jatso 2045 metropolitan transportation plan update

Adopted February 18, 2021

jatso metropolitan transportation plan update



what is jatso?

The Joplin Area Transportation Study Organization (JATSO) is the designated Metropolitan Planning Organization (MPO) for the Joplin region. Federal legislation requires that any urbanized area with a population of over 50,000 must have an MPO. MPOs ensure that **existing and future expenditures for transportation projects and programs** are based on a **continuing, cooperative, and comprehensive planning process**.

what does jatso do?

JATSO **maintains and monitors** all **transportation projects** that receive state and federal funding, as well as all regionally significant projects that are funded locally. JATSO is also responsible for **updating long-range transportation plans**, such as this, and updating short-term and long-term transportation needs lists.

JATSO consists of one permanent committee: the Policy Board. The **Policy Board is the policy making governing body** and provides a forum for **cooperative decision-making** for the transportation planning process. The Policy Board is made up of individuals from different municipalities and organizations within the MPA. Staff support is provided by the City of Joplin.



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section 1

introduction

The Metropolitan Transportation Plan Update (MTP) provides the **blueprint for the area's transportation planning process for the next 25 years**. This plan was created through a collaborative effort of JATSO, Jasper and Newton counties, applicable jurisdictions represented by the Harry S. Truman Coordinating Council, all cities, towns, and villages within the metropolitan planing area (MPA), and key agencies including the Missouri Department of Transportation (MoDOT). The general public was also consulted. Additionally, two stakeholder committees were formed, including the Citizen Advisory Group (CAG) and the Technical Advisory Group (TAG). This Plan meets all federal requirements and **addresses the goals, objectives, and strategies necessary to meet the involved communities' vision for the future**. An update of this nature is required for all MPOs every five years.

In carrying out the continuing, cooperative and comprehensive planning process, JATSO develops the regional long-range MTP, short-range transportation improvement plan (TIP) and unified planning work program (UPWP) for the JATSO region. The MTP and TIP include all projects that use federal funding in addition to projects of regional significance. While most projects listed within these documents are developed and executed by MoDOT, JATSO works with MoDOT to prioritize MoDOT's projects within the MPA. JATSO and its committees review, prioritize and recommend future projects, but do not own, operate or maintain any capital infrastructure.

This Plan considers **all modes of transportation**, including trails, pedestrian, and bicycle facilities, transit, roads, railroads, and airports. It relies upon scenario planning to provide multiple options of what the future may hold, allowing for flexibility during the MTP's lifetime. ***Figure 1.1*** illustrates the study area.

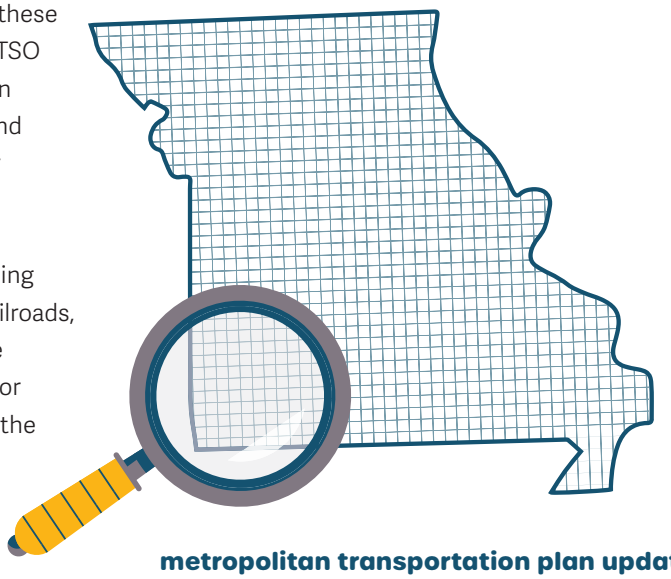
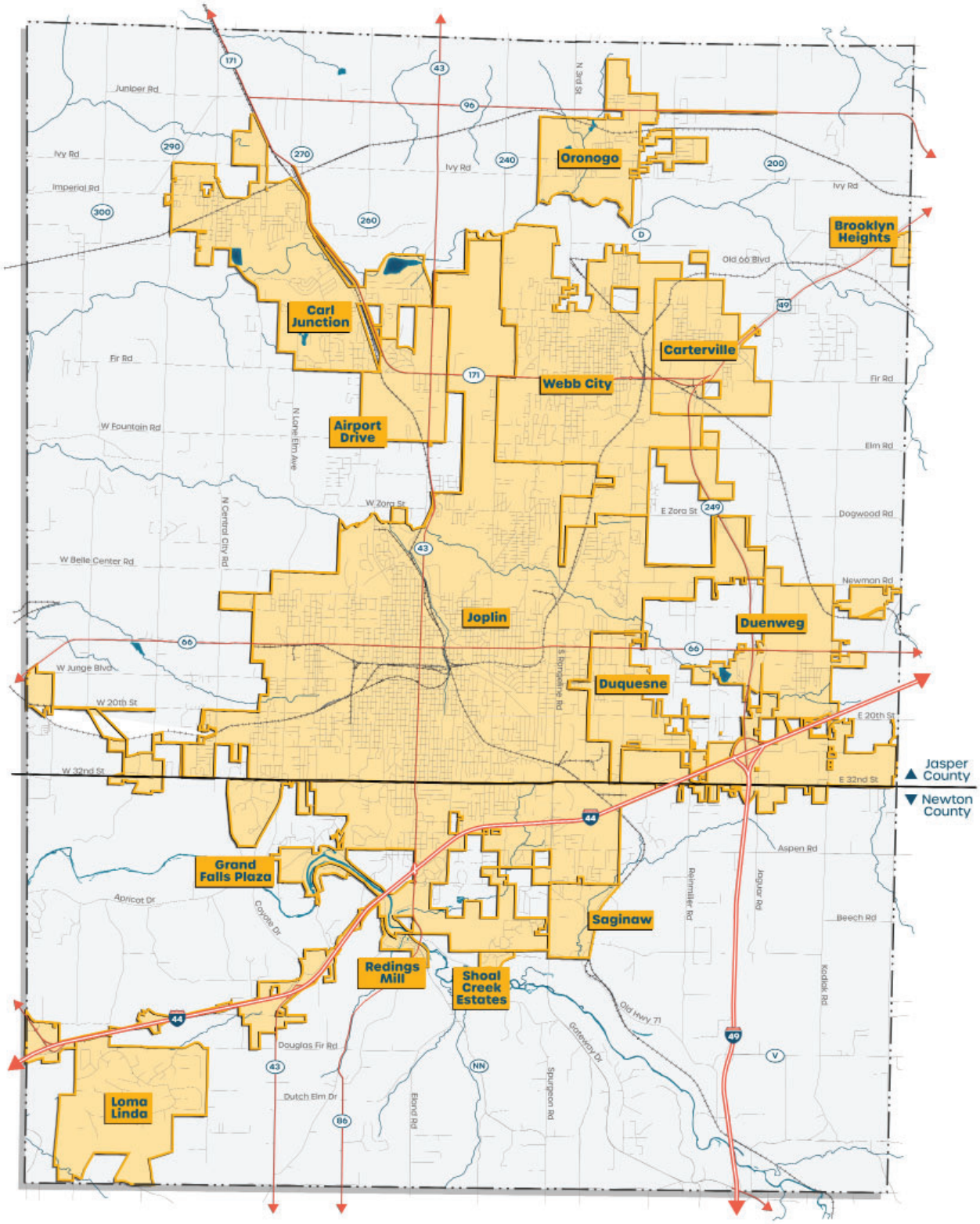


figure 1.1

study area



Data Sources: City of Joplin, Harry S. Truman Coordinating Council, and Ochsner Hare & Hare, the Olsson Studio

planning process & timeline

1 discover
Collect and analyze existing geospatial and transportation data

2 engage
Gather information on needs, desires, and critical issues, and build consensus

3 envision
Develop enhancement and improvement concepts for all modes of transportation

4 narrow
Refine concepts based on public engagement process findings and technical analysis

5 plan
Prepare the Plan document, illustrating the preferred concepts and recommendations

6 implement
Set forth critical steps to achieve the recommendations

compliance with federal & state guidance

MPO's generally serve the same core functions regardless of size. However, MPO's differ in the amount of staff, funding, and programming based upon their population. MPO's are the designated local decision-making body responsible for carrying out the metropolitan transportation planning process for a U.S. Census designated urbanized area (UA). UAs are areas containing at least 50,000 persons. UAs are designated as transportation management areas (TMA) by the U.S. Secretary of Transportation once the 200,000-population threshold is reached.

The Fixing America's Surface Transportation (FAST) Act requires surface transportation block grant (STBG) funding to be used in areas of states based upon the 2010 U.S. Census population. Suballocated STBG is divided into three categories:

1. Areas with a population of 5,000 or fewer.
2. Urban areas with a population of 5,001 to 200,000.
3. UAs with a population over 200,000 (considered a TMA).

State departments of transportation are the recipient of the funding, within which subgrants are made according to state law. For non-TMA MPO planning areas, STBG projects are selected from the approved metropolitan TIP by the state in cooperation with the MPO. For TMA MPO planning areas, STBG projects are selected in consultation with the state and affected transit operators. STBG projects within the JATSO MPA are therefore selected in cooperation with MoDOT.

MPOs are required to develop a metropolitan transportation plan (MTP) addressing no less than a 20-year planning horizon (E-CFR, Title 23, Chapter I, Subchapter E, Part 450, Subpart C, §450.324). Within this document, the MPO must address the following federal planning factors:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
- Increase the safety of the transportation system for motorized and non-motorized users;
- Increase the security of the transportation system for motorized and non-motorized users;
- Increase accessibility and mobility of people and freight;
- Protect and enhance the environment, promote energy conservation, improve quality of life, and promote consistency between transportation improvements and state and local planned growth and development patterns;
- Enhance the integration and connectivity of the transportation system across and between modes, for people and freight;
- Promote efficient system management and operation;
- Emphasize the preservation of the existing transportation system;
- Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and
- Enhance travel and tourism (E-CFR, Title 23, Chapter I, Subchapter E, Part 450, Subpart C, §450.306).

Understanding MPOs vary in the degree to which they can directly influence the above-mentioned planning factors; federal guidance encourages the planning factors be addressed to the 'extent practicable'. To effectively address these planning factors, the U.S. Department of Transportation (USDOT) has developed national performance measures. The federal performance measures have been tailored by MoDOT in partnership with JATSO to apply more directly to local conditions.

To date, **USDOT** has developed 28 national performance measures, including:

- Five safety measures;
- Six infrastructure condition measures;
- Three highway reliability and truck travel time reliability measures;
- One emissions reductions;
- Four transit asset management;
- Seven transit safety targets; and,
- Two congestion measures for UAs.

MoDOT maintains its own performance measures within its *Tracker*, including a focus on:

1. Moving Missourians safely;
2. Providing outstanding customer service;
3. Delivering efficient and innovative transportation;
4. Operating a reliable transportation system;
5. Managing assets;
6. Stabilizing resources and engaging its workforce; and,
7. Building a prosperous economy for all Missourians.

key terms defined

Microtransit: small-scale, on-demand public transit services that can offer fixed routes and schedules, as well as flexible routes and on-demand scheduling

Shared Mobility: transportation services that are shared among users, including public transit, taxis, bikesharing, carsharing, ridesharing (i.e., car-pooling), ridesourcing, scooter sharing, shuttle services, and commercial delivery vehicles providing flexible goods movement

Connected and Automated Vehicles (C / AV): connected vehicle technologies allow vehicles to communicate with each other and the world around them; a fully autonomous vehicle does not require a human driver—rather, they are computer-driven

Urbanized Area (UA): U.S. Census-designated urban area with 50,000 or more people

Transportation Management Area (TMA): an urban area with a population over 200,000

Metropolitan Planning Organization (MPO): the policy board of an organization created and designated to carry out the metropolitan transportation planning process

Transportation Improvement Program (TIP): a list of upcoming transportation projects covering a period of at least four years that MPO's are required to create

Metropolitan Planning Area (MPA): the geographic area determined by agreement between the MPO for the area and the Governor, in which the metropolitan transportation planning process is carried out

Unified Planning Work Program (UPWP): an annual or biennial statement of work identifying the planning priorities and activities to be carried out within the MPA

vision & goals

As an organization, JATSO's core purpose is to use the best available data to make short- and long-range decisions about all transportation needs in the MPA. This planning effort directly supports this organizational purpose by studying existing land use and traffic patterns, emerging modes and technologies, and changing demographics to best anticipate and understand future needs. The vision and goals outlined below work in concert to meet federal guidelines, while responding to the needs and desires of those influenced by the MTP's outcomes. The study goals and vision statement were created in partnership with the CAG and TAG.

goals

The goals of the MTP are comprehensive, yet specific. They include the following:

- Improve safety in all modes of transportation as it concerns the movement of people and goods.
- View existing transportation deficiencies as opportunities for future system enhancement.
- Facilitate a transportation system that serves all users – including those traditionally under served and underrepresented in the planning process.
- Align the transportation system with existing and future land use patterns.
- Enhance local and regional economic vitality by supporting the unique needs of freight systems.
- Encourage public transportation that is practical and serves users in a timely and efficient manner.
- Expand the connectivity of active transportation options, including – but not limited to – bicycle and pedestrian infrastructure, and encourage linkages to activity centers.
- Plan for future transportation trends and new technologies and their impact on how people and goods move around, such as shared mobility, micro transit, and connected/automated vehicles (CAVs).
- Consider the environmental, social, and financial implications of the recommendations to maintain the MTP's relevance and sustainability.

vision

Although planning is the best way to prepare for the future, there is no way to truly know what will happen. This MTP looks ahead to 2045, which makes it critical that the vision is rooted in current conditions while being cognizant of an ever-evolving future. The vision is an expression of existing realities and future aspirations that respects the unknown.

Through active, approachable, and transparent engagement with the public and stakeholders, this MTP looks holistically at all modes and users of the transportation system to provide equitable access to goods, services, jobs, and activity centers.

section 2

existing conditions

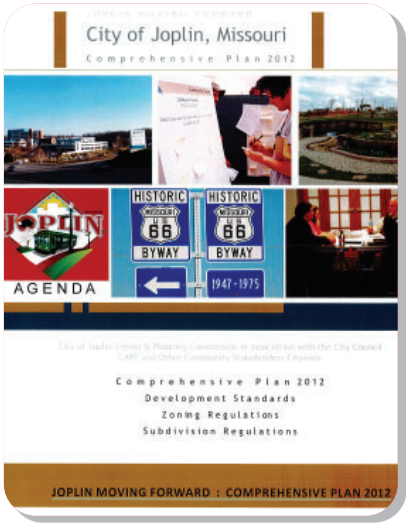
All long-range planning efforts must be founded on an understanding of the present. *Section 2 - Existing Conditions* presents a summary of the **current state of transportation** in the Joplin metropolitan area. This section acknowledges the importance of well-informed recommendations and strategies that properly respond to existing realities.

Certain aspects of the Joplin area are illustrated on maps to better understand the conditions of the study area. Specifically, understanding the existing land uses, points of interest, and existing transportation network were critical to providing context necessary to make the most informed decisions about the future of transportation. In addition to graphic illustrations, demographic data is provided to set the stage for the population the future transportation system must accommodate. Lastly, summaries are provided of relevant plans, studies, and projects to ensure this planning process is informed by past, current, and future efforts.



plans, studies, & projects

The following summaries offer a glimpse into relevant plans, studies, and projects that have already been completed in the Joplin metropolitan area. The purpose of summarizing these relevant documents is to ensure all efforts of this Plan align with concurrent efforts, especially those related to the transportation system.



city of joplin comprehensive plan (2012)

Purpose: A living document intended to be updated to retain its relevancy, to reflect changing factors, and to remain useful as a community guide for development review and decision-making.

Relationship to this Plan: The City of Joplin Comprehensive Plan focused its transportation efforts on maintenance of the existing roadway system, while redefining transportation in Joplin as multimodal. This plan shifted the focus from just cars and expanded it to include the sidewalk network, trails, and bicycle lanes. Efforts to transition away from a car-centric mindset to a multimodal network included: traffic calming; a focus on complete streets; crosswalk upgrades; sidewalk amenities to enhance safety; and site design improvements to promote walkability.



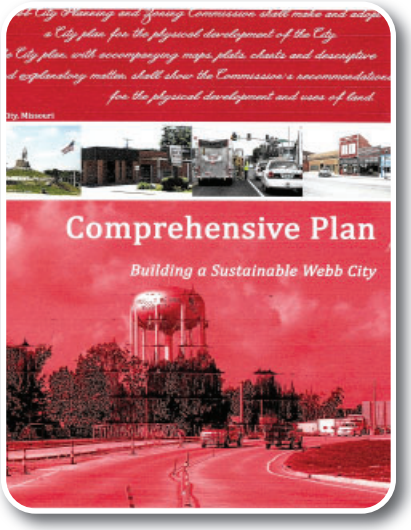
city of carl junction comprehensive plan (2011)

Purpose: A document to guide City of Carl Junction growth in an organized and efficient manner that should be periodically reviewed and adapted to meet the current needs of the city and its citizens.

Relationship to this Plan: Carl Junction is situated north of Joplin. The City of Carl Junction Comprehensive Plan was drafted in response to the dramatic increase in community population, mostly due to the development of the Briarbrook subdivision and strong reputation of the R-1 School District. This plan emphasizes improving roadways and commute times between Carl Junction and Joplin, as most of its residents commute to Joplin for work. The city's transportation infrastructure was constructed primarily in response to its suburban form. Recognizing the importance, but also the downfalls, of this type of sprawled network, the city aims to diversify its roadway network through denser development. Additionally, the plan maintains the following four transportation priorities:

- Improvements to Fir Road;
- Improvements to Pennell Street;
- The development of non-motorized corridors; and,
- The development of a new north-south connector.

city of webb city comprehensive development plan (2017)



Purpose: The Webb City Comprehensive Development Plan sets the community's vision for the future, lays the groundwork of planning policies to guide the city, and provides a framework from which the city and community organizations may work together toward common goals.

Relationship to this Plan: With nearly 12,000 people, nationally recognized schools and athletic teams, convenient highway access, and its location within the Joplin Metropolitan Area, Webb City represents an important transportation hub. Webb City grew from its historic downtown, which now places modern demand on an historic roadway system. The transportation component of this plan provides goals focused on improving existing street networks to enhance livability and promoting a balanced multimodal transportation system, including pedestrian, bicycle, and transit infrastructure. To meet the transportation goals and take necessary action to enhance mobility, the following projects are specific:

- Intersection improvement at Madison (MO-71) and MacArthur (MO-171).
- Expand Fountain Road from Madison Avenue to Orongo Street to decrease public safety response times for east/west movements across the city.
- Complete Dawson Drive from King Jack Park to Hall Street South.
- Complete the interchange onto MO-249 at Fountain Road.
- Complete the pedestrian crossing near Ball Street and connect to Frisco Trail.
- Road improvements at East Road and Daugherty Street to enhance access. Improve the connectivity of Hall Street.
- Pedestrian walkway improvements.

regional origin and destination survey (2008)

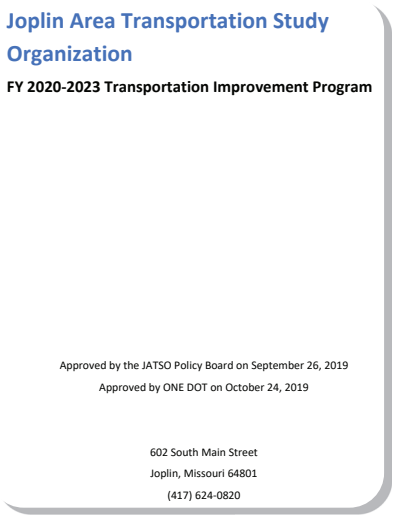


Purpose: This study was completed to determine travel characteristics and trends in the Joplin region, which involved the collection of updated traffic counts at 26 locations in the metropolitan area and intercept surveys at 10 locations. The project was undertaken to update a traffic survey previously conducted by the City of Joplin in 1999.

Relationship to this Plan: The Regional Origin and Destination Survey illustrates traffic patterns in the Joplin region to understand how, where, and when people are traveling to and from Joplin. The data provided by this survey provides valuable intel on which corridors are the most travelled, indicating which roadways are under capacity, nearing capacity, or already at capacity.

Notable findings are summarized as follows:

- The Northpark Mall, St. John's Medical Center (prior to its devastation from the 2011 tornado), and Missouri Southern State University are the top three destinations for travelers in Joplin or traveling into the Joplin metropolitan area.
- The highest number of through trips were by the east-west corridor of I-44.
- Eighty-six percent of the vehicles entering or exiting the Joplin metropolitan area were non-commercial automobiles and 14 percent were commercial trucks.
- Over two thirds (68 percent) of the vehicles entering or exiting the Joplin metropolitan area had one occupant.
- Only 15 percent of travelers entering or exiting the Joplin area live there.
- More than 115,000 people enter the Joplin metropolitan area on a typical day.

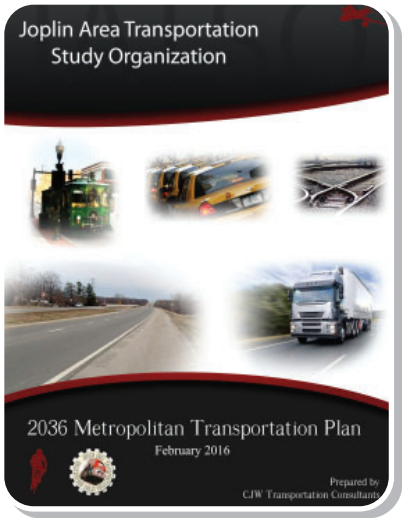


jatso fy 2020-2023 transportation improvement program (TIP) (2019)

Purpose: The TIP is a program management tool for structuring metropolitan transportation related projects that is updated at least every four years to identify a priority list of transportation projects to be carried out within each four-year period.

Relationship to this Plan: This TIP covers four different transportation categories – aviation, highway, transit, and non-motorized – and identifies priority projects during the planning timeframe (2020-2023), outlined as follows:

- **Aviation**: Notable improvements for the airport correspond to the identified short-term improvements in the Joplin Regional Airport Master Plan, including a reconstruction and extension of Runway 18-36 and the construction of a new ARFF building and snow equipment removal building.
- **Highway**: For the highway system, projects focus on bridge rehabilitation, repairs, and improvements; pavement preservation and resurfacing; safety enhancements; and closure of a public railroad crossing.
- **Transit**: To enhance current transit offerings, projects include design/site selection for a centrally-located transit transfer station; necessary vehicle replacements; and operating assistance for the Metro Area Public Transit System (MAPS).
- **Non-Motorized** (Transportation Alternatives Program): This category complements motorized transportation efforts by prioritizing trail and sidewalk construction in identified areas throughout the planning area.



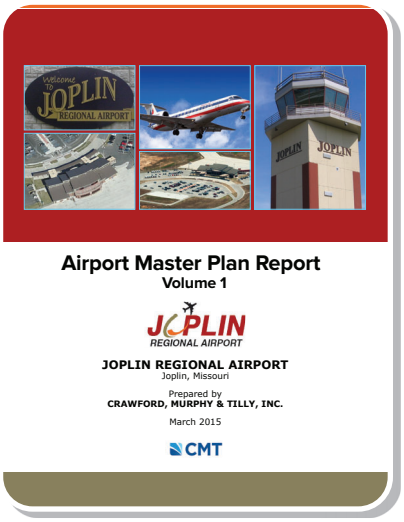
jatso metropolitan transportation plan (2016)

Purpose: The MTP is a living document that is updated every five years. It evaluates the current transportation system in the Joplin metropolitan area and forecasts conditions for the next 20 years to better accommodate expected changes in transportation services.

Relationship to this Plan: The 2016 update to the JATSO MTP is the direct predecessor of this document. This study identified many transportation challenges facing the community, namely accessibility to metropolitan employment centers and other entertainment venues. The need to enhance the transportation network beyond just the considerations for personal vehicles was also noted as a priority, including transit and pedestrian connectivity. Some routes were identified as working well, including Range Line Road, I-44, Route 171, and other regional corridors; however, maintaining mobility on these well-travelled corridors was a considerable challenge. Lastly, a need to balance land use and environmental considerations in line with transportation needs was noted. Future goals identified to tackle the abovementioned challenges aim to provide for the following:

- The development of a transportation system that is supported by and complements land development and enhances community development;
- The development and maintenance of and efficient and safer transportation system for the movement of people and goods;
- The anticipated technological and federal transportation policy changes;
- A balanced transportation system that provides a choice of travel modes for different individuals and activities;
- The development of transportation improvement projects consistent with budget restraints; and,
- A transportation system that enhances the economic vitality in the Joplin metropolitan planning area.

joplin regional airport master plan (2015)



Purpose: The Joplin Regional Airport Master Plan ensures that the facility maintains and improves its infrastructure to continue to serve the region successfully.

Relationship to this Plan: The Joplin Regional Airport (JLN) serves as a major economic engine as it provides a critical transportation service at a local and regional scale. Based on the total operations forecast and potential enhanced service offerings, JLN is anticipated to grow consistent with peer airports (including Manhattan, KS, and Columbia, MO). To accommodate this anticipated growth and demand, several facilities were recommended to be upgraded or constructed across various timeframes.

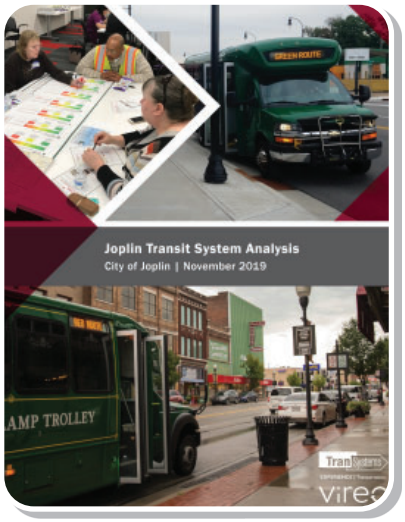
All of the recommended projects are added to the airport's capital improvement plan (CIP) to allow for Federal Aviation Administration (FAA) funding. The short-term goals represent the most immediate needs to maintain the facility, and as such these improvements focus on the airfield, providing additional snow-removal equipment, and expanding the existing terminal building. In the intermediate- and long-terms, the airport focuses on improvements to the aircraft rescue and fire fighting (ARFF) building, additional hangars, fuel farm relocation, additional parking, ongoing upgrades to the terminal building, and eventual runway improvements.

vision joplin 2022 (2017)

Purpose: Spearheaded by a group of area citizens, Vision Joplin 2022 puts forth a vision for the future of the city.

Relationship to this Plan: With the input of residents and community leaders, this plan identified six key topics that are important to the improvement and growth of the city over the planning period (2017 to 2022). These topics and their missions are summarized as follows:

- **Education**: quality schools that foster a supportive learning environment are rooted in strong communication, collaboration, critical thinking, and creative thought.
- **Governance**: supporting citizens' desire for a well-governed city should be managed through long-term strategic governance.
- **Healthy Living/Wellness**: creating healthy places to live is accomplished by increasing the use of preventive health practices for all ages, reducing health inequality, and improve access to mental health and substance abuse treatment programs.
- **Job Growth**: a vibrant economy with a thriving workforce begins by enhancing the job market.
- **Positive Marketing/Branding**: growing community pride is accomplished through the intentional engagement of community members to create everyday champions of the city.
- **Quality of Life**: a diverse, inclusive, and healthy community is one with access to parks, culture, recreation, life-long learning, and leisure activities that are available to all members of the community.



joplin transit system analysis (2019)

Purpose: The City of Joplin initiated the Joplin Transit Comprehensive Operational Analysis (COA) to analyze existing transit service, engage the community and stakeholders, develop service guidelines, and develop short-, medium-, and long-term service plans to best provide for public transportation needs.

Relationship to this Plan: Within the JATSO region, there are three primary transit modes including a flex route bus service, demand response within Joplin city limits and adjacent communities, and demand respond in rural and small urban areas for residents outside of other service areas. MAPS is the primary public transit service provider in the study area. It is also the name used to differentiate the flex route service (Sunshine Lamp Trolley) from the demand response service (MAPS). Recommendations for transit system improvements are based upon demographic trends, commuting patterns, employment density, existing land use patterns, and transit demand analysis. The analyses were distilled into major takeaways about transit in the Joplin area:

- There is strong and consistent ridership in the last five years.
- Most riders use transit to shop, visit friends, or go to medical appointments.
- Land use is mixed with a variety of retail and housing, but large employers are scattered.
- There is unmet transit demand along the Rangeline Road corridor and in the neighborhoods bounded by 26th Street, Main Street, Maiden Lane, and F Street.

To respond to current transit patterns in the Joplin area, the following recommendations were provided:

- In the short-term, the MAPS Green route should be modified to serve the Ozark Center.
- In the medium-term, it is recommended that a new transfer facility be built in an identified, centrally located area (15th Street between Main Street and Iowa Avenue). Additionally, eight additional routes are proposed to provide enhanced week day and week end service. These new routes would provide service to key destinations in the Joplin area, including a Home Depot, Ozark Center's Hope Springs Facility, the Royal Heights Neighborhood, and medical facilities.
- In the long-term, expanded fixed route service into new markets requested by the public would be added. These extensions would create a regional fixed route network (instead of the city-only service currently provided).

city of joplin capital improvement program (CIP) (2014)

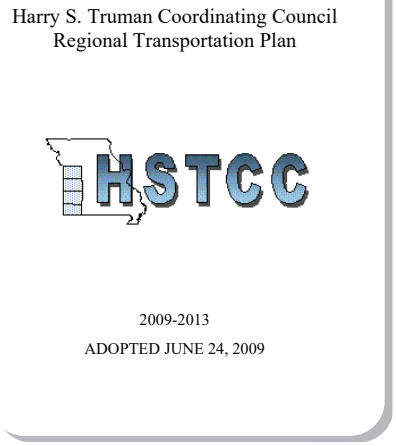
Purpose: The CIP designates a portion of sales tax in the City of Joplin to prioritized city projects that is updated annually.

Relationship to this Plan: The most recent update to the project list was published in 2014 and identified several roadway projects, including:

- 32nd Street improvements;
- Neighborhood transportation, street surface, and intersection improvements;
- Increasing Connecticut at 32nd to 44th Street from 2 to 5 lanes;
- Increasing 44th Street at Rangeline to Connecticut from 2 to 5 lanes;
- Increasing Zora at Rangeline to MO 249 from 2 to 3 lanes;
- Increasing the I-44 overpass at Connecticut to 4 lanes;
- Modifications to the 6th Street and Virginia Parking Garage;
- Increasing 20th Street at Shifferdecker to Country Club Road to 3 lanes and adding a Right of Way;
- Replacing the bridge on Jackson at Shoal Creek; and,
- Building a bridge on Shifferdecker at Turkey Creek.

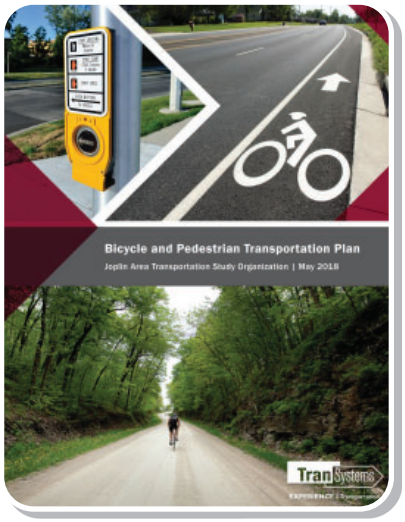
harry s. truman coordinating council regional transportation plan (2009)

Purpose: The Harry S. Truman Coordinating Council (HSTCC) consists of Barton, Jasper, Newton, and McDonald counties, which cover the southwest corner of Missouri. The Transportation Plan identifies goals to improve the transportation system within the HSTCC area including system preservation and safety, access and mobility, sustaining the environment, and maintaining accountability and planning.



