPANDING.**



***204 FAIRGROUNDS RD.**

CURRENT USE: PHELPS COUNTY HIGHWAY DEPARTMENT BUILDING

PARCEL ID: 71-09-2.0-10-001-002.00

LOT SIZE: 0.73 ACRES BUILDING SIZE: 31,799 sq. ft.

ACCOUNT NUMBER: 9563.00

ZONING: G-I (GOVERNMENT INSTITUTIONAL)

**PROPERTY FEATURES: EXISTING PARKING FOR BUSES, AMPLE
PARKING AREA, MULTIPLE GARAGES, AND IS CONVENIENTLY
LOCATED OFF OF KINGSHIGHWAY NEAR I-44.**



1203 SOUTH BISHOP AVE.

CURRENT USE: FORMER CAR LOT

PARCEL ID: 71-09-6.0-14-003-001-002.00

LOT SIZE: 0.76 ACRES

ACCOUNT NUMBER: 10691.00

ZONING: C-2 (GENERAL RETAIL)

**PROPERTY FEATURES: LARGE PARKING AEA, SMALL TRAILER
INTENDED FOR OFFICE SPACE.**



1372 SOUTH BISHOP AVE.

CURRENT USE: FORMER OZARC/GAS COMPANY BUILDING

PARCEL ID: 71-09-6.0-23-002-003-001.002

LOT SIZE: 0.94 ACRES BUILDING SIZE: 2250 SQ. FT.

ACCOUNT NUMBER: 10321.00

ZONING: C-2 (GENERAL RETAIL)

PROPERTY FEATURES: GARAGE SPACE, AMPLE PARKING, OFFICE SPACE, LOADING DOCKS, DELIVERY DOOR, OUTDOOR STORAGE, AND PARTIAL FENCING.



***207 EAST LION'S CLUB DR.**

CURRENT USE: INDUSTRIAL WAREHOUSE

PARCEL ID: 71-09-6.0-13-003-006-014.00

LOT SIZE: 1.83 ACRES

ACCOUNT NUMBER: 10269.01

ZONING: M-1 (LIGHT MANUFACTURING)

PROPERTY FEATURES: 2 GARAGES THAT ALLOW FOR LARGE VEHICLES, VEHICLE MAINTENANCE AREA, LARGE AREA FOR OUTDOOR PARKING.



1409 MARTIN SPRINGS DR.

CURRENT USE: VACANT LOT

PARCEL ID: 71-09-2.0-10-004-003-005.00

LOT SIZE: 0.476 ACRES

ACCOUNT NUMBER: 9642.00

ZONING: C-3 (HIGHWAY COMMERCIAL)

PROPERTY FEATURES: VACANT LOT WITH FRONTAGE ON I-44



1384 SOUTH BISHOP AVE.

CURRENT USE: AUTOBODY REPAIR SHOP

PARCEL ID: 71-09-6.0-23-002-003-007.001

LOT SIZE: 1.11 ACRES BUILDING SIZE: 4,000 SQ. FT.

ACCOUNT NUMBER: 10929.01

ZONING: C-3 (HIGHWAY COMMERCIAL)

PROPERTY FEATURES: PARKING AREA IDEAL FOR LARGE VEHICLES, MULTIPLE DRIVE-IN GARAGES, OFFICE SPACE, GARAGE FOR MAINTENANCE.



606 PARK STREET

CURRENT USE: FORMER OFFICE BUILDING

PARCEL ID: 71-09-1.0-11-001-027-002.00

LOT SIZE: 0.16 ACRES BUILDING SIZE: 2,098 SQ. FT.

ACCOUNT NUMBER:

ZONING: C-1 (NEIGHBORHOOD COMMERCIAL DISTRICT)

PROPERTY FEATURES:



***1325 SOUTH BISHOP AVE.**

CURRENT USE: MEETING HALL

PARCEL ID: 71-09-6.0-23-002-001-011.000

LOT SIZE: 1.952 ACRES

ACCOUNT NUMBER: 10908.00

ZONING: C-2 (GENERAL RETAIL DISTRICT)

PROPERTY FEATURES: LARGE GARAGE, TWO LARGE PARKING AREAS, LARGE BUILDING WITH MULTIPLE OFFICES AND FULL BASEMENT, OUTDOOR STORAGE.



***1 INDUSTRIAL DR.**

CURRENT USE: WAREHOUSE

PARCEL ID: 71-02-4.0-17-004-004-001.006

LOT SIZE: 2 ACRES

ACCOUNT NUMBER: 7200 SQ. FT.

ZONING: UNIDENTIFIED

PROPERTY FEATURES: WAREHOUSE BUILDING WITH OFFICE SPACE, LARGE PARKING AREA, GARAGE AND FENCED IN LOT.



***2 INDUSTRIAL DR.**

CURRENT USE: WAREHOUSE

PARCEL ID: 71-02-4.0-17-004-004-001.002

LOT SIZE: 5.47 ACRES BUILDING SIZE: 10,000 SQ. FT.

ACCOUNT NUMBER: 00732.03

ZONING: UNIDENTIFIED

PROPERTY FEATURES: OFFICE SPACE, LARGE PARKING AREA, FENCED IN LOT, GARAGE AND WAREHOUSE SPACE.



CONCLUSION

On the basis of the study area characteristics, demographics, route analysis, and public input received from survey results, the Meramec Regional Planning Commission (MRPC) has reached the following conclusion:

The most feasible route for the SMTS transportation study would be divided by two buses. “Bus A”, the main deviated fixed-route, would be intended to run a loop route on an hourly basis around the city of Rolla. “Bus A” would board and deboard at a hub, or determined location, on the hour. The spot chosen for the hub is the parking lot between Four Rivers Community Health Center and Regal Forum located at *1101 East 18th Street*.

A second bus, “Bus B” would connect the cities of St. James and Salem to Rolla with a 1.5-hour loop route system. MRPC outlined three route options for this secondary route but concluded that Route Option III would be the most feasible due to it including both Phelps Health Hospital, and a stop at the main boarding and deboarding hub (*1101 East 18th Street*).

By including the main boarding hub from the “Bus A” route, residents are given the opportunity to take advantage of both route systems allowing them to reach more destinations within the City of Rolla, St. James and the city of Salem, if needed.

MRPC has determined that the combination of “Bus A” and “Bus B” Route III will be the most efficient route for both SMTS and residents of Phelps County to utilize the deviated fixed-route bus system.

APPENDIX

- I. College Survey + Results
- II. Public Survey + Results
- III. References

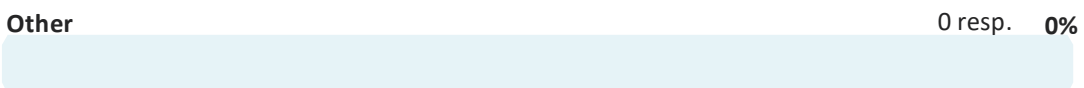
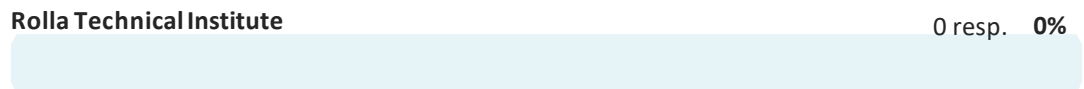
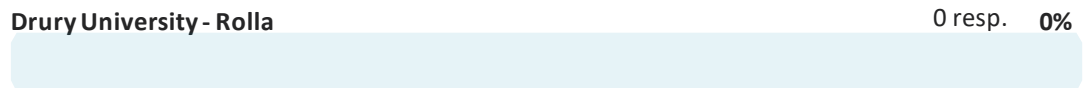
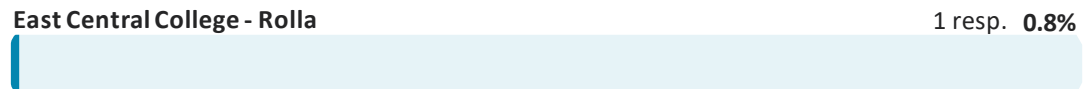
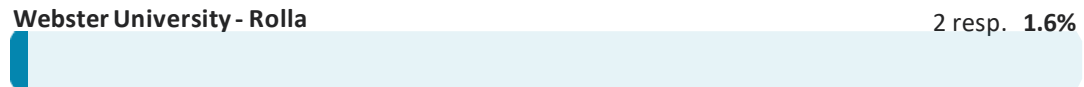
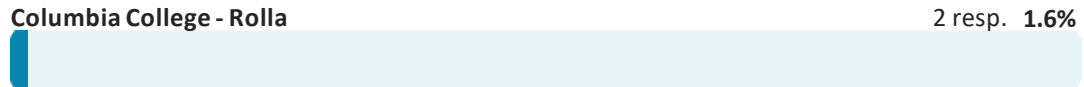
APPENDIX I

SMTS Rolla Deviated Fixed-Route College Survey

126 responses

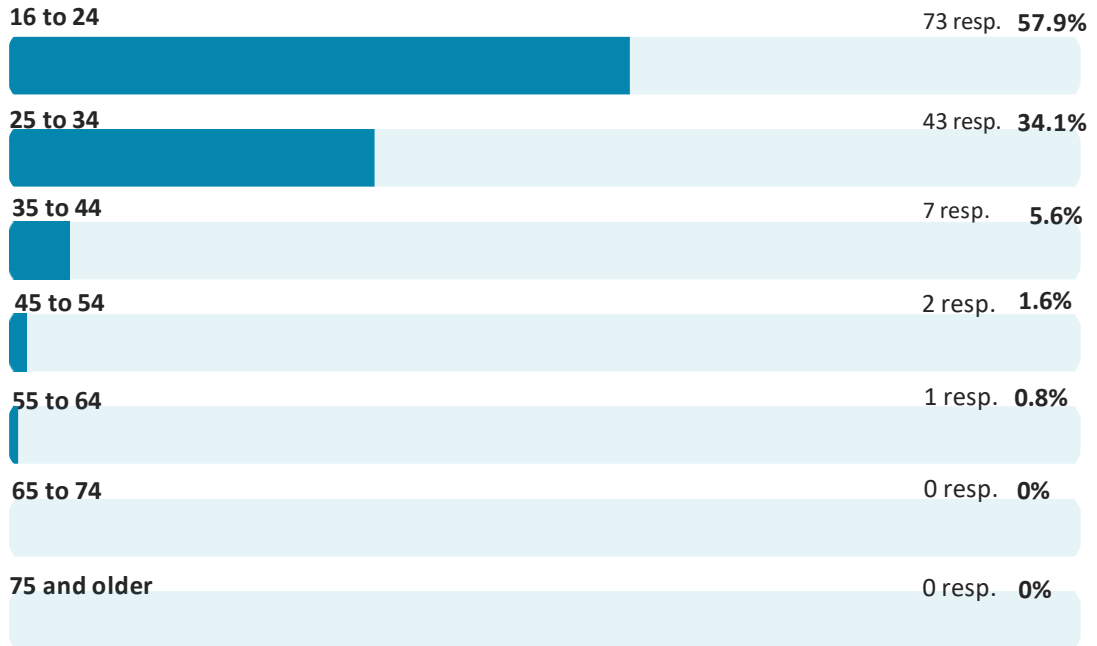
Which University/College are you currently enrolled in?

125 out of 126 answered



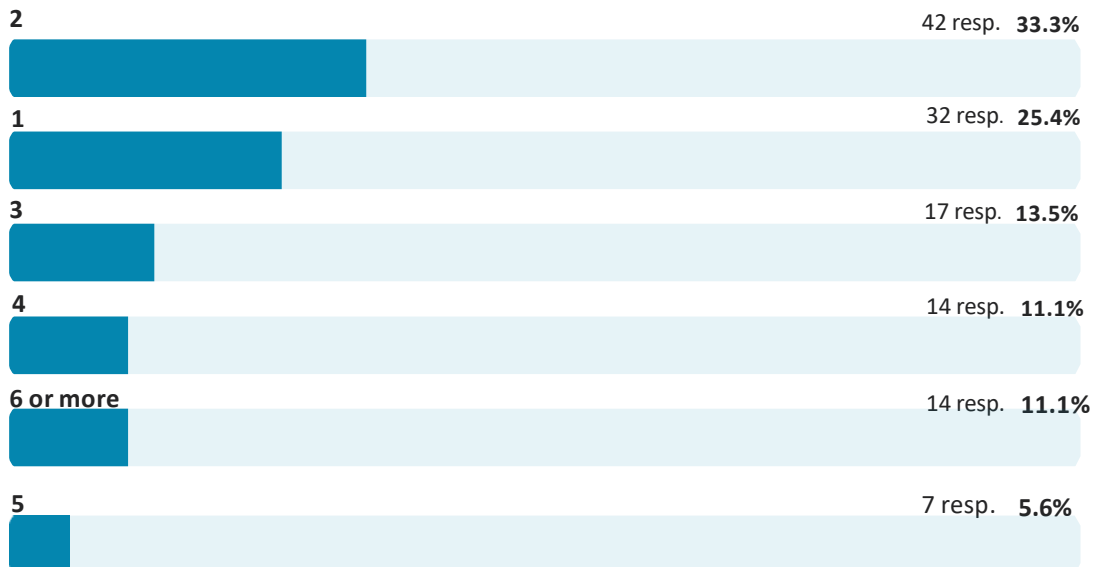
What is your age?

126 out of 126 answered



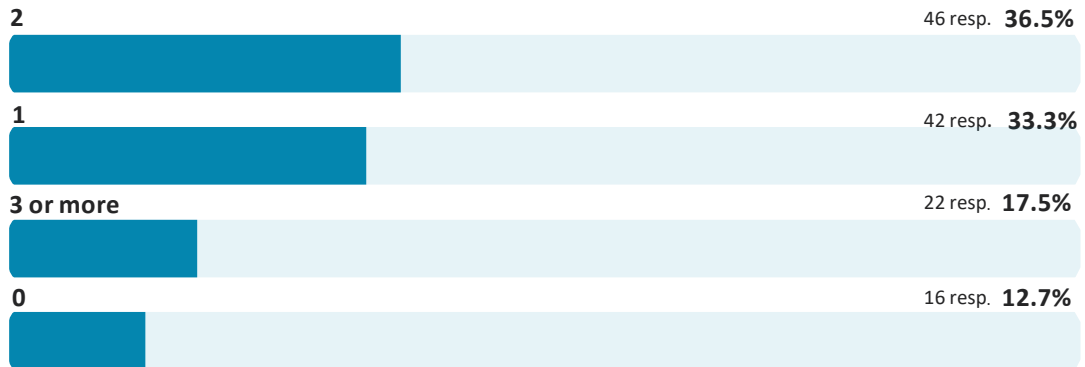
How many people (counting yourself) do you currently live with?

126 out of 126 answered



How many individuals in your household are currently employed?

126 out of 126 answered



Do you own/lease a reliable vehicle?

126 out of 126 answered



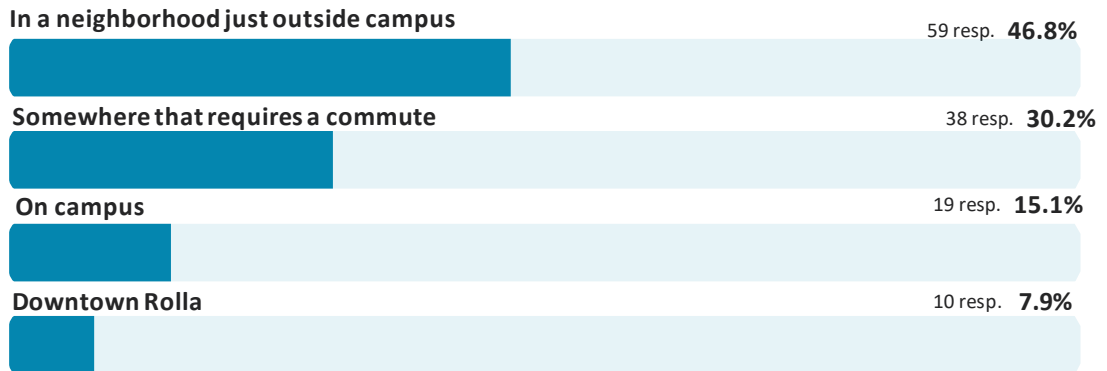
Are you a full-time or part-time student?

125 out of 126 answered



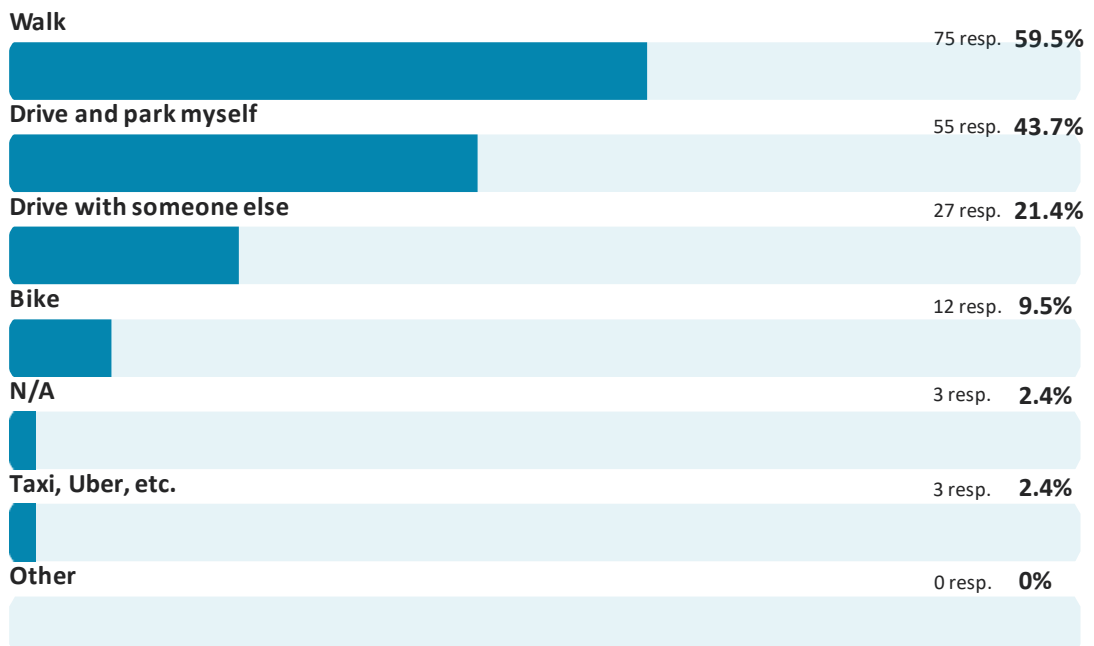
Which best describes where you live?

126 out of 126 answered



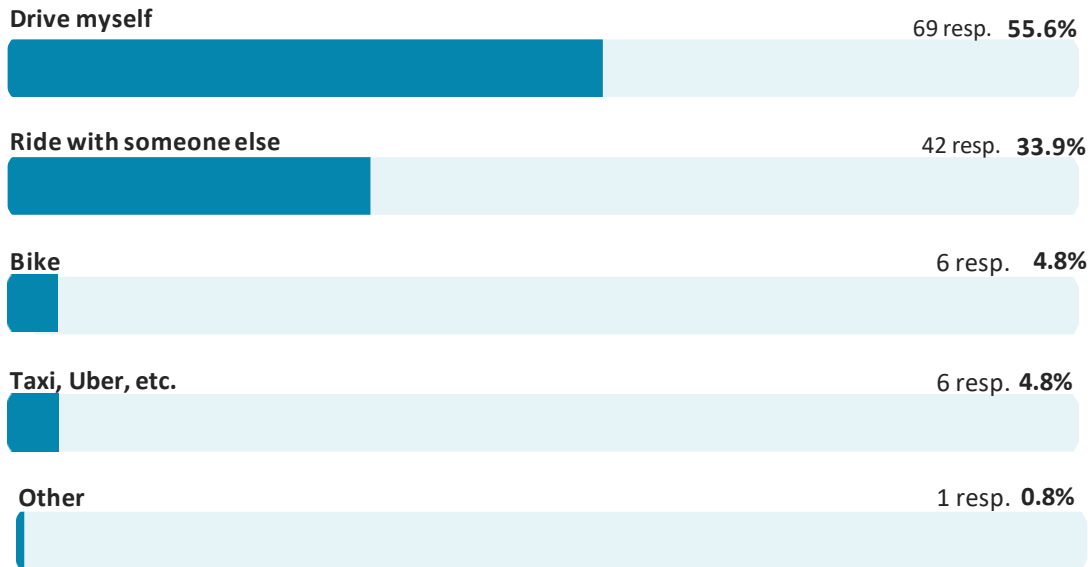
If you commute to campus, what form of transportation do you typically use?

