REGIONAL BICYCLE & PEDESTRIAN PLAN

Adopted April 18th, 2018

SEMPO Southeast Metropolitan Planning Organization

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Dedicated in Memory of Steve Gerard

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Introduction

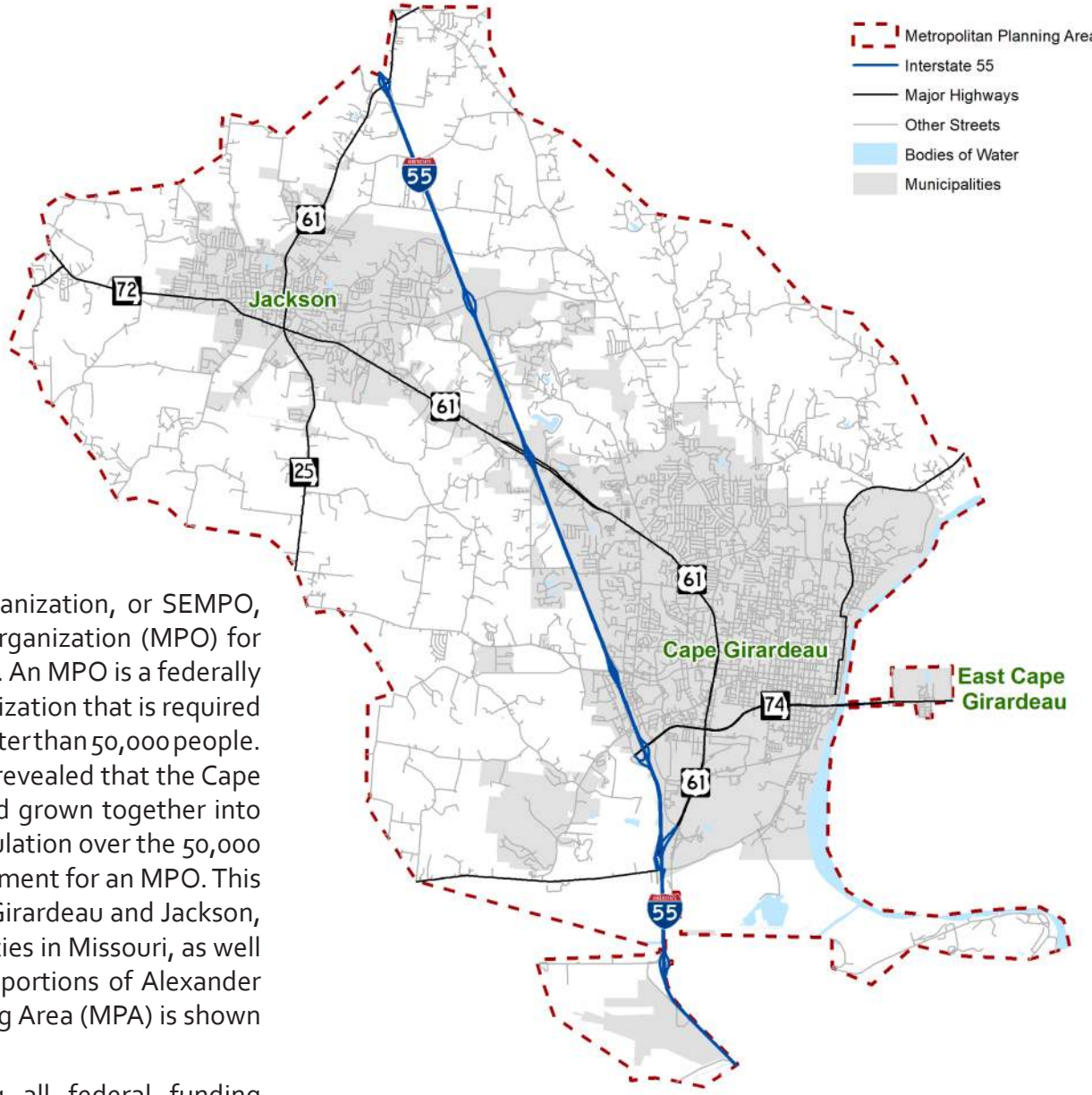
The SEMPO Regional Bicycle and Pedestrian Plan (the Plan) will guide future investments in non-motorized transportation infrastructure throughout the region, as well as provide recommendations on educational programming, enforcement, and performance measures to help ensure that the public feels safe about the region's transportation system.

In recent years, government agencies around the country have been starting to realize the health, safety, economic, and environmental benefits of investing in non-motorized transportation infrastructure at many scales. Getting more people to use active transportation can help reduce obesity and heart disease, thereby reducing long-term medical costs for the public. Providing a safe and protected transportation system for all modes of transportation helps to save lives and reduce the frequency and severity of crashes. Investing in non-motorized transportation infrastructure can help increase nearby property values and can be a key factor in attracting jobs, retaining young workers and families, and allowing the elderly to age in place for longer. These investments can also lead to reduced pollution and congestion on the region's roadways. The Southeast Metropolitan Planning Organization (SEMPO) understands the value of planning for and investing in non-motorized transportation infrastructure and has adopted the Plan to advance these principals.

What is SEMPO?

The Southeast Metropolitan Planning Organization, or SEMPO, is the designated metropolitan planning organization (MPO) for the Cape Girardeau-Jackson urbanized area. An MPO is a federally mandated and funded policy-making organization that is required for all urbanized areas with a population greater than 50,000 people. SEMPO was formed after the 2010 Census revealed that the Cape Girardeau and Jackson urbanized areas had grown together into one, large urbanized area, pushing the population over the 50,000 person threshold and triggering the requirement for an MPO. This urbanized area includes the Cities of Cape Girardeau and Jackson, portions of Cape Girardeau and Scott Counties in Missouri, as well as the Village of East Cape Girardeau and portions of Alexander County in Illinois. The Metropolitan Planning Area (MPA) is shown in **Map 1**.

SEMPO is responsible for administering all federal funding for transportation projects throughout the region, including highways, trails, sidewalks, ports, airports, railroads, and transit



Map 1. SEMPO Metropolitan Planning Area
Source: SEMPO

investments, as well as performing regional planning studies. SEMPO has fulfilled all of its federal requirements, and this Regional Bicycle and Pedestrian Plan is the first plan prepared that is not mandatory, reflecting SEMPO's commitment to improving the region's non-motorized transportation infrastructure network and fostering a climate of safety and encouragement for all ages to experience the region on foot or bicycle.

Vision Statement & Goals

The following vision statement and goals were developed in conjunction with the Study Oversight Team to help guide the development of the Plan as well as the future of transportation investments in the SEMPO region. These qualities are intended to reflect community values and priorities, help the region provide a balanced and safe system for all modes of transportation, and instill a sense of purpose and equality when planning for future generations.

Vision Statement

> ***"The SEMPO Regional Bicycle & Pedestrian Plan will provide a path towards creating a safe and practical comprehensive transportation network grounded in a combination of infrastructure and education. The network will connect local and regional attractions, and be accessible for all ages, abilities, and incomes."***

Goal 1

- Identify existing deficiencies and develop a priority list to improve safety on existing infrastructure and multi-modal crossings.

Goal 2

- Improve and expand the existing system of on- and off-road facilities connecting local and regional destinations.

Goal 3

- Promote use of the transit network by providing accessible connections between non-motorized transportation infrastructure and transit routes.

Goal 4

- Implement education and encouragement campaigns to inform the public of the health, social, and economic benefits of active transportation.

Goal 5

- Pursue funding opportunities for both multi-modal infrastructure improvements and education campaigns.

The "Five E's +"

The planning process has involved a multi-faceted approach to achieving the Plan's goals. Infrastructure investments alone won't be enough to create a major shift in the region's preferences toward more active transportation. The "Five E's" approach is a popular and widely-utilized method for performing well-rounded planning studies to ensure that too much focus is not provided to a single piece of the multi-modal puzzle. The Five E's are:

- Engineering – the infrastructure of the bicycling and walking network that is most visible to citizens;
- Education – the training and skills improvement for all ages, in addition to a wide dissemination of information regarding the safety and social benefits to a robust multi-modal network;
- Encouragement – includes both public and private efforts to foster a more active community;

- Enforcement – training officers and administering laws to compel the public to follow the rules of the road to create a safer environment for all modes of transportation; and
- Evaluation – assess the implementation of the Plan in terms of the quantity and quality of the active transportation system to ensure it achieves the community's mobility goals.

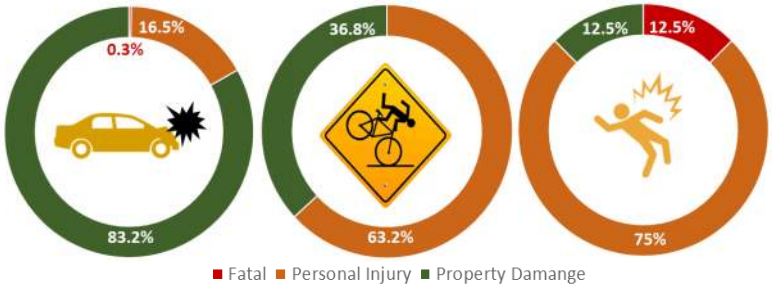
A sixth 'E' has been added to the list in recent years to make what is now referred to as the 'Five E's +'. The final 'E', which functions as an overarching theme for all of the other facets, is Equity. This facet ensures that the Plan, and recommendations within it, make specific efforts to serve the populations that need access the most. Low-income households, zero-vehicle households, and students are among those that need to be efficiently and directly served by the multi-modal network and programming to make key positive impacts in the region.

Why Invest in Pedestrian & Bicycle Infrastructure?

Walking, jogging, cycling and other forms of active transportation provide a variety of safety, social, economic, and environmental benefits. These benefits include, but are not limited to:

- **Improving Safety:** adding more protected bicycle and pedestrian infrastructure, safer roadway crossings, and providing adequate education for both active transportation users and drivers has proven to reduce traffic-related deaths and serious injuries. If a pedestrian is struck at 20 mph, their chance of survival is 95%; however, if they are stuck at 30 mph, their chance of survival is shown to be between 55% and 60%, and at 40 mph, chance of survival is only around 15%.

SEMPO Metropolitan Planning Area Crashes (2014-2016)



- **Providing More Transportation Options:** since the mid-20th Century, the private car has been the dominant mode of travel throughout the SEMPO region. Providing options for those who cannot or choose not to own a vehicle provides more opportunities for work, shopping and recreation than are currently available.
- **Improving Public Health:** a connected transportation network allows for more exercise and recreational opportunities for local residents. Incorporating physical activity into daily routines helps reduce obesity and improve overall health. Having healthier members of society in turn have financial benefits for the economy, with fewer missed days at work and

Table 1. Benefits from Bicycling and Walking - Rails to Trails Conservancy

FACTORS OF INTEREST	STATUS QUO	MODEST SCENARIO	SUBSTANTIAL SCENARIO
Avoided driving (billion miles per year)	23	69	199
Fuel Saving (billion gallons per year)	1.4	3.8	10.3
CO_2 emission reductions (million tons per year)	12	33	91
Physical activity (average daily minutes per person)	3	5	9
Monetary value of the above benefits ($ billion per year)	**4.1**	**10.4**	**65.9**

lower healthcare costs.

- **Increasing Property Values:** amenities such as trails, sidewalks, and bike lanes can increase a neighborhood's desirability and property values. Many young families and recreation enthusiasts may pay more for a house if it is located near desirable outdoor recreation opportunities.
- **Supporting Economic Development:** an extensive multi-modal transportation network can attract bicyclists and other visitors from throughout the SEMPO region and beyond, who will patronize local businesses during their trips.
- **Reducing Pollution:** replacing automobile trips with walking and biking reduces greenhouse gas emissions from private vehicles, improving local air quality.

Benefits of Active Transportation

A study by Rails to Trails Conservancy (RTC) in 2008 showed that an increase in active transportation produces significant monetary benefits. In the report, titled *Active Transportation for America*, RTC quantifies the benefits from bicycling and walking in the areas of transportation, oil dependence, climate change, and public health. For a modest scenario, where a 13% increase in bicycling and walking was assumed, RTC quantified the change as $10.4 billion per year throughout the United States.[1]

As described and quantified in the RTC report, the Plan aims to contribute in addressing several complex and interrelated issues present in the SEMPO region, such as traffic congestion, air quality, climate change, etc. It is also hoped that that the recommended changes will help improve livability and public health of the community as a whole. Below are some ways in which the Plan aims to improve the community:

Environmental Benefits

Undoubtedly, walking and cycling are the greenest ways of traveling. Leaving your vehicle home and walking or cycling would:

- Cut down on greenhouse gas emission;
- Reduce noise pollution and congestion;
- Reduce the need for new parking lots and roadways, thereby reducing heat islands;
- Leave ample space for green development;
- Reduce ecological footprint; and

1 RTC. (2008). *Active Transportation for America*. The Case for Increased Federal Investment in Bicycling and Walking. From: https://www.railstotrails.org/resourcehandler.ashx?id=2948. Accessed on: October 3, 2017.

- The land used for bike and pedestrian infrastructure can be more easily made a part of a city's green infrastructure compared to vehicular roadways.

Economic Benefits

Bicycling and walking is economically advantageous to both individuals and communities:

- According to the Active Transportation Alliance, Chicago, the annual operating costs for bicycle commuters are 0.2% to 3.5% of those for automobile commuters ;[2]
- Motor vehicles cause more wear and tear on roads than bicycling and walking and require expensive maintenance and operating work; and
- Finally, a significant shift from vehicular trips to bike trips would reduce the need for improvements and roadway expansion projects.

Livability/Community Life Benefits

Active transportation is an important factor in designating livability standards:

- Walkable and bike friendly communities are likely to be more engaged, socially active, and residents are more likely to know their neighbors;

- Communities accessible via active transportation have to be built in a more compact manner and thus avoid the issues that accompany urban sprawl, such as mental and physical stress, seclusion, etc.;[3]
- Children, as well as the elderly, are more independent in communities where walking and biking is a viable transportation option;

2 Active Transportation website: http://www.activetransportation.org/costs.htm

3 Leyden, K. 2003. *Social Capital and the Built Environment: The Importance of Walkable Neighborhoods*. American Journal of Public Health 93: 1546–51

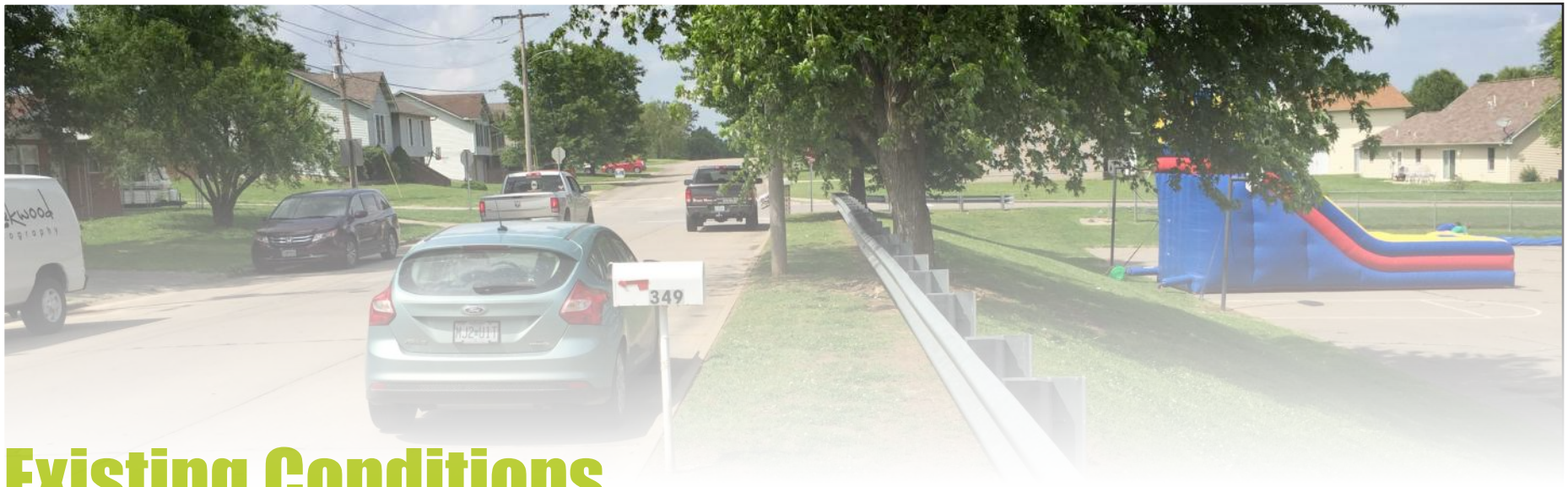
- Reduced noise and air pollution as well as potential increases in the aesthetic quality of a community;
- Bicycling and walking offers more opportunities of interacting with neighbors;
- With more "eyes on the streets", walkable communities are also safer for residents; and
- Fewer vehicles on roads generally lead to fewer accidents.

Health Benefits

Walking and biking have incredible health benefits:

- Physical inactivity is a primary contributor to obesity, a health concern that can also lead to other chronic diseases such as heart disease and diabetes. A walkable and bicycle friendly region would give its residents the opportunity to exercise more often;
- Cycling helps improve posture and balance; and
- Physical activities like walking and cycling help reduce stress levels and maintain healthy blood pressure, thereby reducing health care costs. A 2004 study found that every $1 invested in constructing multi-use paths returns $2.94 in direct medical benefits.[4]

4 Wang, Guijing, et al. 2005. *Cost-Benefit Analysis of Physical Activity Using Bike/Pedestrian Trails.* Health Promotion Practice, Vol. 6, No. 2: 174-179.



Existing Conditions

Understanding the condition of the non-motorized transportation network already in place is essential to being able to form useful and appropriate recommendations for the future. Therefore, a significant amount of time was dedicated to understanding the existing infrastructure, demographics, and land use throughout the SEMPO region.

This chapter reviews existing regional and local planning documents, identifies current transportation characteristics, compares SEMPO to peer regions, summarizes pertinent demographics, and describes current conditions for pedestrians and cyclists.

Regional & Local Plans

SEMPO Metropolitan Transportation Plan (2016)

The *Metropolitan Transportation Plan* is the Long-Range Transportation Plan that is mandated for every MPO to complete. It serves as a long-term roadmap for transportation investments over a 20 to 25 year timeframe, in this instance from 2016 through 2040. Some key findings related to bicycle and pedestrian improvements include:

- Objectives under the 'Accessibility' Goal include encouraging the adoption of complete streets ordinances and strengthening the bicycle and pedestrian infrastructure around transit facilities. This goal included an action item to complete a regional bicycle and pedestrian plan.
- The plan advocates for funding bicycle and pedestrian infrastructure enhancements through a number of programs including the Transportation Alternatives Program. Member jurisdictions have already used the Safe Routes to School Program, Transportation Enhancement Program, Recreational Trails Program, and State coordinating programs.
- The fiscally-constrained plan includes funding for three trail projects:
    - An extension of the riverfront trail from its current

terminus to the Southeast Missouri State University (SEMO University) River Campus in Cape Girardeau;

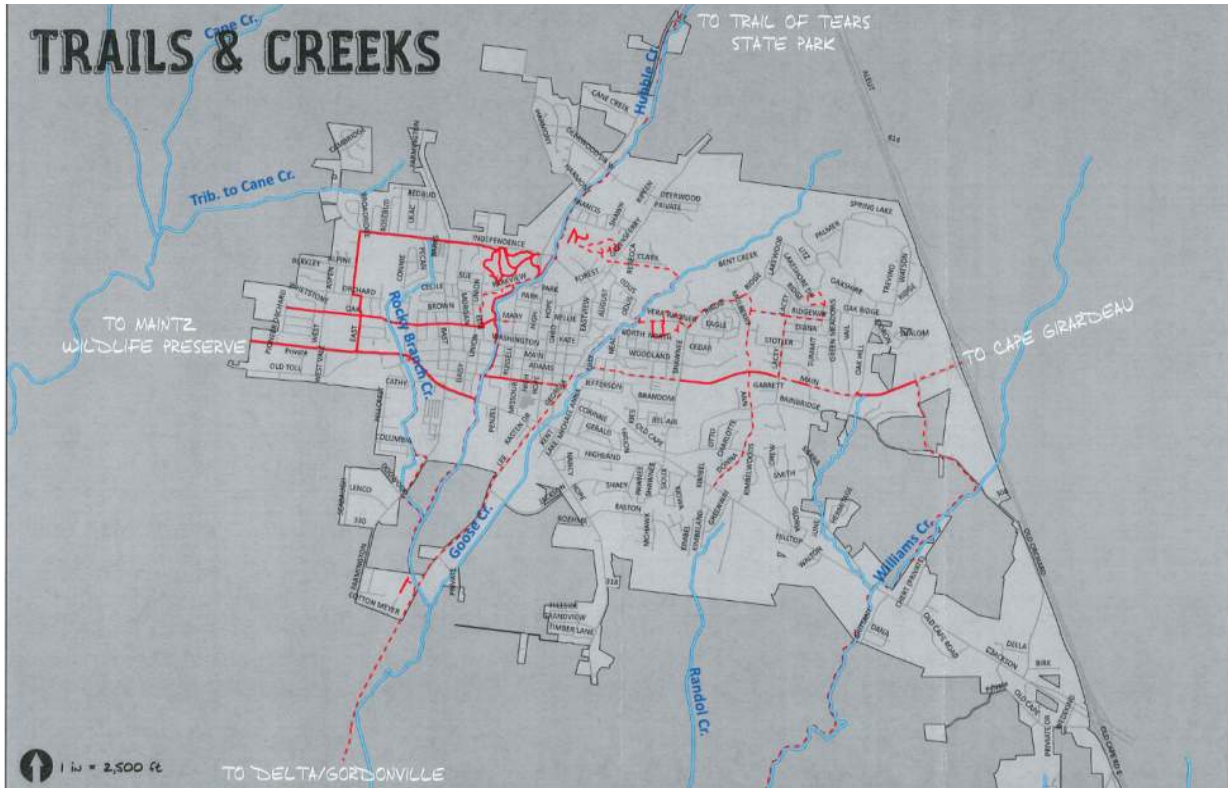
- A trail along Hubble Creek on the south side of Jackson from the Soccer Park to the dog park; and
- A trail from Goose Creek to I-55 in Jackson.

- The majority of roadway improvements in urban areas in the fiscally-constrained plan include sidewalk and ADA improvements in addition to vehicular improvements.

Jackson Parks Master Plan (2014)

The *Jackson Parks Master Plan* provides a long-term plan for the development of parks and green infrastructure throughout the City. As a part of this plan, a map of existing and proposed trails was developed, as shown in **Map 2**. Some of the major recommendations from this plan are:

- Many of the trails should follow creeks in the area, including Williams Creek, Goose Creek, and Hubble Creek.
- Radial trails should extend out from the City to connect to outside destinations such as Cape Girardeau, Delta/Gordonville, Maintz Wildlife Preserve, and Trail of Tears State Park.
- Several new trails are proposed on the east side of the City to balance out the prevalence of existing trails on the west side of town.

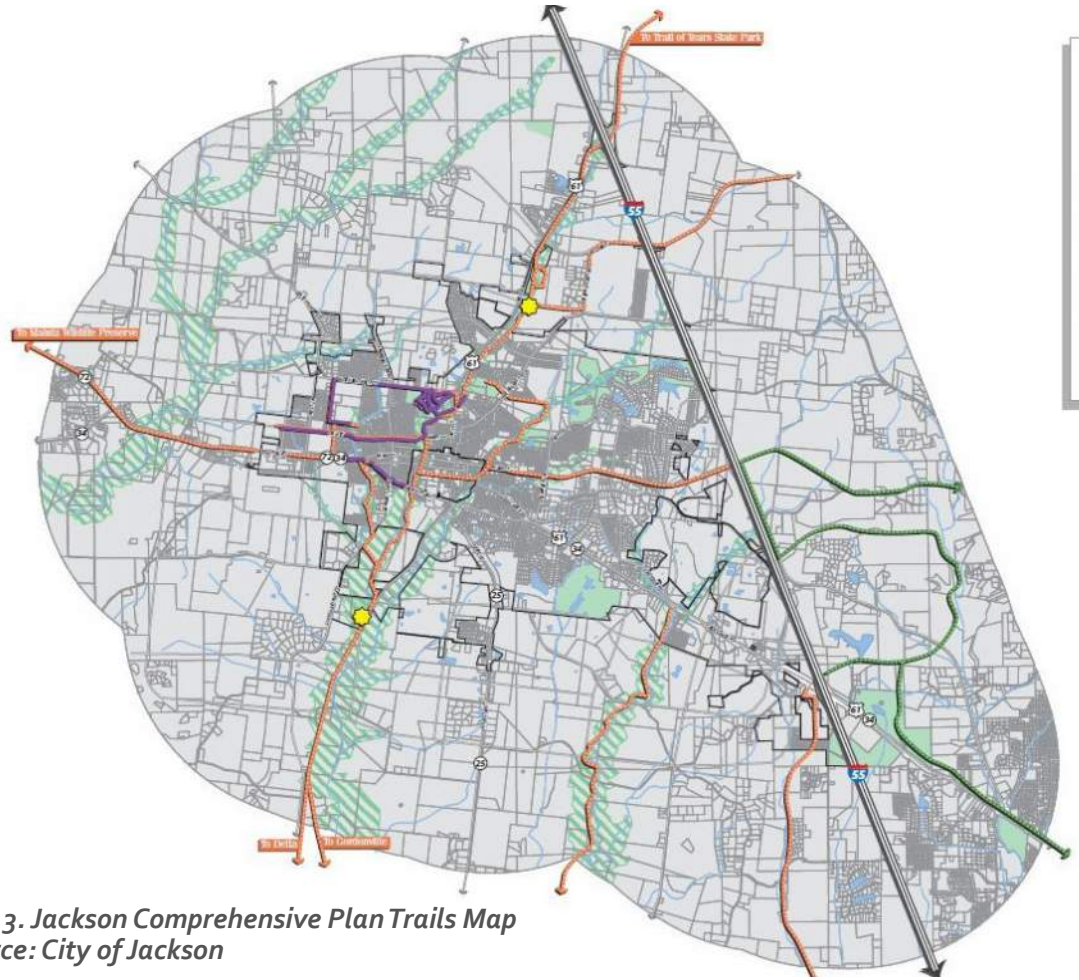


Map 2. Jackson Parks Master Plan Trails Map
Source: City of Jackson

Jackson Comprehensive Plan (2009)

The *Jackson Comprehensive Plan* serves as a long-term vision for the City and surrounding area. This document includes recommendations and implementation strategies for both land use and infrastructure decisions. Key recommendations relating to bicycle and pedestrian infrastructure include the following:

- Several goals and objectives in the plan relate to improving bicycle and pedestrian infrastructure by expanding the City's trail system and providing safe connections across state roadways.
- The City should create continuous sidewalks along arterial streets in the City and provide linkages to shopping and community facilities such as parks, schools, and libraries.
- The City's trail system should be expanded, predominantly off-street, to connect residential areas to regional destinations as shown in **Map 3**.



Map 3. Jackson Comprehensive Plan Trails Map
Source: City of Jackson

Figure 9
Trails Plan

This Plan illustrates existing and proposed trail systems in the City and surrounding region. It is important that the Multi-Use Trail be designed with connectivity to residential neighborhoods and key destinations within the City. Future trails are planned to connect existing City parks to the regional trail system. The majority of the future trails will follow existing creeks off-street, and on-street through the Uptown area. Multi-use trails should be designed to accommodate multiple modes and users, including walking, hiking, jogging, bicycling, and in-line skating.

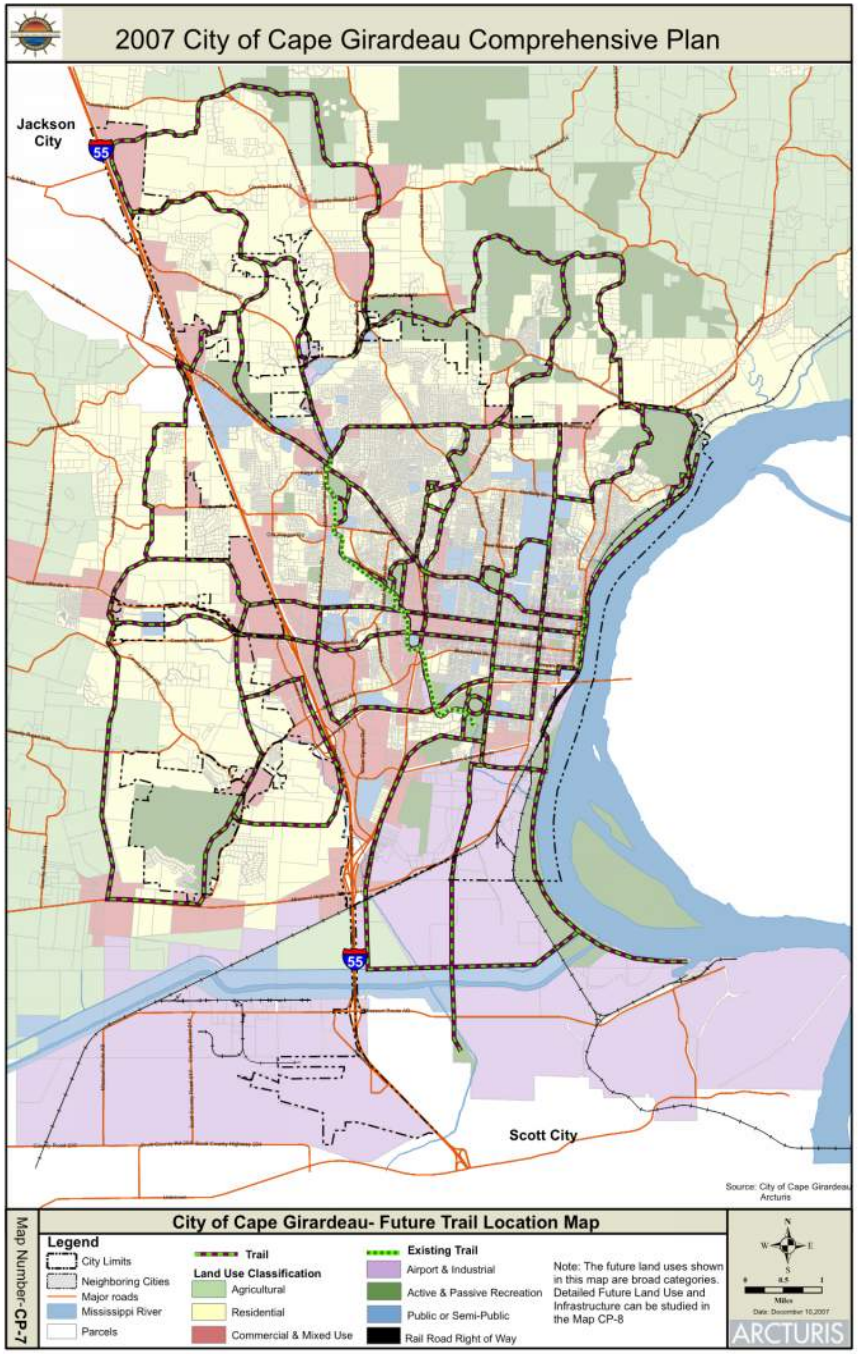
Map Legend
- Existing Trails (approximately 5 miles)
- Proposed Trails (12.5 miles within current boundary, 14 miles outside but within planning area)
- Proposed Cape Girardeau Trails (as shown in the City's 2007 Comprehensive Plan)
- Trailheads (restrooms, shelter, parking)
- Parks, Open Space and potential Greenways
- New Road Network (Per Transportation Plan)
- Creeks
- Municipal Boundary

- The City should plan for regional connections to help form a cohesive regional trail system.
- Implement a complete streets policy.

Cape Girardeau Comprehensive Plan (2007)

The *Cape Girardeau Comprehensive Plan* serves as the guiding document for land use, policy, and infrastructure development. Key recommendations resulting from this plan include:

- Trails should be constructed to connect the Cape Girardeau Osage Community Centre, Cape Rock Park, Cape Girardeau Public Library, Southeast Missouri State University (SEMO University), hospitals and other similar public spaces.
- Sidepaths should be constructed in lieu of sidewalks, or adjacent to existing sidewalks, on major roadways to encourage alternative mode commuting and enhancing access to adjacent land uses. The Plan's trail expansion plan is provided in **Map 4.**
- Roadways should not only be designed to service vehicular movements; all modes should be considered by using a Level of Quality (LOQ) metric rather than a vehicular Level of Service (LOS).
- A number of goals and objectives in the Comprehensive Plan involve creating more pedestrian friendly environments, better trail connections, and connectivity within the non-motorized transportation network.



Map 4. Cape Girardeau Comprehensive Plan Trails Map
Source: City of Cape Girardeau

Cape LaCroix Trail Master Plan (2013)

The Cape LaCroix Trail is the primary trail in Cape Girardeau, extending from the Missouri Department of Conservation Nature Center at the north end of the city to Shawnee Park at the south end. The 5.6 mile trail provides access to several important destinations, including Osage Park, Cape Woods Conservation Area, and Arena Park, as well as several neighborhoods, schools, and commercial areas.

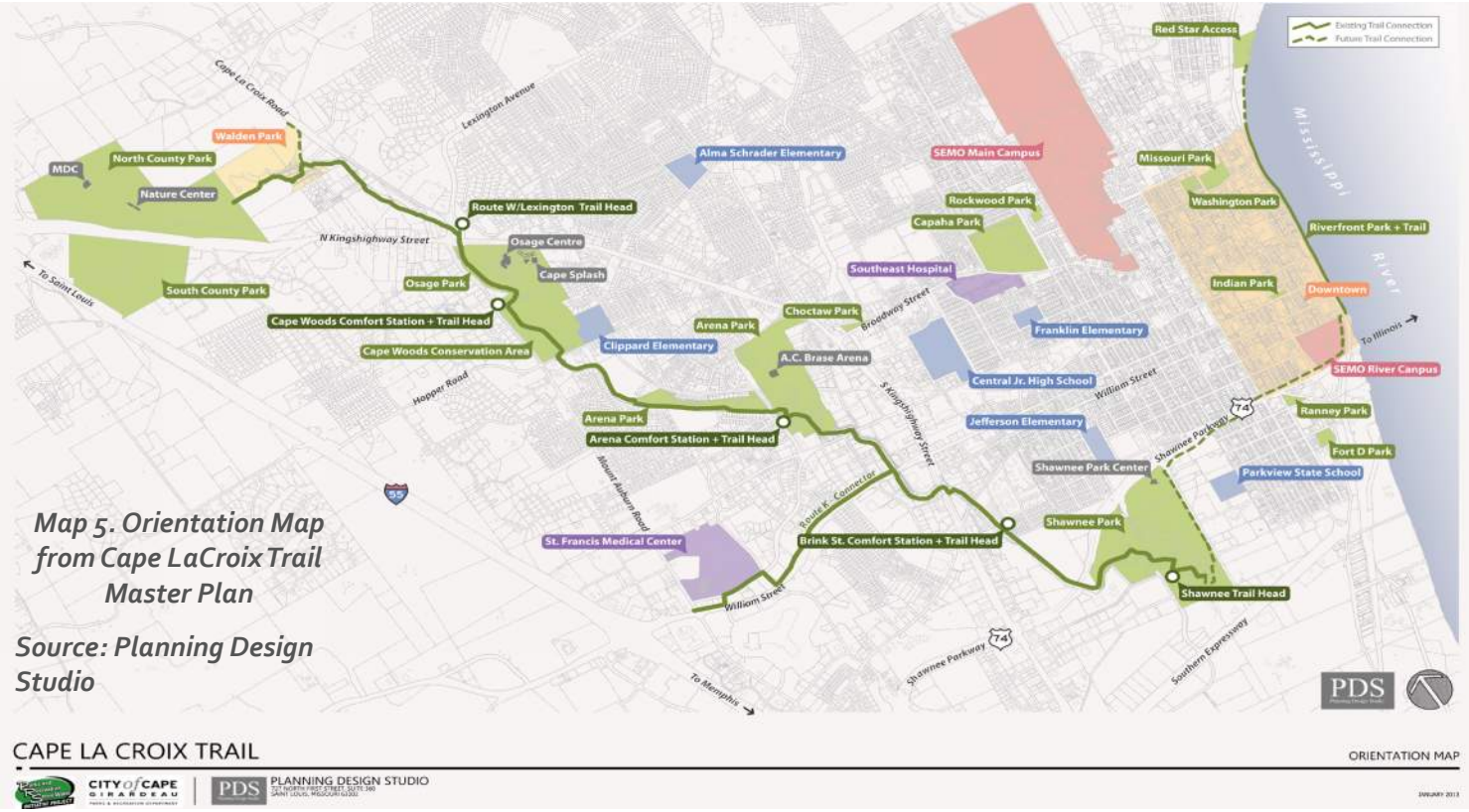
The Master Plan addresses:

- Safety, functional, and aesthetic deficiencies,
- Recommendations,
- Trail amenities and branding standards, and
- Cost estimates and priorities.

Master Plan recommendations include:

- Short term trail branding improvements;
- Short term trail amenity improvements;
- Long term trail widening;
- Long term replacement of bridges; and
- Long term safety improvements at bridges underpasses.

This project was made possible through funding from the City of Cape Girardeau and the State of Missouri. Construction of the trail commenced in 1993 and the final segment of the original planned trail completed in 2000.



Map 5. Orientation Map from Cape LaCroix Trail Master Plan

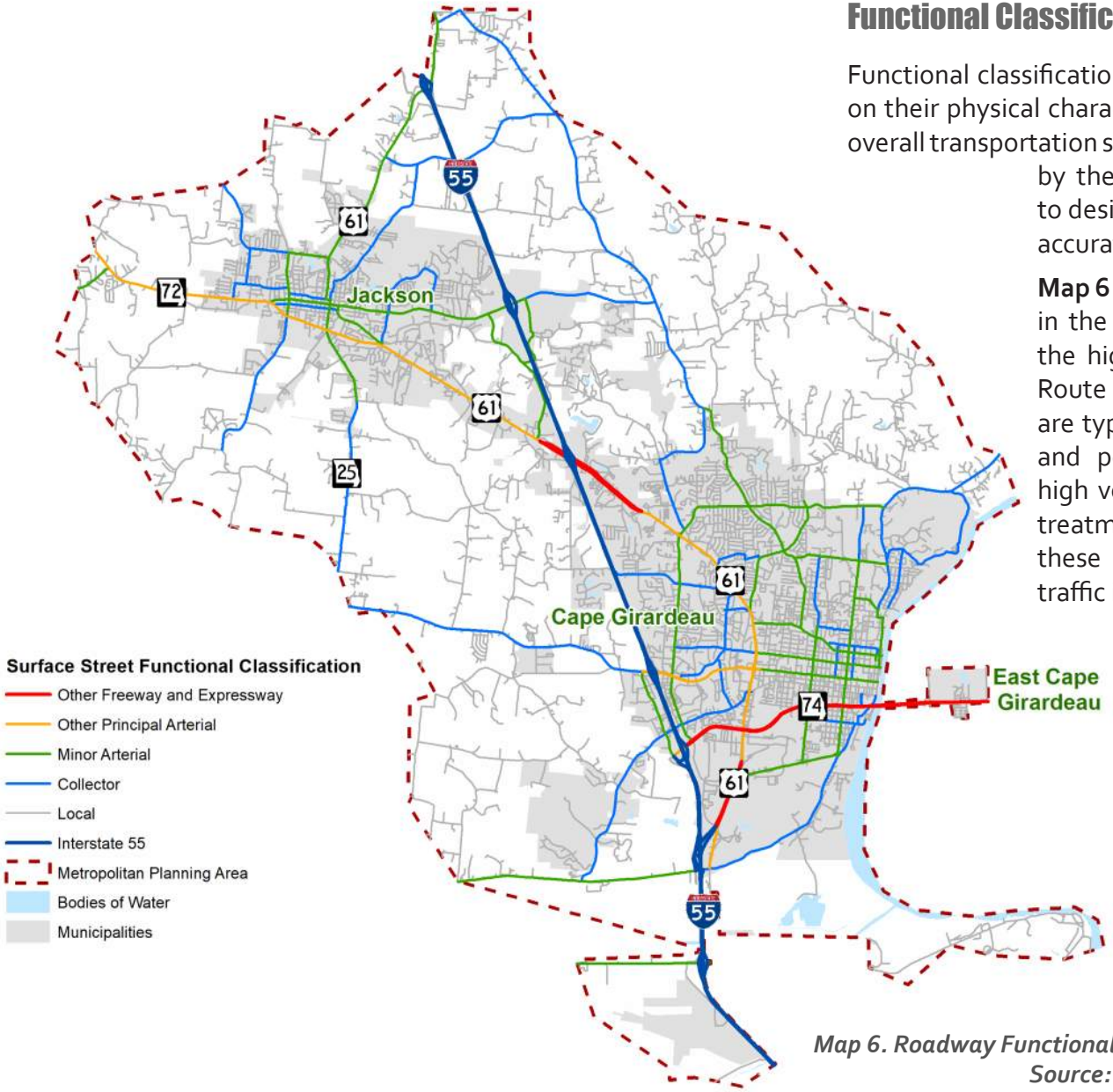
Source: Planning Design Studio

Transportation Characteristics

Functional Classification

Functional classifications are a way to categorize roadways based on their physical characteristics and the purpose they serve in the overall transportation system. This system was originally developed by the Federal Highway Administration (FHWA) to designate these classifications and maintain an accurate and up-to-date map of the roadways.

Map 6 shows the existing functional classifications in the SEMPO MPA. With the exception of I-55, the highest order facilities are US 61 and State Route (SR) 74. These high classification roadways are typically barriers and safety issues for bicycle and pedestrian traffic as they generally carry high volumes of vehicles at high speeds. Special treatments must be applied along and across these roadways to ensure that non-motorized traffic is served as well as motorized traffic.



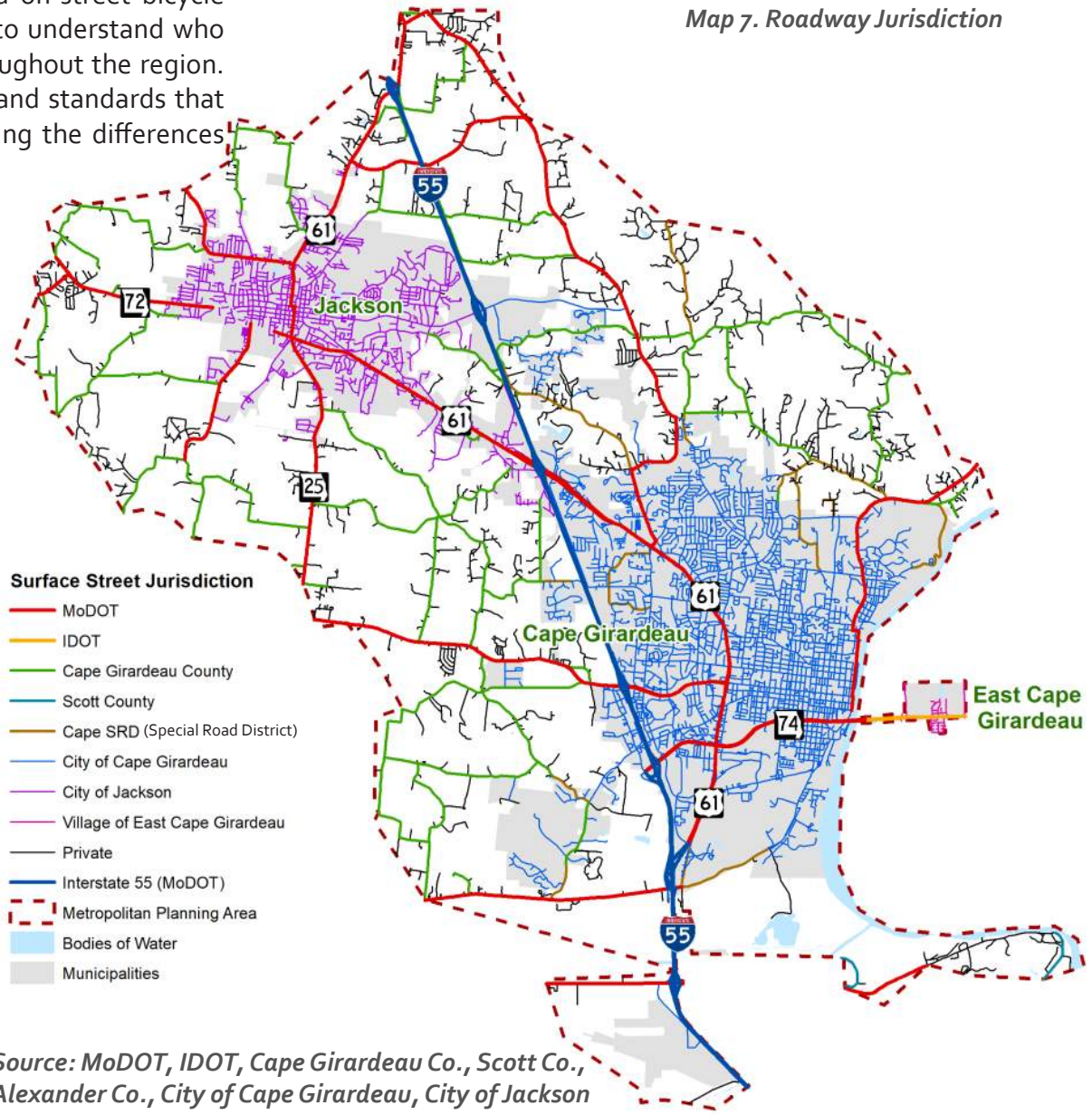
Map 6. Roadway Functional Classification
Source: SEMPO

Roadway Jurisdiction

As part of developing a plan for both off- and on-street bicycle and pedestrian improvements, it is important to understand who owns and maintains the various roadways throughout the region. Different jurisdictions may have varying goals and standards that they apply to their roadways, and understanding the differences and opportunities is key to a successful plan.

Map 7 shows the jurisdictions of the various roadways throughout the SEMPO region. The main arterials and highways are maintained by MoDOT and IDOT, making it necessary for cooperation with the various agencies to address connectivity and safety issues. There must also be concurrence from the various municipalities and counties, as they will also have to allow different treatments and improvements to their roadways to implement the Plan.

Map 7. Roadway Jurisdiction



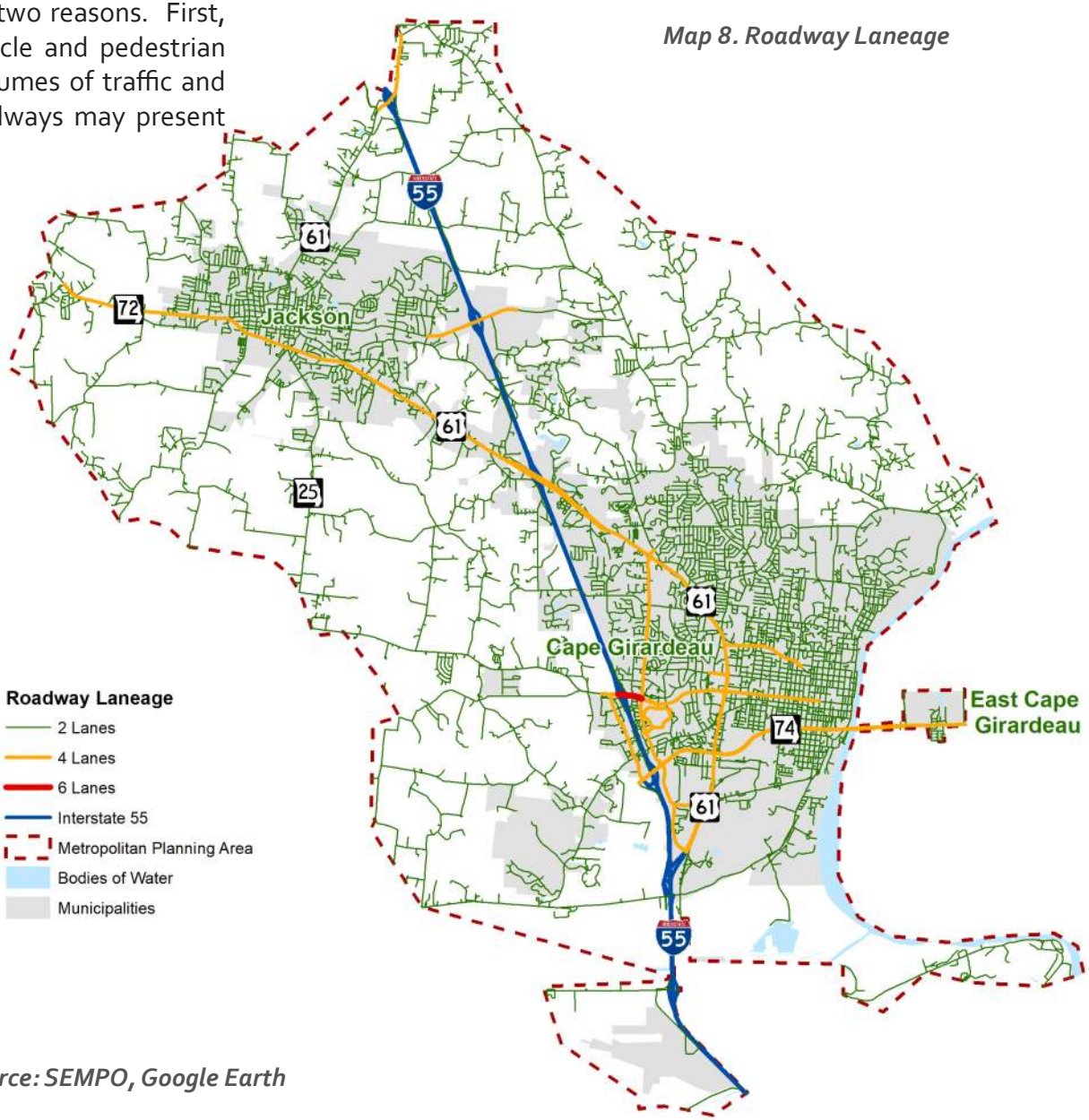
Source: MoDOT, IDOT, Cape Girardeau Co., Scott Co., Alexander Co., City of Cape Girardeau, City of Jackson

Roadway Laneage

Identification of multi-lane roadways (i.e. roadways with two or more lanes in each direction) is important for two reasons. First, multi-lane roadways can be a barrier for bicycle and pedestrian travel because they generally serve higher volumes of traffic and have higher speed limits. Second, these roadways may present opportunities for road diets in order to add on-street bicycle lanes. The typical road diet involves narrowing a four-lane roadway (two lanes in each direction) to a three-lane roadway (one lane in each direction with a center left turn lane).