Relationship to this Plan: Joplin is the largest city within the HSTCC and Jasper County contains over half of the total population of the counties. Recognizing that most of the HSTCC area is not urban and therefore requires the use of automobiles for circulation, this plan primarily proposes roadway improvements. Further, an analysis of key regional transportation needs and issues identified that safety is a major concern in all counties within the JATSO region - which includes Jasper and Newton counties. With increasing traffic volumes due to commercial growth, local trucking, and increased manufacturing operations, highly travelled routes – such as I-44 – require a smoother and safer flow of goods. Based on the analysis, an action plan was created for each county.

- In **Jasper County**, improvements to Highways 96, 171, 66, and 43 are recommended to accommodate increased traffic volumes. Line of sight issues at two intersections – MM Highway and County Road (CR) 210 and HH near CR 200 – should be corrected.
- Recommendations for **Newton County** consist of intersection improvements at 71 Highway and Waldo Hatler Memorial Drive, and 60 Highway and Kodiak. To enhance traffic flow in Neosho, a light and street rerouting is recommended at 86 Highway and Harmony. Lastly, shoulders should be constructed from 71 Highway to George Washington Carver National Monument on V Highway.



bicycle and pedestrian transportation plan (2018)

Purpose: This plan provides a comprehensive, non-motorized transportation plan for JATSO.

Relationship to this Plan: The Bicycle and Pedestrian Transportation Plan was created around a vision to "provide safe bicycle and pedestrian connectivity within, between, and beyond the Joplin area communities". Plan initiatives based on the vision statement and multimodal analysis were categorized into four groups: safety, connectivity, on-road facilities, and off-road facilities. The plan calls for improving pedestrian infrastructure along key corridors (including ADA accommodations and curb cuts to allow accessibility for people of all abilities), railroad crossings, and coordinating with the Joplin Trails Coalition to improve roadway crossings along the Frisco Greenway Trail and Ruby Jack Trail. Connectivity improvements were recommended to be made in alignment with a Complete Streets approach. On-road facilities should be improved with short-term road diet options, such as shared lanes and designated bicycle lanes, or long-term construction of multi-use paths that are physically separated from the roadway.

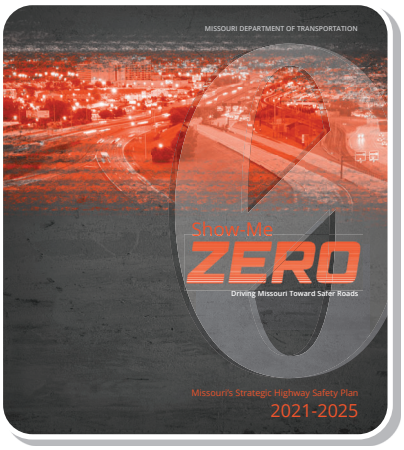
The following roadways were identified as priority corridors for improvement:

- Main Street
- Joplin Avenue/Wall Avenue
- Broadway Street/2nd Street
- 4th Street
- Junge Boulevard/13th Street
- 26th Street

The following trails were identified as priority corridors for improvement:

- **Tin Cup Trail:** construct a 1.1-mile trail to connect the existing Shoal Creek Trail system with the Mohaska Trail (expected completion in 2019).
- **Turkey Creek Trail:** extend the existing trail to the west to connect to Ozark Christian College, Landreth Park, and Dover Hill Park.
- **Frisco Greenway Trail:** extend the existing trail to follow the former railroad corridor while continuing to provide connections to Oronogo and the Ruby Jack Trail.
- **Ruby Jack Trail:** continue the trail restoration by completing improvements between Oronogo and Carl Junction.
- **North Rail Trail:** construct a 5.1-mile trail on the former St. Louis-San Francisco Railway corridor from Fir Road in Carl Junction to 2nd Street in Joplin.
- **Katy Trail:** construct a 2.6-mile trail on the former Missouri-Kansas-Texas Railroad corridor from Murphy Boulevard near Dover Hill Park to Schifferdecker Avenue.

show me zero: driving missouri toward safer roads (2020)



Purpose: Show Me Zero is the fifth edition of Missouri's strategic highway safety plan aimed at saving lives and reducing serious injuries and unnecessary deaths.

Relationship to this Plan: This plan emphasizes the importance of multidisciplinary efforts in education, engineering, enforcement, and emergency response to fulfill the Zero Death vision. The Zero Death vision means that no lives are lost due to a traffic crash.

The plan concentrates its efforts on addressing four key behaviors accounting for the most car accidents, which include:

- Occupant protection;
- Distracted driving;
- Speed and aggressive driving; and,
- Impaired driving.

The plan also focuses on groups overrepresented in crash data who warrent additional attention, including:

- Teen drivers;
- Older drivers;
- Pedestrians; and,
- Bicyclists.

Key strategies under multidisciplinary categories align with the identified behaviors and those overrepresented in crash data. Strategies are broken down by how different Missourians can implement them within their means, such as profession and areas of influence. The Show Me Zero plan emphasizes that the Zero Death vision can only be achieved with statewide collaboration.

While the Plan includes strategies of varying magnitude, the following key strategies are highlighted as important steps to achieving Zero Deaths:

- Handheld electronic devices banned for all drivers
- Employers prioritize driver safety programs
- Statewide primary seat belt law
- Increase in traffic enforcement
- Widespread use of stripes, high friction pavement and traffic separation
- Incentive programs for safe drivers and safer vehicles
- Advanced driver assistance systems standard for new vehicles
- Smart 911 and vehicle-to-everything communication
- Incorporating autonomous vehicle usage



MoDOT long range transportation plan update (2018)

Purpose: This plan was developed to strategically guide planning and programming decisions for the development, management, and operation of Missouri's transportation system over the next 25 years.

Relationship to this Plan: MoDOT's Long Range Transportation Plan Update addresses statewide needs for transportation using a performance-based model. The statewide transportation system consists of roads and bridges, transit, aviation, rail, waterways, and bicycle and pedestrian infrastructure. To address transportation needs and demands – across all modes – amid steady population growth and declining revenues, this plan identifies five overall goals:

- Take care of the transportation system and services we enjoy today.
- Keep all travelers safe, no matter the mode of transportation.
- Invest in projects that spur economic growth and create jobs.
- Give Missourians better transportation choices.
- Improve reliability and reduce congestion on Missouri's transportation system.

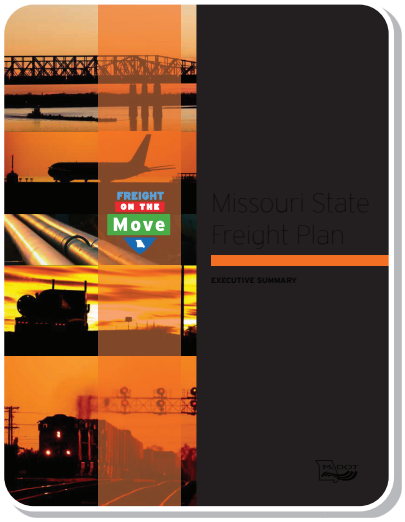
Two major trends were identified at a national level that the state is also experiencing:

- There is an increasing market share of alternative-fuel vehicles; and,
- Increasing urbanization statewide and the availability of shared transportation resources that impact vehicle ownership.

Using population, economic, employment, freight, and travel trends, future needs are assessed. For state roads and bridges, the largest anticipated investment is within construction programs. Transit and aviation systems were tied for highest anticipated multimodal transportation investments. While most anticipated revenue will address maintaining and preserving the existing system in its current condition, high-priority unfunded transportation needs include major interstate reconstruction and further investment into projects increasing economic growth and improving safety.

Joplin is emphasized as one of state's larger cities. It was identified as one of the seven urban areas in the state with local transportation systems and one of eight with an airport.

missouri state freight plan (2017)



Purpose: The Missouri State Freight Plan provides a necessary update to the prior plan to comply with the FAST Act requirements, recognizing that freight is an essential part of Missouri's economy, and making smart investments in the system can make a substantial impact in the efficiency of the system overall.

Relationship to this Plan: Joplin is one of the larger urban areas in the state of Missouri, acting as a connective hub for freight moving on highways, railways, and airplanes. The goals of the plan recognize that transportation is integral to the financial health of the state, the safety of its residents, and delivering a high quality of life. Specifically, this plan's goals prioritize:

- **Maintenance:** Maintain the freight system in good condition by keeping highways and bridges in good condition and supporting the maintenance of railways, waterways, airports, and multimodal connections.
- **Safety:** Improve safety on the freight system by decreasing the number and severity of crashes involving commercial vehicles and improving safety at railway crossings.
- **Economy:** Support economic growth and competitiveness in Missouri through strategic improvements to the freight system.
- **Connectivity and Mobility:** Improve the connectivity and mobility of the freight system by reducing congestion and increasing reliability on the roadways; by supporting improved efficiency of rails, waterways, and airports; and by improving connections between freight modes.

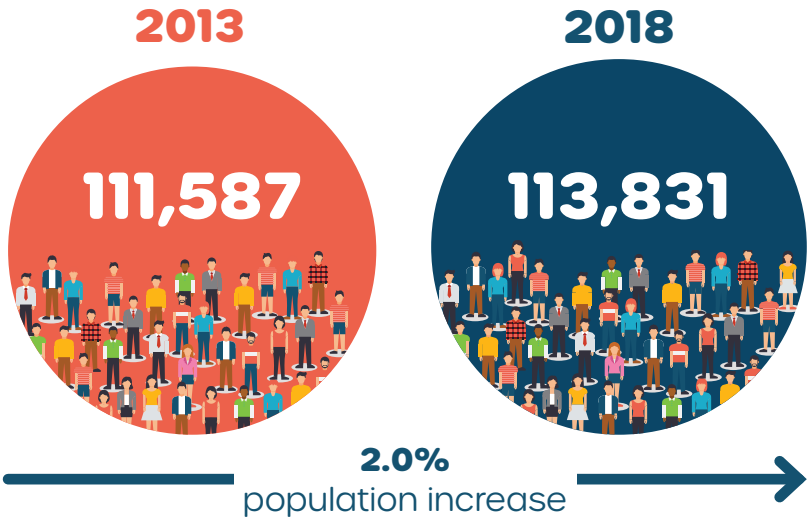
This plan's recommendations are comprehensive and focused on improving the state's freight system but go beyond just freight to address the underlying impacts to economic development, environmental sustainability, and quality of life. Program recommendations include:

- Maintain and improve the freight network;
- Use freight prioritization framework to assist decision makers;
- Expand collaboration with Missouri Department of Economic Development;
- Develop supportive freight and land use guidance;
- Increase public awareness about freight;
- Continue engaging statewide economic development partners;
- Host annual freight round-table;
- Consider developing public-private partnerships;
- Identify and preserve critical multi-modal nodes; and,
- Partner with others involved in certified site program.

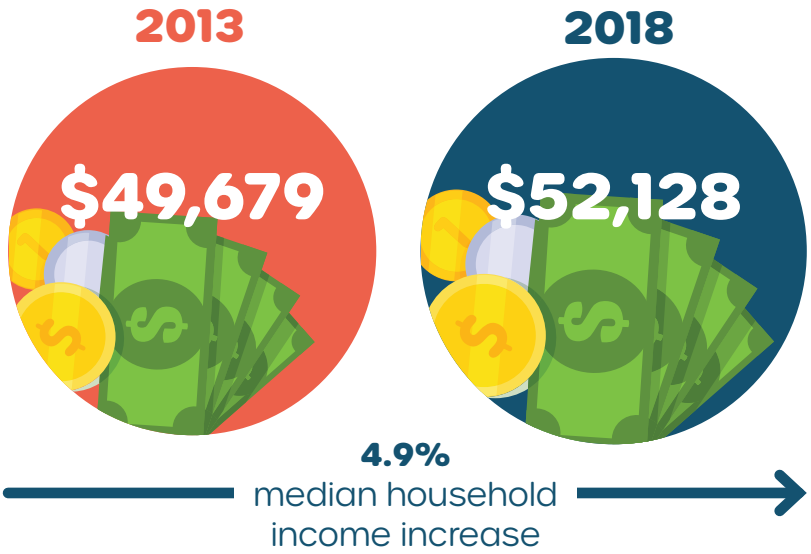
demographics & commuting patterns

To best inform recommendations about the future of the transportation system, certain demographic trends within the MPO were analyzed. This subsection presents and assesses current trends regarding population, income, employment, and commuting patterns that serve as a baseline for the recommendations.

The demographic analysis was created using data from the 2013 American Community Survey (ACS) five-year estimates, and the 2018 ACS. These data sets reflect a five-year estimated average based on surveys conducted by the U.S. Census Bureau during that time. Demographic characteristics were compiled from 83 U.S. Census block groups to classify the MPO, which are located in 44 U.S. Census tracts, within both Newton County and Jasper County.



takeaway:
the JATSO region's population has remained **relatively stable** over the last five years



takeaway:
similar to population, median household income **did not grow significantly** over the last five years

(2013 dollars are adjusted for inflation)

2018
travel time to work

10-19 minutes	46.0%
20-29 minutes	20.0%
0-9 minutes	19.0%
30-39 minutes	9.3%
40+ minutes	6.0%



takeaway:
nearly half of the JATSO region's population spends **10 to 19 minutes** commuting to work

2018
transportation to work

entire working population	
car, truck, van	93.8%
work from home	3.4%
walk	1.4%
public transportation, bicycle, motorcycle, taxicab, or other means	1.4%



takeaway:
the JATSO region's population heavily **relies on automobiles** as their transportation to work

2018
time leaving for work

12:00 p.m. - 4:59 a.m.	21.7%
5:00 a.m. - 5:59 a.m.	7.8%
6:00 a.m. - 6:59 a.m.	18.1%
7:00 a.m. - 7:59 a.m.	31.9%
8:00 a.m. - 8:59 a.m.	12.0%
9:00 a.m. - 11:59 a.m.	8.6%



takeaway:
one-fifth of the JATSO region's population leaves for work at an off-peak time (12:00 p.m. to 4:59 a.m.); however, the most people commute from **7:00 a.m. to 7:59 a.m.**

transportation system

JATSO's transportation system is multifaceted, consisting of roadways, an airport, trails, bicycle lanes, and transit. To understand how these systems function in their current state and their interrelatedness within the entire transportation system, an analysis of traffic volumes, crash data, speed limits, number of lanes, and classification of the streets is provided.

traffic volumes

Traffic volume data was provided by MoDOT for many of the roadways within the JATSO region. Ranging from just a few hundred vehicles per day to over 50,000 vehicles per day on I-44, the higher volume traffic tends to be focused on MoDOT facilities and city arterial streets. The volumes on ***Figure 2.1*** represent estimates of the Average Annual Daily Traffic (AADT).

functional classification

Roadways in the JATSO region are generally classified into one of four categories:

1. Freeways / expressways;
2. Arterials (principal or minor);
3. Collectors; and,
4. Local roadways.

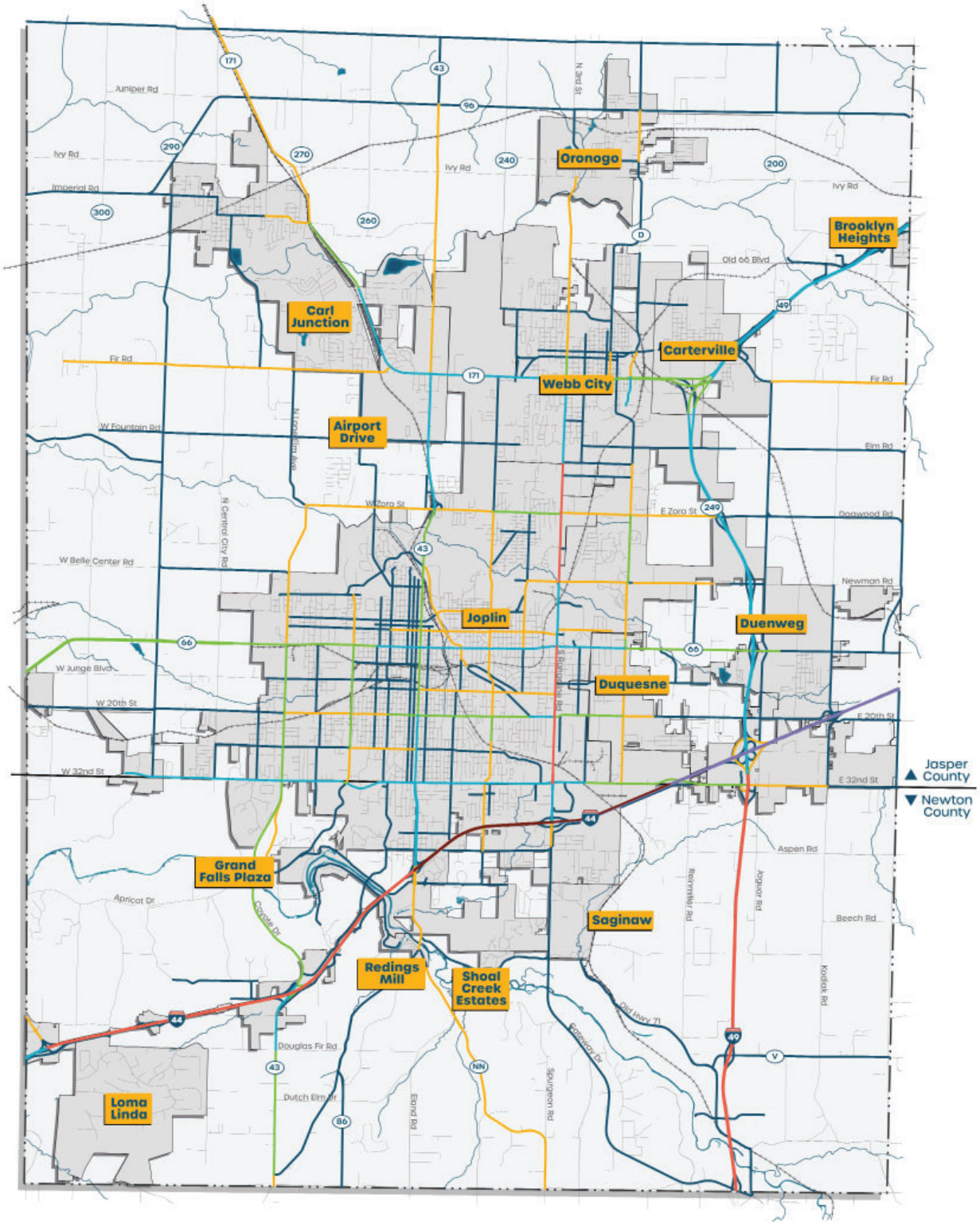
The freeways / expressways provide the highest mobility (speed and capacity) but with limited or no access to adjacent properties. Conversely, local roadways provide a high amount of access to adjacent properties and low mobility. ***Figure 2.2*** illustrates the functional classification within the JATSO region. Note that the classifications shown represent both MoDOT's classification, as well as the MPO's (i.e., both organizations classify the roadways the same).

speed limits & number of lanes

While speed limits and the number of lanes often align with functional classifications, they can also vary depending on the adjacent environment with lower speed limits in higher density locations, even on arterial roadways, than in suburban areas. Similarly, there can be a two-lane arterial street in lower density areas that widens to additional lanes, as density and traffic increase. ***Figures 2.3*** and ***2.4*** illustrate the number of travel lanes on the roadways as well as the speed limits.

figure 2.1

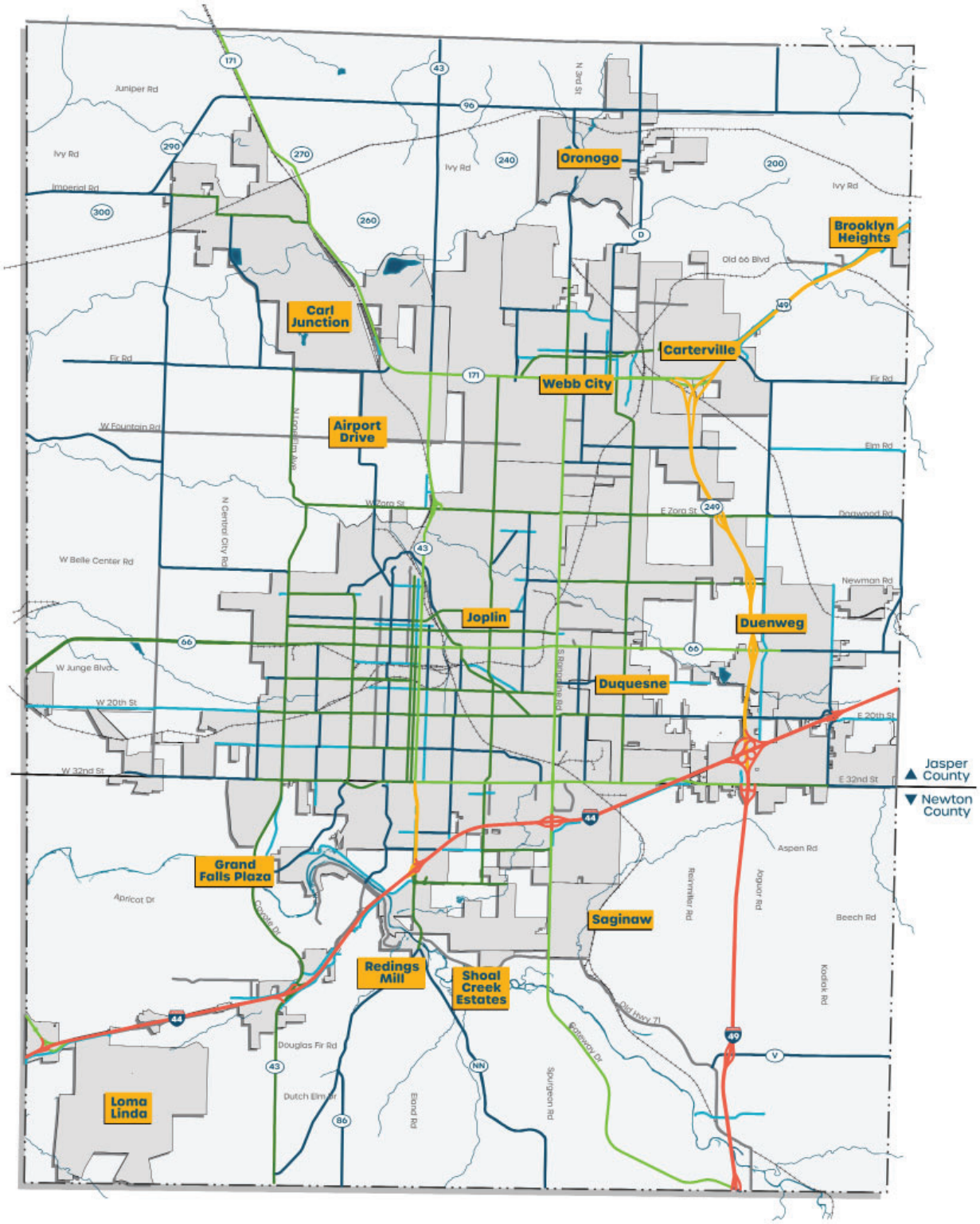
traffic volumes



***Note:** Values illustrated represent bi-directional traffic counts from 2018 and 2019
Data Sources: City of Joplin, Harry S. Truman Coordinating Council, Missouri Department of Transportation, and Ochsner Hare & Hare, the Olsson Studio

figure 2.2

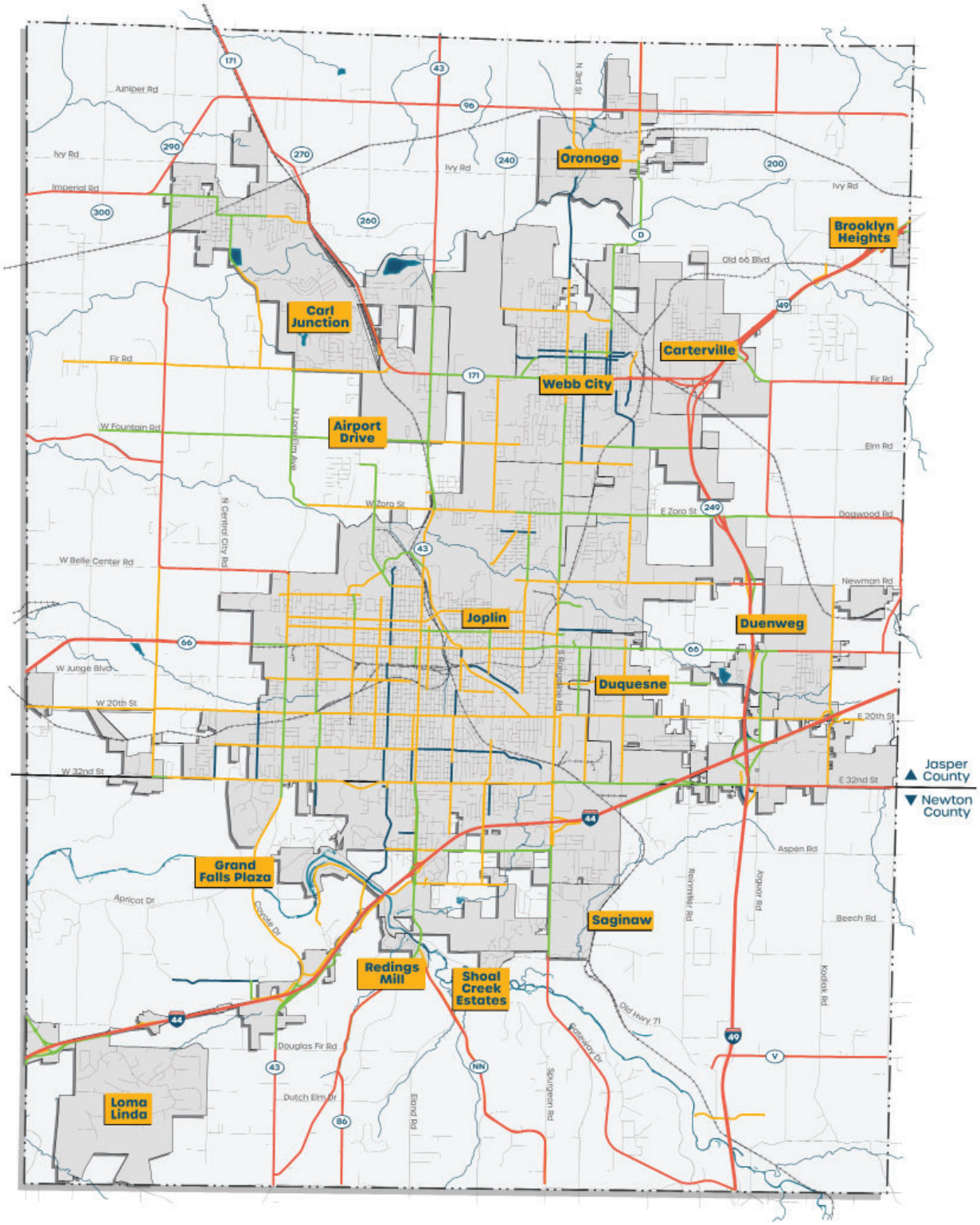
functional classification



Data Sources: City of Joplin, Harry S. Truman Coordinating Council, Missouri Department of Transportation, and Ochsner Hare & Hare, the Olsson Studio

figure 2.3

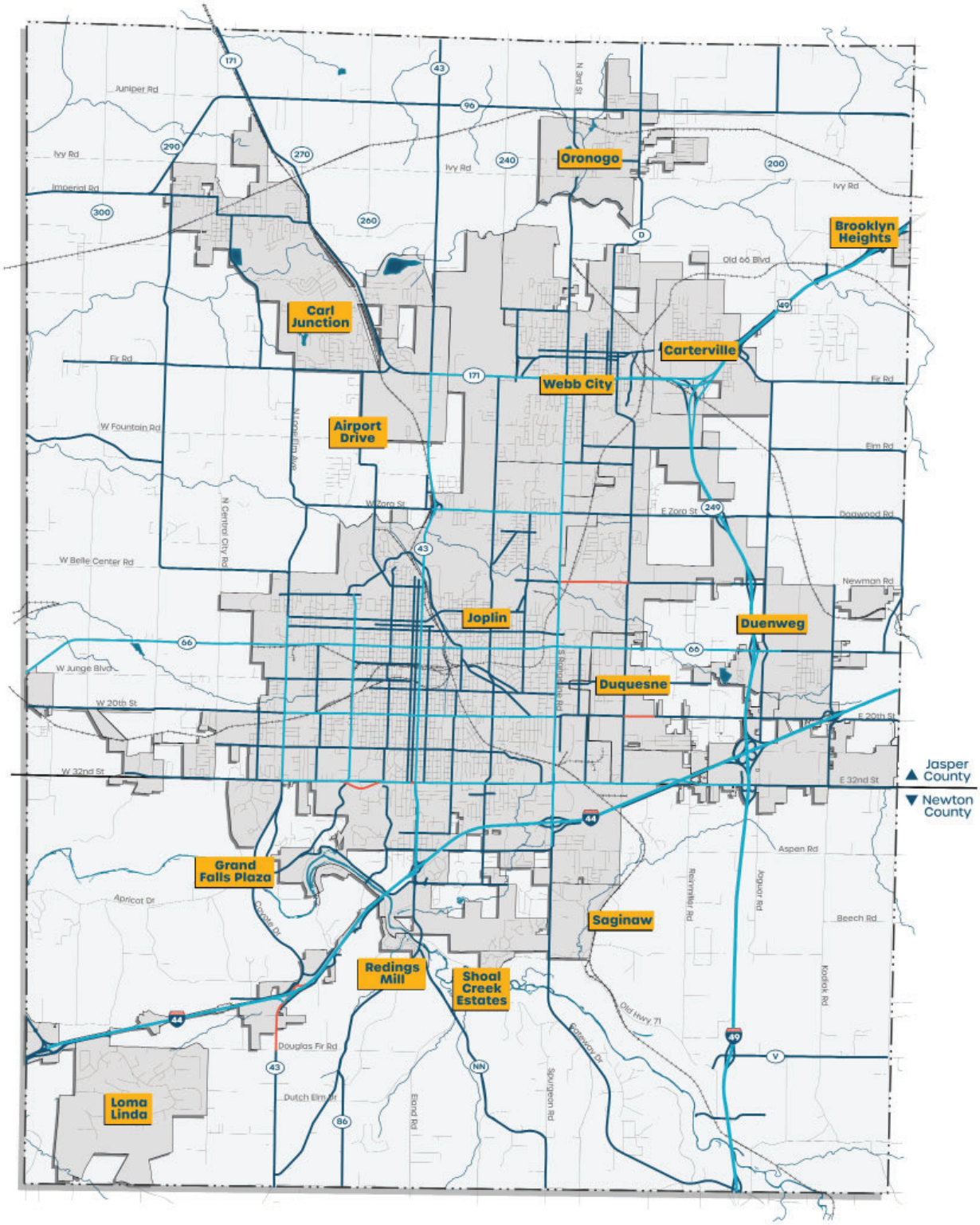
speed limits



Data Sources: City of Joplin, Harry S. Truman Coordinating Council, Missouri Department of Transportation, and Ochsner Hare & Hare, the Olsson Studio

figure 2.4

number of travel lanes



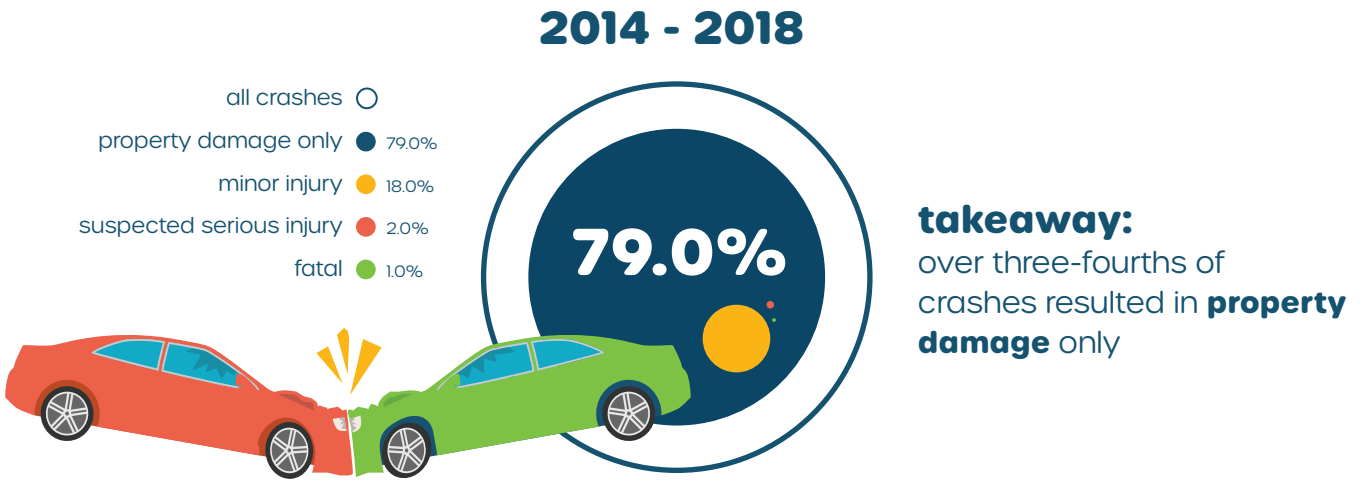
Data Sources: City of Joplin, Harry S. Truman Coordinating Council, Missouri Department of Transportation, and Ochsner Hare & Hare, the Olsson Studio

crash data

The most recent five-year history of crashes in the JATSO region were provided by MoDOT for the calendar years of 2014 to 2018. The location of these crashes are illustrated on ***Figure 2.5,*** in which one dot is equal to one crash. Note the following takeaways:

- 79 percent of the crashes were property damage only
- 20 percent of the crashes resulted in injuries (minor injury or serious injury)
- One percent of the crashes resulted in a fatality

Rear-end collisions were the most frequent type of crash at over 30 percent of all crashes. While the number of crashes involving bicyclists or pedestrians is a small percentage overall, there were, on average, more than 35 crashes per year combined over this five-year period involving non-motorized pedestrians.