126 out of 126 answered



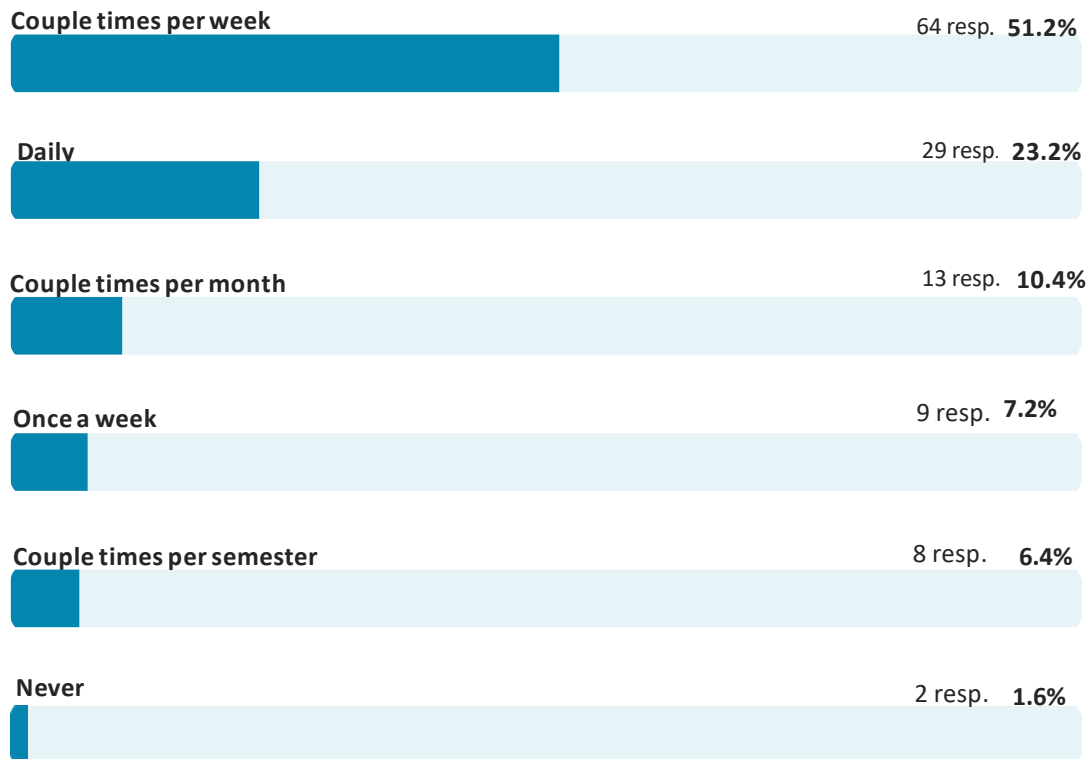
When traveling around town, which mode of transportation are you most likely to take?

124 out of 126 answered



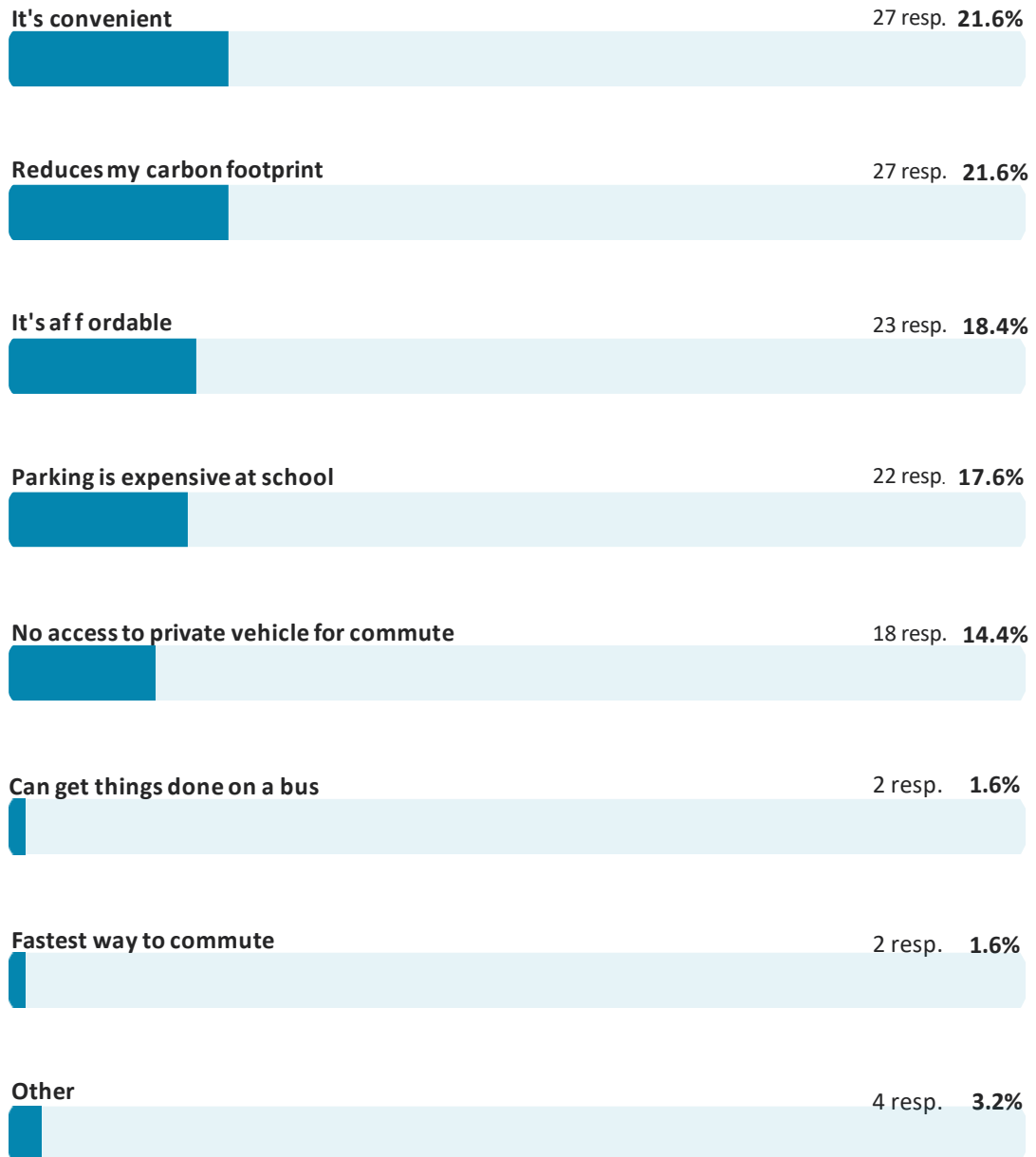
If public transportation was available, how often during the semester would you use the service?

125 out of 126 answered



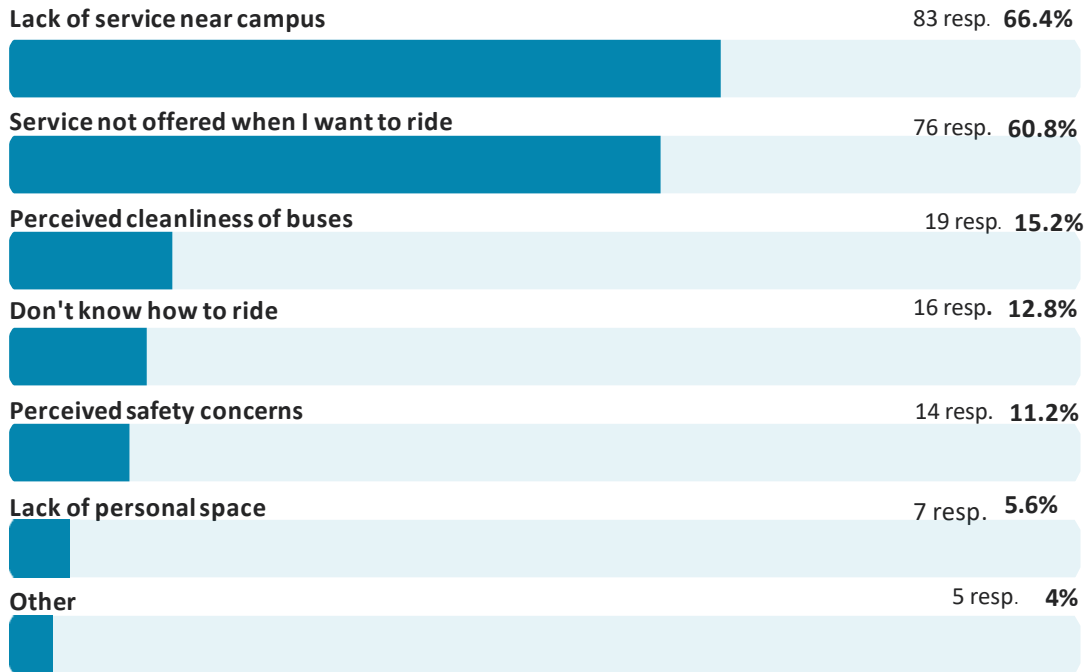
What is the primary reason for selecting public transportation?

125 out of 126 answered



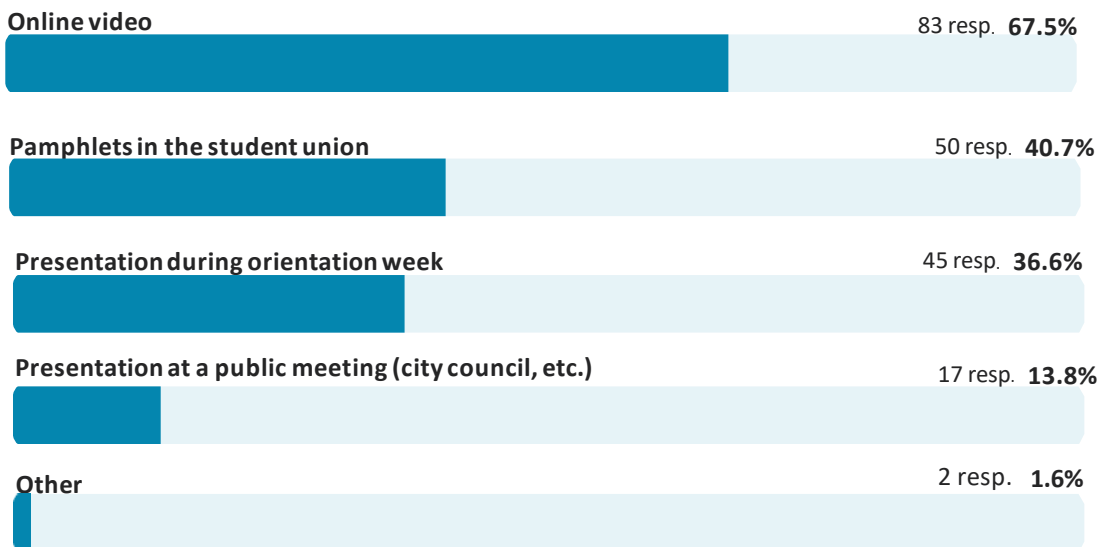
What are the factors that *might* keep you from using public transportation?

125 out of 126 answered



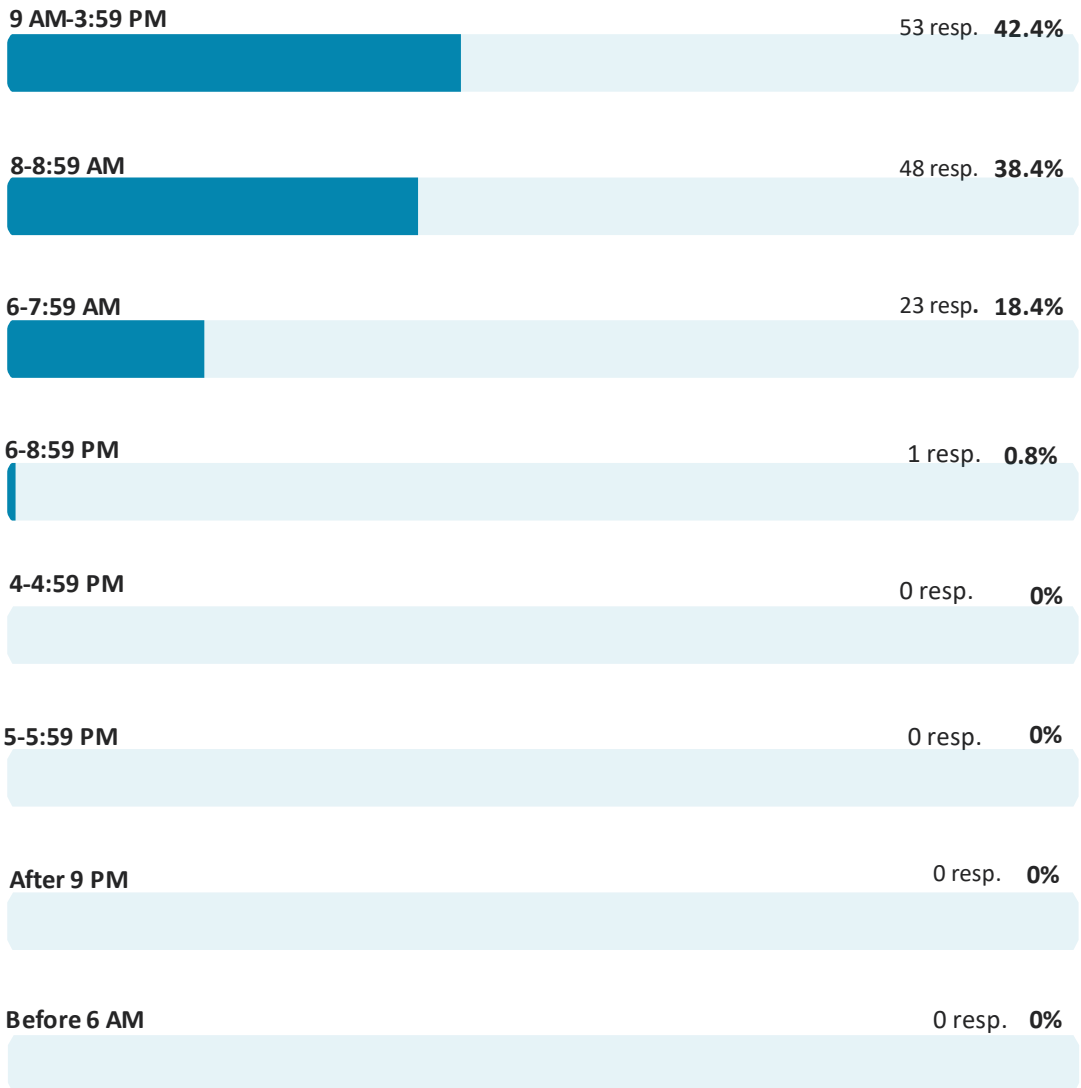
If you don't know how to ride public transportation, how would you like to learn more about it?

123 out of 126 answered



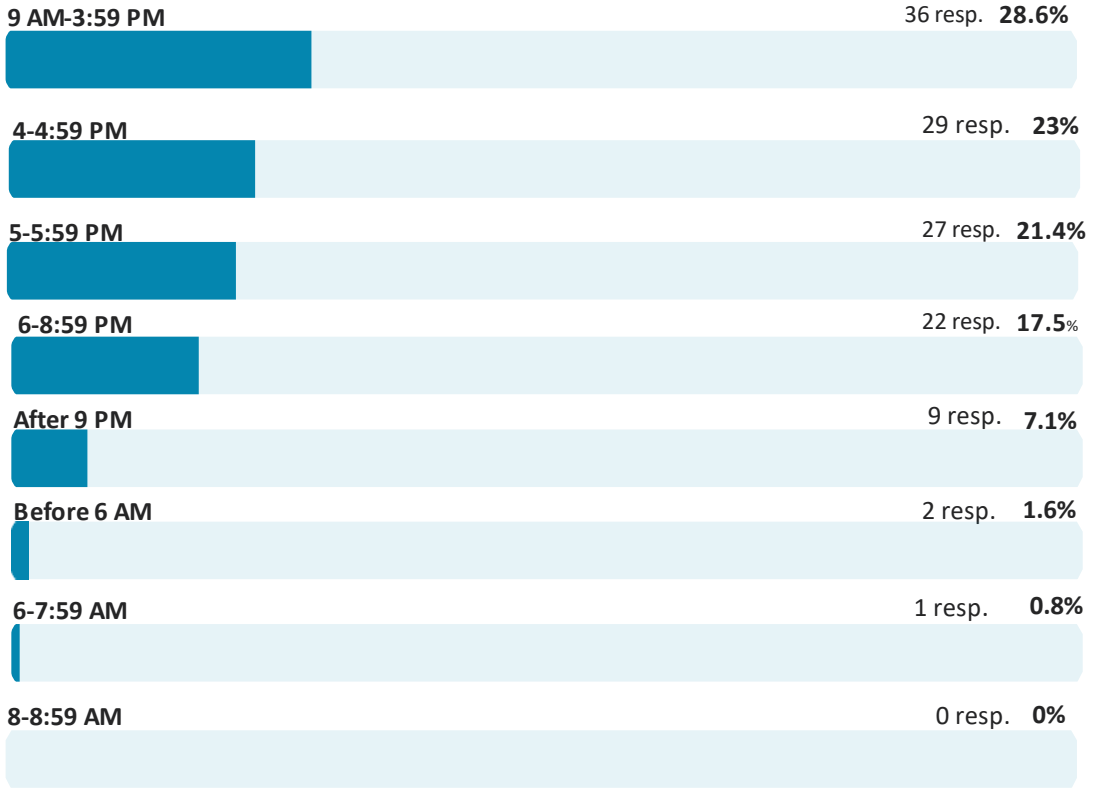
What time do you usually arrive on campus?

125 out of 126 answered



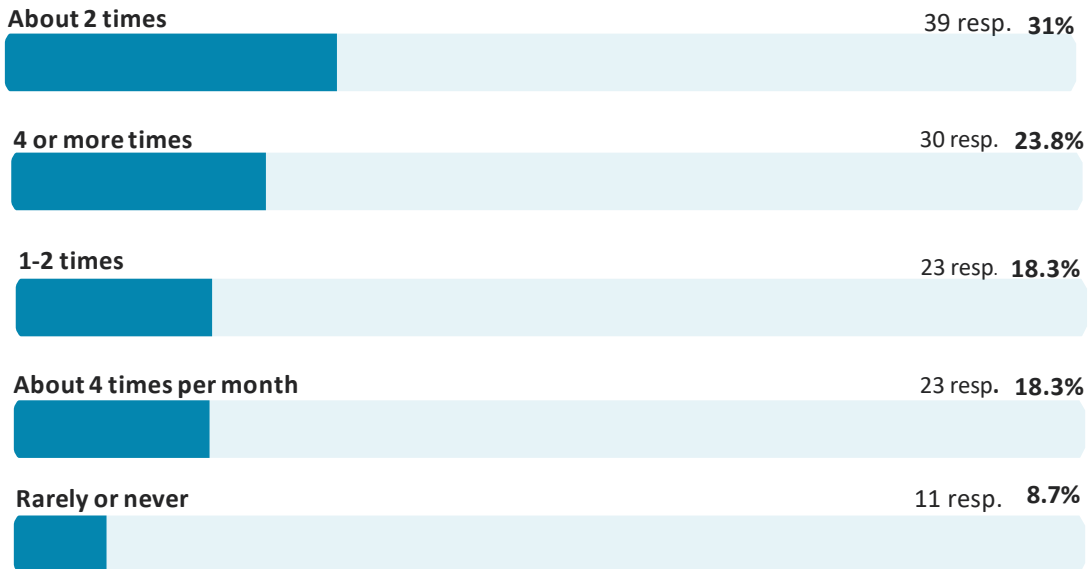
What time do you usually leave campus?