As shown in **Map 8,** there are only a handful of multi-lane roadways within the SEMPO region. The majority of multi-lane roadways exist on the southwestern side of Cape Girardeau near I-55. These roadways serve the large shopping area and St. Francis Hospital, which are all major regional traffic generators. Other multi-lane roadways include Kingshighway, Jackson Boulevard, Shawnee Parkway, East Main/ LaSalle Street, and US 61 at the far north end of the MPA.

Map 8. Roadway Laneage



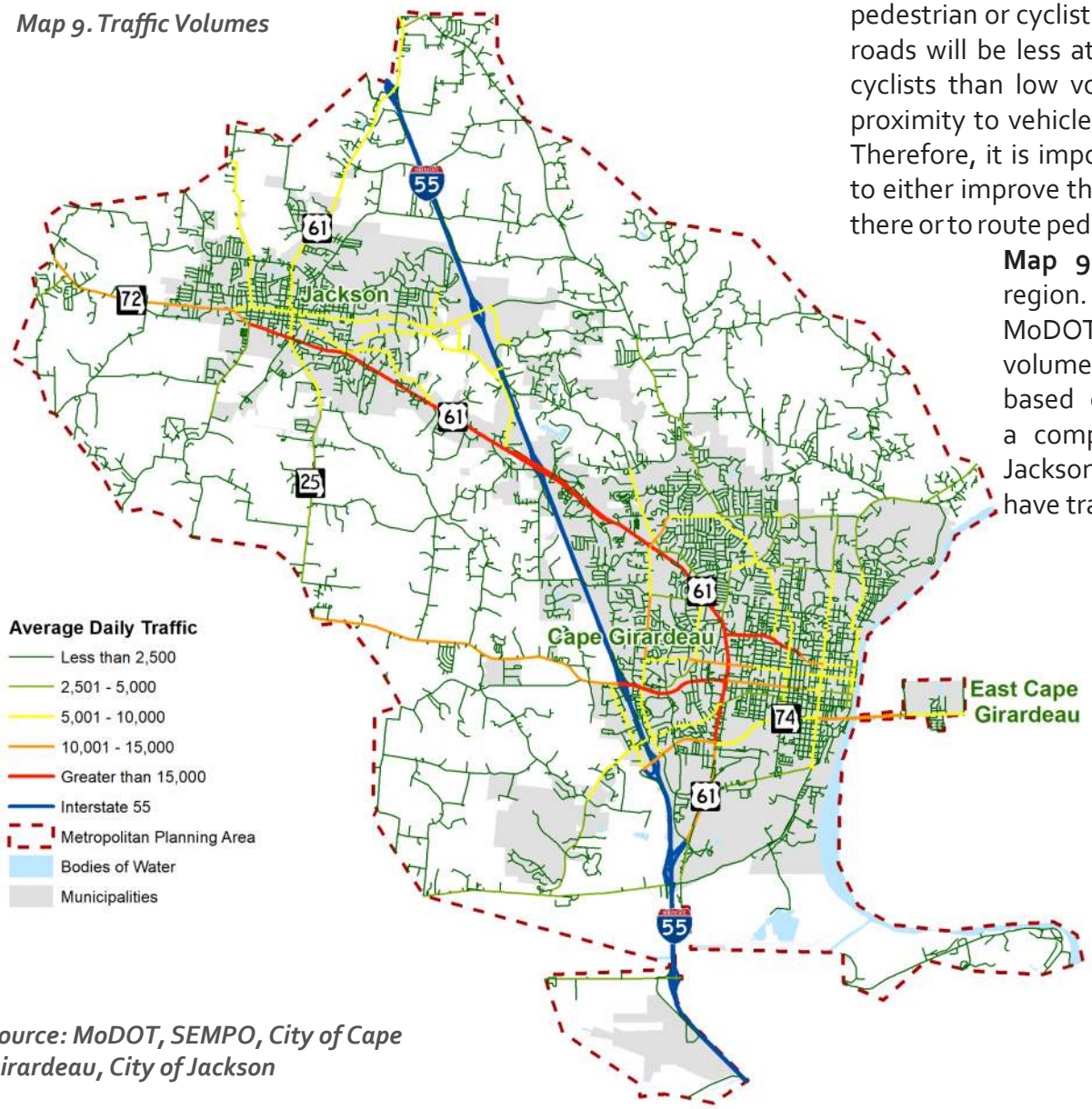
Source: SEMPO, Google Earth

Traffic Volumes

The volume of traffic on roadways correlates to how comfortable a pedestrian or cyclist feels on that roadway. Generally, high volume roads will be less attractive and comfortable for pedestrians and cyclists than low volume roadways. Traffic noise, pollution, and proximity to vehicles are all detrimental to non-motorized traffic. Therefore, it is important to be aware of where traffic is heaviest to either improve the non-motorized transportation infrastructure there or to route pedestrians and cyclists away from those locations.

Map 9 shows traffic volumes within the SEMPO region. Some roadways have traffic data collected by MoDOT or a municipality, and reflect real-world traffic volumes. Other roadway's daily traffic was estimated based on their functional classification to provide a comprehensive map. Portions of Kingshighway, Jackson Boulevard, William Street, and Broadway all have traffic volumes of over 15,000 vehicles per day.

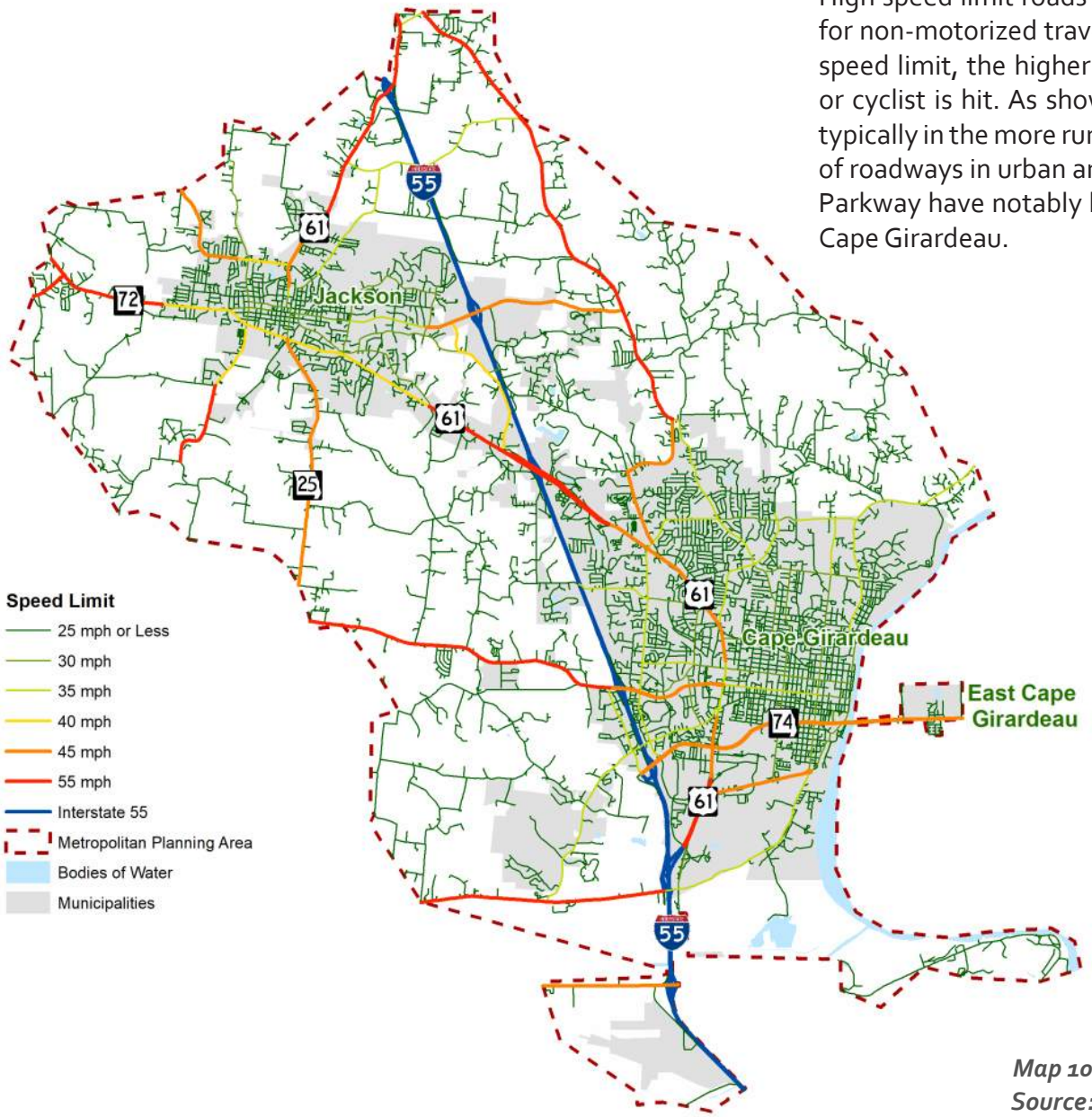
Map 9. Traffic Volumes



Source: MoDOT, SEMPO, City of Cape Girardeau, City of Jackson

Speed Limits

High speed limit roads can be particularly unsafe and unappealing for non-motorized travel. As discussed in Chapter 1, the higher the speed limit, the higher the chance of a fatality when a pedestrian or cyclist is hit. As shown in **Map 10**, the highest speed limits are typically in the more rural areas of the region, with the vast majority of roadways in urban areas at 25 mph. Kingshighway and Shawnee Parkway have notably high speed limits through the urban area of Cape Girardeau.



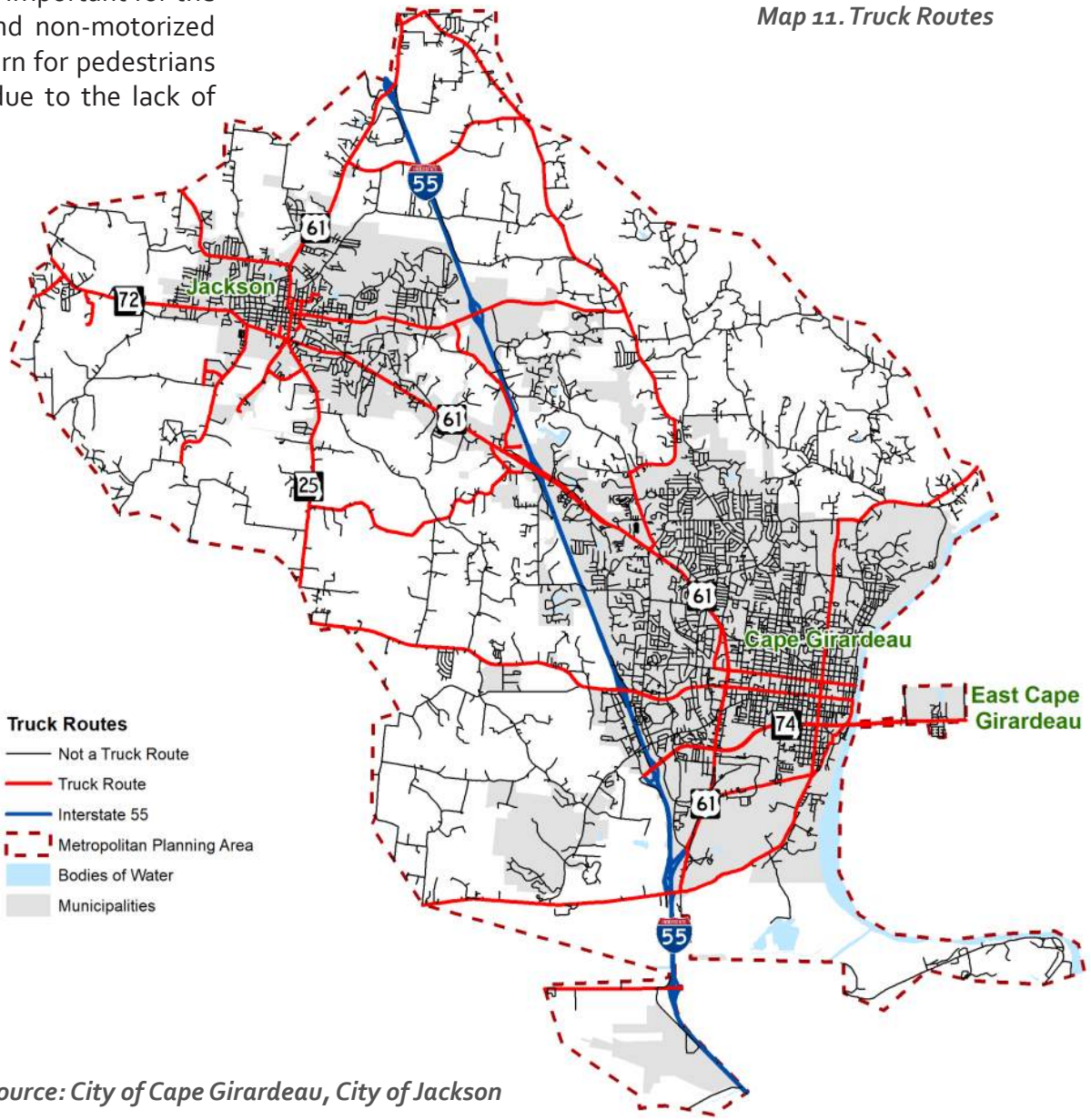
Map 10. Speed Limits
Source: SEMPO, Google Earth

Truck Routes

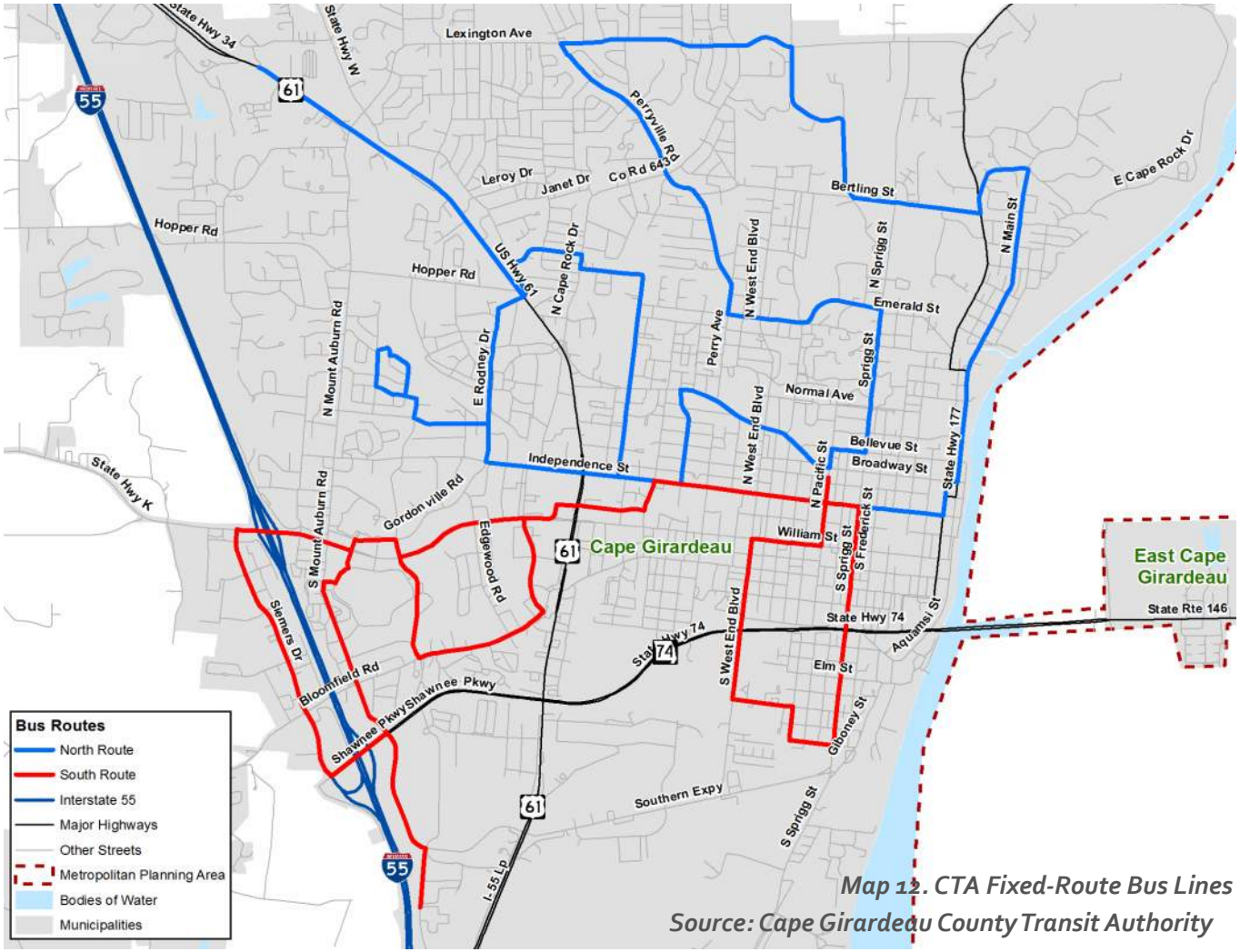
Moving freight into and out of the region is very important for the local economy; however, heavy truck traffic and non-motorized traffic are often at odds. Safety is a major concern for pedestrians and cyclists when there is heavy truck traffic due to the lack of visibility of non-motorized traffic to truck drivers and the long stopping distances and wide turning radii for trucks. If a pedestrian or bicycle improvement is applied to a truck route, additional protection and separation features should be provided above what is provided for other roadways.

Map 11 shows the truck routes in the SEMPO area as designated by the cities of Cape Girardeau and Jackson. State routes are typically designated as truck routes, as well as roadways leading to industrial or retail areas that are likely to serve relatively heavy truck traffic.

Map 11. Truck Routes



Source: City of Cape Girardeau, City of Jackson



Map 12. CTA Fixed-Route Bus Lines
Source: Cape Girardeau County Transit Authority

Transit

Connecting transit to active transportation investments is key to providing a usable transportation system for people who cannot or choose not to drive. All transit riders start and end their trip as pedestrians or cyclists, so connecting transit stops with sidewalks and trails will improve the accessibility of the transit system.

Fixed-route transit in the SEMPO region is provided by Cape Girardeau County Transit Authority (CTA) and Southeast Missouri State University Shuttle Service. CTA has two fixed-route bus lines, the North/Blue Line and the South/Red Line, as shown in **Map 12**. They operate within the City of Cape Girardeau and provide access to the majority of the major employment and shopping destinations within the city. CTA also operates demand response services via its own taxi operations throughout Cape Girardeau County.

Southeast Missouri State University Shuttle Service runs three fixed-routes that, while primarily focused on student-oriented transportation, are available for use by the general public. Two of the three routes circulate around the main campus on the north side of Downtown, and the third route runs between the main campus and the River Campus on the south side of downtown.[1]

Several other entities provide on-demand or paratransit services throughout the SEMPO region, as well as intercity service to St. Louis. However, as these are not fixed route operations, providing multi-modal connectivity is not possible.

1 Taken from http://www.semo.edu/transit/index.html on 11/10/2017

SEMPO Peer Evaluation

Comparing the SEMPO region to similar urbanized areas can be an important tool to understand where the region is lacking and where it is excelling. Four peer urbanized areas were identified to determine if the region is doing particularly well or poorly in relevant metrics for this plan. Peer urbanized areas were identified as locations with similar populations to SEMPO that are located in the Midwest. The peer areas identified are:

- Manhattan Urbanized Area, KS
- Pine Bluff Urbanized Area, AR
- Monroe Urbanized Area, MI
- Danville Urbanized Area, IL

Relevant metrics that could be determined for each of the urbanized areas include population density and the commute to work share for driving, bicycling, walking, and transit. These metrics are provided in **Table 2** below.

The SEMPO region performs on the lower end of the scale for most of the metrics including population density, driving to work, bicycling to work, and using transit for commuting. However, the proportion of people that commute on foot is the second highest in the peer analysis. The Manhattan, KS and Pine Bluff, AR urbanized areas provide a particularly good comparison because they are home to state universities (Kansas State University and University of Arkansas – Pine Bluff), similar to SEMO University in Cape Girardeau. That comparison shows that there is ample room for improvement, even within a small, Midwestern urbanized area.

Table 2. SEMPO Peer Urbanized Area Comparison

PEER URBANIZED AREA	POPULATION (2010)	POP. DENSITY (POP/SQ. MI.)	COMMUTE TO WORK SHARE (2010)			
			DRIVING	BICYCLING	WALKING	TRANSIT
Manhattan, KS	54,622	2,637	82.1%	3.0%	10.0%	0.5%
Pine Bluff, AR	53,495	1,439	92.5%	2.4%	2.0%	0.7%
Cape Girardeau, MO	**52,900**	**1,510**	**92.8%**	**1.5%**	**3.5%**	**0.5%**
Monroe, MI	51,240	1,596	92.2%	1.4%	1.1%	2.8%
Danville, IL	50,996	1,711	91.8%	1.2%	3.3%	1.1%

Demographics and Civic Amenities

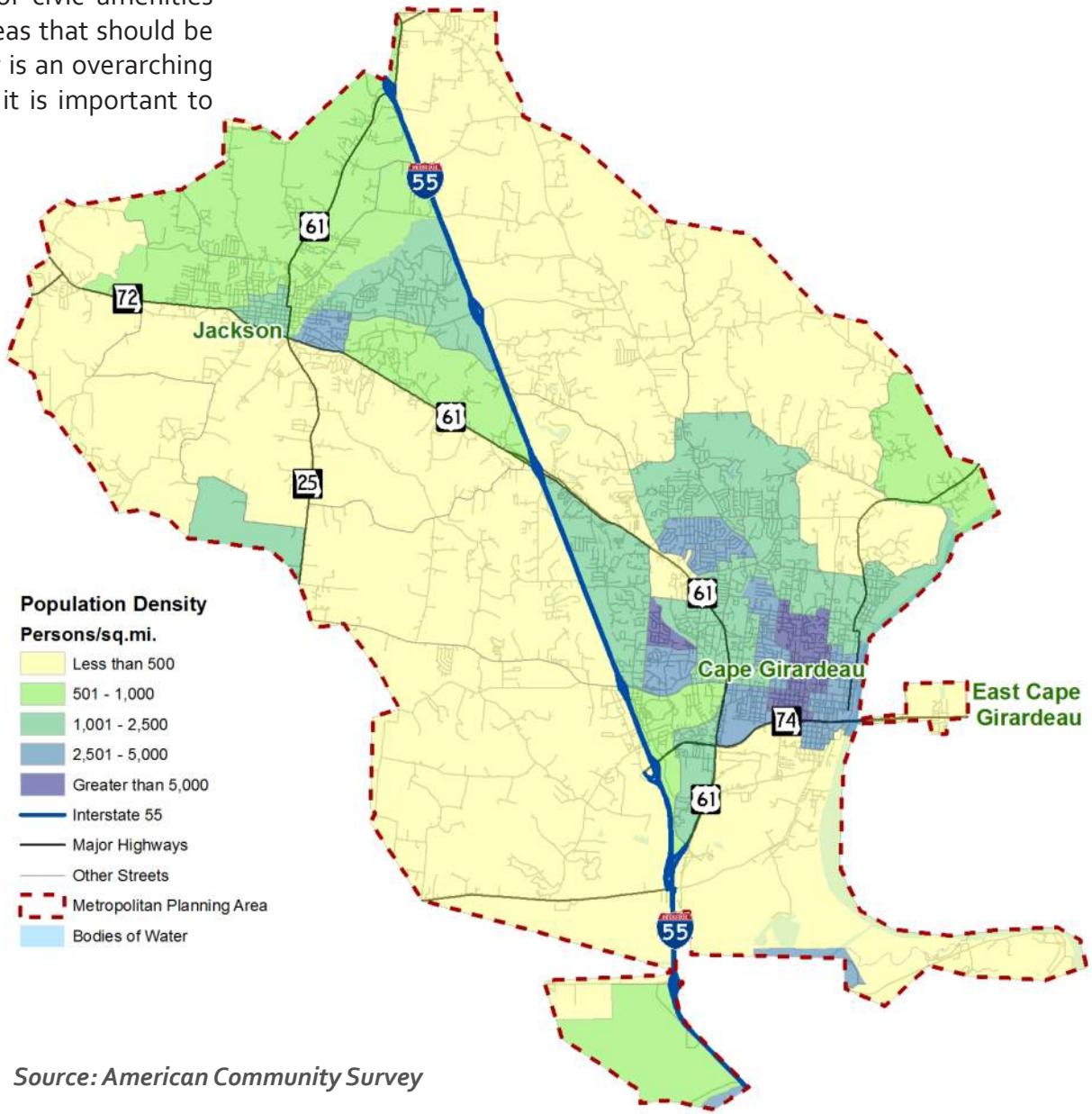
Analyzing the demographics and distribution of civic amenities (such as parks and schools) can help identify areas that should be targeted for additional investment. Since equity is an overarching theme of this report and planning as a whole, it is important to target areas that are economically struggling or have high concentrations of populations who may rely on active transportation modes as their primary way of travel.

Population Density

Areas with a high density of population tend to be more easily serviced by non-motorized transportation infrastructure improvements than low-density areas because fewer miles of trails, bicycle lanes, and sidewalks are required to provide access. **Map 13** shows the population density of the SEMPO region by census block group.

As would be expected, central Cape Girardeau has the highest population densities, particularly around the SEMO University campus. There are also pockets of high-density housing in the west side of Cape Girardeau, between Kingshighway and I-55. One block group in Jackson has a population density of greater than 2,500 persons per square mile, just southeast of Uptown Jackson. These areas represent locations where investments in non-motorized transportation infrastructure may provide access to high amounts of residents with fewer miles of improvements.

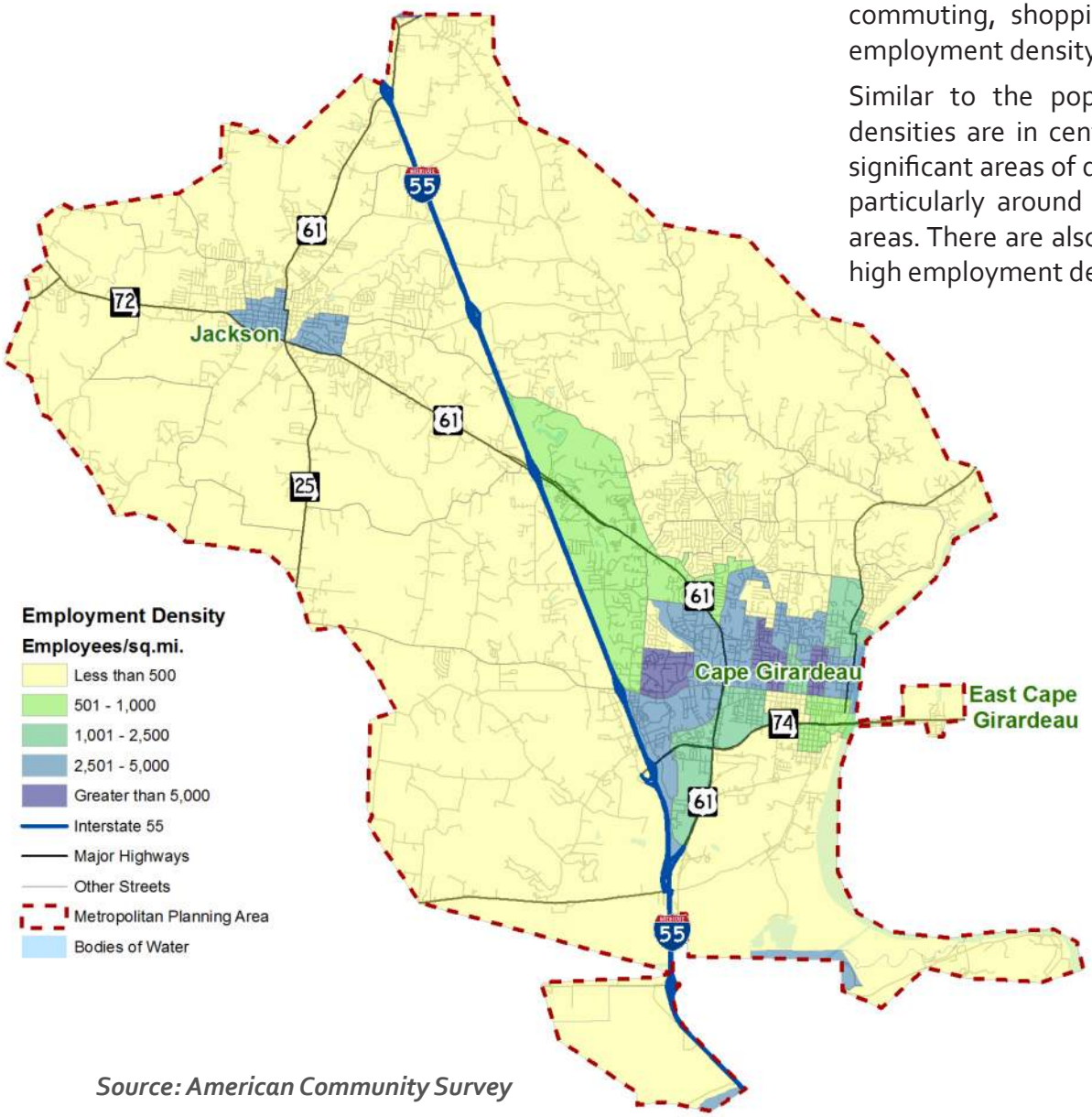
Map 13. Population Density by Census Block Group



Source: American Community Survey

Employment Density

Map 14. Employment Density by Census Block Group



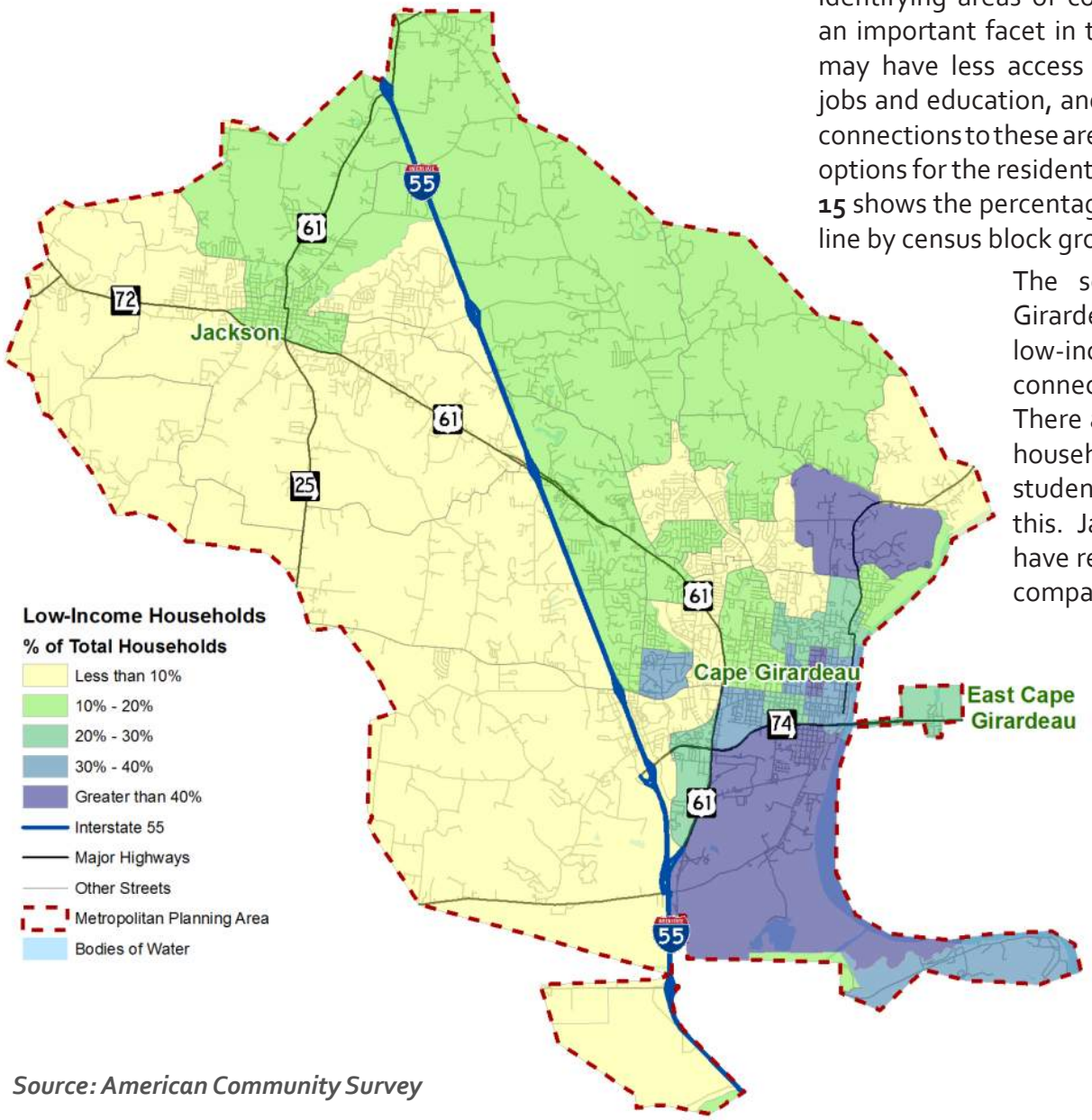
Source: American Community Survey

High-density employment areas serve as strong attractors for commuting, shopping, and other services. **Map 14** shows the employment density of the SEMPO area by census block group.

Similar to the population densities, the highest employment densities are in central Cape Girardeau. However, there are also significant areas of dense employment in Western Cape Girardeau, particularly around the St. Francis Hospital and West Park Mall areas. There are also two census block groups that have relatively high employment density in central Jackson.

Low-Income Households

Map 15. Low-Income Households by Census Block Group



Source: American Community Survey

Identifying areas of concentrations of low-income households is an important facet in the equity goal of this project. These areas may have less access to private vehicles, less access to quality jobs and education, and less access to services. Providing efficient connections to these areas allows additional low-cost transportation options for the residents to make reaching destinations easier. **Map 15** shows the percentage of households that fall below the poverty line by census block group.

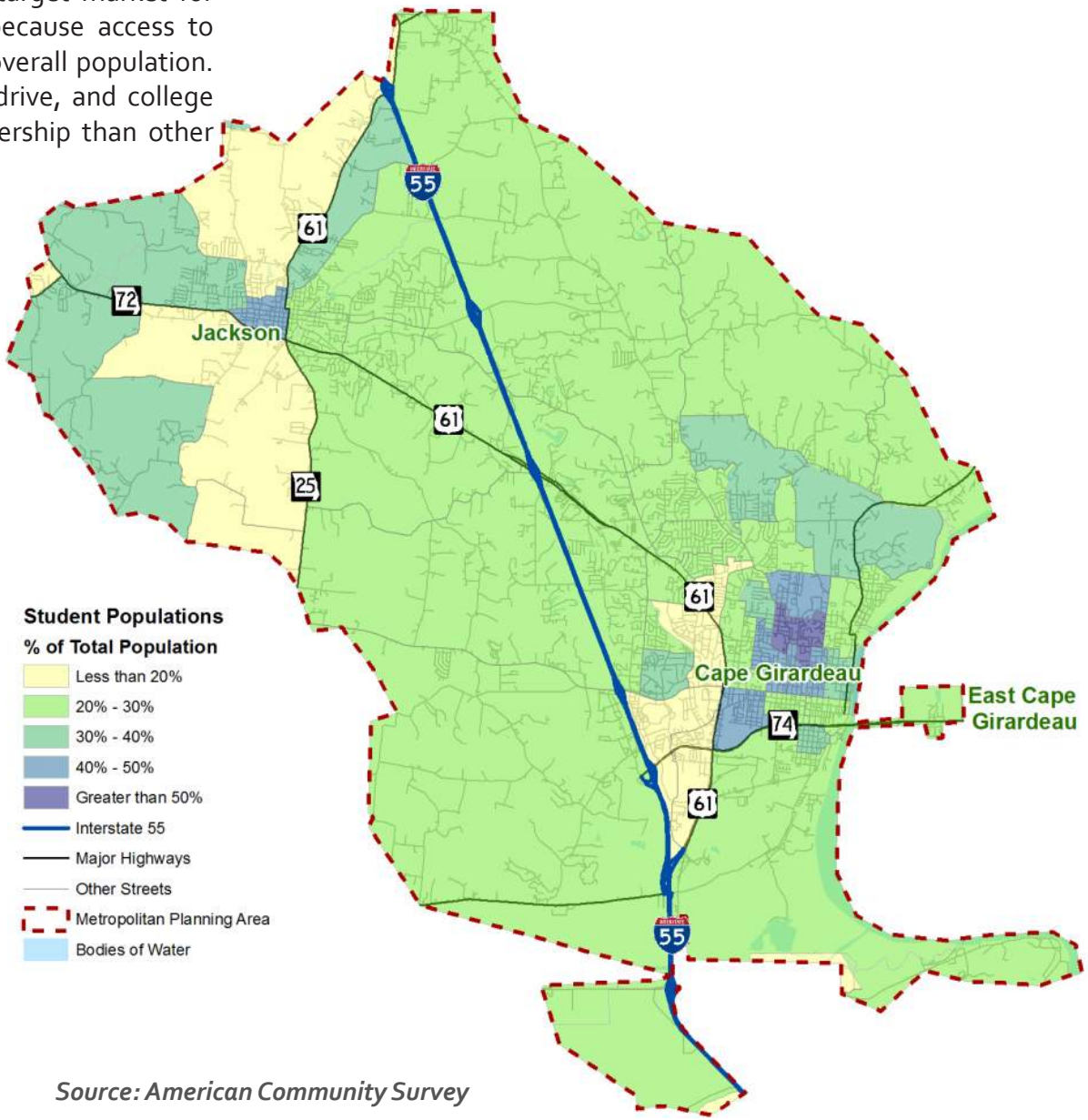
The southeast and northeast areas of Cape Girardeau have the largest concentrations of low-income households in the region, making connecting these areas of critical importance. There are also high concentrations of low-income households in central Cape Girardeau, though student housing for SEMO University may affect this. Jackson and the rural areas of the region have relatively low levels of households in poverty compared to Cape Girardeau.

Student Populations

Student populations are always an important target market for non-motorized transportation improvements because access to motorized vehicles is far less compared to the overall population. Most grade school students are too young to drive, and college students typically have lower rates of car ownership than other adult populations. **Map 16** shows the percentage of students (both K-12 and college students) of the total population by census block group.

The largest proportions of students are located in central Cape Girardeau, generally around the SEMO University campus. However, there are also moderate concentrations of students in southern Cape Girardeau and Uptown Jackson.

Map 16. Student Population by Census Block Group



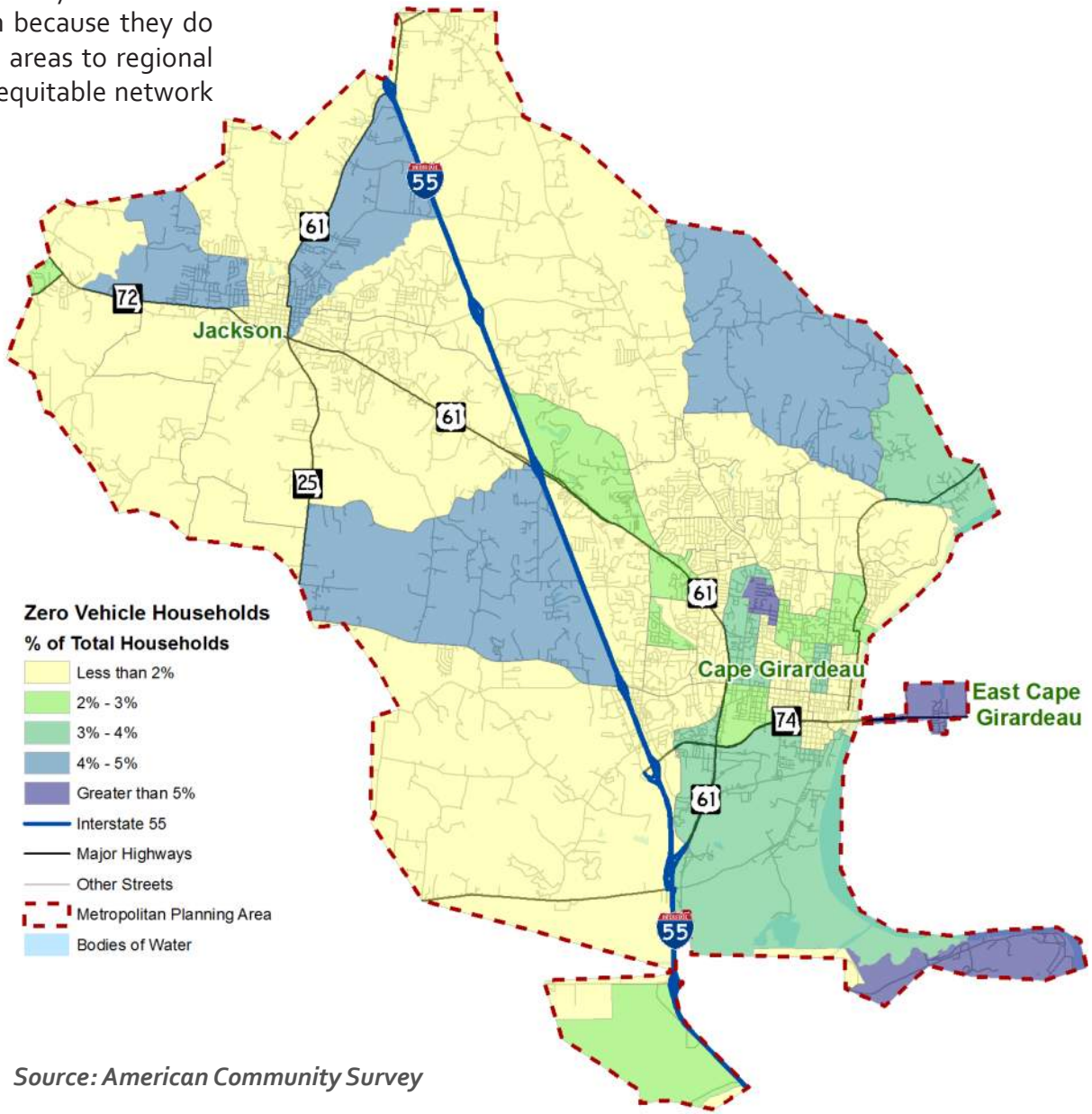
Source: American Community Survey

Zero Vehicle Households

Zero vehicle households are particularly at the mercy of the non-motorized transportation network around them because they do not have other options for travel. Linking these areas to regional destinations is important for the creation of an equitable network that services the populations that need it the most. **Map 17** shows the percentage of households that have no working vehicles as a proportion of the total households by census block group.

The highest concentrations of zero vehicle households appear in East Cape Girardeau, an area in the northwestern part of Cape Girardeau and the extreme southeastern portion of the SEMPO region in Scott County. However, there are also large areas in the rural portions of the region which also have relatively high levels of zero vehicle households. These areas can be particularly difficult to service because of the low population density and length of improvements needed to connect them to regional destinations.

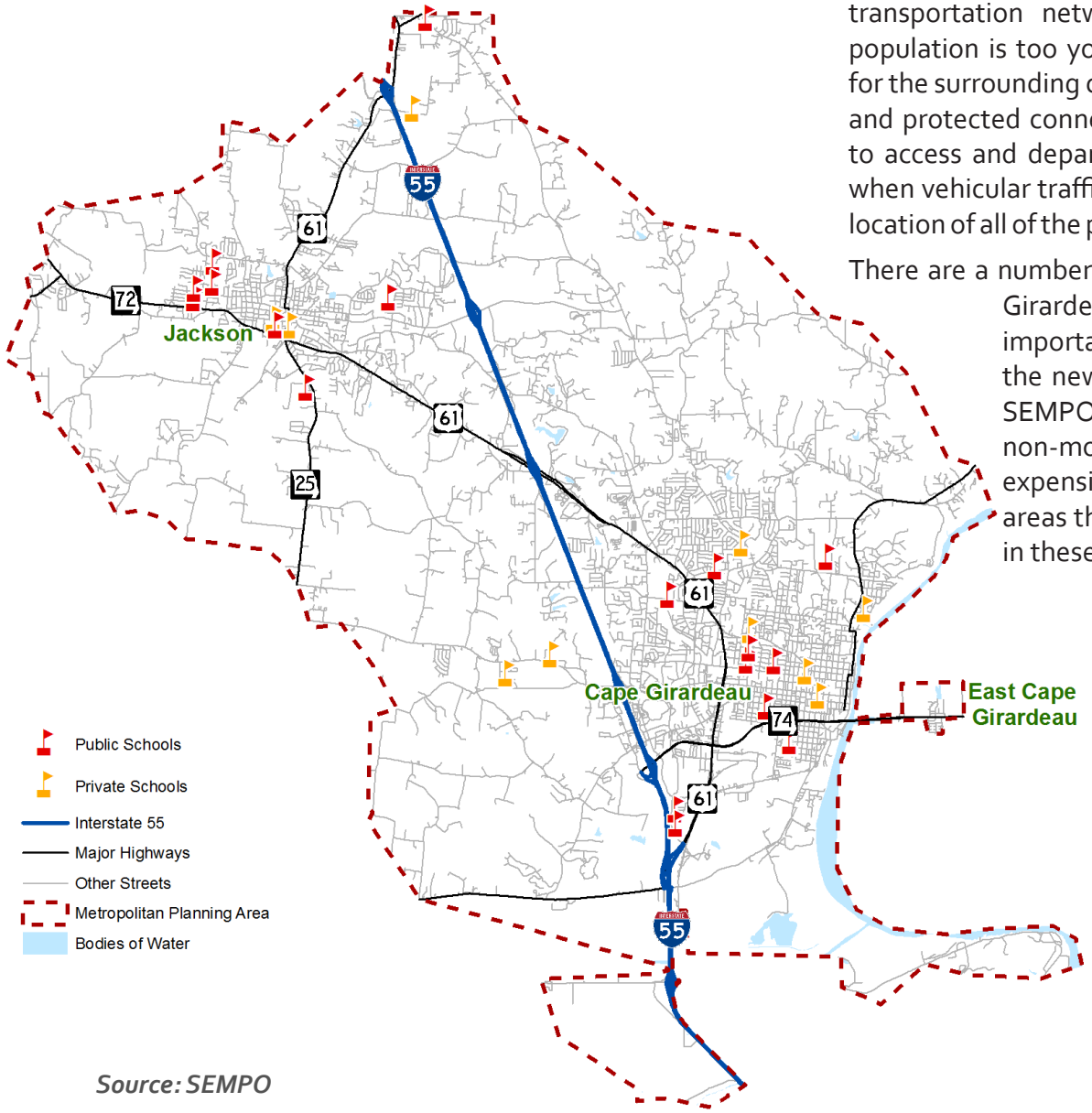
Map 17. Zero Vehicle Households by Census Block Group



Source: American Community Survey

Schools

Map 18. Schools



Source: SEMPO

Schools are important destinations for the non-motorized transportation network because the majority of the student population is too young to drive, and they are centers of activity for the surrounding community. It is also imperative to provide safe and protected connections around schools for children to be able to access and depart from schools at arrival and dismissal times when vehicular traffic will be particularly heavy. **Map 18** shows the location of all of the public and private schools in the SEMPO region.

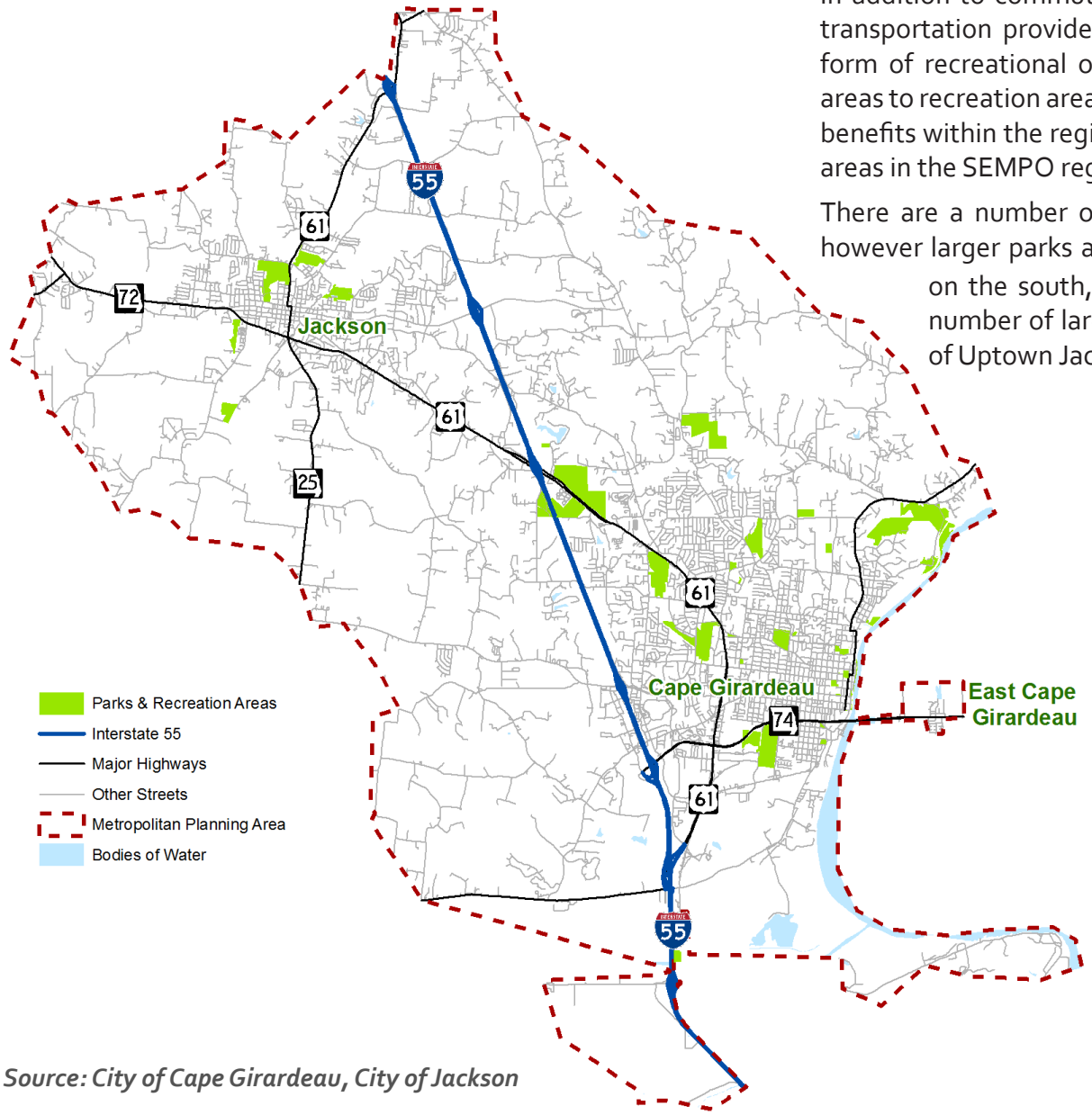
There are a number of schools clustered together in central Cape Girardeau and the west side of Jackson, making those important target areas for improvements. Many of the newer schools are in the more rural areas of the SEMPO region, and as such, servicing them with non-motorized transportation infrastructure is more expensive due to their distance from the residential areas they serve. Traffic speeds also tend to be higher in these areas and sidewalks are less prevalent.