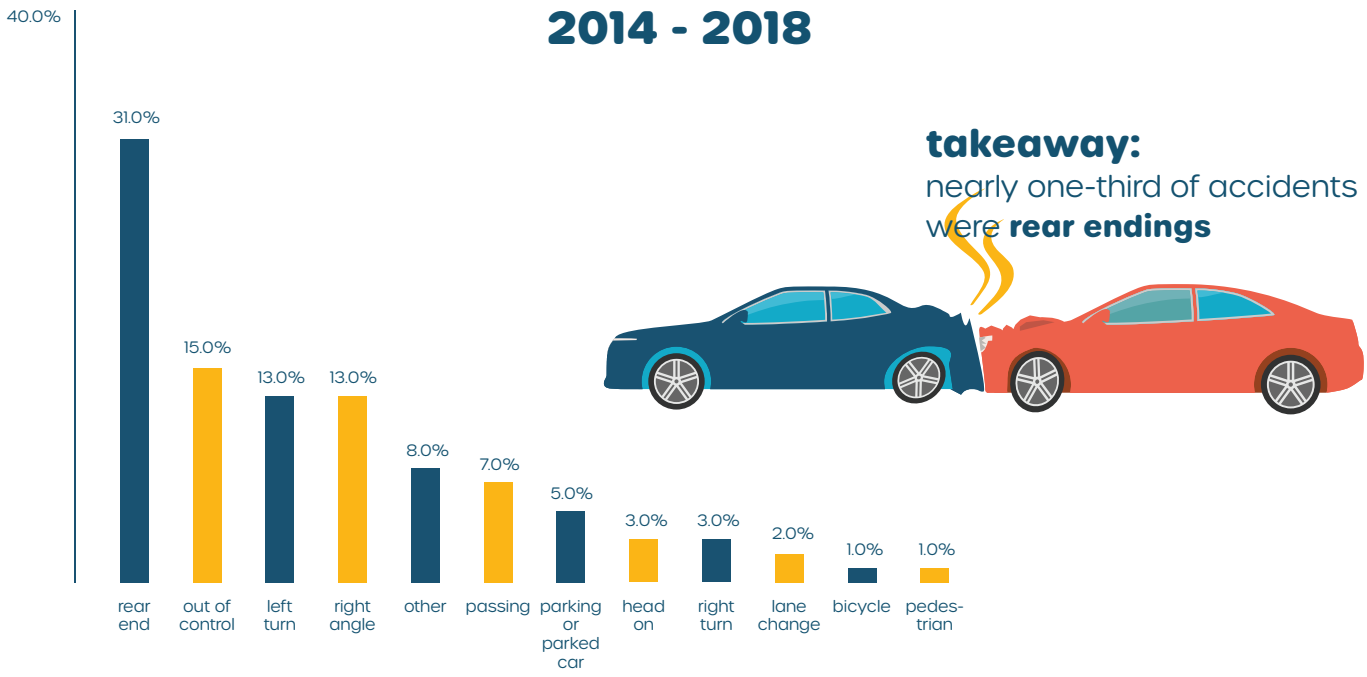
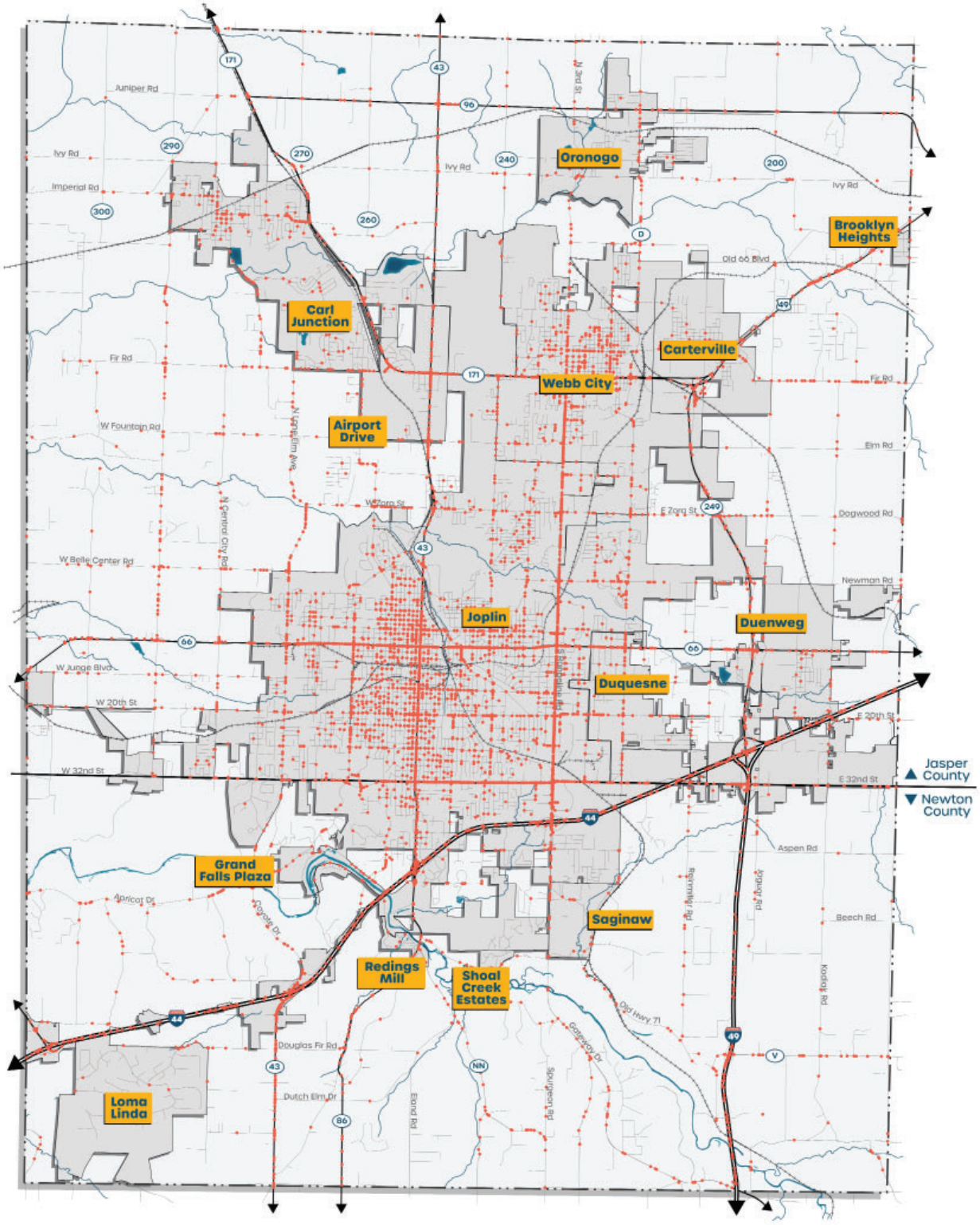


figure 2.5

crash data



Data Sources: City of Joplin, Harry S. Truman Coordinating Council, Missouri Department of Transportation, and Ochsner Hare & Hare, the Olsson Studio

freight mobility

Freight and trucking play a very important role within the JATSO region. Not only does it serve as an economic driver, it also is integral in the local, regional, and national distribution network. Currently, as illustrated on ***Figure 2.6***, there are very few designated truck routes in the JATSO region. They are concentrated within the City of Joplin along Route 66, Route 43/Main Street, South Rangeline Road, West 20th Street, and South Maiden Lane. Of note is the designated truck route on Route 43/Main Street, which serves as the primary roadway through downtown Joplin. A primary freight mobility issue is the connectivity between the industrial areas in north Joplin / Webb City and I-44 West. In the short term, Joplin has been working to develop the Zora Street and Schifferdecker Avenue corridors to accommodate this issue. Long-term, the proposed north-south corridor west of Joplin ("west bypass") would carry this traffic; however, this solution comes at a significant cost.

In addition to trucking, there is one intermodal facility, based in the City of Joplin, Standard Transportation Services, inc. They provide warehousing, brokerage, local or drayage, spotting, and long haul transportation services. Rail lines within the JATSO region are currently only used for freight; there is no passenger rail.

aviation & air cargo

The Joplin Regional Airport is a commercial service airport with scheduled air carrier service. Joplin is served by American Eagle with daily nonstop flights to and from Joplin, Chicago O'Hare, and Dallas Fort Worth. Exhibit 2.7 shows the difference in control tower operations, total passengers, and cargo between 2014 and 2019. The following summarizes 2014 to 2019 control tower operations, total passengers, and cargo.

Control Tower Operations (itinerant IFR, itinerant VFR, and local)

- 2014: 27,076
- 2019: 24,299
- Decreased 10.3 percent

American Eagle Total Passengers

- 2014: 57,509
- 2019: 98,856
- Increased 71.9 percent

Air Cargo (enplaned and deplaned)

- 2014: 2,146
- 2019: 1,042
- Decreased 51.4 percent

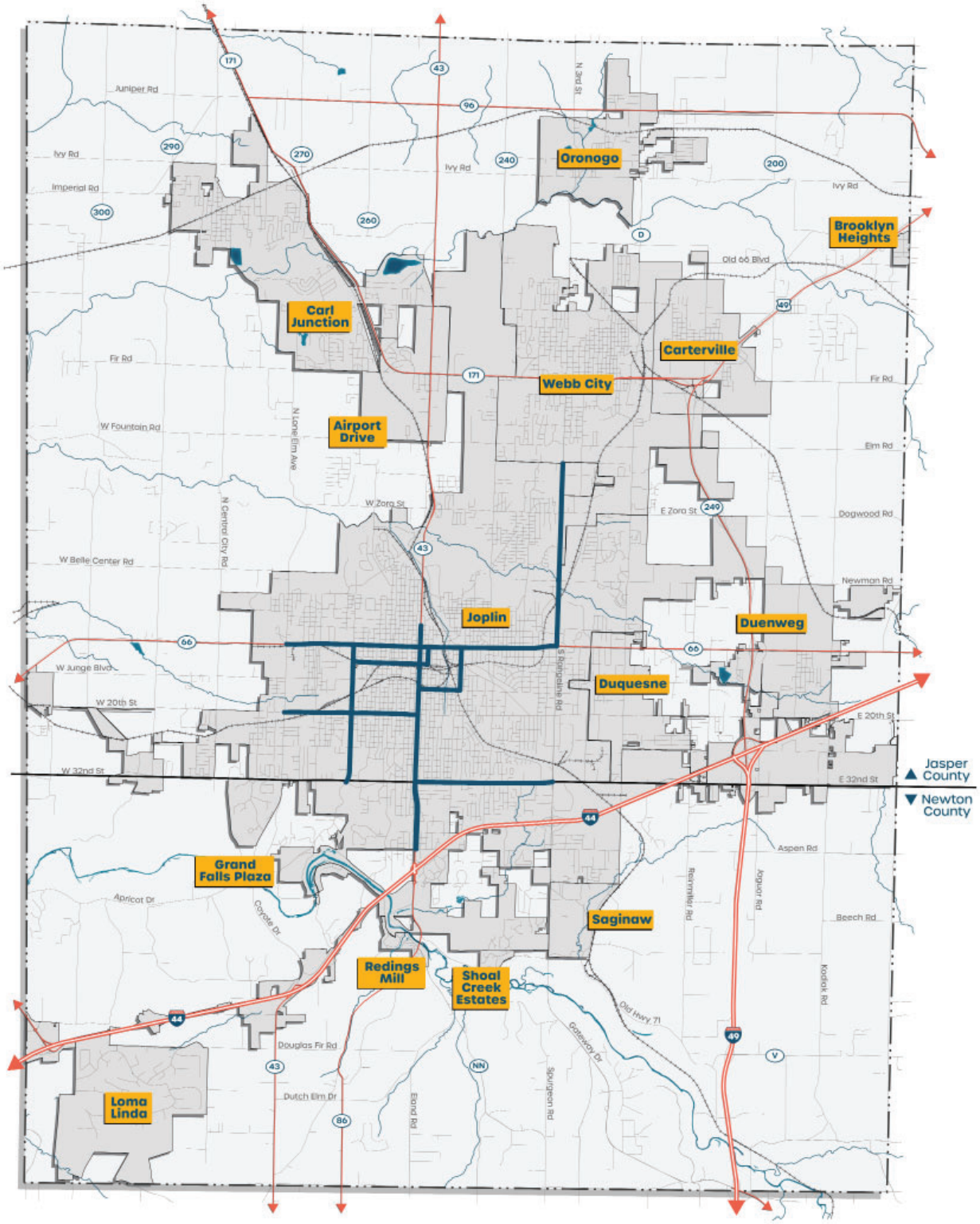
transit

The City of Joplin operates the Sunshine Lamp Trolley. Routes and stops are illustrated on ***Figure 2.7***. Currently, this transit service is only provided within the City of Joplin, primarily concentrated around the center of the city. The largest deficiency of the current system is on-time performance. Each route that the Sunshine Lamp Trolley operates is on a one-hour loop.

Other communities within the JATSO region do not operate a formal public transportation system; however, there is great interest, especially in Webb City, to extend the Sunshine Lamp Trolley's routes. On the horizon is to reevaluate routes and transition to eight, shorter routes that operate on 30-minute loops. Other transportation options do exist, including the Operating Above the Standard (OATS) Transit, which offers fixed and on-demand options to Carthage from Joplin, Webb City, and Alba, and to Joplin from Carthage, Reed, Avilla, Sarcoxie, and rural Joplin. One-way fares are available to other places on demand.

figure 2.6

designated truck routes



Plan / JATSO Boundary
Incorporated Area
Railroad
Designated Truck Route

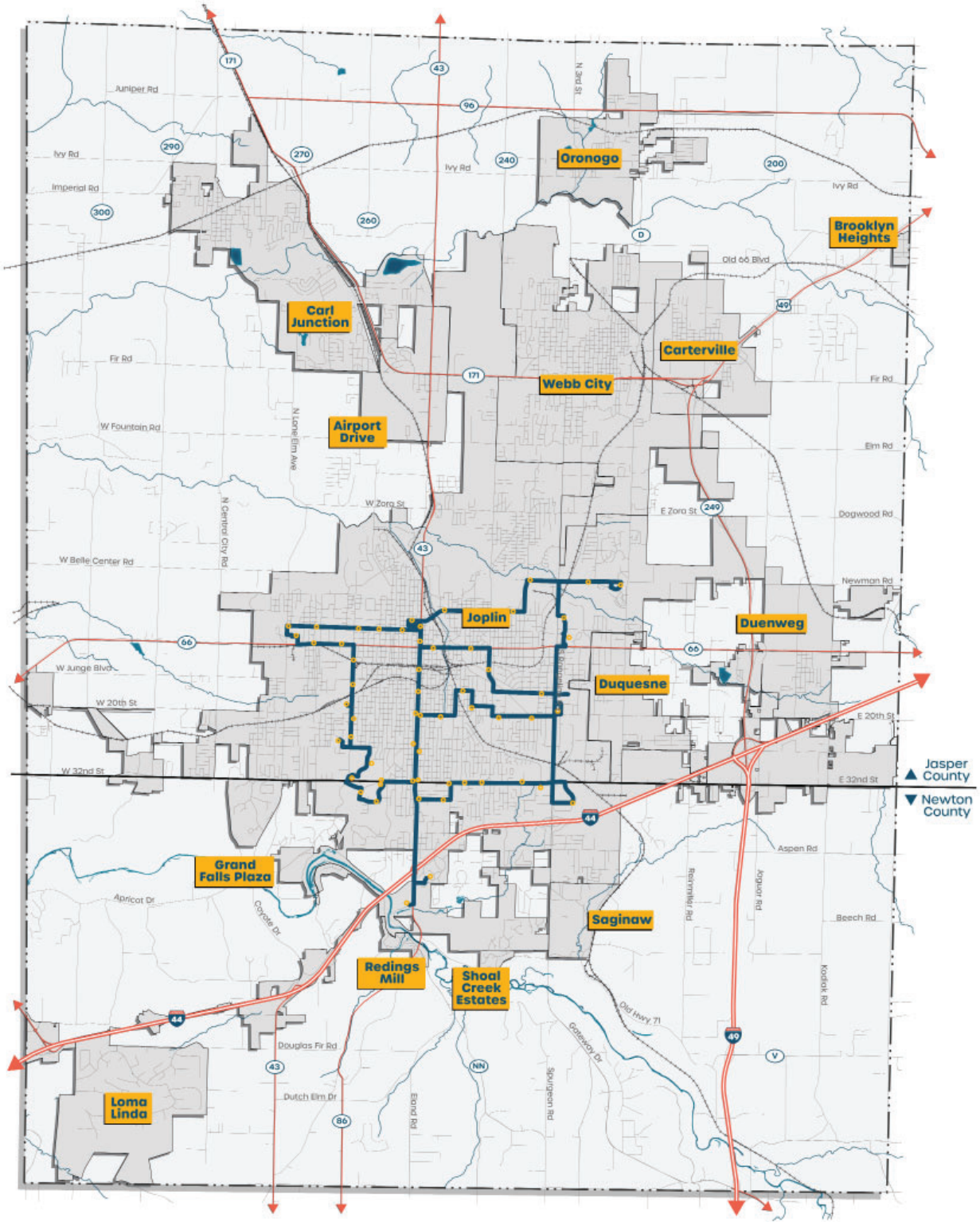
North

0′ 6,500′ 13,000′ 26,000′

Data Sources: City of Joplin, Harry S. Truman Coordinating Council, Missouri Department of Transportation, and Ochsner Hare & Hare, the Olsson Studio

figure 2.7

transit



Plan / JATSO Boundary
Incorporated Area
Railroad
Trolley Route
Trolley Stop

North

0′ 6,500′ 13,000′ 26,000′

Data Sources: City of Joplin, Harry S. Truman Coordinating Council, and Ochsner Hare & Hare, the Olsson Studio

bicycle & pedestrian network

Figure 2.8 illustrates the existing, proposed, and future network of bicycles lanes, sidewalks, and trails. Much of this network is within the City of Joplin; however, there are other trails in the JATSO region, including the Ruby Jack Trail which extends through Carl Junction, Oronogo, and Webb City. Existing bicycle lanes or trails represent infrastructure that currently exists, whereas proposed infrastructure represents what bicycle lanes or trails will be constructed. There are not currently any plans for the infrastructure designated as future; however, they are shown because these alignments could be constructed if funding becomes available. All park trails and shared use paths varying from six to 10 feet in width are shown on the figure (as differentiated from sidewalks which are less than six feet).

Within the City of Joplin, there is a well-connected sidewalk system in and around the downtown area; however, there is a lack of connectivity to surrounding neighborhoods and uses. Further, the bicycle lanes are not integrated, resulting in inconsistent linkages.

alternative transportation

Alternative transportation includes bicycles or electric/electric-assist bicycle sharing and e-scooter/motorized scooter sharing services. This is an emerging form of transportation that can provide everything from last mile service (I.e., gap filling measuring to get from a transit stop to a final destination) to pure recreation. Although alternative transportation modes have not yet arrived within the JATSO region, there is interest within the City of Joplin to work on a city ordinance that would allow them. Another consideration for these alternative transportation modes is that with trail connections between municipalities, there must be some coordination regarding potential bike sharing, as it is likely bikes would end up in other cities.

Within the City of Joplin, there is no guidance in the city's code of ordinances. Further, no private companies have yet approached the City of Joplin – or any other municipality – to provide them.

alternative transportation terms

Micromobility: refers to transportation systems operated through small, user-powered devices such as bicycles or scooters. The shared transportation devices can be used for a designated period of time and paid for electronically at a docking station or through a smartphone application. Micromobility offers solutions for short trips within an urban area.

Docked bike share: requires bikes to be picked up and parked at a designated station (dock)

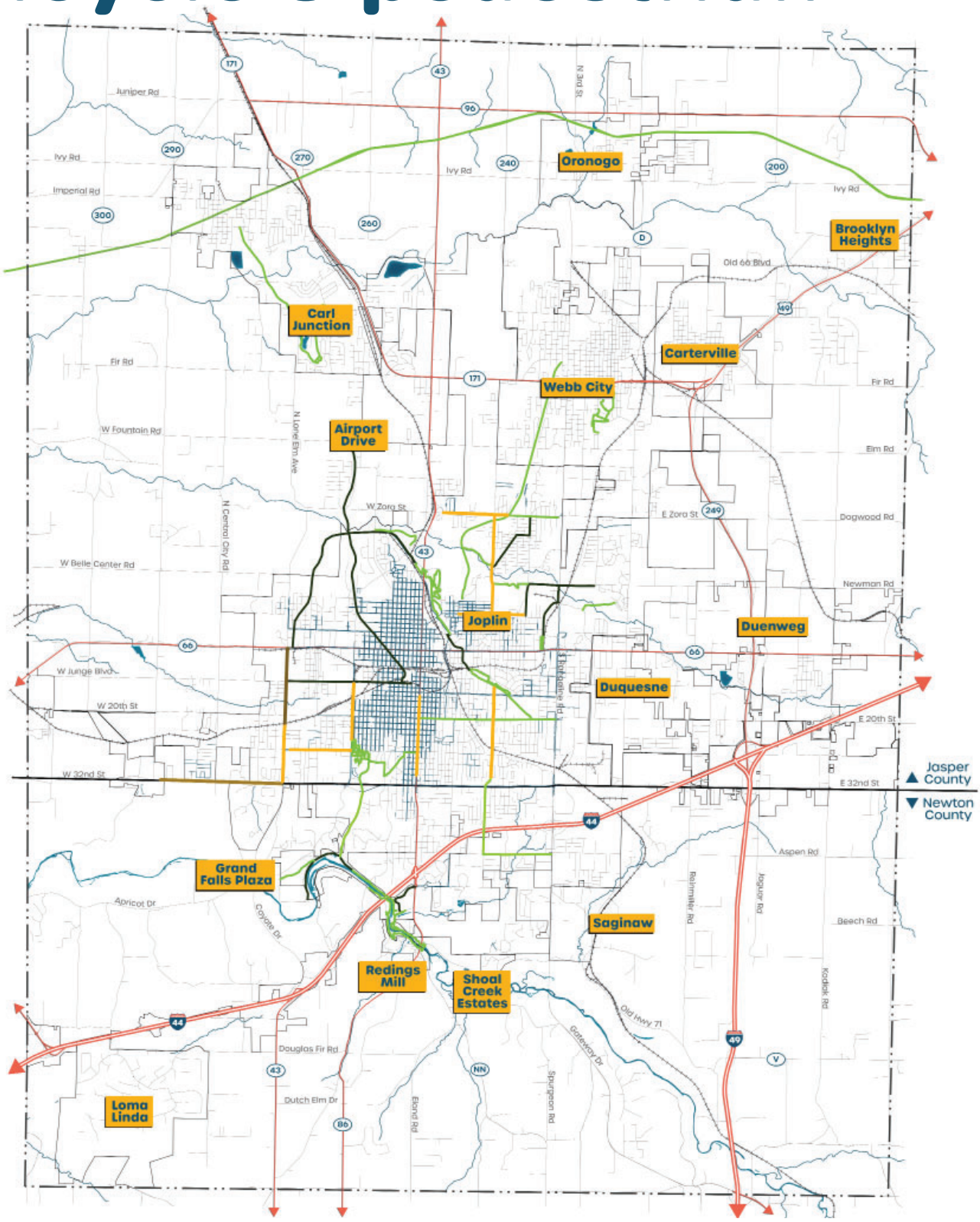
Dockless bike share: bikes that can be picked up and parked anywhere within a defined district, often paid for using a smartphone application

Electric / electric-assist bicycles: bicycles that use electricity to ease pedaling, making them easier to ride

E-scooter share: scooter sharing systems operate similar to dockless bike share systems, using motorized scooters that are located, unlocked, and paid for using a smartphone application

figure 2.8

bicycle & pedestrian



Plan / JATSO Boundary
Incorporated Area
Railroad
Existing Bicycle Lane
Proposed Bicycle Lane
Future Bicycle Lane
Existing Trail
Proposed Trail
Future Trail
Sidewalk

North

0′ 6,500′ 13,000′ 26,000′

Note: The difference between "proposed" and "future" is that there are plans currently in place to design/build the "proposed" category, whereas there are no current plans for the "future" category. All park trails and shared use paths that range from six to 10 feet wide are illustrated.

Data Sources: City of Joplin, Harry S. Truman Coordinating Council, Landworks Studio, and Ochsner Hare & Hare, the Olsson Studio

multimodal level of service (los)

The performance of the transportation network can vary based on the type of user. For instance, a facility with four lanes and no sidewalks may be perceived by drivers and passengers in automobiles as providing a high level of service (LOS), but will likely be perceived as providing poor LOS by a pedestrian. Other factors can impact LOS, such as the condition of sidewalks for pedestrians, width of bicycle lane for bicyclists, and on-time reliability of buses. A simplified LOS approach may be taken to provide high-level performance measures for regional planning purposes where data is available. Since some data is unavailable, such as bicycle counts on trails, the LOS is limited to the street network on functionally classified routes.

LOS results are provided in a range from LOS A, representing the highest performance level and most ideal conditions, to LOS F, representing the least ideal with inadequate facilities and, in the case of vehicular traffic, congestion. While what LOS is deemed acceptable is unique to each community, communities similar to the Joplin region often find LOS C to be their most desired condition. The LOS for each mode is presented below.

automobile LOS

The LOS for automobile users is based on roadway and traffic characteristics. In rural areas, the amount of time spent following other vehicles can influence perceived performance, whereas in urban settings, the delay due to traffic signals can influence a user's experience. The presence of certain features, such as the number of lanes, presence of a median(s), and turn lanes, can also impact LOS by increasing traffic capacity. Regardless, the number of other vehicles on the facility also impacts LOS. ***Figure 2.10*** represents the LOS experienced by those driving automobiles.

bicycle LOS

Bicycles are used for a variety of trip types. When an off-street option is available (such as a separated bicycle path), that is likely what bicylists will choose, particularly for recreational purposes. For others, particularly those who do not have a personal automobile or accessible public transit, bicycling on street may be the only option. Where vehicular traffic is light, bicyclists may feel comfortable traveling on-street; conversely, bicyclists may prefer a separate lane where traffic is heavy. ***Figure 2.11*** is based on the presence of bicycle lanes and automobile traffic. Note that on ***Figure 2.11***, the LOS shown represents on-street bicycle users only. Off-street trails are shown for informational purposes only.

pedestrian LOS

Analyzing the pedestrian experience can be summarized by two primary types of analysis, numbered below. Figure 2.12 illustrates pedestrian LOS based on these types of analysis. The first is individual delay, which is a quantitative metric that can measure delay at intersections. The second is facility attribute, which is a qualitative metric that describes the overall walking experience. Factors that influence this can be items such as lighting, security and sidewalk condition. Automobile traffic volumes also influence a pedestrian's perception of LOS. ***Figure 2.12*** illustrates pedestrian LOS based on these types of analysis.

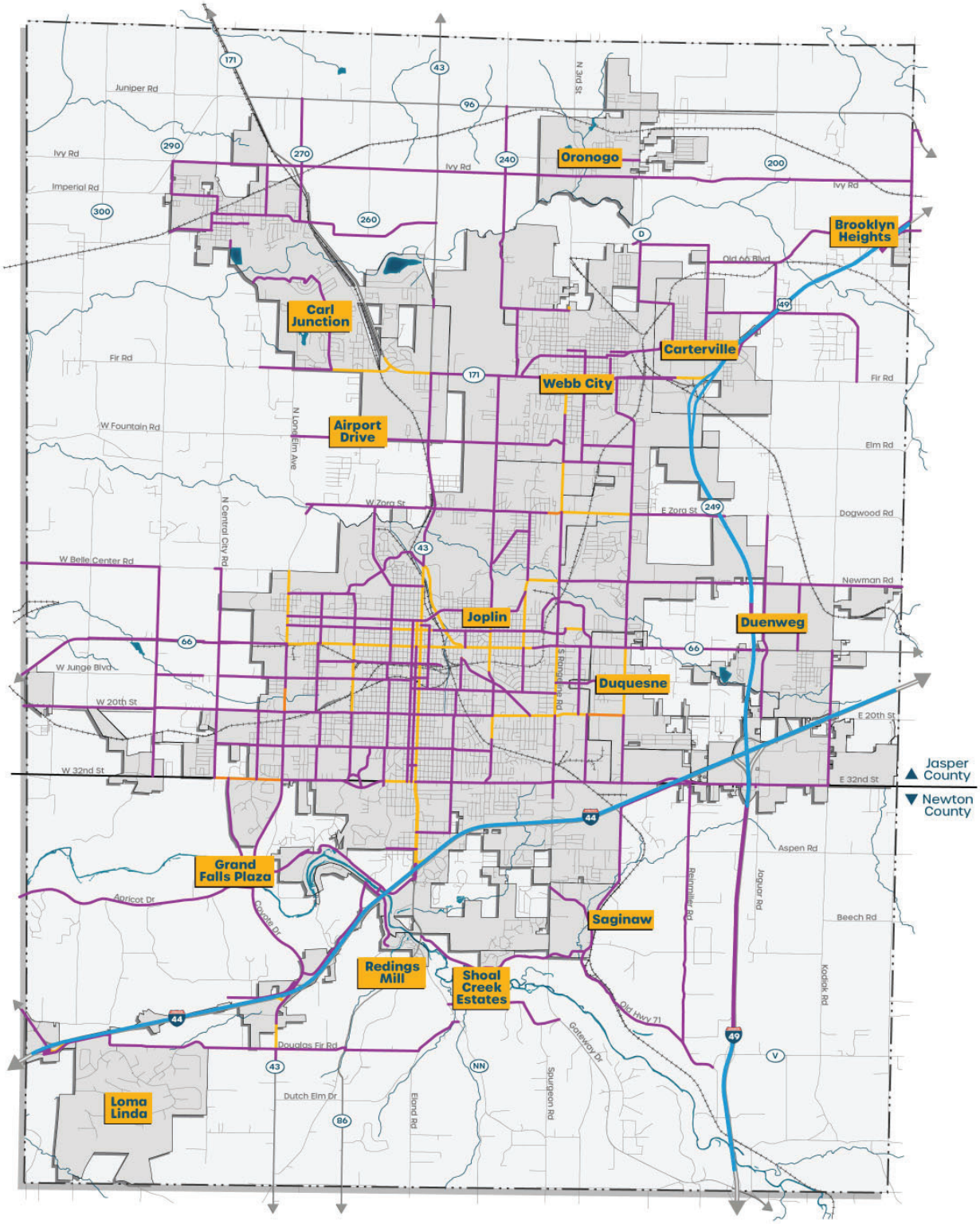
transit LOS

Transit riders can be grouped into two primary categories: choice and captive users. Choice transit riders typically have other means of transportation readily available, but choose transit to, for instance, avoid congestion or save money on gas. Captive riders do not have the option to drive sometimes due to physical or economical constraints, and therefore depend on transit for daily transportation needs. Unlike other modes, transit is primarily focused on service rather than facility characteristics. Service frequency is thus an important factor. Further, because transit riders typically must walk to and from transit stops, sidewalks impact the trip experience.