126 out of 126 answered



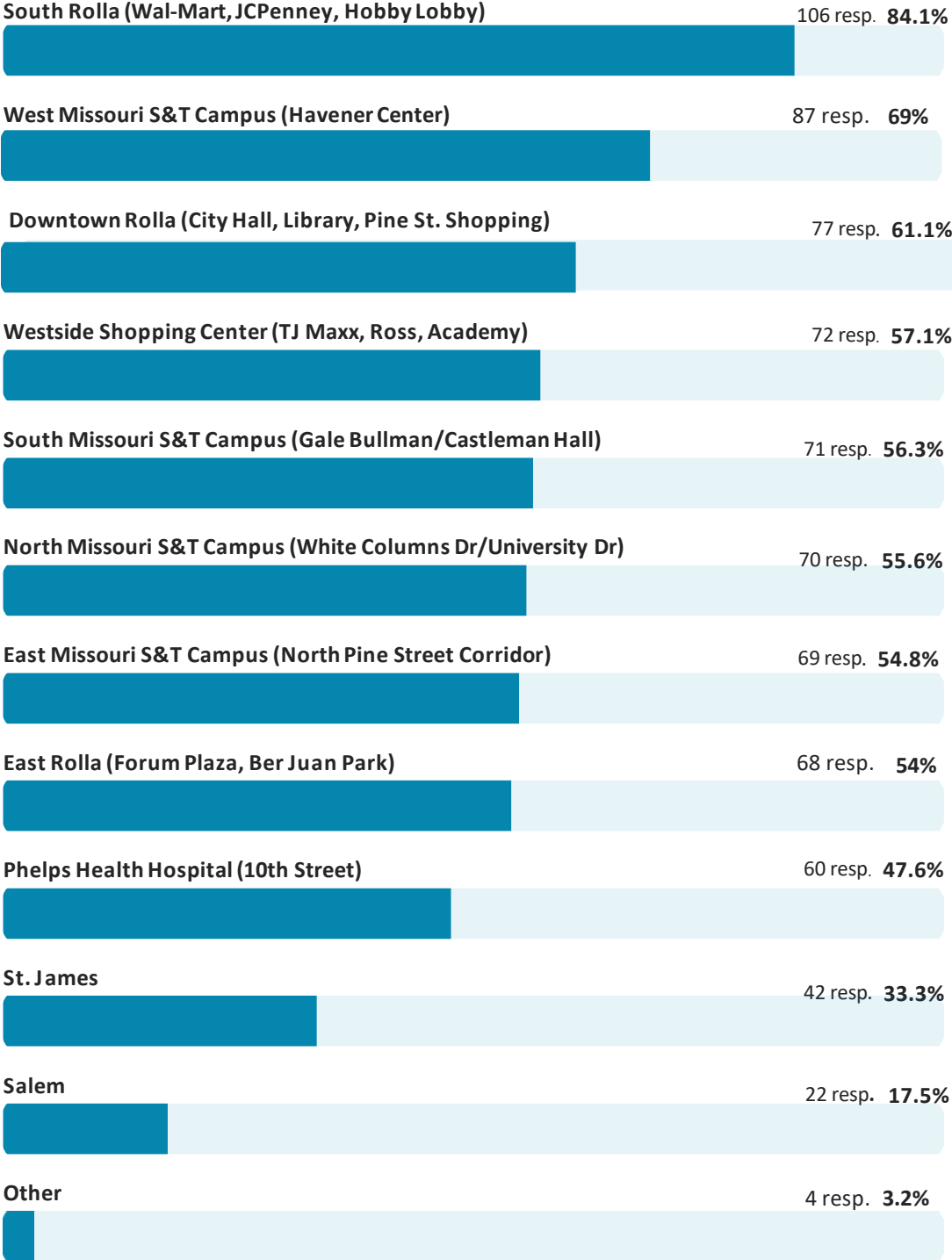
How often do you think you would use a deviated fixed-route transit service for a daily (unlimited rides) fee of \$3?

126 out of 126 answered



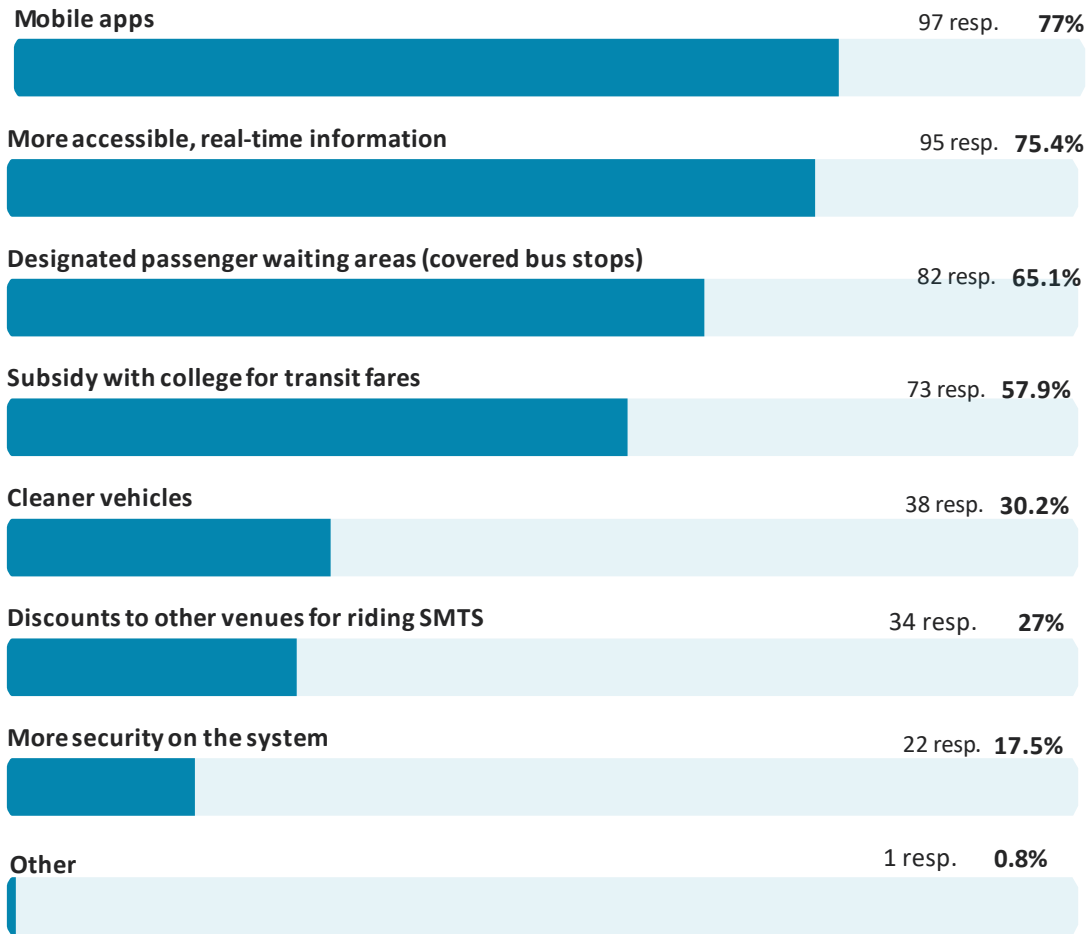
In what areas would you want to have a deviated fixed-route transit service stop? (Check all that apply. If "other", please type in proposed destination or transit stop.)

126 out of 126 answered



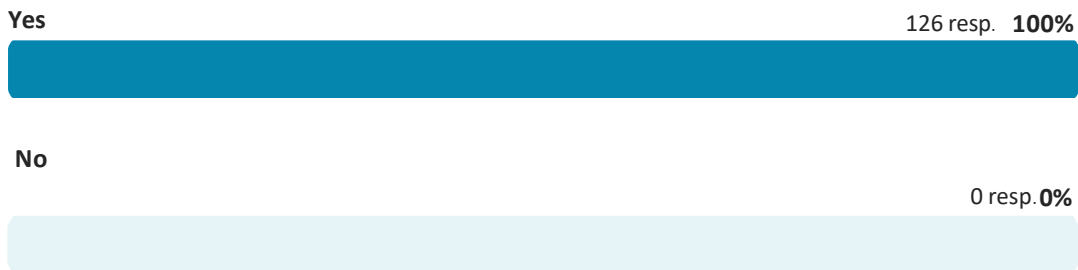
What could SMTS offer that would make taking public transportation more attractive to you?

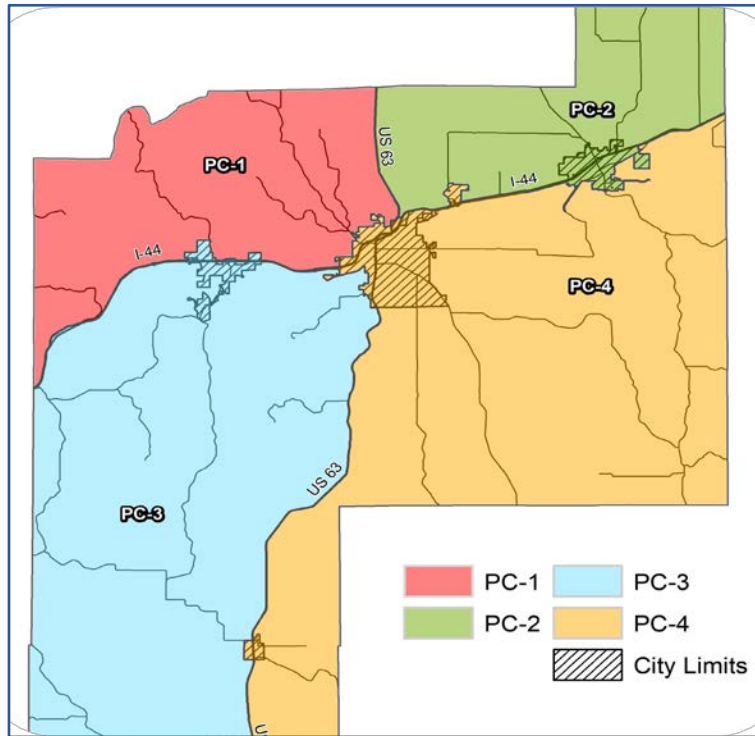
126 out of 126 answered



Do you have a smart phone?

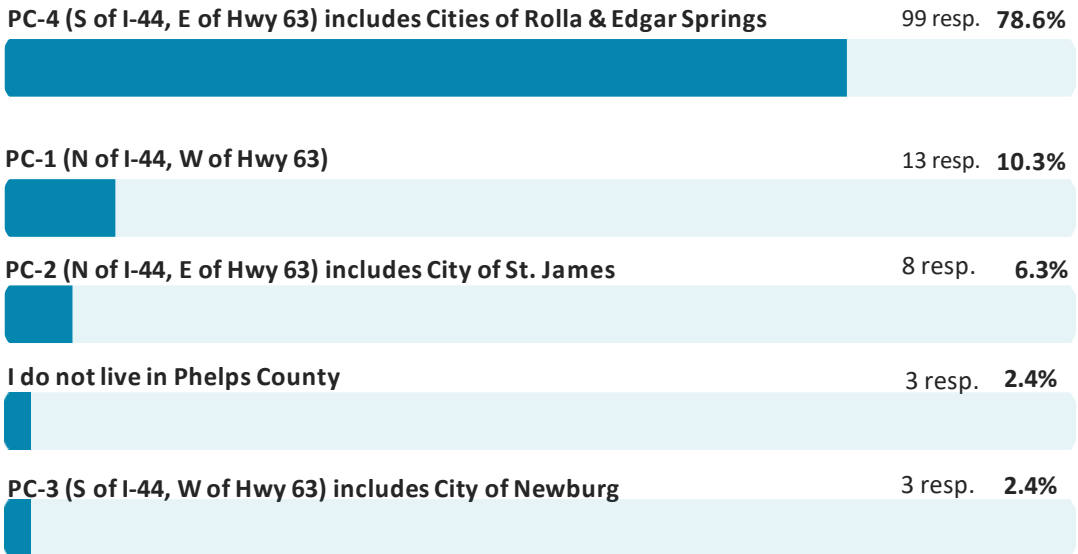
126 out of 126 answered





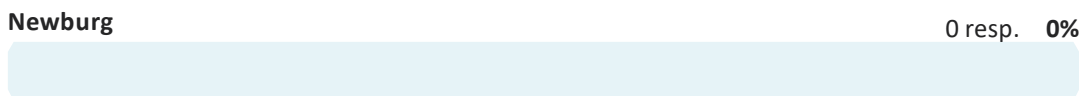
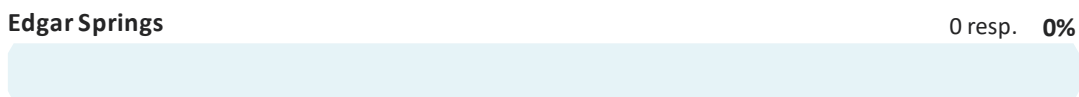
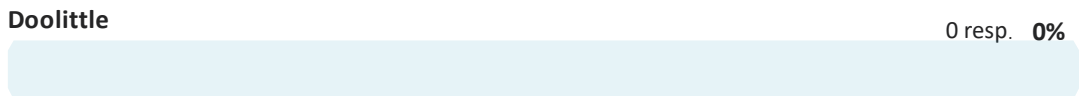
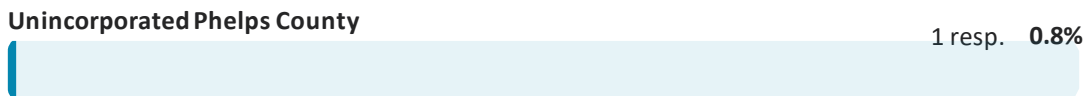
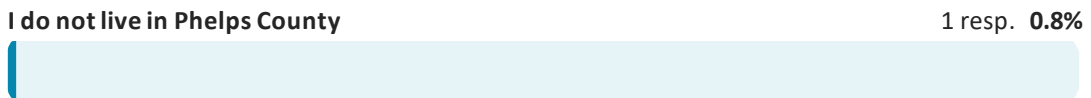
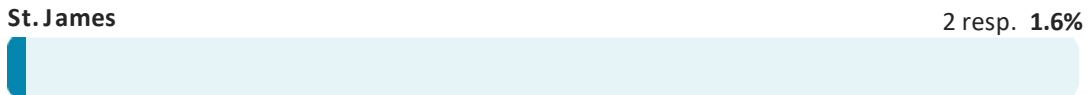
Using the map of Phelps County, in what area of the county do you live?

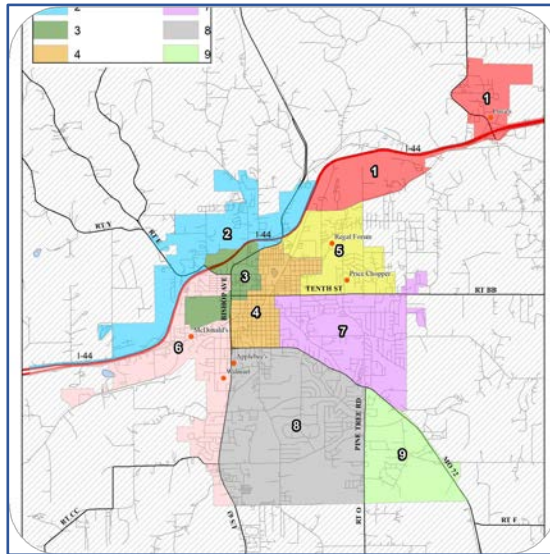
126 out of 126 answered



More specifically, in what part of Phelps County do you reside?

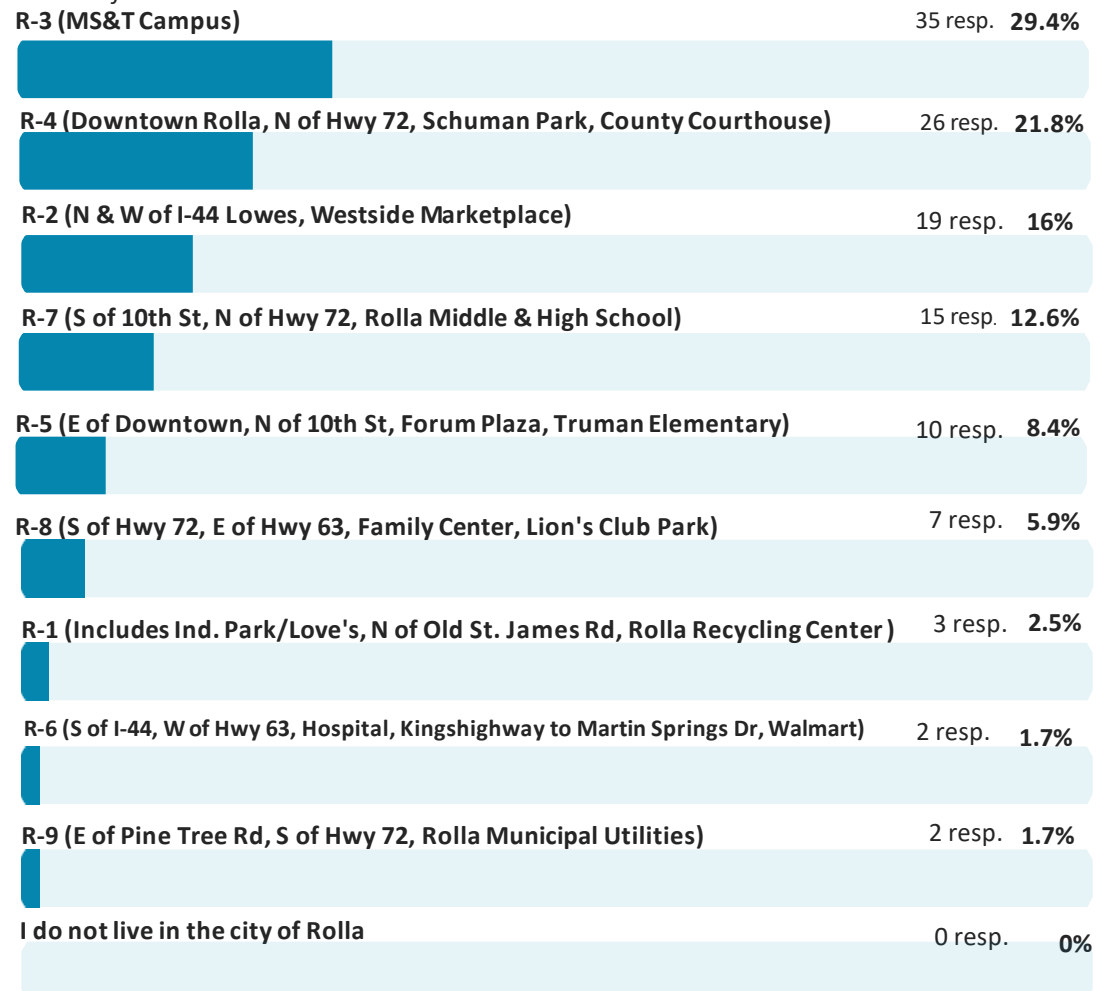
123 out of 126 answered

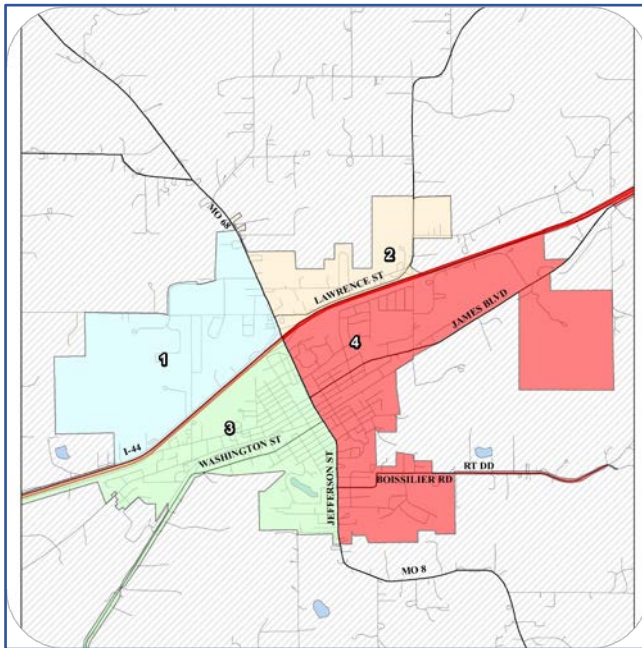




Using the map of Rolla, in what area of the city do you live?

