CHAPTER 8

PUBLIC TRANSPORTATION

BACKGROUND AND PURPOSE

Public transportation/transit is more than fixed route buses that only serve low-income people; it is the backbone of economic development. There are several modes of public transportation available in the Birmingham MPA, including fixed-route, demand response (door-to-door), vanpool, school bus, and interregional bus and train (Greyhound and Amtrak). For the user, it is an inexpensive, green option for travel.

Public transportation plays a major role in providing travel alternatives, improving personal mobility, alleviating congestion, and improving air quality. The RPCGB reviews, analyzes, and incorporates transit projects into its planning process, with the goal for commuters to access destinations.

The RPCGB works with transit providers, governments, and human service organizations to connect funding opportunities and service optimization. Public transportation provides mobility alternatives for all residents and visitors and supports sustainability and equitability in the region. It is an important component of the region's multimodal transportation system and supports the goals stated in this RTP.

THIS CHAPTER INCLUDES:
- Service in the Metropolitan Planning Area (MPA)
- Funding
- Transit Dependency Analysis

THIS CHAPTER ADDRESSES:
- Goal 1: Improve overall system safety and reduce serious injuries and fatalities for motorized and non-motorized users.
- Goal 2: Implement strategies that improve operations and address congestion.
- Goal 3: Provide equitable transportation options that enhance opportunities for physical activity, increase access to essential needs and improve quality of life.
- Goal 4: Enhance the existing transportation system and maintain it in a state of good repair.
- Goal 6: Encourage a transportation system that is compatible with the built environment and sensitive to the natural environment.
- Goal 7: Mitigate the challenges of climate change by incorporating more sustainable transportation choices that promote clean energy, better air and water quality as well as environmental programs that create more resilient communities.

TRANSIT SERVICE IN THE MPA

The Regional Planning Commission of Greater Birmingham (RPCGB) reviews, analyzes, and incorporates transit projects into its planning process. The RPCGB also works with transit providers, governments, and human service organizations to connect funding opportunities and service optimization.

FIXED-ROUTE

The Birmingham-Jefferson County Transit Authority (BJCTA) operates the only fixed-route transit and complementary paratransit (curb-to-curb) service in the MPA. BJCTA operates 20 routes, the Bus Rapid Transit (BRT) (discussed later in this chapter), and the Magic City Connector, which runs north and south through Downtown every 20 minutes. BJCTA's fleet is fueled by compressed natural gas (CNG). MAXMyStop is an app that shows bus location data, route information, schedules, and maps. Customers can plan a trip and schedule text messages that will show information about their favorite routes or stops. Rider alerts will detail delays or detours that may affect a trip.

Fixed-route service in Birmingham has traditionally been characterized as a hub and spoke system, with buses originating, terminating, or passing through the Intermodal Facility in Downtown Birmingham. With the recent addition of the BRT, people can now move east to west without having to transfer Downtown.

Image Credit: City of Birmingham

BUS RAPID TRANSIT

The Bus Rapid Transit (BRT) line, called Birmingham Xpress, opened on September 22, 2022, after experiencing delays due to the Covid pandemic. The BRT is 10 miles in length and connects 25 neighborhoods in Birmingham from Woodlawn on the east side to Five Points on the west side (**Figure 8.1**). The buses operate in dedicated lanes as well as in mixed traffic, with a frequency of 15 minutes during peak hours. Buses are outfitted with special technology that gives them priority at intersections, meaning the light will stay green until the bus passes through it. Every bus has level boarding for passengers and bus stops have contemporary shelters with lighting, passenger information displays, maps and wayfinding, and bicycle parking. Thirty-two (32) stops and two (2) transit centers are strategically located along the corridor. Buses are equipped with WiFi, charging stations, and Automatic Vehicle Locators (AVL). An associated app lets you purchase passes online, plan a trip, and see when the next bus will be arriving. To learn more about the Birmingham Xpress visit https://maxtransit.org/bx.

