

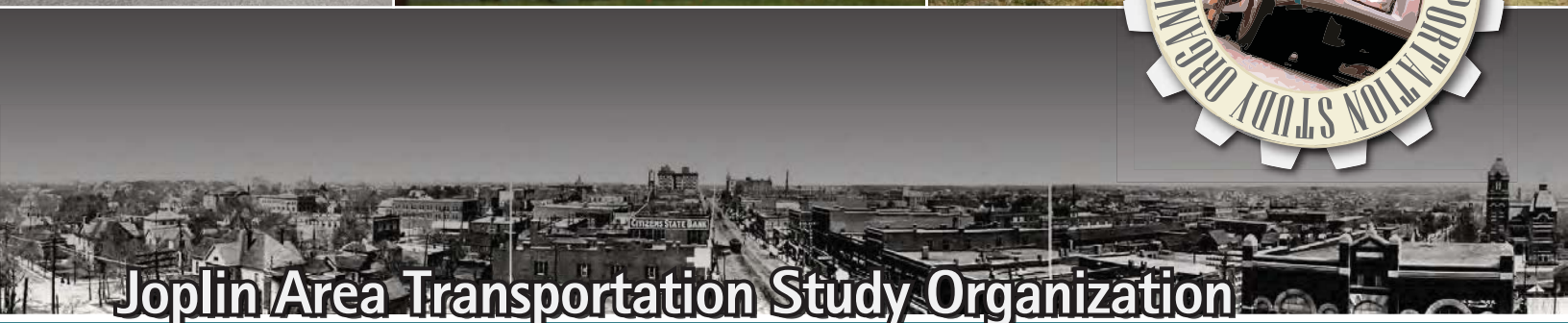












Joplin Area Transportation Study Organization
2030 LONG RANGE TRANSPORTATION PLAN

FINAL DRAFT

prepared by:
CJW Transportation Consultants, LLC
HWS Consulting Group, Inc.
Land Vision, Inc.



October 2010



JOPLIN AREA TRANSPORTATION STUDY ORGANIZATION (JATSO)
2030 LONG RANGE TRANSPORTATION PLAN UPDATE

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This study was funded by federal and local funds.

The opinions expressed in this report do not necessarily reflect those of the Federal Highway Administration, Federal Transit Administration, or Missouri Department of Transportation.

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SECTION 1
BACKGROUND AND INTRODUCTION

1.1 PURPOSE OF STUDY/INTRODUCTION

A Long Range Transportation Plan (LRTP) is a document that serves as a guide to a region regarding that region's transportation infrastructure. It presents an evaluation of the current system and that system's future needs to better accommodate the expected changes in demand for transportation services. Although the plan provides an extended outlook – at least 20 years from the present – the plan is also meant to offer strategies and actions that can be implemented in the short-term to begin to address issues as identified and as they arise.

For metropolitan areas such as Joplin, the LRTP is required to be updated no less often than every five years. Metropolitan Planning Organizations (MPOs) are setup by and given the authority to update these plans by federal legislation. The LRTP was last updated and adopted by JATSO in 2005. This update, once adopted, will extend the previous planning horizon to 2030.