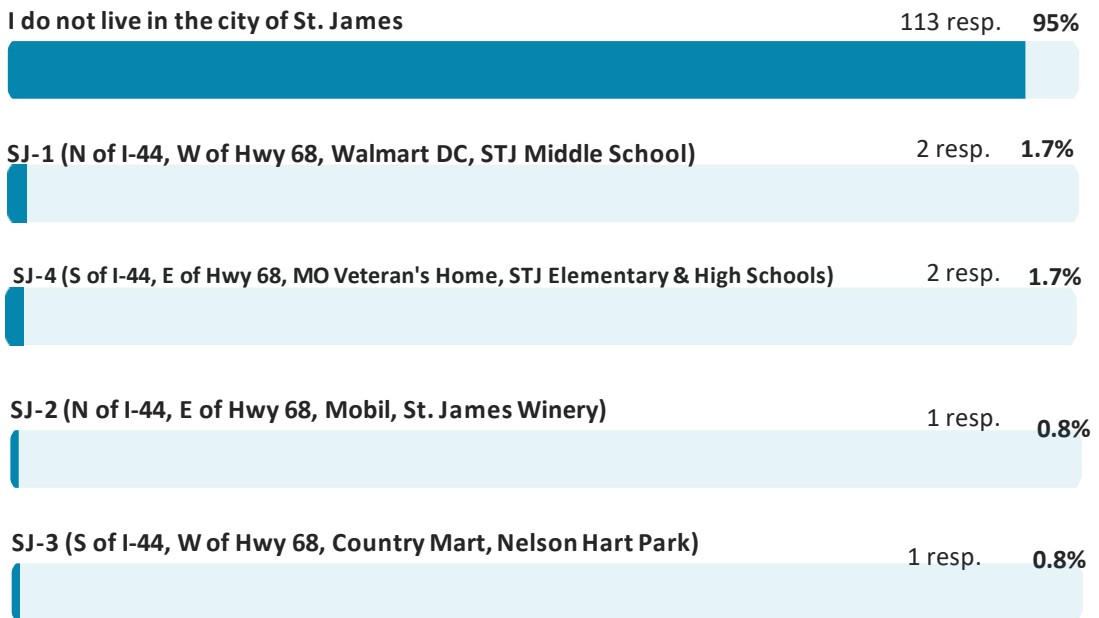
119 out of 126 answered





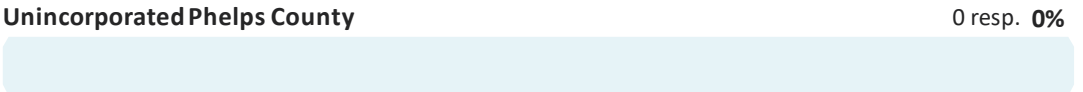
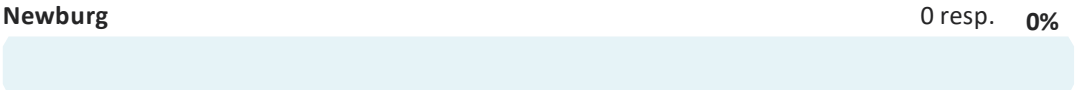
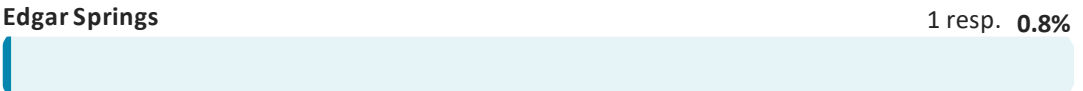
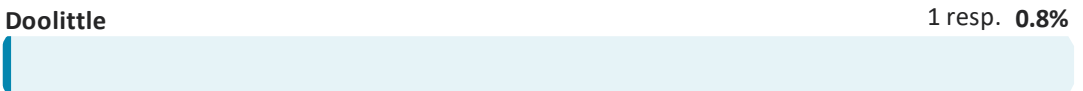
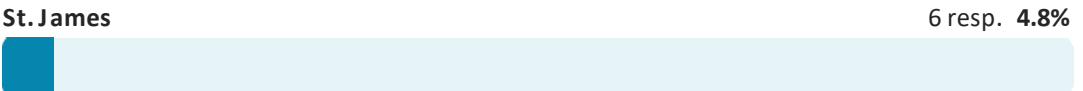
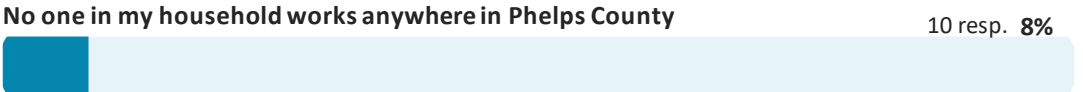
Using the map of St. James, in what area of the city do you live?

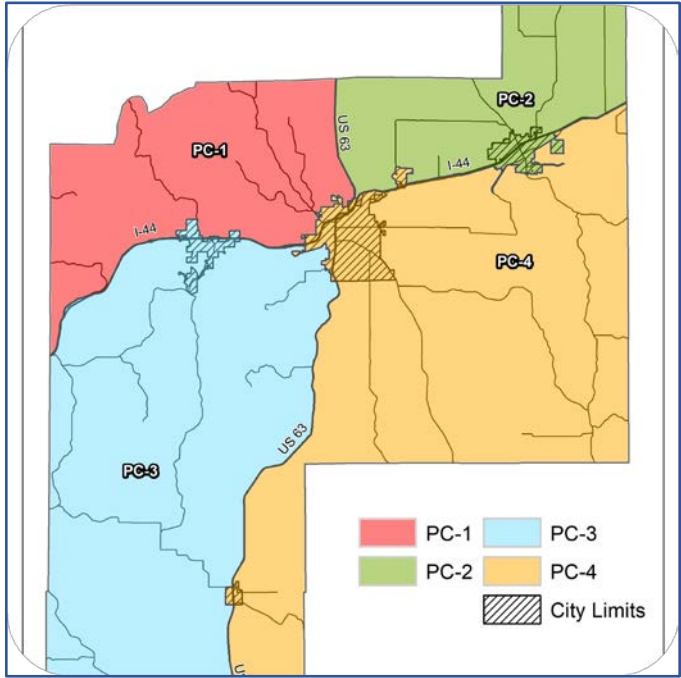
119 out of 126 answered



In what parts of Phelps County do individuals in your household work? (Select all that apply)

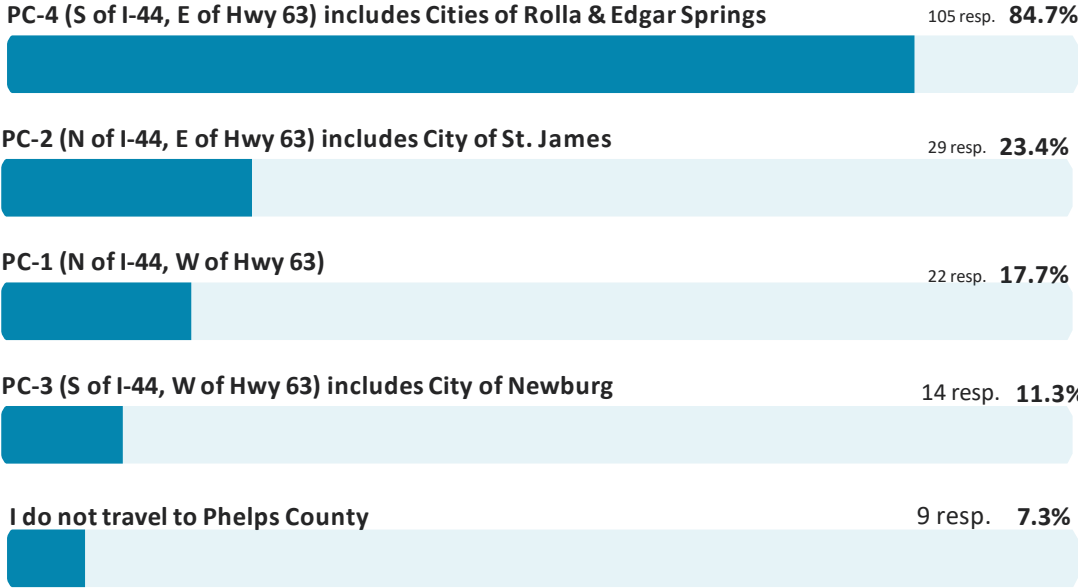
125 out of 126 answered

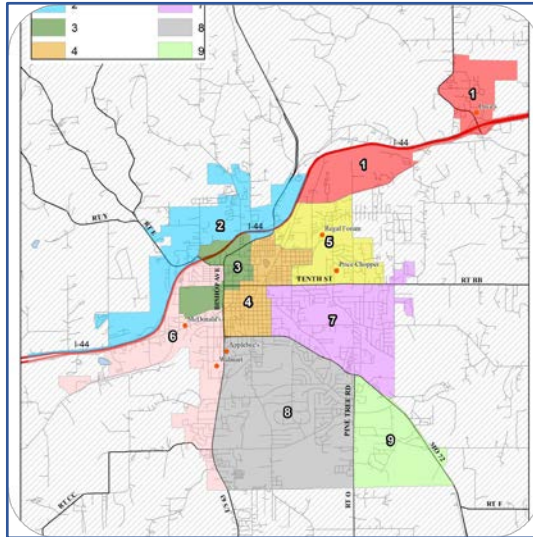




Using the map of Phelps County, what areas of the county do members of your household frequently travel to for any reason? (Select all that apply)

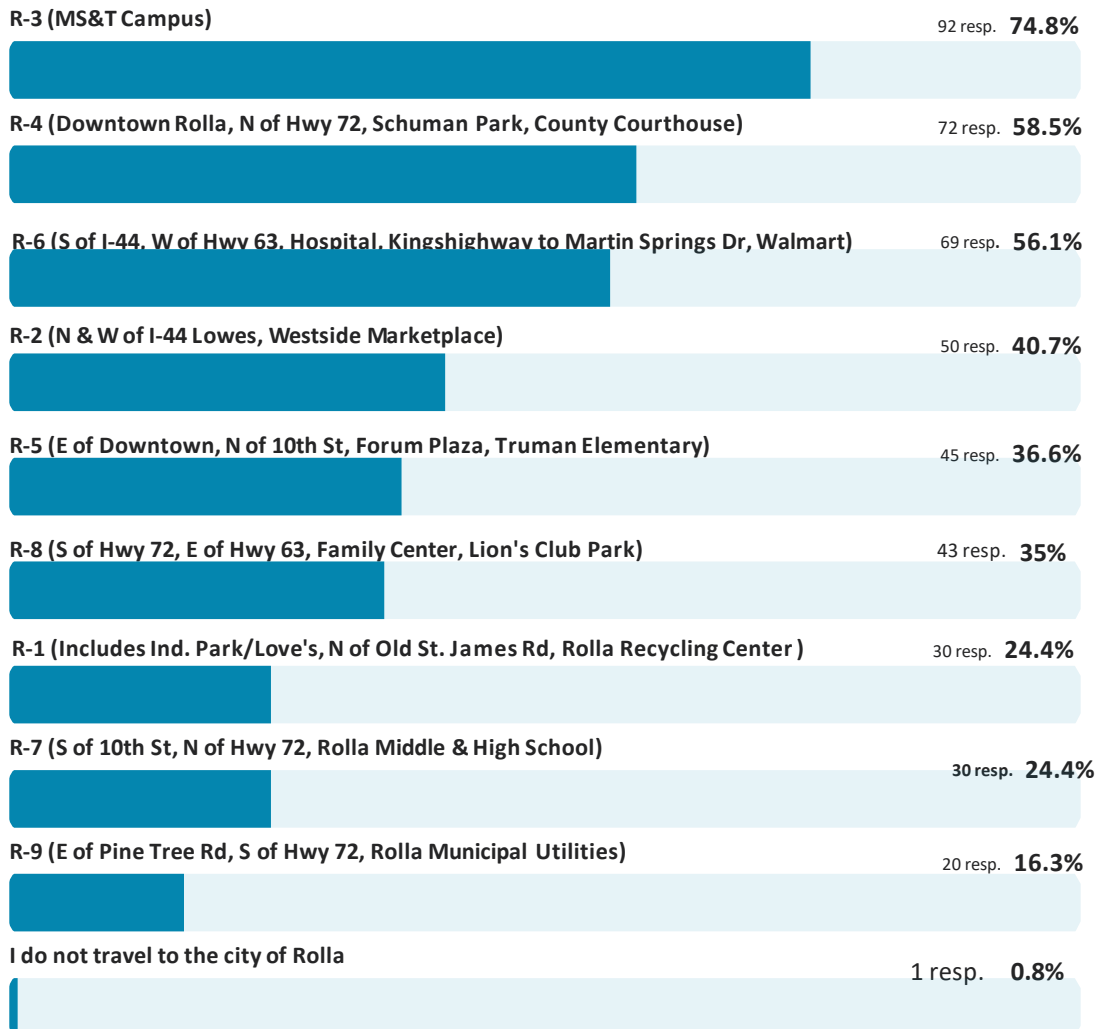
124 out of 126 answered

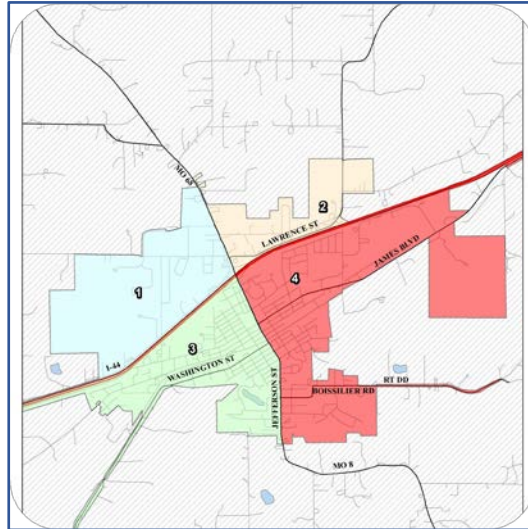




Using the map of Rolla, what areas of the city do members of your household frequently travel to for any reason? (Select all that) apply

123 out of 126 answered





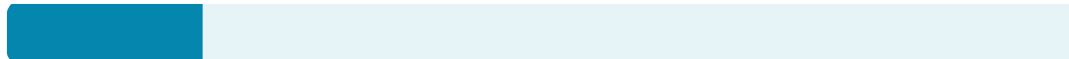
Using the map of St. James, what areas of the city do members of your household frequently travel to for any reason? (Select all that apply)

120 out of 126 answered

I do not travel to the city of St. James 89 resp. **74.2%**



SJ-2 (N of I-44, E of Hwy 68, Mobil, St. James Winery) 22 resp. **18.3%**



SJ-1 (N of I-44, W of Hwy 68, Walmart DC, STJ Middle School) 15 resp. **12.5%**



SJ-3 (S of I-44, W of Hwy 68, Country Mart, Nelson Hart Park) 15 resp. **12.5%**



SJ-4 (S of I-44, E of Hwy 68, MO Veteran's Home, STJ Elementary & High Schools) 15 resp. **12.5%**



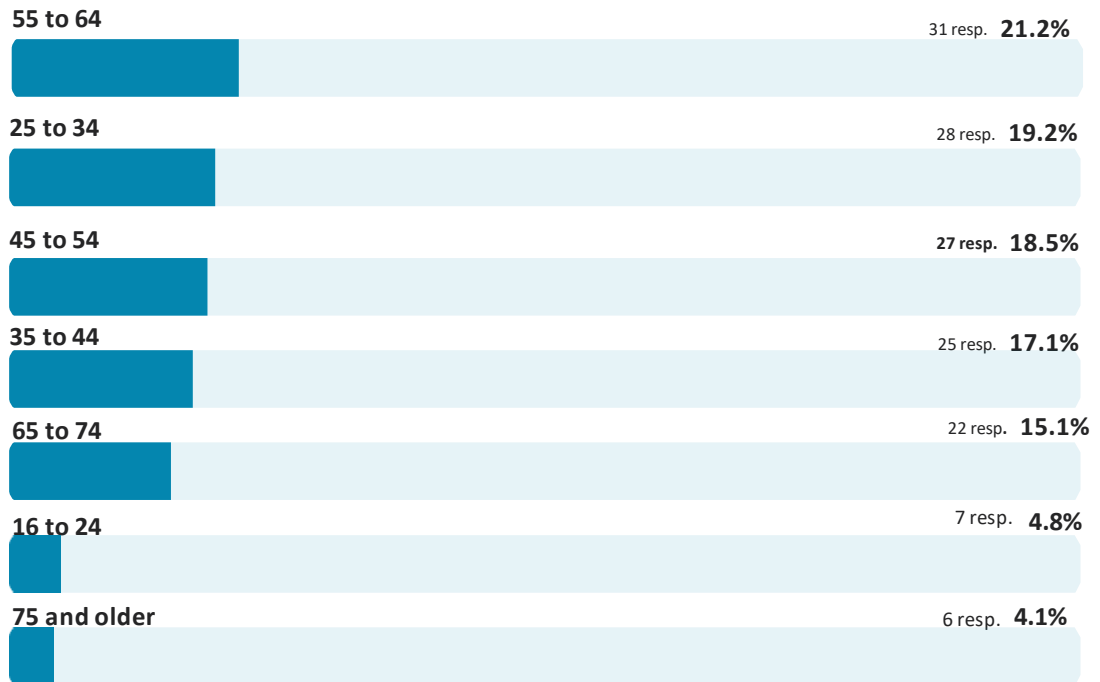
APPENDIX II

SMTS Rolla Deviated Fixed-Route Public Survey

146 responses

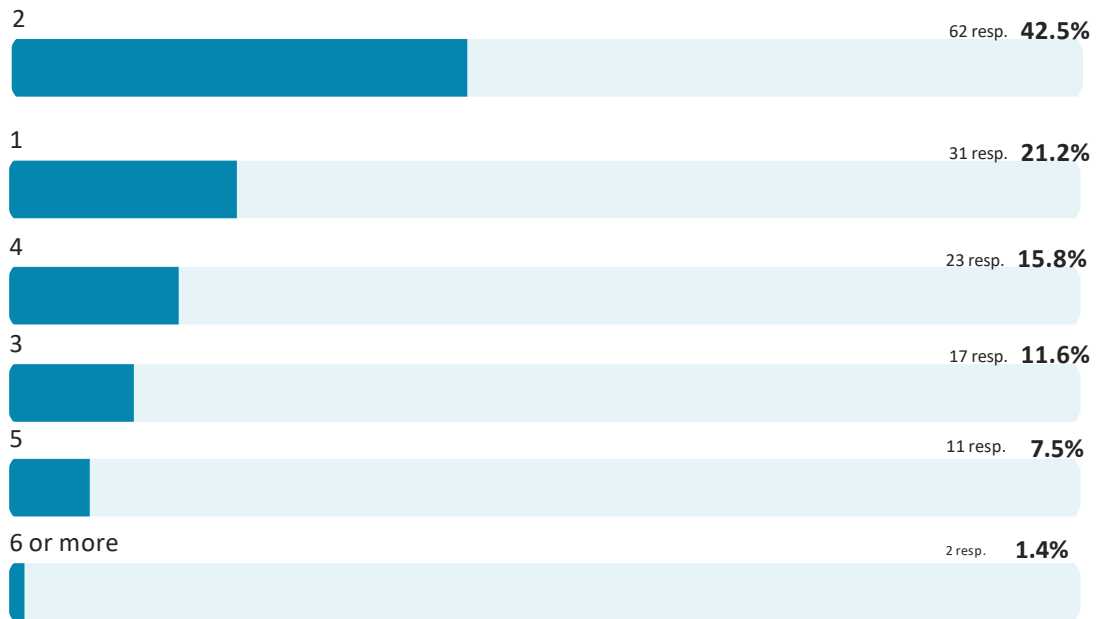
What is your age?