TRANSIT DURING THE WORLD GAMES 2022

In July 2022, Birmingham was host to The World Games, the first U.S. city to host the games since 1981. Held every four years, The World Games showcased 34 sports, with a total of 58 disciplines and 223 medal events. 3,457 athletes from 99 nations took part in the different competitions. A total of 377,000 spectators watched the opening and closing ceremonies and the competitions at 23 venues.

For this special event, BJCTA increased service frequency on routes serving Downtown Birmingham and the airport. Because of the delayed start of the BRT, BJCTA added a special bus route that traveled along the BRT line from Downtown to the CrossPlex.

Figure 8.1: Birmingham Xpress BRT Service Map

BIRMINGHAM XPRESS CENTERS & STATIONS

***All featured nearby destinations & connections are less than a 10-minute walk from the transit centers & stations!**

WOODLAWN TRANSIT CENTER
Nearby Destinations: Woodlawn High School, Woodlawn Business District, Restaurants, Woodlawn Public Library

WEST WOODLAWN STATION
Nearby Destinations: Goods & Services

NORTH AVONDALE STATION
Nearby Destinations: Tom Brown Village, Hayes K-8 School, Dr. Martin Luther King Jr. Park & Recreation Center

AVONDALE STATION
Nearby Destinations: Tom Brown Village, N. Avondale Public Library, Avondale Business District, Avondale Park, Restaurants, Retail

SLOSS FURNACE STATION
Nearby Destinations: Sloss Furnace, Birmingham Water Works, Steris IMS, Back 40 Brewery

CENTRAL STATION
Nearby Destinations: Birmingham Intermodal Facility (BJCTA, Amtrak, Greyhound, Mega Bus), Birmingham Central Market (farmer's market), Pizitz Food Hall, McWane Science Center, Alabama Theatre, Lyric Theatre, 4th Ave. Business District, Restaurants, Retail, Hotels

RAILROAD PARK STATION
Nearby Destinations: Railroad Park, Negro Southern League Museum, Red Mountain Theatre, Lab Corp, Event Venues, Restaurants

MEDICAL CENTER STATION
Nearby Destinations: Children's of Alabama, UAB Hospital, UAB Campus, Restaurants, Hotels, Banking Services

CHILDREN'S HOSPITAL STATION
Nearby Destinations: Regions Field, Children's of Alabama, Jefferson County Department of Health, UAB Campus, Retail, Restaurants

UAB PARKSIDE STATION
Nearby Destinations: UAB Campus, Bartow Arena, Healthcare Services, Restaurants

MEMORIAL PARK STATION
Nearby Destinations: Memorial Park & Recreation Center, Birmingham City Jail, DC Blox, UAB Parking & Transportation Services

TITUSVILLE PLATFORM
Nearby Destinations: Washington Elementary School, Restaurants, Retail, Our Lady of Fatima Catholic Church

ELMWOOD STATION
Nearby Destinations: Awake Community School, Titusville Public Library

NORTH TITUSVILLE STATION
Nearby Destinations: Villas at Titusville, Elmwood Cemetery

WEST END STATION
Nearby Destinations: Healthcare Services, Pharmacies, Arlington Home & Gardens, Arlington-West End Walking Trail

PRINCETON STATION
Nearby Destinations: Princeton Brookwood Baptist Health Center, Pharmacies

RICKWOOD-RISING STATION
Nearby Destinations: Rickwood Field

CROSSPLEX TRANSIT CENTER
Nearby Destinations: Five Points West Library, Birmingham Police Department West Precinct, CrossPlex, Bill Harris Arena, Comfort Inn & Suites, A.G. Gaston Boys & Girls Club, Retail, Restaurants

bx Birmingham Xpress

Connecting Neighborhoods to Opportunities

WOODLAWN TRANSIT CENTER
WEST WOODLAWN
NORTH AVONDALE
AVONDALE
SLOSS FURNACES
CENTRAL STATION
RAILROAD PARK
MEDICAL CENTER
CHILDREN'S HOSPITAL
UAB PARKSIDE
MEMORIAL PARK
TITUSVILLE
ELMWOOD
NORTH TITUSVILLE
WEST END
PRINCETON
RICKWOOD-RISING
CROSSPLEX TRANSIT CENTER