1.2 ROLE OF JOPLIN AREA TRANSPORTATION STUDY ORGANIZATION (JATSO)

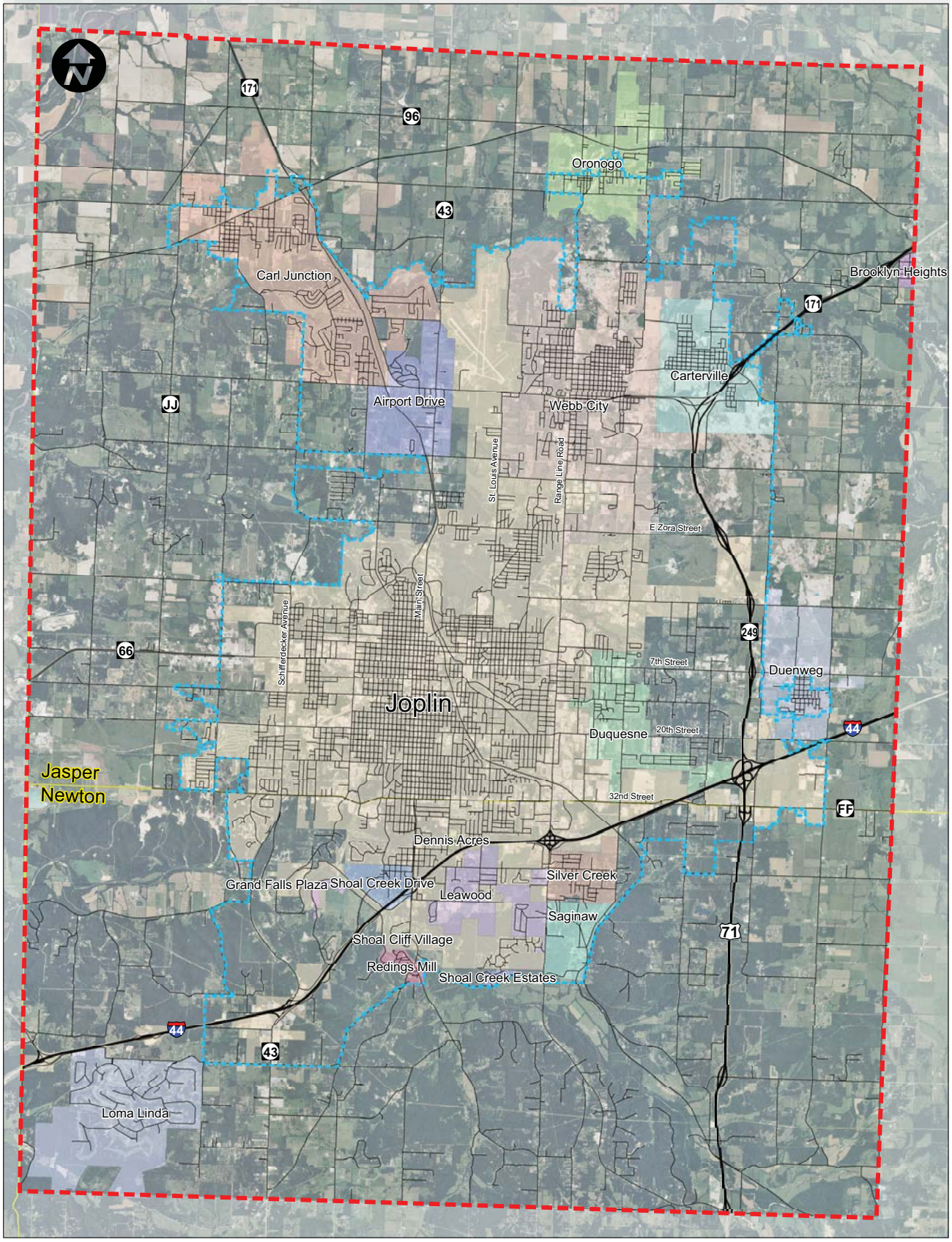
The Joplin Area Transportation Study Organization (JATSO) is the federally designated MPO for the Joplin metropolitan area. An MPO is required to conduct a "continuing, cooperative, and comprehensive" regional transportation planning and project programming process for the MPO's study area. The JATSO Study Area is comprised of many jurisdictions; representatives from municipal, county, and state agencies meet periodically through a policy board that oversees and approves MPO actions. The various agencies represented directly by the voting members of policy board are the City of Joplin (includes MAPS and Sunshine Lamp Trolley transit and Joplin Regional Airport representation), City of Webb City, City of Carl Junction, Jasper County, Newton County, the Southwest District of the Missouri Department of Transportation (MoDOT D7), and the Harry S Truman Coordinating Council (HSTCC). HSTCC is the Regional Planning Commission that provides community planning services for a four county area in Southwest Missouri; two of those counties are Jasper and Newton. HSTCC is the representative for the smaller municipalities within the Study Area including Airport Drive, Brooklyn Heights, Carterville, Cliff Village, Dennis Acres, Duenweg, Duquesne, Grand Falls Plaza, Leawood, Loma Linda, Oronogo, Saginaw, Shoal Creek Drive, Shoal Creek Estates, Silver Creek, and Redings Mill. The Study Area including jurisdictional boundaries is shown on ***Figure 1.1***. The blue line represents the existing urbanized area boundary. JATSO is also required to develop transportation plans that include areas that are not currently urbanized, but can be expected to urbanize over the next 20 years. This 20-year area boundary directly corresponds to the extent of the JATSO Study Area jurisdiction and is represented by the red line.

1.3 THE LONG RANGE TRANSPORTATION PLANNING PROCESS

The development of the 2010 update to the JATSO Long Range Transportation Plan was a joint undertaking of transportation stakeholders in the area, the general public, technical consultants, and community leaders within the JATSO Study Area.

JOPLIN AREA TRANSPORTATION STUDY ORGANIZATION

LONG RANGE TRANSPORTATION PLAN



August 2010

CJW

Study Area

Figure 1.1

JATSO Boundary

Urbanized Area

1.3.1 PUBLIC INVOLVEMENT

A series of public meetings was held that was advertised through public announcements on several television and radio stations, utilization of websites, personal invitations to identified parties, and an article in a local newspaper, the Joplin Globe. Six of the meetings had a focus topic for various groups of community stakeholders; however, anyone was welcome to participate in open discussion at each meeting. The six stakeholder input meetings were grouped as follows: emergency responders and social service agencies; educational institutions; transit providers and bicycle interest groups; freight haulers; commercial/employment/TIF districts; and municipal leaders, staff and representatives. After these focused meetings, an unfocused public meeting was held to gather input in a more relaxed open house format.

In addition to public meetings, public involvement was also provided through other means. Email and phone contacts were made available as well as a dedicated website where pertinent information was posted and documents were displayed. Many comments were submitted through the use of questionnaire forms and by other means. The appendix includes scanned copies of written public comments and other documented comments.