146 out of 146 answered



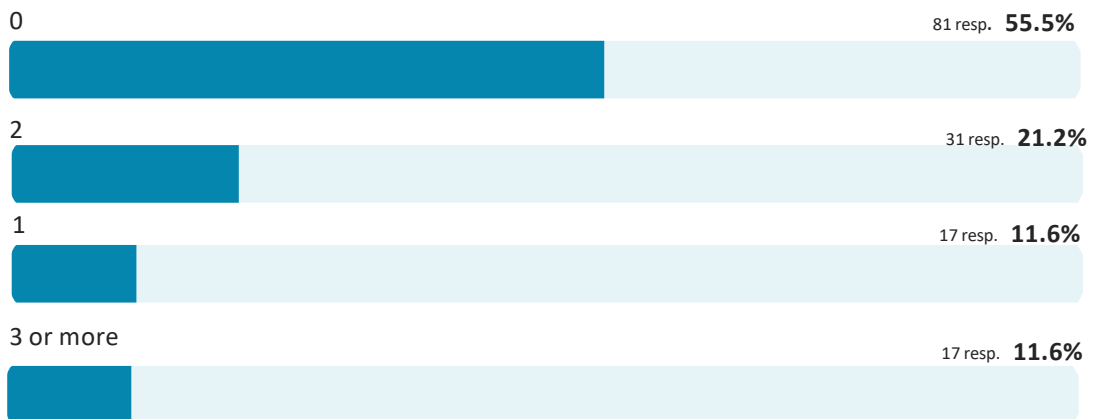
How many people (counting yourself) currently live in your household?

146 out of 146 answered



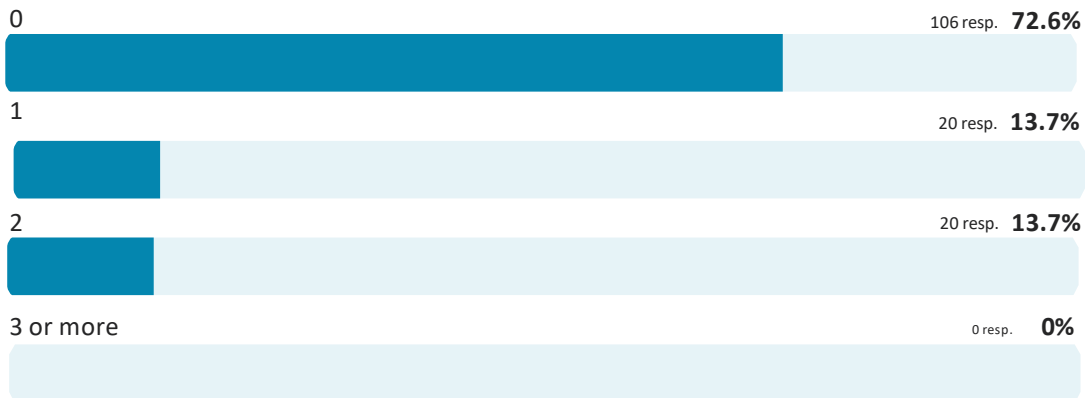
How many people in your household are 18 years old and younger?

146 out of 146 answered



How many people in your household are 65 years old or older?

146 out of 146 answered



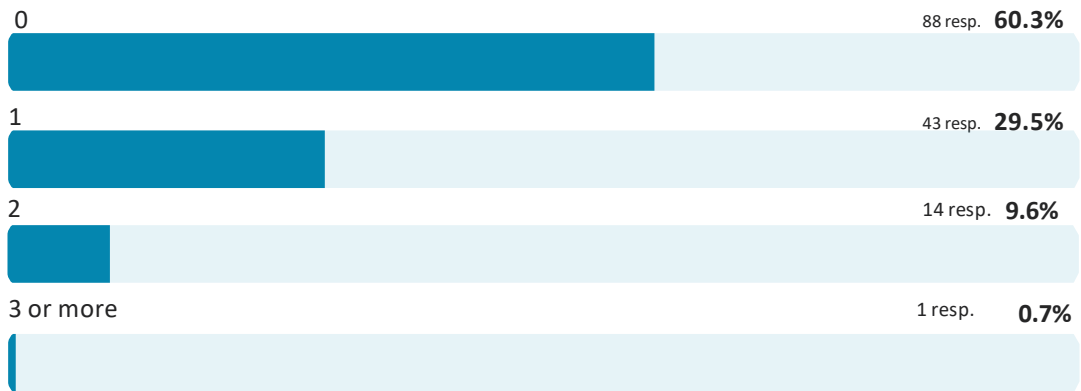
How many individuals in your household, 16 years old or older, are currently employed?

146 out of 146 answered



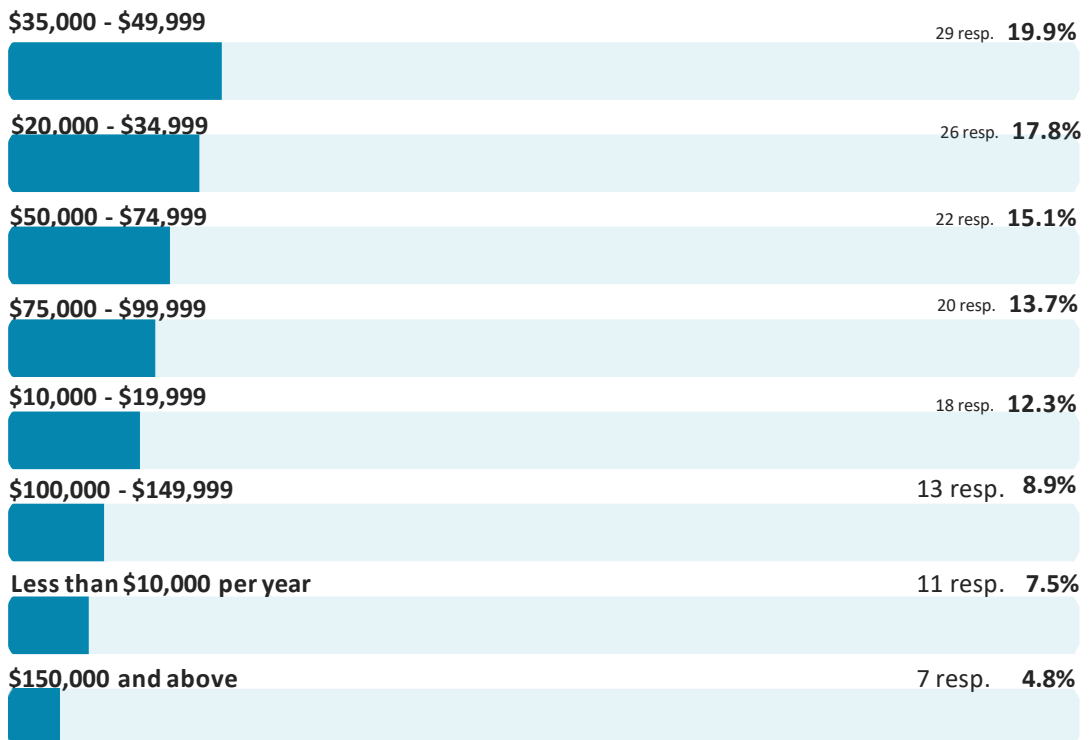
How many individuals in your household have a disability of some kind?

146 out of 146 answered



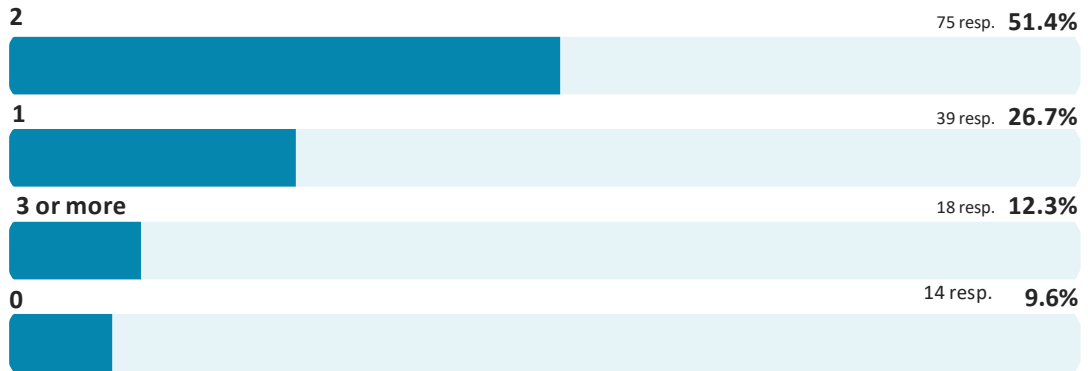
What is your annual household income?

146 out of 146 answered



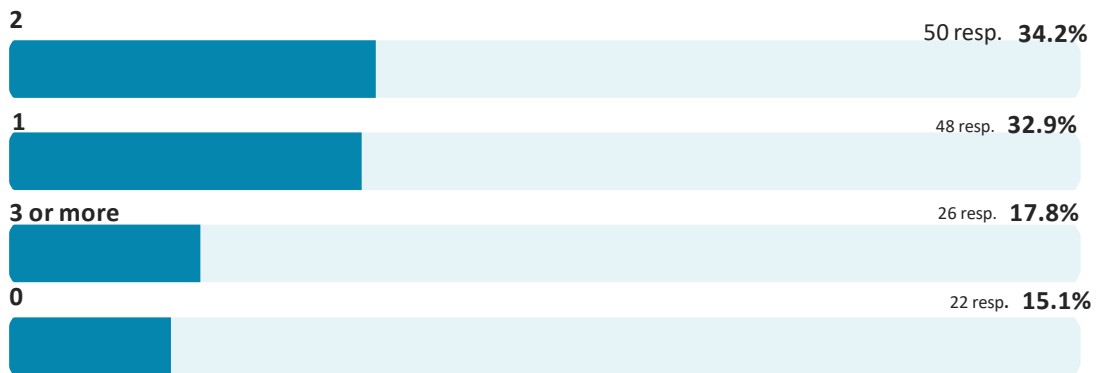
How many people in your household have a valid drivers license?

146 out of 146 answered



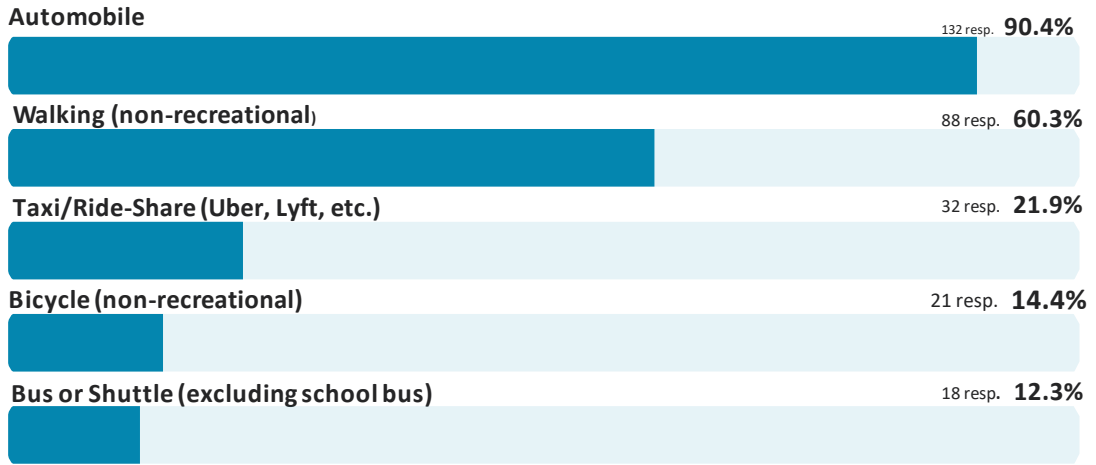
How many reliable vehicles does your household own or lease?

146 out of 146 answered



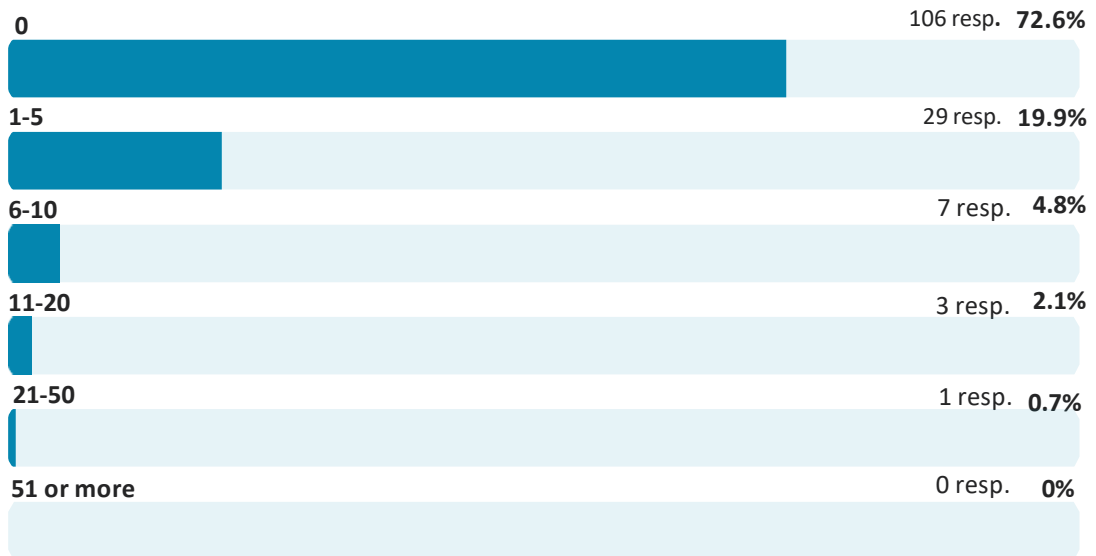
In the past year, what forms of transportation have been used by anyone in your household? (Check all that apply)

146 out of 146 answered



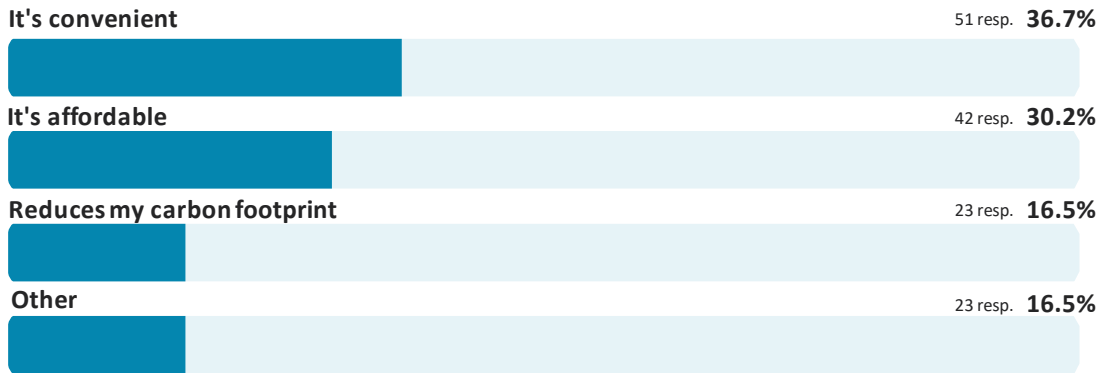
In the past year, how many times has anyone in your household used a transit service of any kind (e.g. SMTS, Greyhound, courtesy service of a church or doctor's office, etc.), excluding school buses?

146 out of 146 answered



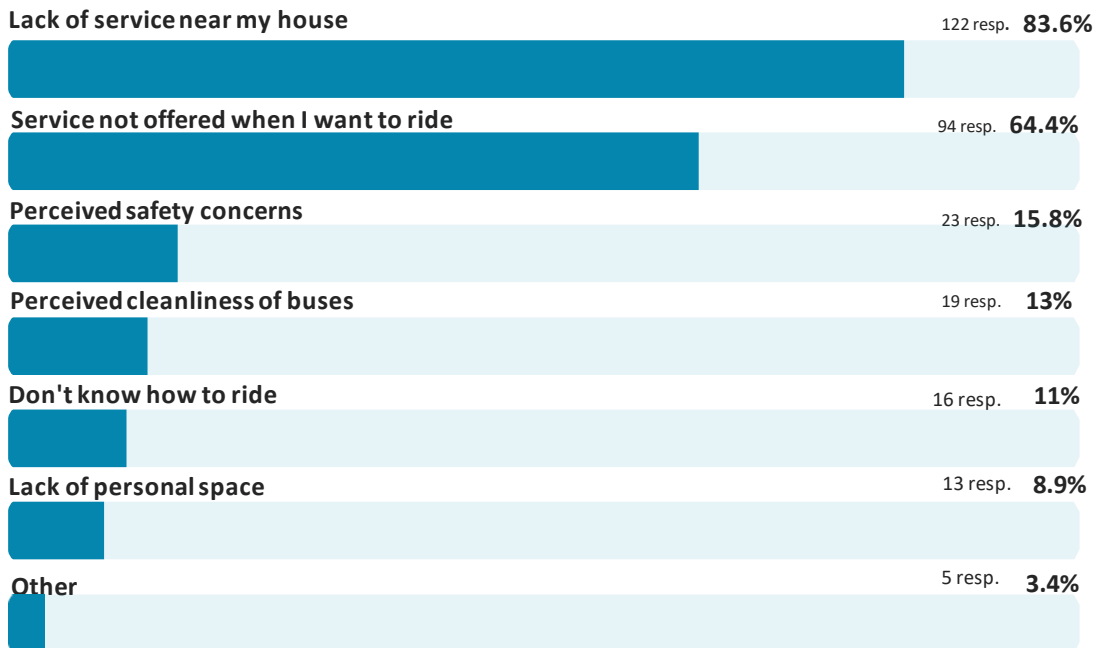
What is the primary reason for selecting public transportation?

139 out of 146 answered



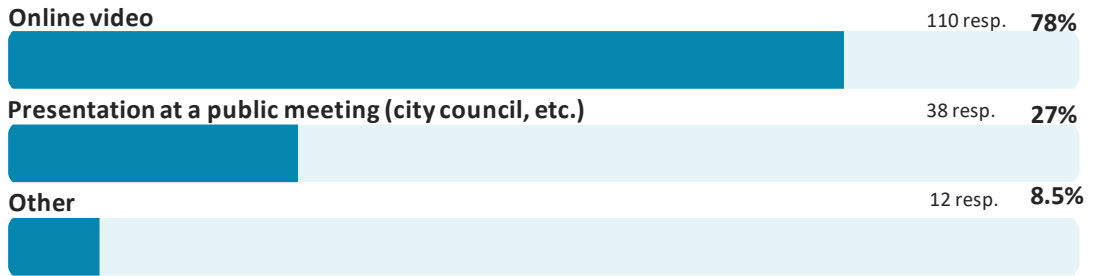
What are the factors that *might* keep you from using public transportation?