Source: Max Transit

DEMAND RESPONSE

Demand response transportation is an on-call, curb-to-curb service in Jefferson and Shelby counties not served by fixed route. In the Birmingham urbanized area, demand response serves individuals who are elderly and/or disabled. In the rural areas service is open to all. This demand response service is provided by ClasTran and funded through FTA grants (Section 5310 and 5311) and local contributions. For more information and to schedule a ride, visit https://www.clastran.com.

ON-DEMAND

On demand ridesharing is a service that provides rides on very short notice, usually arranged through a smartphone app. These rides make use of three technologies: GPS navigation, smartphones, and social networks. There are two dominant players for ridesharing in the Birmingham metro area – Uber and Lyft.

In general, a potential rider provides information regarding the pick-up and destination points, after which the rider is quoted a price and approximate arrival time. If the rider accepts, payment is made through the app. The rider is given a picture of the driver and a description of the vehicle. This makes it safer for everyone, especially individuals who are vulnerable.

MICROTRANSIT

Similar to on-demand service, Microtransit is a flexible shared-ride service where riders request a vehicle (typically a small van or shuttle) and pay through a mobile app (or by calling a dispatcher) to pick them up and drop them off at a location. Unlike on-demand ridesharing, microtransit's pickup and drop-off stops are predefined to allow better optimization of service. Microtransit fits somewhere between private individual transportation (cars or taxicabs) and public mass transit (bus).

Since 2019, Via has been operating Birmingham on-Demand, a microtransit service that complements and extends public transportation for select areas of the City (**Figure 8.2**). The program also provides accessible vehicles for riders with disabilities. For information about the program, visit https://www.birminghamal.gov/via/.

VANPOOLS

A vanpool typically consists of 7 to 15 people traveling together in a passenger van. The commuter vanpool concept typically works best for commuters traveling a distance of at least 20 miles. Vanpools can be an effective alternative for workers with similar trip patterns and schedules, especially in situations that include outlying work destinations with little or no public transit service. Vanpools may also be effective for employment sites that need workers on shifts that fall outside of a fixed-route service area. CommuteSmart currently coordinates 24 vanpools in the Birmingham MPA.

Vanpool programs can earn federal and state formula funding by reporting mileage to the National Transit Database (NTD). This revenue can be greater than the investment in the vanpool program, making the program a revenue generator.