For these reasons, the number of buses per hour and sidewalk coverage are used to determine LOS, which is shown on ***Figure 2.13***. Note that on ***Figure 2.13***, the LOS shown represents Sunshine Lamp Trolley routes. The frequency of these routes are approximately one hour, resulting in LOS E where sidewalks are present, and LOS F where sidewalks are not present.

figure 2.10

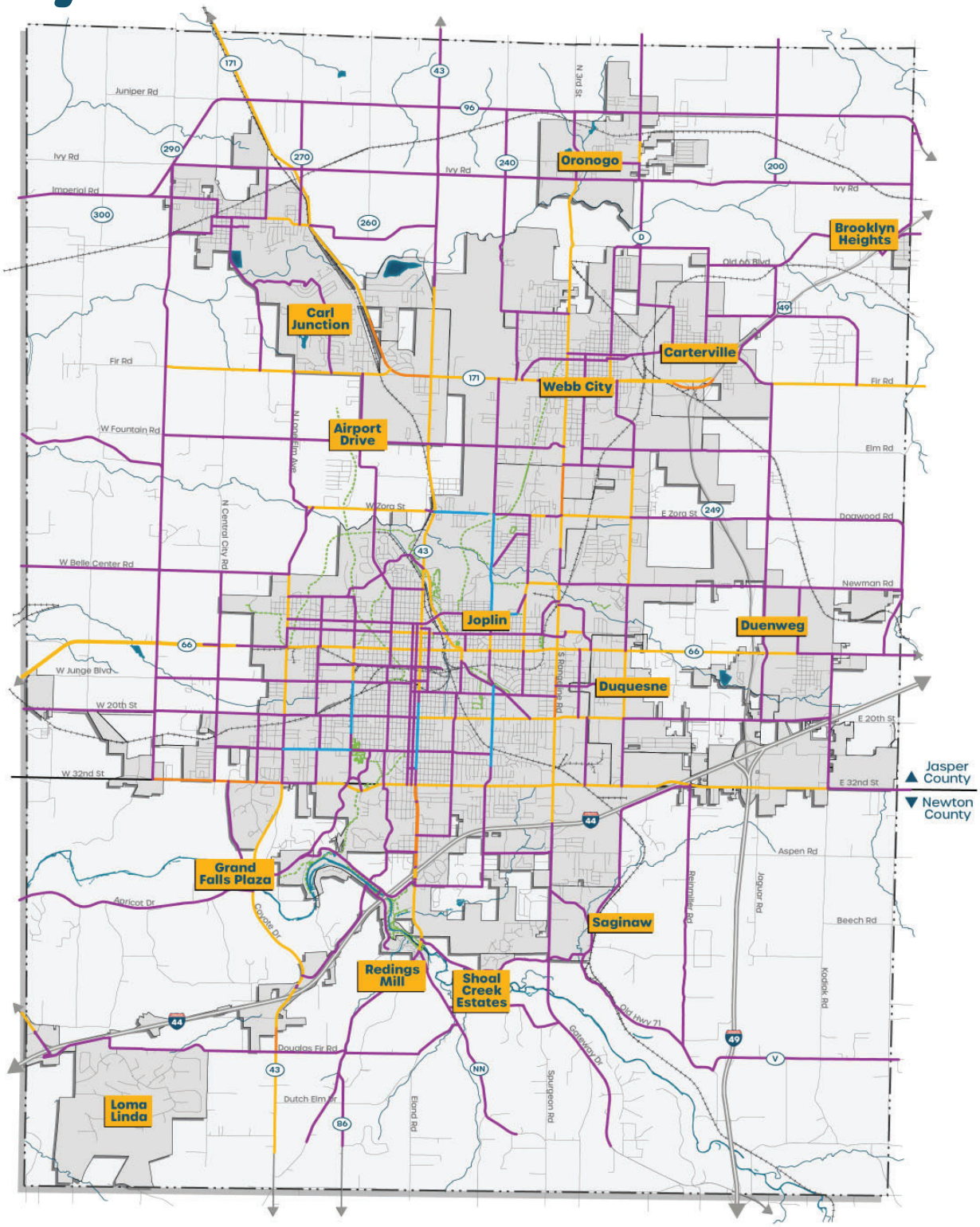
automobile LOS



Data Sources: City of Joplin, Harry S. Truman Coordinating Council, and Ochsner Hare & Hare, the Olsson Studio

figure 2.11

bicycle LOS



Plan / JATSO Boundary
Incorporated Area
LOS A
LOS B
LOS C
LOS D
LOS E
LOS F
Trail

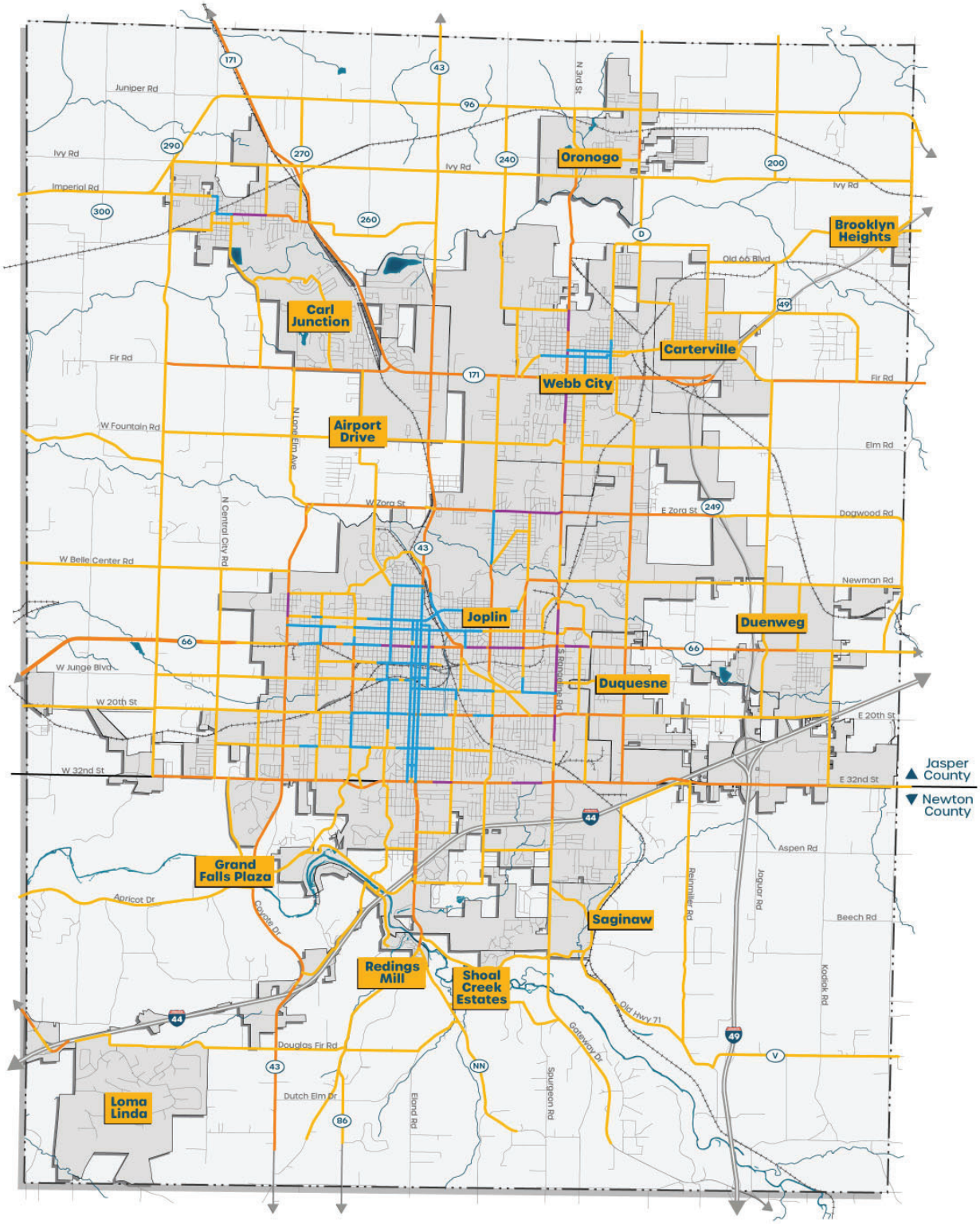
North

0′ 6,500′ 13,000′ 26,000′

Data Sources: City of Joplin, Harry S. Truman Coordinating Council, and Ochsner Hare & Hare, the Olsson Studio
Note: LOS shown represents on-street bicycle users only. Off-street trails are shown for informational purposes only.

figure 2.12

sidewalk LOS



Plan / JATSO Boundary
Incorporated Area
LOS A
LOS B
LOS C
LOS D
LOS E
LOS F

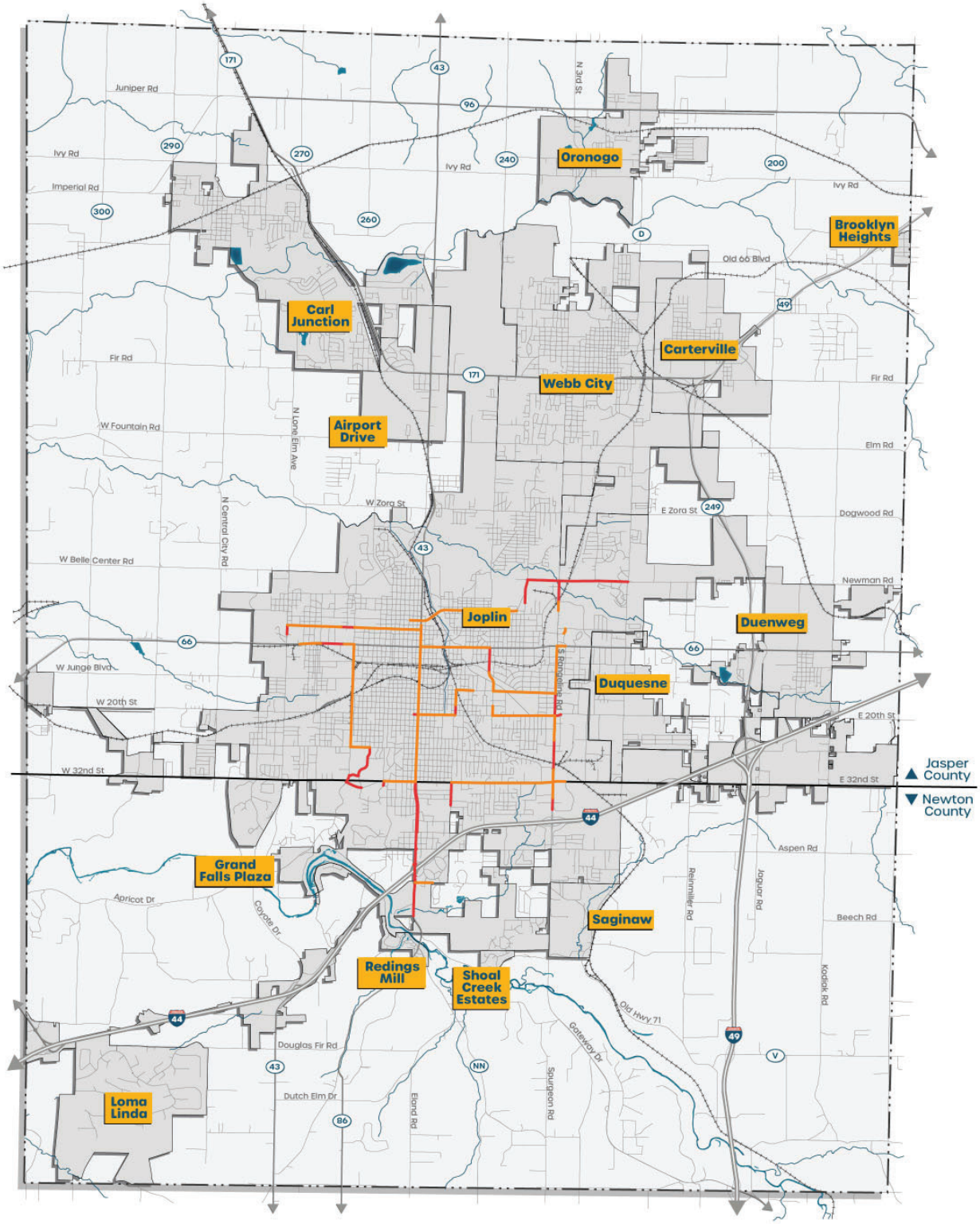
North

0′ 6,500′ 13,000′ 26,000′

Data Sources: City of Joplin, Harry S. Truman Coordinating Council, and Ochsner Hare & Hare, the Olsson Studio

figure 2.13

transit LOS



Plan / JATSO Boundary
Incorporated Area
LOS A
LOS B
LOS C
LOS D
LOS E
LOS F

North

0′ 6,500′ 13,000′ 26,000′

Data Sources: City of Joplin, Harry S. Truman Coordinating Council, and Ochsner Hare & Hare, the Olsson Studio

Note: LOS shown represents Sunshine Lamp Trolley routes. The frequency of these routes are approximately one hour, resulting in LOS E where sidewalks are present, and LOS F where sidewalks are not present.

street typologies

Street typologies are developed by overlaying roadway classifications with the context of the built environment, understanding that how a road functions is dependent on both its overall classification (arterial, collector, local, etc.) combined with the surrounding environment (rural, suburban, town center, or industrial). ***Table 2.1*** helps to explain the relationship between roadway classification and the built environment, indicating typical speeds, number of travel lanes, the presence of shoulder or curb and gutter section (curbed), drainage, parking, and pedestrian and bicycle facilities. ***Figure 2.14*** illustrates approximate street typologies within the MPA.

Table 2.1

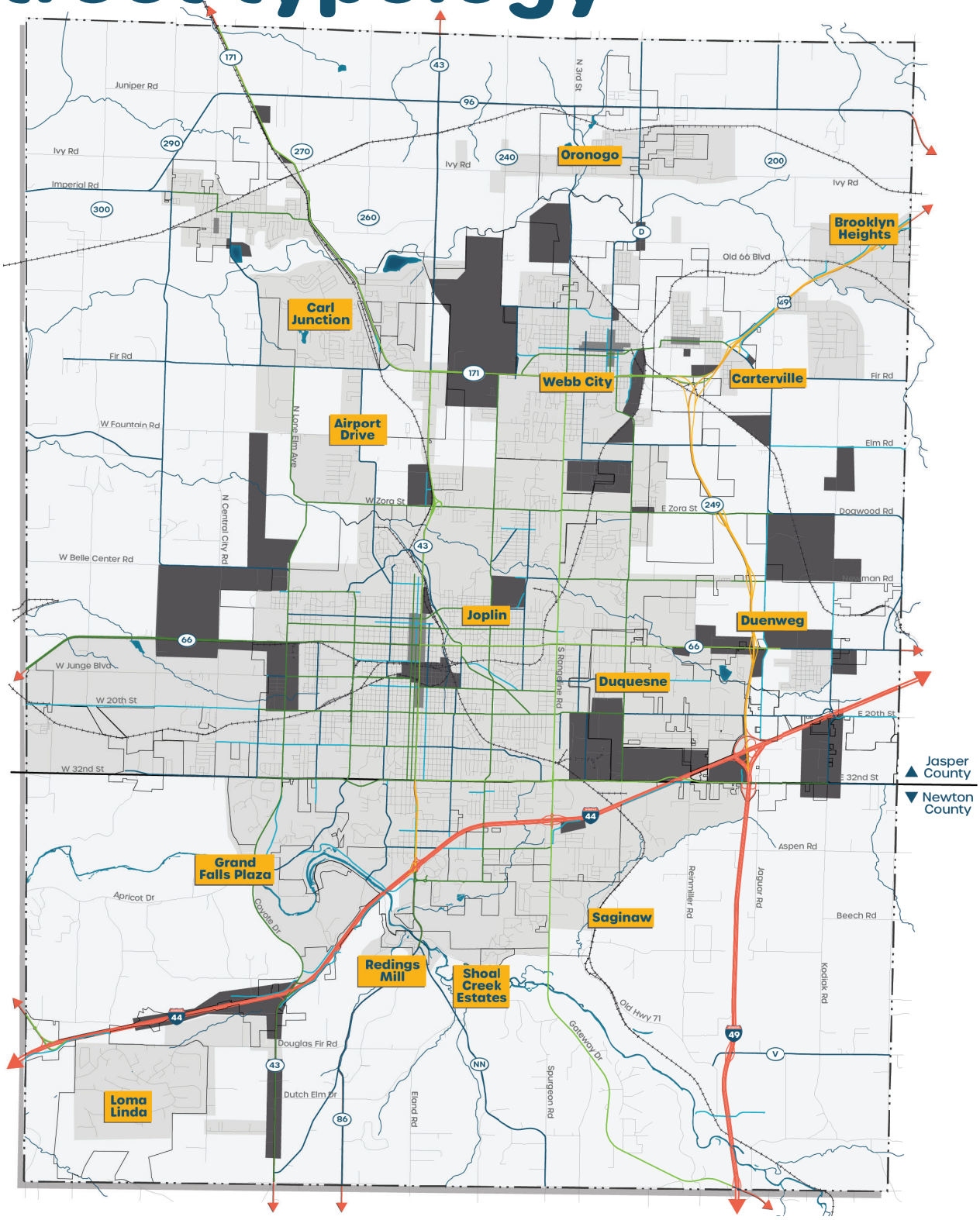
Examples of Street Typologies

Roadway Classification	Built Environment: Rural	Suburban	Industrial	Town Center
Arterial	**Speeds:** 55 mph (or more) **Lanes:** 2 **Shoulders:** Desired **Drainage**: Open **Parking:** None **Sidewalks:** None **Bicycle Lanes:** Shoulders	**Speeds:** 35-45 mph **Lanes:** 3-5 **Shoulders:** Curbed **Drainage**: Closed **Parking:** Off-street **Sidewalks:** Buffered **Bicycle Lanes:** Varies	**Speeds:** 30-45 mph **Lanes:** 4-5 **Shoulders:** Both **Drainage**: Open or closed **Parking:** Off-street desired **Sidewalks:** Buffered **Bicycle Lanes:** Off-street or buffered only	**Speeds:** 25-35 mph **Lanes:** 3-5 **Shoulders:** Curbed **Drainage**: Closed **Parking:** On-street **Sidewalks:** Minimal, if any; buffers **Bicycle Lanes:** Varies
Collector	**Speeds:** 45 mph (or more) **Lanes:** 2 **Shoulders:** None **Drainage**: Open **Parking:** None **Sidewalks:** None **Bicycle Lanes:** Shoulders	**Speeds:** 30-40 mph **Lanes:** 2-3 **Shoulders:** Curbed **Drainage**: Closed **Parking:** Off-street **Sidewalks:** Buffered **Bicycle Lanes:** Shared or on-street	**Speeds:** 30-40 mph **Lanes:** 2-4 **Shoulders:** Both **Drainage**: Open or closed **Parking:** Off-street desired **Sidewalks:** Buffered **Bicycle Lanes:** Varies	**Speeds:** 25-30 mph **Lanes:** 2 **Shoulders:** Curbed **Drainage**: Closed **Parking:** On-street **Sidewalks:** Minimal, if any; buffers **Bicycle Lanes:** Varies
Local	**Speeds:** 30-40 mph **Lanes:** 2 **Shoulders:** Desired **Drainage**: Open **Parking:** None **Sidewalks:** None **Bicycle Lanes:** Shoulders	**Speeds:** 25-30 mph **Lanes:** 2 **Shoulders:** Curbed **Drainage**: Closed **Parking:** Off-street **Sidewalks:** Buffered **Bicycle Lanes:** Shared lanes	**Speeds:** 25-35 mph **Lanes:** 2 **Shoulders:** Both **Drainage**: Open or closed **Parking:** Off-street desired **Sidewalks:** Buffered **Bicycle Lanes:** Shared lanes	**Speeds:** 25-30 mph **Lanes:** 2 **Shoulders:** Curbed **Drainage**: Closed **Parking:** On-street **Sidewalks:** Minimal, if any; buffers **Bicycle Lanes:** Varies

Note: open drainage refers to ditches; closed drainage ditches refers to storm sewers in buried pipes
mph: miles per hour

figure 2.14

street typology



Plan / JATSO Boundary
Incorporated Area
Railroad

functional classification
Interstate
Freeway
Principal Arterial
Minor Arterial
Major Collector
Local

land use type
Rural
Suburban
Town Center
Industrial

North

0′ 6,500′ 13,000′ 26,000′

Data Sources: City of Joplin, Harry S. Truman Coordinating Council, Missouri Department of Transportation, and Ochsner Hare & Hare, the Olsson Studio

section 3

outreach & public engagement

Fruitful and meaningful community engagement lies at the heart of every successful planning effort. The conversation between those that have a technical and an objective understanding of a place and those with on-the-ground knowledge should be ongoing throughout a planning process. The engagement process must be collaborative, personal, and involve much listening by both parties. In the end, a solid plan is developed with the community, and not just for it.

This Plan was developed with two core groups of stakeholders – the Citizen Advisory Group (CAG) and Technical Advisory Group (TAG) – and members of the general public. Through a series of community meetings, online outreach, open houses, and focus groups, committee members, community members, and JATSO staff members informed the thoughts, ideas, and comments that became the recommendations of this document.

This section summarizes the engagement process and its outcomes. A full recording of all comments received is available in *Appendix A - Engagement*.



outreach & marketing

This MTP update intended to utilize a balance of in person and online engagement to ensure all communities and residents felt there were ample ways to engage with the plan. However, due to COVID-19 and the restrictions on in-person gatherings, all engagement efforts were conducted virtually. The following section explains the methods used to inform people of the MTP update process and the various ways in which they could get involved to ensure feedback was not limited due to the online nature.

jatso webpage & social media

Multiple outlets were used to inform the community of the many opportunities to be involved in this planning process. Information about the project, events, and documents to review were posted on both the JATSO's webpage and their Facebook page. These online arenas allowed anyone to get the most up-to-date information about the MTP. These sites were also used as ways for stakeholders to get information and then share it with their networks. Lastly, once the public open house #1 website was created, the language on it was modified for the duration of the project such that it was always a source of information if members of the public visited it.

outreach e-blasts

All stakeholders and members of the public who participated in meetings or events were added to an ever-evolving outreach list. This outreach list compiled email addresses of people who indicated they were interested in the MTP update and wanted to be kept up to date on events and documents to review. Throughout the duration of the planning process, this outreach list continually grew to expand the number of people who were informed about it.

Further, this group that receive emails with information (e-blasts) were asked to forward the messages on to their own networks of co-workers, family members, friends, and neighbors. This resulted in an organic, community-wide reach to educate members of the public about the MTP update.

engagement opportunities

The webpage, social media, and e-blasts were used to inform the public and stakeholders of the opportunity to participate in the process, whereas the engagement opportunities represent the actual events that took place where comment would be provided, dialogue was facilitated, and people recieved live updates on what was going on with the plan. Despite the need to transition all events to a virtual format, participation was fantastic. The following subsections explain the engagement opportunities, who participated, and the purpose of the gathering.

cag & tag

Two committees were formed to guide the MTP update and to serve as sounding boards. Three meetings were held with each group, spaced throughout the duration of the planning process. The purpose of each group is defined as follows:

1. **Citizen Advisory Group (CAG)**: The purpose of this group was to provide citizen perspectives, concerns, ideas, and preferences, and consist of general members of the public. By identifying a diverse cross section of the planning area, the CAG helps represent the issues felt by community members at-large.
2. **Technical Advisory Group (TAG)**: This group provided oversight regarding specific transportation standards and concerns, and its membership consisted of technical and subject matter experts. The TAG also aided in the determination of the project goals, objectives, and primary decision-making process to ensure federal, state, and local compliance.

community meetings

An important message during this process was that the communities within the MPA did not feel that Joplin was the only community being listened to or given priority. As such, individual community meetings were held with Joplin, Webb City, and Carl Junction to understand each community's individual transportation issues. Harry S. Truman Coordinating Council staff members were involved in other stakeholder meetings to ensure their issues were recorded.

Although themes emerged that impact all communities within the MPA, each community had specific concerns that indicated the need for a tailored approach, in addition to overarching strategies. One meeting with each community was conducted.

focus groups

Deep dives into several topic areas, including economic development, public safety, transit, and aviation were conducted. These focus groups created a better understanding of specific transportation issues as they relate to the current and future business environment, police and fire rescue services, public transit accessibility, and aviation.

fhwa meetings

Two meetings were held with the Federal Highway Administration (FHWA) to discuss process, deliverables, and preferences on the MTP Update.

engagement by the numbers

3 **cag**
meetings to better understand citizen perspectives and concerns

3 **tag**
meetings to receive a technical understanding of challenges and opportunities within the transportation system

4 **focus groups**
opportunities to dive deep into specific topics, including economic development, public safety, transit, and aviation

4 **community meetings**
explored issues unique to each area within the MPA, including Joplin, Webb City, Carl Junction, and the Harry S. Truman Coordination Council

public open house #1

289
unique website visitors

262
comments on posters

online public open houses

During the planning process, two public open houses were held:

1. **Public Open House #1:** focus on existing conditions, constraints, and opportunities
2. **Public Open House #2:** presentation of the draft MTP with recommendations for the future of all transportation modes

The public open houses inform the public about the project's overall goals and objectives, assess how project values align with community values, present current conditions, and invite discussion of transportation opportunities and needs. Being fully virtual events, the public open houses featured fully formatted and branded websites, alongside an opportunity to comment on posters in the same manner as an in person setting. By engaging the entire public at these events, community investment in the outcomes occurs and provides champion of the Plan across the entire MPA.

public open house #1

For public open house #1, the website - JatsoOpenHouse.com - featured all information that had been gathered-to-date, including:

- An explanation of what a MTP update is and what modes of transportation are considered;
- The geographic area the project considers;
- Where in the six-step process the project is currently at;
- The vision and the goals;
- Quick facts about demographics and the transportation system; and,
- Information on next steps as well as how to stay engaged in the planning process.

Further, instructions for how to use the website and online comment posting site and a video message from the JATSO project manager were included to ensure all participants felt comfortable and welcome in the online setting. An opportunity to receive a hard copy in the mail or by visiting the city halls of Joplin, Webb City, or Carl Junction, was made available. Open house website imagery and select posters are shown below for additional context.

The following page offers a visual representation of public open house #1 with select images that show the website and posters.

public open house #1 posters

An interactive online commenting software called Konveio was used to display posters for public open house #1. Konveio allows any member of the public to provide input and creates a forum for community members to have dialogue by replying to or simply reviewing one another's comments. The following provides a list of every poster available for comment.

Poster #1 : The very first poster welcomed everyone and asked them to post a comment on the map where they live.

Posters #2 through #8: This series of posters included all existing conditions maps that relate to the auto-oriented transportation system, including traffic counts, speed limits, crash data, truck routes, functional classification, and number of travel lanes.

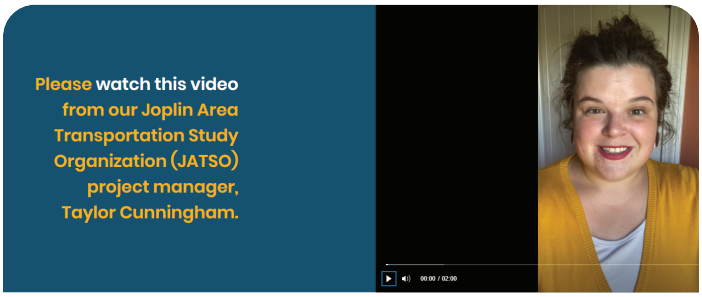
Posters #9 through #12 : This series of posters included all existing conditions maps that relate to the pedestrian-oriented transportation system, including the bicycle and pedestrian network, as well as the Sunshine Lamp Trolley routes and stops.

Posters #13 through 18: This series of posters summarized all comments received from the stakeholder meetings conducted in June 2020. All questions asked of stakeholders were also asked of the public, including: what the critical issues are to address, how future projects should be priortized, how community members use non-vehicular transportation (walking, bicycling, transit), what challenges exist, and how work from home influenced transportation patterns.

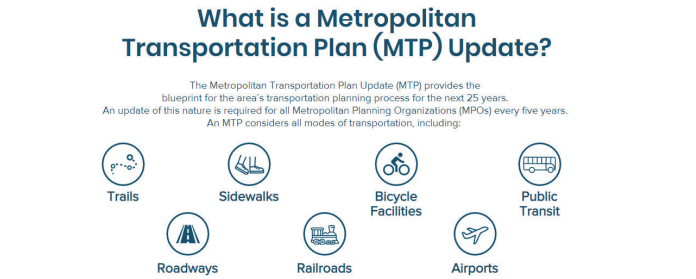
Poster #19: The final poster asked one simple question, "what did we miss?" This poster provided a final opportunity for members of the public to voice concerns or thoughts on any topics left.