Parks & Recreation Areas

In addition to commuting and accessing services, non-motorized transportation provides a large benefit to the community in the form of recreational opportunities. Connections from residential areas to recreation areas is important for public health and livability benefits within the region. **Map 19** shows the parks and recreation areas in the SEMPO region.

There are a number of smaller parks in central Cape Girardeau; however larger parks are located around the periphery of the city on the south, west, and north sides. Jackson also has a number of large parks on both the north and south sides of Uptown Jackson.

Map 19. Parks and Recreation Areas



Source: City of Cape Girardeau, City of Jackson

Existing Pedestrian & Bicycle Conditions

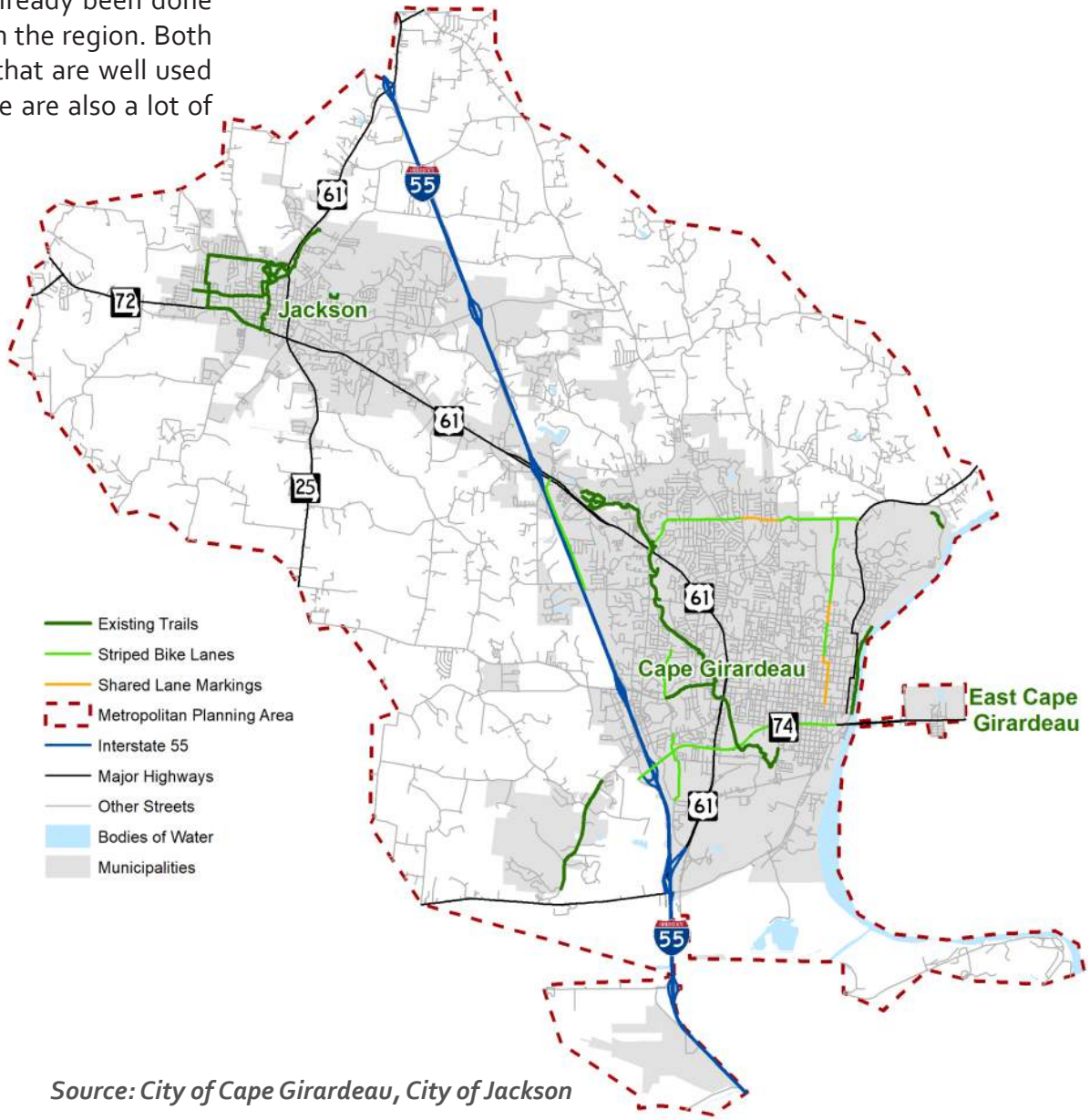
It is important to recognize the work that has already been done to improve pedestrian and bicycling conditions in the region. Both Cape Girardeau and Jackson have trail systems that are well used and well loved by local residents. However, there are also a lot of remaining barriers and underserved areas that are in need of additional routes and connections across busy roadways.

Existing Trails & On-Street Bicycle Facilities

Map 20 shows the locations of existing trails and on-street bicycle facilities. Cape Girardeau's trail system largely consists of the Cape LaCroix Trail, which runs north and south through the western part of the city along Kingshighway. This trail is very popular with residents and visitors alike as it is grade separated at most roadway crossings, making it a very safe and efficient route for both cyclists and pedestrians. Other trails in Cape Girardeau include the Riverfront Trail, a sidepath along William Street west of the Cape LaCroix Trail, and a trail along Bloomfield Road in the southwestern portion of the City.

Cape Girardeau has created some on-street routes for bicycles, though they tend to be discontinuous in their treatment and are sub-standard by existing guidelines for bike facility development. There are bike lanes along Lexington Avenue and Sprigg Street; however, they frequently change to shared lanes at intersections and areas where it was deemed

Map 20. Existing Trails & On-Street Bicycle Facilities



Source: City of Cape Girardeau, City of Jackson

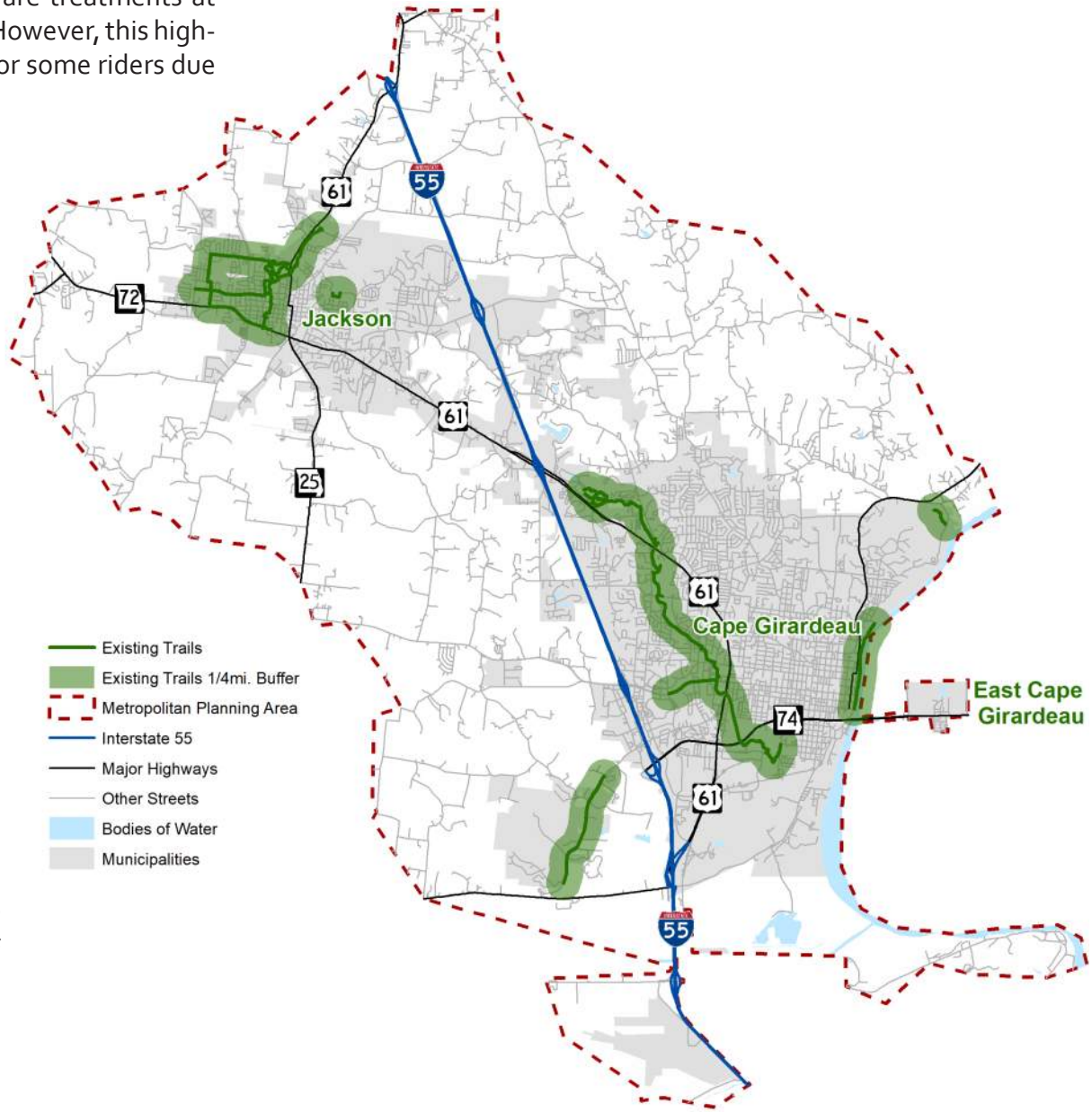
preferable to have more space for vehicular traffic. There are bike lanes along Silver Springs Road, but they are discontinuous. Bike lanes exist along Shawnee Parkway, and there are treatments at the intersections to improve visibility to drivers. However, this high-speed, high-volume roadway is uncomfortable for some riders due to a lack of protection from vehicles.

Jackson has a reasonably well developed trail system in the western part of the city that serves a number of schools and city parks, as well as the city's new community center. However, the eastern and southern portions of the city are currently underserved by the trail system. There are also no on-street bicycle facilities within the City of Jackson.

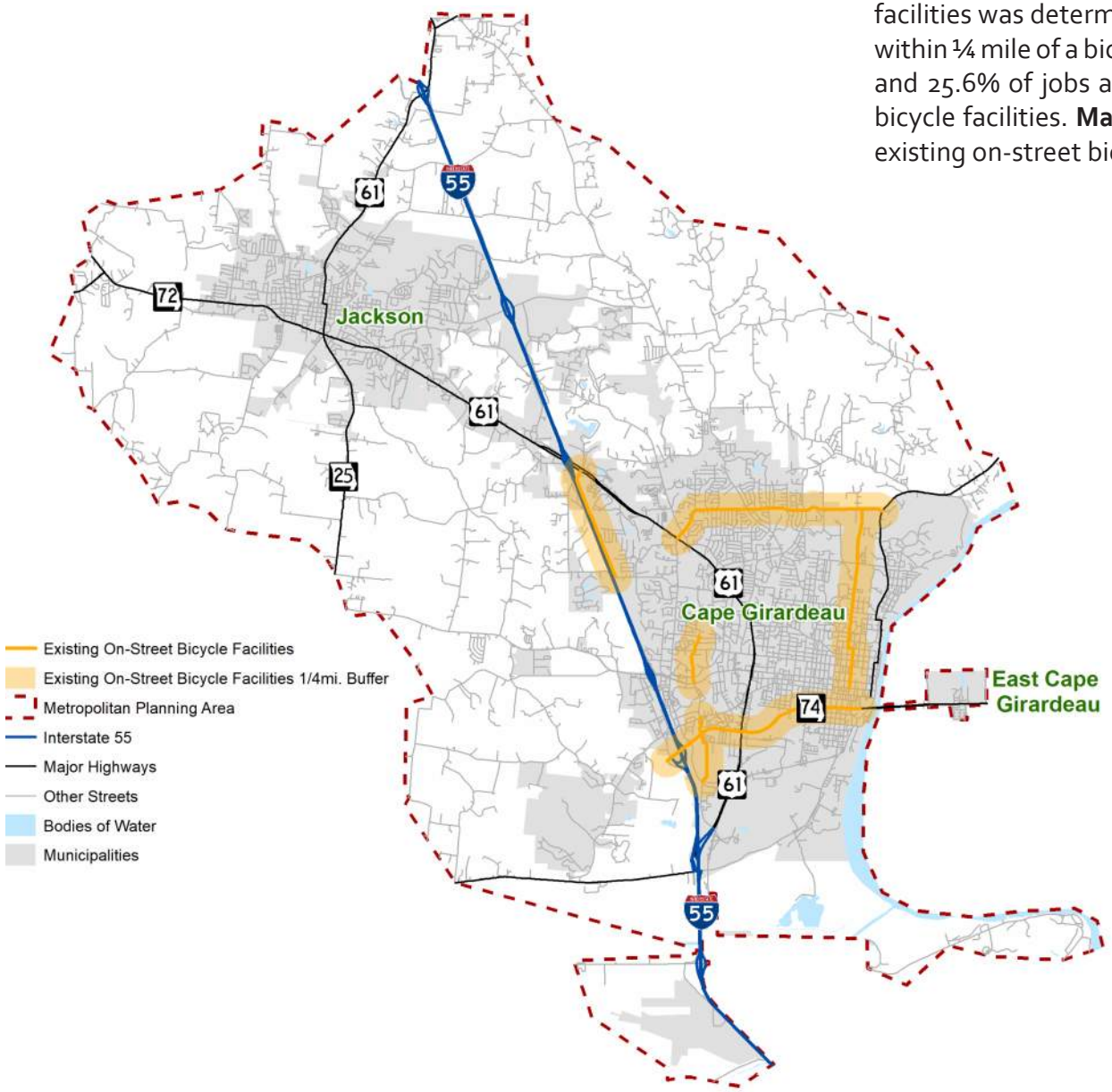
Existing Trail Accessibility

Accessibility to trails can be difficult to determine given that there are numerous barriers, both natural and man-made, that can make reaching trails difficult even if the distance between a particular location and the trail may be quite short. To address this, a larger, more regional metric was developed. Any census block that has its center within ¼ mile of an existing trail was considered accessible. Currently, 17.5% of the population has easy access to a trail, while 32.1% of jobs were located within ¼ mile of a trail. **Map 21** shows the ¼ mile buffer around existing trails within the SEMPO region. The 1/4 mile buffer around the trails shows that the west part of Jackson has good accessibility to trails while the east part has no accessibility.

Map 21. Existing Trail Accessibility



Map 22. Existing On-Street Bicycle Facility Accessibility



Existing On-Street Bicycle Facility Accessibility

Similar to trails, the accessibility to existing on-street bicycle facilities was determined to be any census block that has its center within ¼ mile of a bicycle facility. Currently, 21.0% of the population and 25.6% of jobs are located within ¼ mile of existing on-street bicycle facilities. **Map 22** shows the ¼ mile buffer surrounding the existing on-street bicycle facilities.

Interstate Routes

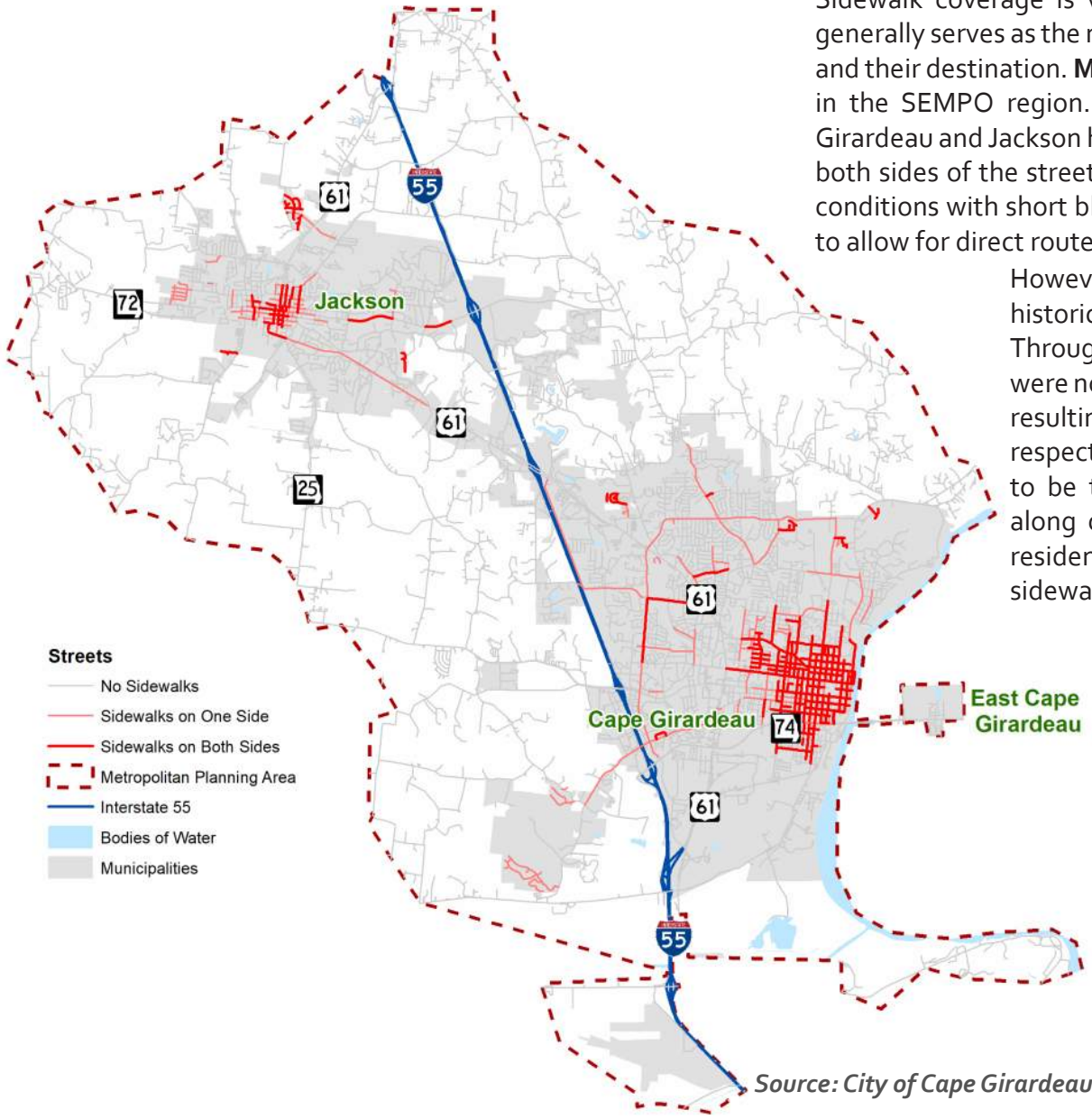
There are three different interstate/national bicycle routes that pass through Cape Girardeau and Jackson:

- Adventure Cycling Association's Great Rivers South Bicycle Touring Route,
- Mississippi River Trail, and
- US Bicycle Route 54.

All of these three routes follow existing high-speed, high-volumes roads with few, if any, on-street bicycle facilities. These facilities are planned at a national or state level, meaning the routes may not be following optimal alignments at the local level. While these routes are predominantly used by experienced cyclists that are comfortable in mixed traffic, safer routes should be identified on which to align these long-range routes through the SEMPO region.

Existing Sidewalk Coverage

Map 23. Existing Sidewalk Coverage



Sidewalk coverage is very important for pedestrian traffic as it generally serves as the most direct route between someone's home and their destination. **Map 23** shows the existing sidewalk coverage in the SEMPO region. The historic, central areas of both Cape Girardeau and Jackson have well connected grids with sidewalks on both sides of the streets. These areas provide for optimal walking conditions with short block lengths and ample roadways crossings to allow for direct routes.

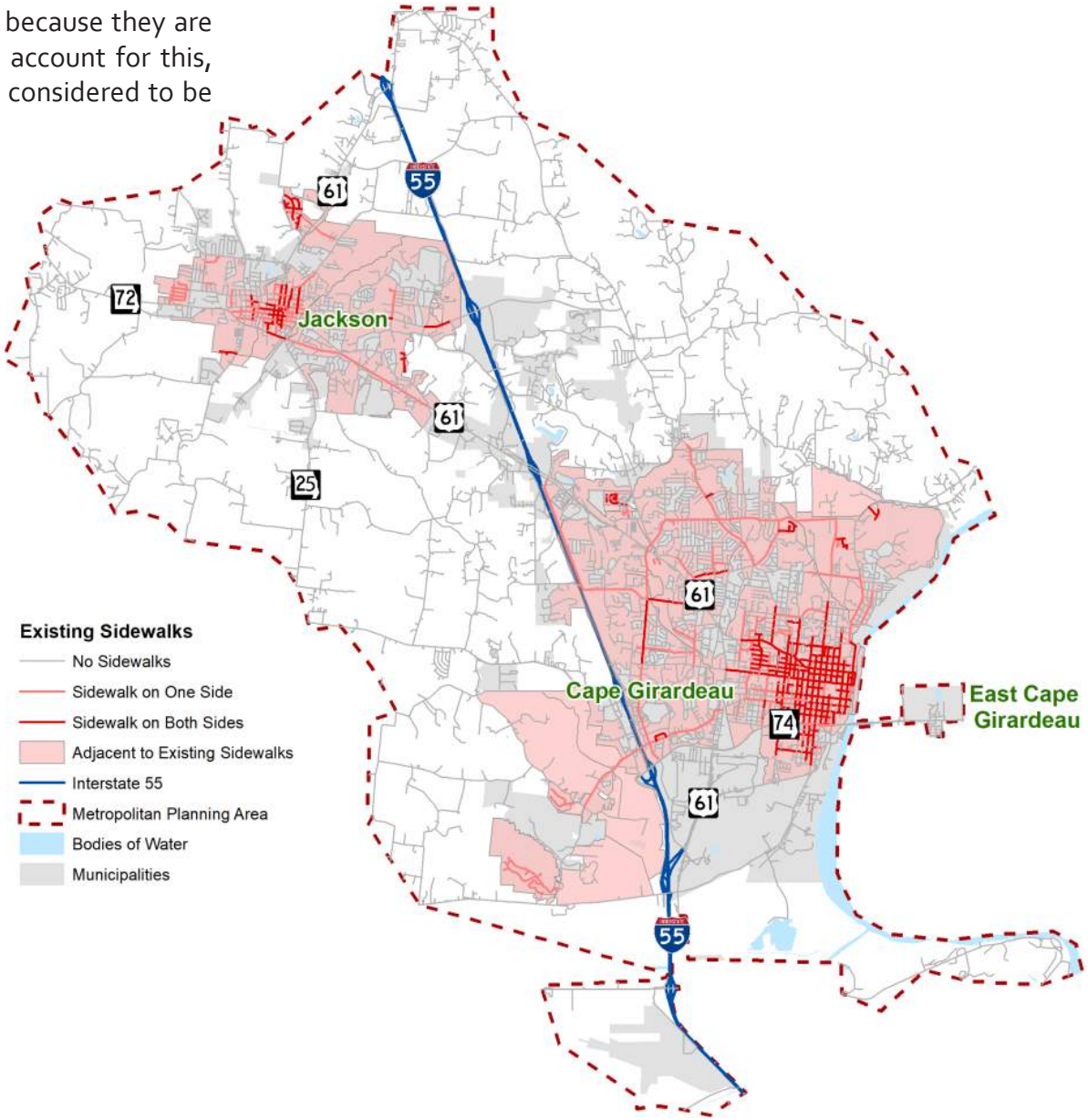
However, both cities suffer from a gap between the historic central areas and the more suburban areas. Through most of the twentieth century, sidewalks were not a priority for municipalities or developers, resulting in rings of few, if any, sidewalks around the respective central areas. These large gaps will need to be targeted to provide strategic connections along continuous roadways to safely serve local residents. Both Cape Girardeau and Jackson have sidewalk requirements for new developments.

Source: City of Cape Girardeau, City of Jackson, Google Earth

Existing Sidewalk Accessibility

Unlike trails and on-street bicycle facilities, sidewalks have a much smaller catchment area of potential users because they are not typically a regional destination or route. To account for this, census blocks adjacent to existing sidewalks are considered to be accessible, rather than census blocks within ¼ mile of sidewalks. Since sidewalks are much more prevalent than the other non-motorized transportation facilities, 57.3% of the population is in a census block adjacent to an existing sidewalk, and 62.9% of jobs are adjacent to an existing sidewalk. **Map 24** shows the census blocks that are adjacent to existing sidewalks.

Map 24. Existing Sidewalk Accessibility



Multi-Modal Level of Service

Quantifying the cycling conditions in the region is an important step in identifying where the greatest needs are as well as exploring opportunities for low-stress bicycle facilities. Using methodology from the Northeastern University College of Engineering (http://www.northeastern.edu/peter.furth/criteria-for-level-of-traffic-stress/), a custom GIS-based tool was developed to assign a Bike Level of Traffic Stress (BLTS) and Pedestrian Level of Service (PLOS) to every roadway in the SEMPO region. This methodology was originally developed in 2012 and subsequently updated in June of 2017 and includes levels one through four to indicate the amount of stress a cyclist would experience on a particular roadway.

Bike Level of Traffic Stress

Bike Level of Traffic Stress (BLTS) is based on several characteristics of a roadway including the presence of bike lanes or sidepaths, the ADT of the roadway, the speed limit of the roadway, the number of traffic lanes, and whether or not on-street parking is present on the roadway. The BLTS values are explained below and a map showing the existing BLTS in the SEMPO region is shown in **Map 25**:

- BLTS 1: Strong separation from all except low speed, low volume traffic. Simple-to-use crossings. BLTS 1 is a facility suitable for children.
- BLTS 2: Except in low speed / low volume traffic situations, cyclists have their own place to ride that keeps them from having to interact with traffic except at formal crossings. Physical separation from higher speed and multi-lane traffic. Crossings that are easy for an adult to negotiate. Limits traffic stress to what the mainstream adult population can tolerate.
- BLTS 3: Involves interaction with moderate speed or multilane traffic, or close proximity to higher speed traffic.
- BLTS 4: Involves being forced to mix with moderate speed traffic or close proximity to high speed traffic.

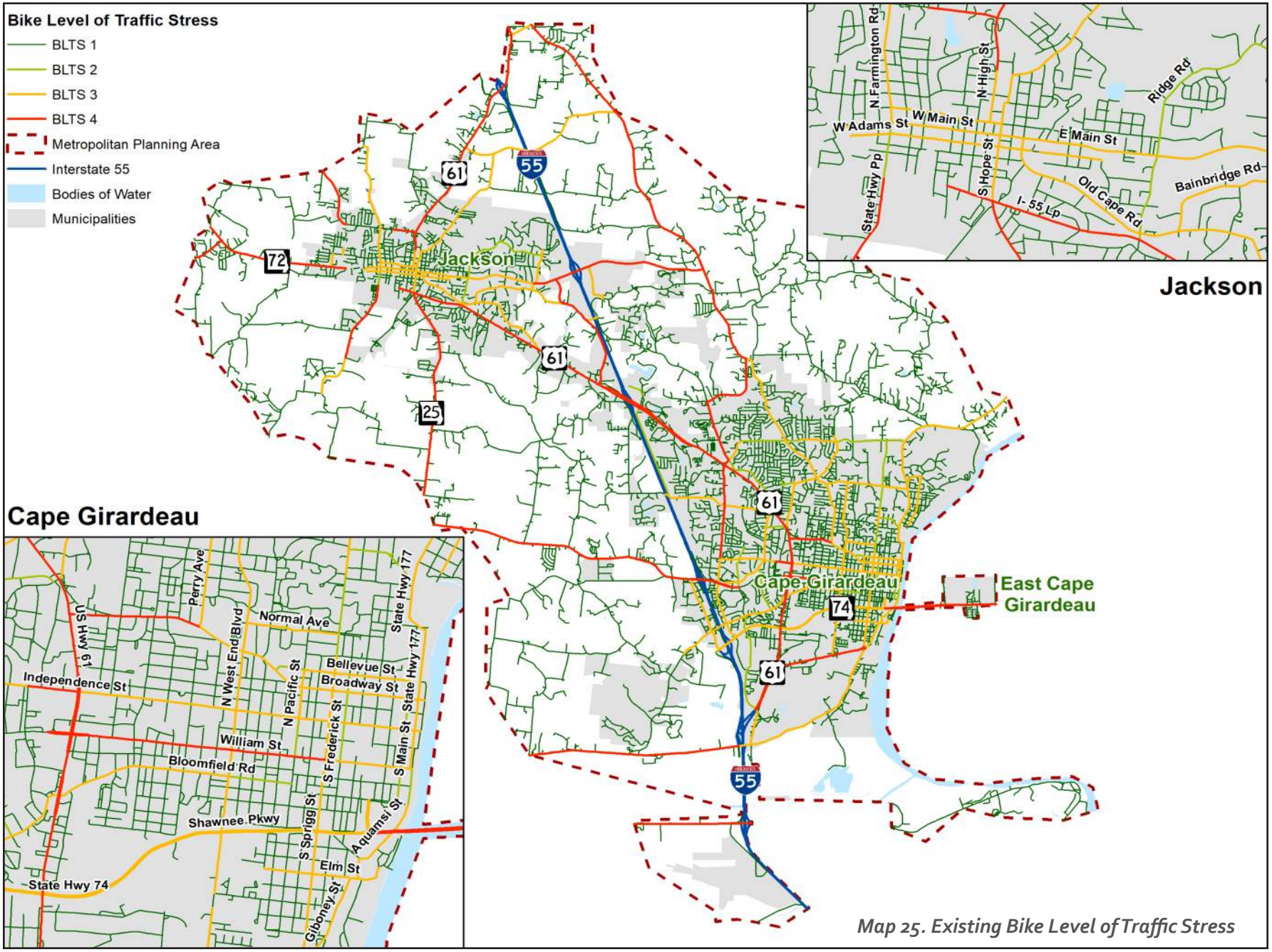
Map 25 shows that in both Cape Girardeau and Jackson, the minor roads have a low BLTS while the major roads have a high BLTS. This does not solve the issue of connectivity and accessibility, as major roads still pose as barriers in the bicycle network.

Pedestrian Level of Service

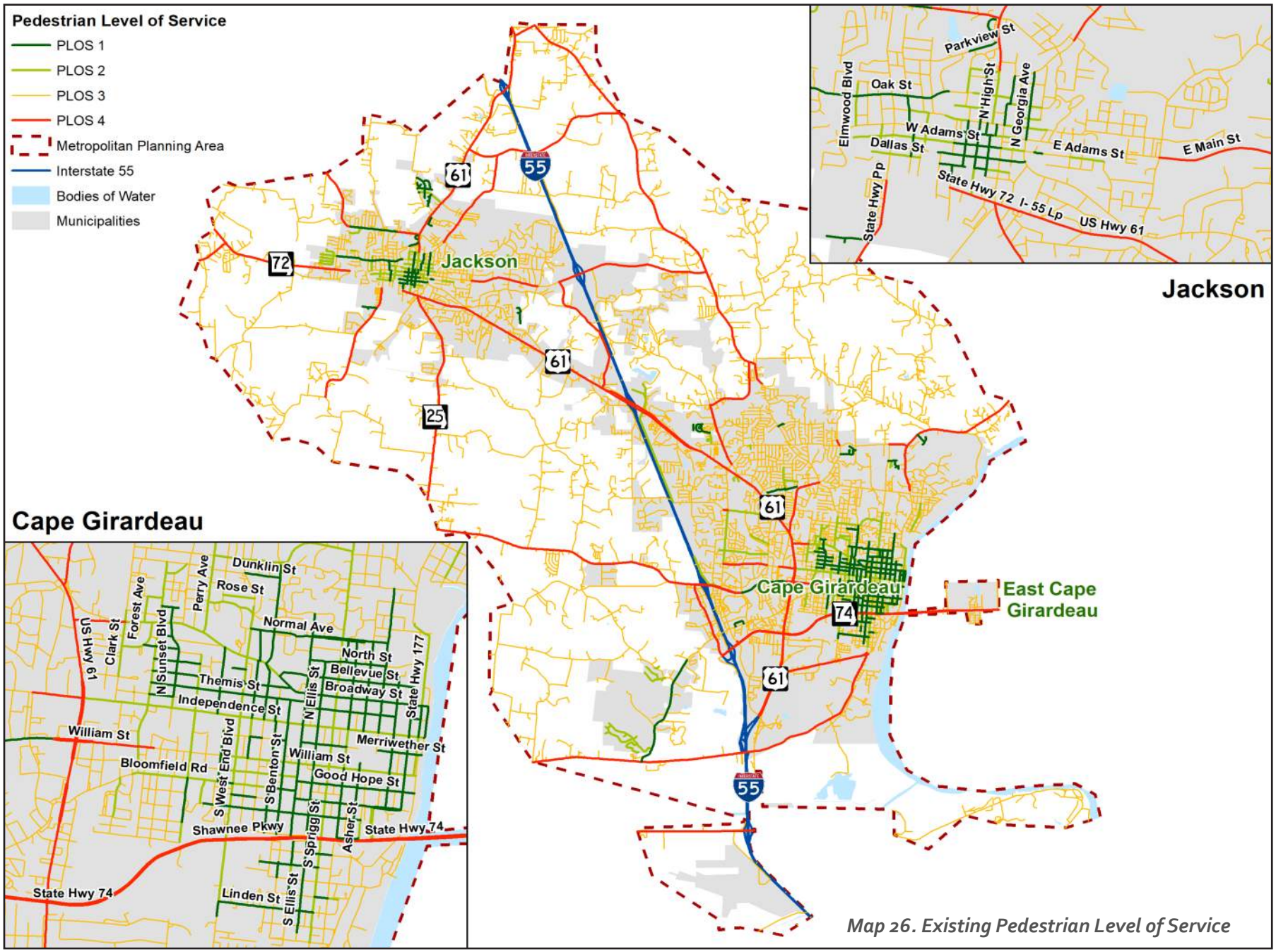
Pedestrian Level of Service (PLOS) is also based on the physical characteristics of the roadway, including the presence of sidewalks or sidepaths, width of sidewalks, speed limit, and number of vehicular lanes. The PLOS values are explained below and a map showing the existing PLOS in the SEMPO region is shown in **Map 26**:

- PLOS 1: Sidewalks on both sides of the street and a low speed limit.
- PLOS 2: Moderate traffic speeds with sidewalks on both sides of the street, or sidewalks on one side of the street with low traffic speeds.
- PLOS 3: Sidewalks on both sides of the street with high traffic speeds, or sidewalks on one side of the street with moderate traffic speeds.
- PLOS 4: No sidewalks or sidewalk on one side of the street with high traffic speeds.

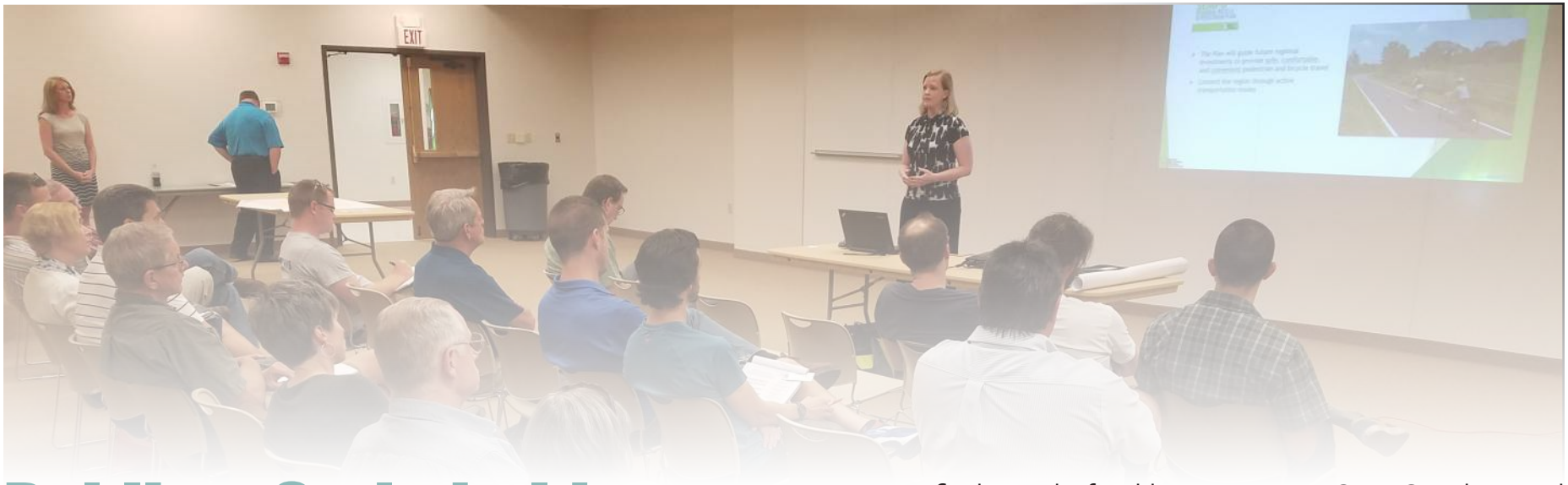
Map 26 shows that the streets in the downtown areas of Cape Girardeau and Jackson have a good PLOS whereas the roadways outside of these areas have a poor PLOS. This reflects the shift from compact, walkable development to auto-oriented sprawl development that occurred in the mid-twentieth century.



Map 25. Existing Bike Level of Traffic Stress



Map 26. Existing Pedestrian Level of Service



Public & Stakeholder Engagement

Public participation is important in any planning effort to ensure that the plan reflects the actual needs and desires of the public and that there is buy-in from a diverse group of residents and business owners. The Plan was developed using a process of engaging the public and key stakeholders in the SEMPO region through several means, including:

- Meetings with a Study Oversight Team (SOT);
- An initial round of public meetings in Cape Girardeau and Jackson;
- A public online survey;
- A public interactive mapping activity;
- A Facebook page; and
- A final round of public meetings in Cape Girardeau and Jackson.

Study Oversight Team (SOT)

The SOT was assembled to help guide the Plan process and ensure that focus on topics within the Plan are equitably distributed throughout the region. The team is made up of members from SEMPO, staff from the municipalities in the region, economic development professionals, representatives from grade schools and SEMO University, and cycling advocacy groups.

This diverse group was tasked with providing guidance on a number of issues including:

- Establishing the final scope-of-work for the project;
- Helping to establish the vision statement and goals for the project;
- Deciding where and when to hold public outreach events;
- Sharing what kind of bicycle and pedestrian treatments have been successful or unsuccessful in the past;

- Deciding how to structure the Plan and what points of emphasis to make;
- Identifying existing bicycle and pedestrian issues in the region;
- Reviewing the recommendations for both infrastructure and non-infrastructure plan elements; and
- Reviewing the Plan document.

Initial Public Meetings

An initial round of public meetings was held on June 21st, 2017. The first meeting was conducted at the Osage Centre in Cape Girardeau, and the second meeting was at the Jackson Civic Center in Jackson, both locations being universally accessible. These locations were chosen to ensure that people from both of the larger urban locations within SEMPO would have easy access to the public meetings.

The meetings began with brief presentations explaining what SEMPO is, what the bicycle and pedestrian plan is intended to achieve, the Plan's vision statement and goals, and what the next steps will be. The participants were then broken into small groups to comment on the existing bicycle and pedestrian conditions in the region. Participants commented on safety issues, areas they would like to see connected by bicycle and pedestrian infrastructure, and future development around the region.

A selection of comments during these meetings included:

- Rumble strips on highway shoulders are very bad for cyclists;
- The existing bike lanes and shared lanes in Cape Girardeau are not properly maintained and are often ignored by drivers;
- Some of the curves on the Cape LaCroix Trail are too sharp, parts of the trail are too narrow, and the railings are dangerous;
- Participants want a trail connection between Cape Girardeau and Jackson;

- Connections to SEMO University, other schools, and parks will be very important;
- More safe crossings across state highways in the area are a necessity; and
- Participants would prefer separated trails compared to on-street bicycle facilities.

Public Survey

An online survey was conducted using the SurveyMonkey platform to enable people to give detailed feedback on their perceived successes and shortcomings of the existing non-motorized transportation network, as well as provide their opinions on how they would like to see active transportation evolve in the SEMPO region. A total of 206 people responded to the online survey to contribute their opinions and ideas. The entire survey was 31 questions long; however, respondents were able to decide if they wanted to answer questions regarding walking, cycling, or both which lowered the overall time it took to complete the survey. Some of the most pertinent survey results are summarized below. The complete record of survey results are provided in **Appendix A.**

- Walking in the Region:
  - Only 3% of respondents thought walking conditions in the region are excellent, while 33% thought they are poor.
  - 67% of respondents thought it was very important to

improve walking conditions in the region.

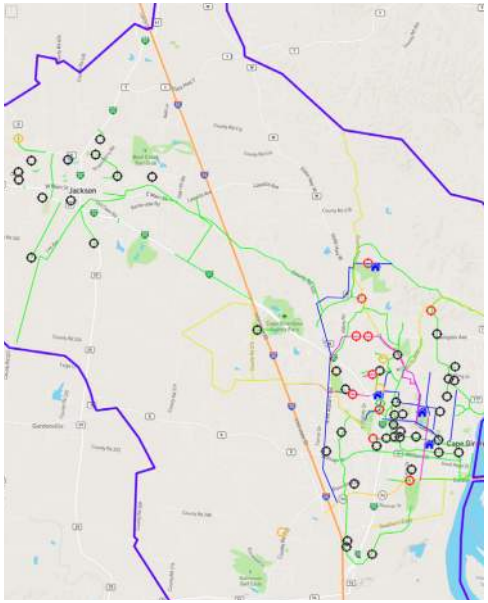
- The top three reasons people do not walk more are:
    - Lack of Sidewalks (66%)
    - Lack of Connectivity (59%)
    - Vulnerability to Traffic (57%)
- The top three improvements that would make people more likely to walk are:
    - Improved connections to Downtown Cape Girardeau and Uptown Jackson (75%)
    - More sidewalks in residential neighborhoods (72%)
    - Improved connections from residential areas to trails (68%)
- The top three most popular improvement types for walking are:
    - Sidewalks (59%)
    - Multi-Use Paths/Trails (58%)
    - Improved Safety Features (48%)

- Cycling in the Region:
    - Less than 2% of respondents thought cycling conditions are excellent, while 53% thought they are poor.
    - 70% of respondents thought it was very important to improve biking conditions in the region.
    - Only 36% of respondents were comfortable riding their bicycle in mixed-traffic conditions with vehicles.
    - The top three reasons people do not cycle more are:
        - Vulnerability to traffic (84%)
        - Lack of on-street bike lanes or parking (66%)
        - Uneven road surfaces and potholes (55%)
    - The top three improvements that would make people more likely to cycle are:
        - Improved connections to Downtown Cape Girardeau and Uptown Jackson (80%)
        - Safer and more comfortable bike routes (79%)
        - Improved on-street connections to trails (73%)
    - The top three most popular improvement types for bicycles are:
        - Multi-use Paths/Trails (65%)
        - Separate On-Road Bicycle Lanes (63%)
        - Striped Bicycle Lanes (61%)

Interactive Mapping Activity

An interactive mapping activity was performed using an online tool called WikiMapping. This activity allowed the public to point out:

- Locations they feel are unsafe or barriers to non-motorized transportation;
- Gaps in sidewalks or bike routes;
- Destinations they would like to be served by the non-motorized network;
- Routes that they currently love to ride or walk;
- Routes they like,



but need to be improved in some way;

- Routes they use but don't like; and
- New suggested routes.

The exercise was popular and produced a large amount of valuable information. Some of the major themes that can be obtained from the WikiMapping exercise are:

- Central Cape Girardeau needs more east-west connections and better connections between SEMO University and the surrounding areas;
- Recreational loops in the rural areas north of Cape Girardeau and between Cape Girardeau and Jackson received positive feedback;
- Trails should follow creeks as much as possible to avoid hills and other barriers;
- A trail connecting Cape Girardeau to Jackson would be popular;
- The large, state roadways are barriers to non-motorized transportation; and
- Connecting parks and schools in Jackson should be a priority.

Facebook Page

A Facebook page was created for the project to quickly and easily distribute information to the public on the progress of the project as well as to distribute the public engagement opportunities. This page also provided the public opportunities to engage directly with the project team. Social media is an ever increasingly important tool for public input as finding time to attend in-person public meetings has become difficult for most families.

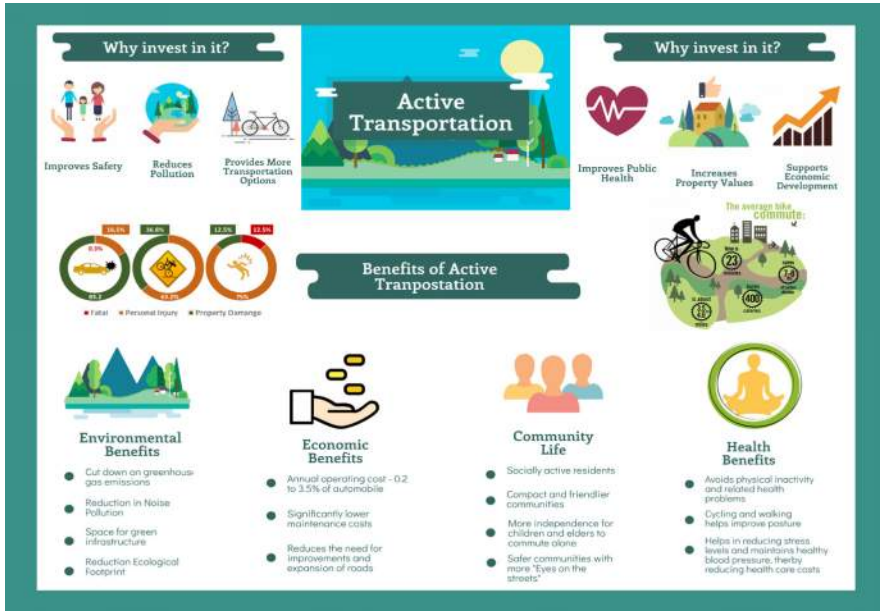
Final Public Meetings

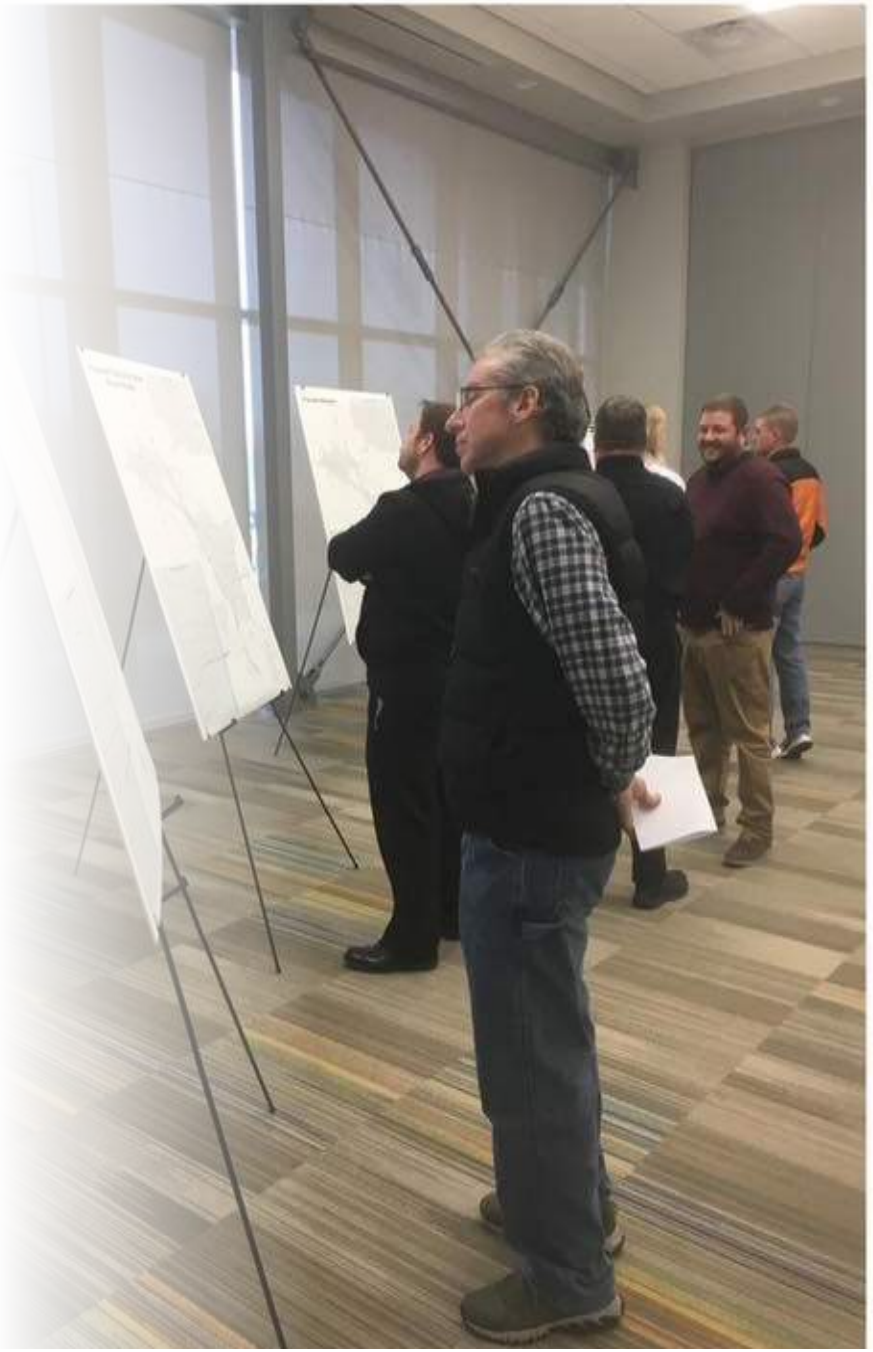
The second round of public meetings were held in an open-house style gathering on January 9th, 2018. The first meeting was conducted at the Jackson Civic Center in Jackson, and the second meeting was at the Osage Centre in Cape Girardeau, again, to ensure that people from both of the larger urban centers within SEMPO would have easy access to contribute to the process.

Proposed routes and improvements for various facilities were displayed on presentation boards for the public to review and comment. Copies of the Draft Plan were also available along with infographics on presentation boards explaining the Plan and the planning process for the public to review and comment. Members from SEMPO and Lochmueller Group were present to answer questions on the Draft Plan and the proposed routes.