Image Credit: Max Transit

Figure 8.2: Birmingham On-Demand Service Area Map
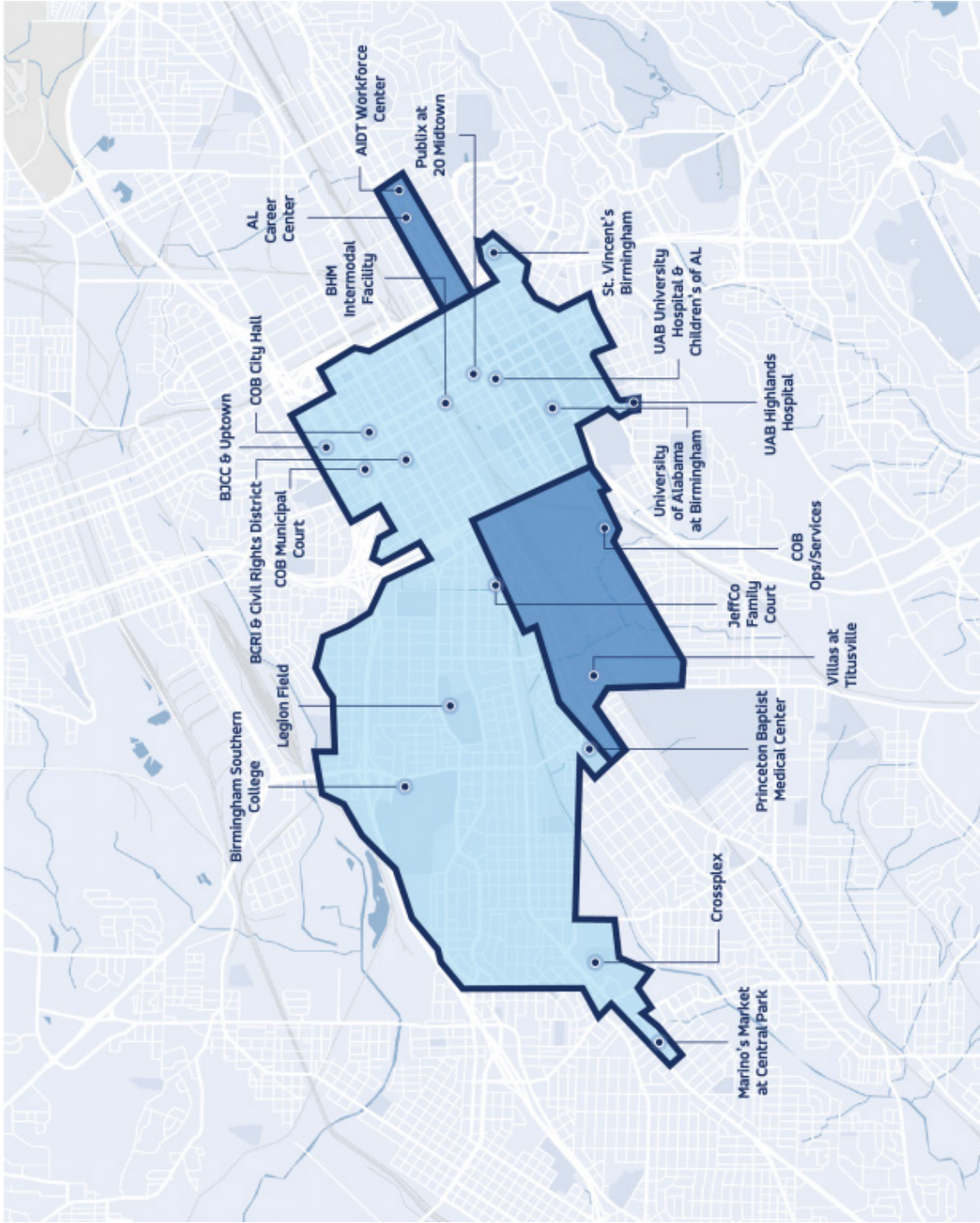
Source: Birmingham On-Demand

CARPOOLS

Carpooling is defined as two or more persons sharing a ride in a private vehicle. Census data show that, next to driving alone, it is the most prevalent commute alternative in the United States. Carpooling was first encouraged in this country during World War II, due to petroleum and rubber conservation measures. It has been promoted since the 1970's in response to energy crises and as an air quality transportation control measure.

A major advantage of carpooling is that it has the convenience of a private automobile. In addition, responsibilities for driving are shared among the carpoolers. However, there are some disadvantages when compared to driving alone. These include the necessity for set schedules, the constrained ability for individuals to run errands, and increased commute time (due to picking up additional passengers). In addition, some commuters feel that carpooling deprives them of their private time.

The matching processes for carpoolers range from sophisticated computerized systems to informal arrangements. More effective matching systems usually include information on specific origins and destinations, schedules, and travel routes. A sufficiently large pool of potential commuters is important for securing good matches. Overall, it has been found that organized carpools targeting commuters at the work site seem to be more effective than those focusing on residential areas. Length of work trip can determine carpool success. Commutes ranging from 15 to 25 miles seem to attract the largest proportion of carpools. CommuteSmart has a free online ridematching database to match commuters interested in sharing their commute.