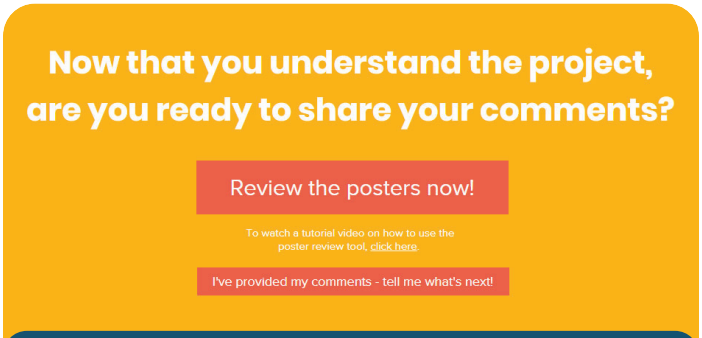
Website / home page



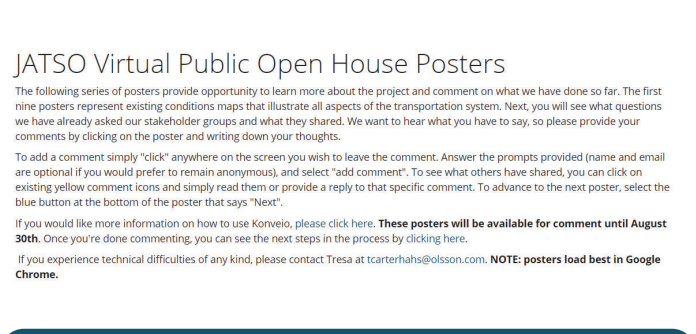
Video greeting from JATSO project manager



Overview of the MTP & focus areas



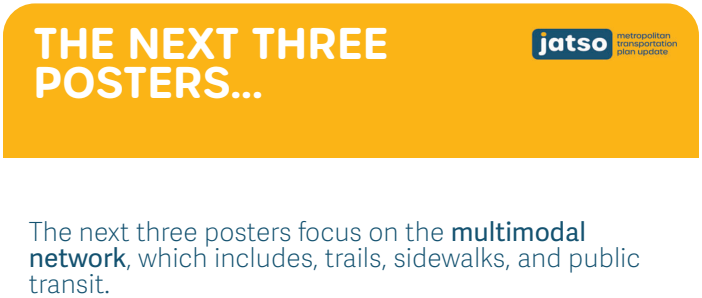
Opportunity to provide comment on the plan



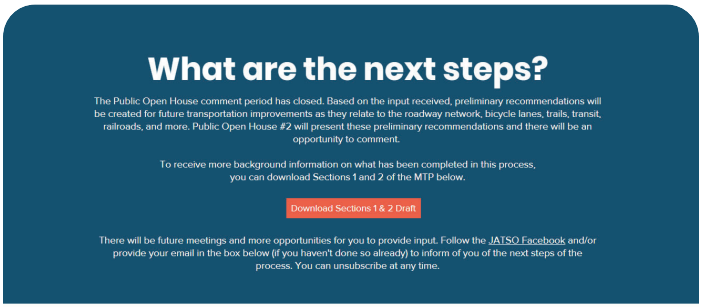
Online, interactive poster commenting



Real-time comments from all participants



Instructions to facilitate the online setting



Participants were informed of the plan's next steps

public open house #2

The second public open house was available online at JatsoOpenHouse.com from November 18, 2020 to December 6, 2020. This event provided a recap of what was heard from the first public open house and then focused on the recommendations for the Plan, including:

- The level of service (LOS) analysis and the implications that has on the different modes of transportation
- The proposed bicycle and pedestrian network, including new linkages for trails and sidewalks.
- The proposed transit system, including routing and stop changes, as well as a new transfer facility
- The proposed roadway system, which incorporated maintenance projects and recommendations for capacity improvements

A total of 51 comments were received during the online event. Most of the comments centered around the bicycle and pedestrian improvements. Many comments noted that the LOS analysis indicated a much needed focus for low-income areas of the MPO to ensure proper linkages and access be provided from these neighborhoods to destinations and employment centers.

public open house #2 posters

Same as the first open house, Konveio was used to display the posters. This allowed anyone to provide comment on the new posters that illustrated proposed improvements for the future. The following provides a list of every poster available for comment.

Poster #1 : The first poster provided a recap of public open house #1, summarizing all comments received by category.

Posters #2 through #7: This series of posters explained what the LOS analysis meant for each mode of transportation and then provided a map for each mode or facility, including: vehicular, bicycles, sidewalks, and transit.

Posters #8 and #9 : These two posters explained the proposed bicycle and pedestrian network, which focused on bicycle lanes, as well as road diet candidates.

Posters #10 through #13: This series of posters explained the proposed transit system and then illustrates the short-, mid-, and long-term recommendations, including routing changes, stop additions and removals, and a new transit facility.

Poster #14 through #18: These posters concentrated on the proposed roadway network. These improvements look ahead to 2045 and used models to determine the needs of the MPO, including both maintenance and new facilities projects.

Poster #19: The final poster asked one simple question, "what did we miss?" This poster was also included in public open house #1 because it's critical to make sure no stones have been left unturned.

section 4

goals, objectives, & performance measures

To achieve the previously defined goals in support of the 2045 vision, specific objectives and performance measures must be established and defined. While goals provide an overarching statement that creates a guiding vision, objectives drill down to more actionable activities to achieve a goal. Performance measures then provide a quantifiable and transparent approach to evaluate the transportation system. Each performance measure relates to the MTP's, MoDOT's, and USDOT's goals. A system performance report is also included in compliance with federal regulations (23 CFR 450.324 & 49 CFR 613.100).

The goals and objectives outlined in this section were created alongside a variety of stakeholders, including economic development representatives, aviation and transit officials, MoDOT, members of the CAG and TAG, public health and safety officials, school districts, and all communities within the MPA. The inclusion of these stakeholders in the development of the goals and objectives ensured a balanced and equitable approach.



goals & objectives

The following text outlines goals (as previously defined in ***Section 1***) and their accompanying objectives.

goal #1 Improve safety in all modes of transportation as it concerns the movement of people and goods.

Objective 1.1	Support the MoDOT Show Me Zero safety plan and related efforts.
Objective 1.2	Prioritize projects that support state, regional, and local roadway safety plans as available.
Objective 1.3	Support the coordination of safety education programs for bicyclists, pedestrians, and motorists.

goal #2 View existing transportation deficiencies as opportunities for future system enhancement.

Objective 2.1	Educate the public and stakeholders regarding the regional transportation needs and funding opportunities.
Objective 2.2	Support efforts to provide transparent performance measures, tracking, and target setting using updated website.

goal #3 Facilitate a transportation system that serves all users – including those traditionally under served and underrepresented in the planning process.

Objective 3.1	Support projects, programs, and policies of inclusion to foster public trust and increase participation in the regional transportation planning process.
Objective 3.2	Follow and implement JATSO's public involvement plan.
Objective 3.2	Actively and continuously reach out to the public through non-traditional means.

goal #4 Align the transportation system with existing & future land use patterns.

Objective 4.1	Prioritize multimodal transportation investments in an equitable manner that support sustainable regional growth.
Objective 4.2	Collaborate with stakeholders to pursue transportation funding initiatives.

goal #5 Enhance local & regional economic vitality by supporting the unique needs of freight systems.

Objective 5.1	Support the Missouri State Freight Plan and related efforts to promote and maintain the region's economic competitiveness.
Objective 5.2	Maintain and improve the regional freight network infrastructure by supporting freight related grants.

goal #6 Encourage public transportation that is practical & serves users in a timely & efficient manner.

Objective 6.1 Support the implementation of the Joplin Transit System Analysis recommendations.

Objective 6.2 Continue to obtain funding for improved transit services.

goal #7 Expand the connectivity of active transportation options, including bicycle & pedestrian infrastructure, & encourage linkages to activity centers.

Objective 7.1 Develop an action plan to implement active transportation recommendations.

Objective 7.2 Support programs and policies that encourage healthy active transportation.

Objective 7.3 Actively seek funding opportunities to implement bicycle and pedestrian infrastructure.

Objective 7.4 Prioritize projects that connect modes and fill gaps within the active transportation network.

goal #8 Plan for future transportation trends & new technologies & their impact on how people & goods move around, such as shared mobility, micro transit, & connected/automated vehicles (CAVs).

Objective 8.1 Improve and maintain traffic signal systems with updated communication protocols and technologies.

Objective 8.2 Identify and support strategic partnerships and collaborative efforts at local, regional, and state level.

goal #9 Consider the environmental, social, & financial implications of the recommendations to maintain the MTP's relevance & sustainability.

Objective 9.1 Actively engage the public and stakeholders to be a part of the planning process using social media and online tools, as well as traditional methods.

Objective 9.2 Leverage tools and technology to effectively communicate the value of JATSO and the regional transportation planning process.

performance measures

To guide decision making and comply with federal transportation legislation (FAST Act), performance measures were established around the nine goals identified in this MTP. **Table 4.1** provides these performance measures and shows how they align with not only the JATSO goals, but also MoDOT and USDOT goals. The performance measures include those that are federally required, in addition to other measures specific to achieve the JATSO goals identified in this MTP. These non-federally required measures will be tracked by JATSO over time during the lifetime of this MTP. By doing so, JATSO will be able to ensure that investments in the transportation system are moving the region toward achieving its goals.

Table 4.1

Performance Measures

	Which goals do the performance measures address?		
Performance Measures	**JATSO MTP Goals**	**MoDOT Goals**	**USDOT Goals**
Five year rolling averages for: • Number of fatalities • Rate of fatalities • Number of serious injuries • Rate of serious injuries • Number of non-motorized fatalities and serious injuries	**Goal #1:** Improve safety in all modes of transportation as it concerns the movement of people and goods	Keep all travelers safe, no matter the mode of transportation	**Safety and Security:** To achieve a significant reduction in traffic fatalities and serious injuries on all public roads
• Number of participants in planning process • Percent of projects in environmental justice areas • Percent of polled residents aware of JATSO	**Goal #2:** View existing transportation deficiencies as opportunities for future system enhancement **Goal #3:** Facilitate a transportation system that serves all users – including those traditionally under served and underrepresented in the planning process **Goal #9:** Consider the environmental, social, and financial implications of the recommendations to maintain the MTP's relevance and sustainability	Take care of the transportation system and services we enjoy today	**Environmental Sustainability:** To enhance the performance of the transportation system while protecting and enhancing the natural environment
• Annual Sunshine Lamp Trolley transit boardings • Percent of housing units within quarter mile of a transit stop • Percent on-time transit performance • Percent of revenue vehicles exceeding ULB • Percent of non-revenue service vehicles exceeding ULB • Percent of facilities rated under 3.0 on the TERM scale	**Goal #3:** Facilitate a transportation system that serves all users – including those traditionally under served and underrepresented in the planning process **Goal #4:** Align the transportation system with existing and future land use patterns **Goal #6:** Encourage public transportation that is practical and serves users in a timely and efficient manner	Give Missourians better transportation choices	**Congestion Reduction and System Reliability:** To achieve a significant reduction in congestion on the National Highway System and to improve the efficiency of the surface transportation system **Environmental Sustainability:** To enhance the performance of the transportation system while protecting and enhancing the natural environment

Table 4.1 (continued)

Performance Measures

Performance Measures	Which goals do the performance measures address? JATSO MTP Goals	MoDOT Goals	USDOT Goals
• Truck travel time reliability index • Percent of Interstate pavement in good condition • Percent of Interstate pavement in poor condition • Percent of non-Interstate NHS pavement in good condition • Percent of non-Interstate NHS pavement in poor condition • Percent of NHS bridges classified in good condition • Percent of NHS bridges classified in poor condition	**Goal #5:** Enhance local and regional economic vitality by supporting the unique needs of freight systems	Invest in projects that spur economic growth and create jobs Take care of the transportation system and services we enjoy today	**Freight Movement and Economic Viability:** To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic developments **Infrastructure Condition:** To maintain the highway infrastructure asset system in a state of good repair
• Number of miles of trails, bicycle lanes, and other bicycle facilities • Number of miles of sidewalks • Number of gaps filled and connections	**Goal #7:** Expand the connectivity of active transportation options, including – but not limited to – bicycle and pedestrian infrastructure and encourage linkages to activity centers	Give Missourians better transportation choices	**Environmental Sustainability:** To enhance the performance of the transportation system while protecting and enhancing the natural environment
• Percent of person-miles traveled on the Interstate that are reliable • Percent of person-miles traveled on the non-Interstate NHS that are reliable • Number of traffic signals capable of communicating with vehicles • Number of policies and ordinances adopted by communities that address innovative or emerging technologies such as shared mobility, micro transit, and connected/automated vehicles (CAVs)	**Goal #4:** Align the transportation system with existing and future land use patterns **Goal #8:** Plan for future transportation trends and new technologies and their impact on how people and goods move around, such as shared mobility, micro transit, and connected/automated vehicles (CAVs)	Improve reliability and reduce congestion on Missouri's transportation system	**Congestion Reduction and System Reliability:** To achieve a significant reduction in congestion on the National Highway System and to improve the efficiency of the surface transportation system

Note: text in red indicates federally required performance measures.
ULB: useful life benchmark, the expected life of assets, such as transit vehicles
NHS: national highway system (see ***Appendix B - National Highway System Map*** for reference)
TERM: transit economic requirements model

system performance report

As required by MAP-21 and the FAST Act, and State DOTs, MPOs must establish targets related to performance measures in the categories of safety, transit asset management, pavement and bridge condition, and system reliability. As noted in ***Section 1***, there are 28 national performance measures; however, five of these measures are not applicable to JATSO since one pertains to rail transit, one pertains to non-revenue transit vehicles exceeding $50,000, and three pertain to congestion mitigation and air quality standards. Accordingly, JATSO is responsible for reporting targets on 23 performance measures, as shown in ***Table 4.2 (MoDOT)*** and ***Table 4.3 (MAPS)***.

MPOs establish targets for each of these measures by either supporting the State DOT performance target or by establishing its own target. Specifically, JATSO must establish targets by "either (1) agreeing to plan and program projects so that they contribute toward the accomplishment of the relevant State DOT target for that performance measure; or (2) committing to a quantifiable target for that performance measure for their metropolitan planning area" (23 CFR 490.209(c)(4) and 23 CFR 490.105(f)(3)). With respect to transit asset management targets, JATSO must establish targets based on the targets set by the transit provider in the region (49 CFR 450.306(d)).

JATSO has elected to support MoDOT targets for all categories and create their own targets for transit asset management and safety (MoDOT does not set targets for this category). On November 19, 2020, the JATSO Policy Committee approved a resolution to support MoDOT's performance targets, as well as the Metro Area Public Transit System (MAPS) asset management targets. The JATSO Policy Committee approved a resolution to support the MAPS performance safety targets on February 18, 2021.

Table 4.2

Performance Targets (MoDOT)

Safety	MoDOT Five-Year Rolling Average	
	Baseline (2015 - 2019)	Target (2021)
Number of fatalities	910.0	871.6
Rate of fatalities	1.213	1.119
Number of serious injuries	4,681.2	4,463.9
Rate of serious injuries	6.241	5.829
Number of non-motorized fatalities and serious injuries	462.2	462.2

Pavement & Bridges	MoDOT		
	Baseline	Two-Year Target	Four-Year Target
Percent of Interstate pavements in good condition	77.5%	N/A	77.5%
Percent of Interstate pavements in poor condition	0.1%	N/A	0.1%
Percent of non-Interstate NHS pavements in good condition	61.1%	61.1%	61.1%
Percent of non-Interstate NHS pavements in poor condition	1.0%	1.0%	1.0%
Percent of NHS bridges classified as in good condition	34.0%	30.9%	26.4%
Percent of NHS bridges classified as in poor condition	7.1%	7.1%	8.2%

System Reliability	MoDOT		
	Baseline	Two-Year Target	Four-Year Target
Truck travel time reliability index	1.25	1.28	1.45
Percent of reliable person-miles traveled on *Interstate*	91.6%	88.9%	87.1%
Percent of reliable person-miles traveled on *non-Interstate*	92.3%	N/A	87.8%

ULB: useful life benchmark, the expected life of assets, such as transit vehicles
NHS: national highway system

Table 4.3

Performance Targets (MAPS)

Transit Asset Management	Baseline (2018)	Target (2021)
Percent of revenue vehicles exceeding ULB	75%	75%
Percent of non-revenue service vehicles exceeding ULB	0.07%	0%
Percent of facilities rated under 3.0 on the TERM scale	0%	0%

Transit Safety - Fixed Route Mode	Baseline	Target (2021)
Number of fatalities	0	0
Rate of fatalities per 100,000 VRM	0	0
Number of injuries	1	1
Rate of injuries per 100,000 VRM	0.8	0.8
Number of safety events	9.2	9.2
Rate of safety events per VRM	9.0	9.0
System reliability*	25,000	25,000

Transit Safety - Demand Response	Baseline	Target (2021)
Number of fatalities	0	0
Rate of fatalities per 100,000 VRM	0	0
Number of injuries	3.4	3.4
Rate of injuries per 100,000 VRM	1.7	1.7
Number of safety events	5.6	5.6
Rate of safety events per VRM	2.8	2.8
System reliability*	33,333	33,333

***System reliability** refers to the mean distance between major mechanical failures
ULB: useful life benchmark, the expected life of assets, such as transit vehicles
VRM: vehicle revenue miles
TERM: transit economic requirements model

section 5

planning for the transportation needs of 2045

Continued growth in the JATSO region will result in increased transportation demand. From 2018 to 2045, the region is expected to increase in population from 111,500 to 146,000 persons. Similarly, the total employment is forecast to increase from 54,000 to 70,500. Projections for population and employment growth were used as a basis for the projections described in this section. Finally, JATSO reviewed areas of potential development anticipated to build out by the horizon year to ensure adequate linkage and capacity to move people to jobs and activity centers throughout the region.

The projected growth can be largely accommodated with the transportation investments that have previously been made or financially committed to in the next few years. While new projects are proposed in the following sections, a large portion of the funding is anticipated to be used to support the ongoing operation and maintenance of the existing transportation system.

Proposed projects presented in this section cover the roadway system, bicycle and pedestrian network, public transit, and broadband access. Together, these improvements will better connect the JATSO region across all modes to support the goals of this MTP update. Cost estimates - in the form of a financial plan - for the proposed projects are also provided as a guide for securing funds and planning ahead.



proposed roadway system

The proposed roadway system presents a series of maps that outline recommendations to the vehicular transportation network within the JATSO region. These projects focus on the physical roadways (primarily used by cars and trucks) and how to alleviate projected congestion based upon population and employment growth.

committed projects

Figures 5.1 and ***5.2*** represent the committed roadway network, which means the proposed improvements can be funded with anticipated revenue. As provided in the figures, the projected average annual daily traffic (AADT) and level of service (LOS) in 2045 is anticipated to largely meet the automobile needs of the region with the committed projects, which do not add capacity and are therefore not shown.

illustrative projects

Conversely, ***Figures 5.3*** and ***5.4*** show illustrative projects, which represents improvements that are desired but are outside of the anticipated revenue scenario for budgetary reasons. The illustrative projects are based on the improvements considered necessary to accommodate 2045 AADT and LOS projections. Specifically, the illustrative improvements represent those roadway widening projects (capacity expansion) that can reasonably be accomplished to mitigate projected capacity constraints to meet the desired LOS.

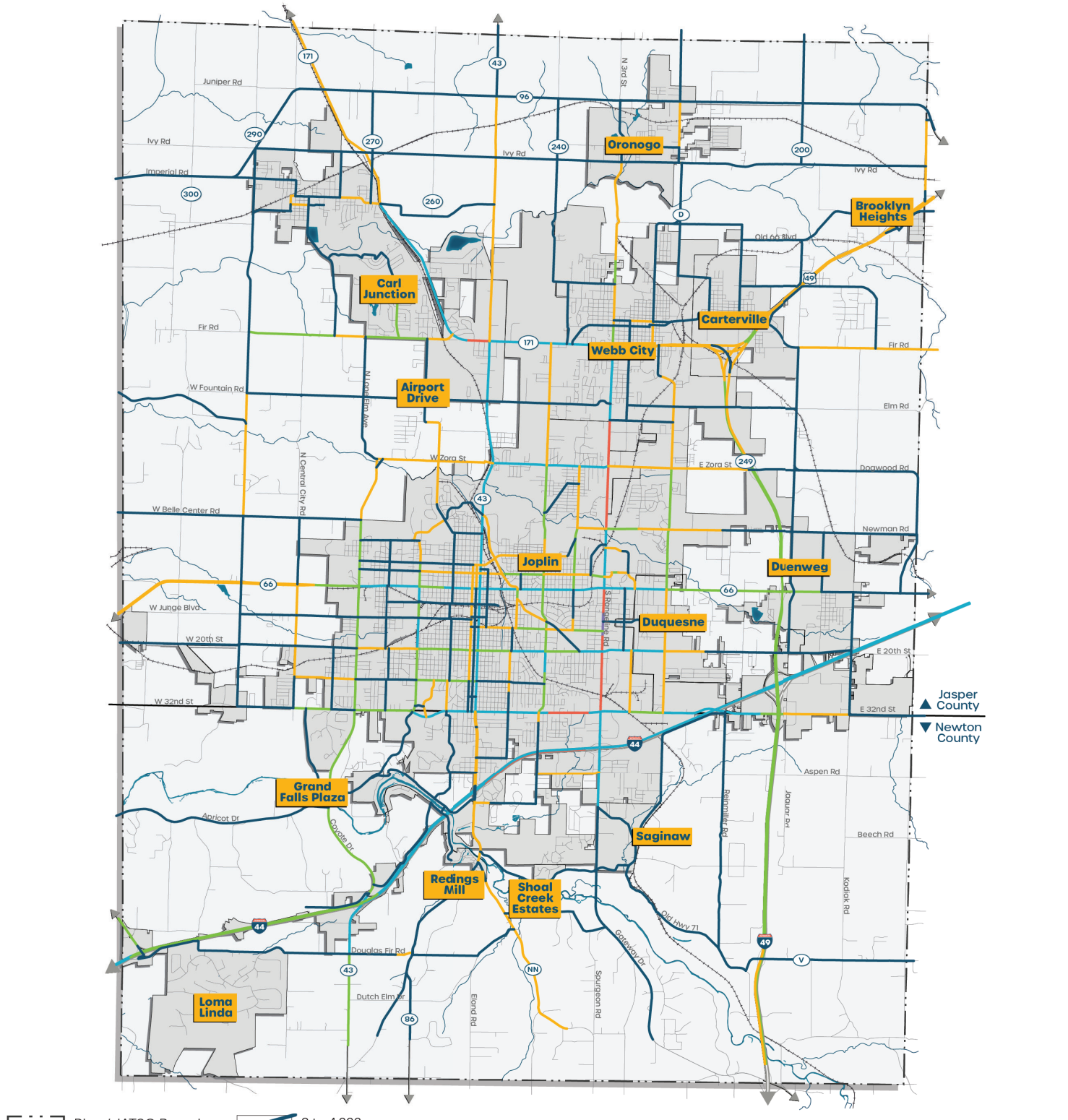
The improvements shown in ***Figures 5.3*** and ***5.4*** also represent those roadway widening projects that have come up in conversations, but are not critical to maintaining an adequate LOS based on the projections for year 2045. That is not to say these projects do not merit consideration for other reasons, such as to enhance economic development or to improve roadway conditions; however, they are not deemed critical to meet future traffic needs.

other projects

Lastly, one project not shown that was frequently discussed during various stakeholder meetings throughout this planning process is the concept of a western bypass. While there does not appear to be an overwhelming need for this improvement at this time, such a project has the potential to generate new investments in the region and to shift truck traffic from existing routes. It is recommended that a feasibility study and cost estimate for this project be conducted to understand the impact and magnitude of costs for this potential investment.

figure 5.1

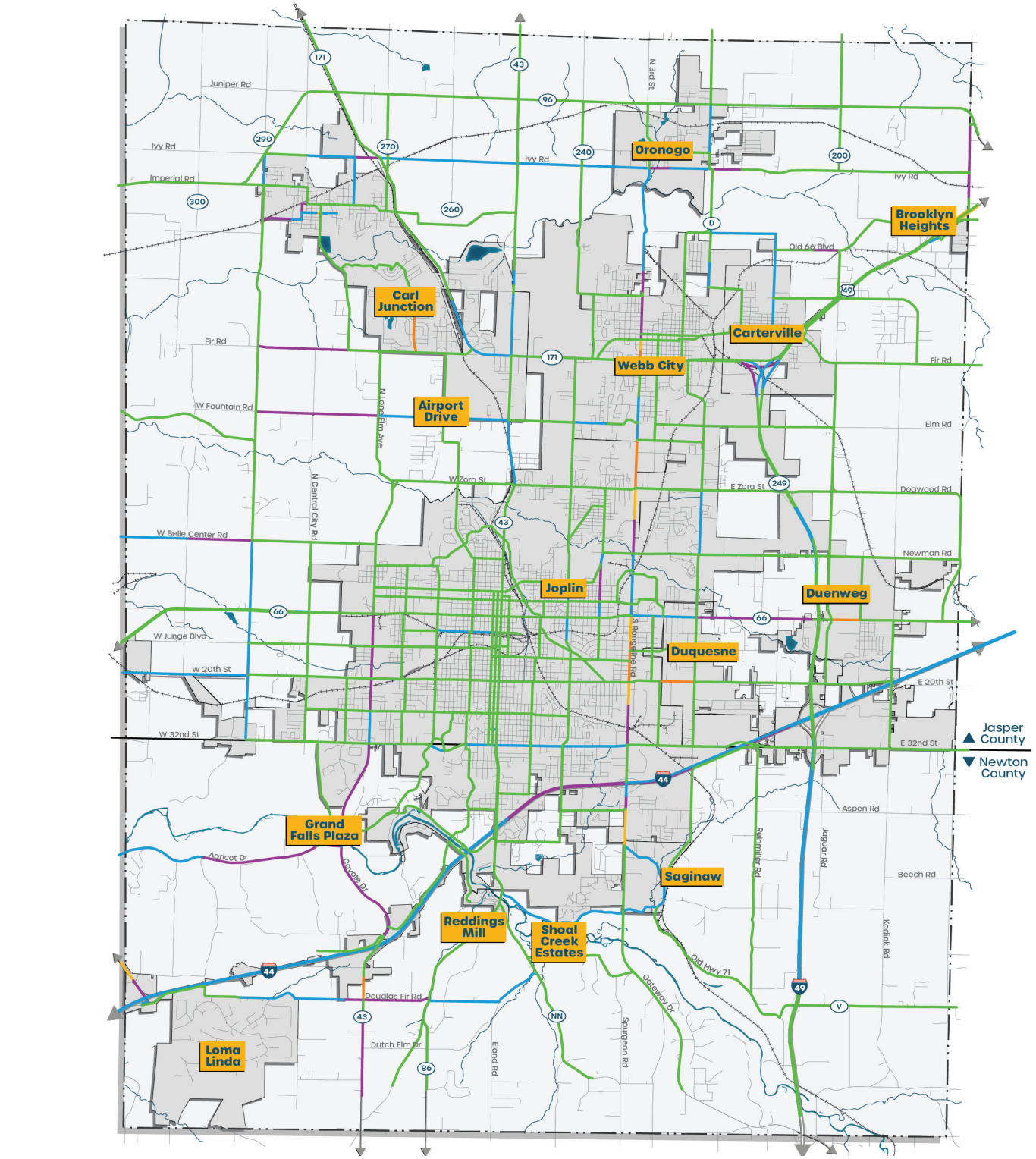
committed projects: 2045 AADT



***Note:** Values illustrated represent bi-directional traffic counts from 2018 and 2019
Data Sources: City of Joplin, Harry S. Truman Coordinating Council, Missouri Department of Transportation, and Ochsner Hare & Hare, the Olsson Studio

figure 5.2

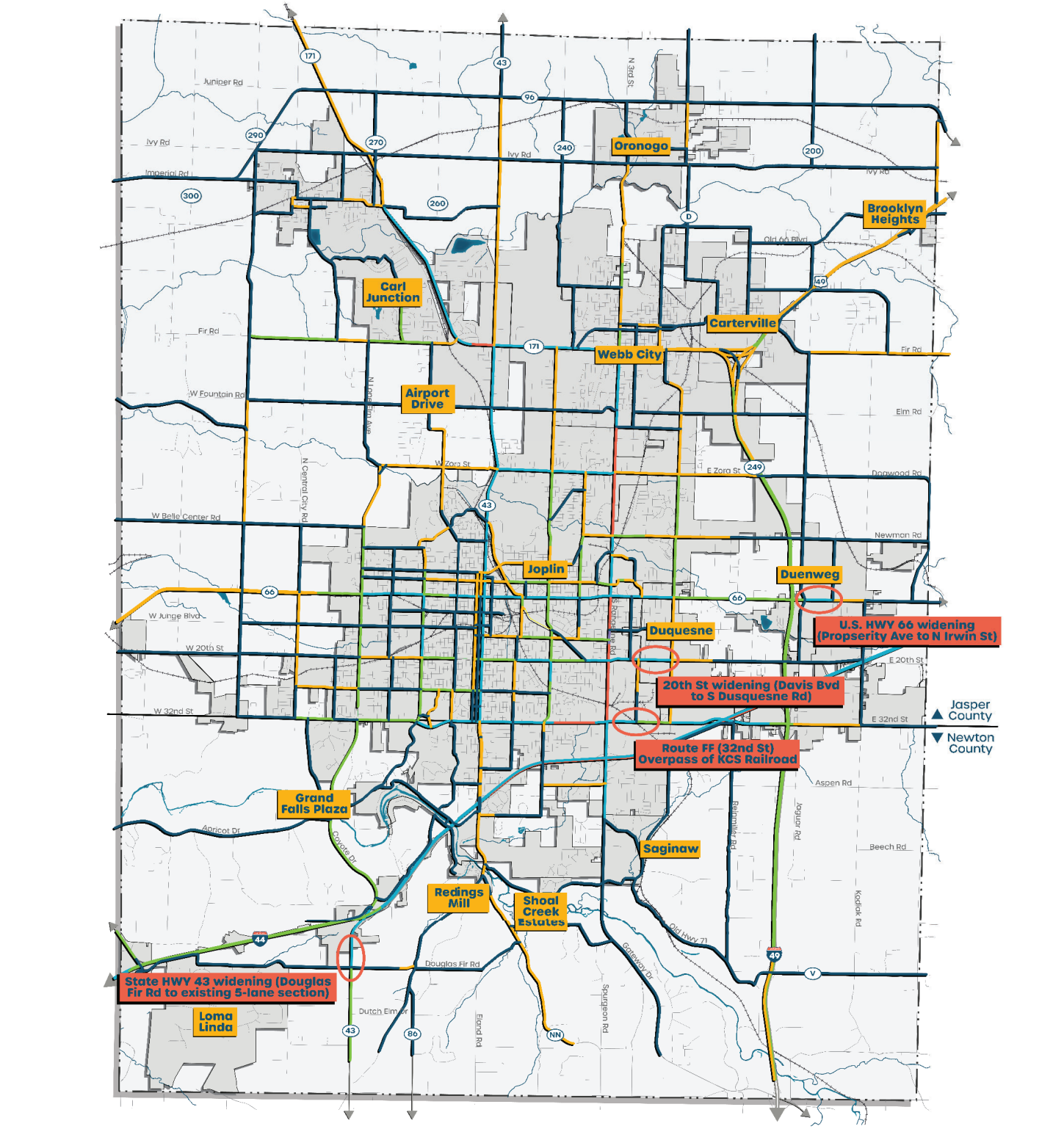
committed projects: 2045 LOS



Data Sources: City of Joplin, Harry S. Truman Coordinating Council, and Ochsner Hare & Hare, the Olsson Studio, Joplin Transit System Analysis (2019)

figure 5.3

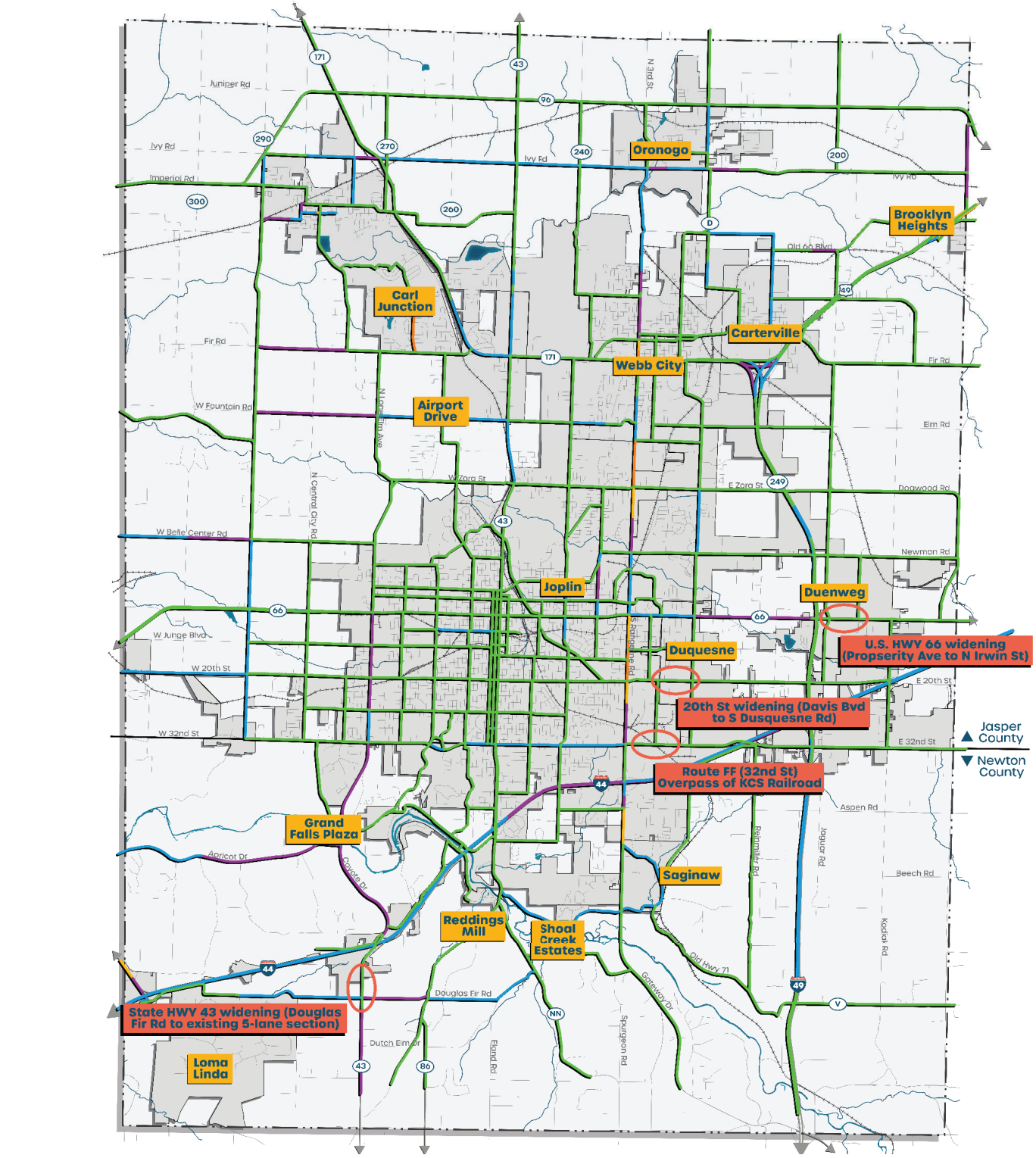
illustrative projects: 2045 AADT



Data Sources: City of Joplin, Harry S. Truman Coordinating Council, Missouri Department of Transportation, and Ochsner Hare & Hare, the Olsson Studio

figure 5.4

illustrative projects: 2045 LOS



Data Sources: City of Joplin, Harry S. Truman Coordinating Council, and Ochsner Hare & Hare, the Olsson Studio, Joplin Transit System Analysis (2019)

proposed bicycle & pedestrian network

The proposed bicycle and pedestrian system takes into consideration several factors:

1. JATSO's Bicycle and Pedestrian Transportation Plan;
2. Comments from both public open houses; and,
3. Conversations with the Citizen Advisory Group (CAG) and Technical Advisory Group (TAG).