Prior to the final meeting, the Draft Plan was available on the Facebook and the SEMPO pages for the public with a link to submit comments. A comment sheet was also circulated at the meeting for additional comments. A selection of these comments include:

- Incorporating interstate bicycle routes and information from Strava Bicycle and Pedestrian Heat Maps;
- A need for widening facilities at sharp turns;
- A need for additional bike boulevard treatments; and
- ADA compliant crosswalks and mid-block crossings, especially around schools.





Infrastructure Recommendations (Engineering)

The recommendations in this chapter are based on all of the preceding information established in the Existing Conditions and Public & Stakeholder Engagement chapters. The proposed system connects to the majority of destinations identified by the public and SOT, and adds substantially to the active transportation accessibility of the majority of residents and employees in the region.

This chapter provides an overview of the types of bicycle and pedestrian infrastructure recommended for the SEMPO region, explains the method used to evaluate potential routes, and makes recommendations for new routes as well as policies to address some of the systemic issues affecting the transportation system.

Types of Bicycle and Pedestrian Infrastructure

Some basic design standards are provided in the sections below, but more detailed information on design guidelines and appropriate

contexts for various treatments are provided by a number of sources, including, but not limited to:

- *Urban Street Design Guide* and *Urban Bikeway Design Guide* published by the National Association of City Transportation Officials (NACTO)
- *Guide for the Development of Bicycle Facilities* by the American Association of State Highway and Transportation Officials (AASHTO)
- *Recommended Design Guidelines to Accommodate Pedestrians and Bicycle at Interchanges* by the Institute of Transportation Engineers (ITE)
- *Designing for Pedestrian Safety* by the Federal Highway Administration (FHWA)
- *Road Diet Information Guide* by the Federal Highway Administration (FHWA)

The following are the types of active transportation facilities that are proposed to be utilized in the SEMPO region. The basic descriptions and design standards are a combination of recommendations from the sources above. The planning-level cost estimate ranges come from the University of North Carolina Highway Safety Research Center and have been adjusted for inflation to 2017 dollars.[1] The cost estimates include engineering, design, mobilization, and furnish and installation costs. However, it should be noted that costs vary widely based on site conditions, and the costs noted below are provided as an order of magnitude cost that should be refined as preliminary design occurs on the route. Costs will likely be significantly higher than noted if a structure is required, such as a bridge or overpass.

1 Bicyclist Infrastructure Improvements website: http://www.pedbikeinfo.org/cms/downloads/Countermeasure%20Costs_Report_Nov2013.pdf

Trails

Multi-Use Trails

Multi-use Trail

- Used by both pedestrians and cyclists
- Bi-directional
- Not located along existing roadways, provide completely separate travelways away from vehicular traffic
- Crossings with roadways should be highly visible for both vehicles and trail users
- Width: 8 feet – 14 feet
- Estimated per-mile cost range: $550,000 - $5,000,000. For purposes of this study, $800,000 - $1,400,000 per mile was used to try and narrow the range.

Sidepaths

- Used by both pedestrians and cyclists
- Bi-directional
- Located along an existing roadway, replaces the sidewalk
- Crossings can be combined with crosswalks, though high-visibility crossings are recommended
- Width: 8 feet – 12 feet
- Estimated per-mile cost range: $550,000 - $5,000,000. For purposes of this study, $800,000 - $1,400,000 per mile was used to try and narrow the range.

On-Street Bicycle Facilities

Bike Lanes

Bike Lanes, San Jose, CA

- Used exclusively by bicycles
- Directional
- Either located adjacent to the curb or between the travel lane and parking lane
- It is preferred that bike lanes include a 2-3 foot striped buffer between the lane and the adjacent travel lane, as well as between the bike lane and adjacent parking lane, if one exists. Standard bike lanes, without buffers, should only be constructed if right of way constraints prevent buffers.
- Green paint should be used to highlight conflict areas
- Width: 5 feet – 7 feet
- Estimated per-mile cost range: $100,000 – $150,000

Bike Boulevards

- Uses shared lanes between bicycles and vehicles
- Bi-directional
- Typically involves traffic calming treatments or traffic diverters to limit vehicular volumes and speeds
- Green paint should be used to highlight conflict areas
- Width: 10 feet – 14 feet (entire vehicular travel lane)
- Estimated per-mile cost range: $60,000 - $120,000

Sidewalks

- Used exclusively by pedestrians
- Bi-directional
- Located along roadways; it is recommended that a buffer is provided between vehicular lanes and sidewalks such as a tree line or parking lane
- Width: 5 feet – 7 feet
- Estimated per-mile cost range: $145,000 - $180,000

Trailheads

Since the region already has a good network of trails and is leaning towards developing it further, trailheads and proper signage for users would not only attract more people but would also enhance the experience of the trail. While specific locations for trailheads are not identified in this study, as a new trail proceeds into the design process, appropriate locations for trailheads should be incorporated. In addition to providing access, trailheads can provide information, orientation and other amenities for the comfort and convenience of the trail user. Trailheads can incorporate:

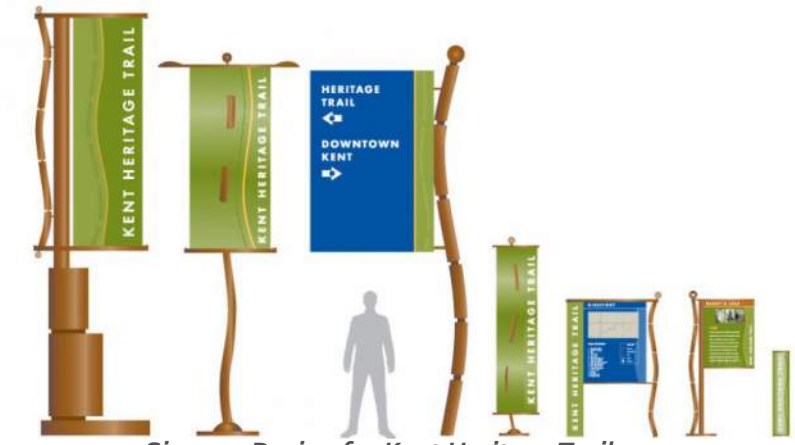
- Automobile parking
- Bicycle parking
- Wayfinding kiosks and information centers
- Drinking water, light snack kiosks and restrooms
- Convenient access to transit

Trailhead, Daniel Boone National Forest

Branding

It is important that trail users have access to information regarding trails and bicycle facilities to make full use of the facilities. Information on the active transportation network can be provided in a variety of ways, including brochures, kiosks, guidebooks, websites and signage. For informational materials to be most effective, consistent branding should be used across all platforms; however, the branding can be customized for the different cities in the region to let users know which area they are traveling through. The branding should be easily recognizable, following the same color scheme and using a consistent logo designed for the trail network, on all informational materials and signage. A few examples:

Signage Design for Grass River Natural Area



Signage Design for Kent Heritage Trail

Signage Design for Fort Collins Bikeway

Traffic Calming

Traffic calming measures involve design and management strategies that aim to balance vehicular traffic on streets with other users. The techniques help reduce the impact of motor vehicle traffic by slowing it down. Depending on the availability of funds, traffic calming measures can vary from inexpensive, "paint can" improvements to permanent infrastructure improvements. A few examples of traffic calming measures that can be implemented in the SEMPO region are:

- Narrowing traffic lanes. Narrowing a 12 foot wide lane to 10 or 11 feet has been shown to reduce vehicle speeds and can also provide for more room on the roadway for buffered bike lanes or other bicycle and pedestrian improvements;
- Striping of vehicular travel lane edge lines and the incorporation of on-street parking to narrow the effective width of travel lanes and provide a barrier between pedestrians and motorists;
- Radar speed display and other signage to help reduce

vehicle speed;

- Curb extensions (bump-outs) and chicanes (concrete islands used to offset traffic and create horizontal diversions) to reduce speed; and
- Raised crosswalks or intersections to encourage motorists to yield to bicyclists and pedestrians; the raised platform increases pedestrian and bicyclist visibility.

Minor infrastructural additions like railings, street furniture, high-visibility or textured crosswalks, and lighting can also reduce vehicle speeds. All of these identified techniques can be compatible and integrated with multi-modal infrastructure.

Radar Speed Display

Curb Extensions

Raised Crosswalks

Chicanes

Evaluation Scorecard

A scorecard was developed to combine measures of effectiveness to be able to create the most useful possible routes as well as to evaluate routes against one another to develop a priority list of projects. The measures of effectiveness included in the scorecard include:

- Does the route improve the Bike Level of Traffic Stress (BLTS)? (Yes/No)
- Does the route improve the Pedestrian Level of Service (PLOS)? (Yes/No)
- Is the route on a roadway with a high speed limit (35mph+)? (Yes/No)
- Is the route on a roadway with high average daily traffic (10,000+)? (Yes/No)
- Does the route touch an area with high employment density? (Yes/No)
- Does the route touch an area with high population density? (Yes/No)
- Does the route touch an area with a high proportion of low-income housing? (Yes/No)
- Does the route touch an area with high student populations? (Yes/No)
- Does the route touch an area with a high proportion of zero-vehicle households? (Yes/No)
- Does the route go near a school? (Yes/No)
- Does the route go near another destination (identified by WikiMapping or public/SOT input)? (Yes/No)
- What amount of additional population is served? (Population of census blocks within ¼ mile of a proposed trail or on-street bicycle facility that are not within ¼ mile of an existing trail or

bicycle facility. Census blocks adjacent to a new sidewalk that are not adjacent to an existing sidewalk.)

- 0 – 1,000 = Poor
- 1,000 – 2,000 = Okay
- 2,000 + = Good

• What amount of additional employment is served? (Employment in census blocks within ¼ mile of a proposed trail or on-street bicycle facility that are not within ¼ mile of an existing trail or bicycle facility. Census blocks adjacent to a new sidewalk that are not adjacent to an existing sidewalk.)

- 0 – 1,000 = Poor
- 1,000 – 2,000 = Okay
- 2,000 + = Good

Determining Scores

- Each Yes or Good = +1 point
- Each Okay = 0 points
- Each No or Poor = -1 point

Each metric has equal weight. The points are added up for each route and a composite score is created. The composite score can be positive or negative. The score is not necessarily the only metric by which to judge a project. Some projects may score poorly but have some other benefits not reflected in the composite score, such as they serve as an important connection in the network or have recreational potential. However, this scoring method is a beneficial, quantifiable method by which to compare the projects to one another.

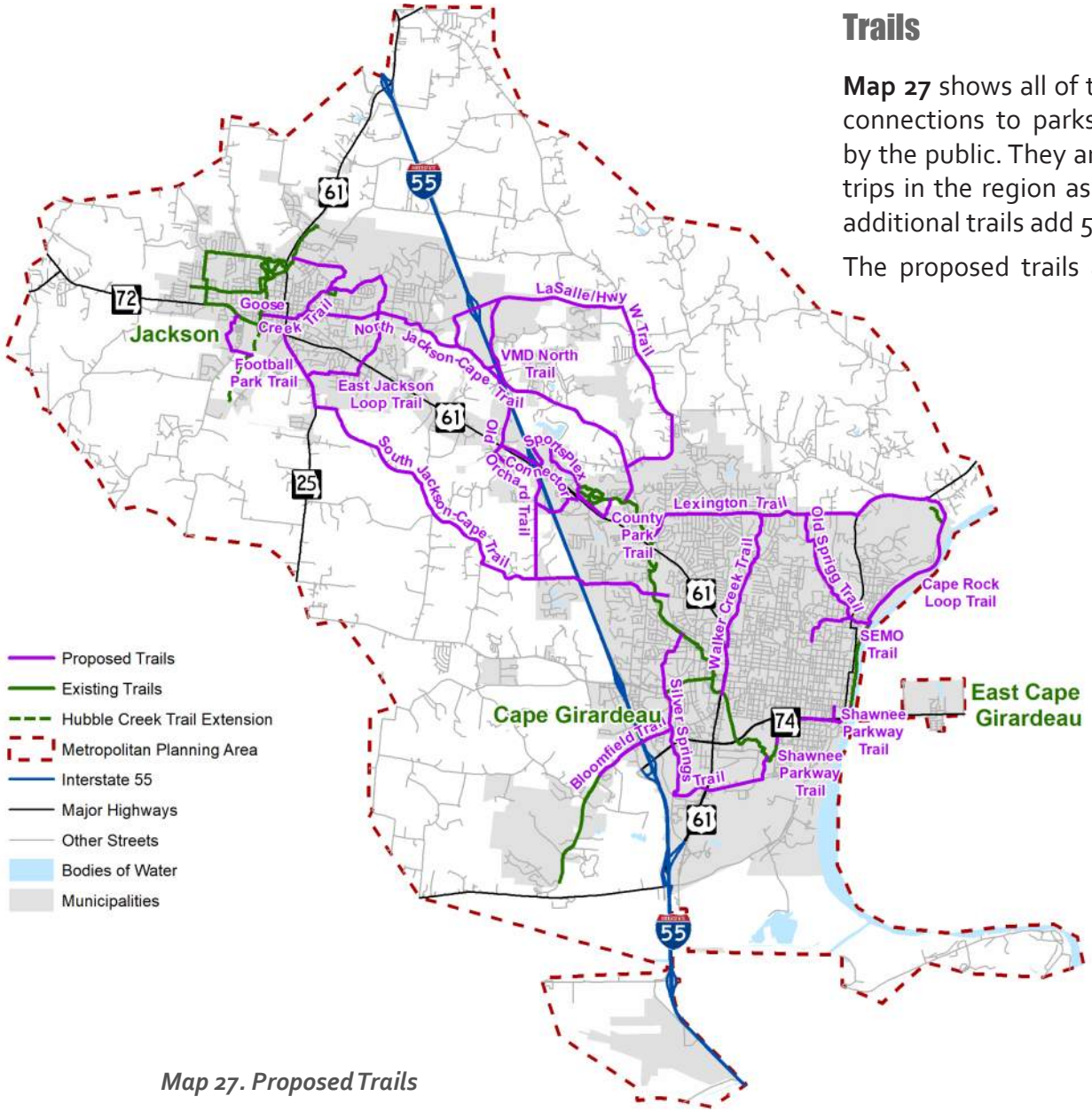
Recommended Routes

Trails

Map 27 shows all of the proposed trails. The trails aim to improve connections to parks, schools, and other destinations identified by the public. They are meant to serve the longest non-motorized trips in the region as well as recreational purposes. Together, the additional trails add 55 miles to the system.

The proposed trails are also based on recommendations in the Cape Girardeau Comprehensive Plan and the Jackson Parks Plan. Many of the proposed trails follow similar routes to access destinations within the SEMPO region; however, the respective plans from Cape Girardeau and Jackson both had recommendations to connect to recreational destinations outside of the MPA. These routes were not included in the final recommendations because this plan is primarily focused on trips within the region, though many of the proposed trails serve as "starter" lines with the ultimate destination being outside the region. For detailed analyses of the individual trails, including maps, scorecard results, and pros and cons lists, refer to **Appendix B**.

The results of the scoring process for the individual trails are provided in **Table 3**. In general, trails located close to the urban centers of Cape Girardeau and Jackson fared better in the scoring than trails in the more rural areas of the region.



Map 27. Proposed Trails

Table 3. Trail Performance Metric Scorecard

Proposed Trail	Improve BLTS	Improve PLOS	On High Speed Limit Road	On High ADT Road	High Density Emp.	High Density Housing	Low-Income Housing	High Student Pop.	High Zero-Vehicle HH	Near Schools	Near Other Destinations	Additional Pop. Access	Additional Emp. Access	Composite Score
Walker Creek Trail	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	4,403	2,499	+10
Silver Springs Trail	Y	Y	Y	N	Y	Y	Y	N	N	Y	Y	2,532	3,699	+7
SEMO Trail	-	-	-	-	Y	Y	Y	Y	N	Y	Y	4,573	1,980	+6
Goose Creek Trail	-	-	-	-	Y	N	N	N	Y	Y	Y	2,750	1,517	+2
Shawnee Parkway Trail	Y	Y	Y	Y	N	Y	Y	N	N	N	N	2,422	364	+1
Lexington Trail	Y	Y	N	N	N	Y	Y	N	N	N	Y	5,465	1,244	0
South Jackson-Cape Trail	Y	Y	Y	N	N	N	N	N	Y	Y	N	3,782	1,396	0
Old Sprigg Trail	-	-	-	-	N	N	Y	Y	N	N	Y	1,879	266	-2
Bloomfield Trail	Y	Y	Y	N	Y	N	N	N	N	N	N	1,248	2,870	-2
East Jackson Loop Trail	Y	Y	N	N	N	N	N	N	N	Y	Y	4,686	1,001	-2
Cape Rock Loop Trail	Y	Y	Y	N	N	N	Y	N	N	N	N	2,196	798	-3
North Jackson-Cape Trail	Y	Y	Y	N	Y	N	N	N	N	N	N	4,538	778	-3
Old Orchard Trail	Y	Y	Y	N	N	N	N	N	Y	N	Y	659	821	-3
SportsPlex Connector Trail	Y	-	Y	Y	N	N	N	N	N	N	Y	423	641	-4
LaSalle/Hwy W Trail	Y	Y	Y	N	N	N	N	N	N	N	N	2,395	778	-5
County Park Trail	-	-	N	N	N	N	N	N	Y	N	Y	1,099	308	-6
Football Park Trail	-	-	-	-	N	N	N	N	N	N	Y	210	153	-7
VMD North Trail	Y	Y	N	N	N	N	N	N	N	N	N	345	201	-7

Jackson to Cape Girardeau Connection

A long-standing priority for SEMPO has been to connect the region's two trail systems in Cape Girardeau and Jackson together via a new trail. Such a trail would vastly improve regional connectivity as well as provide a multitude of new recreational opportunities for current and prospective cyclists and pedestrians. Therefore, even though they do not score particularly well in the performance metrics, at least one of the Jackson-Cape trails should be assigned a high priority, as each trail serves as a critical link in the regional active transportation network. Feedback from the Study Oversight Team and the public has revealed that the North Jackson-Cape Trail is the preferable initial connection between the two cities to capitalize on the existing infrastructure in both areas.

On-Street Bicycle Facilities

Map 28 (page 56) shows all of the proposed on-street bicycle facilities. The on-street facilities are intended to provide bicycle connections through the dense, urban areas of Cape Girardeau.

These facilities are meant to serve areas where trails would be infeasible or unnecessary. A main goal of the bicycle facilities are to provide better access to the main SEMO University campus, which is a major generator of bicycle traffic in the region.

There are no on-street bicycle facilities planned for Jackson, mainly because there are a relatively large number of trails proposed for the area. The density of trails proposed ensures that the vast majority of residents and workers will be within ¼ mile of a trail, making on-street facilities less necessary. On-street bicycle facilities were also a less popular option during the public outreach phase of the project. There was also more desire for physical separation of bicycles and pedestrians from vehicles.

The existing bike route that follows Frederick Street and Sprigg Street north from Cape Girardeau is recommended to be upgraded to meet current standards for bicycle facilities. This important north-south route connects Downtown Cape Girardeau with SEMO University and the residential areas to the north. The Sprigg Street portion of the route has substandard four-foot wide bike lanes that are frequently interrupted by segments of shared lanes. It is recommended that continuous, six-foot wide bike lanes replace the existing bike lanes. The portion of the route on Frederick Street can remain as shared lanes, but should include traffic calming or diversion treatments to create a bike boulevard with low traffic speeds and volumes.

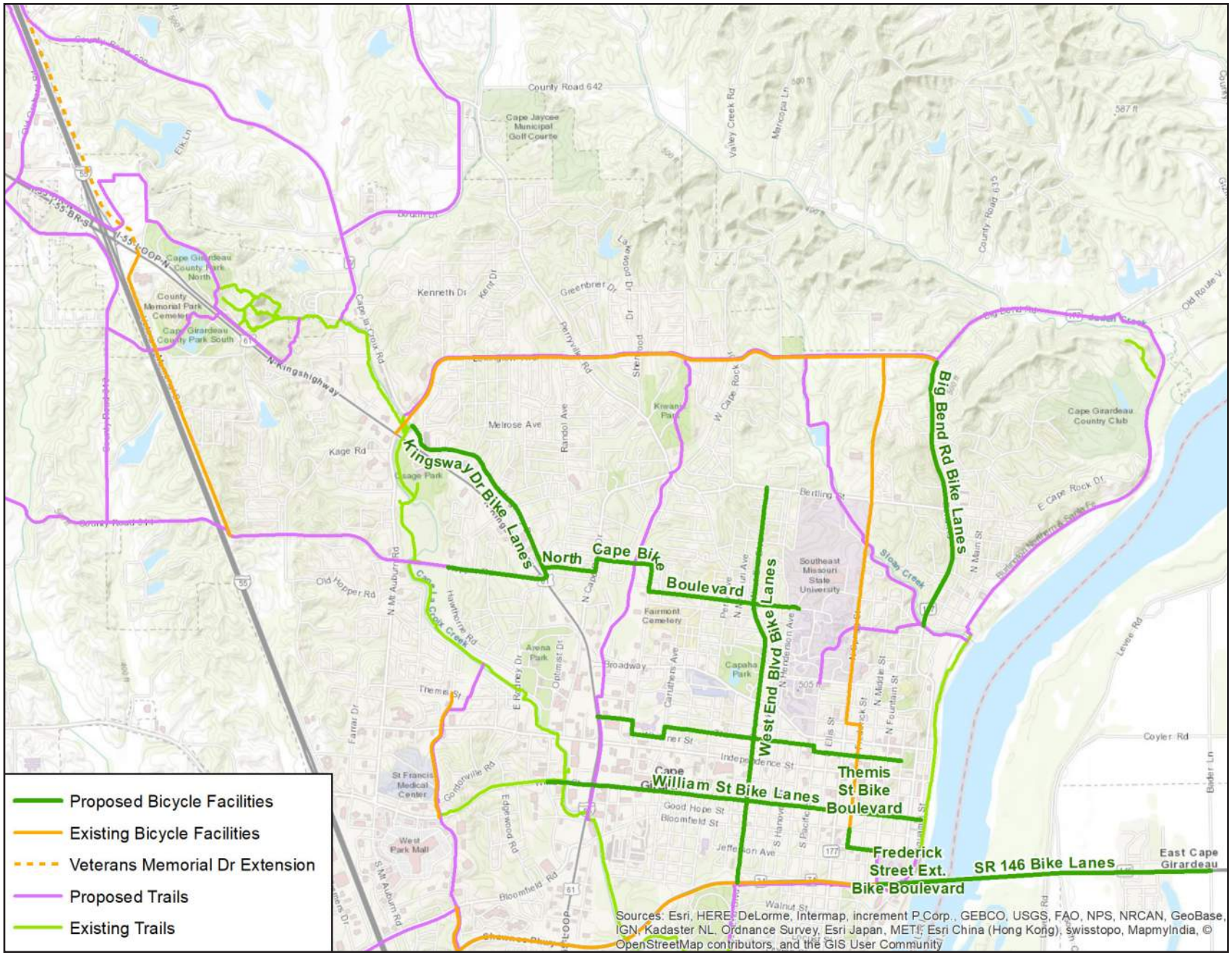
The results of the scoring process for the individual bicycle routes are provided in **Table 4**. In general, bike facilities located close to the urban center of Cape Girardeau fared better in the scoring than bike facilities in more suburban areas of the City.

For detailed analyses on the individual on-street bicycle facilities, including maps, scorecard results, and pros and cons lists, refer to **Appendix C**.

Table 4. On-Street Bicycle Facility Performance Metric Scorecard

Proposed Bicycle Facility	Improve BLTS	Improve PLOS	On High Speed Limit Road	On High ADT Road	High Density Emp.	High Density Housing	Low-Income Housing	High Student Pop.	High Zero-Vehicle HH	Near Schools	Near Other Destinations	Additional Pop. Access	Additional Emp. Access	Composite Score
William Street Bike Lanes	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y	3,375	3,694	+9
West End Boulevard Bike Lanes	Y	-	N	N	Y	Y	Y	Y	Y	Y	Y	5,902	2,795	+8
Themis Street Bike Boulevard	-	-	N	N	Y	Y	Y	Y	N	Y	Y	3,211	5,638	+5
SR 146 Bike Lanes	Y	-	Y	Y	N	Y	Y	N	Y	N	N	480	17	0
North Cape Bike Boulevard	-	-	N	N	N	Y	Y	N	N	N	Y	4,271	1,072	-2
Big Bend Road Bike Lanes	Y	-	Y	N	N	N	Y	N	N	N	N	2,030	1,206	-3
Kingsway Drive Bike Lanes	Y	-	N	N	N	Y	N	N	N	N	Y	3,198	1,636	-3
Fredrick Street Bike Boulevard	-	-	N	N	N	Y	Y	N	N	Y	N	464	44	-5

Map 28. Proposed On-Street Bicycle Facilities



Sidewalks

Map 29 shows all of the proposed sidewalks in the SEMPO region, while **Maps 30-32** show proposed sidewalks in South/East Cape Girardeau, North Cape Girardeau, and Jackson. Sidewalks serve the most localized active transportation trips, generally connecting directly from a person's origin to either a trail or directly to their destination. Sidewalk coverage is very important to improving safety and accessibility for pedestrians, particularly along major roadways where traffic volumes and speeds are relatively high.

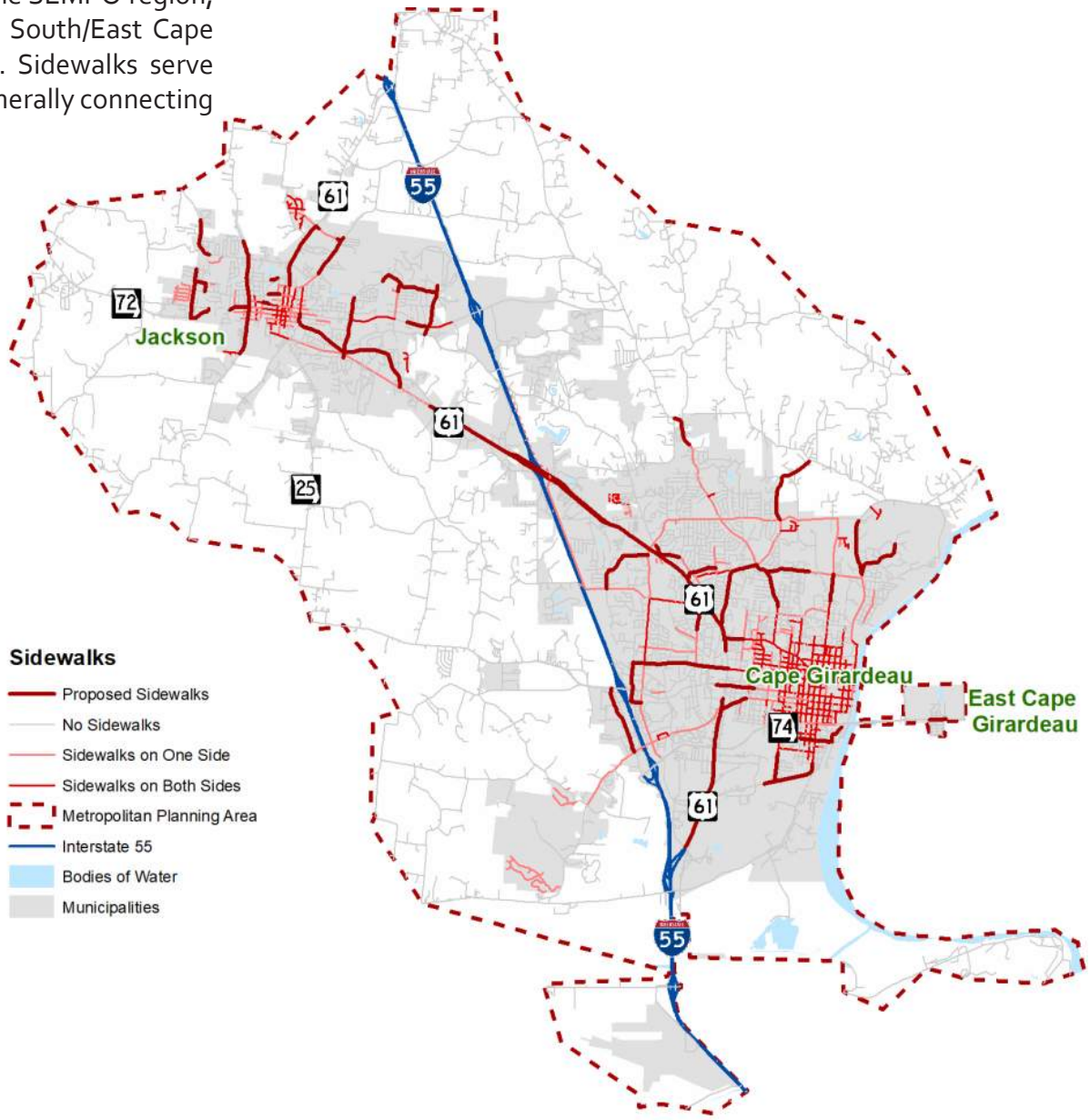
While it would be desirable to have sidewalks on both sides of every street in the region, the cost of installing and maintaining sidewalks along every street in every neighborhood is prohibitive. The majority of residential streets are relatively safe for pedestrians because they tend to be narrower and have lower traffic speeds and volumes. Proposed sidewalk projects focus on gaps in sidewalk connectivity along major roadways to at least provide safe connections on the most dangerous streets.

To effectively portray proposed sidewalk projects, they were broken down into geographic areas:

- South/East Cape Girardeau
- North Cape Girardeau
- Jackson

Tables 5-7 show additional adjacent population and employment that would be served by the proposed sidewalks.

Map 29. Proposed Sidewalks



Map 30. South/East Cape Girardeau Sidewalk Projects

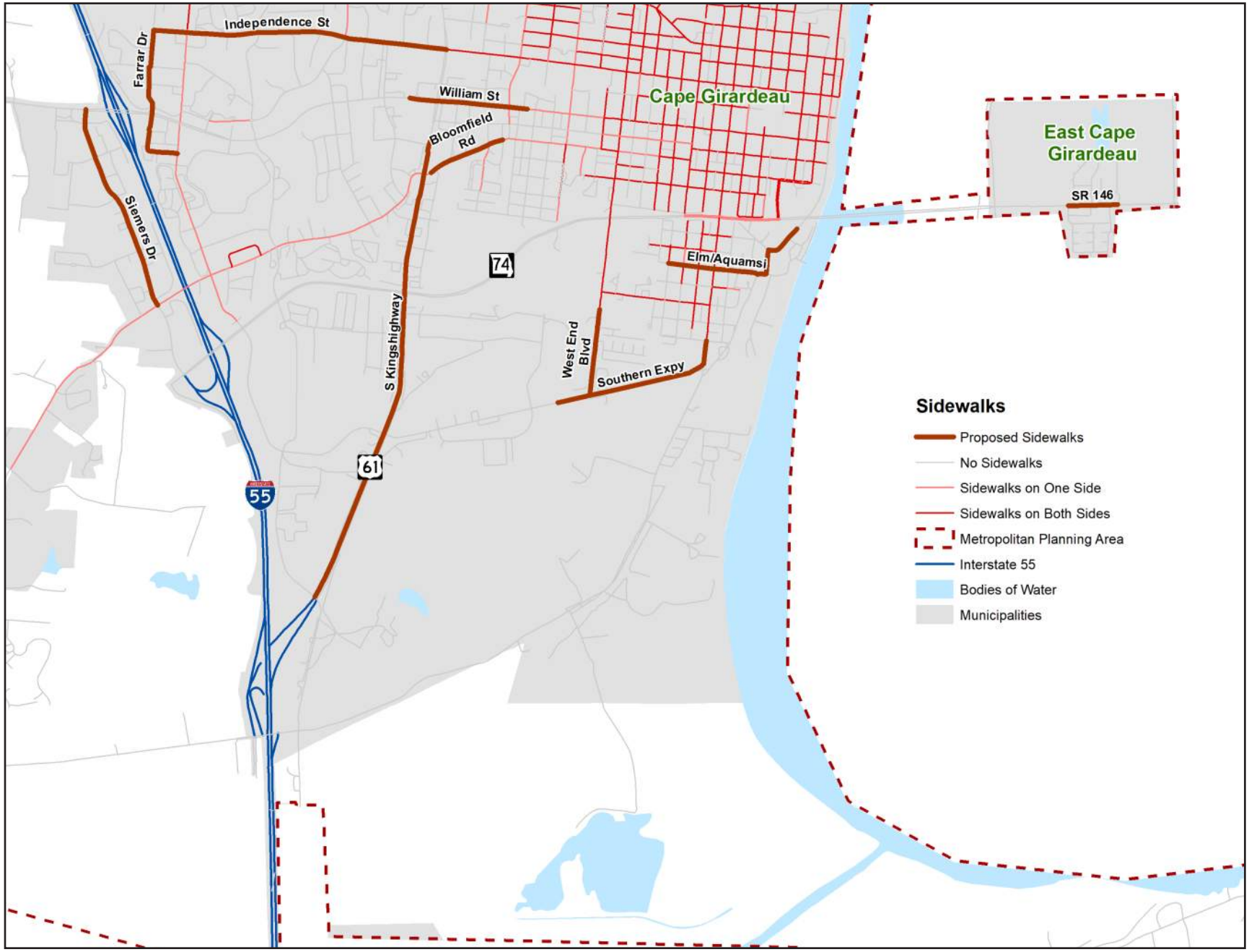


Table 5. South/East Cape Girardeau Sidewalk Projects

PROJECT ROADWAY	FROM	TO	ADDITIONAL ADJACENT POPULATION	ADDITIONAL ADJACENT EMPLOYMENT
S Kingshighway	Silver Springs Rd	Cape LaCroix Trail	400	2,756
Independence St	Farrar Dr	Kingshighway	247	1,499
William St	Cape LaCroix Trail	Sunset Blvd	66	1,282
Bloomfield Rd	Kingshighway	Sheridan Dr	319	802
Southern Expy	Silver Springs Trail	Hackberry St	69	770
Siemers Dr	Bloomfield Rd	William St	3	812
West End Blvd	Southern Expy	Linden St	25	443
SR 146	Commanche Dr	Virginia Dr	366	0
Elm/Aquamsi St	Benton St	Shawnee Pkwy	21	40
Farrar/Hospitality Dr	Mt Auburn Rd	Independence St	0	41

Map 31. North Cape Girardeau Sidewalk Projects

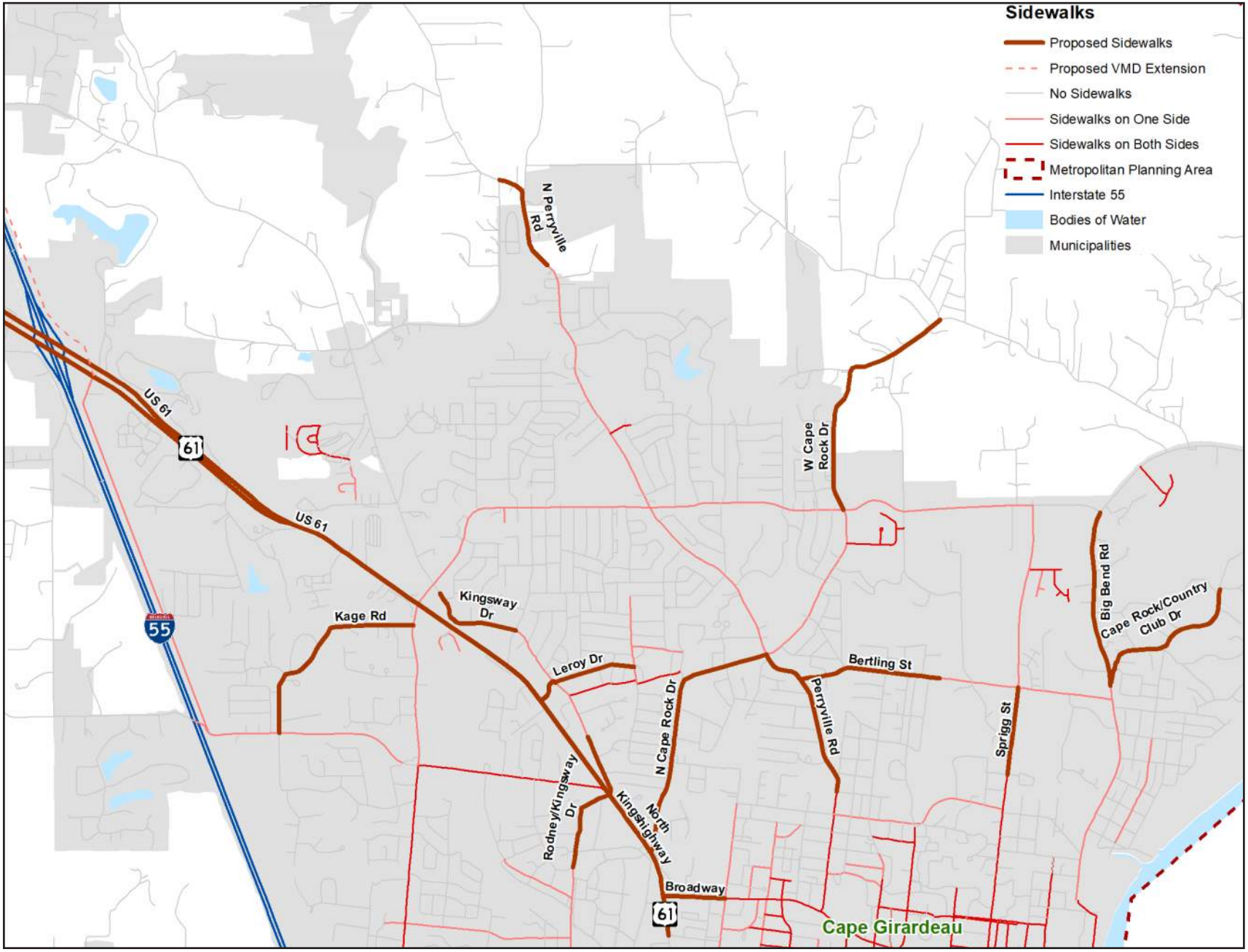
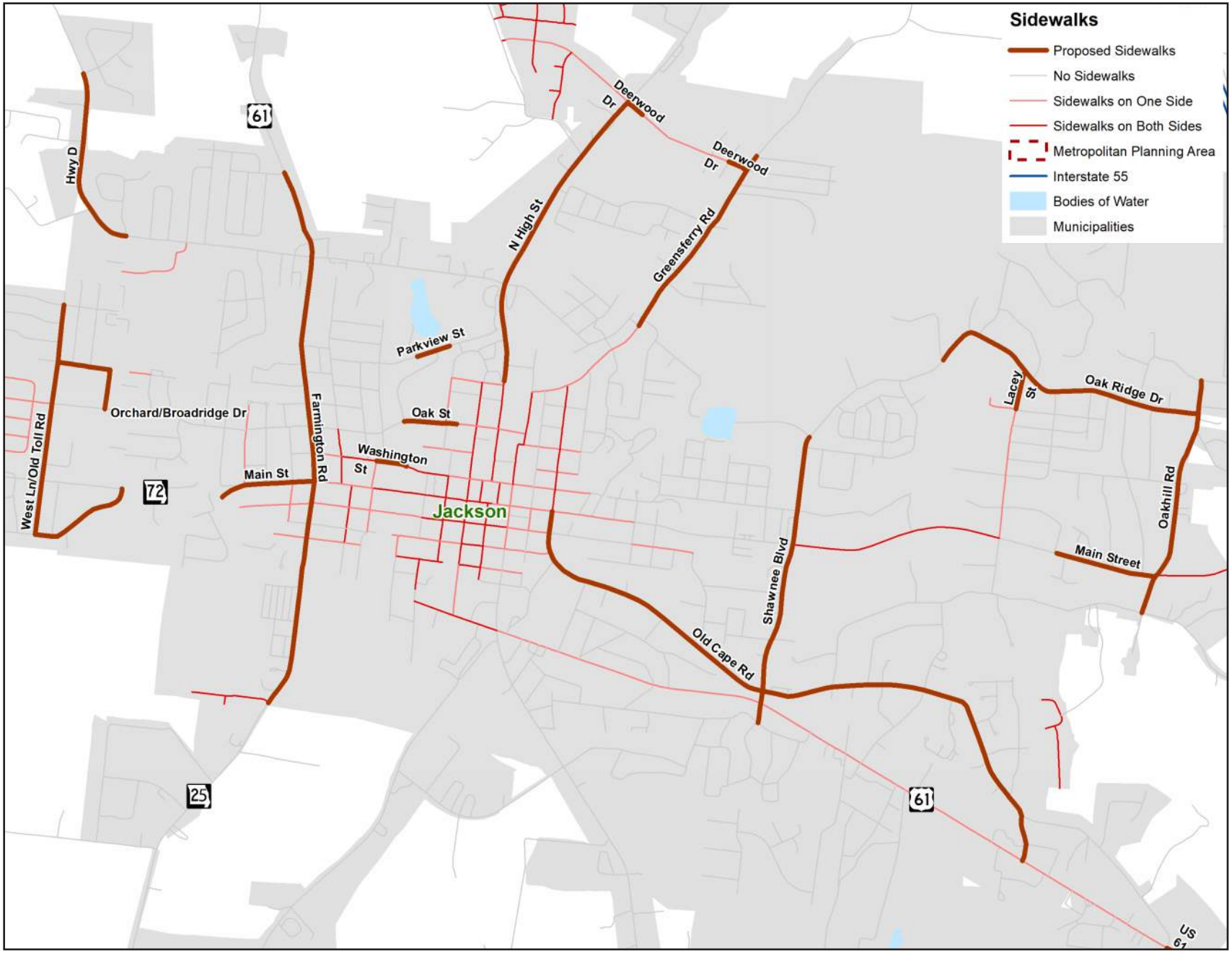


Table 6. North Cape Girardeau Sidewalk Projects

PROJECT ROADWAY	FROM	TO	ADDITIONAL ADJACENT POPULATION	ADDITIONAL ADJACENT EMPLOYMENT
N Cape Rock Dr	Kingshighway	Perryville Rd	1,610	750
W Cape Rock Dr	Lexington Ave	Old Sprigg Street Rd	1,546	161
E Jackson Blvd/N Kingshighway	Old Cape Rd	Bessie St	393	1,081
Broadway	Kingshighway	Clark Ave	291	1,179
Perryville Rd	Mississippi St	W Cape Rock Dr	1,186	34
Rodney/Kingsway Dr	W Rodney Dr	Plymouth Dr	743	446
Bertling St	Perryville Rd	Price Dr	1,037	34
Big Bend Rd	E Cape Rock Dr	Lexington Ave	936	17
Kage Rd	Hopper Rd	Mt Auburn Rd	441	311
Kingsway Dr	Lexington Ave	Kurre Ln	385	271
N Perryville Rd	Sue Annes Trail	Hwy W	383	192
E Cape Rock/Country Club Dr	Big Bend Rd	DePaul Ln	331	7
Sprigg St	Alumni Dr	Bertling St	78	0
Victoria/Leroy Dr	Kingshighway	Randol Ave	35	0

Map 32. Jackson Sidewalk Projects



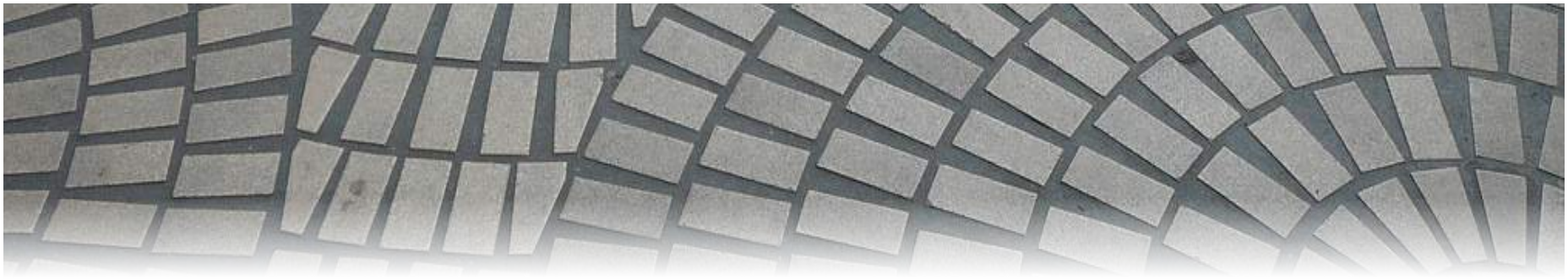
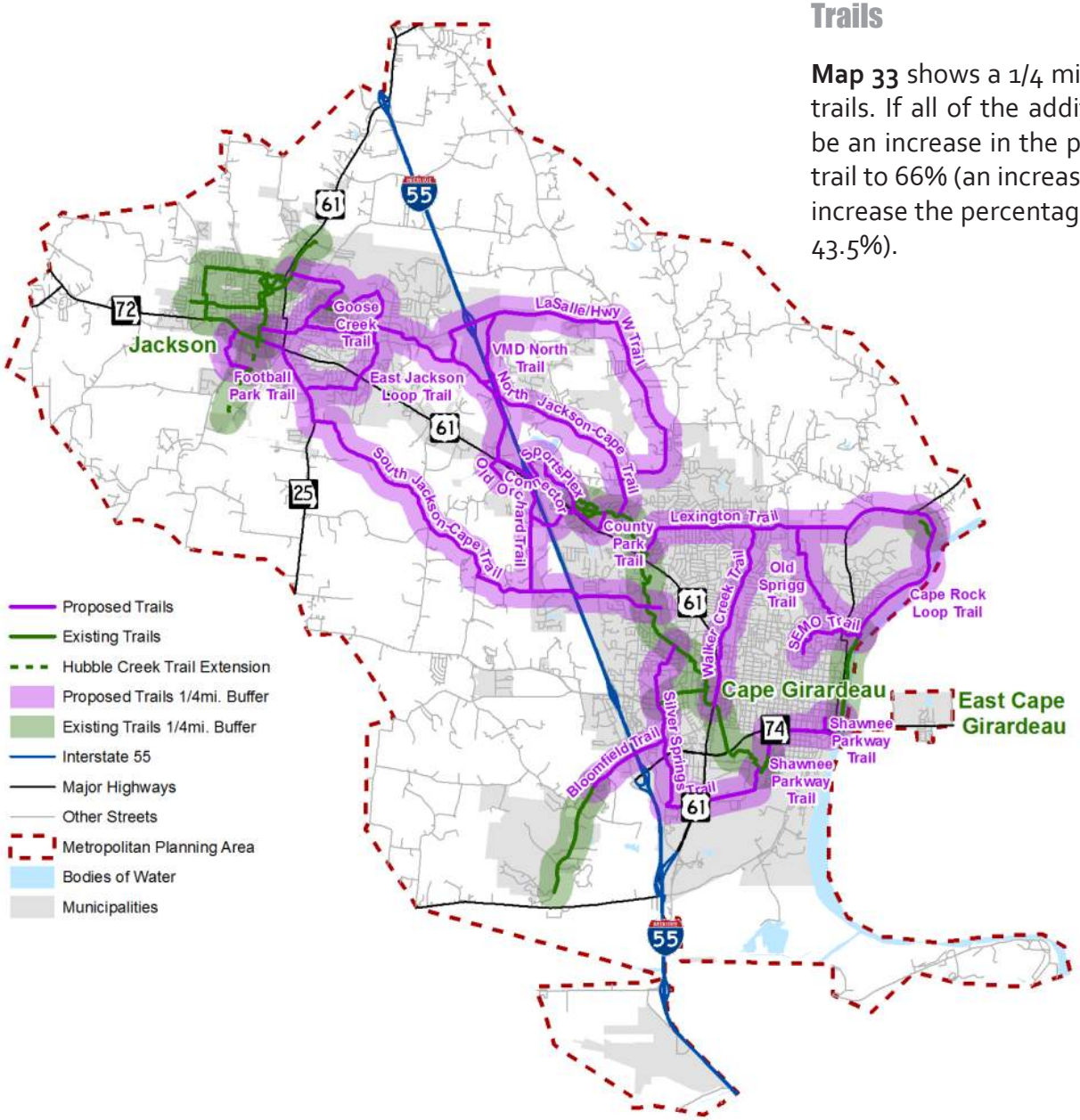


Table 7. Jackson Sidewalk Projects

PROJECT ROADWAY	FROM	TO	ADDITIONAL ADJACENT POPULATION	ADDITIONAL ADJACENT EMPLOYMENT
Shawnee Blvd	Highland Dr	Litz Park	1,661	82
Old Cape Rd	Main St	Jackson Blvd	1,407	68
Oak Ridge Dr	Ridge Rd	Oakhill Rd	1,110	37
Oakhill Rd	Bainbridge Rd	Ridge Rd	846	51
Farmington Rd	Jackson Ridge Dr	Redbud St	760	48
Deerwood Dr	Ripken Way	Greensferry Rd	642	103
N High St	Park St	Deerwood Dr	609	113
Greensferry Rd	Walnut St	Jennifer Dr	687	18
Hwy D	Cambridge Rd	Broadridge Dr	489	1
West Ln/Old Toll Rd	Jackson Blvd	Alpine Dr	354	78
Parkview Dr	Safety City Driveway	Parkview Sidepath	179	36
Orchard/Broadridge Dr	West Ln	Oak St	100	35
Main St	Jackson Blvd/Traveler's Way	Farmington Rd/ Oak Hill Dr	26	3
Oak St	Hubble Creek Trail	E of Russell St	0	0
Lacey St	Ridgeway Dr	Ridge Dr	0	0

Map 33. Existing & Proposed Trails Accessibility



Active Transportation Accessibility

Trails

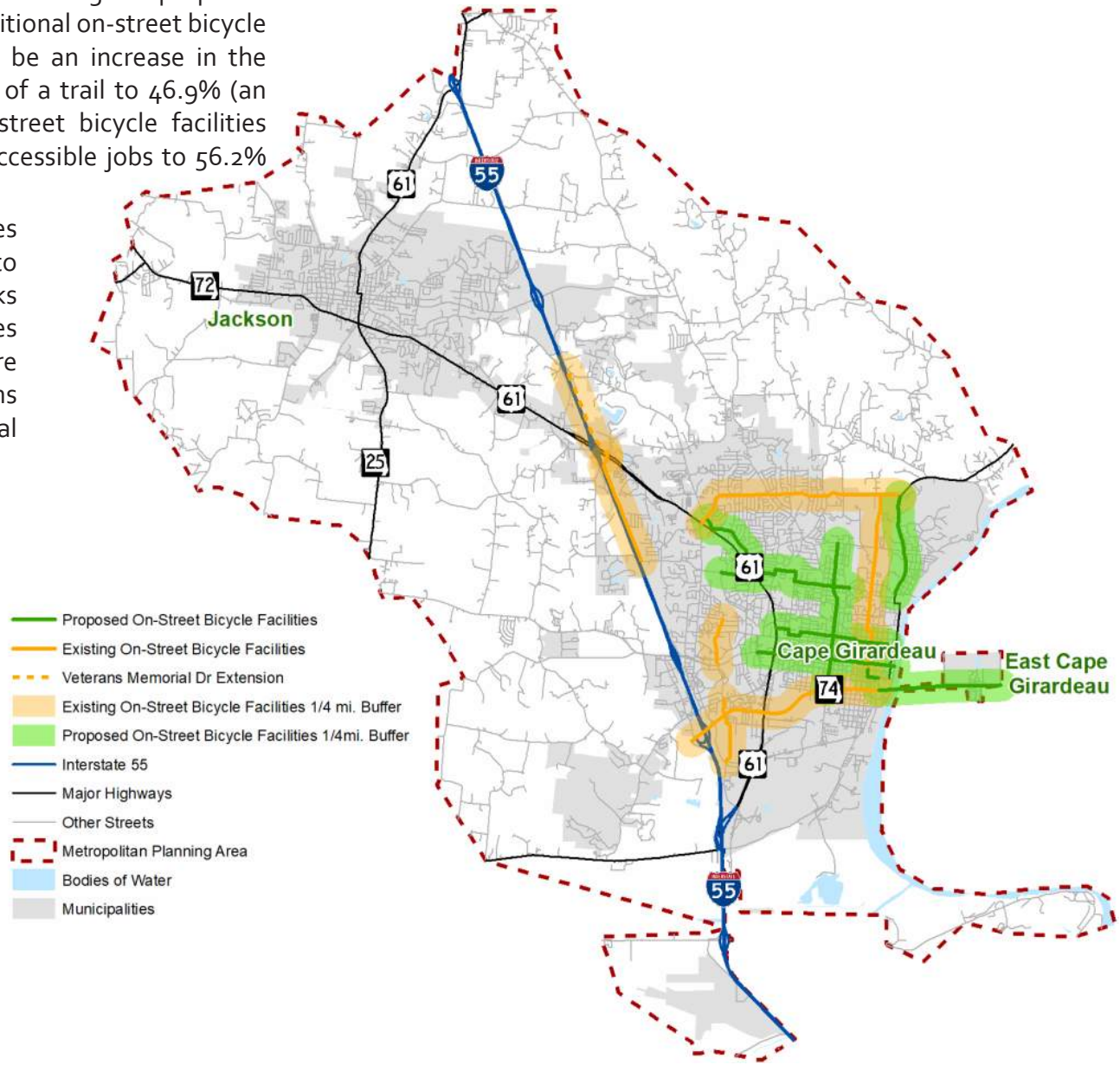
Map 33 shows a 1/4 mile buffer of all of the existing and proposed trails. If all of the additional trails were constructed, there would be an increase in the percentage of population within ¼ mile of a trail to 66% (an increase of 48.6%). The additional trails would also increase the percentage of accessible jobs to 75.6% (an increase of 43.5%).