THE BENEFITS OF MULTIMODAL ACCESS TO PUBLIC TRANSPORTATION

Multimodal access to public transportation considers and accommodates the many ways public transportation users get to and from a public transportation stop or center to access a public transportation service. Those methods include walking, bicycling, riding feeder public transportation systems (e.g., taking the bus to connect to Bus Rapid Transit at a station), and driving. The idea is that providing the infrastructure and support services for multiple modes to public transportation will increase use of the public transportation system and result in health benefits. Specifically, when effectively integrated, bicycling and walking to public transportation help advance various environmental, health, and congestion-mitigating benefits for communities.

The 20th Street / Birmingham Green Refresh project is a great example of the City of Birmingham's efforts to enhance multimodal transportation. The refresh included the addition of bike and flex lanes, sidewalk and crosswalk improvements, flexible café-style public seating, public art, and new native and drought-resistant landscaping.

FUNDING SOURCES

FEDERAL FUNDING

Fixed-route transit is funded through ad valorem revenue, Federal Transit Administration (FTA) grants (Sections 5307, 5309, and 5339), and contributions from municipalities served by BJCTA. Birmingham has been fortunate to receive additional funding over the past couple of years to support public transportation.

In FY 2022, the BJCTA received $11,165,790 for economic relief from the coronavirus pandemic:

CARES:	$7,059,881
CRRSAA:	$3,105,909
ARP:	$1,000,000

BJCTA has recently been awarded the following grants:

- $780,115 from the Route Planning Restoration Program under the American Rescue Plan Act of 2021 for restoration of service reduced due to the COVID-19 pandemic.

- $13.6 million from the first round of the Bipartisan Infrastructure Law for the Bus & Bus Facilities Grant Program. The award is for a new maintenance facility and the purchase of compressed natural gas, hydrogen fuel-cell, and battery electric buses and charging equipment.

- $1.6 million from FTA's Pilot Program for Transit-Oriented Development (TOD) Planning to provide more transportation options by integrating land use and transportation planning in new or expanded transit project corridors.

- $800,000 from the Reconnecting Communities Pilot program for a "Birmingham Transportation Capital Investment Plan" to help reconnect communities that were previously cut off from economic opportunities by transportation infrastructure.

In June 2022, RPCGB was awarded $495,000 from FTA's Areas of Persistent Poverty to develop a plan to address the transportation challenges faced by those in areas of persistent poverty.

In addition, in March 2023 the RPCGB was awarded $1,492,204 from the Strengthening Mobility and Revolutionizing Transportation (SMART) grants program to advance smart community technologies and systems to improve transportation efficiency and safety.

STATE FUNDING

The American Association of State Highway and Transportation Officials (AASHTO) lists Alabama as one of only three states (also Hawaii and Nevada) investing no state dollars in public transit. A 1952 constitutional amendment bars the Alabama Department of Transportation (ALDOT) from using revenue from the state gas tax or license fees for public transportation. In February 2018, the Alabama Public Transportation Act was passed, but no funding source was established. Therefore, the Act established an in-name-only state Public Transit Trust Fund under the Alabama Department of Economic and Community Development (ADECA). Actual state transit funding could help expand public transit service opportunities throughout the Birmingham region in the future.

TRANSIT DEPENDENCY

Census data can be used to make a demographic analysis using characteristics that are highly correlated with the need for transit. This type of analysis is useful for determining whether census tracts having transit-dependent characteristics are being adequately served by existing routes. For this analysis, 2020 American Community Survey 5-year tract-level estimates were used. Characteristics used to indicate transit dependence were: under 18 years; age 65 and over; households having no vehicle; and persons identified as being at or below the poverty threshold.

The first step in identifying the census tracts that have persons or households with the greatest propensity for transit use involved the calculation of the percent distributions of the four demographic characteristics for each tract. This process resulted in a table of values indicating the percent in each category for each of Jefferson County's census tracts and the City of Birmingham census tracts that are within Shelby County. The census tracts were then sorted for each characteristic in descending order of percent distribution, so the tracts with higher percentages for each characteristic would appear at the top of their respective ranges.