The Bicycle and Pedestrian Transportation Plan was recently completed in May 2018. The analysis performed for that plan is still highly relevant to the conditions during this MTP's planning process. Further, the mindset of this plan was to take a regional approach that focused on safety and connectivity, all of which was echoed by comments from the public open houses and during conversations with stakeholders.

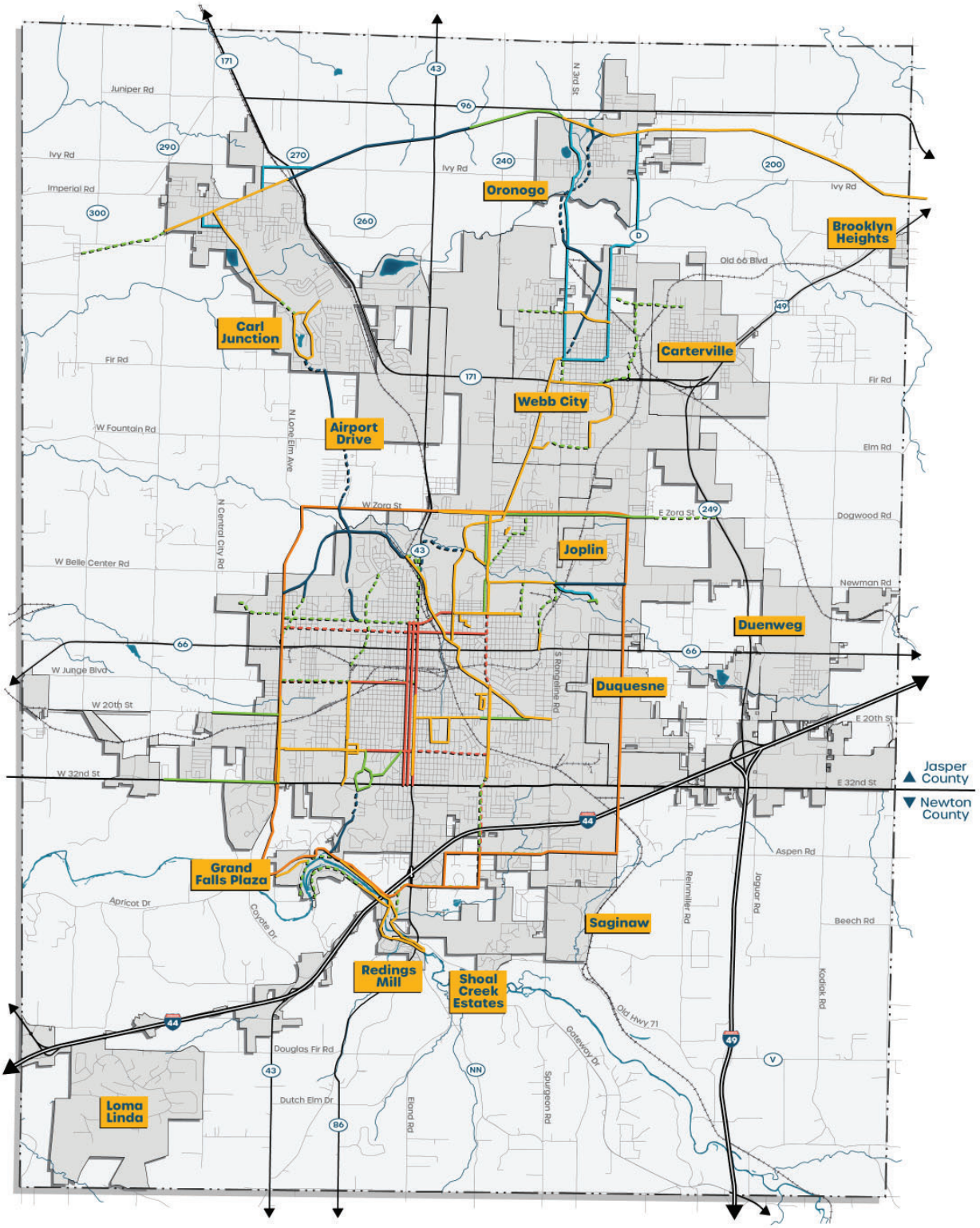
As such, the bicycle and pedestrian network proposed in the Bicycle and Pedestrian Transportation Plan from 2018 is the foundation for the proposed system contained within this MTP. The proposed network shown on ***Figure 5.5*** identifies both improvements along roadways (sidewalks, bicycles lanes, etc.), as well as trails on separate alignments from roadways.

Many of the improvements within the proposed bicycle and pedestrian network can be implemented as part of ongoing maintenance activities (pavement maintenance, sidewalk repair, etc.), while other projects have the opportunity to be funded, at least in part, through federal grant programs.

In spring 2021, the City of Joplin will begin an active transportation assessment that will focus on increasing connectivity and bicyle and pedestrian options. Building upon this MTP and JATSO's Bicycle and Pedestrian Transportation Plan (2018), this planning project is envisioned to identify and prioritize additional improvements. Consideration should also be taken into account for growth in unincorporated areas of the metropolitan area. Throughout Missouri, and the nation, there is a growing emphasis on connecting metropolitan areas and trails. For the JATSO region, that could include connections south to the expansive trail system in Northwest Arkansas and east to Carthage, Missouri.

figure 5.5

proposed bicycle & pedestrian network



Plan / JATSO Boundary
Incorporated Area
Railroad
Existing Bicycle Lane

Off-Road Network

Committed Bicycle Lane
Potential Bicycle Lane
Potential Right-of-Way Defined
Potential Right-of-Way Undefined
Potential Alternate Option

On-Road Network

Potential Road Diet Candidate
Potential Extension Candidate
Potential Long-Term Loop Vision

North

0′ 6,500′ 13,000′ 26,000′

Data Sources: City of Joplin, Harry S. Truman Coordinating Council, and Ochsner Hare & Hare, the Olsson Studio, Bicycle and Pedestrian Transportation Plan (2018)

proposed transit system

Similar to the bicycle and pedestrian network, the transit system within the City of Joplin was evaluated just one year ago prior to the development of this MTP in November 2019. The conditions for public transit have not changed significantly since this analysis was completed. The Proposed Transit System for the MTP therefore is based upon the short-, mid-, and long-term plans laid out in the Joplin Transit System Analysis. The proposed short-, mid-, and long-term plans were expanded upon for the purposes of the MTP to incorporate more of the Joplin metropolitan area, and not just the City of Joplin.

However, expansion of transit throughout the MPO region - even in the long-term transit network - still has limited access for other communities in the MPO region. Webb City and Duenweg would receive transit service in the proposed long-term transit network, but the northern half of the MPO region will remain largely without service. It is important to note that the proposed transit networks on the following pages take into consideration the most needed expansion areas while still being cost effective and operating at appropriate headways.

short-term transit network

The only operational change in the short-term (to occur in the immediate future) is to modify the Green route to serve the Ozark Center and make two alignment changes to improve traffic flow. Three stops would be added, two on the Green route and one on the Red route, whereas the Green route stop at Sam's Club would be eliminated. There would be no service span or frequency changes for any of the routes during this time frame. These routing and stop changes are illustrated on ***Figure 5.6***.

mid-term transit network

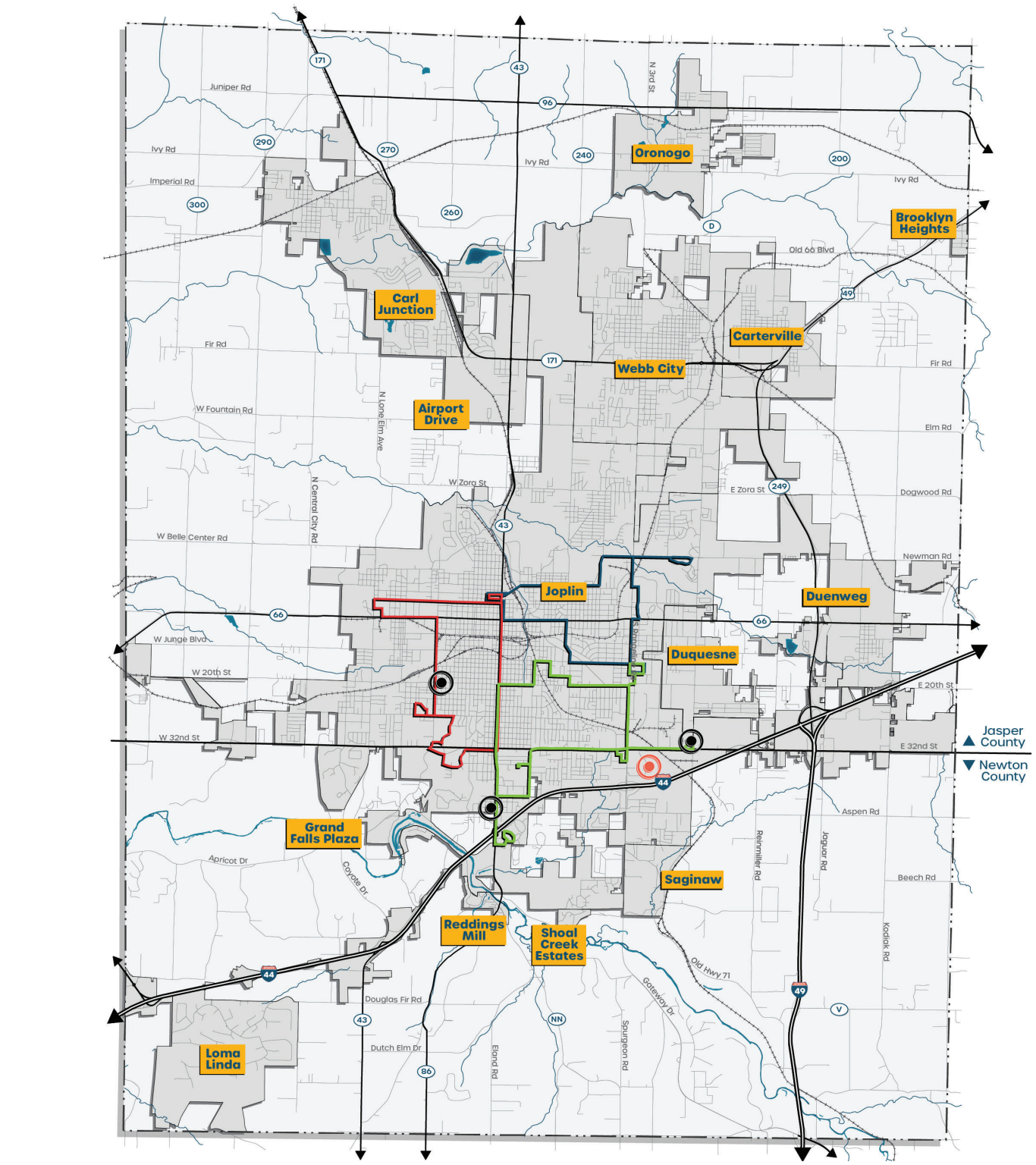
The mid-term changes build upon the short-term network modifications and could happen by 2022. A new transfer facility is proposed on 15th between Main Street and Iowa Avenue and eight routes are proposed. These routes would run on 30-minute intervals serving new destinations at more efficient headways. The mid-term transit network if shown on ***Figure 5.7***.

long-term transit network

Similarly, the long-term plan builds upon the mid-term transit network to expand fixed route service to create a regional network rather than just the City of Joplin. A timeline to achieve the long-term vision is not explicitly provided in the Joplin Transit System Analysis Plan as it relies upon the modifications of the mid-term network to be funded and implemented. Four additional routes or route extensions are proposed to meet regional needs, including an extension to the Joplin Industrial Park, Wildwood Senior Apartments, and new Duenweg and Webb City routes. This expansion of service is illustrated on ***Figure 5.8***.

figure 5.6

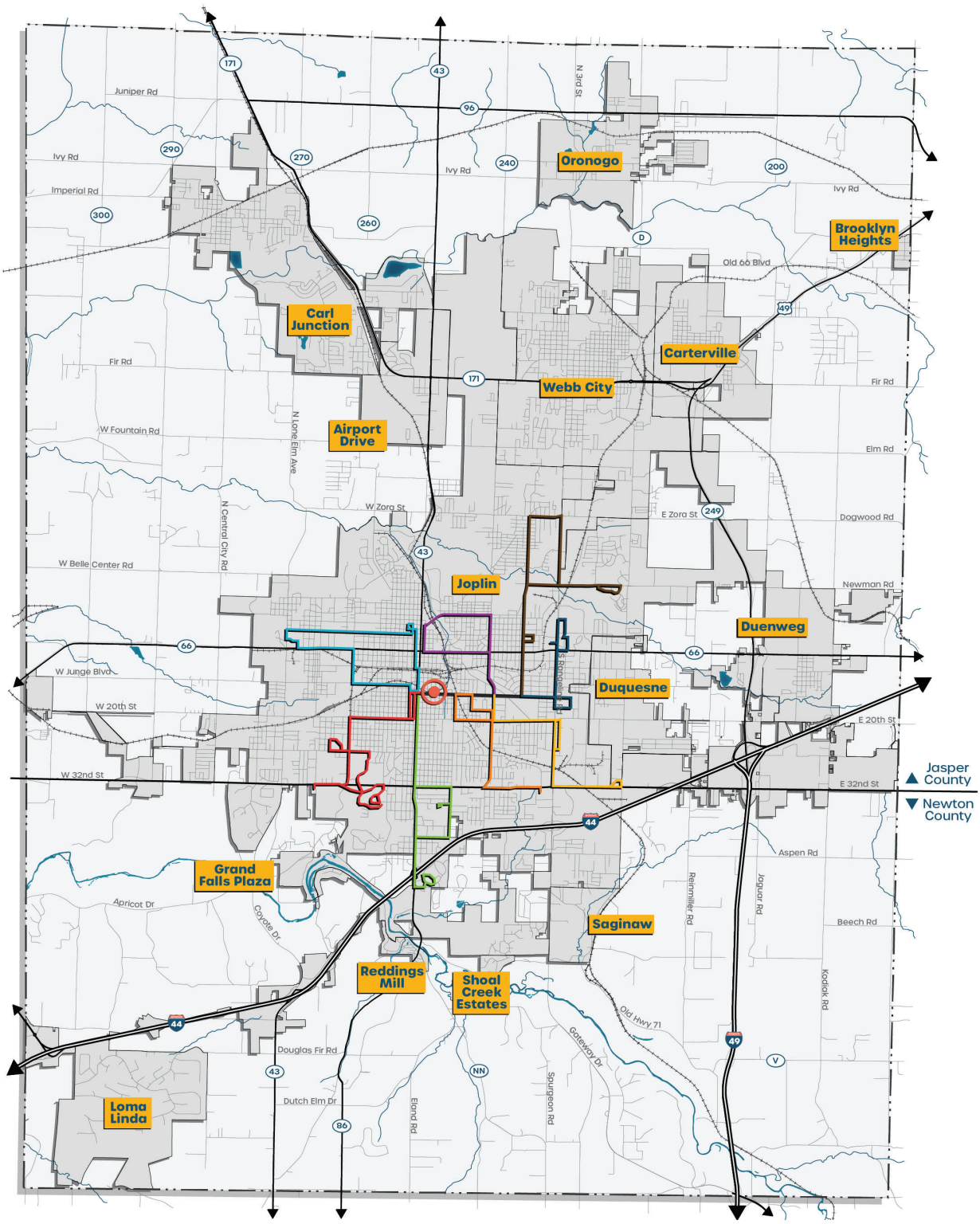
short-term transit network



Data Sources: City of Joplin, Harry S. Truman Coordinating Council, and Ochsner Hare & Hare, the Olsson Studio, Joplin Transit System Analysis (2019)

figure 5.7

mid-term transit network



Plan / JATSO Boundary

Incorporated Area

Railroad

Proposed Routing Changes

Proposed Red Trolley Revision

Proposed Orange Trolley Revision

Proposed Yellow Trolley Revision

Proposed Light Green Trolley Revision

Proposed Light Blue Trolley Revision

Proposed Dark Blue Trolley Revision

Proposed Purple Trolley Revision

Proposed Brown Trolley Revision

Proposed Black Trolley Revision

Proposed Stop Changes

New Transfer Facility

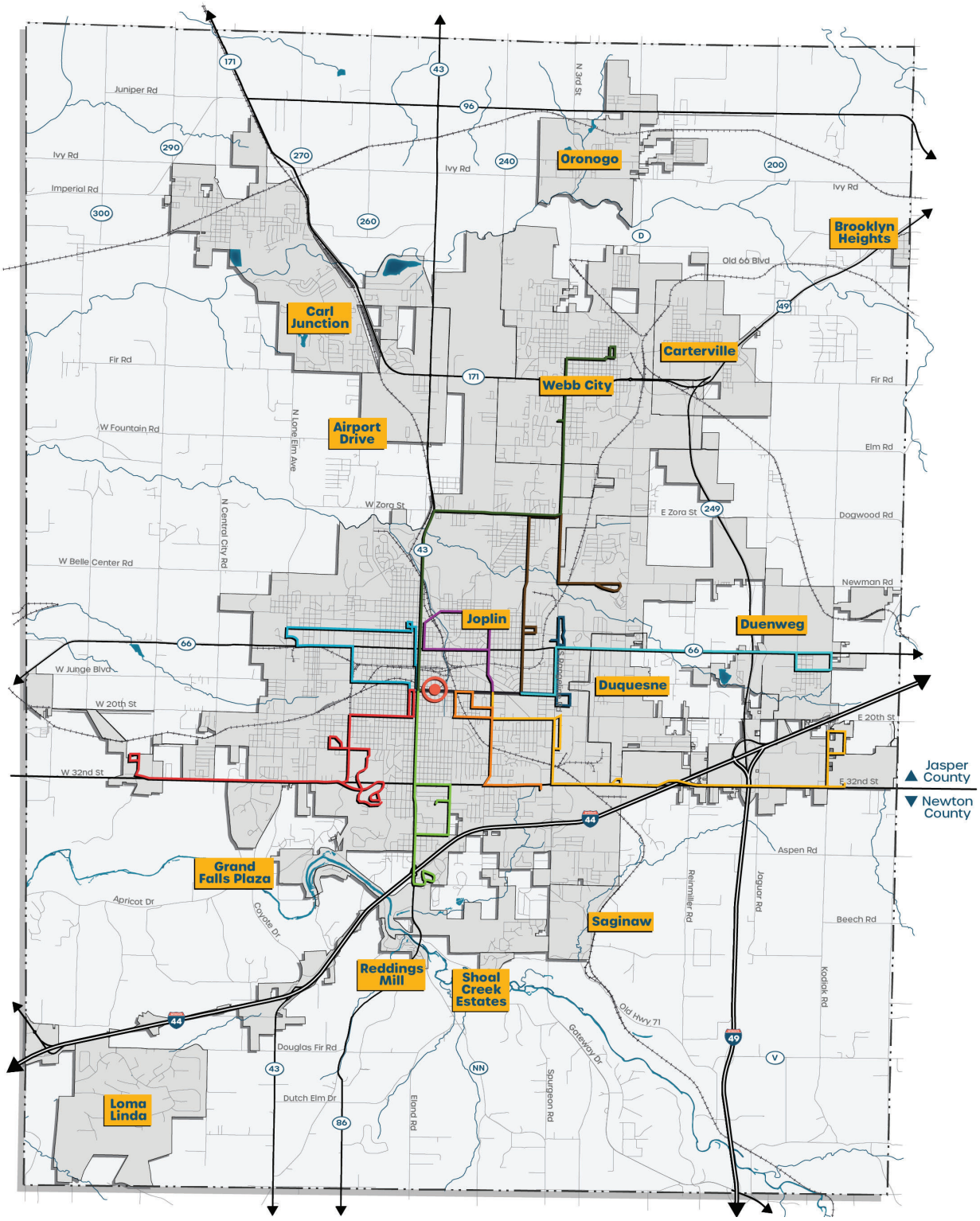
North

0′ 6,500′ 13,000′ 26,000′

Data Sources: City of Joplin, Harry S. Truman Coordinating Council, and Ochsner Hare & Hare, the Olsson Studio, Joplin Transit System Analysis (2019)

figure 5.8

long-term transit network



Plan / JATSO Boundary

Incorporated Area

Railroad

Proposed Routing Changes

Proposed Red Trolley Revision

Proposed Orange Trolley Revision

Proposed Yellow Trolley Revision

Proposed Light Green Trolley Revision

Proposed Light Blue Trolley Revision

Proposed Dark Blue Trolley Revision

Proposed Purple Trolley Revision

Proposed Brown Trolley Revision

Proposed Black Trolley Revision

Proposed Stop Changes

New Transfer Facility

North

0′ 6,500′ 13,000′ 26,000′

Data Sources: City of Joplin, Harry S. Truman Coordinating Council, and Ochsner Hare & Hare, the Olsson Studio, Joplin Transit System Analysis (2019)

proposed broadband

In addition to changes in the way people move around the JATSO region - be it on foot, bicycle, bus, or car - there is another need that must be considered: broadband. Broadband - or internet access - influences the transportation system greatly. Transportation patterns and mobility are influenced by a person's ability to work remotely or do online learning. Although the COVID-19 pandemic has accelerated the need for equitable access to broadband, the remote world was already creating waves of change in the transportation industry. From the increase in delivery trucks to the ability to conduct business online, this MTP would be incomplete without discussing broadband.

To promote the economic vitality and equity in the JATSO region, a broadband plan is recommended. A plan of this type should assess current broadband capabilities and installed infrastructure, service providers, pricing levels, and providers, and provide a service gap analysis. The plan should explore various broadband model options, including public-private partnerships, grant programs or other funding sources, agency-owned, and other alternative models. The plan should provide a definitive set of actions to be performed with the end goal of providing 100 percent of the JATSO region's residents and businesses with the minimum standard of 25 mega bytes per second (Mbps) down and three Mbps up – or better. This study is estimated to cost approximately $200,000.

financial plan

The financial plan demonstrates how the MTP can be implemented. The financial plan includes federal, state, and local funding sources, as well as future expenditures that can be reasonably expected with federal-aid funds during the 25-year planning period. When combined with the current 2020-2023 Transportation Improvement Program (TIP), this section becomes the financial plan for the MTP. ***Table 5.1*** summarizes the funding sources of the JATSO 2020-2023 TIP.

TIP overview

MPOs use a TIP to identify transportation projects and strategies they will pursue over the next four years. These projects reflect the investment priorities detailed in the MTP. TIPs list the immediate program of investments that, once implemented, will go toward achieving the performance targets established by the MPO and documented in this MTP. Essentially, a TIP is a region's means of allocating its transportation resources among the various capital, management, and operating investment needs of the area, based on a clear set of short-term transportation priorities prepared through a performance-driven process. All projects receiving Federal funding must be in the TIP.

Table 5.1

JATSO 2020-2023 TIP Summary

Project Type	Expenditures (in millions)* 2020	2021	2022	2023
Highways				
FHWA	$3.379	$18.639	$52.945	$0.419
MoDOT	$1.387	$4.948	$7.088	$0.118
MoDOT-AC**	$2.771	$4.210	$1.501	$0
Local	$0.132	$0.325	$0	$0
Total	**$7.669**	**$28.142**	**$61.534**	**$0.537**
Transit				
Total	**$1.927**	**$1.556**	**$4.985**	**$0**

***** based on latest 2020-2023 TIP with amendments and modifications through November 23, 2020
****** AC (Advanced Construction); MoDOT to be reimbursed with federal funds at a later date

roadway state & federal funding sources & expenditures

In order to demonstrate fiscal constraint, revenues from FHWA and MoDOT beyond the current 2020-2023 TIP were projected. The projections shown in ***Table 5.2*** are funds that are controlled by MoDOT to support infrastructure preservation projects, continued implementation of the Americans with Disabilities Act (ADA) transition plan, Intelligent Transportation Systems (ITS) related projects, and safety projects. Also shown are projected MoDOT operations and maintenance (O&M) costs in the region, which include activities such as snow removal, pothole patching, and mowing. Funds shown in ***Table 5.2*** are minimum projected commitments provided by MoDOT with project costs projected to increase by 2.5 percent per year consistent with the MoDOT 2018 Long-Range Transportation Plan (LRTP). It is assumed that revenue growth will be consistent with the project cost increase as MoDOT is not anticipated to award funding beyond historic trends.

Table 5.2

Fiscally Constrained Funding

Project Type	Forecast Revenue, year of expenditure dollars (in millions) 2024	2025	2026	2027	2028	2029	2030	2031-2035	2036-2040	2041-2045
Pavement-Interstate	$0	$0	$0	$11.675	$0	$0.884	$0	$7.546	$10.544	$11.929
Pavement-Other Major Routes	$10.972	$0.860	$0	$1.263	$8.422	$0	$9.453	$13.397	$18.719	$21.179
Pavement-Minor Routes	$0	$0	$0.561	$0	$1.016	$0	$0.648	$3.718	$5.194	$5.877
Bridges	$0	$6.455	$2.365	$0.526	$11.189	$3.202	$6.020	$12.801	$13.892	$15.718
ADA	$4.191	$4.730	$0	$0.012	$0.012	$0.012	$0.012	$0.067	$0.076	$0.086
ITS	$0.115	$0.118	$0.121	$0.124	$0.127	$0.130	$0.134	$0.720	$0.815	$0.922
Safety	$0.649	$0.666	$0.682	$0.699	$0.717	$0.735	$0.753	$4.057	$4.590	$5.194
Total	**$15.928**	**$12.829**	**$3.730**	**$14.299**	**$21.483**	**$4.963**	**$17.020**	**$42.306**	**$53.831**	**$60.905**
Sub-Total FHWA portion	***$12.807***	***$10.330***	***$3.052***	***$11.509***	***$17.258***	***$4.044***	***$13.691***	***$34.251***	***$43.524***	***$49.243***
Sub-Total MoDOT portion	***$3.121***	***$2.499***	***$0.678***	***$2.790***	***$4.225***	***$0.919***	***$3.329***	***$8.056***	***$10.307***	***$11.662***
State O&M Activities*	$2.534	$2.598	$2.662	$2.729	$2.797	$2.867	$2.939	$15.834	$17.914	$20.268

***** Portion of MoDOT Southwest District O&M activities in region based on the JATSO 2020-2023 TIP. These activities are funded with state funds only.

comprehensive projects overview

Table 5.3 provides a detailed list of all projects that are part of this MTP update. These are broken out by year, location, project type, and cost. The costs are provided as a total, as well as what FHWA and MoDOT would contribute. Many of these are maintenance projects, MoDOT can provide exact locations. Others, in future years, are assumed maintenance activities where the exact location may not be defined yet.

Table 5.3

Project List

Year	Job No.	Route	Location	Project Type	Cost*	FHWA portion*	MoDOT portion*
2024	7S2185	66	Route 66/7th St Street Pavement Rebuild	Pavement-Other Majors and ADA	$14.643	$11.714	$2.939
	N/A	Joplin 66/7th St	Joplin 66/7th St	ADA	$4.191	$3.353	$0.838
	N/A	NA	ITS/Mobility Improvements	ITS/Mobility	$0.115	$0.092	$0.023
	N/A	NA	Safety Improvements	Safety	$0.649	$0.584	$0.065
Total					**$15.928**	**$12.807**	**$3.121**
2025	7P2220C	43	Route 171 to South of Murphy Blvd. in Joplin	Pavement-Other Majors	$0.860	$0.688	$0.172
	N/A	249	Bridge A5149	Bridges	$0.232	$0.186	$0.046
	N/A	I-49	Bridge A5225	Bridges	$1.213	$0.971	$0.243
	N/A	171	Bridge L0293	Bridges	$5.010	$4.008	$1.002
	N/A	Various	Various Jasper	ADA	$4.730	$3.784	$0.946
	N/A	N/A	ITS/Mobility Improvements	ITS/Mobility	$0.118	$0.094	$0.024
	N/A	N/A	Safety Improvements	Safety	$0.666	$0.599	$0.067
Total					**$12.829**	**$10.330**	**$2.499**
2026	N/A	D	171 to 96	Pavement-Minors	$0.561	$0.449	$0.112
	N/A	66	Bridge A6147	Bridges	$0.374	$0.299	$0.075
	N/A	I-44	Bridge L0857	Bridges	$0.748	$0.598	$0.150
	N/A	I-49	Bridge A5224	Bridges	$1.244	$0.995	$0.249
	N/A	N/A	ITS/Mobility Improvements	ITS/Mobility	$0.121	$0.097	$0.024
	N/A	N/A	Safety Improvements	Safety	$0.682	$0.614	$0.068
Total					**$3.730**	**$3.052**	**$0.678**
2027	N/A	I-44	0.4 miles east of Loop 49 in Joplin to 1.5 miles east of Route 37 near Sarcoxie	Pavement-Interstate	$11.675	$9.340	$2.335
	N/A	66	East of Loop 49 to 0.2 miles west of Route 249	Pavement-Other Majors	$0.775	$0.620	$0.155
	N/A	43	Hearnes Blvd: north of Route FF to I-44	Pavement-Other Majors	$0.489	$0.391	$0.098
	N/A	I-44	Bridge A0541 (East)	Bridges	$0.263	$0.210	$0.053
	N/A	I-44	Bridge A0541 (West)	Bridges	$0.263	$0.210	$0.053
	N/A	N/A	ADA Improvements	ADA	$0.012	$0.009	$0.002
	N/A	N/A	ITS/Mobility Improvements	ITS/Mobility	$0.124	$0.099	$0.025
	N/A	N/A	Safety Improvements	Safety	$0.699	$0.629	$0.070
Total					**$14.299**	**$11.509**	**$2.790**

***** In millions
ITS: Intelligent Transportation Systems
CR: County Road
ADA: Americans with Disabilities Act
PP: Pavement Preservation

Table 5.3 (cont.)