146 out of 146 answered



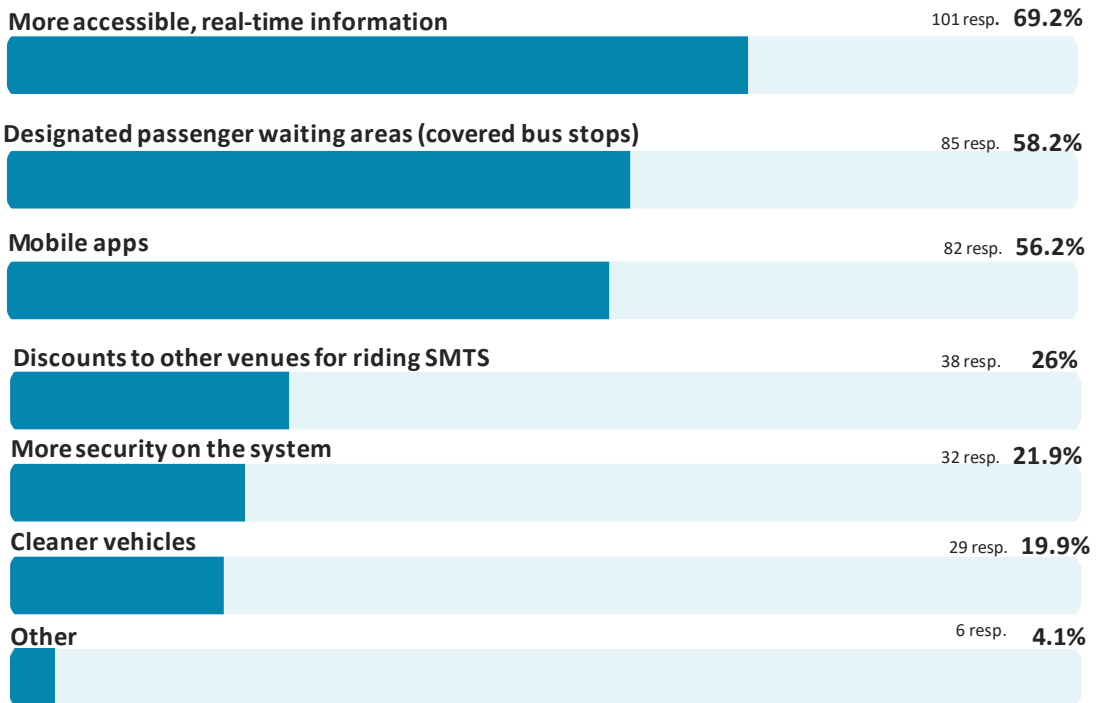
If you don't know how to ride public transportation, how would you like to learn more about it?

141 out of 146 answered



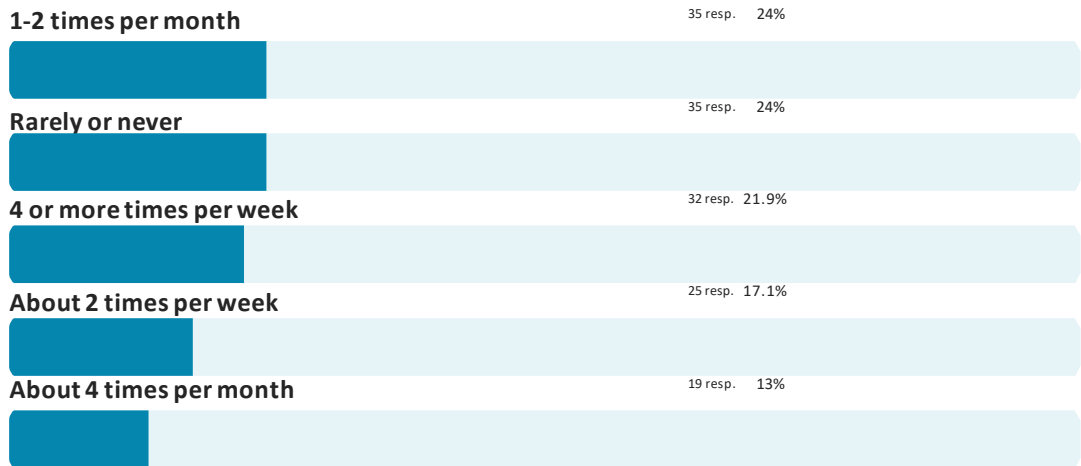
What could SMTS offer that would make taking public transportation more attractive to you?

146 out of 146 answered



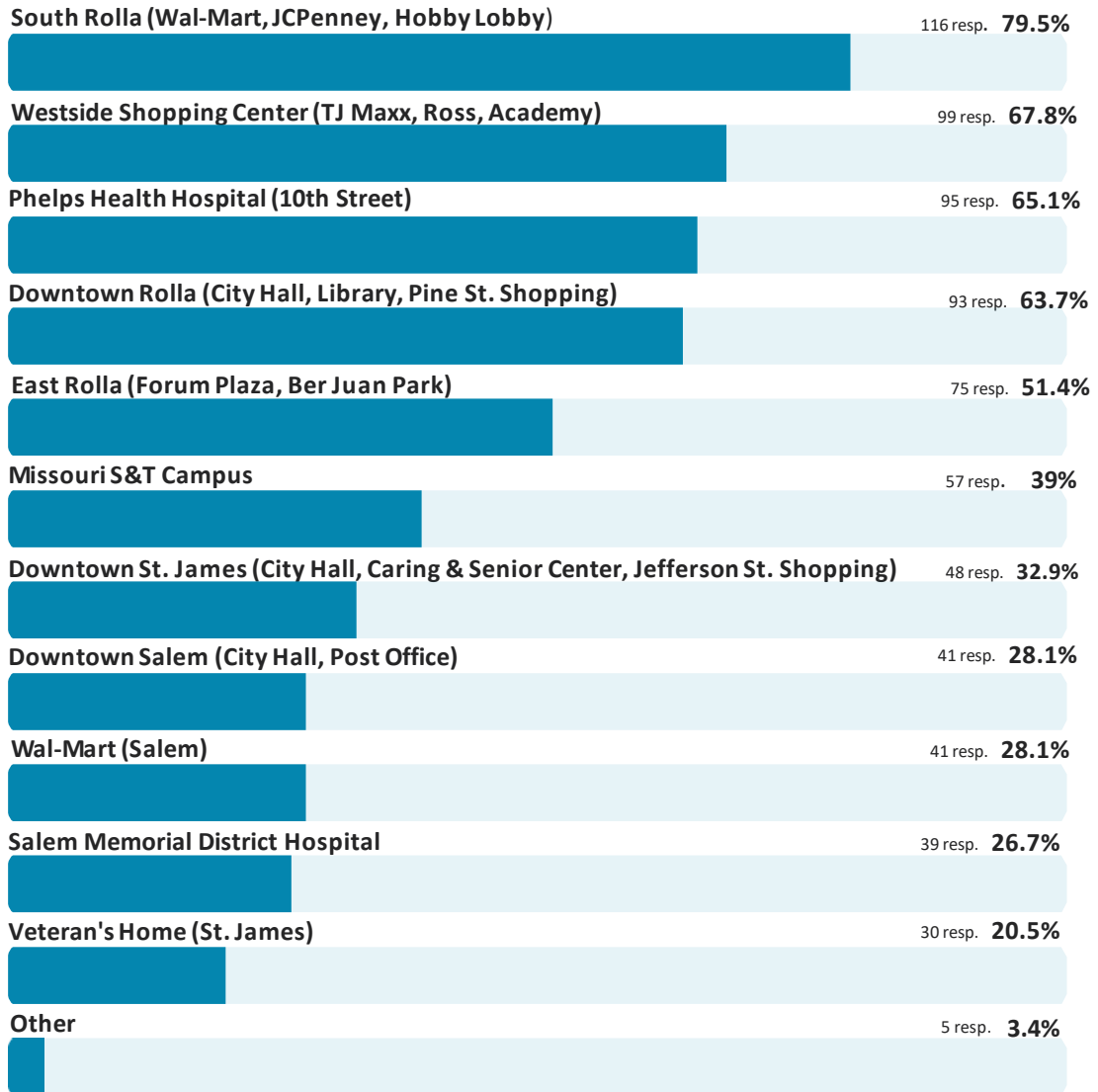
How often do you think you would use a deviated fixed-route transit service for a daily (unlimited rides) fee of \$3?

146 out of 146 answered



**In what areas would you want to have a deviated fixed-route transit service stop?
(Check all that apply. If "other", please type in proposed destination or transit stop.)**

146 out of 146 answered



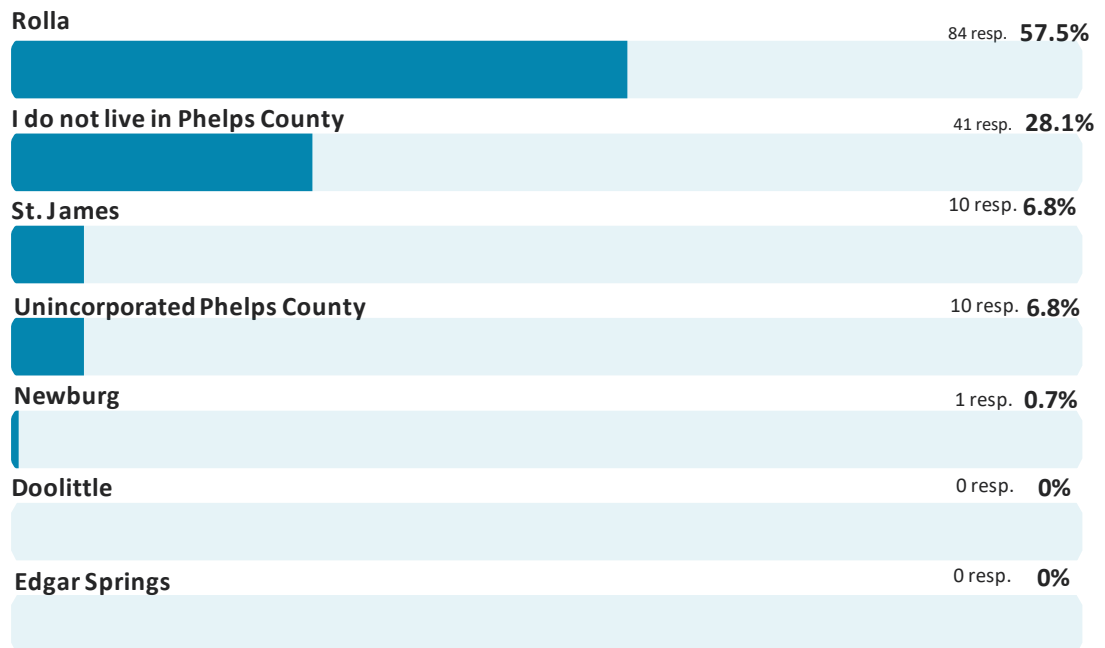
Do you have a smart phone?

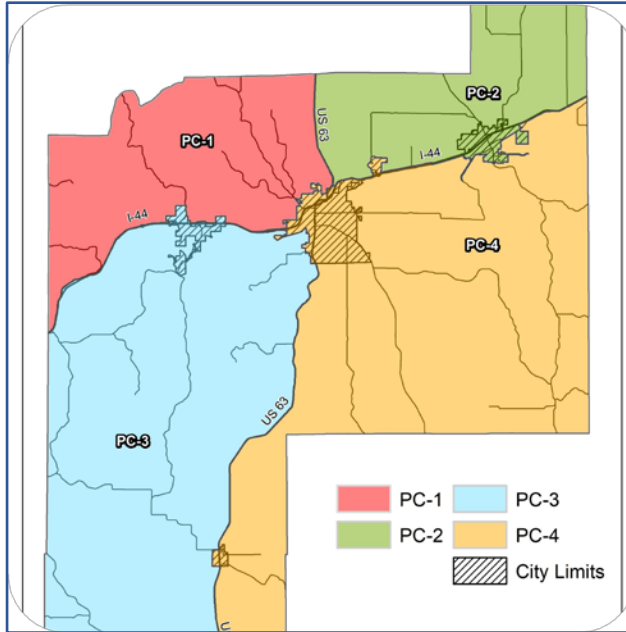
146 out of 146 answered



In what part of Phelps County do you reside?

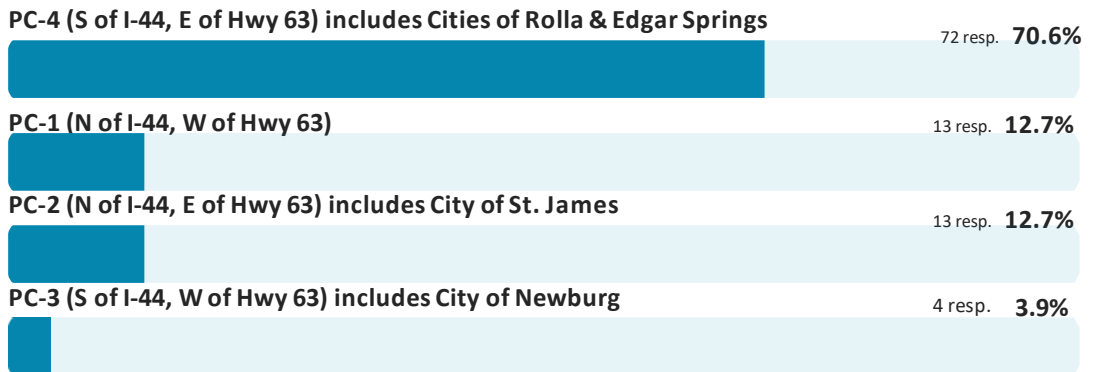
146 out of 146 answered

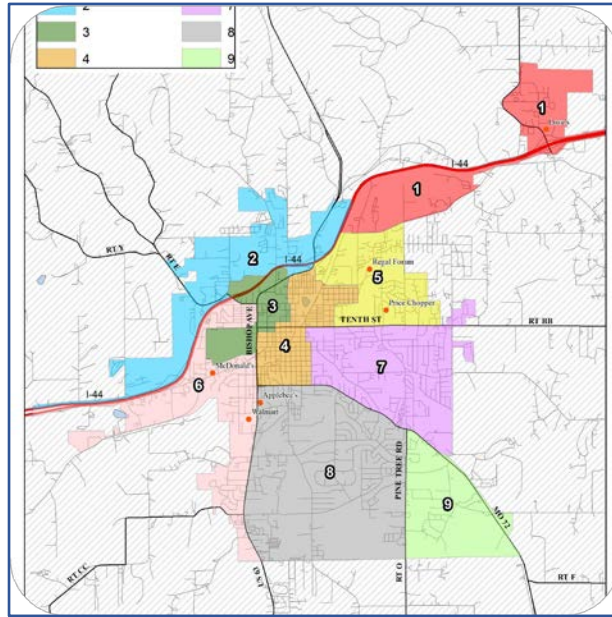




Using the map of Phelps County, in what area of the county do you live?

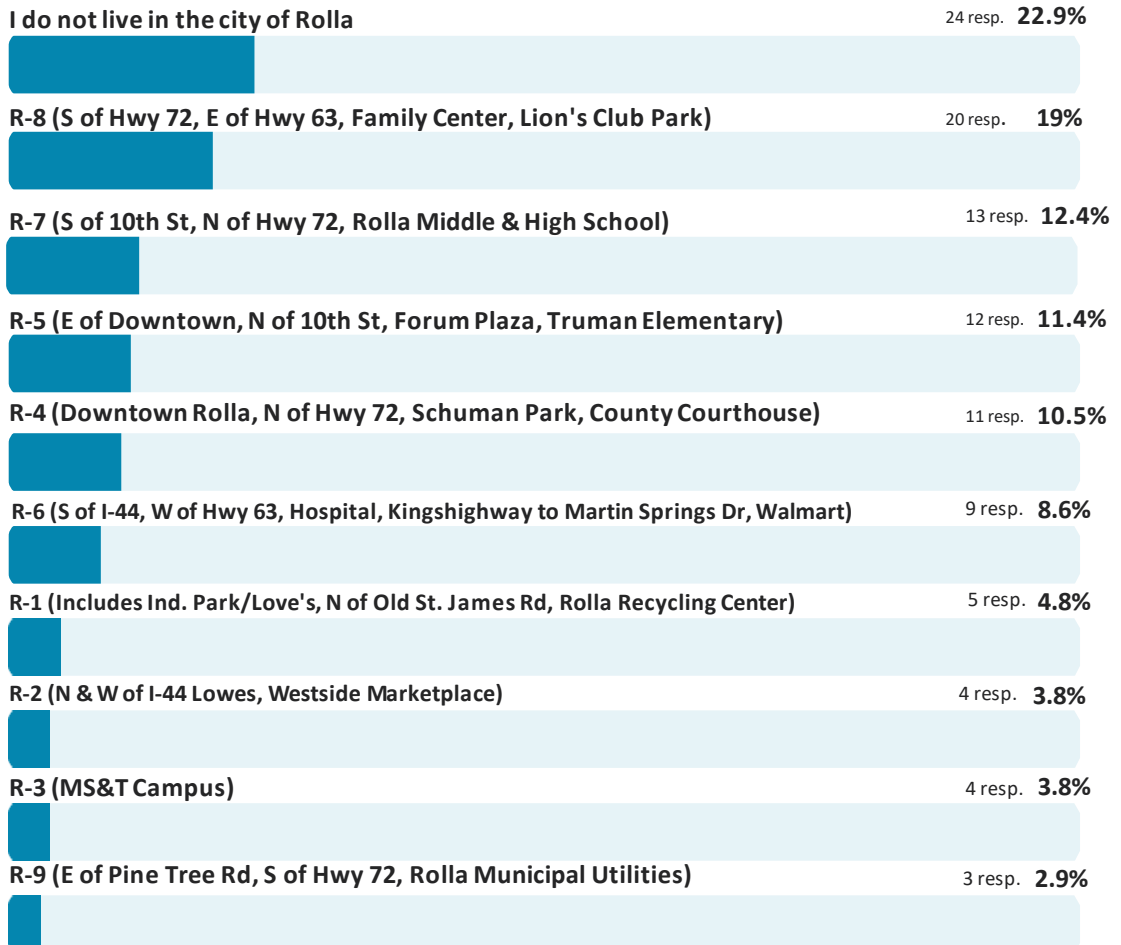
102 out of 146 answered

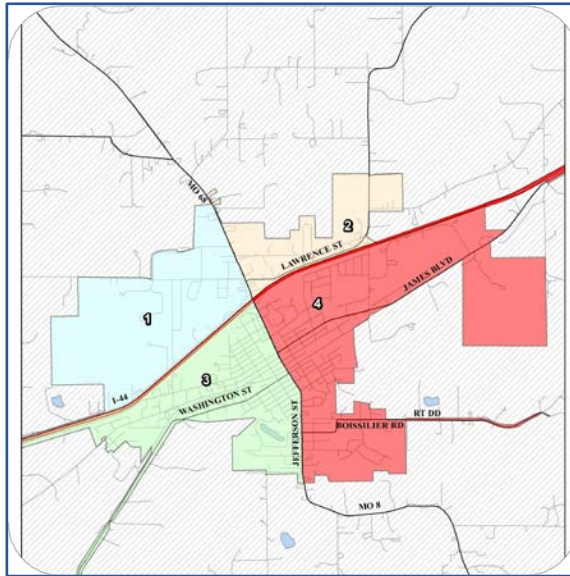




Using the map of Rolla, in what area of the city do you live?

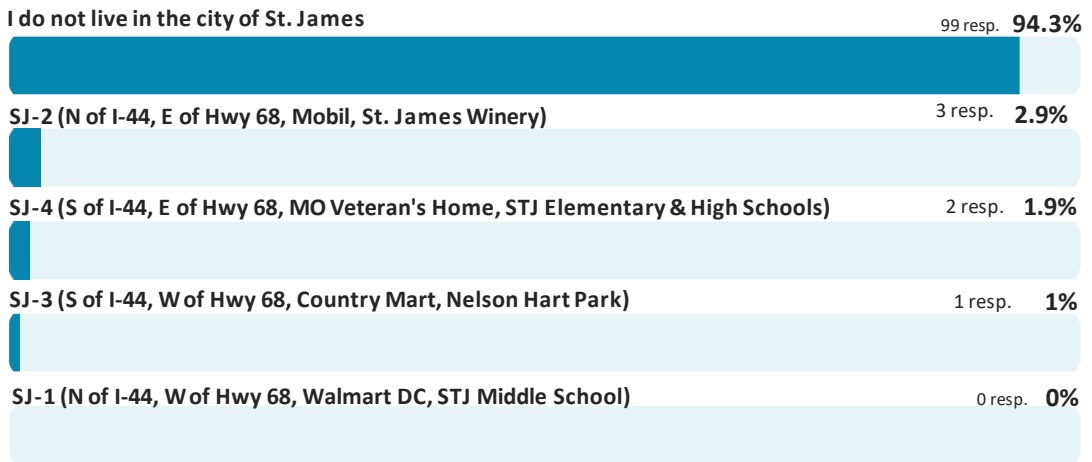
105 out of 146 answered





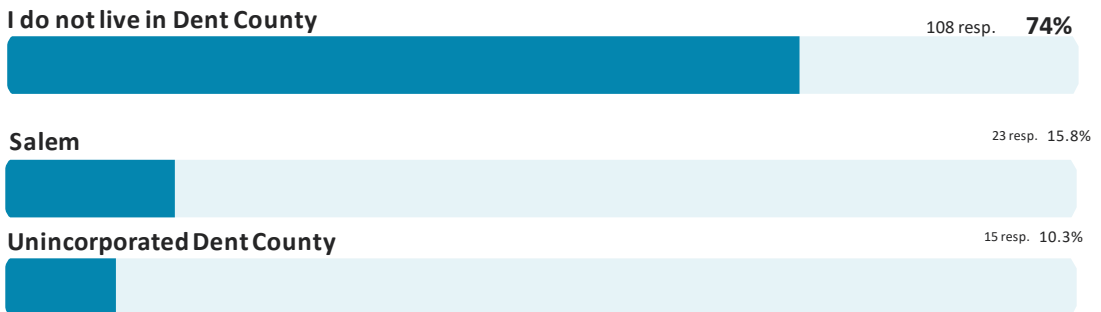
Using the map of St. James, in what area of the city do you live?