From the percentage ranges, an average percent value and a standard deviation value were calculated for each characteristic. Statistically, the standard deviation is a measure of distance from the average value. For most moderately-sized data sets with a bell-shaped normal distribution, approximately 68% of the data values are within one standard deviation of the average and approximately 95% of the data values are within two standard deviations of the average. The census tracts fell into one of the following categories: (1) below average; (2) above average (but less than one standard deviation above average); (3) well above average (between one and two standard deviations above average); and (4) far above average (more than two standard deviations above average).

The next step involved the assignment of discrete numerical scores to each of the four categories established for each demographic characteristic.

These scores serve two basic purposes: (1) to provide a uniform ranking to all tracts within a specified category; and (2) to numerically differentiate among the four categories for each characteristic. A comparative probability estimation method was utilized to develop the scores. First, the probability that a tract would be part of a specific category for a given characteristic was calculated for each category. For example, for the poverty characteristic, 11 of the 192 census tracts are far above average. This means that there is a 5.73% probability (number of tracts in category divided by the number of total tracts) that one of the tracts would fall within the range established for that category.

After the probabilities were calculated for each characteristic, they were used to estimate scores by using comparative probability ratios. That is, the probability percentage for each category was divided into the probability percentage for the below average category. This numerator was selected so that for each characteristic, the census tracts in the below average category would receive a score of 1. Using the far above average category of the poverty characteristic as an example, it was determined that the score for this category would be 10.64 since the probability for the below average category was 60.94% and this probability, divided by the far above average category probability of 5.73%, equals 10.64.

Finally, composite scores were calculated for the census tracts by summing the individual category scores for each demographic characteristic. The census tracts were then ranked by composite score and stratified into levels using the same method to develop characteristic categories.

Figure 8.3 illustrates the transit-dependent census tracts with an overlay of BJCTA's current fixed-route network. Most tracts having a higher-than-average transit dependency score are served by existing routes and many are served by more than one route. This means that the transit system is providing at least minimal service to individuals with the greatest need. There is demonstrable need, however, for more frequent and dependable service in many areas.

Figure 8.3: Transit Dependency

Source: RPCGB

ROADWAY LEVEL OF SERVICE

The RPCGB maintains information about roadway level of service (LOS) in the Birmingham Urbanized Area (UZA). LOS is a qualitative assessment of the flow of traffic using a scale of A to F, with A representing free-flowing driving conditions and F meaning that the flow of traffic is interrupted or heavily congested. **Figure 8.4** identifies the transit routes and failing segments. Transit service is provided on a good portion of the failing routes, which indicates effectiveness in helping to alleviate congestion and backup.