On-Street Bicycle Facilities

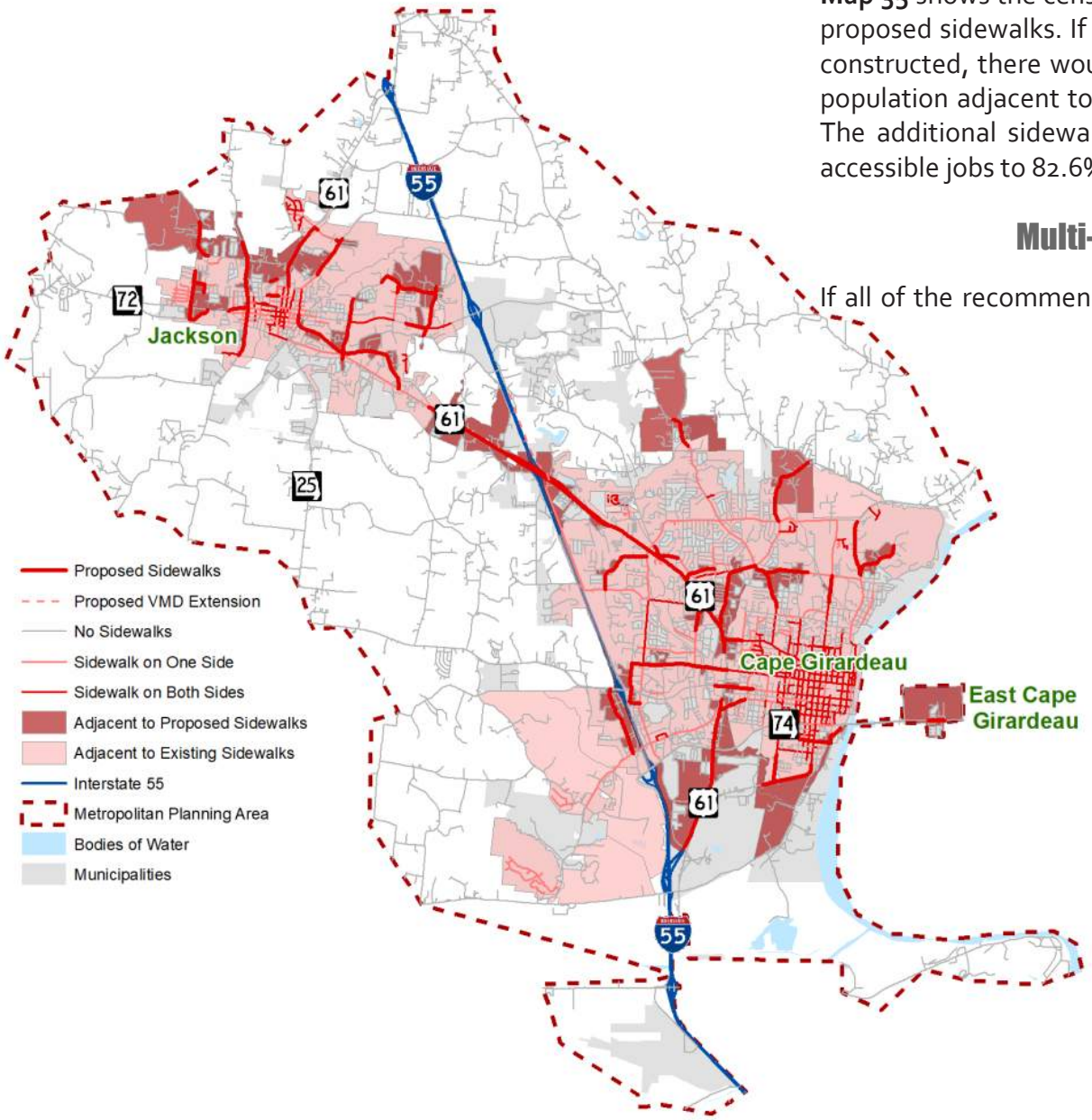
Map 34 shows a ¼ mile buffer of all of the existing and proposed on-street bicycle facilities. If all of the additional on-street bicycle facilities were constructed, there would be an increase in the percentage of population within ¼ mile of a trail to 46.9% (an increase of 25.9%). The additional on-street bicycle facilities would also increase the percentage of accessible jobs to 56.2% (an increase of 30.6%).

It is recommended that the municipalities in the region continue to update and add to their respective on-street bicycle networks based on future demand. This plan provides a basis for a regional network, but more localized improvements and additions should always be on the radar of local government entities to improve access.

Map 34. Existing & Proposed On-Street Bicycle Facilities Accessibility



Map 35. Existing & Proposed Sidewalk Accessibility

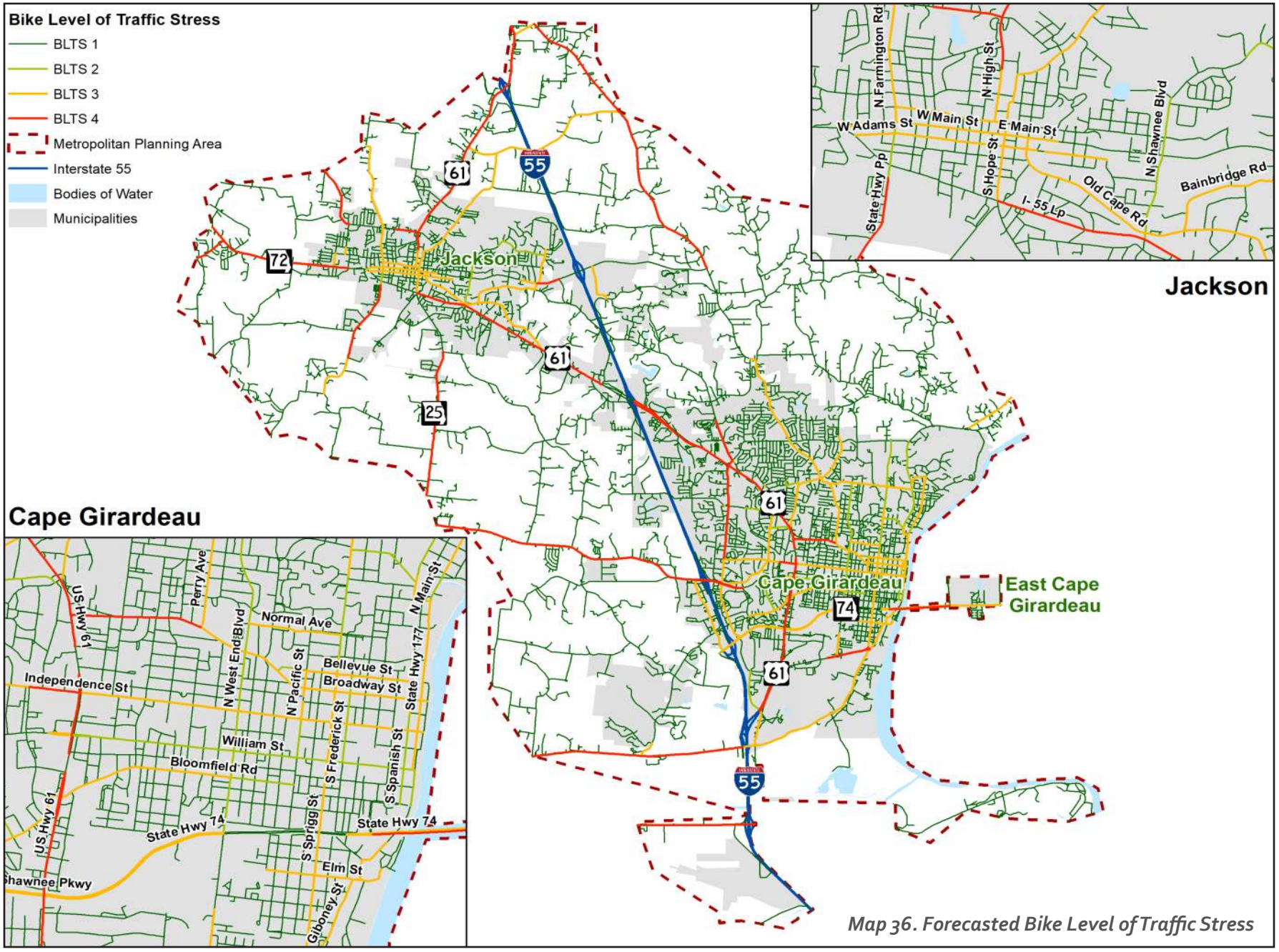


Sidewalks

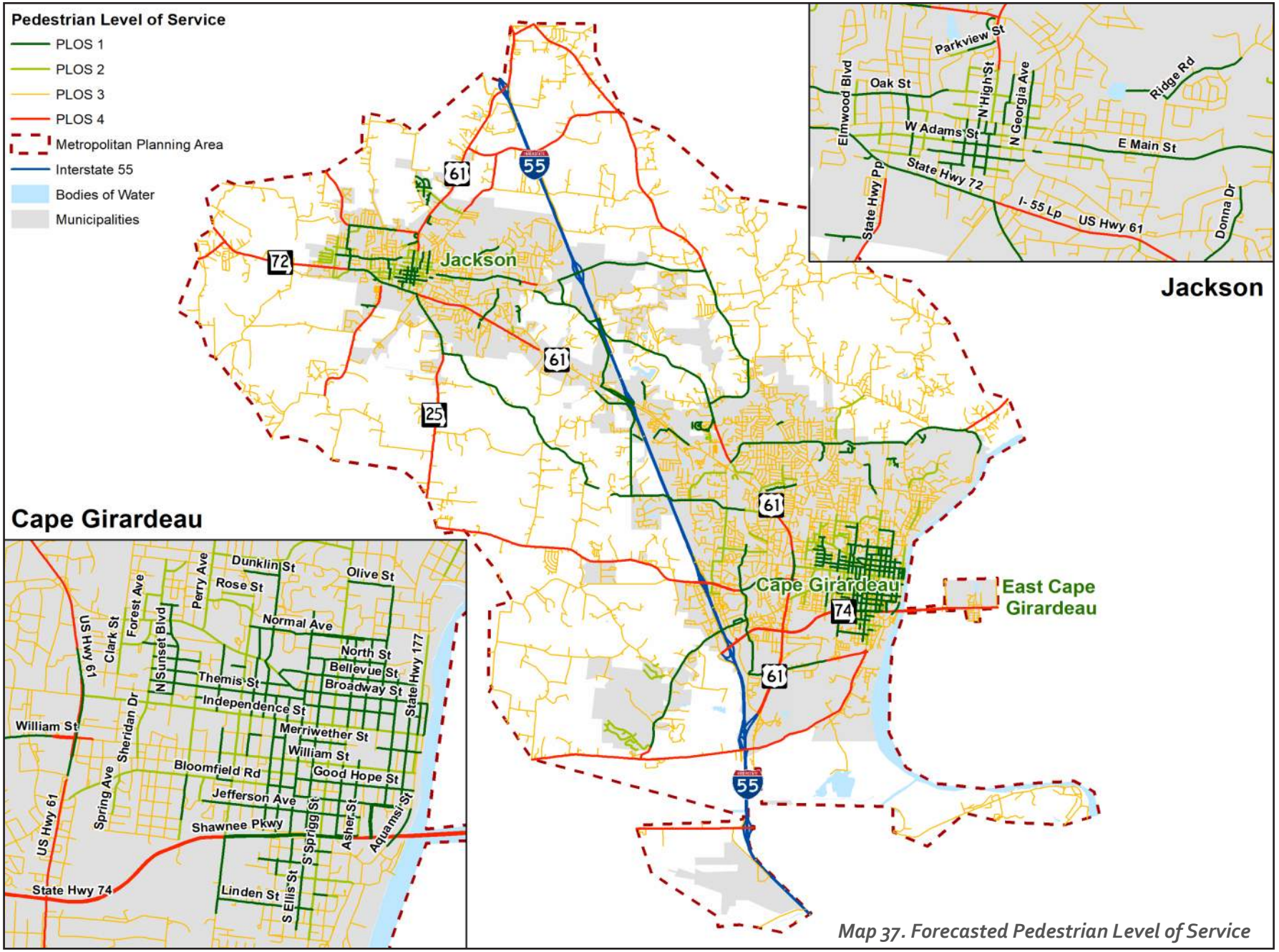
Map 35 shows the census blocks adjacent to all of the existing and proposed sidewalks. If all of the additional sidewalk projects were constructed, there would be an increase in the percentage of the population adjacent to a sidewalk to 67.1% (an increase of 9.8%). The additional sidewalks would also increase the percentage of accessible jobs to 82.6% (an increase of 19.7%).

Multi-Modal Level of Service Improvements

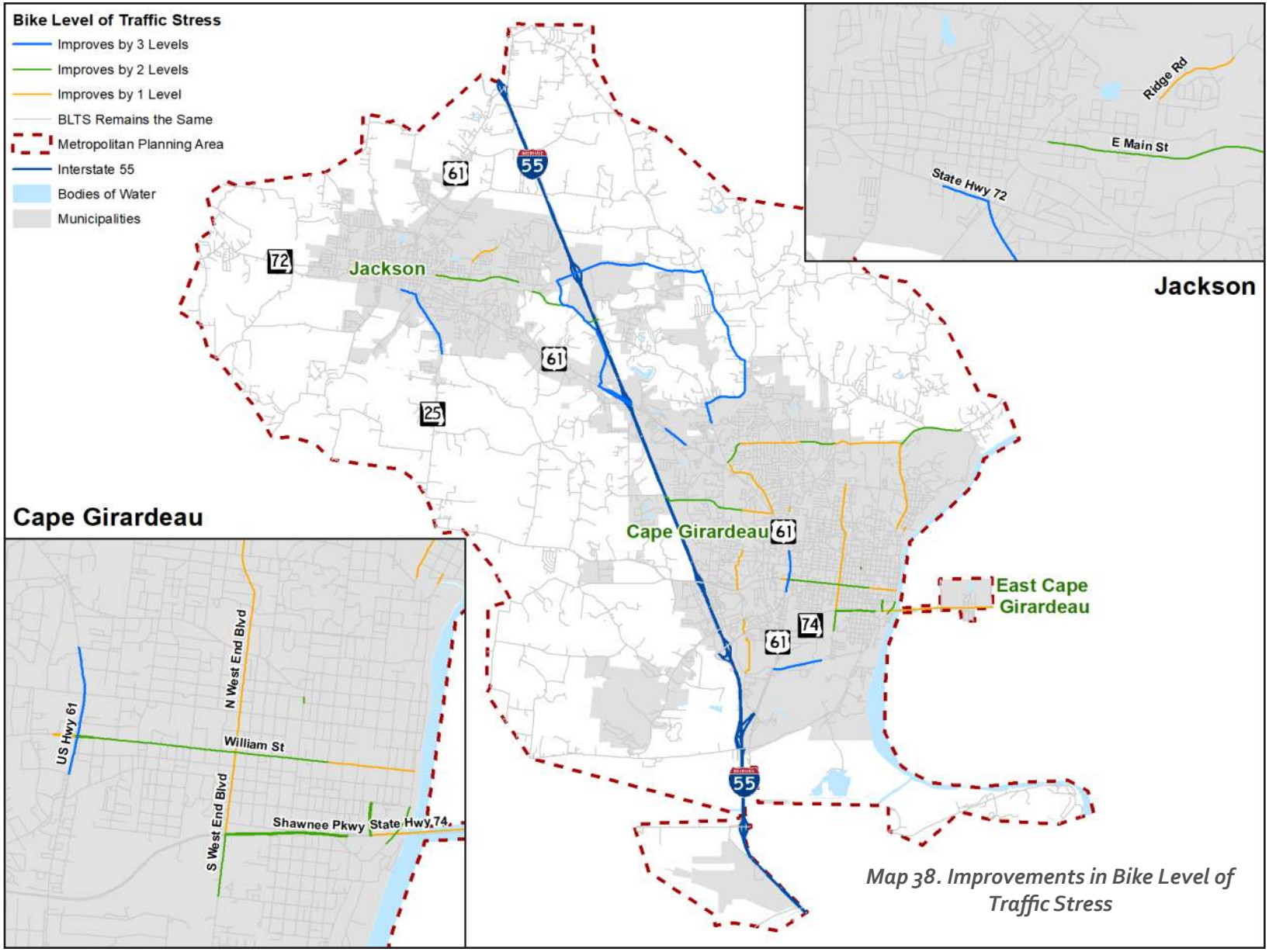
If all of the recommended routes were to be implemented, there would be a number of benefits to the BLTS and PLOS ratings for many area roadways. **Map 36** shows the forecasted BLTS ratings and **Map 37** shows the forecasted PLOS values if all of the recommended improvements are made. While there are still several roadways that have poor ratings for BLTS and PLOS, many of these roadways have parallel routes that are proposed, making these roadways less of a barrier to active transportation usage.



Map 36. Forecasted Bike Level of Traffic Stress

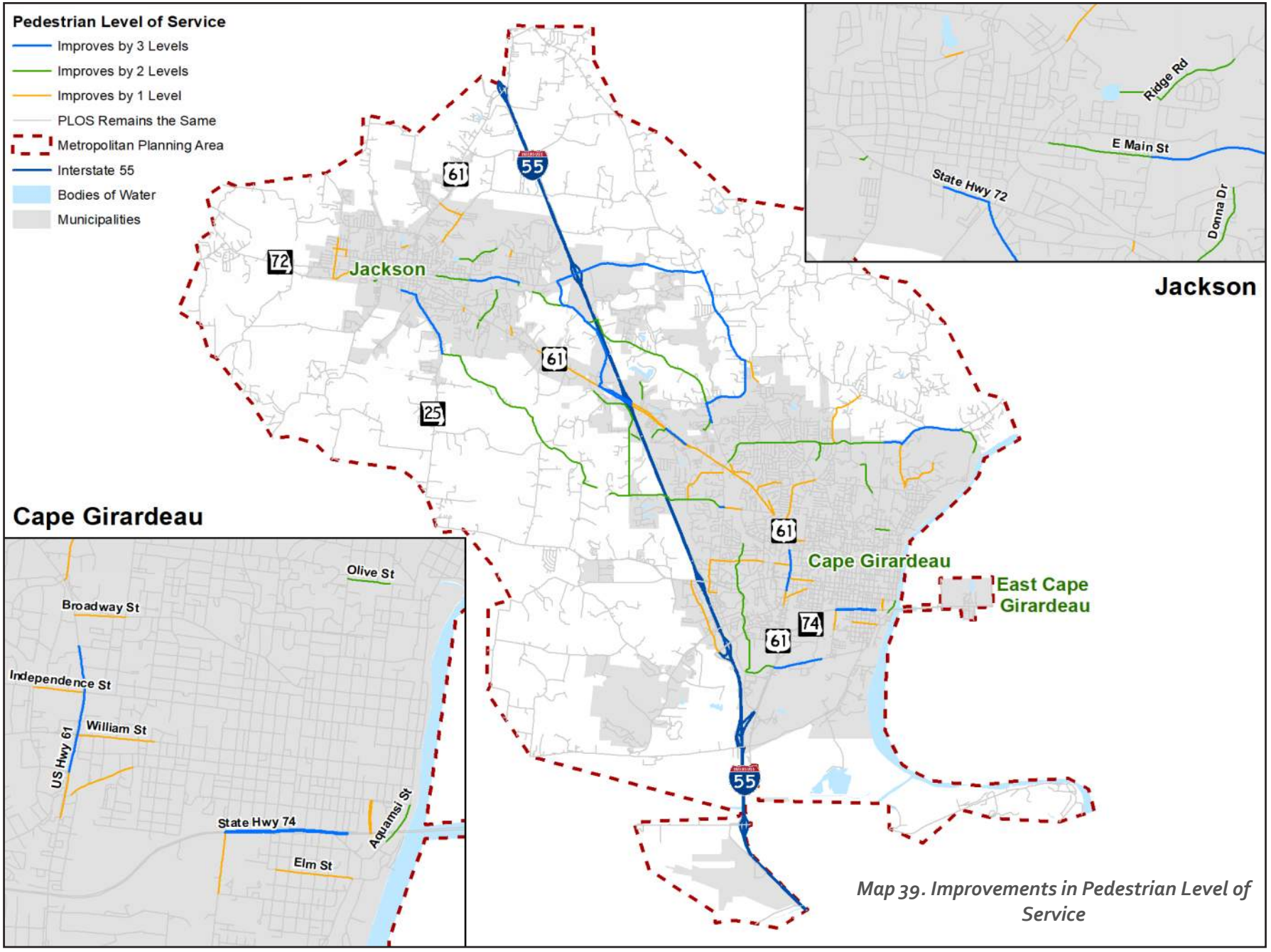


Map 37. Forecasted Pedestrian Level of Service



Map 38. Improvements in Bike Level of Traffic Stress

Relative improvements in the on-street multi-modal levels of service are an important measure of effectiveness for many of the proposed active transportation routes. **Map 38** and **Map 39** show the improvements in BLTS and PLOS if all improvements were to be constructed, respectively.



Map 39. Improvements in Pedestrian Level of Service

Rural Routes

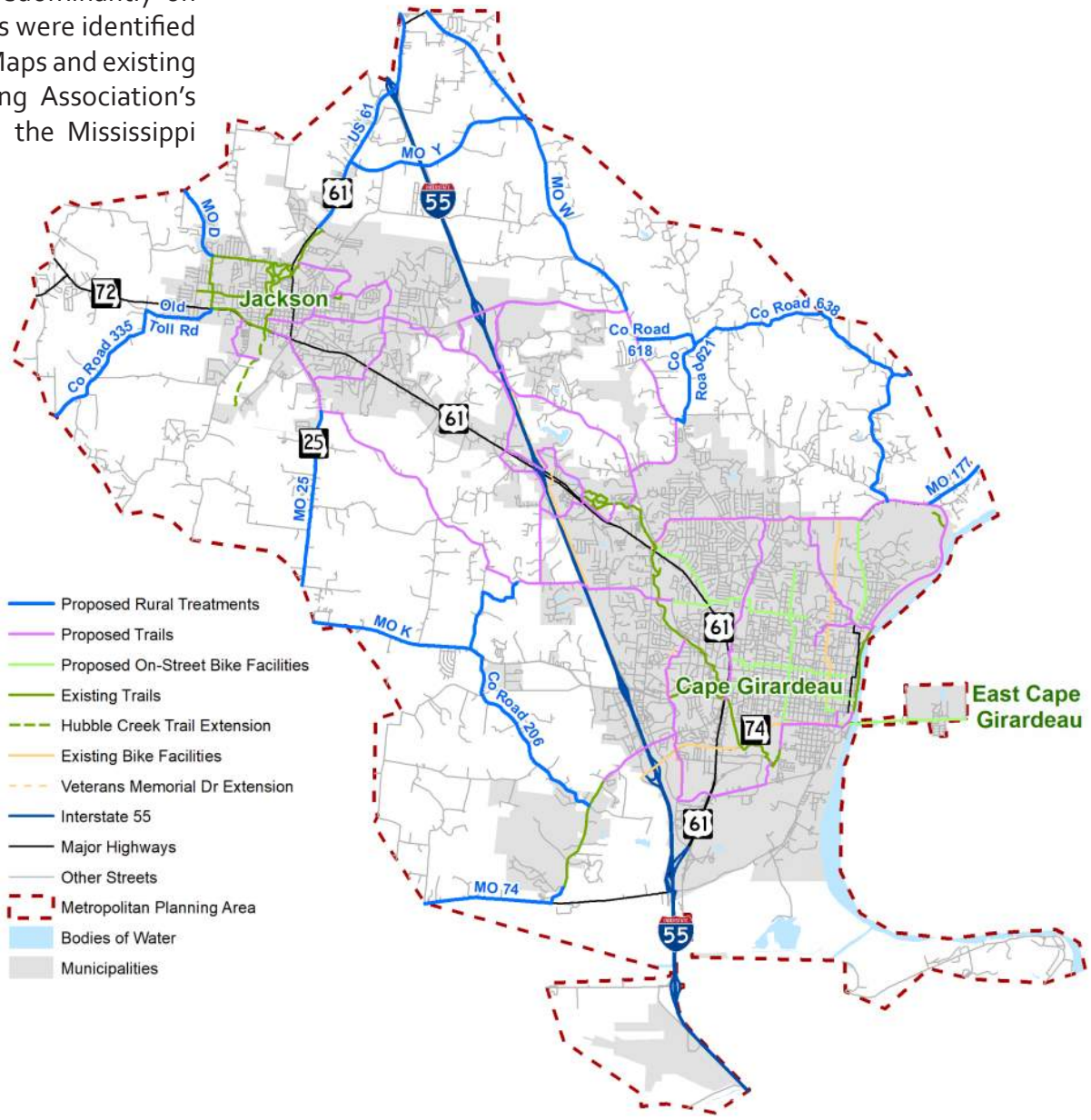
Map 40 shows rural bicycle routes that are predominantly on county-maintained and state roads. These routes were identified using information from the Strava Cycling Heat Maps and existing interstate routes such as the Adventure Cycling Association's Great Rivers South Bicycle Touring Route and the Mississippi River Trail.

It is recommended that when resurfacing or reconstruction projects are performed on these routes, accommodations should be made for cyclists such as:

- 8-10 ft wide shoulders to accommodate bicyclists on higher speed or state routes;
- Shoulders or advisory bike lanes on lower-speed or county roadways to accommodate bicycles.
- Special attention should to be paid to sharp curves and grade changes to ensure there is enough room for vehicles to divert around bicycles safely.

It is also recommended that the Interstate routes crossing the SEMPO region, including the Mississippi River Trail and the Adventure Cycling Touring Route, be re-aligned to follow the recommended routes for a safer and more comfortable route.

Map 40. Rural Route Treatments



Infrastructure Policy Recommendations

Safe Pedestrian & Bicycle Crossings

Perhaps the most frequent comment received during the public engagement process was that safely crossing major roadways, state highways in particular, is seen as dangerous and should be avoided. Kingshighway in Cape Girardeau and Jackson Boulevard in Jackson were mentioned specifically and frequently as safety concerns that divide their respective communities. In conjunction with the active transportation routes described above, improving crossings of roadways should be included on every project implemented in the future.

Signalized Intersections

All signalized intersections should provide ADA-compliant pedestrian accommodations. Some specific guidelines on the design of signalized intersections include:

- Pedestrian accommodations should be provided on all sides of the intersection to avoid excessive crossing times and indirect travel paths.
- Evaluate the removal of channelized right turn lanes. Channelized right turns increase the speeds at which vehicles can make right turns and force pedestrians to cross multiple crosswalks (some of which are only yield-controlled) to get across the roadway. These crossings are also more difficult for blind people to navigate than standard intersections because they have to navigate three separate crossings at different angles, which may lead to confusion. By removing these turn lanes, vehicles are forced to slow down more (making pedestrians more visible), the overall crossing distance for pedestrians is reduced (limiting their exposure to vehicular traffic), and more room is created at intersections for pedestrian waiting areas. If the removal of a channelized right turn is infeasible, consideration should be given to adding raised crosswalks in the turn lanes to increase driver awareness of pedestrians and to slow vehicular traffic down.
- Provide additional signage, at least in the short term, warning drivers to yield to pedestrians while making left and right turns. These signs would be particularly important at locations where new crosswalks are added to existing roadways.
- Provide pedestrian refuges on roadways with medians. Pedestrian refuges allow for pedestrians to make two-stage crossings if they are not able to complete their crossing in one cycle length. They also provide additional protection to pedestrians from turning vehicles.

Mid-Block Crossings

Mid-block crossings are necessary where signalized intersections are too far apart or where land uses on either side of a roadway create relatively heavy demands for roadway crossings. Some guidelines on the design and placement of mid-block crossings include:

- Mid-block crossings should be placed along arterial roadways in locations where the distance between signalized intersections is greater than ½ mile. They should also be provided on any roadway where demand for crossing the roadway may be elevated by what are called pedestrian "desire lines". These desire lines are often found adjacent to schools, churches, parks, community centers, transit stops, shopping areas, or any other land use that may increase pedestrian demand.
- Mid-block crossings should generally provide some sort of pedestrian signal on roadways with a speed limit greater than 30 mph. Compliance with mid-block crosswalks on high speed roadways is generally low and it may provide pedestrians with a false sense of security if these crosswalks are not signalized.

- The use of new and enhanced crosswalk treatments are encouraged and can be incorporated into branding for the trail and bike system in the region, including:
  - Raised crosswalks;
  - Raised intersections;
  - Pedestrian Hybrid Beacon (HAWK Signals);
  - Pedestrian signals;
  - Pedestrian refuges; and
  - High-visibility and textured crosswalks.

Safe pedestrian crossings are particularly important in the vicinity of schools and other areas with high concentrations of children.

Subdivision Policies

By incorporating best practices for bicycle and pedestrian facility development into subdivision policies, SEMPO and the included municipalities and counties can ensure that newly developed areas will be walkable and that active transportation can be a viable mode of transportation for residents. The following policy points should be considered for incorporation into subdivision regulations:

- Requiring sidewalks on both sides of each street within a subdivision regardless of lot size or intended use;
- Requiring sidewalks along streets on the perimeter of a subdivision;
- Requiring stub streets and sidewalks at regular intervals to provide for future connectivity between subdivisions; and
- Limiting the use of cul-de-sac's to provide better connectivity between subdivisions.

In addition to the above policy points, a "connectivity index" should be developed either by SEMPO or the municipalities with a target score for new subdivisions. This index should have a simple formula

that quantifies the connectivity of each subdivision (generally the number of roadway segments divided by the number of intersections). Increasing connectivity in subdivisions provides more direct travel patterns and produces a number of benefits, such as:

- Increased viability of active transportation as a mode of travel;
- Increased accessibility for public safety services (police, fire, ambulance);
- Increased accessibility to the regional street systems (multiple routes available); and
- Increased ability of the community to adapt to changes in regional economic, social, or environmental conditions over the long term.

It appears that both Cape Girardeau and Jackson already address several of the suggested policy points in their respective subdivision regulations, but SEMPO should encourage incorporating all of the points and also making sure they are consistent among the jurisidictions.

New and Reconstructed Roadways

By incorporating more bicycle and pedestrian best practices into new roadway designs, SEMPO can ensure that newly developed areas will be friendly to active transportation and thus reduce or eliminate the need for future retrofitting. SEMPO has the authority to ensure that any federal money for future roadway projects incorporates bicycle and pedestrian best practices. Some recommended policies for new roadways include:

- New and reconstructed collector roadways should have sidewalks on both sides of the street and provide pedestrian accommodations at all intersections including striped crosswalks and accessible curb ramps;
- New and reconstructed arterial roadways, wherever feasible, should have a sidewalk on one side and a bi-directional, multi-use trail on the other side; and
- All signalized intersections should provide accommodations for pedestrians, and all side streets should have striped crosswalks.

Next Steps

Along with all the improvements and recommended changes, the region should also consider adopting "complete streets" policies to address the needs of users of the transportation system at all ages and ability levels. These policies ensure that proper consideration is given to both motorized and non-motorized modes of transportation.

Additionally, once the Plan is underway and sufficient progress is achieved, the region can apply for both Bicycle Friendly Community and Walk Friendly Community designations. These are national designations awarded by The League of American Bicyclists, which can be used for marketing purposes to help attract more active-minded people and businesses to the region.

Non-Infrastructure & Policy Recommendations

In addition to design and construction of bike lanes, trails and sidewalks, it is also crucial to engage the community to promote the safe usage of the bicycle and pedestrian facilities. Along with engineering, the promotion of safe usage of bicycle and pedestrian facilities can be supported with the help of the remaining 4 of the 5 E's – Education, Encouragement, Enforcement and Evaluation. Successful implementation of these concepts would not only increase the usage of the non-motorized transportation network but would also help promote safety in active transportation.

Education & Encouragement

Education and awareness were regarded by the Study Oversight Team and the public as being just as important as infrastructure improvements and should be a major focus when implementing the Plan. It would not only ensure safety, but with better awareness, more people will start bicycling and walking. Not only is it important to educate cyclists and pedestrians, but it is also essential to educate motorists. Each group needs to be aware of their own legal rights, of each other's presence, and of the safety precautions that should be taken.

The most effective education programs focus on specific user groups as well as identified community problems. The Pedestrian and Bicycle Information Center, an organization within the University of North Carolina Highway Safety Research Center, has well-structured guidelines that can be used in designing effective

education programs.[1] According to the guidelines, there should be programs that address the following bicycle and pedestrian related problems at a minimum:

- Programs to assist pedestrians and motorists in understanding the right usage of pedestrian signals;
- Traffic rules for cyclists to deter them from riding against traffic or in unsafe places;
- Educating motorists about their own right of way as well as that of cyclists and pedestrians;
- Educating children to safely cross streets in absence of an adult; and
- Educating pedestrians and cyclists of the dangers of drinking and bicycling.

It is important to design these programs with a targeted audience in mind because different groups of road users have different needs, different learning capacities, and different behavioral patterns.[2] Examples of different groups that can be potential audiences for education programs are:

- Various age groups of road users such as school going children, college age pedestrians and cyclists, elderly road users, etc.;
- Parents and teachers; and
- Transportation officials, decision makers, and law enforcement officers.

With varying audience groups, the method of lesson delivery should also vary. Information on education programs and reference material for all users should be readily available at intuitive locations such as schools, college campuses, DMVs, parking lots, information kiosks, etc.

1 Pedestrian and Bicycle Information Center.

2 ibid

Resources

There are different guidelines and case studies available that can be used as resources in planning education programs and campaigns. Many organizations that promote active transportation have sample education programs that can be used as a reference. Many national and state organizations support new local programs through both training and funding. A few such organizations/ programs that could be used in the SEMPO region are:

- **Safe Routes to School National Partnership**

There are many examples of Safe Routes safety education curricula currently being used all around the country. Some programs use mentors and rodeos to train children in basic bicycle and pedestrian rules, while others have more intensive lesson plans to train children, teachers and parents. These lessons also highlight health and environmental benefits of using active transportation.

Source: http://www.saferoutespartnership.org/state/bestpractices/curriculum

- **Missouri Department of Transportation (MoDOT)**

A bicycle/pedestrian program has existed within the department since 1991. The program deals with each of the non-engineering four E's of bicycle and pedestrian planning. Under the program, MoDOT has coordinated training of pedestrian safety road show trainers, who are available to conduct workshops in communities throughout Missouri. Numerous videos that can be used for training and educating users are also available from the program.

Source:http://www.modot.org/othertransportation/bicyclepedestriangeneralinformation.htm

- **The Missouri Bicycle and Pedestrian Federation (MoBikeFed)**

This statewide not-for-profit organization works toward the goal of supporting and protecting the rights and interests of cyclists and pedestrians in Missouri. MoBikeFed supports, as well as promotes, bike education and has collaborated with a number of organizations in training and educating communities, including:

- The League of American Bicyclists, which offers online bicycle education classes; and
- CyclingSavvy, which offers courses throughout the state.

Source: http://mobikefed.org/content/bicycle-education

- **Pedestrian and Bicycle Information Center (PBIC)**

PBIC is supported by the Federal Highway Administration (FHWA) and National Highway Traffic Safety Administration (NHTSA), and is housed within the UNC Highway Safety Research Center in Chapel Hill, NC. PBIC, since its inception in 1999, has been focused on improving the quality of life in communities by promoting safe bicycling and walking as a viable means of transportation and physical activity. PBIC has an online catalogue of bicycle and pedestrian education programs, guides and factsheets. These guidebooks have design parameters for planning programs and campaigns. They also consist of elaborate lesson plans and can be used by organizations and local governments in promoting safe biking and walking in their communities.

Source: http://www.pedbikeinfo.org/programs/education.cfm

Potential Programs and Events

Bicycle and pedestrian education programs do not necessarily have to be planned as conventional classroom lessons. The more these lessons are practical and intuitive, the better. Below are some examples of potential programs and events that can used for addressing issues in active transportation while educating and encouraging community members to walk and bike more:

Road Safety Programs

These programs can vary from educating people to follow road rules to spreading awareness regarding right of way and sharing the roadway respectfully with other users. Different local governments have different programs promoting roadway safety, depending on the issues that need to be addressed. The following are examples of programs and events can be replicated in the SEMPO region with support from residents and local/state organizations:

- **Keep Kids Alive, Drive 25. Omaha, Nebraska** :[3]

  This program was a grassroots education program started by a local resident of Omaha to address the issue of speeding in residential areas. Elements of the public awareness campaign included street and yard signs, brochures, bumper stickers, trash can decals, and public service announcements. Most elements contained dramatic slogans like "Keep Kids Alive,

3 From: http://www.pedbikeinfo.org/data/library/details.cfm?id=2809

Drive 25", "STOP. Take 3 to See", and "Check Your Speed". The campaign has been replicated in 240 communities and the first study of effectiveness, conducted in Oceanside, CA, showed a 16% decrease in average speeds in targeted neighborhoods. Similar materials can be used in the SEMPO region in neighborhoods with on-street bicycle facilities or in neighborhoods around schools.

- **Bicycle Rodeos:**

A bicycle rodeo is a bicycle skills event that provides an opportunity for bicyclists to practice and develop skills to help them ride safely and avoid common crashes. With adequate training and workshops, local volunteers can organize bicycle rodeos at schools and public events for children to learn and improve bicycle skills. These workshops can be conducted in partnership with the school district and the parents.

- **Safety City U.S.A.:**

Example of a Traffic School

Safety City U.S.A., located within City Park in Jackson, can be developed to be used as a training park for active transportation for all ages. The existing infrastructure is in need of updating to reflect modern street design elements, such as bike lanes, shared lanes, trails, and roundabouts. Monthly lessons could be conducted at the park for training as well as encouraging residents to bike and walk safely.

- **Bicycle Education Curriculum:**

As discussed earlier, the school district and local officials can collaborate with the Safe Routes to School National Partnership and conduct lessons on safe bicycling and walking. These lessons can be incorporated into the existing curriculum of physical education or health classes.

Promotion and Encouragement Events

Local governments and not-for-profit organizations all over the country have promoted active transportation through encouragement events like walkathons, bike-athons, and car free days, which have been successful in increasing the percentage of residents biking or walking to work. An example of these programs is Cape Girardeau's annual Bike to Work Day. A few more such successful events hosted by local governments are listed below:

- **Let's Walk Downtown Challenge, Atlanta, Georgia:**[4]

Atlanta's Downtown Transportation Management Association (TMA) began an education program in 2004 to increase walking for short trips, with the goal to promote public health and more sustainable practices for downtown workers. The challenge encouraged members of different organizations and public officials to walk instead of driving. The participants received a pedometer to record their number of steps. At the end of every week, scores were updated on the TMA website and the winners were recognized with prizes. Something similar could

4 From: http://www.pedbikeinfo.org/data/library/details.cfm?id=2868

be done in the SEMPO region with business districts, schools, or colleges.

- **Celebrate National Trail Day:**

In the SEMPO region, where the trail network is reasonably well developed, organizing community engagement events like trail days and walkathons would be easy and effective. Such events can be coupled with training and safety programs with bicycle rodeos. Events such as these are an effective means of distributing pamphlets and guides on road safety. Road safety quizzes, helmet fitting, and bike workshops can also be set up at such events.

- **"Light the Night", Champaign, Illinois:**[5]

"Light the Night" is an annual free bike light distribution event hosted by the Champaign-Urbana Mass Transit District. The purpose of the campaign is to improve the visibility of bicyclists at night and enhance their presence for motorists. SEMPO could collaborate either with the school district or with SEMO University in conducting similar on-campus events, which could also include a volunteer bike repair shop. Off-campus events can be organized by collaborating with local residents and bike enthusiasts.

5 From: http://illinois.edu/calendar/detail/1771/33281777

Light the Night, Champaign, IL

- **Car Free Weekends/Sundays:**

For a large percentage of people, the reason for not using active transportation is the fear of being seriously injured by motorists sharing busy streets. Organizing car free weekends in either Downtown Cape Girardeau or Uptown Jackson would give these residents an opportunity to use the same streets for bicycling and walking without the fear of vehicular traffic. Attractions such as food trucks, temporary dog parks, play areas, and performances can be used to attract pedestrians and cyclists.

Availability of Information

It is very important to have readily available guidebooks, maps, and informational brochures and pamphlets on bicycle safety, bicycle routes, trails, etc. Again, all education material should be designed targeting specific age groups and should be available in intuitive places like the SEMPO and municipal websites, school parking lots, and PE classes. A few creative examples of educational materials are:

- Road safety and rules quizzes for children;
- Bicycling safety tips signs on trails;
- Updated maps and guidelines;
- Checklists for bicycling and trekking; and
- Right of way rules.

Name: _____

WHAT DO YOU KNOW ABOUT BICYCLING?

	True	*False*
1. I should ride my bike facing traffic so I can see what's coming.		
2. All bicycles riders must stop at all stop signs and red lights just like car drivers do.		
3. I have to stop my bike when I hear a siren coming from an ambulance, police care, or fire truck.		
4. I don't need lights on my bike to ride at night because I already have reflectors.		
5. Bicycle riders can safely carry packages in one hand because they can steer with the other.		
6. Bicycle riders must give hand signals before making turns.		
7. On my bike I only have to look for cars straight ahead when crossing a road or riding out of a driveway.		
8. It's okay for two people to ride on a bike if one sits on the seat and the other sits on the handlebars.		
9. I don't need to wear a bike helmet because I never ride my bike around cars.		
10. It's okay to ride a bike that's a little too big for me now so that I can grow into it next year.		
11. When riding, if I can see the car then the driver can always see me and I can proceed.		
12. Bicycle helmets protect best if they fit properly.		

Source - North Carolina Department of Transportation

Enforcement

Enforcement strategies, like enforcing traffic violations even for pedestrians and cyclists, would help ensure a safe environment for walking and cycling. The recommendations given below aim to compel the public to follow rules of the road in hopes of reducing common traffic mistakes committed by motorists, cyclists and pedestrians while sharing the right of way.

Enforcement of Traffic Violations

After observing patterns in behavior of roadway users, enforcement can be focused on key violations. It can vary from issuing warning citations to ticketing bicyclists and pedestrians for traffic offenses such as riding against traffic, disregarding traffic signals, etc. Alternatives to ticketing, such as mandatory attendance of a road safety class, can also be enforced.

Training Sessions for Law Enforcement Officers

It is very important for a city or a region to support the professional development of its law enforcement officers regarding the enforcement of bicycle and pedestrian laws. As these laws have changed and evolved over the last few years, it is important to ensure that law enforcement is aware of the latest laws and how to appropriately enforce them.

University/School Bicycle Code

The physical condition of bicycles used by cyclists can be regulated by adopting a code that establishes minimum standards to ensure that bicycles are in proper working condition. The code can be enforced by a university or school on its campus and can be used to educate bicycle owners about proper bicycle maintenance.

Business Incentives

Business incentive programs can be developed for existing as well as new businesses to get them to install or upgrade bike parking and accessibility to meet the current Association of Pedestrian and Bicycle Professionals (APBP) Bicycle Parking Guidelines. By providing adequate bicycle parking, riders will feel more comfortable and apt to take a bicycle trip over a vehicular trip because they know there is a safe place to store their bicycle.

Evaluation

All aspects of this Plan should be evaluated on a regular basis to gauge progress in implementation and to assess quality and user friendliness. Obtaining feedback from users of bicycle and pedestrian facilities, and making improvements in response to the feedback, will ensure the facilities are successful.

Public Participation

Public engagement methods like online surveys, community meetings, and block parties would be a good opportunity to understand the perspective of the community. Meetings twice a year would help highlight issues as well as set future goals focusing on suggested improvements.

Annual Bike/Ped Counts

Performing annual bicycle and pedestrian counts in targeted areas around the SEMPO region can help quantify the increases in non-motorized traffic for all trip purposes. These can be organized and performed by groups of volunteers or a bicycle/pedestrian advocacy group at little or no cost to local governments.

Safety Analysis

An annual analysis of crash data would provide insight regarding the efficiency of the bicycle and pedestrian facilities and help in demarcating problem areas. MoDOT and IDOT collect and track crash data for their respective jurisdictions.

Scorecard

Many local governments are evaluating current and new multi-modal facilities by keeping a yearly scorecard. These scorecards are made up of performance measures such as miles of infrastructure development, miles of ADA compliant sidewalks, increase in mode share, bicycle and pedestrian counts, etc. A year after year comparison helps set better targets and goals for the coming years. The image on page 82 is a scorecard prepared by Great Rivers Greenway showing the implementation progress of the Gateway Bike Plan.

IMPLEMENTATION OF BIKEWAYS

GRADE: A

The Gateway Bike Plan recommends over 1,000 miles of on-street bikeways to provide a safe, comfortable, and interconnected transportation network for people bicycling in the St. Louis Region. In 2016, Great Rivers Greenway and its community partners completed 65 miles of new, updated, and upgraded on-street bikeways St. Louis City, St. Louis County, and St. Charles County. Of those 65 miles, 33 were new bikeways on the Gateway Bike Plan Network, bringing the total network miles up to 257.

TARGET	ACHIEVEMENT
200 new miles of on-street bikeways by 2017	33 miles of new on-street bikeways in 2016

33 new miles. 32 updated or upgraded

ANNUAL NEW MILES OF BIKEWAYS

APPLICATION OF DESIGN STANDARDS

GRADE: C

Well-designed streets support safe travel for all modes of transportation, from motor vehicles and transit to bicycling and walking. Applying design standards that address active transportation makes bicycling a safer, easier, and more convenient travel choice.

TARGET	ACHIEVEMENT
Identify and address 5 high crash locations	0 new intersections identified or addressed
Complete up to 3 special facilities to address unique issues	2 special bikeway projects

Chestnut Protected Bike Lane

Morganford Green Bike Lane Markings

EDUCATION

GRADE: A+

Education is not just about giving people the skills and confidence they need to get out and ride. It's also about equipping local governments with the tools and training to help make bicycling a part of the transportation system.

TARGET	ACHIEVEMENT
5-10 training courses per year	17 documented training courses throughout the region

including 11 Bike Smart courses and 6 CyclingSavvy courses.

4 training workshops for professionals and decision-makers	15 training opportunities held throughout the region

including 12 APBP webinars, 2 FHWA webinars, and the APBP Professional Development Seminar, which included more than 21 available courses and over 90 hours of training opportunities.

MAJOR 2015 ACCOMPLISHMENT

Hosted the national Association of Pedestrian and Bicycle Professional's Professional Development Seminar, a 3-day training for planners, engineers, advocates, and elected officials. Forty-seven of the 260 attendees were from the St. Louis area.

ENCOURAGEMENT

GRADE: B+

Encouragement activities foster a culture that welcomes and celebrates bicycling. Local governments, non-profit organizations, bike shops, and community groups across the region host events and activities throughout the year to encourage more people to get out and ride.

TARGET	ACHIEVEMENT
1 Bike Friendly Community per year	3 Bike Friendly Designations awarded in 2015

1. City of St. Louis – **Bronze Level Bike Friendly Community**
2. Washington University – **Bronze-Level Bicycle Friendly University**
3. Nebula Coworking – **Silver-Level Bicycle Friendly Business**

15 Bicycling promotion events per year	65 documented events occurred in 2015

MAJOR 2015 ACCOMPLISHMENT

Bike St. Louis Map Update

SUPPORTING POLICIES

GRADE: D

Policies are the foundation on which local governments and organizations base their decisions. Policies that support bicycling, like Complete Streets policies and bicycle parking ordinances, can have a profound impact on the way we design and build our streets and our communities.

TARGET	ACHIEVEMENT
Fund regional Bicycle and Pedestrian Coordinator	City of St. Louis hired its first Bicycle and Pedestrian Coordinator

East West Gateway and Great Rivers Greenway share duties for regional bikeway coordination and Gateway Bike Plan implementation, with contracted support from Alta Planning + Design & Trailnet.

3 jurisdictions adopting a Complete Streets Policy	The City of St. Louis strengthened its existing Complete Streets Policy

In addition, the City of Kirkwood adopted its first bicycle and pedestrian master plan, and the Cities of Wildwood and St. Louis joined the national Mayor's Challenge for Safer People, Safer Streets, led by the USDOT.