Project List (continued)

Year	Job No.	Route	Location	Project Type	Cost*	FHWA portion*	MoDOT portion*
2028	N/A	249	Route 171 in Carterville to 20th Street in Joplin	Pavement-Other Majors	$2.580	$2.064	$0.516
	N/A	FF	32nd Street: Route 43 (Main Street) to I-49	Pavement-Other Majors	$1.583	$1.267	$0.317
	N/A	LP 49	Madison Ave/Rangeline Road: 10th Street in Webb City to E. 46th St. in Leawood	Pavement-Other Majors	$2.831	$2.265	$0.566
	N/A	LP 49	Rangeline Road: East 46th St. in Leawood to I-49	Pavement-Other Majors	$1.427	$1.142	$0.285
	N/A	FF	Joint E. of Route 249 to I-44	Pavement-Minors	$0.650	$0.520	$0.130
	N/A	FF	E. of Route I-49 to E. of CR 190 (Joint East of CR 190)	Pavement-Minors	$0.366	$0.293	$0.073
	N/A	HH	Bridge A3471	Bridges	$0.850	$0.680	$0.170
	N/A	249	Bridge A5150	Bridges	$0.250	$0.200	$0.050
	N/A	249	Bridge A6143	Bridges	$0.173	$0.138	$0.035
	N/A	249	Bridge A6146	Bridges	$0.130	$0.104	$0.026
	N/A	I-44	Bridge L0854	Bridges	$0.385	$0.308	$0.077
	N/A	I-44	Bridge L0855	Bridges	$0.385	$0.308	$0.077
	N/A	43	Bridge K0415	Bridges	$9.018	$7.214	$1.804
	N/A	N/A	ADA Improvements	ADA	$0.012	$0.010	$0.002
	N/A	N/A	ITS/Mobility Improvements	ITS/Mobility	$0.127	$0.102	$0.025
	N/A	N/A	Safety Improvements	Safety	$0.717	$0.645	$0.072
Total					**$21.483**	**$17.258**	**$4.225**
2029	N/A	I-49	South of Shoal Creek bridge to N. of Rt 175 bridge	Pavement-Interstate	$0.600	$0.480	$0.120
	N/A	I-49	To 159 S. of Iris Road	Pavement-Interstate	$0.283	$0.227	$0.057
	N/A	Zora St	Bridge A7377	Bridges	$0.108	$0.086	$0.022
	N/A	43	Bridge J0339	Bridges	$3.094	$2.476	$0.619
	N/A	N/A	ADA Improvements	ADA	$0.012	$0.010	$0.002
	N/A	N/A	ITS/Mobility Improvements	ITS/Mobility	$0.130	$0.104	$0.026
	N/A	N/A	Safety Improvements	Safety	$0.735	$0.661	$0.073
Total					**$4.963**	**$4.044**	**$0.919**
2030	N/A	171	KS state line to 0.6 miles W. of Rte 43 on Airport Dr.	Pavement-Other Majors	$4.494	$3.595	$0.899
	N/A	171	0.6 miles W of Rte 43 on Arport Dr to E of Centennial Ave in Webb City	Pavement-Other Majors	$1.811	$1.449	$0.362
	N/A	171	E of Centennial Ave in Webb City to I-49 in Carthage	Pavement-Other Majors	$3.148	$2.518	$0.630
	N/A	FF	CR 190 to Route 59	Pavement-Minors	$0.648	$0.518	$0.130
	N/A	43	Bridge A3659	Bridges	$1.625	$1.300	$0.325

***** In millions
ITS: Intelligent Transportation Systems
CR: County Road
ADA: Americans with Disabilities Act
PP: Pavement Preservation

Table 5.3 (cont.)

Project List (continued)

Year	Job No.	Route	Location	Project Type	Cost*	FHWA portion*	MoDOT portion*
2030	N/A	Old 66 Blvd	Bridge A3477	Bridges	$0.769	$0.615	$0.154
(cont.)	N/A	171	Bridge L0289	Bridges	$3.626	$2.901	$0.725
	N/A	N/A	ADA Improvements	ADA	$0.012	$0.010	$0.002
	N/A	N/A	ITS/Mobility Improvements	ITS/Mobility	$0.134	$0.107	$0.027
	N/A	N/A	Safety Improvements	Safety	$0.753	$0.678	$0.075
Total					**$17.020**	**$13.691**	**$3.329**
2031	N/A	249	Bridge A6144	Bridges	$0.189	$0.151	$0.038
	N/A	249	Bridge A5871	Bridges	$0.322	$0.258	$0.064
	N/A	249	Bridge A6145	Bridges	$0.137	$0.110	$0.027
	N/A	249	Bridge A6142	Bridges	$0.096	$0.077	$0.019
	N/A	Zora St	Bridge A7376	Bridges	$0.197	$0.158	$0.039
	N/A	43	Bridge A5725	Bridges	$1.916	$1.533	$0.383
	N/A	N/A	ADA Improvements	ADA	$0.013	$0.010	$0.003
	N/A	N/A	ITS/Mobility Improvements	ITS/Mobility	$0.137	$0.110	$0.027
	N/A	N/A	Safety Improvements	Safety	$0.772	$0.695	$0.077
Total					**$3.779**	**$3.101**	**$0.679**
2032-	N/A	N/A	Interstate PP	Pavement-Interstate	$7.546	$6.037	$1.509
2035	N/A	N/A	Other Major Routes PP	Pavement-Other Majors	$13.397	$10.718	$2.679
	N/A	N/A	Minor Routes PP	Pavement-Minors	$3.718	$2.974	$0.744
	N/A	N/A	Bridge Preservation	Bridges	$9.943	$7.954	$1.989
	N/A	N/A	ADA Improvements	ADA	$0.054	$0.044	$0.011
	N/A	N/A	ITS/Mobility Improvements	ITS/Mobility	$0.583	$0.466	$0.117
	N/A	N/A	Safety Improvements	Safety	$3.285	$2.957	$0.329
Total					**$38.527**	**$31.150**	**$7.377**
2036-	N/A	N/A	Interstate PP	Pavement-Interstate	$10.544	$8.435	$2.109
2040	N/A	N/A	Other Major Routes PP	Pavement-Other Majors	$18.719	$14.975	$3.744
	N/A	N/A	Minor Routes PP	Pavement-Minors	$5.194	$4.155	$1.039
	N/A	N/A	Bridge Preservation	Bridges	$13.892	$11.114	$2.778
	N/A	N/A	ADA Improvements	ADA	$0.076	$0.061	$0.015
	N/A	N/A	ITS/Mobility Improvements	ITS/Mobility	$0.815	$0.652	$0.163
	N/A	N/A	Safety Improvements	Safety	$4.590	$4.131	$0.459
Total					**$53.831**	**$43.524**	**$10.307**
2041-	N/A	N/A	Interstate PP	Pavement-Interstate	$11.929	$9.544	$2.386
2045	N/A	N/A	Other Major Routes PP	Pavement-Other Majors	$21.179	$16.943	$4.236
	N/A	N/A	Minor Routes PP	Pavement-Minors	$5.877	$4.701	$1.175
	N/A	N/A	Bridge Preservation	Bridges	$15.718	$12.574	$3.144
	N/A	N/A	ADA Improvements	ADA	$0.086	$0.069	$0.017
	N/A	N/A	ITS/Mobility Improvements	ITS/Mobility	$0.922	$0.737	$0.184
	N/A	N/A	Safety Improvements	Safety	$5.194	$4.674	$0.519
Total					**$60.905**	**$49.243**	**$11.662**

***** In millions
ITS: Intelligent Transportation Systems
CR: County Road
ADA: Americans with Disabilities Act
PP: Pavement Preservation

JATSO also has access to other funding programs that are based on a competitive application process. Example programs include the MoDOT Cost Share Program, the MoDOT Transportation Alternatives Program (or TAP, funded through FHWA), and BUILD federal discretionary grant program (funded by USDOT). Because these funds can be difficult to forecast, these potential funding sources are not shown in ***Table 5.2***.

There are several projects shown in ***Table 5.4*** that have been identified as part of this MTP that can be pursued through these discretionary funding programs, using local funds as potential match. These projects are considered illustrative and are not included within constrained funding shown in ***Table 5.2*** and are shown using a 2.5 percent per year inflation rate for anticipated year of expenditure. ***Table 5.4*** illustrates the illustrative projects and the following provides a summary of the projects listed:

- A **western bypass** of the region has been discussed for several years. A study should be undertaken to identify a feasible route and cost estimate for future project development.
- Consistent with Objective 8.1 and the feedback received from the public, a **master plan to improve the broadband and communication** infrastructure of the region should be pursued.
- Consistent with Goal #7 and the feedback received from the public, connections to support **active transportation** should be implemented using the results of Joplin's Active Transportation Assessment that will be underway in 2021.
- Projects to **upgrade** segments of **US Highway 66, State Highway 43, and 20th Street** are needed to improve LOS.
- A **grade separation** of the **KCS railroad line** for Route FF/32nd Street has been identified to improve the safety and reliability of this busy crossing.

Table 5.4

Illustrative Projects

Project Description	Potential Funding Sources	Cost Estimate (in millions)	Year of Expenditure
Western Bypass Feasibility Study	BUILD, Local	$1.000	2021
Broadband & Communication Master Plan	Local	$0.200	2022
Various Active Transportation Connections	TAP, Local	$5.000	2022-2026
20th St Widening (Davis Blvd to S Dusquesne Rd)	Local	$8.063	2026
US Hwy 66 Widening (Prosperity Ave to N Irwin St)	MoDOT Cost Share, Local	$4.762	2028
State Hwy 43 Widening (Douglas Fir Rd to existing 5 lane section)	MoDOT Cost Share, Local	$4.143	2030
Route FF (32nd St) Overpass of KCS Railroad	BUILD, MoDOT Cost Share, Local	$16.139	2032
Route 171 & Loop 49 (Madison St) Intersection Improvements	MoDOT Cost Share, Local	$11.000	2034
Route 66 pavement preservation	BUILD, MoDOT Cost Share, Local	$15.599	2036
Total		**$65.906**	

Although not shown in ***Table 5.4***, there may be a need to consider capacity improvements to I-44 beyond 2045. As shown in ***Figure 5.4***, the 2045 LOS of I-44 is anticipated to be C. Future MTP updates should consider including this potential project. Additionally, intersection improvements at Route P and Schifferdecker Avenue could also be eligible for MoDOT cost share in the future.

local funding sources & expenditures

There are various sources of potential revenue controlled by local jurisdictions that can be used to help fund the illustrative projects listed in ***Table 5.4***. Funding sources include state revenue from motor fuel taxes, vehicle sales taxes, and vehicles fees distributed to local jurisdictions. Other sources include Off-System Bridge Replacement and Rehabilitation (BRO) for counties to replace or rehabilitate deficient bridges, as well as city specific sales taxes. ***Table 5.5*** describes locally available funding.

Table 5.5

Locally Available Funding

State revenues distributed to local jurisdictions	Forecast Revenue, year of expenditure dollars (in millions)									
	2024	2025	2026	2027	2028	2029	2030	2031-2035	2036-2040	2041-2045
Joplin	$2.205	$2.236	$2.268	$2.299	$2.332	$2.364	$2.397	$12.500	$13.399	$14.364
Webb City	$0.478	$0.484	$0.491	$0.498	$0.505	$0.512	$0.519	$2.707	$2.902	$3.111
Carl Junction	$0.323	$0.328	$0.333	$0.337	$0.342	$0.347	$0.352	$1.833	$1.965	$2.107
Jasper County	$1.592	$1.614	$1.637	$1.660	$1.683	$1.707	$1.730	$9.023	$9.672	$10.368
Newton County	$1.432	$1.452	$1.472	$1.493	$1.514	$1.535	$1.556	$8.115	$8.699	$9.325
BRO – Jasper*	$0.232	$0.235	$0.239	$0.242	$0.245	$0.249	$0.252	$1.316	$1.411	$1.512
BRO – Newton*	$0.214	$0.217	$0.220	$0.223	$0.226	$0.229	$0.233	$1.213	$1.300	$1.393
Sub-Total	***$6.476***	***$6.567***	***$6.659***	***$6.752***	***$6.847***	***$6.943***	***$7.040***	***$36.705***	***$39.348***	***$42.180***
Local revenues										
Joplin										
1/2 cent transportation sales tax	$6.997	$7.095	$7.194	$7.295	$7.397	$7.500	$7.605	$39.654	$42.508	$45.568
3/8 cent CIP sales tax	$5.262	$5.335	$5.410	$5.486	$5.563	$5.640	$5.719	$29.821	$31.967	$34.269
Carl Junction										
1/2 cent transportation sales tax	$0.158	$0.160	$0.163	$0.165	$0.167	$0.170	$0.172	$0.897	$0.961	$1.030
1/2 cent CIP sales tax	$0.158	$0.160	$0.163	$0.165	$0.167	$0.170	$0.172	$0.897	$0.961	$1.030
Webb City										
1/2 cent transportation sales tax	$0.629	$0.637	$0.646	$0.655	$0.665	$0.674	$0.683	$3.563	$3.820	$4.095
3/8 cent CIP sales tax	$0.811	$0.823	$0.834	$0.846	$0.858	$0.870	$0.882	$4.598	$4.928	$5.283
Sub-Total	***$14.014***	***$14.211***	***$14.410***	***$14.611***	***$14.816***	***$15.023***	***$15.234***	***$79.428***	***$85.146***	***$91.275***
Total	**$20.490**	**$20.778**	**$21.069**	**$21.363**	**$21.663**	**$21.966**	**$22.274**	**$116.133**	**$124.494**	**$133.455**

***** Includes county portions outside of JATSO region
CIP: Capital Improvement Projects

transit

Anticipated revenues available for transit operations, maintenance, and capital projects is shown on ***Table 5.6***. A revenue increase of 1.4 percent per year from the MoDOT 2018 LRTP was used for all revenue sources. FTA funds are shown by category and they include the following:

- **5307:** Funding for transit in urbanized areas such as the Sunshine Lamp Trolley, part of the Metro Area Public Transportation System (MAPS) in Joplin.
- **5310:** Funding to transport the elderly and individuals with disabilities.
- **5339:** Bus and bus facilities funding.

The local revenue source is from the City of Joplin's ½ cent transportation sales tax to support MAPS.

Table 5.6

Fiscally Constrained Funding for Transit

	Forecast Revenue, year of expenditure dollars (in millions)									
Funding sources	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031-2035**	**2036-2040**	**2041-2045**
FTA - 5307	$1.114	$1.130	$1.146	$1.162	$1.178	$1.195	$1.211	$6.316	$6.771	$7.258
FTA - 5310	$0.022	$0.023	$0.023	$0.023	$0.024	$0.024	$0.024	$0.126	$0.136	$0.145
FTA - 5339	$0.356	$0.361	$0.366	$0.371	$0.376	$0.382	$0.387	$2.017	$2.162	$2.318
State Revenue	$0.006	$0.006	$0.006	$0.006	$0.006	$0.007	$0.007	$0.034	$0.037	$0.040
Fare Revenue	$0.172	$0.175	$0.177	$0.180	$0.182	$0.185	$0.187	$0.977	$1.047	$1.123
Local Revenue	$0.456	$0.463	$0.469	$0.476	$0.482	$0.489	$0.496	$2.586	$2.772	$2.972
Total	**$2.127**	**$2.157**	**$2.187**	**$2.218**	**$2.249**	**$2.281**	**$2.312**	**$12.057**	**$12.925**	**$13.855**

A summary of capital improvement projects (CIP) identified in Joplin's 2020 Transit System Analysis beyond the TIP period is provided in ***Table 5.6***. Note that the short- and mid-term projects from the 2019 Transit System Analysis are incorporated in the current TIP. The 2020 Transit System Analysis identified additional routes to be implemented in the long-term. The time frame for implementation is assumed to be 2025 since the study did not specify a time period. Cost shown in ***Table 5.7*** is for capital only.

Table 5.7

Illustrative Long-Term Capital Transit Projects

Project Description	**Cost Estimate (in millions)**	**Year of Expenditure**
Long-Term Projects (63 new stops and 4 new buses)	$0.315	2025
Transfer Center	$3.000	Unknown*
Total	**$3.315**	

***** The Joplin Transit System Analysis (2019) proposes a new transfer center in the mid-term (as shown on ***Figure 5.7***, however an exact year is not provided).

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appendix a

engagement

The following pages provide all public comments received throughout the duration of this planning process. These comments have not been modified for their content, but rather have been grouped into similar ideas to better identify themes.

Comments included are from Public Open House #1 (held virtually) and Public Open House #2 (held virtually).

Joplin Public Open House #1 Comments

Public Transit

- As with bike lanes, may be worth adding a trolley stop out near the jobs at the industrial park.
    - Maybe they should have thought of that before they built the industrial park so far away from the rest of town. This is a lesson we never seem to learn.
    - We need to provide public transportation to the industrial park and other large - employers for all shifts.
    - Perhaps a route can connect to the many jobs out at the industrial park?
- If we don't already, can we work with MSSU to have part of student tuition go to a trolley pass? I know as a college kid public transit was key to my experiences!
- How can we get the bus routes to appear on Google Maps as an option? I have used this service in other cities and it is great! It really does help to know how you can get places and when the "trolleys" leave.
    - Easily accessible information about the system (Google maps!!)
- Add a transfer station downtown so people can wait in a weather protected area to change buses.
- Does the trolley have the option to transport bikes? With the corridor just north of Wildcat being extremely skinny, it's not all that safe for a biker to get from Joplin to Wildcat trails.
- I work for the city, and all the time I hear about how difficult it is to keep the trolley route running because the trolley drivers are underpaid. They can easily make more money by driving school buses or by going to another town. Please encourage your council members to increase their pay, and then positive changes will be possible! But no expansions will happen when we are having such a hard time keeping the current routes staffed.
- I hope planners realize how worthless the trolly system is to anyone with a car (and how hard that is on people without). We need to invest more here with a more connected wheel spoke system and trolly service every 15 minutes. If it were convenient to use more people (like me) would ride, which could fund expansions in the future.
- Would be more useful if trolleys ran in both directions. Right now, for example, travel between downtown and MSSU might take a couple of hours.
    - Good point. Especially with MSSU planning to use the old library as part of their campus. I'm sure many college students would like an efficient transportation option between the library and main campus.
- Make it easy to understand the routes and timetables and easy to ride!
- We need to expand our public transportation system

Safety Improvements for Pedestrians

- A pedestrian right-of-way is needed to connect the trail system at Parr Hill Park to the Campbell Parkway trail system. Currently, there is no designation on 15th Street to allow pedestrians to safely cross.
- In my opinion we need more sidewalks and trails throughout much of the Joplin metro area. I would like to see more trails to access more of the city and businesses safely via bicycle and would like to see investment in mountain bike trails.
- I prefer to bike and walk on 5th street instead of 4th street. Much less traffic than 4th and the hill is not as steep. This would be a great connection/extension of a historic trail connecting downtown to Ewert Park and the Joplin Creek trail system.

- If a major bicycle trail system goes over the road, that road should have a designated bicycle lane which is barrier protected (not just striped). In my opinion, good candidates would be Joplin, Wall and/or St. Louis Avenues.
- I would LOVE more connectivity through the city for biking AND walking while pushing a stroller. I would bike so many more places if it felt safe enough! (Bike lanes, paved trails, wider roads to allow for bikes, lights long trails)
- 18th street doesn't connect across the train tracks W of Connecticut anymore, heavy foot traffic across tracks for walkers/cyclists avoiding 20th street. It would be great to have a trail or signage.
- To provide bike/ped access (for North Heights, Murphysburg and the other neighborhoods on the west side of town) to Landreth Park and East Town, Joplin could; 1. Install a Pedestrian Hybrid Beacon (PHB) at the intersection of C Street and Main Street, and 2. Extend C Street east from Main Street, over the RR Tracks and Joplin Creek, on to Murphy Boulevard. This short section of road would include a protected bike lane and a pedestrian sidewalk. The new road would be less than 700 feet in length.
- Indiana needs to be widened to accommodate traffic between 7th and 32nd with protected cycle/pedestrian paths. South of 32nd, there is a need for protected cycle/ped paths, but the street is wide enough vehicular traffic.
- 4th street has minimal traffic and would be a good candidate for a road diet with protected bike-ped lanes or paths.
    - 4th street road diet? Bike lanes connecting existing 2nd street bike lanes and Frisco Trail access
- I honestly could care less about biking. It's not something I'm interested in. It's a great recreational opportunity for those who enjoy it, and there is a vocal population here interested in adding that, but it shouldn't be the only focus. When I look at this area map, I do not see a lot of walk-ability, other than an inner corridor of Joplin. Increase walking accessibility = increase activity levels = increase resident well-being = increase interest in other activities (aka biking, jogging, running, etc.)
- Sidewalks are dark and have no illumination at night
- (Bicycle / pedestrian infrastructure that is) safe, well-lit and useful, that is a major concern in older neighborhoods.
- Let's keep making the Joplin area more bikeable and walkable

Pedestrian infrastructure that is connected, safe, and useful

- Connected to all parts of the city!
    - Connected!!!!
    - Connectivity is the critical missing ingredient in our trail system
    - Intra-city connections and extensions that end in desirable destinations (retail, larger trails, access to country roads, etc.)
    - Yep. Connected!!!

Bicycle / Pedestrian

- Big yes on all these
- Just even having (bicycle / pedestrian) third on the list is frustrating. Can we show our priorities in priority??

- Young professional families want to live in an area with access to nature and amenities, especially in an age of remote-workers. Therefore, to retain and recruit young talent, you need great internet and investments in things they like to do: such as outdoors, health-oriented activities - like trails, hiking, cycling - and other forms of entertainment. Joplin struggles to compete with Springfield, Tulsa, and NWA. Let's make the "small town living" attractive again!
- Designate Joplin as a Pedestrian/Bicycle friendly city. Invest in infrastructure that separates auto traffic from bike/ped routes. Use traffic calming devices to slow uncool drivers. Pass and enforce No Cell Phone While Driving legislation. Lower speed limits on bike/ped streets. Make public safety advertisements on how drivers should safely interact with bicycles and pedestrians.
- Yes yes yes!!!

Trails

- We have always been heavy users of the Frisco Greenway Trail and would love to see more trails like it in the area!
- This trail looks very lonely. (Missouri Southern State University and Turkey Creek)
- This is my favorite trail in Joplin! The parking lot needs improvement!!! (Frisco Greenway)
- While the trail network is nice, if we want to make commuting via bike viable then these need to also connect to where people are trying to go. Connecting some of these systems to the mall complex, restaurants, or other areas of commerce would be helpful. Also, bike racks??
- Connect Ruby Jack trail to Frisco with bike lane access. There is also no signage for the Frisco trail head in Webb City. You just have to know it's there.
- I hope the Frisco Trail and Ruby Jack Trail will eventually connect through Webb City.
- Again, a trail that leads to nowhere (E 44th Street and S Rangeline Road)
- Would love to see more bike trails throughout the Webb City and Carl Junction areas. Would also love it if the Frisco and Ruby Jack could be paved at some point, or at least portions of them (recognizing that there is a significant cost associated with that).
    - I agree!! I would love for the trails to be paved with recycled tire rubber. This would make them less bumpy (for strollers and wheelchairs and road bicycles) without using concrete or asphalt, which are high-impact on runners' joints. Plus, it keeps landfill-banned tires from sitting around.
- It would be really fun to have some mountain biking trails. Maybe that falls more under recreation and less under transportation. I know the current trails off to the side of the Frisco trail are technically on private property.
    - I agree 100%. If Neosho can build some nice mountain bike trails, why can't Joplin or any of the other surrounding towns?
- The current trails that are on private property are some of the best single track mountain bike trails in the area. This property would be an excellent addition to public green space in Joplin. It's on a creek, it's historical and it's in downtown. It's next to a park, a college campus, and the Frisco Trail. (Southeast of 171 and S Madison Street)
- Joplin has a lot of bike lanes/routes the connect to pedestrian trails - not bike trails.
- Why would you put a trail on a planned 5 lane road that leads to nowhere? (Connecticut Ave north of 44)
- Bike lane access to Frisco Trail head - signage directing people to the trail
- What is being defined as "Trail"? Main and 20th Street don't have any trails that run along them.
- I wish the trail could go under the mains St viaduct here instead of going out to the traffic light.

- I have never seen this "trail" (crosses Route 66 between S Maiden Ln and Highway 43)
- What about a multiuse trail down the median? (Junge Blvd)
- Complete the Tin Cup Creek Trail. It is my #1 suggestion.
    - Ditto to previous commenter!!
    - Complete the Tin Cup Creek Trail. It is my number one suggestion. It will be fabulous and I think will become on of the busiest trails in Joplin.
- What trail is this? (Crosses W Zora St near N Red Fox Rd)
- The designers of the Mohaska trail included multiple crossings across streets just to progress up the trail on the other side of the road, sometimes for very short distances. This makes no sense, especially crossing 26th street at a little stop light that drivers easily overlook. I do not think it's family-friendly at all. Another suggestion is to have the mohaska trail connect from right behind the senior center east toward Picher Ave. Having to require families, strollers, dogs, kids, etc to walk through an unmarked parking lot to continue on the trail is not safe.
- I can't wait until the new segment of the Joplin Creek trail under 7th Street is completed.
- I know the railroads disrupt the street network, maybe trails and bike lanes can bridge the divide?
    - Ditto. There are a lot of abandoned railroad networks in town. Converting some to trails to the success of Frisco would be great.
- Zero trail signage on Mohaska Trail and only the short section from Mohaska Park to Pearl Street is worth riding. The rest of it is basically a sidewalk that crosses streets multiple times at the bottom of hills.
    - Ditto to previous commenter. The trail is not very functional - crosses a lot of streets, cuts through a parking lot, etc.
- This trail could easily connect to the Ruby Jack Trail in Carl Junction (Trail at NW Murphy Blvd and N Maiden Ln)
    - Maybe someday
- I don't understand how there are so many "Trails" - what are all these green designated areas? Are most of them just side-walks?
- Better signage/advertisement is needed for sure. I didn't realize how many trails we already have to offer, even if they are disconnected.

Need long range trail planning

- Agreed. While we want Joplin to be well-connected with sidewalks and trails, it makes the most sense to get widely used and/or long trail systems connected first.
- Run biking trails along local businesses, like breweries and such. People can bike/walk to entertainment!

Want more recreational biking and running trails / multi-use paths

- Love this idea
- Running trails would be nice, but as a runner, I can take sidewalks if I really want to. A cyclist has no choice. I would invest in cycling lanes before adding more running trails. Although, BOTH would be great.

Large demographic that would work or use for other means if the trails were available, safe, and well-connected to activity centers

- Yes!!

    - I would commute to work on my bike if there was a safe route. I tried for a month, but it was too dangerous and I stopped.
    - I'd commute to work on a bike if there was a safe path at least part of the way.
- We need to protect those that use trails as a mode for transportation need to be protected.
- We love the newly redone sidewalks and the Mohaska Walking/Biking Path in our neighborhood! Joplin needs much more of this type of transportation infrastructure.

Bike Lanes and Non-Trail Infrastructure

- Joplin and Wall could be good alternatives to Main St. for bike lanes. Lots of room to fit them in and less traffic.
- This part of Connecticut (South of W 32nd St and North of 44) has minimal traffic and would be a good candidate for a road diet with protected bike-ped lanes or paths. It is also heavily traveled by neighborhood walkers.
- Protected bike lanes on the one way streets or Main st into/out of downtown.
- Some of these roads behind main street (if not main street itself) would be great for cycling lanes. There's a lot of parallel parking spots on the road on the road, which is convenient, but downtown Joplin has so many free parking lots that bike lanes may be a better use of that space.
- Old highway 71 and scenic Drive from Saginaw to Neosho should be designated a bike route with signage and restricted speed limits. We could connect the Joplin trail network and the Neosho trail network to this route. It would be world class!
- Is this potential trail expansion or current? Zora is definitely not a trial. There is a bike lane for a portion W of Range Line, but from the Frisco trail East there is nothing. It cuts down to two lane with no sidewalk East of Range Line. Also, the bike lane in this area (like most bike lanes in Joplin) is not nearly wide enough. The seam where the road meets the curb paving is in the middle of the lane. You have to ride either dangerously close to the curb or traffic if you attempt to ride in the bike lane.
- When Highway D between Webb City & Oronogo is widened [and I suspect that with current traffic, that will happen in the foreseeable future], please consider adding a shoulder for bike riders. The new Center Creek bridge n Hwy D is great for cyclists and pedestrians. Why not make the approaches safe as well?
- Connect existing bike lanes/paths for easier commute across town.
    - Would love to see more connectivity between bike lanes.
    - That is my #1 suggestion. Having bike lanes that last less than a mile in length disjointed around town is not only not helpful, it's not safe.
    - Bike lanes need to connect to each other.
- This area of St. Louis would be perfect for a bike lane and sidewalks. (S St. Louis Ave directly north of Route 66)
- People living in North town do not have access to a bike route from the neighborhood that does not involve riding on busy roads.
- Junge Blvd. would be an excellent designated bike route!
- Why does this cycling lane end so soon would it would easily progress all the way to 4th street or beyond? (S Black Cat Road south of W 20th St)
- This section of 32nd St. is currently unsafe for bicycles. When 32nd St is widened to Central City Rd., a protected mix use trail should be added.
- Add bike lanes and side walks to 26th street from Connecticut Ave. to Maiden Lane.

- Bike lanes in the south and north are disconnected from each other. Once connections are made, more bicycles will be utilized for necessary transportation and recreation.
- I think this is the bike lane on St. Louis? If it is, it ends right before the nursing home. Would be so great to continue it to I-79 where it could then connect to Webb City and that trail system
- Bicycle lanes need to be protected from traffic if they are to be a viable mode of transportation. Many people do not feel safe, and rightly so, riding next to speeding traffic.
- I would like to see some of Joplin streets designated as bike routes. We have many low traffic streets that are fun to ride on. Leave the parking as is, it works to slow/calm traffic. I like to ride on Langston Hughes Broadway, 2nd street, 15th street, 22nd street, 26th street, 34/36th street, Florida Ave., Indiana Ave., Pennsylvania Ave., Pearl Ave., Byers Ave., and Pitcher Ave. If you know the streets you can navigate through most of Joplin without going on any busy streets. Bike route signs would help new residents who are not as familiar with Joplin streets.
- Add bike route signs and restricted speed limits to the streets along Shoal Creek
- This is a very dangerous railroad crossing and needs to be fixed now before another bicyclist is killed here! This is a very complicated intersection so hire a engineering company that specializes in bicycle infrastructure. (S Schifferdecker Ave and W 20th St)
    - 1000% yes to hiring someone that knows what they are doing
    - Ditto! The bicycle lane ends at this intersection and it is so dangerous, it actually hinders access to the lane. Please fix and extend the protected lanes!
- Biking improves businesses!! https://bicyclecoalition.org/facts-biking-improves-business/

Sidewalks and Pedestrian Infrastructure

- 26th Street needs sidewalks for pedestrian traffic that extend through to maiden lane. People cut through back yards to get through to get access to Mercy/Cunningham park, etc.
- Incomplete sidewalk network in this area. 26th street only has sidewalks to the West of the HAWK signal. Residents coming from the East and North of Mercy/Cunningham Parks have to walk through people's yards to reach the HAWK and cross safely.
- We need a pedestrian light or speed table at Murphy and Sergeant for safer crossing.
- Please consider a pedestrian signal at Madison & 13th.
- I rarely see anyone walking on these sidewalks. The road is wide, the traffic is fast, and there is little to no shade. (S Rangeline Road between Route 66 and E 32nd Street)
- This trail connecting two parks does not feel safe to cross at 15th street. There is no crossing site or signage, just a curb. (Parr Hill Park and Murphy Boulevard Park)
- Incomplete sidewalk network in this area. 26th street only has sidewalks to the West of the HAWK signal. Residents coming from the East and North of Mercy/Cunningham Parks have to walk through people's yards to reach the HAWK and cross safely.
    - Ditto to the previous commenter. This is a daily problem for the neighborhood.
- Pedestrian infrastructure in the N side of town is not well lit. Very dark at night.
- Sidewalks need to be improved in the downtown corridors and lower income neighborhoods.
- Inconsistent sidewalk infrastructure
- The "inviting aspect" of the infrastructure should be as much a part of the plan as the plan itself. No use building expensive sidewalks that no one wants to use.
- Just re-stating that the Recycling Center would be thrilled to help pave sidewalks with recycled tire rubber
- No more sidewalks with utility poles, mail boxes or traffic lights in the middle of the side walk. We should all try using a wheelchair to see if we can get by these obstacles. I bet it would be very

frustrating. Sidewalks do not have to be straight like and interstate highway. Since people walk at 3-4 MPH it should not be hard to build around these obstacles.
- There's no safe way for visitors staying in the hotel district to safely cross the bridge over the railroad without walking on Range Line.