Figure 8.4: Level of Service and Transit
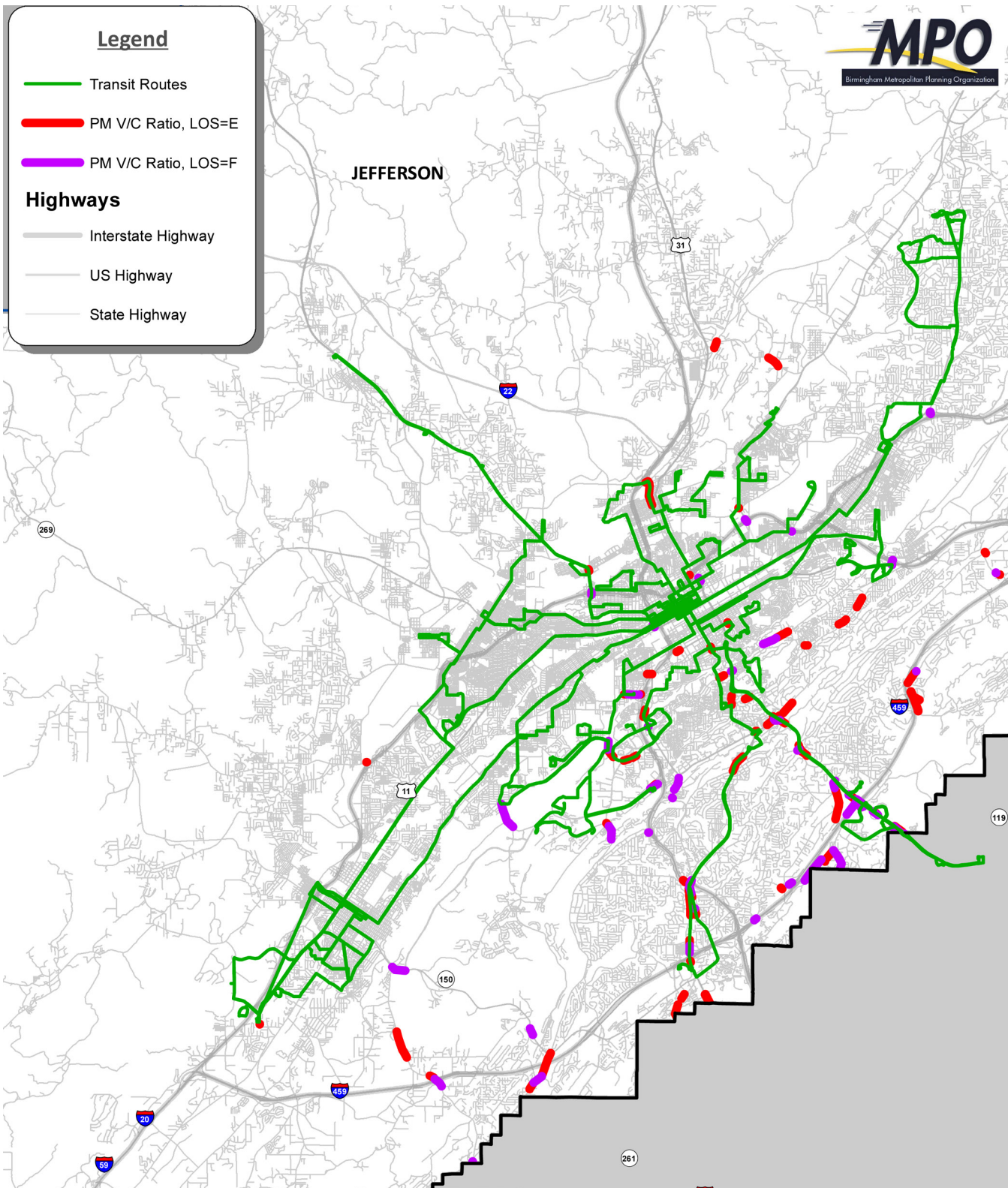
Source: RPCGB

Table 8.1 expands upon this chapter's support for Goals 1, 2, 3, 4, 6, and 7 of this RTP.

Table 8.1: Public Transportation's Support of Goals

Goal 1: Improve overall system safety and reduce serious injuries and fatalities for motorized and non-motorized users.	Transit helps support a safe transportation system for all users, especially when combined with pedestrian, bicycle, and roadway infrastructure that promote multimodalism.
Goal 2: Implement strategies that improve operations and address congestion.	Public transportation addresses congestion by reducing single occupancy vehicles on the roadways.
Goal 3: Provide equitable transportation options that enhance opportunities for physical activity, increase access to essential needs and improve quality of life.	Transit helps support equitable transportation options that enhance physical activity and increased access for all users, especially when combined with pedestrian, bicycle, and roadway infrastructure that promote multimodalism.
Goal 4: Enhance the existing transportation system and maintain it in a state of good repair.	Public transit enhances and maintains the transportation system by providing options and reducing the use and wear on roadways.
Goal 6: Encourage a transportation system that is compatible with the built environment and sensitive to the natural environment.	Public transportation is, by nature, environmentally sensitive as it reduces vehicle miles and emissions. In Birmingham, all vehicles in the transit system are powered by compressed natural gas.
Goal 7: Mitigate the challenges of climate change by incorporating more sustainable transportation choices that promote clean energy, better air and water quality as well as environmental programs that create more resilient communities.	Public transportation is, by nature, environmentally sensitive as it reduces vehicle miles and emissions. In Birmingham, all vehicles in the transit system are powered by compressed natural gas.

Source: RPCGB