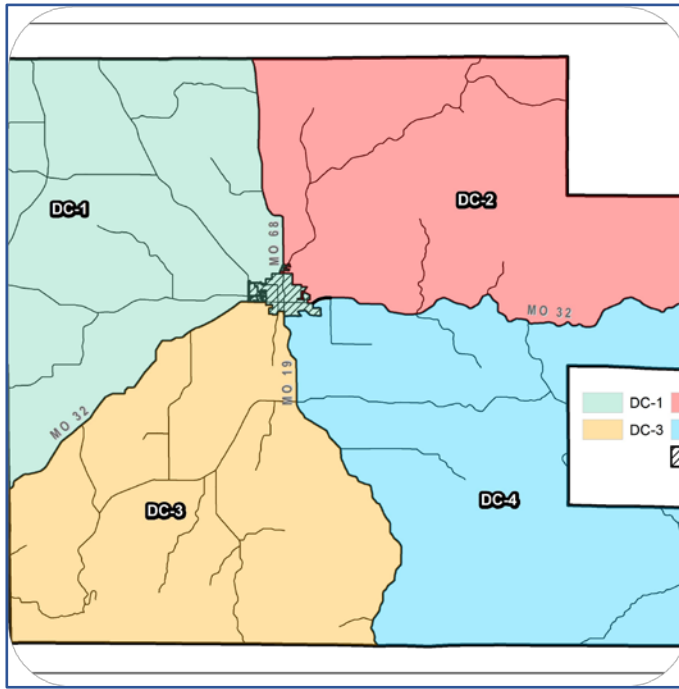
105 out of 146 answered



In what part of Dent County do you reside?

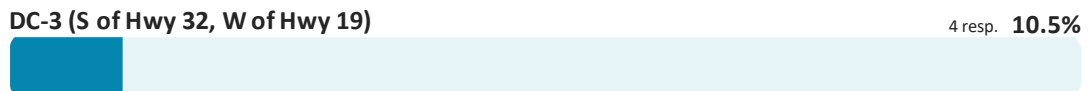
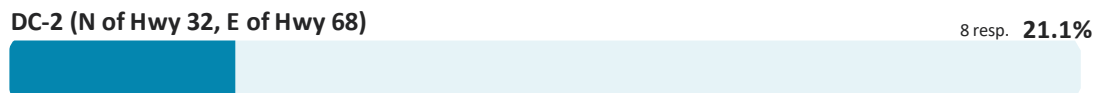
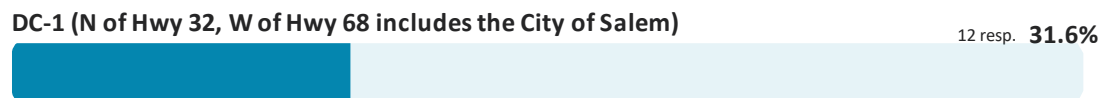
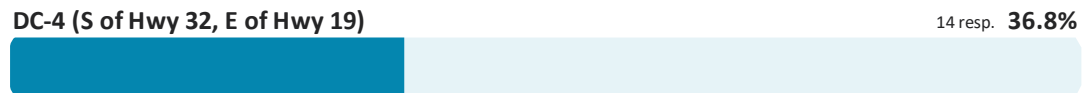
146 out of 146 answered

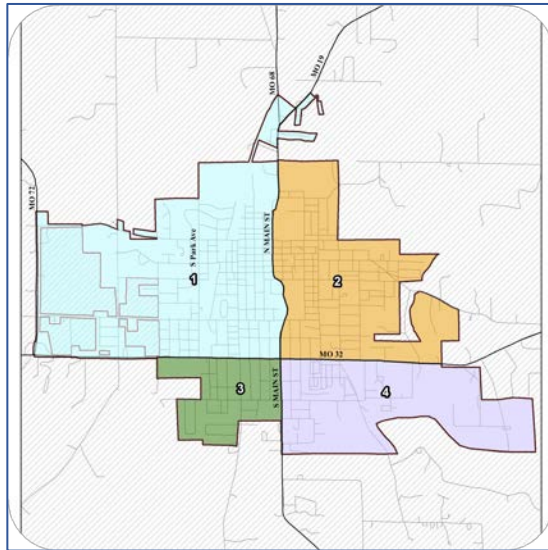




Using the map of Dent County, in what area of the county do you live?

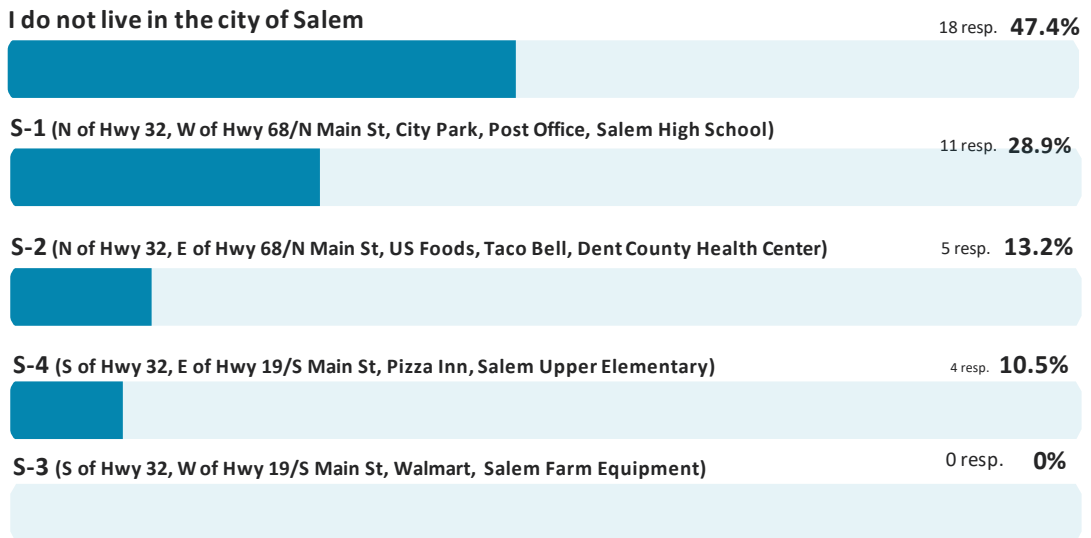
38 out of 146 answered





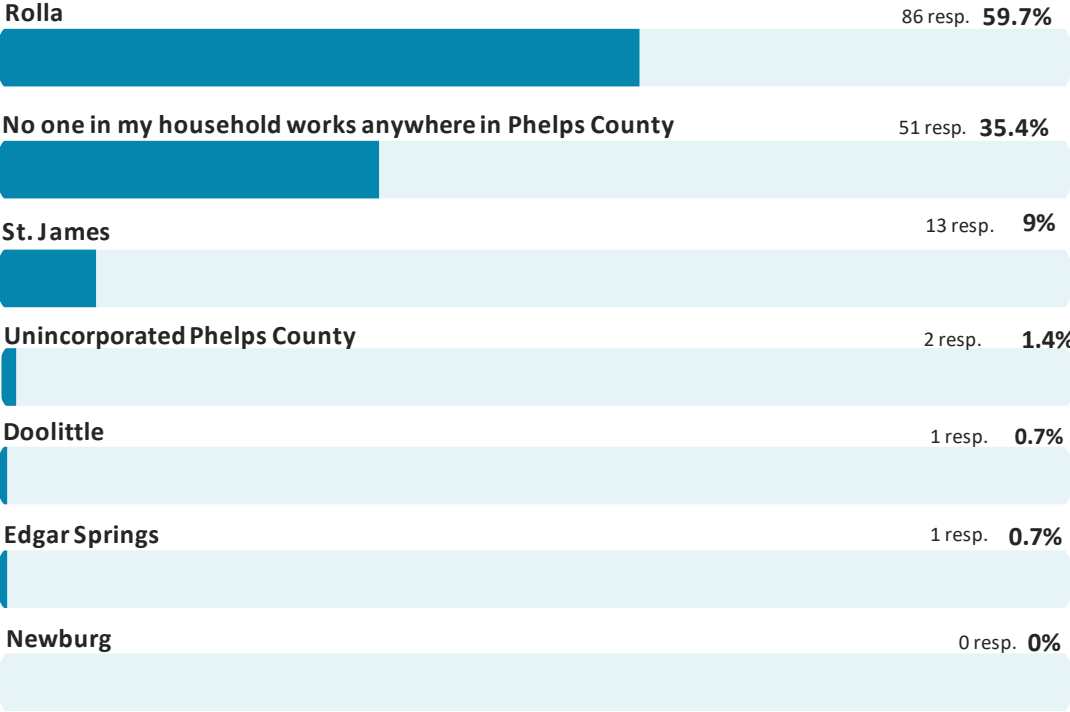
Using the map of Salem, in what area of the city do you live?

38 out of 146 answered



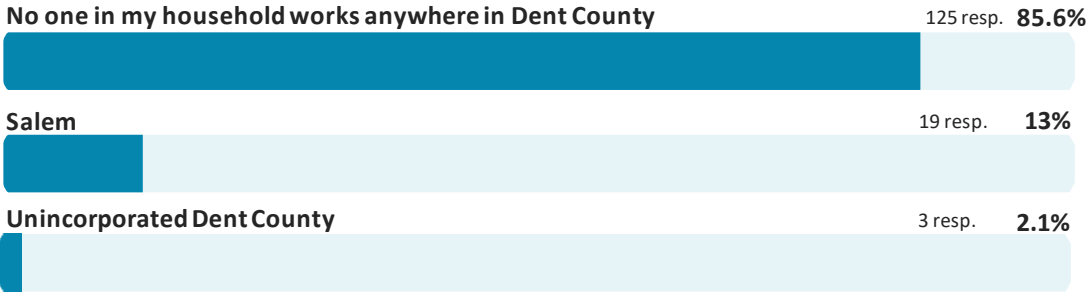
In what parts of Phelps County do individuals in your household work? (Select all that apply)

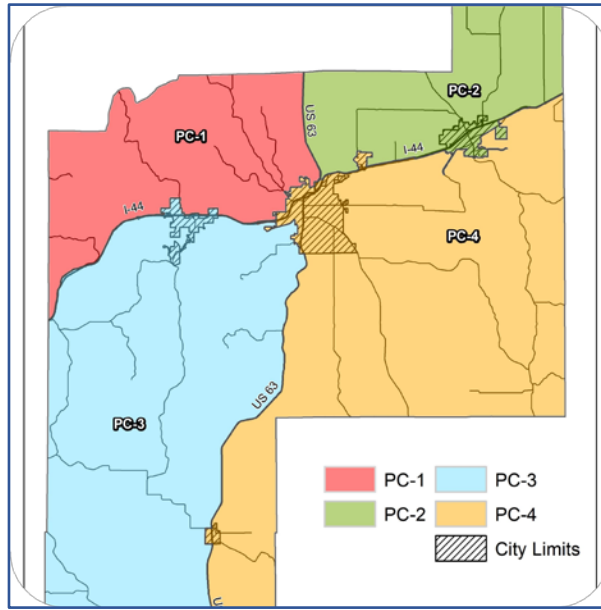
144 out of 146 answered



In what parts of Dent County do individuals in your household work? (Select all that apply)

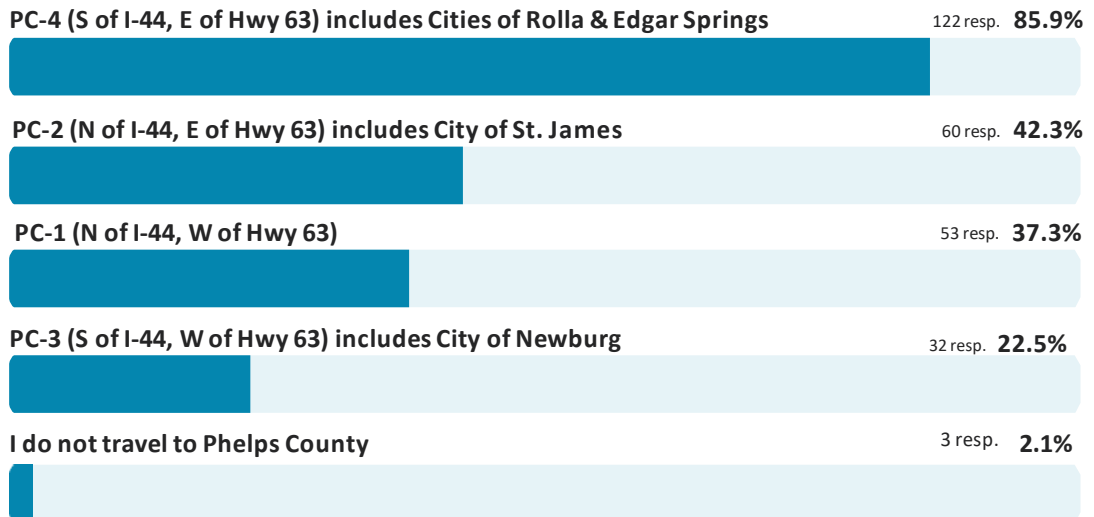
146 out of 146 answered

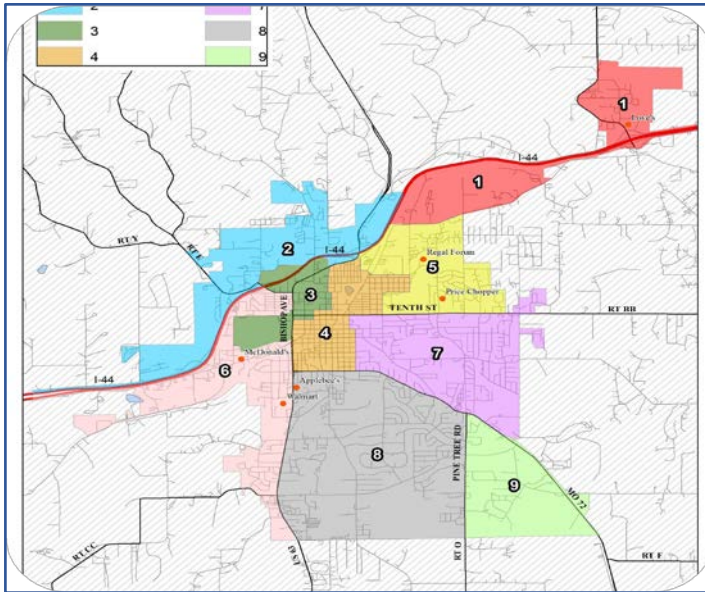




Using the map of Phelps County, what areas of the county do members of your household frequently travel to for any reason? (Select all that apply)

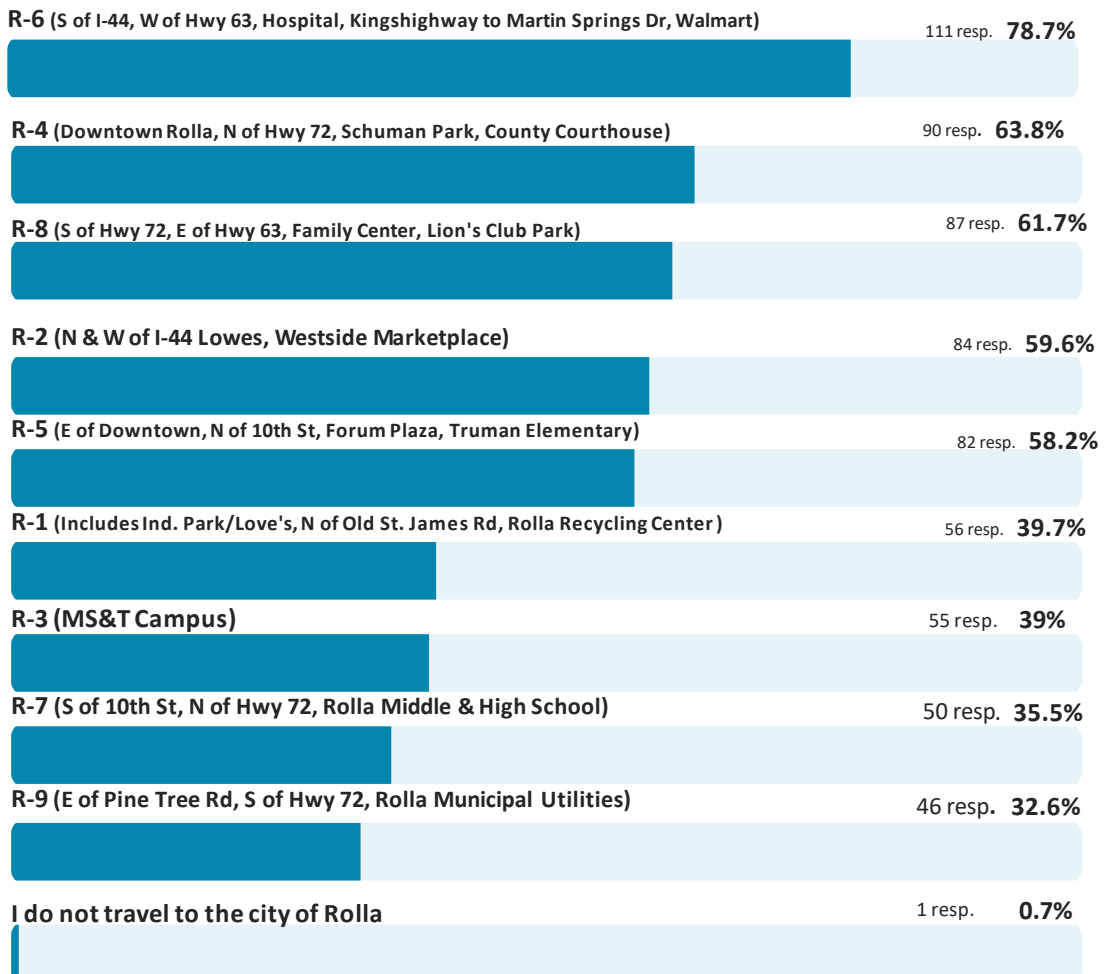
142 out of 146 answered

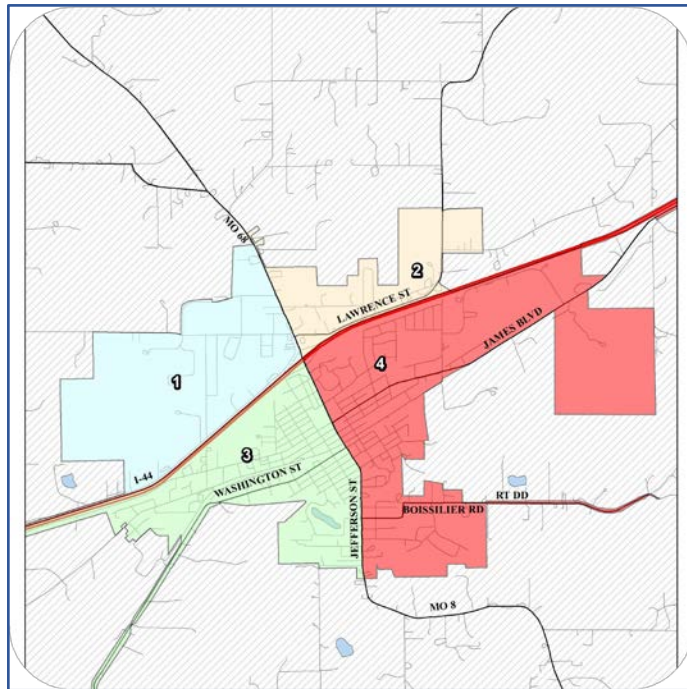




Using the map of Rolla, what areas of the city do members of your household frequently travel to for any reason? (Select all that apply)