Scooters and E-Bikes

- Electric scooters and bicycle ride sharing could help fill the public transportation gap to employment opportunities if there were safe routes.
- If electric bicycles become more popular in Joplin as in other parts of the country we will need more bicycle lanes
    - I'm not sure if electric bicycles will be allowed in bike lanes. Doesn't seem like they should be for safety reasons
- I have developed a relationship with Bird a major player in alternative transportation. After months of back and forth Bird has agreed to work with my company Fulcrum Technologies. Our combined goal is to bring electric scooter ride sharing to Joplin! This touches on many topics with jatso. I believe economic development is a good place to start the conversation.
    - I think Bird is a great idea. I just wonder if we can think about a novel way to implement it here given the smaller nature of our community. I'm interested to see what can be developed.
- I agree that Bird can both provide a fix and inhibit elements of access. It can be difficult to maintain, but the accessibility of a scooter to get around is very nice. I wonder if there is a way to think outside of the box with Bird on how they can support our community, based on its size, with the needs of manual labor to implement Bird. A local non-profit is working on setting up shop to bring used/donated bicycles to those in need (children & adults) and I wonder if this is something Bird could connect with in some way.
- I have to say I'm not super jazzed about the comment that mentions bringing Bird into town. Those scooter-sharing services really clutter up the sidewalks of the big cities these days--don't really want to see that in Joplin. However, I completely agree that developing a more bikable and walkable Joplin will go a long way in attracting new talent to the area.
    - I agree
    - I think having electric bicycles on bike lanes/walking trails would make them less safe.
    - I do not like Bird as a solution for Joplin. create bike lanes first that improves area connectivity, then see if the community wants something like Bird. They are an eye-sore and clutter up the few sidewalks we would have.

School Safety

- We need pedestrian and trail connection to the new school at Dover Hill. This can become part of a larger connected system that serves recreational biking and hiking
- Bike lanes or improved sidewalks are needed here to provide safe walking from the school/residences to the Frisco trail. (Route 66 / W Broadway Street in Webb City)
- It would be great to have bike lanes/wider and unbroken sidewalks to allow safe walking/biking from the Webb City High School and neighborhood to the Frisco Trail.
- We need access from the N town neighborhoods to the new Dover Elementary. Pedestrian lights or speed tables on Murphy. An accessible bike lane at the Main Street bridge (and a new bridge). Or a pedestrian / bike bridge at the end of Wall St that connects to the trail system at Dover.
- There is a place here where the Landreth/ Dover hill trail comes next to Joplin creek just a few yards from N Wall Ave and Islington Pl. this would be a great place for a pedestrian connector

from the residential neighborhood to the trail system and a safe route to the new Dover Hill school. It would require a bridge over the railroad track and creek.
- Many sidewalks in this area are unsafe and not pedestrian friendly (surrounding North Middle School NW of W 4th St and N Main St)
- Need safe passage from North and West neighborhoods to Dover Hill for future school.
- There should be safe walking and biking routes to schools.
- If we want children to grow up with an active life mindset, we need to provide safe ways to schools.

Safety Improvements for Vehicles and Road Network

- Dangerous intersection with several traffic patterns. With new Center Creek bridge coming off of Zora onto N Schiff, more traffic is using this bypass. Roundabout here might help. ?????
- I see cars constantly use the wrong lane traveling south on Murphy Blvd. to Indiana. Clear road markings and signals might reduce crashes.
- Interesting how in Joplin's grid of local streets this area seems to have a higher level of crashes.
- I-44 is long overdue for adding lanes. I realize this is a cooperative effort with MODOT, but let's keep knocking on their door to get this done
- Really need to expand this road - lots of heavy trucks in and out of this area. In addition, protected bike lanes would be wonderful because it is heavily trafficked by cyclists. (Newman Road
- 171 has so many problems; sharp curves, numerous angled intersections all with the railroad right next to the highway. Replace with 4 lane divided highway of interstate standards from 249 interchange in Carterville to state line at highway 400.
    - I agree that 171 has many problems. With it being highly traveled for regular working commute as well as trucking, something needs to be upgraded. Widening might boost sales from Pittsburg shoppers as well.
- 20th street west of Schiff really needs expanded. There are constantly heavy semi trucks along this route on a very narrow road without even a shoulder. In addition, it's a popular route out to the country for cyclists and traverses nice residential areas.
- 32nd street past Schiff needs expanded lanes or at least a generous shoulder. It is very narrow and hilly and lots of people take this route at extremely fast speeds..
- The residential growth in Duquesne should warrant some roadway upgrades, particularly along 20th Street from Davis Blvd past East Middle School and along Duquesne Road from 32nd Street to 7th Street. The City of Duquesne should be a major player in funding.
- Focus on maintenance of the existing transportation system before building new – let's get creative with what we have
    - Porque no los dos? (Why not both?)
    - Absolutely! We have so many great opportunities already: wide streets, slower traffic regions with wide easements for modification, and several parks and trails throughout the community that just need to be connected.

See a lot of patches, not a lot of long-term fixes / improvements

- This is a major problem. Patches don't last long, resulting in potholes. The potholes can cause car damage and are very dangerous for bike riders.

Maintenance of roadways to ensure they are traversable

- YES!

- We need to stop building for speed and start building for safety and other modes of transportation.

Speed Limits

- I think the speeds driven in this area are substantially higher than what is shown here. We joke it's the Joplin Autobahn. (Highway 43, South of W Zora Street)
- Higher speed limits overall than I expected!
- (W 4th St, NW of Highway 66 and Highway 43) Traffic typically travels far too fast in this area. Traffic slowing measures that also improves walk-ability (the sidewalks are in very poor shape) may help reduce crashes.
- West Zora sees a lot faster speeds than posted, road is nice and smooth and people take advantage of this. Unfortunately East Zora is posted for higher speed but it is a dangerous road to travel that fast.
- The actual speed of vehicles traveling the new road in the evening, especially on weekends, is between 45 and 65 mph, maybe higher for racing motorcycles.
- Anytime you widen a road, especially one that doesn't have much traffic, you encourage speeding. People drive as fast as they feel comfortable on a given stretch.
- The speed of the flow of traffic is usually 40 to 45 MPH
- Most people drive around 35mph on 26th between Main and Connecticut.
- If this is supposed to represent posted speed limits then it is very inaccurate. For example Murphy Bvd between Main and Lone Elm is posted 25- here it shows 54-50. If it is supposed to represent the actual speed people drive then ???

Traffic

- Really need to expand these lanes as soon as possible. Amount of traffic and trucks are tearing up this little county lane. (E Zora Street, W of Highway -249)
- Improved signage, including on the road in advance of traffic signals would help improve pinch points and traffic safety.
    - I work right next to the sign shop for Joplin. I would love to help with this.
- Looks like traffic isn't a problem here (Connecticut Avenue and E 32nd St). Why is so much being spent constructing extra lanes?
- No way it is that busy! (Hearnes Blvd)
- West 26th Street would be a great candidate for a road diet based on these traffic numbers.
- (171) Can this really be right? When I commuted from Pittsburg, it always felt congested. But again, maybe that's because there are very limited opportunities to pass the numerous semis.
- There are so many entrance and exit's along Rangeline without signals. A frontage road or limiting business access points could reduce some of the traffic and collisions.
- St. Louis is very busy between Central and Murphy Blvd. to vehicular traffic especially during commute times.
- We are definitely going to need a southbound right turn lane on Main when the Dover school opens. I know they can turn on Lone Elm, but when I asked the superintendent, she was unsure as to whether there would be a turn lane at the second entrance, just north of Lone Elm.
- 36th St., with some revisions, could be a major collector.
- Agree that the Main St. events can be a bit disruptive. Would love to figure out a way to keep the events but mitigate the impact on traffic
    - I would also like to see more downtown events and traffic re-routed.
    - Would love to see more events and trucks re-routed.

- It's going to be a hot mess on north Main in the mornings and afternoons when the Dover Hill school opens unless there are multiple turn lanes, or even a light, at both school entrances.

Flooding

- Flooding at Murphy Blvd under the train bridge is terrible, cutting off east and west travel along this corridor every time it rains. Re routing traffic through the already congested neighborhood.
- Add D highway north of Oronogo and O highway leading into Alba, both at the bridges over Shoal Creek. I don't why they didn't build the road bed higher when they put in the new bridge on O highway. It constantly floods in the spring, and there is no easy way to go around to get to Alba because D floods too! You either have to go way north or way east to access a road to Alba.
- I have heard that funds from the federal government given to the city to buy flood pumps were used to buy astro turf. I haven't fact-checked this.

Truck Routes

- There is almost a constant line of semis from the industrial park down Duquesne Rd to Zora and on Zora to 249. When Zora is widened don't forget this short segment of Duquesne Rd.
- Zora from Lone Elm to 249 would be a safer truck route than 7th street.
- Lots of discussion from downtown groups about moving the truck route off of Main.
    - Agree
    - This would really be ideal in allowing more 'Main Street' character especially downtown.
    - I would LOVE to see Joplin's downtown free of trucking traffic, to allow for more foot traffic, slower drivers, etc.
    - Lone Elm at Fir Rd to Schifferdecker at I44 would be a much safer and quicker route for a designated truck route than main street.
    - I would agree with this. A bypass would be ideal.
    - Would love to see more events and trucks re-routed.

Truck traffic in downtown Joplin detracts from local economy and makes it less attractive for development

- Yes, but we also should be careful not to inconvenience truck traffic too much, or businesses may be less likely to want to conduct business here.

Roundabouts

- I think the roundabout at Stone's Corner has dramatically improved traffic flow. The unfortunate downside is a lot of people do not understand how to navigate it. I find this more likely during the weekends/holidays when more people who do not drive through it daily are using it.
- Maybe some roundabout education could help not only here but in other locals too.

Economic Development

- Need to focus on biking as an economic development tool and quality of life enhancement
    - Yes and yes please!
- Alternative modes of transportation are a major economic driver
    - Yes!
    - Emphasize the positive economic impact of connectivity and alternate transportation accessibility.

Equity

- How will essential workers reach their jobs?
- Connect public transportation system to employment centers and other destinations
    - Really important points, this is a big deal for the low-income folks I've worked with both in Joplin and Webb City
    - People should be able to get to places within their own community, regardless of income
    - Accessibility to community for those of lower income and whose with disability is extremely limited to a lack of public transportation and a lack of connectivity in our region (Complete Streets) to safely access necessities. To get to a doctor or the store often takes more money and more time for those who are already limited by their means compared to those who have regular access to a vehicle.
- A focus on equity- special consideration given to projects that would support the population without a car
    - I'm all for this!
    - We need to start building transportation systems for all people not just for those that have cars or that can easily walk and bike.
    - Infrastructure/funding mechanisms need to be open to the conversation with those who would actually be using the infrastructure.

Additional improvements, like bike/ped, usually get cut on roadway projects due to funding

- I will help look for/apply for grants to help ensure they cannot cut funding for these things

National best practices to see what similar communities have done to balance economic development AND quality of life

- AND safety
- Copy as much as possible of what NWA did for their region.
- I think public safety often gets overlooked in the name of economic development. Bigger is not always better.

Ability to provide job access

- Especially through internet work from home options in rural areas

Environment

- I would love if we would highlight the environmental importance of public transportation, walking, biking etc. Walking trails also allow for public education about native flora and creatures through signage, fostering every person's innate appreciation for nature.

Work from Home and Internet Access

- We need wi-fi access downtown and into the low income neighborhoods that surround downtown. This could boost downtown economic development while at the same time help low income children with school work and their parents with employment.
- I live in Alba, and there is only one internet service provider that serves that area. And they don't even serve all locations in Alba.

- Lack or rural internet access poses challenges to working or schooling from home
    - This was a real challenge during the quarantine work from home period. If the shut down occurs again, or becomes a regular thing due to pandemic, then a lot of folks in this area are going to be in a world of hurt.
    - And broadband is extremely weak in that area too. If you can connect to it at all.
    - Agreed! The rural internet option I tried failed miserably and had high cost, even if it had worked correctly. It would be nice to have a reliable option.
- Gaps in high speed internet; broadband funding cut from state budget
    - I do know a lot of people without access to decent internet.
    - I definitely agree that internet accessibility is important, but is it relevant to JATSO?
- From an economic development perspective, affordable and high-speed internet is an increasingly big issue
    - Yes, and a big issue for equitable access to resources for children to prepare for their future.
    - Why is there only one internet provider in Joplin? Should be improved.

Broader acceptance of biking as a legitimate transportation mode

- Yes!
- This should include safety campaigning for bikers/walkers. (yielding for pedestrians crossing, yielding when turning left on green at a 4-way stop).
- Also the casual cyclist needs to be educated on proper rules - for instance, that all driving laws must be obeyed (stop at stop-signs, etc) and which side of the road to ride on. Campaigns to improve area awareness of how to share the road with a cyclist is a must.
- Carpool opportunities for people who work in Carthage or other regional areas? Thinking about commuters to Leggett & Platt.

More deliveries by UPS, Fedex, and Amazon in box vans and large trucks

- I haven't seen this at all in the neighborhoods which I frequent. COVID, I'm certain, has increased deliveries but as drone deliveries launch, this concern may be mostly eliminated.

Details, Corrections, and Feedback

- Need to consider going further west in your plan. Many travel CR 290 to reach Carl Junction and now that SW Joplin is that far west, we're seeing more and more traffic and cyclists.
- Range Line Road should be 3 separate words. We need to work to make this consistent across all signage and publications.
- This street is incorrectly labeled. Central City Road is the same as County Road 290, which is another mile west.
- Connecticut is a five lane road from Murphy Blvd. to 32nd St.
- West bypass??? What road to the west is being groomed for this north/south traffic? I thought it was CR 290/Central City??? or is it Lone Elm/Peace Church or Black Cat?
- So glad you all are taking a careful, systematic approach to improving the transportation infrastructure in Joplin. Keep up the good work!
- I think it is important to look towards other places that have our ideal infrastructure in place and see how it was implemented. We don't have to reinvent the wheel! There are many places in the world that have implemented great multi-modal transportation. Let's see how we can learn from their experiences.
    - NWA!!

- Thanks for going the extra mile to encourage public input.
- I really appreciate all the effort this must have taken to study and present. I don't have many comments but I love knowing these things about my community and what's possible on the horizon. It makes me feel proud and hopeful. Thank you!
- Very comprehensive. Public input is a must. Looking forward to the next steps!
- Long-range transportation plans should be re-evaluated prior to commencement. This is more important now than ever as employers are shifting away from offices to having employees work from home. This shift will put less strain on traffic infrastructure and more need for safe, walkable, bikable neighborhoods and connected trails.

Joplin Public Open House #2 Comments

Recommendations for New Improvements:

- *Public Open House #1 Recap: Trucks need to get off Main Street in downtown Joplin*
    - This must be addressed not only for the growth of downtown, but for safety!
- *Level of Service Analysis (LOS): The pedestrian LOS analysis evaluates how long a person walking must wait for safe crossing, as well as the overall walking experience, which considers lighting, security, sidewalk condition, and automobile traffic volumes.*
    - Overall sidewalk experience should also include aesthetics. Is it visually appealing? Are there trees to provide shade and other soft landscaping? What is the noise level? If there is not a barrier between a busy, noisy street, people will only use the sidewalk if necessary. The City removes trees to widen roads and put in sidewalks. There should be a much better planning process than bulldozers.
        - **Agree x6**
- *Bicycle Level of Service (LOS) Map*
    - If Highway D from north of Webb City to Highway 96 could be widened to include a shoulder for bicycles, that would effectively connect the Frisco Greenway and Ruby Jack Trails. It would create a route for safe bicycle travel between Carthage, Oronogo, Carl Junction, Webb city, and Joplin.
        - **Agree x2**
    - Adding a two ft. "bike lane" does not protect riders, especially children riding bikes in a residential neighborhood.
        - **Agree x2**
    - Bikers want off-road trails and protected lanes. These 2 foot lanes (the gutter does not count as bike lane according to the USDOT) are less than worthless on a 40 mph road. Please don't make more of these and say we have bike facilities.
        - **Agree x3**
- *Sidewalk Level of Service (LOS) Map*
    - It would be great to get a trail to Grand Falls.
        - **Agree x3**
    - In my opinion, it would be better to build both a sidewalk and a protected bike lane on one side of the road and do it right so people use it rather than build two sidewalks and two striped bike lanes that are unsafe and uninviting.
        - **Agree x1**
    - A sidewalk and a bike path are so needed on Indiana from 15th St. to 44th and then along 44th to Stapleton School.

        - **Agree x2**

- *Transit Level of Service (LOS) Map*
    - This map is sad. We need more transit options. Perhaps moving away from the large expensive "trolley cars" would be more cost efficient. If public transportation was provided by smaller vans they could run more often. We also need public transit out to the industrial park and other workplaces that have a three shift schedule. As ridership may be low, a car could even be used.
    - A bicycle renting or sharing program in census tracts 110, 108, 106, and parts of tract 101 could boost not only public transportation but also add a fun element of getting around in central Joplin. Rethink public transportation.
        - **Agree x2**
    - There needs to be a public transportation option for Wildwood Ranch. This is a large development that continues to grow everyday.
- *Potential Bicycle & Pedestrian Network Map*
    - It would be great to bring a bike and hike trail from Y to McIndoo Park. Then to Grand Falls.
        - **Agree x2**
    - Any chance of getting the Frisco Greenway and/or Ruby Jack paved?
    - Why don't you consider the planned path on the west side of the road a bicycle path and keep the road to four lanes so it is user friendly and inviting to bike riders, walkers, and the neighborhood?
    - Having a protected bike path to Redings Mill along Main Street would create a large loop to Grand Falls and then back north along Schifferdecker.
        - **Agree x1**
    - This area could use a boost. I think a road diet would be great all along 4th street. (W 4th Street and S Main Street)
        - **Agree x1**
- *Potential Mid-Term Transit Network Map*
    - Public transportation to the airport should be considered in the near future, assuming we have a functioning airport.
        - **Agree x1**
    - Low income census tracts, 106, 107, and 108 need more access to public transportation.
    - I like the overall design here. Could we add a stop in North Heights, maybe along D street between Wall and Pearl (next to Neighborhood Life House) I think it would be well used, but we are currently way too far from the transit stops to use them.

        - **Agree x1**

- *Proposed Project Average Annual Daily Traffic (AADT) Map*
    - There needs to be a route to Rangeline along 36th Street. People already use the route to get to and from several high traffic businesses. The road is wide enough to accommodate the traffic but there needs to be a sidewalk and bike lane installed.
- *What Did We Miss?*
    - Is the North Main Viaduct scheduled to be replaced any time soon? It's pretty rough to drive though I can't speak for its structural integrity. If it is, it would be a good opportunity to update it with an underpass for the trail, and off-street multi-use paths on either side of Main. It's a frustrating barrier to nonmotor mobility in both directions.
        - **Agree x1**

Mistakes

- *Bicycle Level of Service (LOS) Map*
    - There is no biking on 32nd street. I do not understand this map at all.
        - **Agree x1**
    - I'd like someone to explain the criteria for the LOS levels. I'm guessing whoever came up with these is not a biker. If a sharrow on S Main gets a B, and parts of Rangeline get a C (no sane person would ever ride a bike there) the bar is incredibly low.
        - **Agree x2**
    - Why are there LOS dots? Is this a crosswalk? (E 50th Street)
    - This is a pedestrian only trail (Wildcat), why does is have a Bicycle LOS rating of A?
        - **Agree x1**
    - These are pedestrian only paths (Cunningham and Mercy Park), why does is have a Bicycle LOS rating of A?
        - **Agree x2**
    - Are these trails or proposed trails?
        - **Agree x1**
    - It is very difficult to read these maps as most streets are not named.
        - **Agree x1**
- *Sidewalk Level of Service (LOS) Map*
    - In a few square blocks there are multiple gaps in LOS. Why the break?
    - Why the break? (at E 26th Street between W Junge Boulevard and W 20th Street)
    - Why the break? (Route 66 and S Maiden Lane)

    - Why the break? (Route 66 and S Main Street)
- *Potential Bicycle & Pedestrian Network Map*
    - this small loop? (Near Murphy Boulevard Park)
    - Why this small loop? (E 20th Street at Joplin High School)
    - Another little loop? (Freeman Hospital West campus)
- *Potential Long-Term Transit Network Map*
    - Isn't there suppose to be a BIG residential senior housing project being built at the corner of Connecticut and 44th? If so, they will need a public transportation option.
    - This low income area needs public transportation. (NE area of W 32nd St and S Main St)
- *Proposed Project Level of Service (LOS) Map*
    - From this map, I have no idea what is proposed, so I am not able to comment.
        - **Agree x1**

General Comments

- *Bicycle Level of Service (LOS) Map*
    - Where on 7th street is it safe to bike?
        - **Agree x1**
    - This one is interesting!? (LOS C on US Route 66)
    - Has the City of Leawood agreed to this? Will Leawood pay for this or will Joplin citizens?
    - This is clearly not a bicycle path unless you just want to ride around in a small oval. I'm not even sure what this is without any markings, it is difficult to know. (Trail in or near Murphy Boulevard Park)
    - General comment about Bicycle LOS: Signage and path markers will be critical for a successful, connected trail system. Signs/markers should be placed at consistent intervals on the main trail systems.
        - **Agree x1**
- *Potential Long-Term Transit Network Map*
    - This is needed now, not four years from now, especially with low income people being hit the hardest by the economic downturn.
- *Committed Project Annual Average Daily Traffic (AADT) Map*
    - It is difficult to determine if these roadway improvements are necessary without more details.
        - **Agree x1**

    - I don't believe Leawood has agreed to this.
    - How much of this is maintenance that should have been happening all along, how much is committed to improvements that make other transportation methods available and ENJOYABLE, and how much is more of the same - build big roads with sidewalks and bike lanes few use?

- *Committed Project Level of Service (LOS) Map*
    - If it is a committed project, i.e. already agreed to with all parties including communities that are outside of the City limits, I don't think comments will change anything.

- *What Did We Miss?*
    - I am concerned about who can and cannot comment on these plans. It assumes people have access to internet, a computer and have high reading skills, computer, and map reading skills. Many of the proposed plans completing miss low income areas. The biking and running community have a large voice, which is wonderful. We need focus groups from neighborhoods so they too have a voice. Without that input, we cannot really determine what our citizen need and want now and in the future for all modes of transportation in Joplin.

appendix b

national highway system map

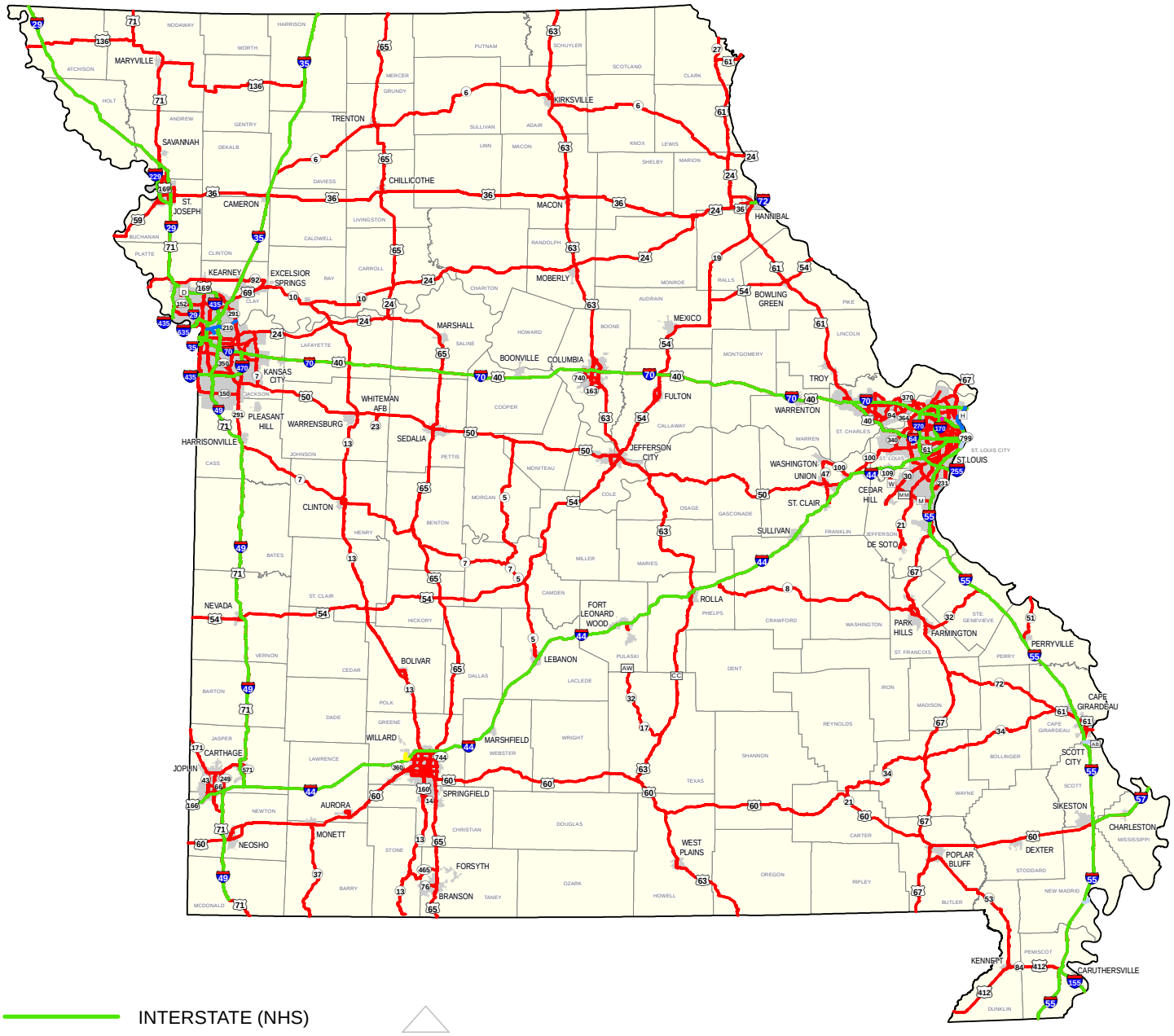
The National Highway System (NHS) is a network of significant highways approved by Congress in the National Highway Designation Act of 1995, including:

- The Interstate System
- The Strategic Highway Network (STRAHNET)
- Connectors to the STRAHNET
- Connectors to Intermodal Facilities

For reference, Missouri's NHS system (***Figure B.1***) and Joplin's NHS system (***Figure B.2***) are provided shown.

figure b.1

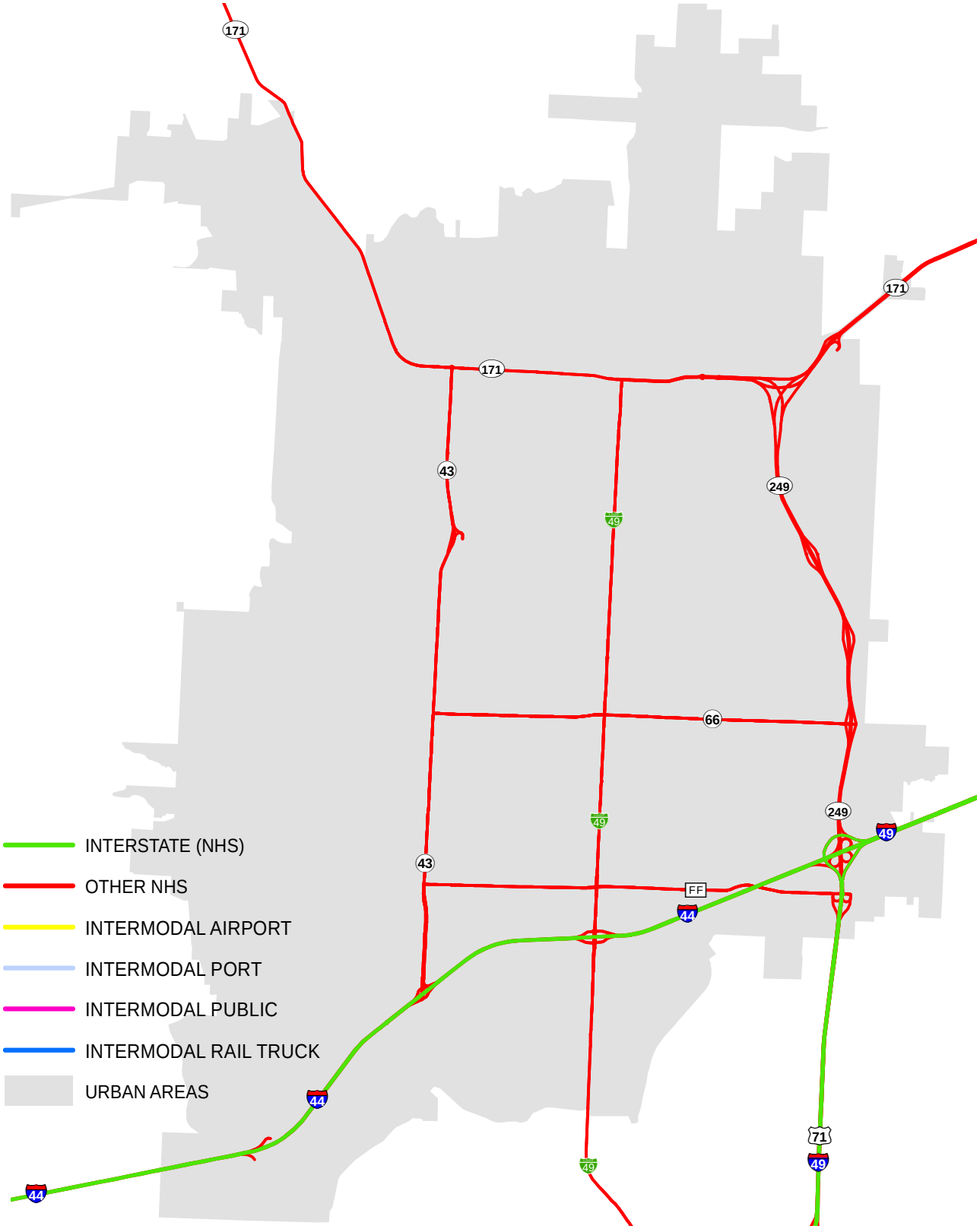
missouri nhs system



Source: MoDOT National Highway System maps (https://www.modot.org/sites/default/files/documents/NHS_Statewide_9292020_3.pdf)

figure b.2

joplin nhs system



Source: MoDOT National Highway System maps (https://www.modot.org/sites/default/files/documents/NHS_Statewide_9292020_3.pdf)