ENFORCEMENT

GRADE: B+

Law enforcement officers play an important role in fostering mutual respect and responsibility among all road users. From police officer bike patrol training to bicycle traffic regulation courses, law enforcement agencies across the region are taking a proactive approach to creating safe streets for people on bike, on foot, and in motor vehicles.

TARGET	ACHIEVEMENT
1 bike-related law enforcement training every two years	3 law enforcement trainings in 2015

MAJOR 2015 ACCOMPLISHMENT

St. Louis Bicycle Works continued to partner with the St. Louis County & Municipal Police Academy to train officers in effective bicycle riding and bicycle patrol tactics, which supports community policing and increased awareness for bicycling. Two 32-hour police cyclist courses and one 8-hour bicycle maintenance course were offered in 2015.

Scorecard prepared by Great Rivers Greenway, St. Louis.

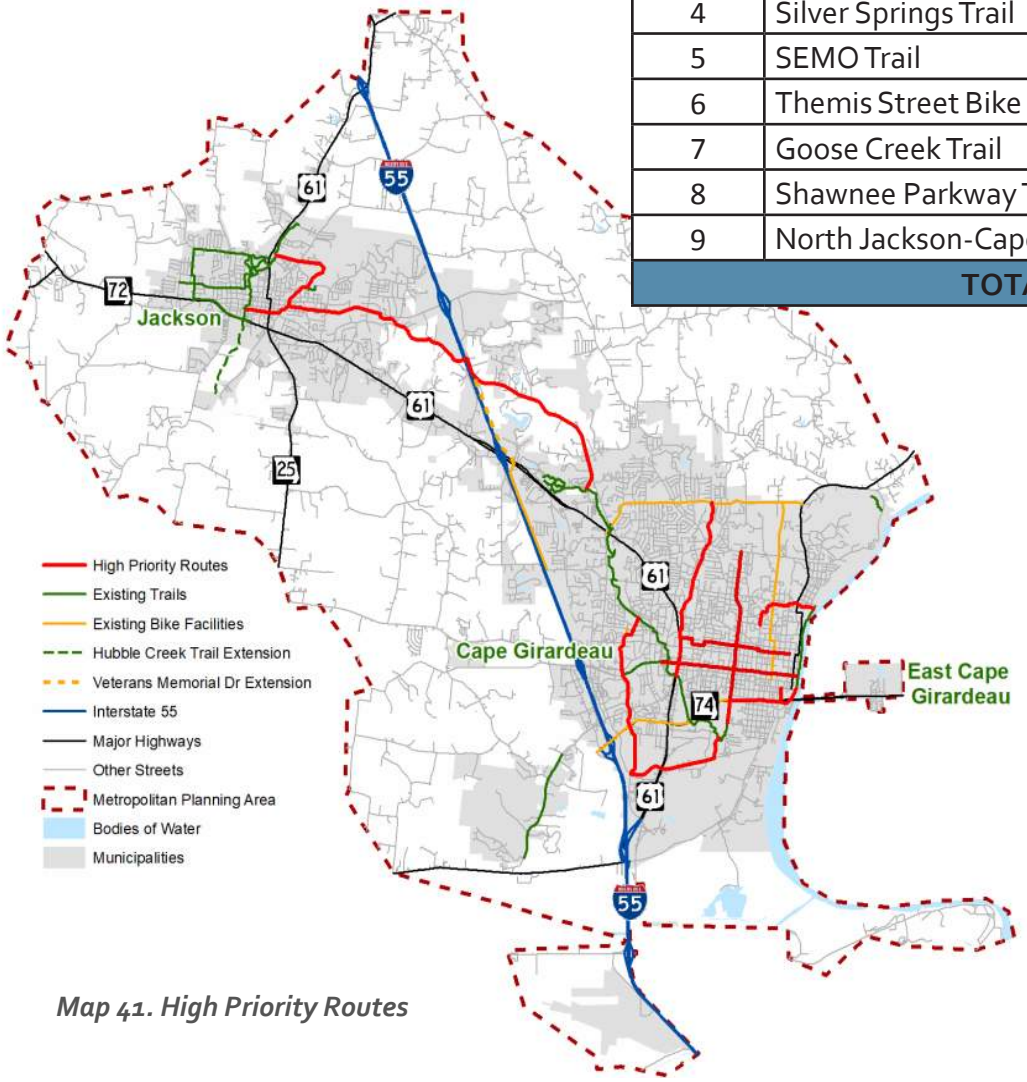
Conclusion

Infrastructure Recommendations

After evaluating each of the proposed routes, they were organized into a ranked list with three priority levels: high, medium, and low. The priority lists are predominantly based on the composite score from the evaluation scorecards for trails and on-street bicycle facilities, with the exception of the North Jackson to Cape Girardeau trail connection. As discussed in the recommended trail routes section, this connection was identified as a regionally significant link between the two cities. As such, it should be identified as high priority even though it did not necessarily score well against the grading criteria. Sidewalk projects are not included in the overall priority list because they tend to be smaller and have more localized impacts, so evaluating them against the larger facility types would be inappropriate since it would result in all or most of the sidewalk projects ranking near the bottom. Therefore, a separate list of prioritized sidewalk projects is provided after the other facilities.

RANK	ROUTE	COMPOSITE SCORE	LOW COST ESTIMATE	HIGH COST ESTIMATE
1	Walker Creek Trail	+10	$2,255,000	$3,950,000
2	William Street Bike Lanes	+9	$185,000	$280,000
3	West End Blvd Bike Lanes	+8	$225,000	$340,000
4	Silver Springs Trail	+7	$3,440,000	$6,020,000
5	SEMO Trail	+6	$890,000	$1,555,000
6	Themis Street Bike Boulevard	+5	$115,000	$225,000
7	Goose Creek Trail	+2	$1,905,000	$3,330,000
8	Shawnee Parkway Trail	+1	$1,385,000	$2,420,000
9	North Jackson-Cape Trail	-3	$5,000,000	$8,750,000
TOTAL:			**$15,400,000**	**$26,870,000**

Table 8. High Priority Routes



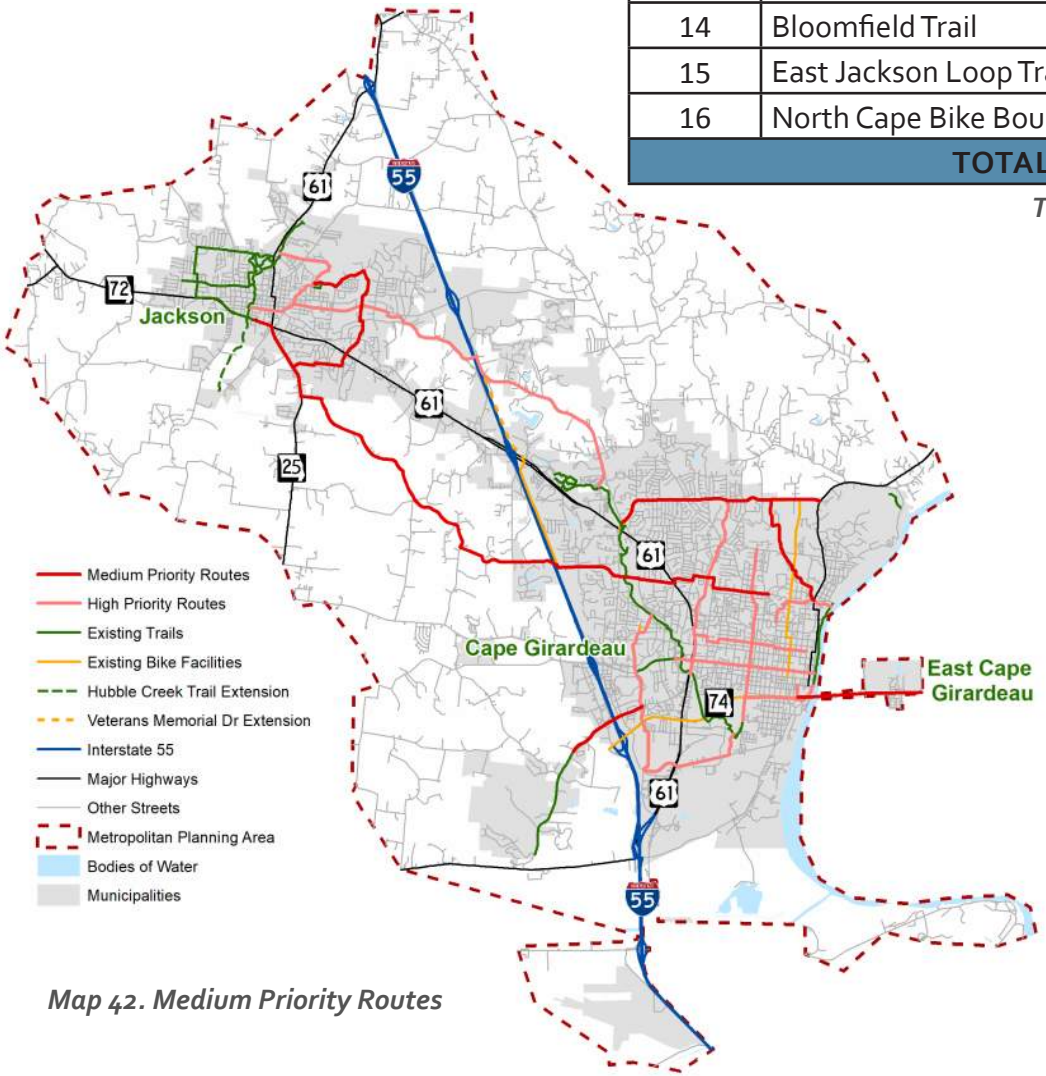
Map 41. High Priority Routes

High Priority Routes

Map 41 shows high priority routes, which are the ones that received high marks in the scorecard and provide critical local and regional connections in the SEMPO region. Therefore, these routes will provide the most benefit for the cost and should be completed first. It is expected that these new routes will increase the number of users on the active transportation system because they will provide access to a larger proportion of the population, as well as connect the two urban centers in the region. **Table 8** shows composite scores and cost estimates for high priority routes.

RANK	ROUTE	COMPOSITE SCORE	LOW COST ESTIMATE	HIGH COST ESTIMATE
10	Lexington Trail	0	$2,570,000	$4,495,000
11	South Jackson-Cape Trail	0	$6,410,000	$11,215,000
12	SR 146 Bike Lanes	0	$185,000	$280,000
13	Old Sprigg Trail	-2	$1,490,000	$2,605,000
14	Bloomfield Trail	-2	$1,015,000	$1,780,000
15	East Jackson Loop Trail	-2	$2,610,000	$4,565,000
16	North Cape Bike Boulevard	-2	$140,000	$275,000
TOTAL:			**$14,420,000**	**$25,215,000**

Table 9. Medium Priority Routes



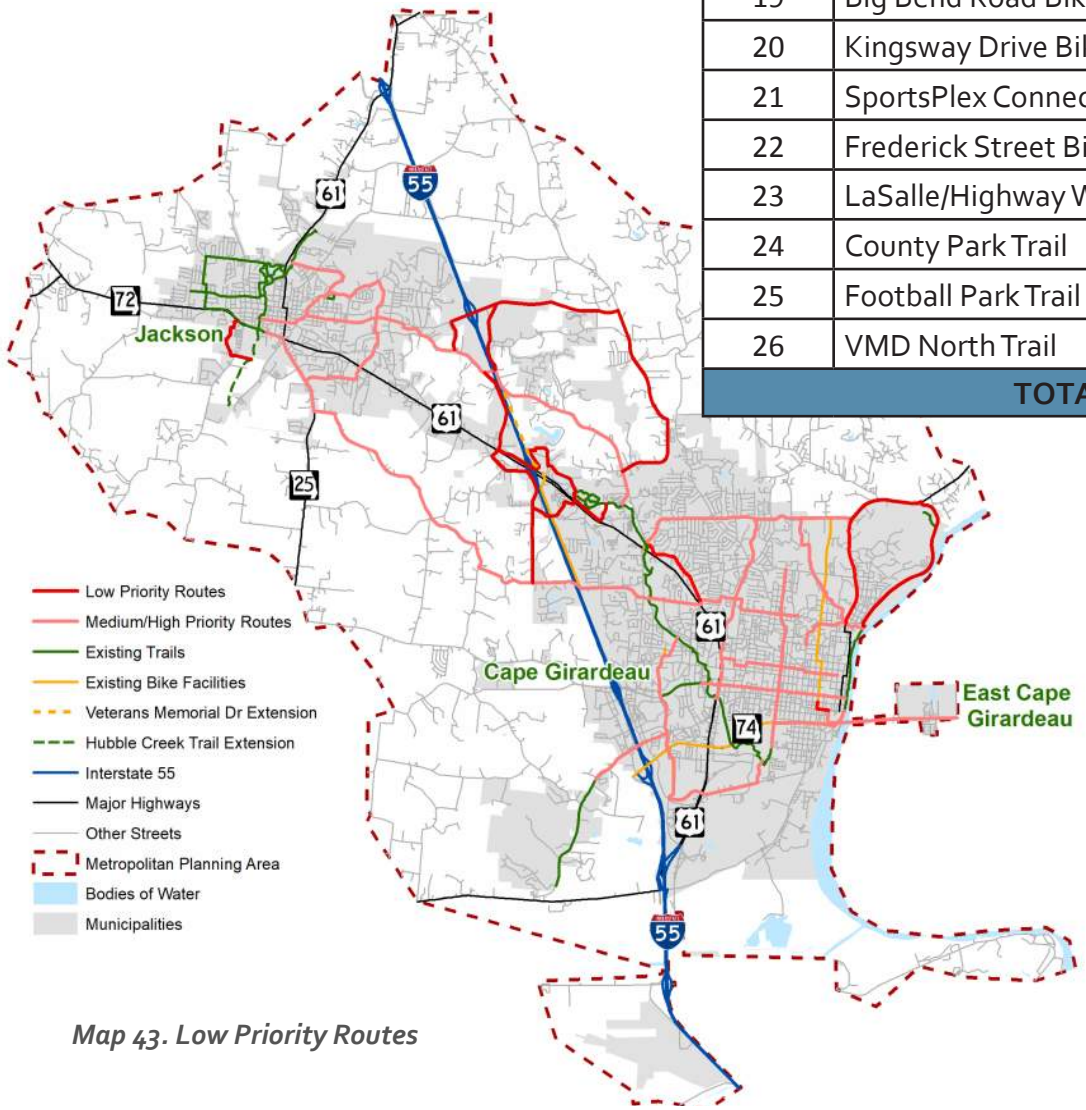
Map 42. Medium Priority Routes

Medium Priority Routes

Map 42 shows medium priority routes, which are the ones that scored moderately-well in the scorecard and provide beneficial connections to destinations in the SEMPO region, including linking Cape Girardeau to both Jackson and East Cape Girardeau. **Table 9** shows composite scores and cost estimates for medium priority routes.

RANK	ROUTE	COMPOSITE SCORE	LOW COST ESTIMATE	HIGH COST ESTIMATE
17	Cape Rock Loop Trail	-3	$2,895,000	$5,070,000
18	Old Orchard Trail	-3	$2,910,000	$5,095,000
19	Big Bend Road Bike Lanes	-3	$155,000	$230,000
20	Kingsway Drive Bike Lanes	-3	$120,000	$175,000
21	SportsPlex Connector Trail	-4	$1,800,000	$3,150,000
22	Frederick Street Bike Blvd	-5	$50,000	$105,000
23	LaSalle/Highway W Trail	-5	$4,790,000	$8,385,000
24	County Park Trail	-6	$1,240,000	$2,170,000
25	Football Park Trail	-7	$735,000	$1,290,000
26	VMD North Trail	-7	$810,000	$1,415,000
TOTAL:			**$15,505,000**	**$27,085,000**

Table 10. Low Priority Routes



Map 43. Low Priority Routes

Low Priority Routes

Map 43 shows low priority routes, which are the ones that scored relatively poorly in the scorecards and generally serve more of a recreational purpose, rather than a commuter or accessibility purpose. These routes provide extensive recreational loops and provide access to the areas that are expected to grow in the near future. **Table 10** shows composite scores and cost estimates for low priority routes.

Sidewalks

A complete listing of the proposed sidewalk projects, in order of the amount of additional access they provide, is shown in **Table 11** below.

Table 11. Proposed Sidewalks Projects - Ranked

RANK	ROADWAY	FROM	TO	ADD. POP. & EMP.	LOW COST ESTIMATE	HIGH COST ESTIMATE
1	S Kingshighway	Silver Springs Rd	Cape LaCroix Trail	3,156	$325,000	$405,000
2	N Cape Rock Dr	Kingshighway	Perryville Rd	2,360	$170,000	$210,000
3	Independence St	Farrar Dr	Kingshighway	1,746	$200,000	$250,000
4	Shawnee Blvd	Highland Dr	Litz Park	1,743	$130,000	$165,000
5	W Cape Rock Dr	Lexington Ave	Old Sprigg Street Rd	1,707	$160,000	$200,000
6	Old Cape Rd	Main St	Jackson Blvd	1,475	$305,000	$380,000
7	E Jackson Blvd/N Kingshighway	Old Cape Rd	Bessie St	1,474	$830,000	$1,030,000
8	Broadway	Kingshighway	Clark Ave	1,470	$40,000	$50,000
9	William St	Cape LaCroix Trail	Sunset Blvd	1,348	$80,000	$105,000
10	Perryville Rd	Mississippi St	W Cape Rock Dr	1,220	$105,000	$135,000
11	Rodney/Kingsway Dr	W Rodney Dr	Plymouth Dr	1,189	$100,000	$125,000
12	Oak Ridge Dr	Ridge Rd	Oakhill Rd	1,147	$130,000	$165,000
13	Bloomfield Rd	Kingshighway	Sheridan Dr	1,121	$55,000	$70,000
14	Bertling St	Perryville Rd	Price Dr	1,071	$90,000	$115,000
15	Big Bend Rd	E Cape Rock Dr	Lexington Ave	953	$115,000	$140,000
16	Oakhill Rd	Bainbridge Rd	Ridge Rd	897	$110,000	$135,000
17	Southern Expy	Silver Springs Trail	Hackberry St	839	$120,000	$150,000
18	Siemers Dr	Bloomfield Rd	William St	815	$145,000	$180,000
19	Farmington Rd	Jackson Ridge Dr	Redbud St	808	$240,000	$300,000
20	Kage Rd	Hopper Rd	Mt Auburn Rd	752	$135,000	$170,000
21	Deerwood Dr	Ripken Way	Greensferry Rd	745	$60,000	$80,000
22	N High St	Park St	Deerwood Dr	722	$140,000	$180,000
23	Greensferry Rd	Walnut St	Jennifer Dr	705	$90,000	$115,000
24	Kingsway Dr	Lexington Ave	Kurre Ln	656	$60,000	$75,000

RANK	ROADWAY	FROM	TO	ADD. POP. & EMP.	LOW COST ESTIMATE	HIGH COST ESTIMATE
25	N Perryville Rd	Sue Annes Trail	Hwy W	575	$70,000	$90,000
26	Hwy D	Cambridge Rd	Broadridge Dr	490	$85,000	$105,000
27	West End Blvd	Southern Expy	Linden St	468	$60,000	$75,000
28	West Ln/Old Toll Rd	Jackson Blvd	Alpine Dr	432	$150,000	$185,000
29	SR 146	Commanche Dr	Virginia Dr	366	$35,000	$45,000
30	E Cape Rock/Country Club Dr	Big Bend Rd	DePaul Ln	338	$110,000	$135,000
31	Parkview Dr	Safety City Driveway	Parkview Sidepath	215	$15,000	$20,000
32	Orchard/Broadridge Dr	West Ln	Oak St	135	$40,000	$50,000
33	Main St	Jackson Blvd/ Traveler's Way	Farmington Rd/Oak Hill Rd	93	$88,500	$109,000
34	Sprigg St	Alumni Dr	Bertling St	78	$55,000	$70,000
35	Elm/Aquamsi St	Benton St	Shawnee Pkwy	61	$110,000	$140,000
36	Farrar/Hospitality Dr	Mt Auburn Rd	Independence St	41	$130,000	$165,000
37	Victoria/Leroy Dr	Kingshighway	Randol Ave	35	$70,000	$90,000
38	Oak St	Hubble Creek Trail	E of Russell St	0	$25,000	$30,000
39	Lacey St	Ridgeway Dr	Ridge Dr	0	$15,000	$25,000
TOTAL:					**$4,950,000**	**$6,210,000**

Potential Funding Sources

There are numerous federal funding opportunities for bicycle and pedestrian improvements and programs. The majority of these funding mechanisms are administered by the U.S. Department of Transportation (USDOT) surface transportation funding programs. The complete list of funding opportunities through the USDOT is provided in Appendix D; however, some of the most applicable programs include:

- Highway Safety Improvement Program (HSIP): a core federal-aid program with the purpose of achieving a significant reduction in traffic fatalities and serious injuries on all public roads, including non-state owned roads. This program could be used for road diets, ped/bike crossing improvements, traffic

calming, and other treatments that improve safety for both vehicles and active transportation users.

- National Highway Performance Program (NHPP): a funding program designed to improve the overall performance, including bicycle and pedestrian conditions, on major highways on the National Highway System (NHS). These funds can be used to make improvements on Kingshighway, Jackson Boulevard, Shawnee Parkway, as well as portions of William Street and High Street.
- Surface Transportation Block Grant Program (STBG): a flexible funding program that may be used by states and localities for projects to preserve and improve the conditions and performance on any public road, including bicycle and pedestrian infrastructure.
- Transportation Alternatives (TA): funding set aside from the STBG program specifically for "transportation alternatives", which include on- and off-road bicycle and pedestrian facilities (Replaces the Transportation Alternatives Program (TAP) from past years).
- Recreational Trails Program (RTP): provides funds to states to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. These funds could be helpful to implement trails connecting to and through the region's local and state parks.

In addition to the capital funding for building new facilities, ensuring adequate funding for maintenance should be considered before expanding the active transportation network. Operations and maintenance, including striping, sweeping, snow removal, bridge maintenance, and repaving all need to be factored into budgets for SEMPO and the local jurisdictions within the MPA. Special attention should also be paid to the potential for requiring specialized maintenance equipment for certain types of trails and bicycle facilities that may be too narrow or delicate for standard maintenance vehicles. Facility design should avoid the requirement of non-standard maintenance vehicles whenever possible to lower the long-term maintenance burden on local jurisdictions. Some of the funding opportunities shown in Appendix D provide for operational and maintenance funding.

Non-Infrastructure Recommendations

Teaching people how to properly use the active transportation network, enforcing the applicable laws, and evaluating the network are just as important as expanding the network. The following are the main points covered in the Non-Infrastructure Recommendations chapter.

Education & Encouragement

The most effective education programs focus on specific user groups as well as identified community problems. It is recommended that programmed activities cover:

- Programs to assist pedestrians and motorists in understanding the right usage of pedestrian signals;
- Traffic rules for cyclists to deter them from riding against traffic or in unsafe places;
- Educating motorists about their own right of way as well as that of cyclists and pedestrians;
- Educating children to safely cross streets in absence of an adult; and
- Educating pedestrians and cyclists of the dangers of drinking and bicycling.

Examples of different groups that can be potential audiences for education programs are:

- Various age groups of road users such as school going children, college age pedestrians and cyclists, elderly road

users, etc.;

- Parents and teachers; and
- Transportation officials, decision makers, and law enforcement officers.

With varying audience groups, the method of lesson delivery should also vary. Information on education programs and reference material for all users should be readily available at intuitive locations such as schools, college campuses, DMVs, parking lots, information kiosks, etc. Several examples of successful programs in other areas are provided in the Non-Infrastructure Recommendations chapter.

Enforcement

The recommendations given below aim to compel the public to follow rules of the road in hopes of reducing common traffic mistakes committed by motorists, cyclists and pedestrians while sharing the right of way:

- Enforce traffic violations;
- Provide training sessions for law enforcement officers;
- Create a university/school bicycle code; and
- Provide business incentives for bicycle parking.

Evaluation

All bicycle and pedestrian facilities should be regularly assessed for quality and user friendliness. Improvements based on regular feedback from users can help make these facilities a success. Potential methods of evaluation include:

- Public participation in the form of meetings, surveys, and participation in local events;
- Annual bicycle and pedestrian counts;
- Annual analysis of crashes involving pedestrians or cyclists; and
- The creation of an annual scorecard to evaluate the progress on achieving the Plan's goals and recommendations.

Equity

Equity considerations have been infused in all of the infrastructure and non-infrastructure recommendations. The Plan aims to benefit all demographic groups, with particular attention given to providing accessible and safe bicycle and pedestrian facilities for historically disadvantaged groups.

Equity was also taken into account with the Evaluation Scorecard for the proposed bicycle and pedestrian routes. Points were awarded to the proposed project if it provides access to targeted areas such as:

- Low-income neighborhoods;
- Neighborhoods with high student populations; and
- Areas with high proportions of zero-vehicle households.

While recommending the various non-infrastructure policies and programs, involvement of all demographic groups was prioritized. Recommendations and improvements are not focused on limited geographic areas in the region, but are distributed broadly to provide connections between areas with varying demographic and economic characteristics.

From universally accessible public meeting locations to ADA compliant design recommendations, significant consideration has been, and will continue to be given to all demographic groups at every stage of the planning process.

Appendices

Appendix A: Public Survey Results

206

Total Responses

Date Created: Tuesday, May 23, 2017

Complete Responses: 121

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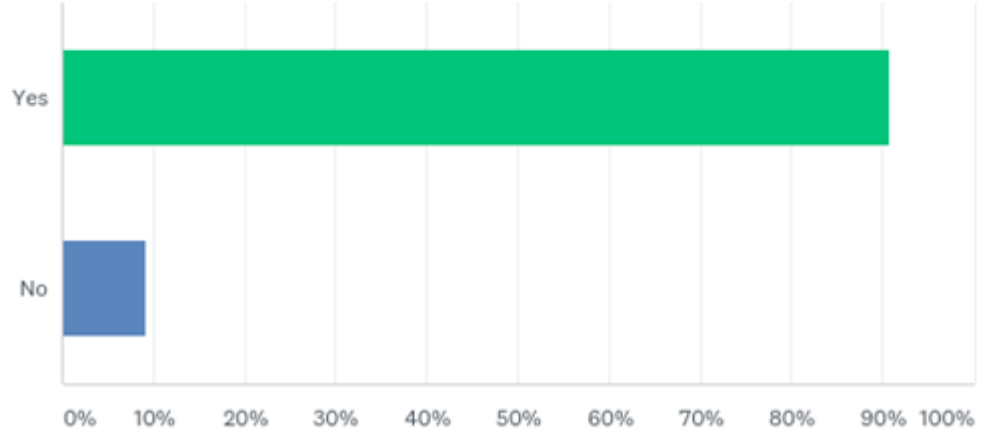
Q1: Are you interested in answering questions about walking in the region?

Answered: 206 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	90.78%	187
No	9.22%	19
TOTAL		206

Q2: How would you rate existing walking conditions in your community?

Answered: 161 Skipped: 45

	I DON'T KNOW	POOR	FAIR	EXCELLENT	TOTAL	WEIGHTED AVERAGE
☆	1.24% 2	29.19% 47	62.73% 101	6.83% 11	161	2.75

Q3: How would you rate existing walking conditions in the SEMPO region?

Answered: 161 Skipped: 45

	I DON'T KNOW	POOR	FAIR	EXCELLENT	TOTAL	WEIGHTED AVERAGE
☆	9.94% 16	32.92% 53	54.04% 87	3.11% 5	161	2.50

Q4: How important to you is improving walking conditions in your community?

Answered: 162 Skipped: 44

	I DON'T KNOW	NOT IMPORTANT	SOMEWHAT IMPORTANT	VERY IMPORTANT	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	3.09% 5	30.25% 49	66.67% 108	162	3.64

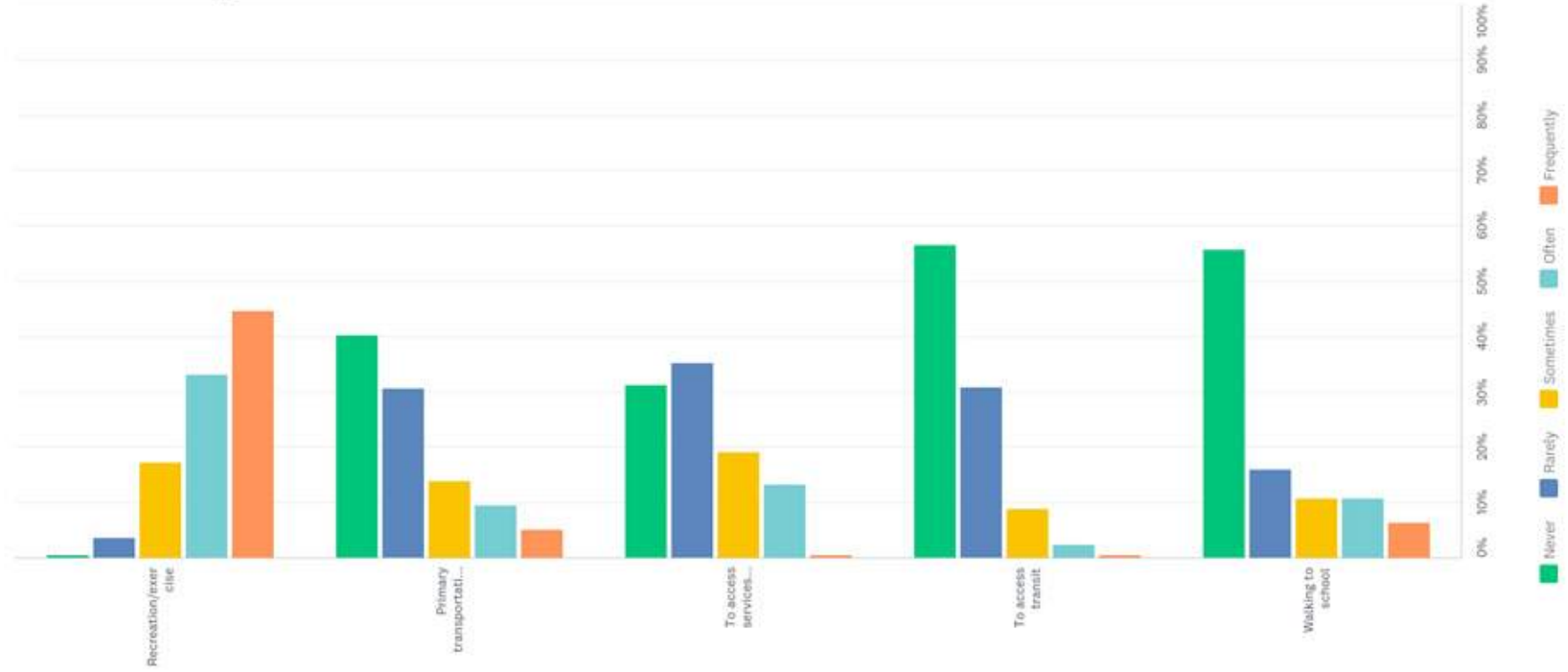
Q5: How important to you is improving walking conditions in the SEMPO region?

Answered: 160 Skipped: 46

	I DON'T KNOW	NOT IMPORTANT	SOMEWHAT IMPORTANT	VERY IMPORTANT	TOTAL	WEIGHTED AVERAGE
☆	2.50% 4	2.50% 4	30.63% 49	64.38% 103	160	3.57

Q6: Of the following reasons for walking, which apply to you?

Answered: 157 Skipped: 49



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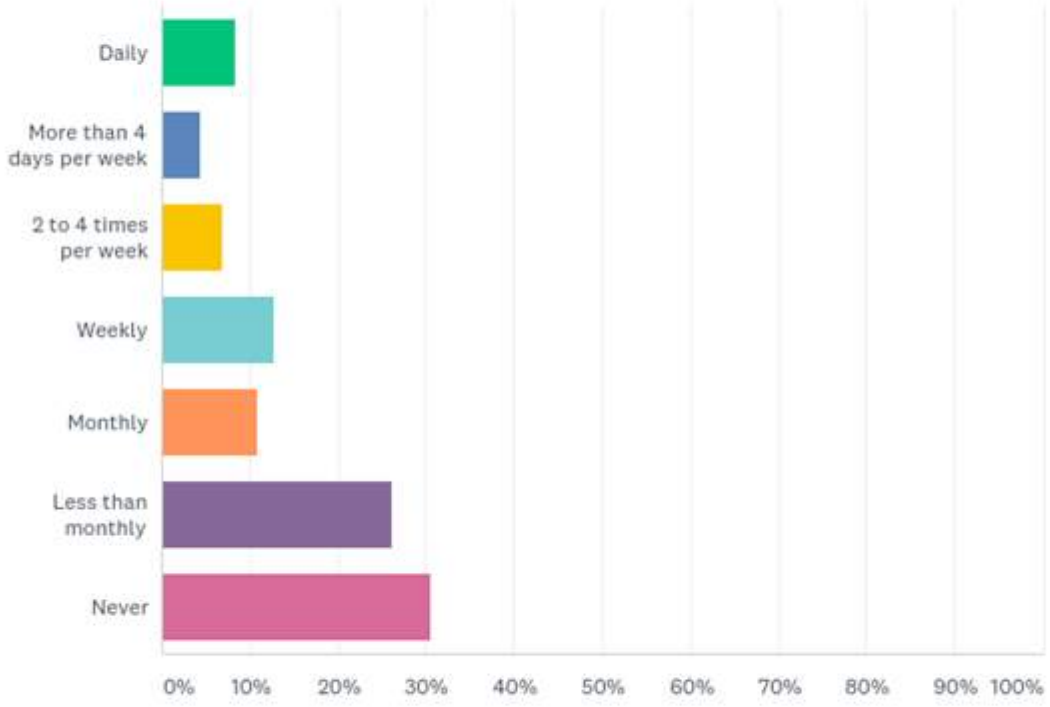
Q6: Of the following reasons for walking, which apply to you?

Answered: 157 Skipped: 49

	NEVER	RARELY	SOMETIMES	OFTEN	FREQUENTLY	TOTAL
Recreation/exercise	0.64% 1	3.85% 6	17.31% 27	33.33% 52	44.87% 70	156
Primary transportation to work, school, etc.	40.38% 63	30.77% 48	14.10% 22	9.62% 15	5.13% 8	156
To access services (shopping, medical care, etc.)	31.41% 49	35.26% 55	19.23% 30	13.46% 21	0.64% 1	156
To access transit	56.77% 88	30.97% 48	9.03% 14	2.58% 4	0.65% 1	155
Walking to school	55.77% 87	16.03% 25	10.90% 17	10.90% 17	6.41% 10	156

Q7: How often do you walk as your primary mode of transportation?

Answered: 157 Skipped: 49



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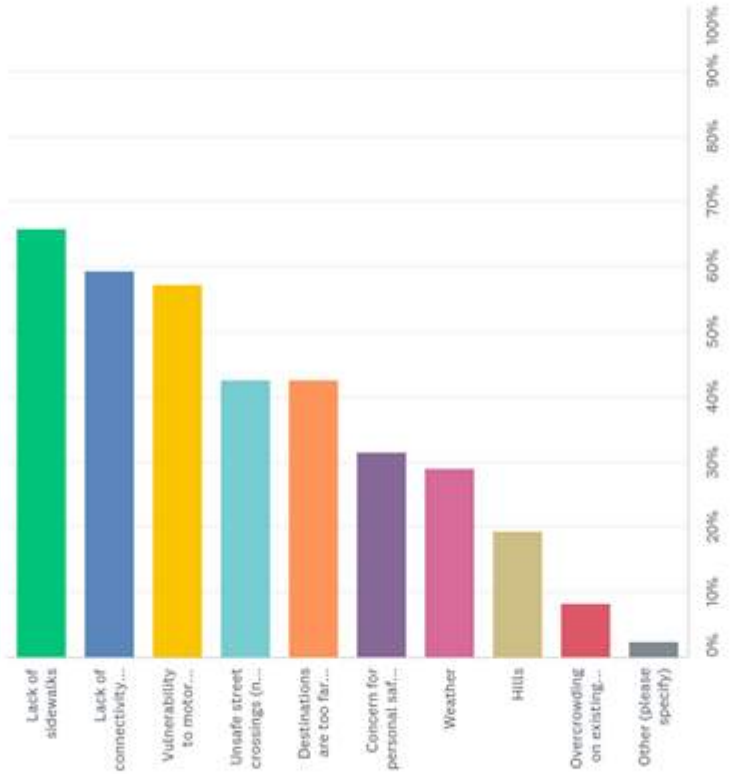
Q7: How often do you walk as your primary mode of transportation?

Answered: 157 Skipped: 49

ANSWER CHOICES	RESPONSES	
Daily	8.28%	13
More than 4 days per week	4.46%	7
2 to 4 times per week	7.01%	11
Weekly	12.74%	20
Monthly	10.83%	17
Less than monthly	26.11%	41
Never	30.57%	48
TOTAL		157

Q8: What discourages you from walking more? (Check all that apply)

Answered: 155 Skipped: 51



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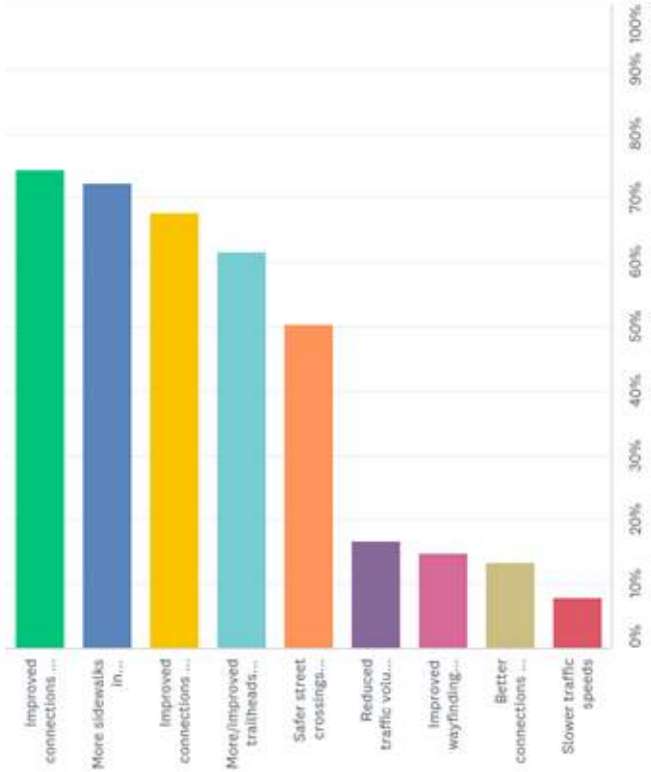
Q8: What discourages you from walking more? (Check all that apply)

Answered: 155 Skipped: 51

ANSWER CHOICES	RESPONSES	
Lack of sidewalks	65.81%	102
Lack of connectivity between residential neighborhoods and destinations (shopping, parks, schools, etc.)	59.35%	92
Vulnerability to motor vehicle traffic	57.42%	89
Unsafe street crossings (no crosswalks, disabled ramps, or pedestrian signals)	42.58%	66
Destinations are too far away	42.58%	66
Concern for personal safety and security (crime)	31.61%	49
Weather	29.03%	45
Hills	19.35%	30
Overcrowding on existing trails and sidewalks	8.39%	13
Other (please specify)	2.58%	4
Total Respondents: 155		

Q9: What types of improvements would make you more likely to walk? (Check all that apply)

Answered: 149 Skipped: 57



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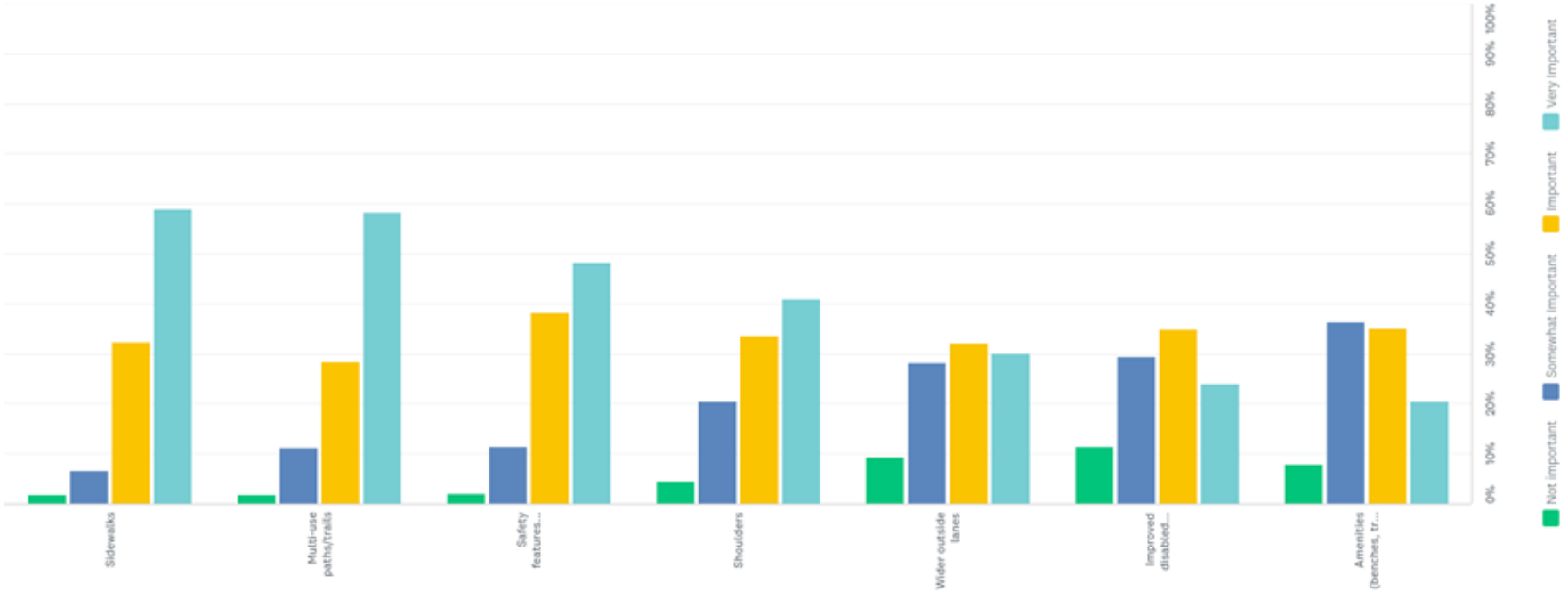
Q9: What types of improvements would make you more likely to walk? (Check all that apply)

Answered: 149 Skipped: 57

ANSWER CHOICES	RESPONSES	
Improved connections to downtown Cape Girardeau, uptown Jackson, and other regional destinations	74.50%	111
More sidewalks in neighborhoods	72.48%	108
Improved connections to trails	67.79%	101
More/improved trailheads (locations where a trail begins that could contain parking, maps, and/or restrooms)	61.74%	92
Safer street crossings (striped and/or signalized crosswalks)	50.34%	75
Reduced traffic volumes on preferred routes	16.78%	25
Improved wayfinding (directional signs)	14.77%	22
Better connections to transit	13.42%	20
Slower traffic speeds	8.05%	12
Total Respondents: 149		

Q10: Rate the importance of these types of improvements to the transportation system in the SEMPO region.

Answered: 152 Skipped: 54



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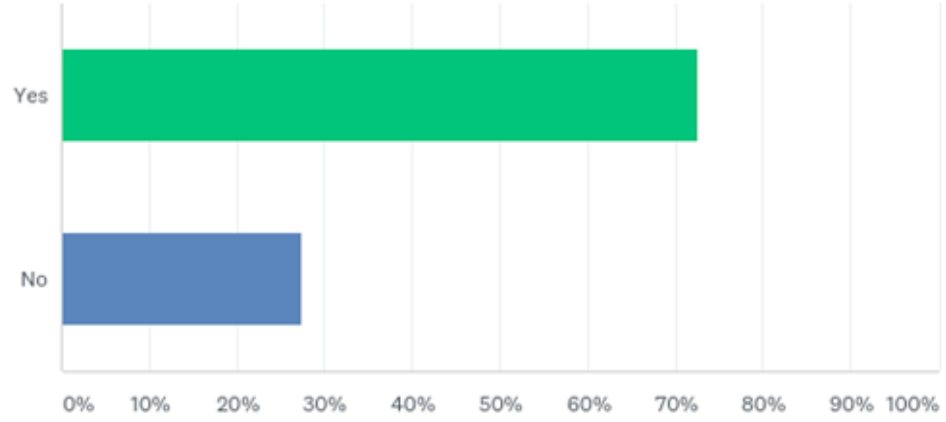
Q10: Rate the importance of these types of improvements to the transportation system in the SEMPO region.

Answered: 152 Skipped: 54

	NOT IMPORTANT	SOMEWHAT IMPORTANT	IMPORTANT	VERY IMPORTANT	TOTAL
Sidewalks	1.99% 3	6.62% 10	32.45% 49	58.94% 89	151
Multi-use paths/trails	1.99% 3	11.26% 17	28.48% 43	58.28% 88	151
Safety features (pedestrian-scale lighting, security cameras, signalized crosswalks, etc.)	2.01% 3	11.41% 17	38.26% 57	48.32% 72	149
Shoulders	4.64% 7	20.53% 31	33.77% 51	41.06% 62	151
Wider outside lanes	9.40% 14	28.19% 42	32.21% 48	30.20% 45	149
Improved disabled accessibility	11.41% 17	29.53% 44	34.90% 52	24.16% 36	149
Amenities (benches, trash cans, shade trees, etc.)	7.95% 12	36.42% 55	35.10% 53	20.53% 31	151

Q11: Are you interested in answering questions about biking in the region?

Answered: 168 Skipped: 38



ANSWER CHOICES	RESPONSES	
Yes	72.62%	122
No	27.38%	46
TOTAL		168

Q12: How would you rate existing cycling conditions in your community?

Answered: 124 Skipped: 82

	I DON'T KNOW	POOR	FAIR	EXCELLENT	TOTAL	WEIGHTED AVERAGE
☆	4.84% 6	54.84% 68	37.90% 47	2.42% 3	124	2.38

Q13: How would you rate existing cycling conditions in the SEMPO region?

Answered: 124 Skipped: 82

	I DON'T KNOW	POOR	FAIR	EXCELLENT	TOTAL	WEIGHTED AVERAGE
☆	8.06% 10	53.23% 66	37.10% 46	1.61% 2	124	2.32

Q14: How important to you is improving cycling conditions in your community?

Answered: 122 Skipped: 84

	I DON'T KNOW	NOT IMPORTANT	SOMEWHAT IMPORTANT	VERY IMPORTANT	TOTAL	WEIGHTED AVERAGE
☆	0.82% 1	4.92% 6	22.95% 28	71.31% 87	122	3.65

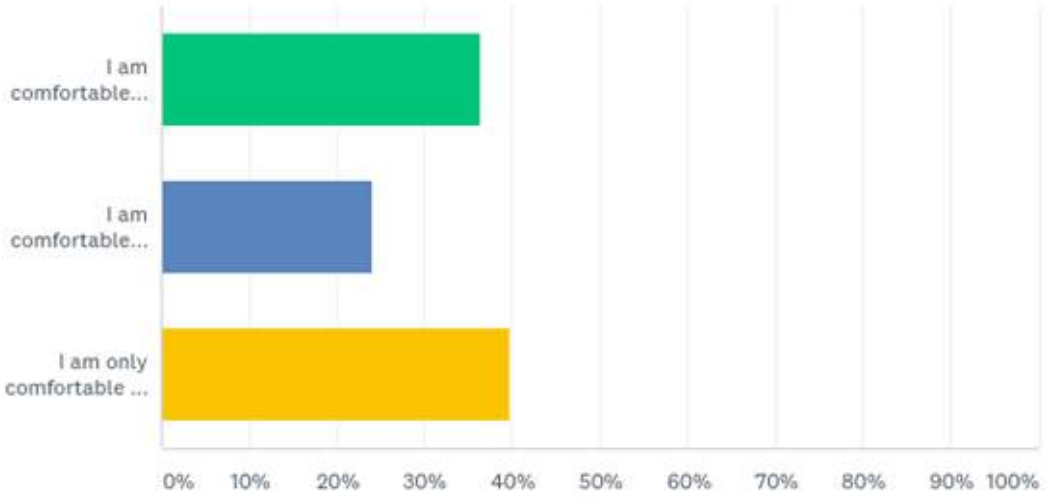
Q15: How important to you is improving cycling conditions in the SEMPO region?

Answered: 122 Skipped: 84

	I DON'T KNOW	NOT IMPORTANT	SOMEWHAT IMPORTANT	VERY IMPORTANT	TOTAL	WEIGHTED AVERAGE
☆	2.46% 3	4.10% 5	23.77% 29	69.67% 85	122	3.61

Q16: How comfortable are you riding in traffic?

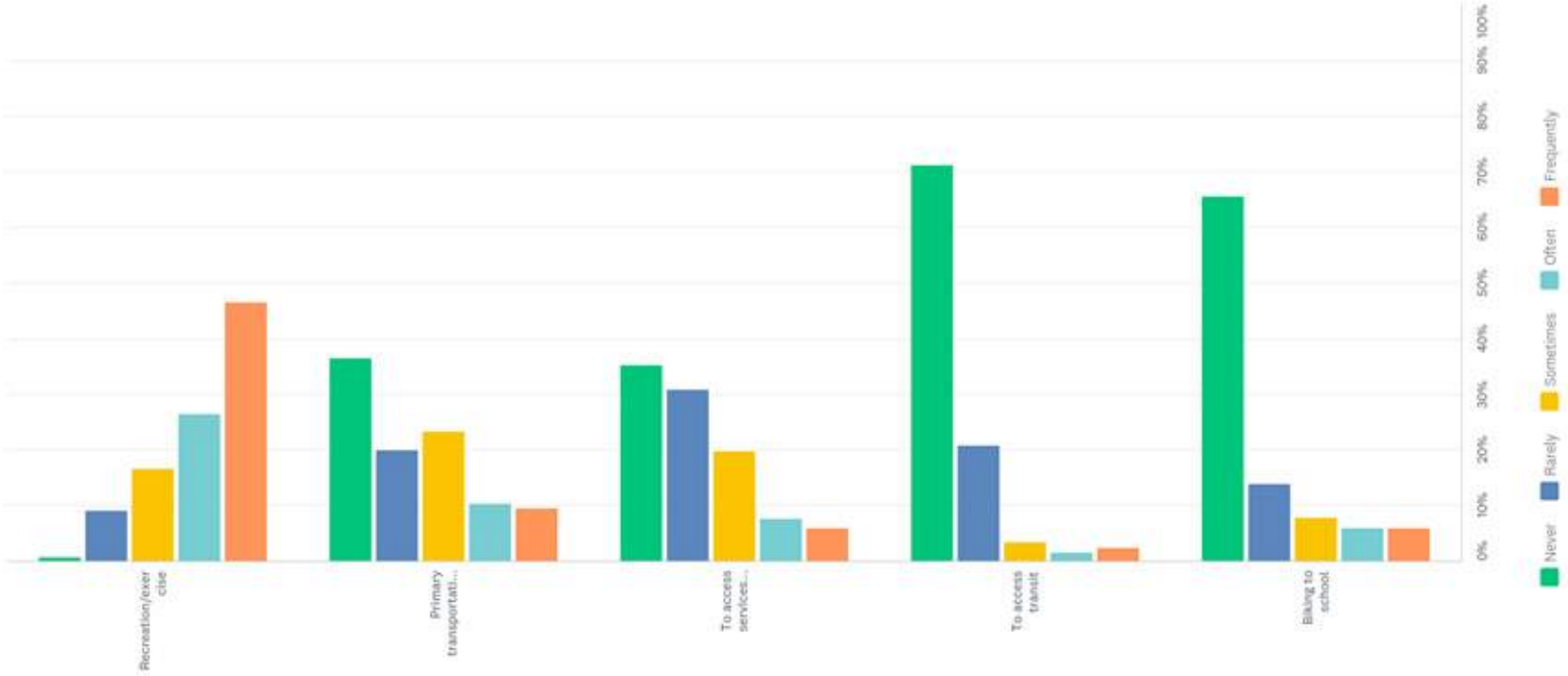
Answered: 121 Skipped: 85



ANSWER CHOICES	RESPONSES	
I am comfortable riding in mixed traffic (no bike lanes)	36.36%	44
I am comfortable riding in striped bike lanes, next to traffic	23.97%	29
I am only comfortable on separated facilities like trails	39.67%	48
TOTAL		121

Q17: Of the following reasons for cycling, which applies to you?