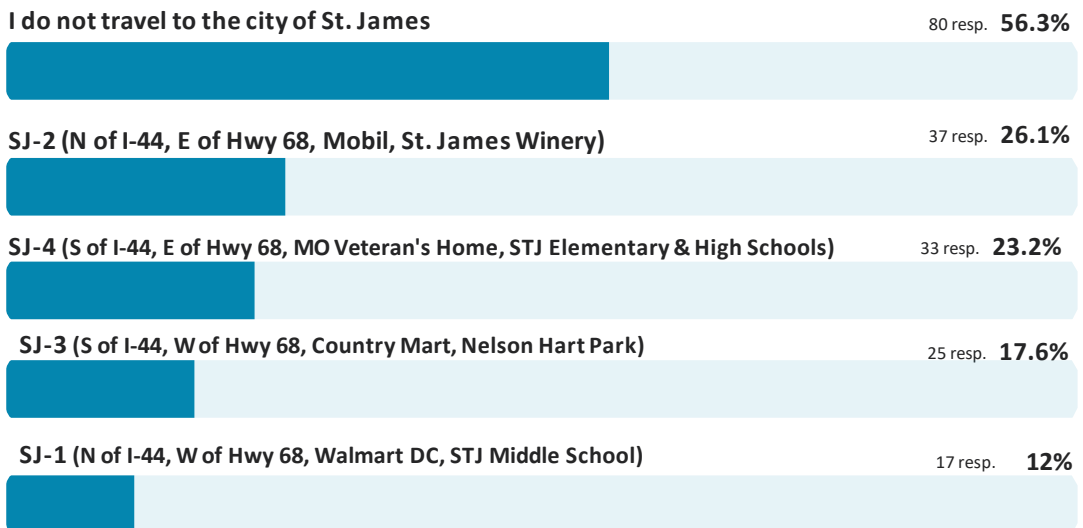
141 out of 146 answered





Using the map of St. James, what areas of the city do members of your household frequently travel to for any reason? (Select all that apply)

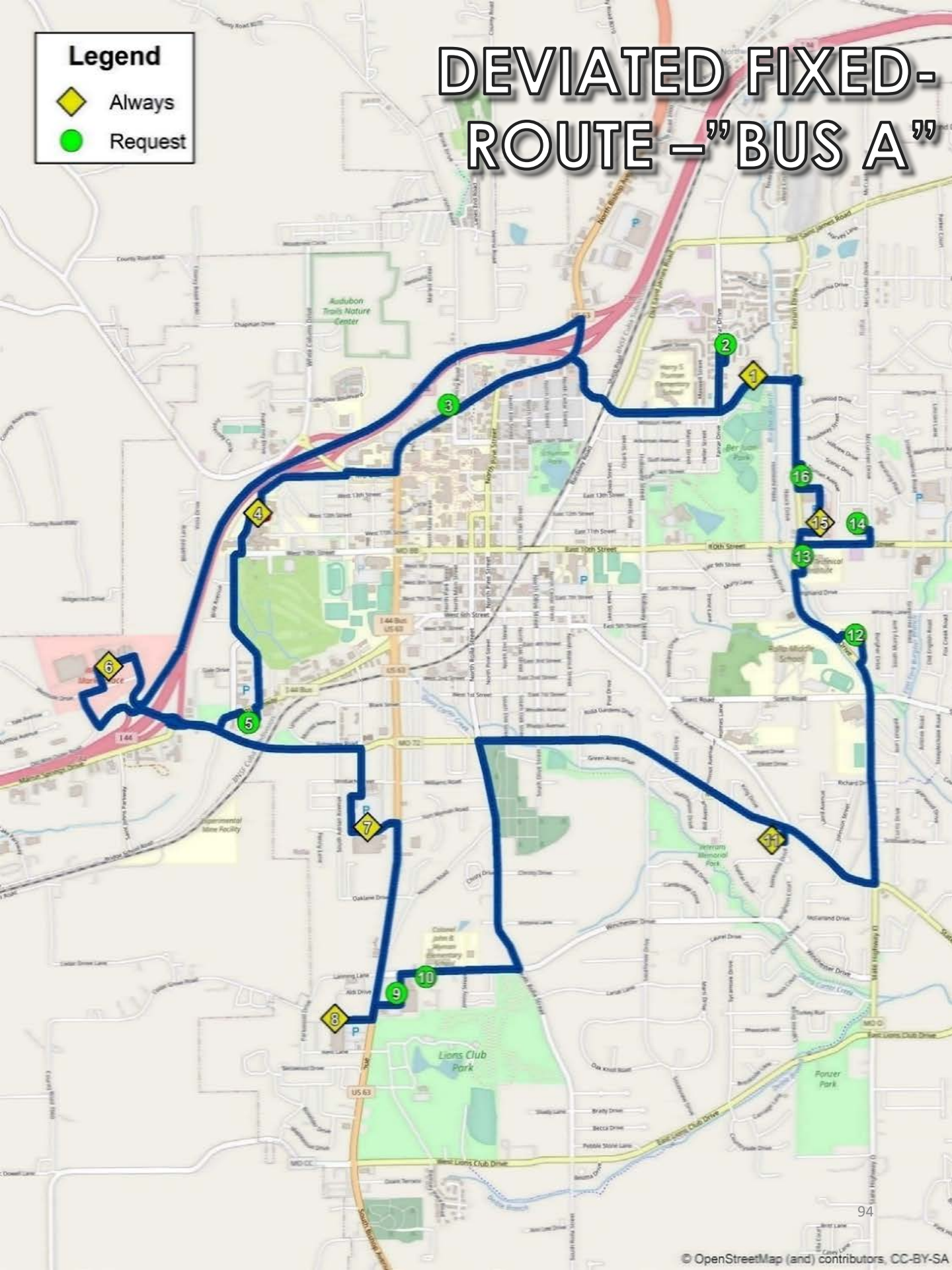
142 out of 146 answered



DEVIATED FIXED-ROUTE – "BUS A"

Legend

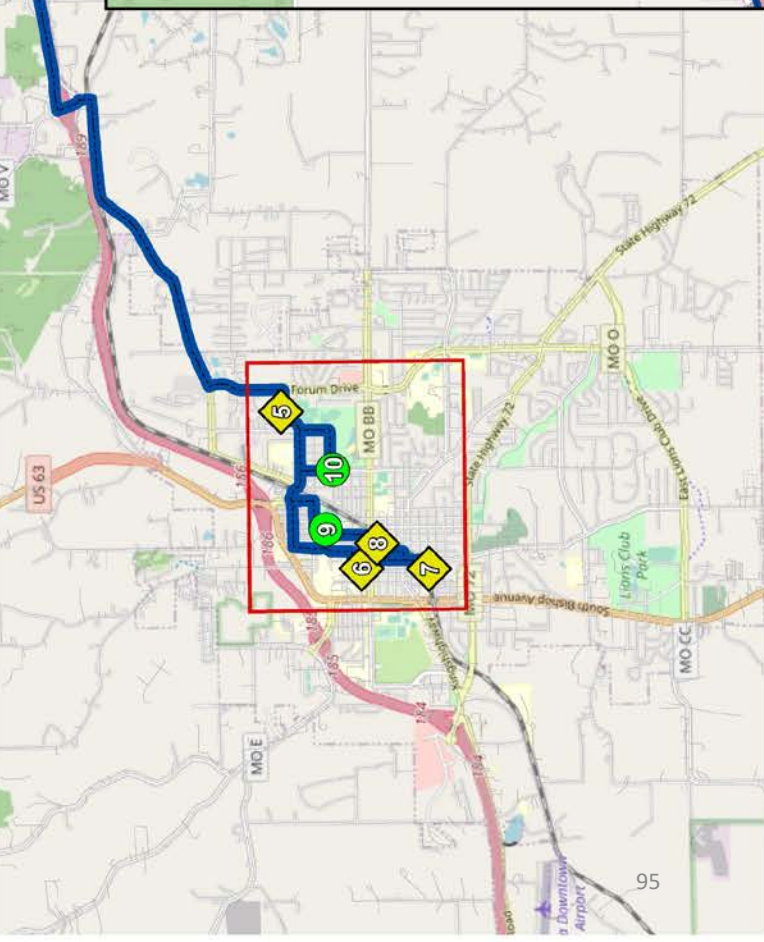
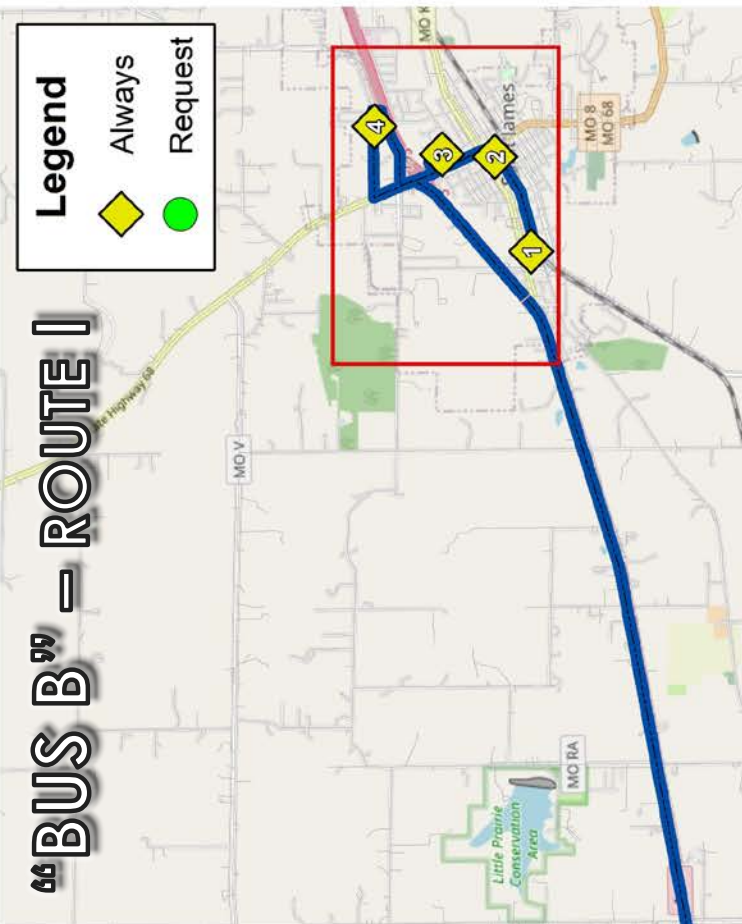
-  Always
-  Request



"BUS B" - ROUTE 1

Legend

-  Always
-  Request



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“BUS B” - ROUTE II

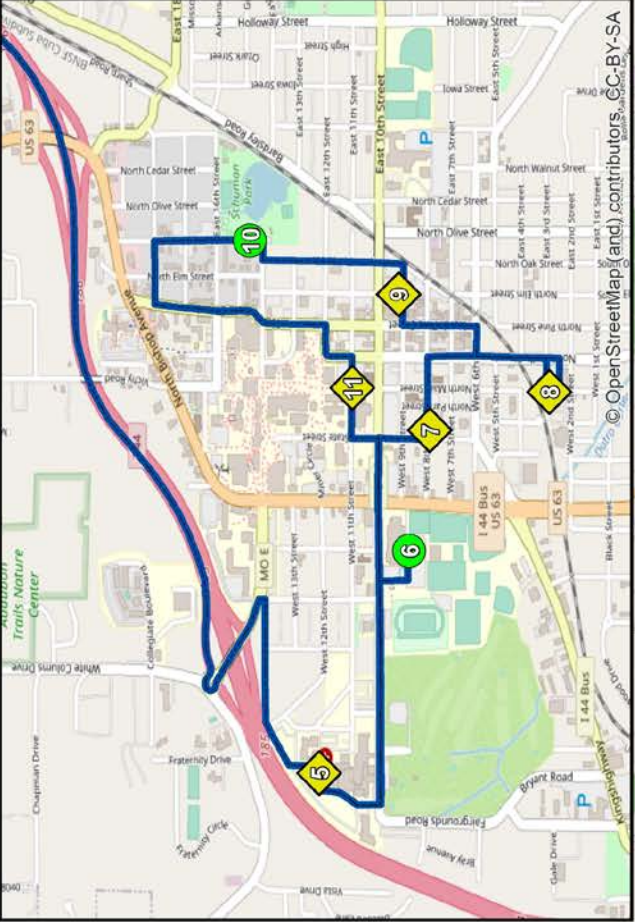
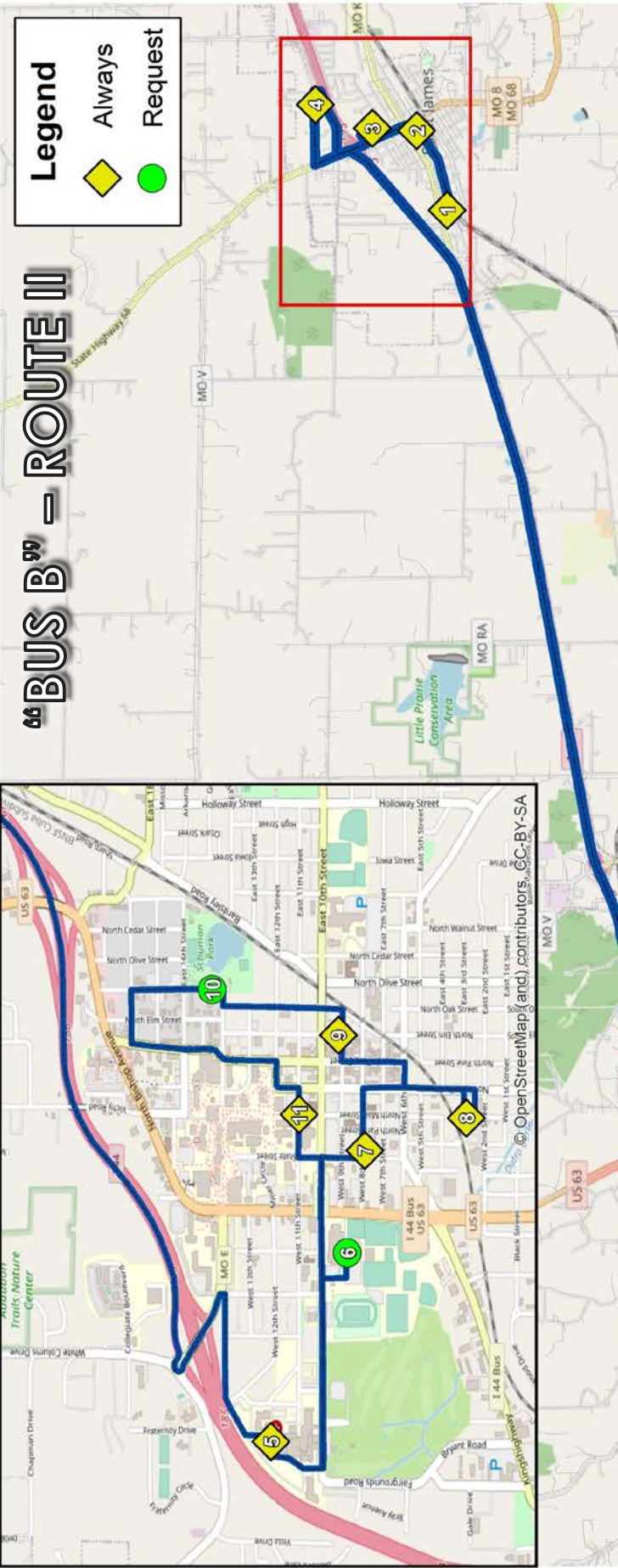
Legend



Always



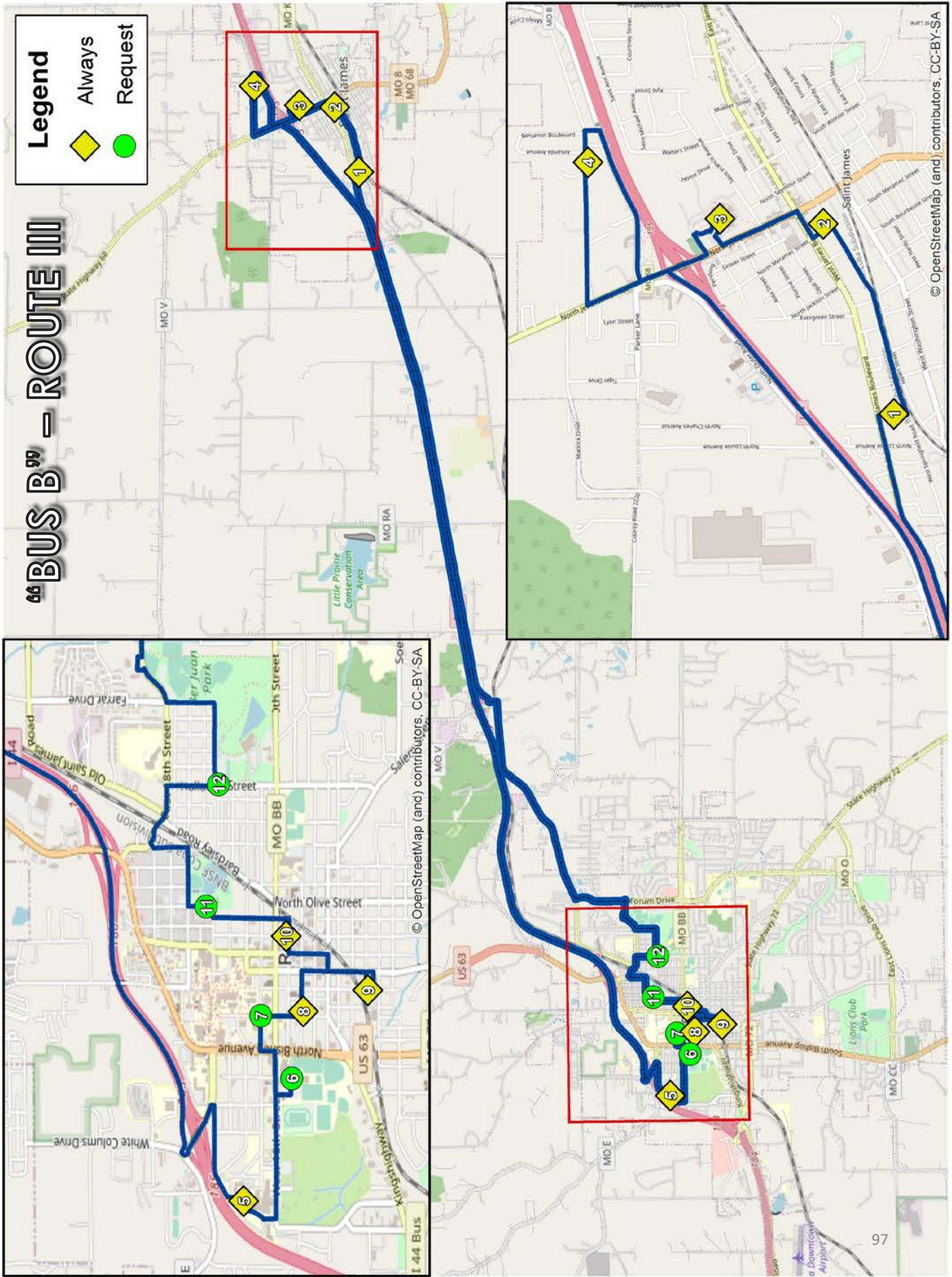
Request



BUS B⁹⁹ - ROUTE III

Legend

- ◆ Always
- Request



APPENDIX III

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