Answered: 120 Skipped: 86



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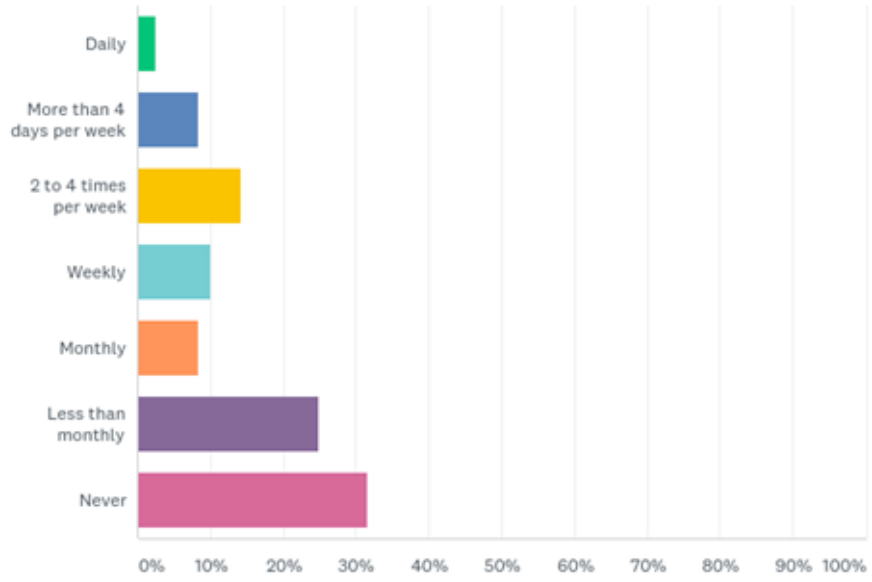
Q17: Of the following reasons for cycling, which applies to you?

Answered: 120 Skipped: 86

	NEVER	RARELY	SOMETIMES	OFTEN	FREQUENTLY	TOTAL
Recreation/exercise	0.83% 1	9.17% 11	16.67% 20	26.67% 32	46.67% 56	120
Primary transportation to work, school, etc.	36.52% 42	20.00% 23	23.48% 27	10.43% 12	9.57% 11	115
To access services (shopping, medical services, etc.)	35.34% 41	31.03% 36	19.83% 23	7.76% 9	6.03% 7	116
To access transit	71.30% 82	20.87% 24	3.48% 4	1.74% 2	2.61% 3	115
Biking to school	65.79% 75	14.04% 16	7.89% 9	6.14% 7	6.14% 7	114

Q18: How often do you ride a bike as your primary mode of transportation?

Answered: 120 Skipped: 86



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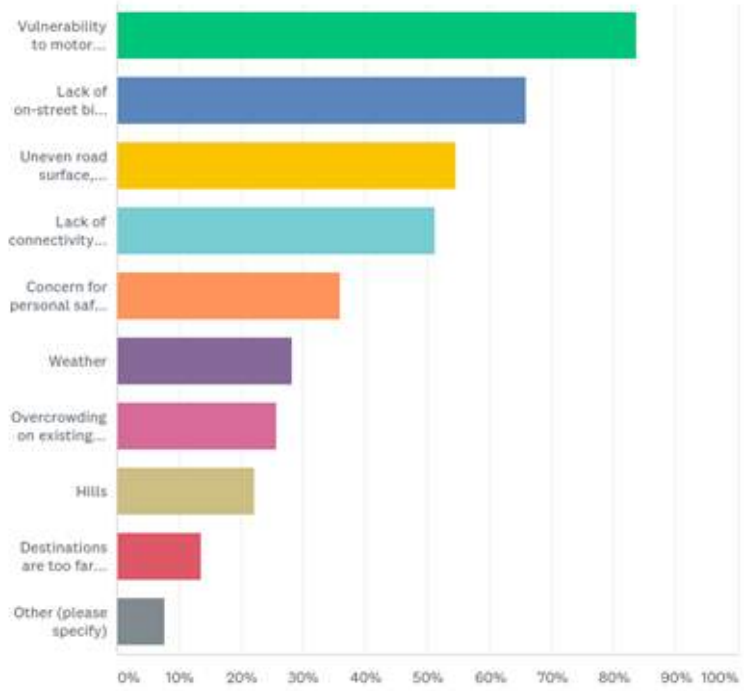
Q18: How often do you ride a bike as your primary mode of transportation?

Answered: 120 Skipped: 86

ANSWER CHOICES	RESPONSES	
Daily	2.50%	3
More than 4 days per week	8.33%	10
2 to 4 times per week	14.17%	17
Weekly	10.00%	12
Monthly	8.33%	10
Less than monthly	25.00%	30
Never	31.67%	38
TOTAL		120

Q19: What discourages you from biking more? (Check all that apply)

Answered: 117 Skipped: 89



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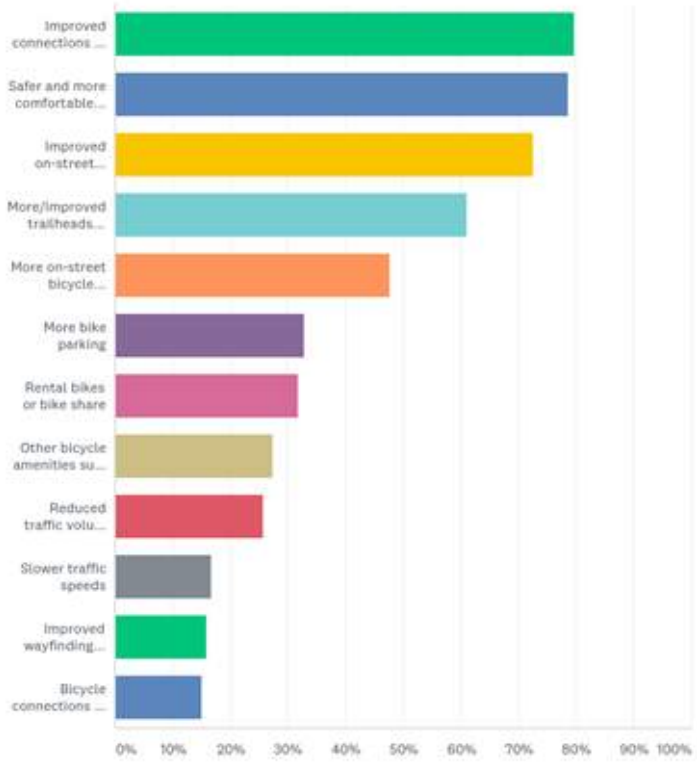
Q19: What discourages you from biking more? (Check all that apply)

Answered: 117 Skipped: 89

ANSWER CHOICES	RESPONSES	
Vulnerability to motor vehicle traffic	83.76%	98
Lack of on-street bike lanes or bike parking	65.81%	77
Uneven road surface, potholes	54.70%	64
Lack of connectivity between residential neighborhoods and destinations (shopping, parks, schools, etc.)	51.28%	60
Concern for personal safety and security (crime)	35.90%	42
Weather	28.21%	33
Overcrowding on existing trails and bicycle lanes	25.64%	30
Hills	22.22%	26
Destinations are too far away	13.68%	16
Other (please specify)	7.69%	9
Total Respondents: 117		

Q20: What types of improvements would make you more likely to ride a bicycle? (Check all that apply)

Answered: 113 Skipped: 93



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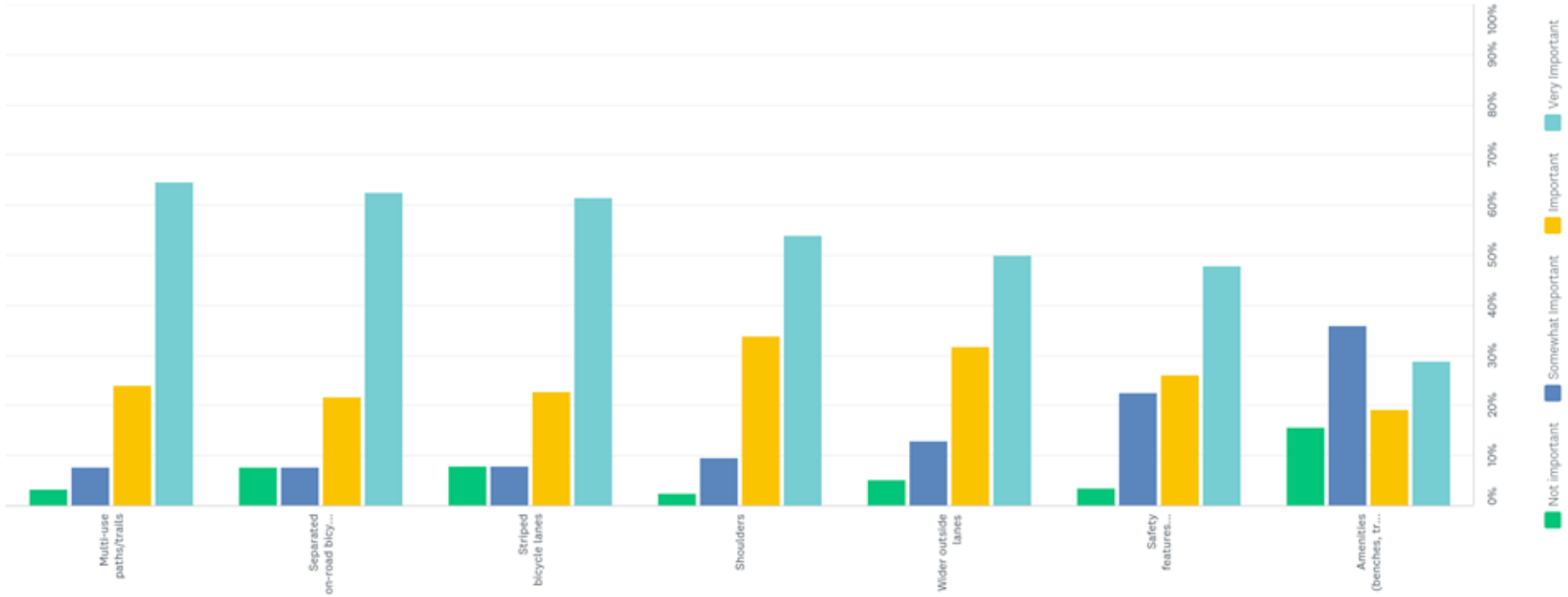
Q20: What types of improvements would make you more likely to ride a bicycle? (Check all that apply)

Answered: 113 Skipped: 93

ANSWER CHOICES	RESPONSES	
Improved connections to downtown Cape Girardeau, uptown Jackson, and other regional destinations	79.65%	90
Safer and more comfortable bicycle routes	78.76%	89
Improved on-street connections to trails	72.57%	82
More/improved trailheads (locations where a trail begins that could contain parking, maps, and/or restrooms)	61.06%	69
More on-street bicycle facilities	47.79%	54
More bike parking	32.74%	37
Rental bikes or bike share	31.86%	36
Other bicycle amenities such as fix-it stations	27.43%	31
Reduced traffic volumes on preferred routes	25.66%	29
Slower traffic speeds	16.81%	19
Improved wayfinding (directional signs)	15.93%	18
Bicycle connections to transit	15.04%	17
Total Respondents: 113		

Q21: Rate the importance of these types of improvements to the transportation system in the SEMPO region.

Answered: 117 Skipped: 89



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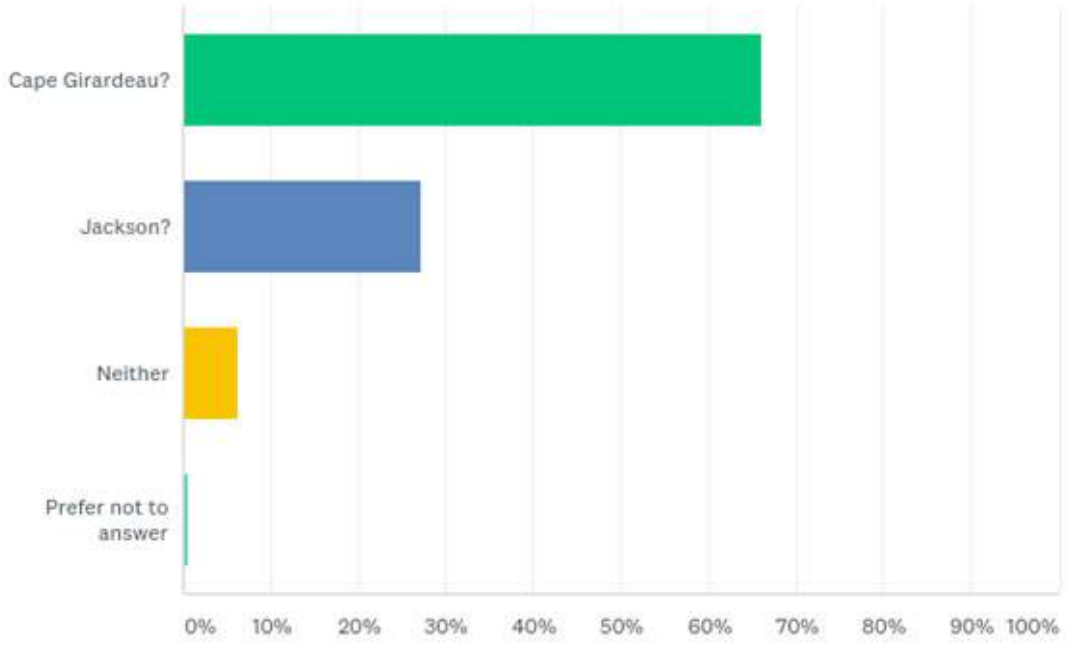
Q21: Rate the importance of these types of improvements to the transportation system in the SEMPO region.

Answered: 117 Skipped: 89

	NOT IMPORTANT	SOMEWHAT IMPORTANT	IMPORTANT	VERY IMPORTANT	TOTAL
Multi-use paths/trails	3.45% 4	7.76% 9	24.14% 28	64.66% 75	116
Separated on-road bicycle lanes	7.83% 9	7.83% 9	21.74% 25	62.61% 72	115
Striped bicycle lanes	7.89% 9	7.89% 9	22.81% 26	61.40% 70	114
Shoulders	2.61% 3	9.57% 11	33.91% 39	53.91% 62	115
Wider outside lanes	5.17% 6	12.93% 15	31.90% 37	50.00% 58	116
Safety features (pedestrian-scale lighting, security cameras, signalized crosswalks, etc.)	3.48% 4	22.61% 26	26.09% 30	47.83% 55	115
Amenities (benches, trash cans, shade trees, etc.)	15.79% 18	35.96% 41	19.30% 22	28.95% 33	114

Q22: Are you a resident of

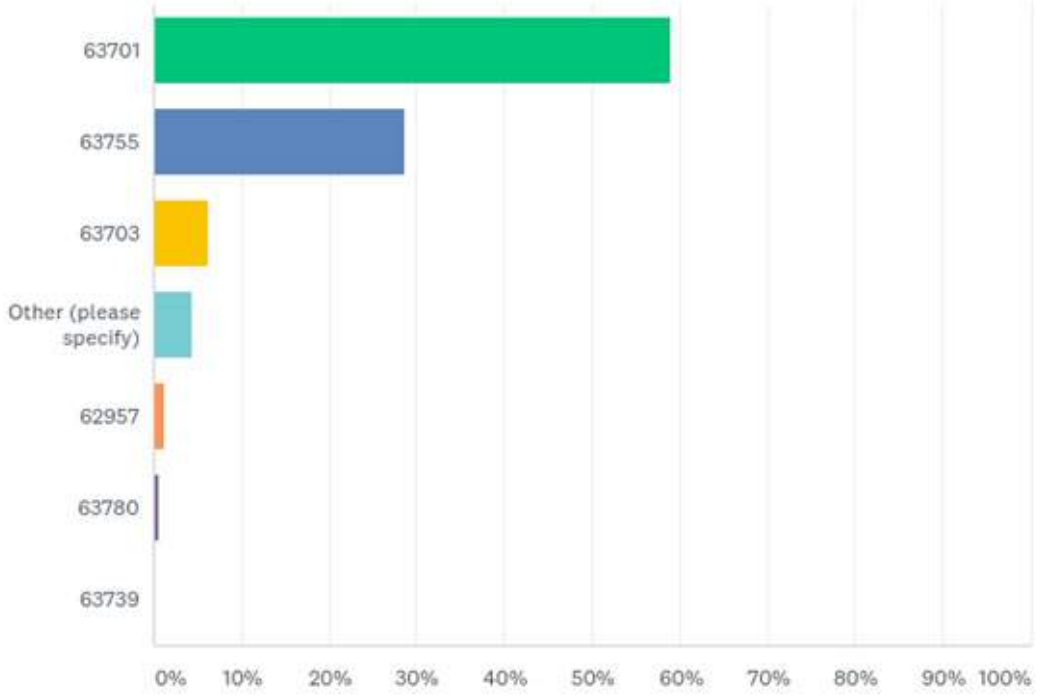
Answered: 162 Skipped: 44



ANSWER CHOICES	RESPONSES	
Cape Girardeau?	66.05%	107
Jackson?	27.16%	44
Neither	6.17%	10
Prefer not to answer	0.62%	1
TOTAL		162

Q23: What is your zip code?

Answered: 161 Skipped: 45



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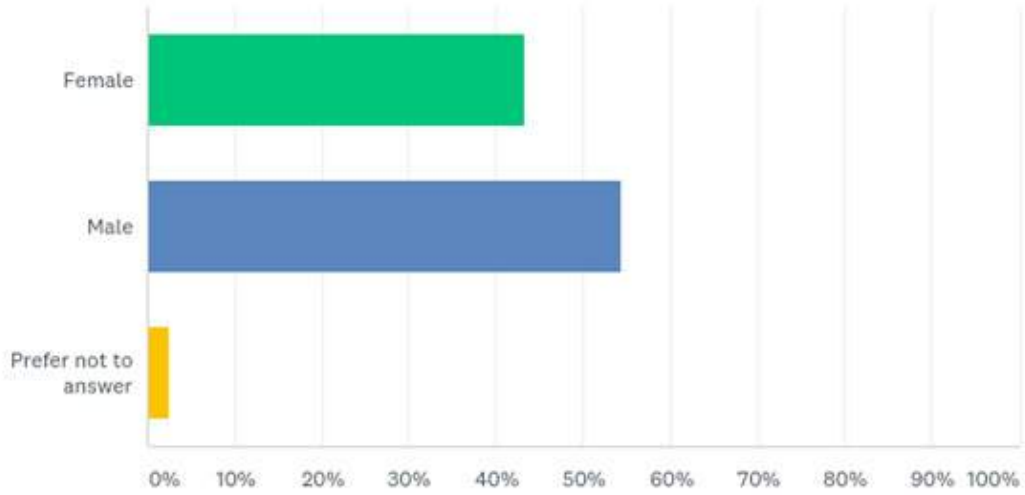
Q23: What is your zip code?

Answered: 161 Skipped: 45

ANSWER CHOICES	RESPONSES	
63701	59.01%	95
63755	28.57%	46
63703	6.21%	10
Other (please specify)	4.35%	7
62957	1.24%	2
63780	0.62%	1
63739	0.00%	0
TOTAL		161

Q24: What is your gender?

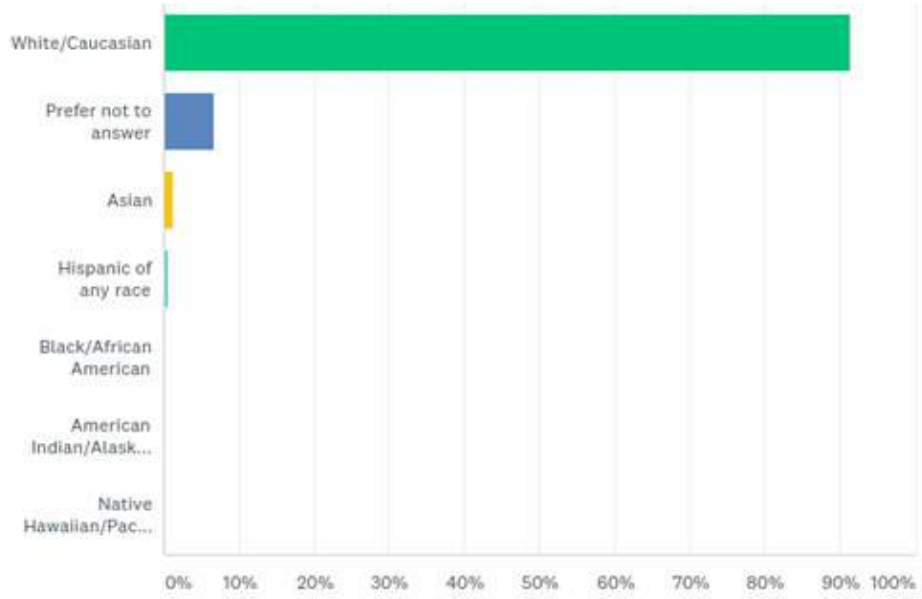
Answered: 162 Skipped: 44



ANSWER CHOICES	RESPONSES	
Female	43.21%	70
Male	54.32%	88
Prefer not to answer	2.47%	4
TOTAL		162

Q25: What is your race/ethnicity?

Answered: 162 Skipped: 44



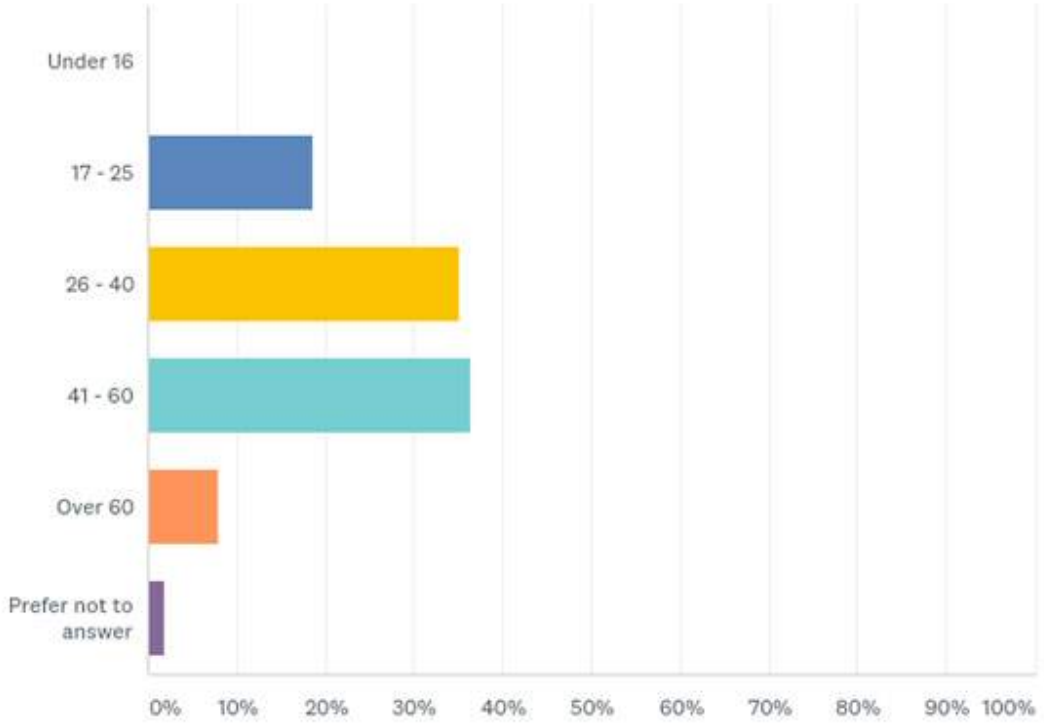
Q25: What is your race/ethnicity?

Answered: 162 Skipped: 44

ANSWER CHOICES	RESPONSES	
White/Caucasian	91.36%	148
Prefer not to answer	6.79%	11
Asian	1.23%	2
Hispanic of any race	0.62%	1
Black/African American	0.00%	0
American Indian/Alaska Native	0.00%	0
Native Hawaiian/Pacific Islander	0.00%	0
TOTAL		162

Q26: What is your age?

Answered: 162 Skipped: 44



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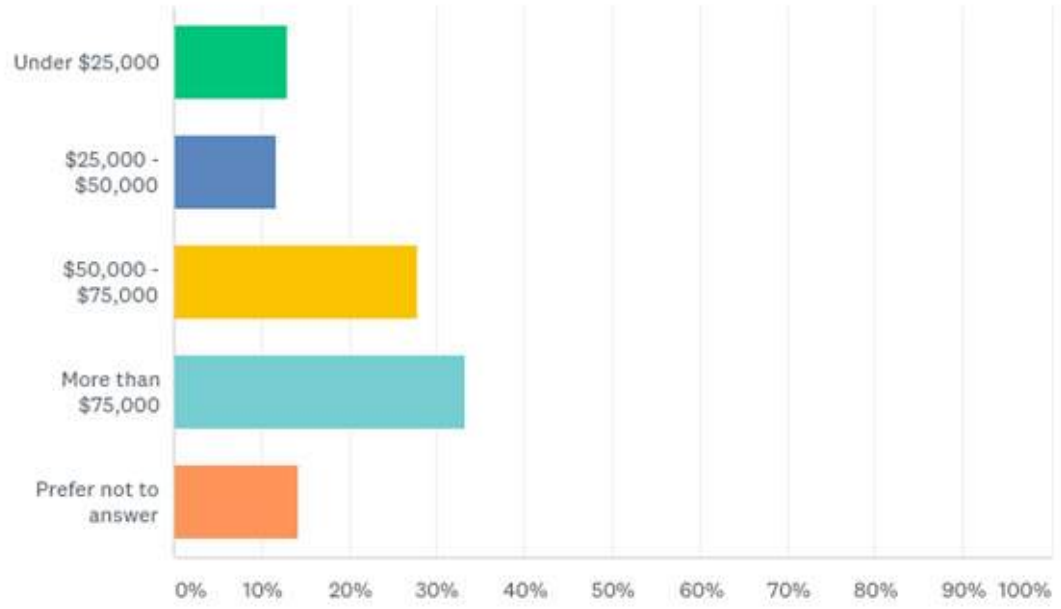
Q26: What is your age?

Answered: 162 Skipped: 44

ANSWER CHOICES	RESPONSES	
Under 16	0.00%	0
17 - 25	18.52%	30
26 - 40	35.19%	57
41 - 60	36.42%	59
Over 60	8.02%	13
Prefer not to answer	1.85%	3
TOTAL		162

Q27: What is your household income?

Answered: 162 Skipped: 44



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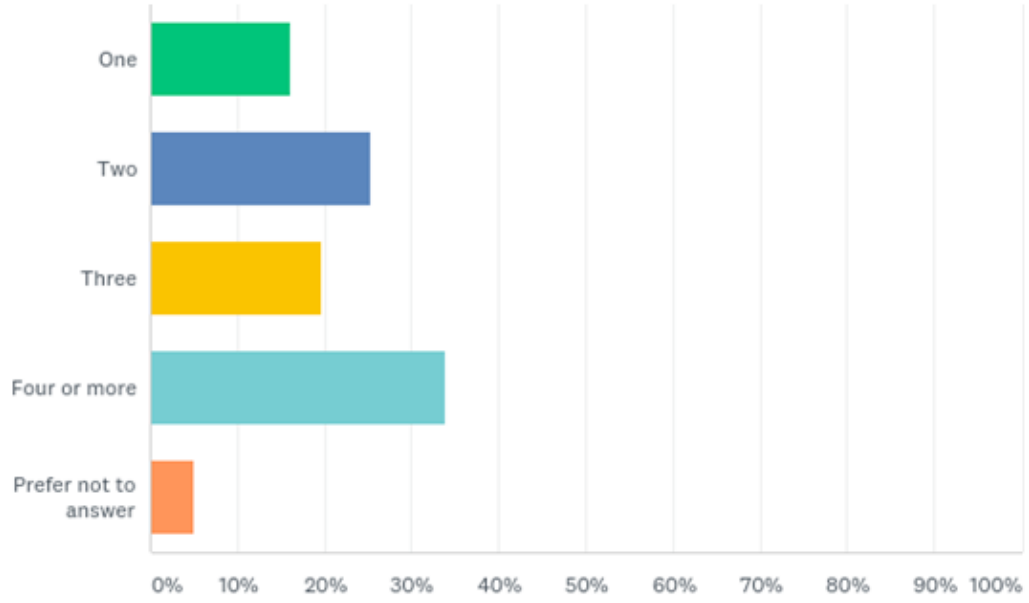
Q27: What is your household income?

Answered: 162 Skipped: 44

ANSWER CHOICES	RESPONSES	
Under $25,000	12.96%	21
$25,000 - $50,000	11.73%	19
$50,000 - $75,000	27.78%	45
More than $75,000	33.33%	54
Prefer not to answer	14.20%	23
TOTAL		162

Q28: How many people are in your household?

Answered: 162 Skipped: 44



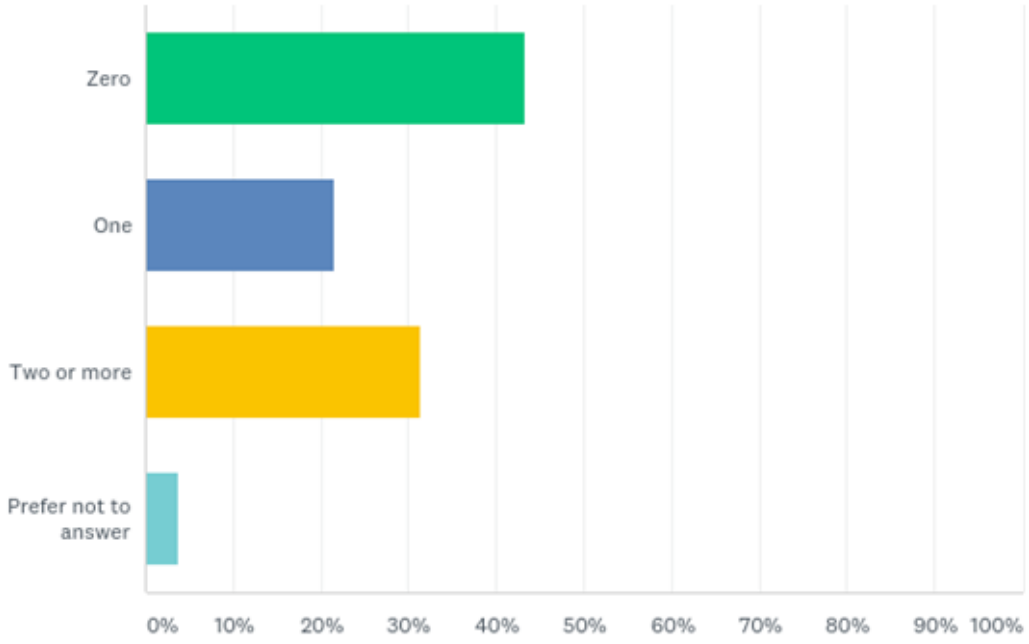
Q28: How many people are in your household?

Answered: 162 Skipped: 44

ANSWER CHOICES	RESPONSES	
One	16.05%	26
Two	25.31%	41
Three	19.75%	32
Four or more	33.95%	55
Prefer not to answer	4.94%	8
TOTAL		162

Q29: How many students (K-12 and College) are in your household?

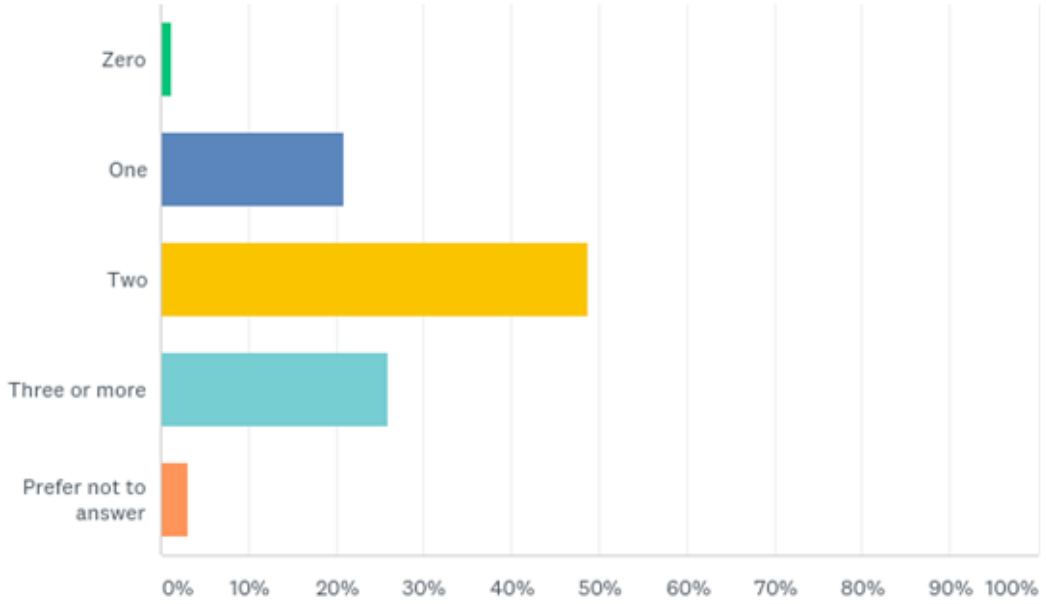
Answered: 162 Skipped: 44



ANSWER CHOICES	RESPONSES	
Zero	43.21%	70
One	21.60%	35
Two or more	31.48%	51
Prefer not to answer	3.70%	6
TOTAL		162

Q30: How many working vehicles are present in your household?

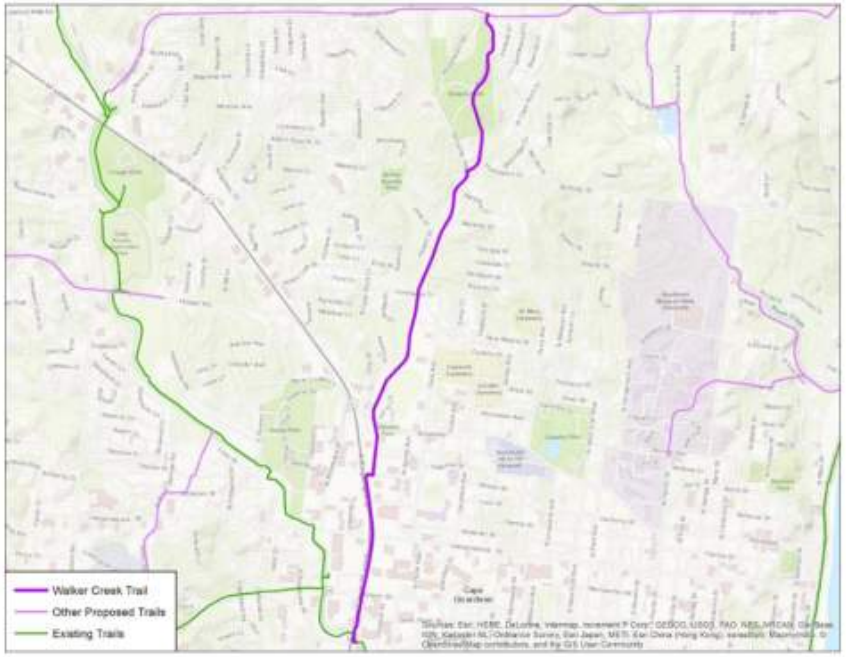
Answered: 162 Skipped: 44



ANSWER CHOICES	RESPONSES	
Zero	1.23%	2
One	20.99%	34
Two	48.77%	79
Three or more	25.93%	42
Prefer not to answer	3.09%	5
TOTAL		162

Appendix B: Detailed Trail Route Analyses

Walker Creek Trail

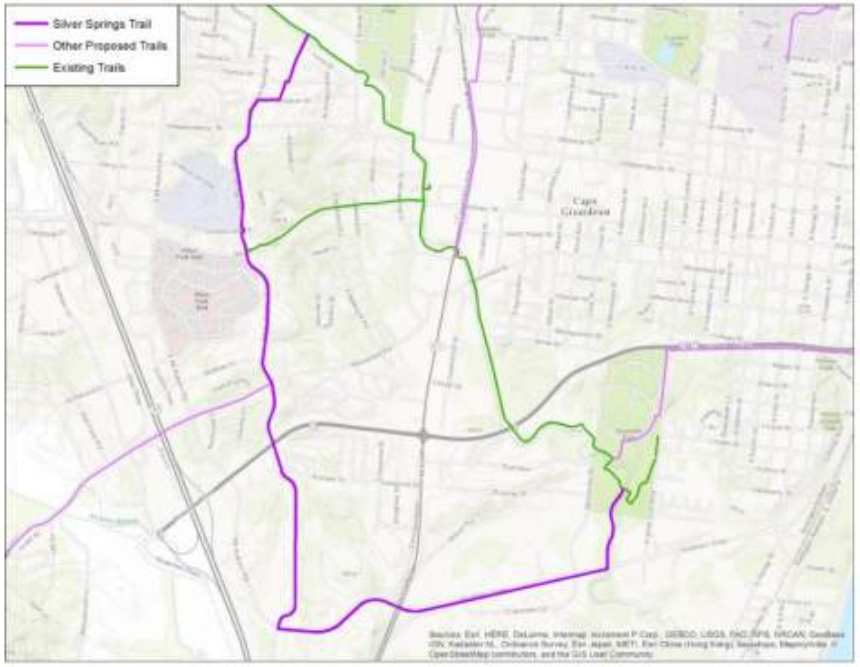


Distance: 2.82 miles

Metric	Result
Improves BLTS	Y
Improves PLOS	Y
High Speed Limit Road	Y
High ADT Road	Y
High Density Employment	Y
High Density Housing	Y
Low-Income Housing	Y
High Student Population	Y
High Zero-Vehicle Households	Y
Near Schools	N
Near Other Destinations	Y
Additional Pop. Access	4,403
Additional Emp. Access	2,499

Pros:	• Connects to the existing Cape LaCroix Trail and the proposed Lexington Trail • Adds a trail along Kingshighway which has poor pedestrian access • Connects through Kiwanis Park • Provides access through densely populated northern Cape Girardeau
Cons:	• Does not go near any schools

Silver Springs Trail

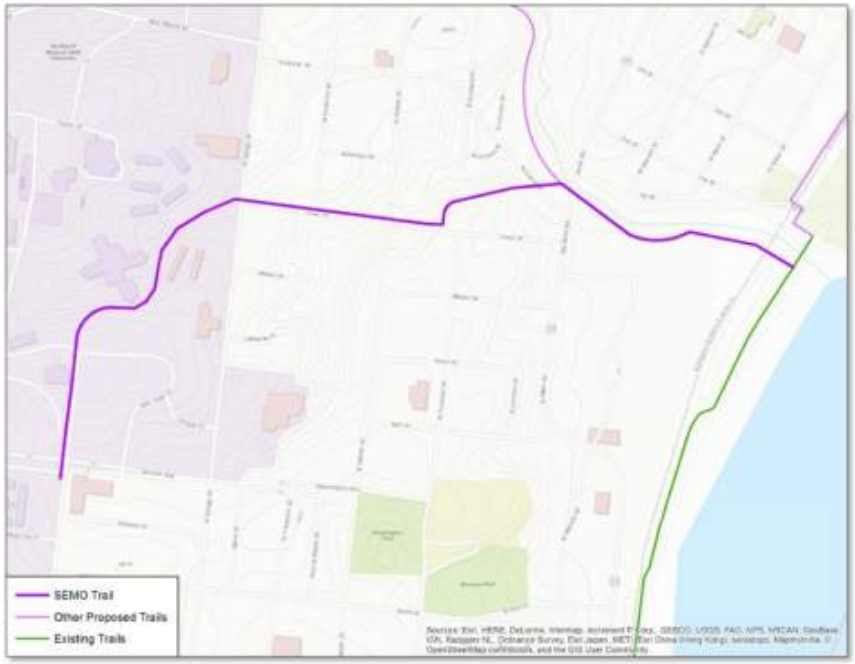


Distance: 4.30 miles

Metric	Result
Improves BLTS	Y
Improves PLOS	Y
High Speed Limit Road	Y
High ADT Road	N
High Density Employment	Y
High Density Housing	Y
Low-Income Housing	Y
High Student Population	N
High Zero-Vehicle Households	N
Near Schools	Y
Near Other Destinations	Y
Additional Pop. Access	2,532
Additional Emp. Access	3,699

Pros:	• Provides a western loop that parallels the Cape LaCroix Trail • Connects Central High and Cape Girardeau Career & Technology Center to the trail system • Accesses regional destinations such as West Park Mall and St. Francis Hospital
Cons:	• Does not hit some of the target populations – student populations and zero-vehicle households

SEMO Trail

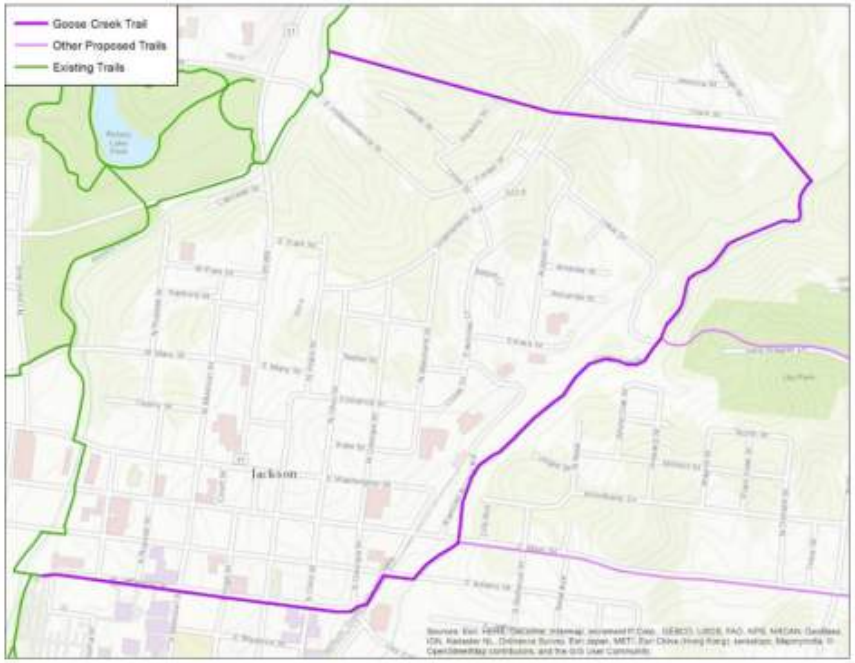


Distance: 1.11 miles

Metric	Result
Improves BLTS	-
Improves PLOS	-
High Speed Limit Road	-
High ADT Road	-
High Density Employment	Y
High Density Housing	Y
Low-Income Housing	Y
High Student Population	Y
High Zero-Vehicle Households	N
Near Schools	Y
Near Other Destinations	Y
Additional Pop. Access	4,573
Additional Emp. Access	1,980

Pros:	• Connects the SEMO University Campus to the Riverfront Trail • The eastern side follows a creek bed to help address grades in the area • Connects through heavily student-oriented neighborhoods
Cons:	• The westernmost section of the trail would be fairly steep

Goose Creek Trail

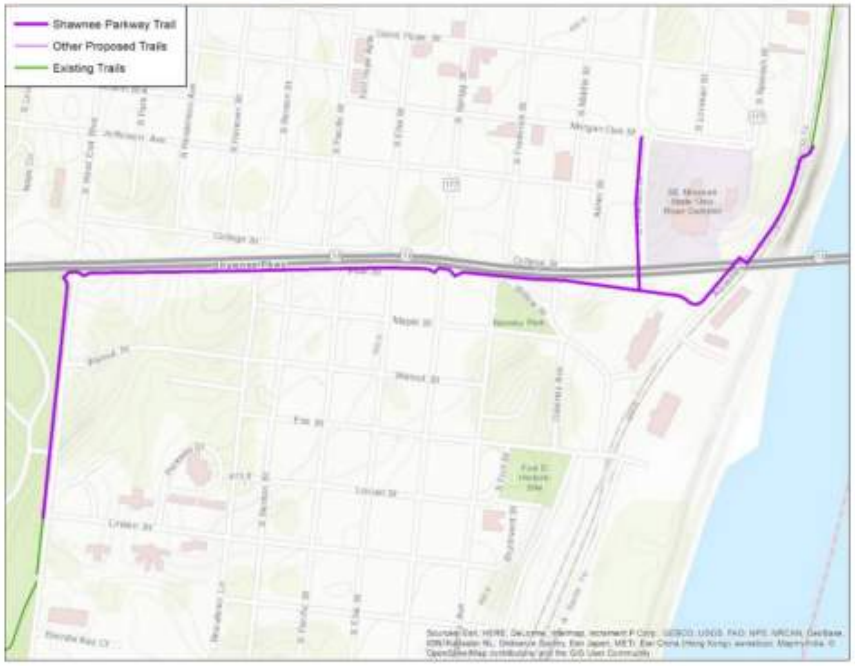


Distance: 2.38 miles

Metric	Result
Improves BLTS	-
Improves PLOS	-
High Speed Limit Road	-
High ADT Road	-
High Density Employment	Y
High Density Housing	N
Low-Income Housing	N
High Student Population	N
High Zero-Vehicle Households	Y
Near Schools	Y
Near Other Destinations	Y
Additional Pop. Access	2,750
Additional Emp. Access	1,517

Pros:	• Connects through Uptown Jackson • Follows a creek to address grades in the area • Connects residential neighborhoods to parks
Cons:	• May require several bridges over Goose Creek • Does not hit several of the target populations

Shawnee Parkway Trail

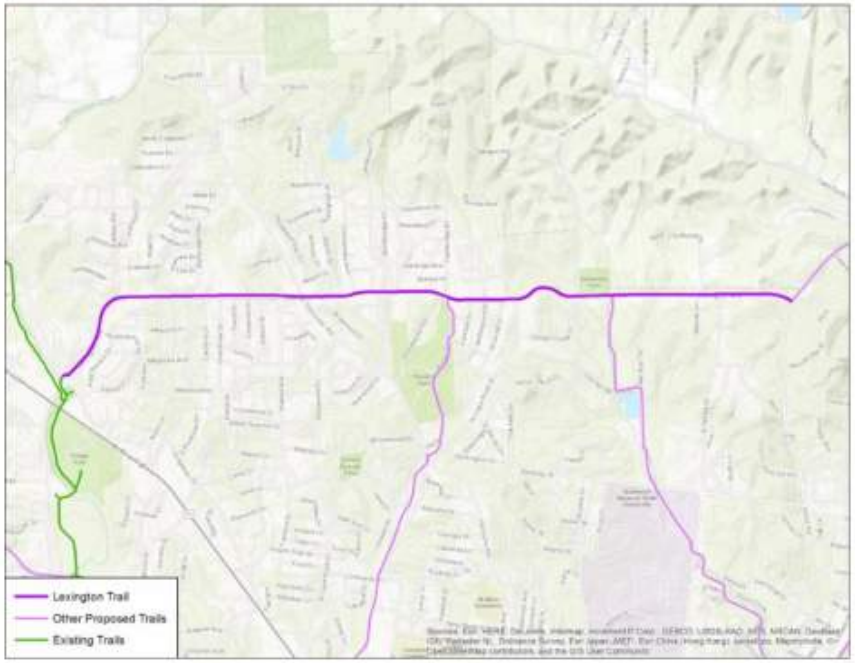


Distance: 1.73 miles

Metric	Result
Improves BLTS	Y
Improves PLOS	Y
High Speed Limit Road	Y
High ADT Road	Y
High Density Employment	N
High Density Housing	Y
Low-Income Housing	Y
High Student Population	N
High Zero-Vehicle Households	N
Near Schools	N
Near Other Destinations	N
Additional Pop. Access	2,422
Additional Emp. Access	364

Pros:	• Connects the south end of the Riverfront Trail to the Cape LaCroix Trail • Helps to complete the southern end of the loop around Cape Girardeau • Provides a connection to the SEMO State University River Campus • Connects through a low-income area • Provides a trail along Shawnee Parkway which has high traffic volumes and speeds
Cons:	• Proper intersection crossings may require some reconstruction of the roadway

Lexington Trail

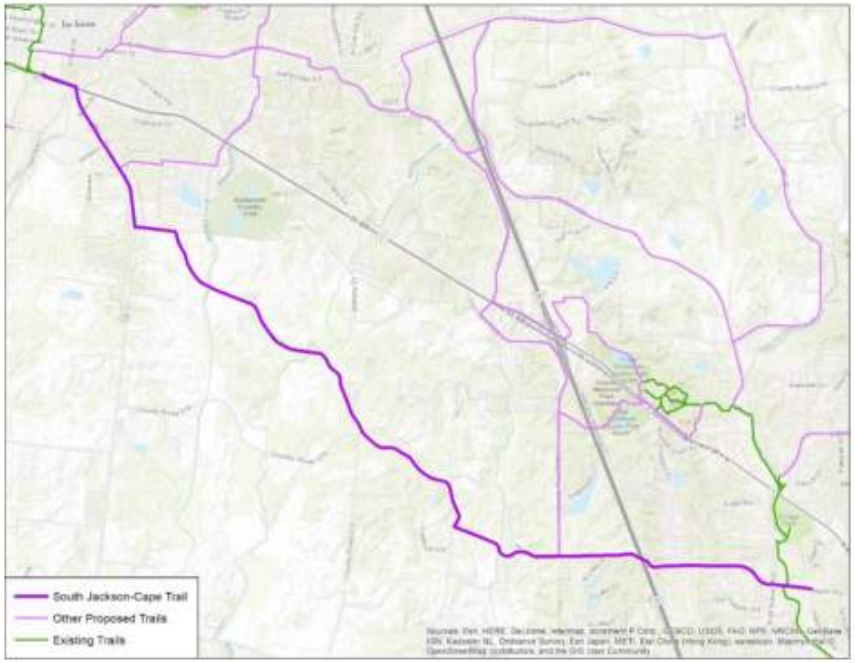


Distance: 3.21 miles

Metric	Result
Improves BLTS	Y
Improves PLOS	Y
High Speed Limit Road	N
High ADT Road	N
High Density Employment	N
High Density Housing	Y
Low-Income Housing	Y
High Student Population	N
High Zero-Vehicle Households	N
Near Schools	N
Near Other Destinations	Y
Additional Pop. Access	5,465
Additional Emp. Access	1,244

Pros:	• Completes the loop around Cape Girardeau by adding a section to the north • Serves as the northern terminus of many other proposed trails and bike facilities • Replaces insufficient and discontinuous bike lanes
Cons:	• Will have many roadway crossings because it is a sidepath for the length of the trail • There has been resistance to sidewalks and other infrastructure in the past from local residents

South Jackson-Cape Trail

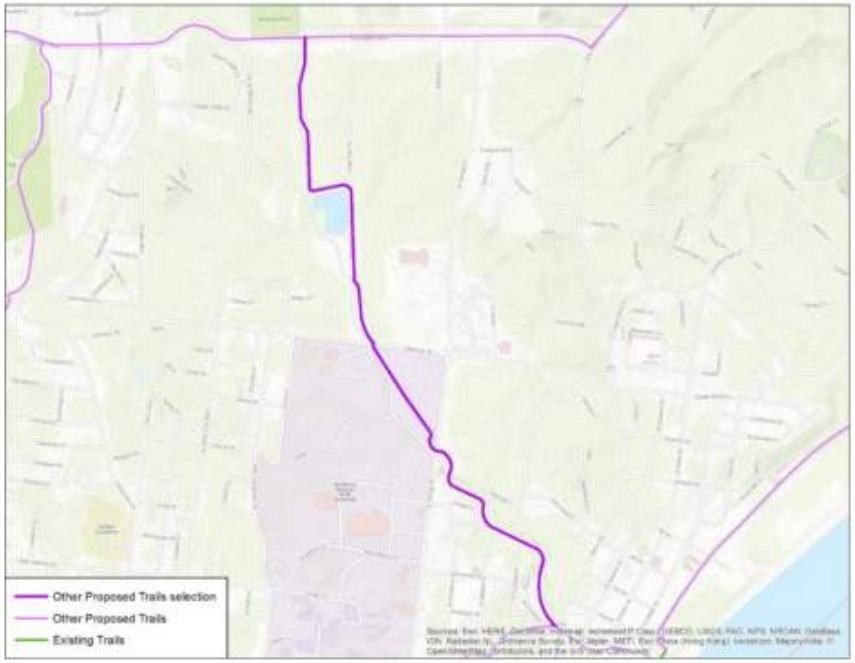


Distance: 8.01 miles

Metric	Result
Improves BLTS	Y
Improves PLOS	Y
High Speed Limit Road	Y
High ADT Road	N
High Density Employment	N
High Density Housing	N
Low-Income Housing	N
High Student Population	N
High Zero-Vehicle Households	Y
Near Schools	Y
Near Other Destinations	N
Additional Pop. Access	3,782
Additional Emp. Access	1,396

Pros:	• Provides a direct connection between Cape Girardeau and Jackson • Provides a safe connection over I-55 • Provides access through residential areas in both cities that are currently underserved by the active transportation network
Cons:	• Requires the reconstruction of the Hopper Rd. bridge over I-55 • The rural nature of the trail means that there are only low-density developments along the trail

Old Sprigg Trail



Distance: 1.86 miles

Metric	Result
Improves BLTS	-
Improves PLOS	-
High Speed Limit Road	-
High ADT Road	-
High Density Employment	N
High Density Housing	N
Low-Income Housing	Y
High Student Population	Y
High Zero-Vehicle Households	N
Near Schools	N
Near Other Destinations	Y
Additional Pop. Access	1,879
Additional Emp. Access	266

Pros:	• Connects the Riverfront Trail to Lexington Avenue • Follows a creek bed to limit grades through a hilly area • Runs through the northern part of the SEMO Campus
Cons:	• Traverses a relatively rural area, avoids the denser neighborhoods • May require bridges across the creek or have flooding issues

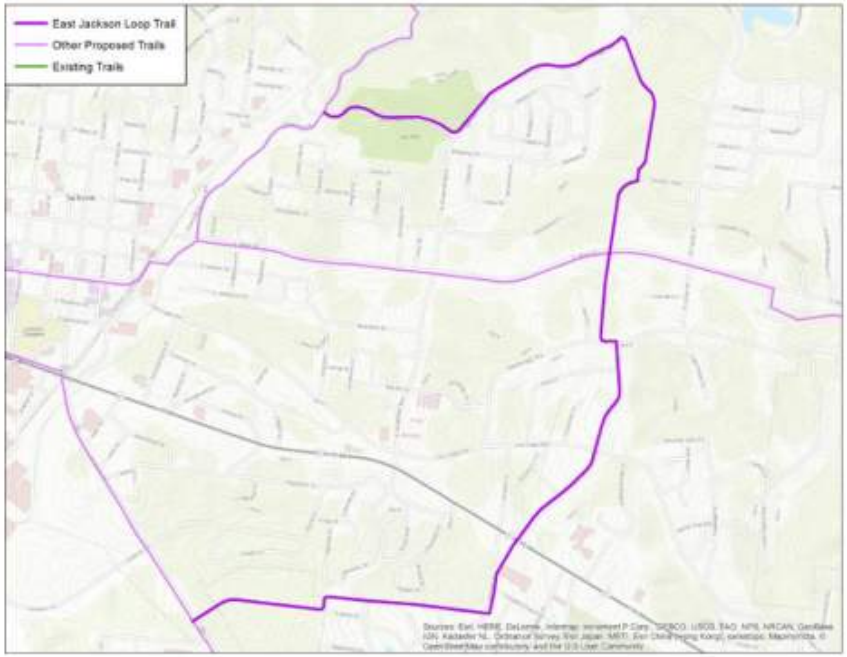
Bloomfield Trail

Distance: 1.27 miles

Metric	Result
Improves BLTS	Y
Improves PLOS	Y
High Speed Limit Road	Y
High ADT Road	N
High Density Employment	Y
High Density Housing	N
Low-Income Housing	N
High Student Population	N
High Zero-Vehicle Households	N
Near Schools	N
Near Other Destinations	N
Additional Pop. Access	1,248
Additional Emp. Access	2,870

Pros:	• Connects an existing trail to the larger trail network • Provides a safe connection across I-55 • Connects to regional shopping destinations on both sides of the Interstate
Cons:	• Requires the reconstruction of the Bloomfield Road bridge over I-55 • Does not access most of the target population groups

East Jackson Loop Trail

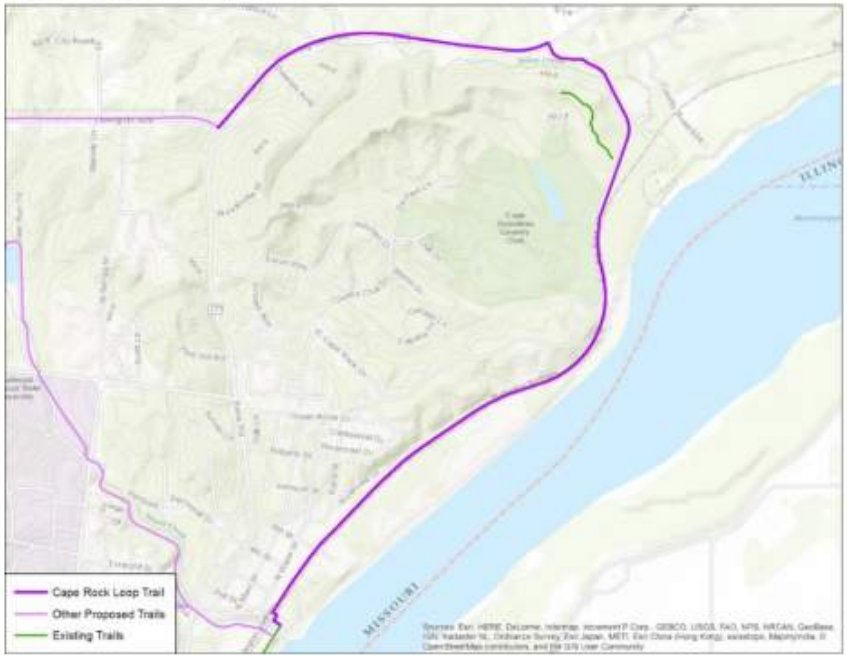


Distance: 3.26 miles

Metric	Result
Improves BLTS	Y
Improves PLOS	Y
High Speed Limit Road	N
High ADT Road	N
High Density Employment	N
High Density Housing	N
Low-Income Housing	N
High Student Population	N
High Zero-Vehicle Households	N
Near Schools	Y
Near Other Destinations	Y
Additional Pop. Access	4,686
Additional Emp. Access	1,001

Pros:	• Provides access to most East Jackson neighborhoods, which are currently underserved by the City's trail system • Provides a safe crossing across Jackson Boulevard • Provides routes between residential neighborhoods and schools
Cons:	• Obtaining the right-of-way may be difficult in some parts of the trail because the trail would run behind neighborhoods and East Jackson Elementary School • Some areas may contain relatively steep grades

Cape Rock Loop Trail

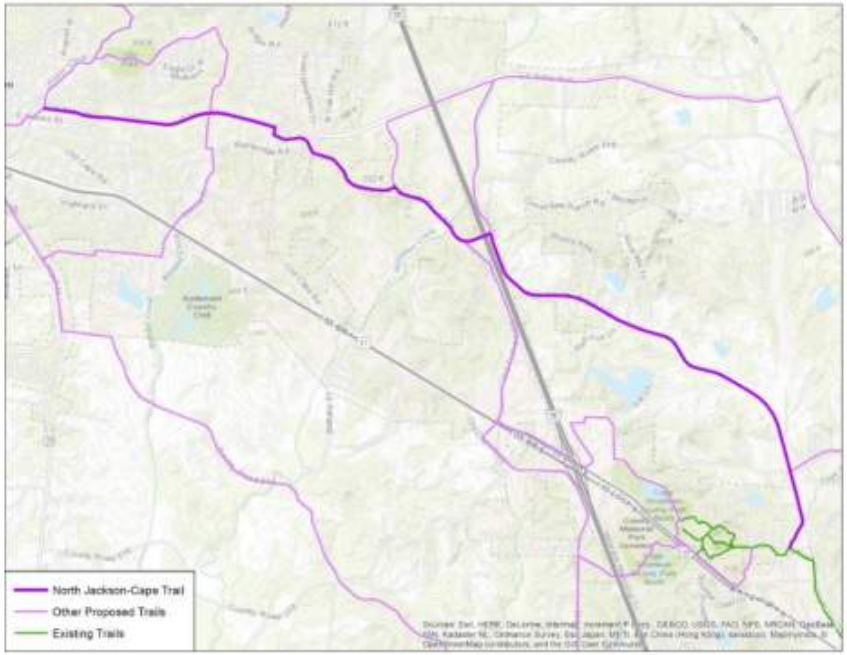


Distance: 3.62 miles

Metric	Result
Improves BLTS	Y
Improves PLOS	Y
High Speed Limit Road	Y
High ADT Road	N
High Density Employment	N
High Density Housing	N
Low-Income Housing	Y
High Student Population	N
High Zero-Vehicle Households	N
Near Schools	N
Near Other Destinations	N
Additional Pop. Access	2,196
Additional Emp. Access	798

Pros:	• Provides access to major recreational areas on the north side of Cape Girardeau • Provides for a relatively flat route through a hilly area • Adds a safe route along Highway 177, a popular, yet dangerous, bike route
Cons:	• Does not connect directly to the Cape Rock Park lookout area; a spur trail up to the lookout would be necessary to provide a connection • Travels through a relatively rural area, does not connect to denser residential areas

North Jackson-Cape Trail

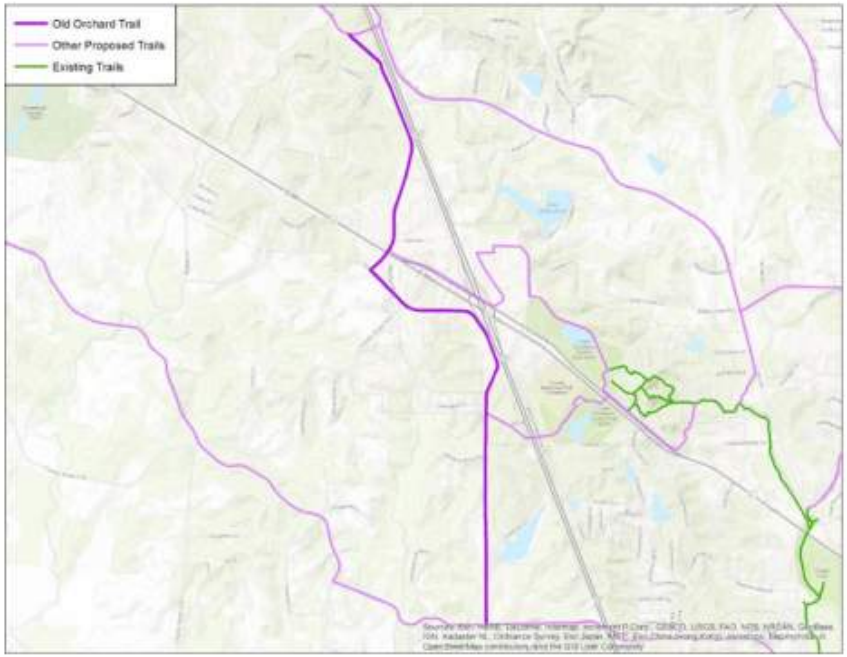


Distance: 6.25 miles

Metric	Result
Improves BLTS	Y
Improves PLOS	Y
High Speed Limit Road	Y
High ADT Road	N
High Density Employment	Y
High Density Housing	N
Low-Income Housing	N
High Student Population	N
High Zero-Vehicle Households	N
Near Schools	N
Near Other Destinations	N
Additional Pop. Access	4,538
Additional Emp. Access	778

Pros:	• Provides a continuous connection between Cape Girardeau and Jackson • Provides a safe connection over I-55 • Provides access through an area that is expected to see high growth in the future • Creates an extension of the Cape LaCroix Trail
Cons:	• Requires the reconstruction of the CR 306 overpass over I-55 • Does not go through many of the target population areas

Old Orchard Trail

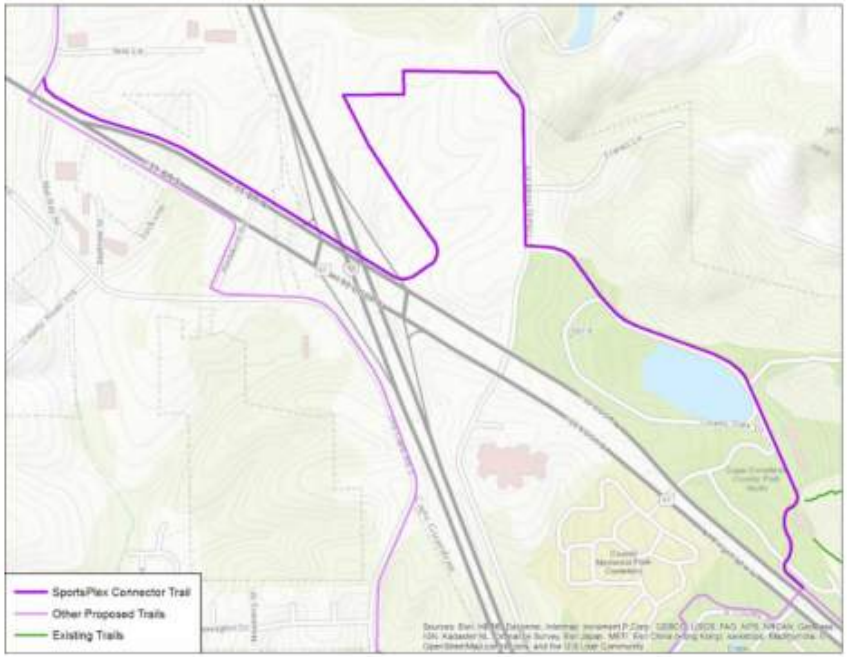


Distance: 3.64 miles

Metric	Result
Improves BLTS	Y
Improves PLOS	Y
High Speed Limit Road	Y
High ADT Road	N
High Density Employment	N
High Density Housing	N
Low-Income Housing	N
High Student Population	N
High Zero-Vehicle Households	Y
Near Schools	N
Near Other Destinations	Y
Additional Pop. Access	659
Additional Emp. Access	821

Pros:	• Connects to several other proposed trails to form recreational loops • Provides a safe connection across Jackson Boulevard • Provides access to parks and recreational opportunities
Cons:	• Does not expand access to a large number of residents or employees compared to other trail investments • Does not provide access to the majority of the target populations

SportsPlex Connector Trail

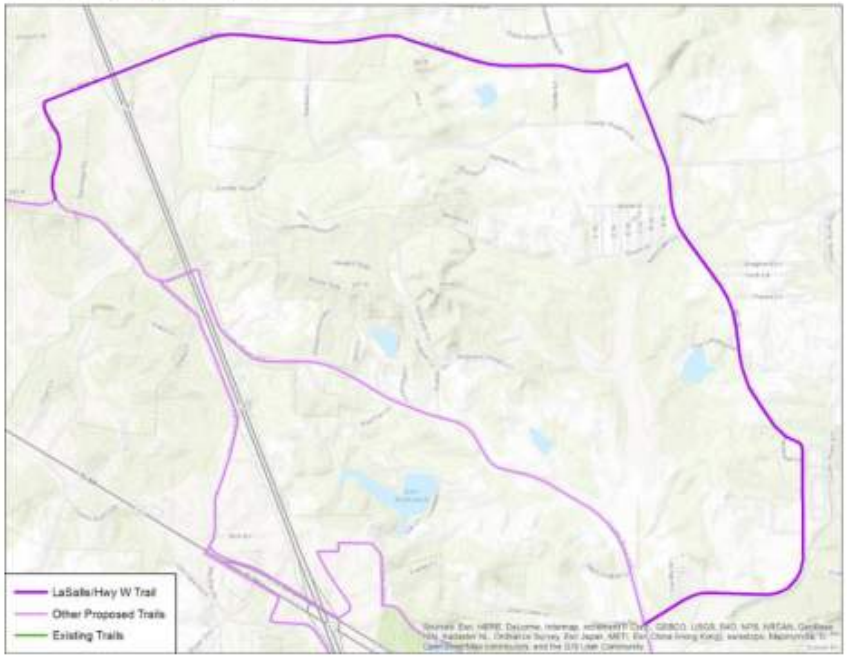


Distance: 2.25 miles

Metric	Result
Improves BLTS	Y
Improves PLOS	-
High Speed Limit Road	Y
High ADT Road	Y
High Density Employment	N
High Density Housing	N
Low-Income Housing	N
High Student Population	N
High Zero-Vehicle Households	N
Near Schools	N
Near Other Destinations	Y
Additional Pop. Access	423
Additional Emp. Access	641

Pros:	• Provides access to both County Park and the new SportsPlex • Provides a safe connection through the interchange of US 61 and I-55
Cons:	• Does not provide a direct route along US 61 • Crossings at the I-55 ramps will need to be partially reconstructed to create safe connections

LaSalle/Highway W Trail

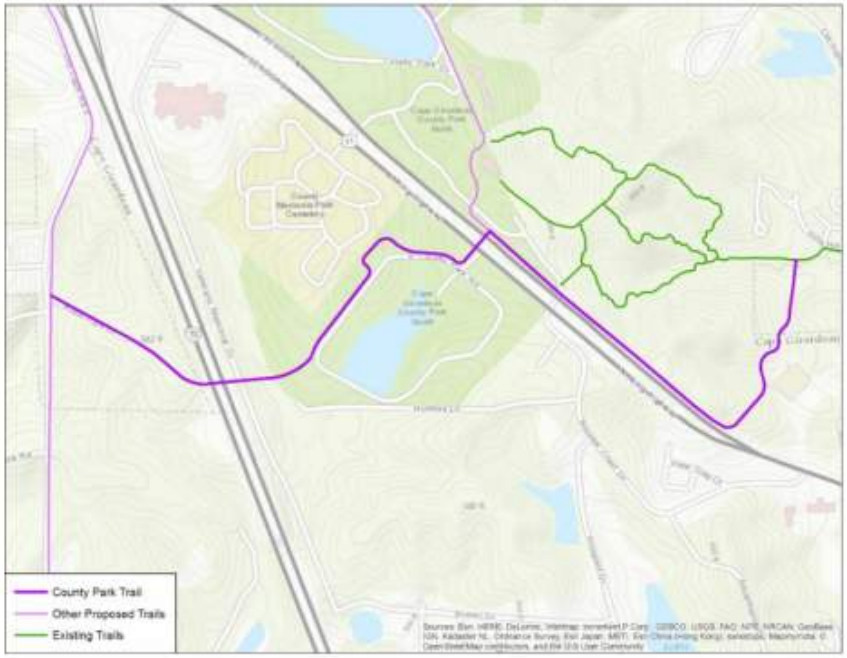


Distance: 5.99 miles

Metric	Result
Improves BLTS	Y
Improves PLOS	Y
High Speed Limit Road	Y
High ADT Road	N
High Density Employment	N
High Density Housing	N
Low-Income Housing	N
High Student Population	N
High Zero-Vehicle Households	N
Near Schools	N
Near Other Destinations	N
Additional Pop. Access	2,395
Additional Emp. Access	778

Pros:	• Creates a safer connection on a popular recreational bike route • Provides active transportation facilities to an area that is expected to grow significantly in the future • Creates a northern recreational loop between Cape Girardeau and Jackson
Cons:	• The area is predominately rural today and does not connect to higher density areas • Does not connect to any target populations

County Park Trail



Distance: 1.55 miles

Metric	Result
Improves BLTS	-
Improves PLOS	-
High Speed Limit Road	N
High ADT Road	N
High Density Employment	N
High Density Housing	N
Low-Income Housing	N
High Student Population	N
High Zero-Vehicle Households	Y
Near Schools	N
Near Other Destinations	Y
Additional Pop. Access	1,099
Additional Emp. Access	308

Pros:	• Creates a safe connection across I-55 • Provides a safe connection across Kingshighway • Provides access to a number of parks and recreation areas
Cons:	• Requires the construction of a new bridge over I-55 • Connects through a predominantly rural area

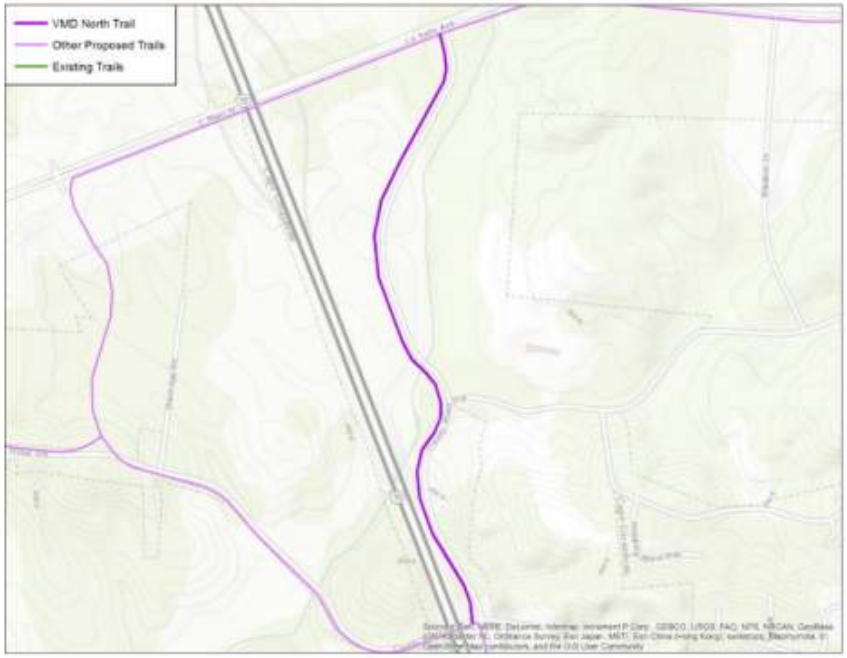
Football Park Trail

Distance: 0.92 miles

Metric	Result
Improves BLTS	-
Improves PLOS	-
High Speed Limit Road	-
High ADT Road	-
High Density Employment	N
High Density Housing	N
Low-Income Housing	N
High Student Population	N
High Zero-Vehicle Households	N
Near Schools	N
Near Other Destinations	Y
Additional Pop. Access	210
Additional Emp. Access	153

Pros:	• Connects the Jackson Boulevard Trail to the Hubble Creek Trail Extension • Provides access to Jackson Football Park and new residential developments in South Jackson • Provides a safe connection across Jackson Boulevard
Cons:	• Does not hit any target populations • The utility of this trail depends on the completion of the Hubble Creek Trail extension

Veterans Memorial Drive North Trail



Distance: 1.01 miles

Metric	Result
Improves BLTS	Y
Improves PLOS	Y
High Speed Limit Road	N
High ADT Road	N
High Density Employment	N
High Density Housing	N
Low-Income Housing	N
High Student Population	N
High Zero-Vehicle Households	N
Near Schools	N
Near Other Destinations	N
Additional Pop. Access	345
Additional Emp. Access	201

Pros:	• Creates additional loops for recreational purposes in the area north of Cape Girardeau and east of Jackson • Runs through an area that is expected to experience high growth in the future • Follows a creek to address grade issues in a hilly area
Cons:	• Does not hit any target populations • Does not provide access to very many additional residents or employees

Appendix C: Detailed On-Street Bicycle Facilities Analyses

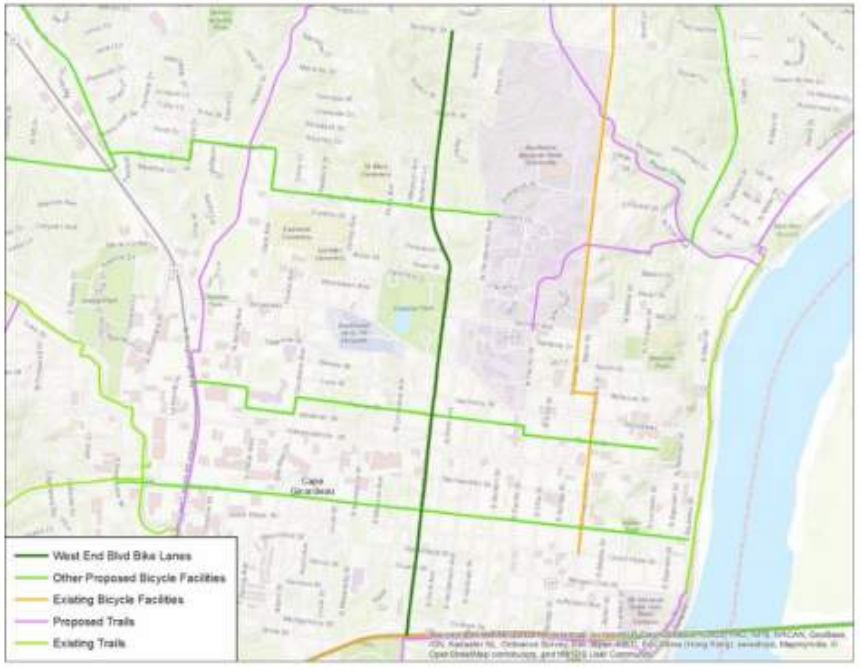
William Street Bike Lanes

Distance: 2.11 miles

Metric	Result
Improves BLTS	Y
Improves PLOS	Y
High Speed Limit Road	N
High ADT Road	Y
High Density Employment	Y
High Density Housing	Y
Low-Income Housing	Y
High Student Population	Y
High Zero-Vehicle Households	N
Near Schools	Y
Near Other Destinations	Y
Additional Pop. Access	3,374
Additional Emp. Access	3,694

Pros:	• Provides an east-west connection through central Cape Girardeau • Improves bicycle access through the densest areas of the city • Includes a road diet, which will improve traffic safety and reduce speeds • Provides a connection to the Cape LaCroix Trail
Cons:	• The road diet may negatively impact vehicular traffic on William Street • Route on a roadway with relatively high traffic volumes and speeds in central Cape Girardeau

West End Boulevard Bike Lanes



Distance: 2.25 miles

Metric	Result
Improves BLTS	Y
Improves PLOS	-
High Speed Limit Road	N
High ADT Road	N
High Density Employment	Y
High Density Housing	Y
Low-Income Housing	Y
High Student Population	Y
High Zero-Vehicle Households	Y
Near Schools	Y
Near Other Destinations	Y
Additional Pop. Access	5,902
Additional Emp. Access	2,795

Pros:	• Provides a north-south connection through central Cape Girardeau • Connects through all target population clusters • Provides access to parks, schools, and large employment centers
Cons:	• The bike lanes may displace on-street parking on West End Boulevard • Creating safe intersections may be difficult at certain intersections due to limited roadway widths

Themis Street Bike Boulevard

Distance: 1.89 miles

Metric	Result
Improves BLTS	-
Improves PLOS	-
High Speed Limit Road	N
High ADT Road	N
High Density Employment	Y
High Density Housing	Y
Low-Income Housing	Y
High Student Population	Y
High Zero-Vehicle Households	N
Near Schools	Y
Near Other Destinations	Y
Additional Pop. Access	3,211
Additional Emp. Access	5,638

Pros:	• Provides an east-west connection through central Cape Girardeau • Utilizes a low-traffic, low-speed roadway to create a safe bicycle route • Traffic control measures or traffic calming can be implemented to further reduce vehicular traffic volumes
Cons:	• The Central Junior High School campus forces a one-block diversion in the route off of Themis Street • An offset intersection at Pacific Street will require additional intersection treatments to get cyclists safely across the crossing

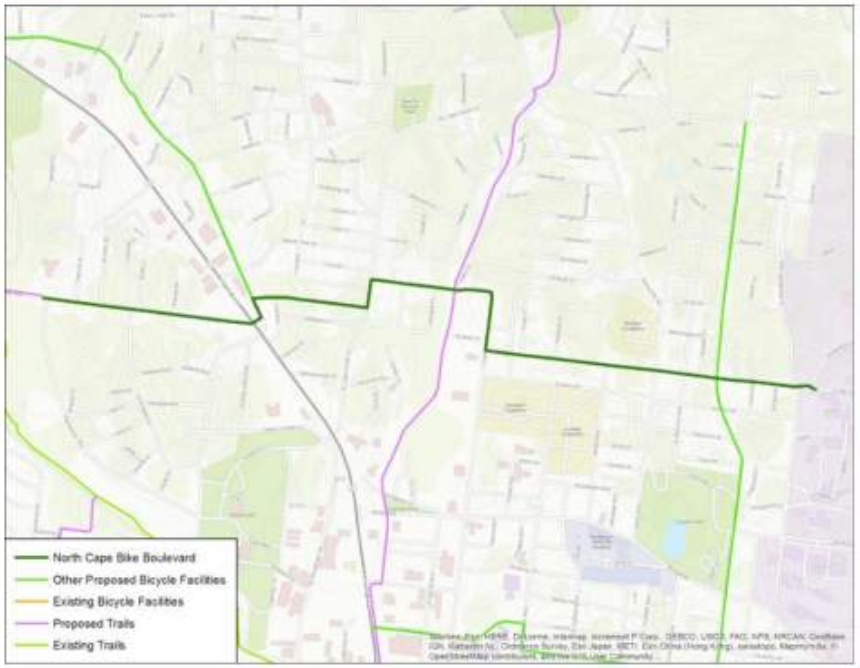
SR 146 Bike Lanes

Distance: 1.87 miles

Metric	Result
Improves BLTS	Y
Improves PLOS	-
High Speed Limit Road	Y
High ADT Road	Y
High Density Employment	N
High Density Housing	Y
Low-Income Housing	Y
High Student Population	N
High Zero-Vehicle Households	Y
Near Schools	N
Near Other Destinations	N
Additional Pop. Access	480
Additional Emp. Access	17

Pros:	• Provides a connection to East Cape Girardeau • Connects to existing bike lanes and proposed trails on the west side of the River • Already a popular bike route between Cape Girardeau and Shawnee National Forest
Cons:	• The bridge is a high-speed, high-volume roadway and standard bike lanes don't provide much protection for cyclists • Difficult to provide protection to cyclists because the bike lanes must also serve as emergency lanes for the highway

North Cape Bike Boulevard

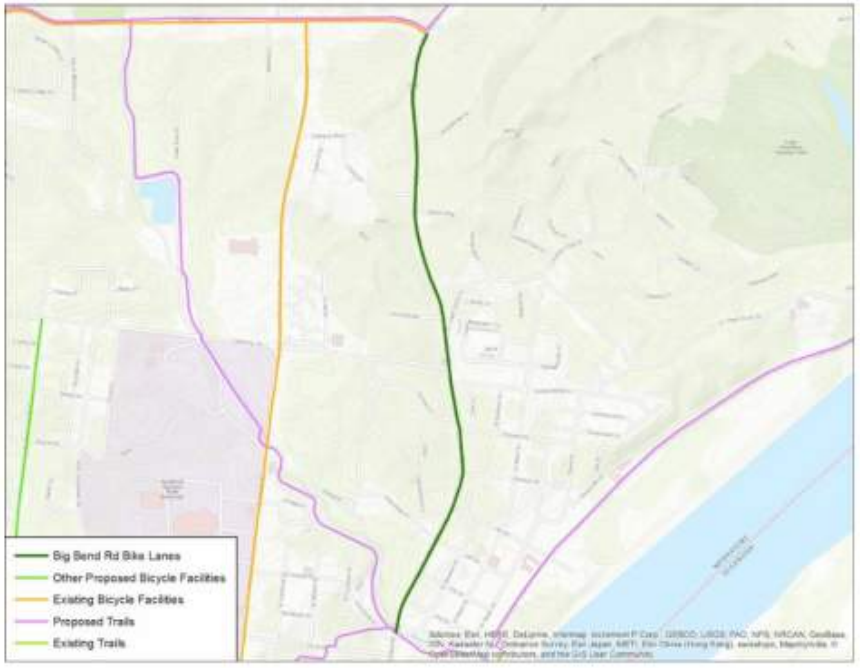


Distance: 2.30 miles

Metric	Result
Improves BLTS	-
Improves PLOS	-
High Speed Limit Road	N
High ADT Road	N
High Density Employment	N
High Density Housing	Y
Low-Income Housing	Y
High Student Population	N
High Zero-Vehicle Households	N
Near Schools	N
Near Other Destinations	Y
Additional Pop. Access	4,271
Additional Emp. Access	1,072

Pros:	• Connects to several proposed trails and bike routes • Provides an east-west connection through an area with few continuous streets • Connects to the SEMO University Campus • Formalizes a route that is already popularly used
Cons:	• The various diversions in the route will require intersection treatments to guide and protect cyclists • The area is fairly hilly and grades in some sections of the route may be challenging

Big Bend Road Bike Lanes

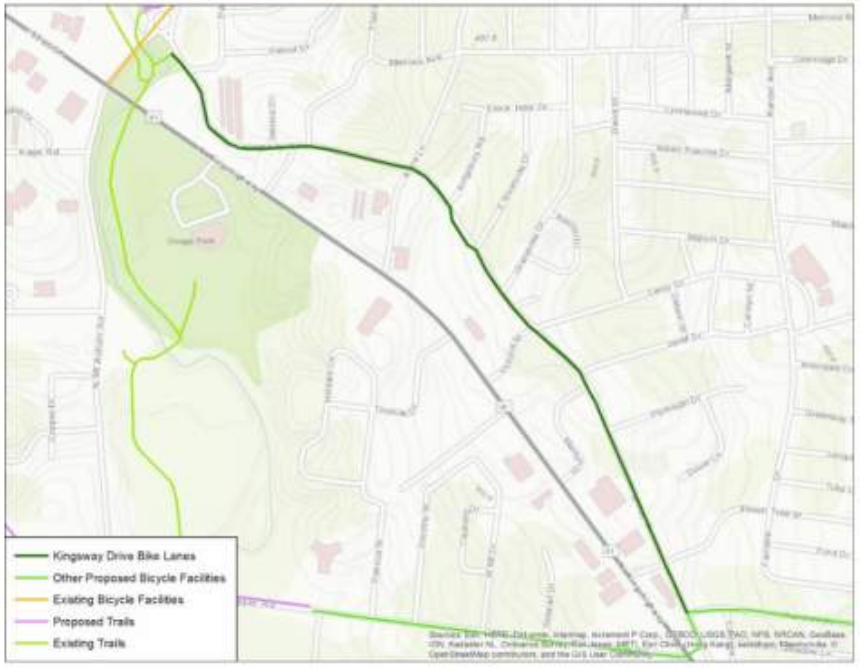


Distance: 1.54 miles

Metric	Result
Improves BLTS	Y
Improves PLOS	-
High Speed Limit Road	Y
High ADT Road	N
High Density Employment	N
High Density Housing	N
Low-Income Housing	Y
High Student Population	N
High Zero-Vehicle Households	N
Near Schools	N
Near Other Destinations	N
Additional Pop. Access	2,030
Additional Emp. Access	1,206

Pros:	• Provides access to numerous recreational opportunities north of Cape Girardeau • Helps form loops with the existing bike lanes as well as proposed trails • Provides relatively flat access through a hilly area
Cons:	• The inclusion of bike lanes may result in the loss of on-street parking • This route does not hit the majority of the target populations for multi-modal improvements

Kingsway Drive Bike Lanes



Distance: 1.18 miles

Metric	Result
Improves BLTS	Y
Improves PLOS	-
High Speed Limit Road	N
High ADT Road	N
High Density Employment	N
High Density Housing	Y
Low-Income Housing	N
High Student Population	N
High Zero-Vehicle Households	N
Near Schools	N
Near Other Destinations	Y
Additional Pop. Access	3,198
Additional Emp. Access	1,636

Pros:	• Connects to existing and proposed trails and bike routes • Provides a safer parallel route to Kingshighway • Provides connections between residential areas and commercial areas along Kingshighway
Cons:	• Does not provide as direct of access to commercial areas as if the route were on Kingshighway • This route does not hit the majority of the target populations for multi-modal improvements

Fredrick Street Bike Boulevard

Distance: 0.87 miles

Metric	Result
Improves BLTS	-
Improves PLOS	-
High Speed Limit Road	N
High ADT Road	N
High Density Employment	N
High Density Housing	Y
Low-Income Housing	Y
High Student Population	N
High Zero-Vehicle Households	N
Near Schools	Y
Near Other Destinations	N
Additional Pop. Access	464
Additional Emp. Access	44

Pros:	• Improves shared lanes to a Bike Boulevard along Frederick Street • Connects to the proposed Shawnee Parkway Trail spur along Fountain Street • Provides a connection between both SEMO State University Campuses • Utilizes a low-traffic, low-speed roadway to create a safe bicycle route for students
Cons:	• Will require intersection treatments to guide and protect cyclists • Does not provide increased access to large numbers of residents or employees

Appendix D: USDOT Pedestrian & Bicycle Funding Opportunities

Pedestrian and Bicycle Funding Opportunities
U.S. Department of Transportation Transit, Highway, and Safety Funds
Revised August 12, 2016

This table indicates potential eligibility for pedestrian and bicycle projects under U.S. Department of Transportation surface transportation funding programs. Additional restrictions may apply. See notes and basic program requirements below, and see program guidance for detailed requirements. Project sponsors should fully integrate nonmotorized accommodation into surface transportation projects. Section 1404 of the Fixing America's Surface Transportation (FAST) Act modified 23 U.S.C. 109 to require federally-funded projects on the National Highway System to consider access for other modes of transportation, and provides greater design flexibility to do so.

Key: $ = Funds may be used for this activity (restrictions may apply). $* = See program-specific notes for restrictions. ~$ = Eligible, but not competitive unless part of a larger project.

	Pedestrian and Bicycle Funding Opportunities U.S. Department of Transportation Transit, Highway, and Safety Funds														
Activity or Project Type	TIGER	TIFIA	FTA	ATI	CMAQ	HSIP	NHPP	STBG	TA	RTP	SRTS	PLAN	NHTSA 402	NHTSA 405	FLTTP
Access enhancements to public transportation (includes benches, bus pads)	$	$	$	$	$		$	$	$						$
ADA/504 Self Evaluation / Transition Plan								$	$	$		$			$
Bicycle plans			$					$	$		$	$			$
Bicycle helmets (project or training related)								$	$SRTS		$		$*		
Bicycle helmets (safety promotion)								$	$SRTS		$				
Bicycle lanes on road	$	$	$	$	$	$	$	$	$		$				$
Bicycle parking	~$	~$	$	$	$		$	$	$	$	$				$
Bike racks on transit	$	$	$	$	$			$	$						$
Bicycle share (capital and equipment; not operations)	$	$	$	$	$		$	$	$						$
Bicycle storage or service centers at transit hubs	~$	~$	$	$	$			$	$						$
Bridges / overcrossings for pedestrians and/or bicyclists	$	$	$	$	$*	$	$	$	$	$	$				$
Bus shelters and benches	$	$	$	$	$		$	$	$						$
Coordinator positions (State or local)					$ 1 per State			$	$SRTS		$				
Crosswalks (new or retrofit)	$	$	$	$	$*	$	$	$	$	$	$				$
Curb cuts and ramps	$	$	$	$	$*	$	$	$	$	$	$				$
Counting equipment			$	$		$	$	$	$	$	$	$*			$
Data collection and monitoring for pedestrians and/or bicyclists			$	$		$	$	$	$	$	$	$*			$
Historic preservation (pedestrian and bicycle and transit facilities)	$	$	$	$				$	$						$
Landscaping, streetscaping (pedestrian and/or bicycle route; transit access); related amenities (benches, water fountains); generally as part of a larger project	~$	~$	$	$			$	$	$						$
Lighting (pedestrian and bicyclist scale associated with pedestrian/bicyclist project)	$	$	$	$		$	$	$	$	$	$				$
Maps (for pedestrians and/or bicyclists)			$	$	$			$	$		$	$*			
Paved shoulders for pedestrian and/or bicyclist use	$	$			$*	$	$	$	$		$				$

Key: $ = Funds may be used for this activity (restrictions may apply). $* = See program-specific notes for restrictions. ~$ = Eligible, but not competitive unless part of a larger project.															
	Pedestrian and Bicycle Funding Opportunities U.S. Department of Transportation Transit, Highway, and Safety Funds														
Activity or Project Type	TIGER	TIFIA	FTA	ATI	CMAQ	HSIP	NHPP	STBG	TA	RTP	SRTS	PLAN	NHTSA 402	NHTSA 405	FLTTP
Pedestrian plans			$					$	$		$	$			$
Recreational trails	~$	~$						$	$	$					$
Road Diets (pedestrian and bicycle portions)	$	$				$	$	$	$						$
Road Safety Assessment for pedestrians and bicyclists						$		$	$			$			$
Safety education and awareness activities and programs to inform pedestrians, bicyclists, and motorists on ped/bike safety								$SRTS	$SRTS		$	$*	$*	$*	
Safety education positions								$SRTS	$SRTS		$		$*		
Safety enforcement (including police patrols)								$SRTS	$SRTS		$		$*	$*	
Safety program technical assessment (for peds/bicyclists)								$SRTS	$SRTS		$	$*	$		
Separated bicycle lanes	$	$	$	$	$	$	$	$	$		$				$
Shared use paths / transportation trails	$	$	$	$	$*	$	$	$	$	$	$				$
Sidewalks (new or retrofit)	$	$	$	$	$	$	$	$	$	$	$				$
Signs / signals / signal improvements	$	$	$	$	$	$	$	$	$		$				$
Signed pedestrian or bicycle routes	$	$	$	$	$		$	$	$		$				$
Spot improvement programs	$	$	$			$	$	$	$	$	$				$
Stormwater impacts related to pedestrian and bicycle projects	$	$	$	$		$	$	$	$	$	$				$
Traffic calming	$	$	$			$	$	$	$		$				$
Trail bridges	$	$			$*	$	$	$	$	$	$				$
Trail construction and maintenance equipment								$RTP	$RTP	$					
Trail/highway intersections	$	$			$*	$	$	$	$	$	$				$
Trailside and trailhead facilities (includes restrooms and water, but not general park amenities; see guidance)	~$*	~$*						$*	$*	$*					$
Training					$	$		$	$	$	$	$*	$*		
Training for law enforcement on ped/bicyclist safety laws								$SRTS	$SRTS		$			$*	
Tunnels / undercrossings for pedestrians and/or bicyclists	$	$	$	$	$*	$	$	$	$	$	$				$

Abbreviations

ADA/504: Americans with Disabilities Act of 1990 / Section 504 of the Rehabilitation Act of 1973
TIGER: Transportation Investment Generating Economic Recovery Discretionary Grant program
TIFIA: Transportation Infrastructure Finance and Innovation Act (loans)
FTA: Federal Transit Administration Capital Funds
ATI: Associated Transit Improvement (1% set-aside of FTA)
CMAQ: Congestion Mitigation and Air Quality Improvement Program
HSIP: Highway Safety Improvement Program
NHPP: National Highway Performance Program
STBG: Surface Transportation Block Grant Program
TA: Transportation Alternatives Set-Aside (formerly Transportation Alternatives Program)
RTP: Recreational Trails Program
SRTS: Safe Routes to School Program / Activities
PLAN: Statewide Planning and Research (SPR) or Metropolitan Planning funds
NHTSA 402: State and Community Highway Safety Grant Program
NHTSA 405: National Priority Safety Programs (Nonmotorized safety)
FLTTP: Federal Lands and Tribal Transportation Programs (Federal Lands Access Program, Federal Lands Transportation Program, Tribal Transportation Program, Nationally Significant Federal Lands and Tribal Projects)

Program-specific notes

Federal-aid funding programs have specific requirements that projects must meet, and eligibility must be determined on a case-by-case basis. For example:

- TIGER: Subject to annual appropriations.
- TIFIA: Program offers assistance only in the form of secured loans, loan guarantees, or standby lines of credit, but can be combined with other grant sources, subject to total Federal assistance limitations.
- FTA/ATI: Project funded with FTA transit funds must provide access to transit. See Bikes and Transit and the FTA Final Policy Statement on the Eligibility of Pedestrian and Bicycle Improvements under Federal Transit Law.
  - Bicycle infrastructure plans and projects funded with FTA funds must be within a 3 mile radius of a transit stop or station, or if further than 3 miles, must be within the distance that people could be expected to safely and conveniently bike to use the particular stop or station.
  - Pedestrian infrastructure plans and projects funded with FTA funds must be within a ½ mile radius of a transit stop or station, or if further than ½ mile, must be within the distance that people could be expected to safely and conveniently walk to use the particular stop or station.
  - FTA funds cannot be used to purchase bicycles for bike share systems.
  - FTA encourages grantees to use FHWA funds as a primary source for public right-of-way projects.
- CMAQ projects must demonstrate emissions reduction and benefit air quality. See the CMAQ guidance at www.fhwa.dot.gov/environment/air_quality/cmaq/ for a list of projects that may be eligible for CMAQ funds. Several activities may be eligible for CMAQ funds as part of a bicycle and pedestrian-related project, but not as a highway project. CMAQ funds may be used for shared use paths, but may not be used for trails that are primarily for recreational use.
- HSIP projects must be consistent with a State's Strategic Highway Safety Plan and either (1) correct or improve a hazardous road location or feature, or (2) address a highway safety problem.
- NHPP projects must benefit National Highway System (NHS) corridors.
- STBG and TA Set-Aside: Activities marked "$SRTS" means eligible only as an SRTS project benefiting schools for kindergarten through 8th grade. Bicycle transportation nonconstruction projects related to safe bicycle use are eligible under STBG, but not under TA (23 U.S.C. 217(a)).
- RTP must benefit recreational trails, but for any recreational trail use. RTP projects are eligible under TA and STBG, but States may require a transportation purpose.
- SRTS: FY 2012 was the last year for SRTS funds, but SRTS funds are available until expended.
- Planning funds must be used for planning purposes, for example:
  - Maps: System maps and GIS;
  - Safety education and awareness: for transportation safety planning;
  - Safety program technical assessment: for transportation safety planning;
  - Training: bicycle and pedestrian system planning training.
- Federal Lands and Tribal Transportation Programs (FLTTP) projects must provide access to or within Federal or tribal lands:
  - Federal Lands Access Program (FLAP): Open to State and local entities for projects that provide access to or within Federal or tribal lands.
  - Federal Lands Transportation Program: For Federal agencies for projects that provide access within Federal lands.
  - Tribal Transportation Program: available for federally-recognized tribal governments for projects within tribal boundaries and public roads that access tribal lands.
- NHTSA 402 project activity must be included in the State's Highway Safety Plan. Contact the State Highway Safety Office for details: http://www.ghsa.org/html/about/shsos.html
- NHTSA 405 funds are subject to State eligibility, application, and award. Project activity must be included in the State's Highway Safety Plan. Contact the State Highway Safety Office for details: http://www.ghsa.org/html/about/shsos.html

Cross-cutting notes

- FHWA Bicycle and Pedestrian Guidance: http://www.fhwa.dot.gov/environment/bicycle_pedestrian/
- **Applicability of 23 U.S.C. 217(i) for Bicycle Projects:** 23 U.S.C. 217(i) requires that bicycle facilities "be principally for transportation, rather than recreation, purposes". However, sections 133(b)(6) and 133(h) list "recreational trails projects" as eligible activities under STBG. Therefore, the requirement in 23 U.S.C. 217(i) does not apply to recreational trails projects (including for bicycle use) using STBG funds. Section 217(i) continues to apply to bicycle facilities other than trail-related projects, and section 217(i) continues to apply to bicycle facilities using other Federal-aid Highway Program funds (NHPP, HSIP, CMAQ). The transportation requirement under section 217(i) is applicable only to bicycle projects; it does not apply to any other trail use or transportation mode.
- There may be occasional DOT or agency incentive grants for specific research or technical assistance purposes.
- Aspects of many DOT initiatives may be eligible as individual projects. For example, activities above may benefit Ladders of Opportunity; safe, comfortable, interconnected networks; environmental justice; equity; etc.

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