1.3.2 REVIEW OF EXISTING DOCUMENTATION

A Long Range Transportation Plan, much like other planning documents, does not exist in isolation. It incorporates and builds upon the concepts and recommendations from ongoing and previous planning efforts and documentation. With help from JATSO policy board members and staff, a consultant team reviewed and assessed existing plans and studies in order to understand better the context in which this LRTP exists. The following is a partial list of documents that were reviewed and helped to guide the LRTP process.

- Joplin Metropolitan Area Long Range Transportation Plan, 2005 Update
- FY 2010-2013 Transportation Improvement Program and amendments
- City of Joplin, Missouri – Comprehensive Plan, 2003 Update
- City of Joplin, Missouri – 2007 Regional Origin and Destination Survey
- HSTCC Regional Transportation Plan, 2009-2013
- Bicycle and Pedestrian Transportation Plan – Phase I & II
- HSTCC Coordinated Public Transit – Human Services Transportation Plan, 2007
- Joplin Regional Airport Master Plan, 2002 Update
- City of Joplin – Capital Improvement Project program
- Webb City, Missouri – Comprehensive Plan, 2008 Update
- City of Carl Junction, Missouri – Transportation Plan, 2009
- Carl Junction, Missouri – Comprehensive Plan, 2000 Update
- Joplin West Corridor, Purpose and Need Study, October 2009
- City of Joplin Traffic Signal System Assessment, 2008
- City of Joplin – Intersection Traffic Crash Analysis, July 2010
- Missouri Statewide Bicycle Map, 2004
- City of Joplin, Missouri – Citizens Park Master Plan
- I-44, Purpose and Need Study, November 2008
- Missouri's Long Range Transportation Plan, April 2007

1.4 PLANNING FACTORS

1.4.1 DEMOGRAPHIC TRENDS

In order to plan for future transportation needs, an understanding of the existing characteristics of the community and an idea of what is changing about those characteristics is necessary. The JATSO Study Area is located entirely within the Joplin Metropolitan Statistical Area (MSA), which is comprised of Jasper and Newton Counties in Missouri.

While the definition of the Joplin MSA has not changed since the 2000 census, the boundaries of the JATSO Study Area have changed since the 2000 census. Similarly, while the boundaries of Jasper and Newton Counties are fixed, the municipalities within are continually annexing more land and development into their respective jurisdictions. The relative fluidity of jurisdictions needs to be acknowledged when comparing demographic and other data from year to year.

As can be seen from ***Table 1.1***, the Joplin MSA has experienced an estimated 10.8% growth between the years 2000 and 2009.

Table 1.1: Joplin Area Estimated Change in Population

Jurisdictional Area*	2000 Census Population	2009 Estimate Population	Net Change in Population	% Change in Population
Joplin MSA	**157,322**	**174,300**	**+16,978**	**+10.8%**
Jasper County (entire county)	104,686	118,179	13,493	12.9%
Newton County (entire county)	52,636	56,121	3,485	6.6%
City of Joplin	45,504	50,208	4,704	10.3%
City of Webb City	9,812	11,676	1,864	19.0%
City of Carl Junction	5,294	7,450	2,156	40.7%
other MPO municipalities	9,303	11,494	2,191	23.6%
Carthage (non-MPO community)	12,668	14,055	1,387	10.9%
Neosho (non-MPO community)	10,505	11,255	750	7.1%

* Population represents total population within jurisdictional boundaries regardless of JATSO boundary overlap.
Source: U.S. Census Bureau

Most of this growth has occurred within the JATSO Study Area communities. Also, this growth has been more prevalent in Jasper County than Newton County. Although JATSO encompasses a portion of both counties, the majority of the population and land area of JATSO is within Jasper County. This trend can be expected to continue as can be seen in ***Table 1.2***. According to the Missouri Division of Budget and Planning, Jasper County will continue to see the majority of growth in the area, but both counties will outpace the average population growth in Missouri which is expected to be close to twenty percent.

Table 1.2: Joplin Area Projected Change in Population

Jurisdictional Area*	Population		Net Change in Population	% Change in Population
	2000 Census	2030 Projection		
Jasper County	104,686	152,528	47,842	45.7%
Newton County	52,636	66,111	13,475	25.6%
Joplin MSA	**157,322**	**218,639**	**61,317**	**39.0%**

Source: U.S. Census Bureau & Missouri Division of Budget and Planning

Just as population has increased and is expected to continue to increase, the number of housing units continues to rise. To keep up with the expected population demand, housing in the Joplin area will need to outpace the growth of housing in other areas. How and where this housing need is accommodated will affect nearly all aspects of the transportation system. ***Table 1.3*** shows the increase in housing in the Joplin MSA as well as the county components of that change. Once more, Jasper County shows an advantage in both number of units and percent change.

Table 1.3: Joplin Area Estimated Change in Housing

Jurisdictional Area*	Number of Housing Units		Net Change in Housing	% Change in Housing
	2000 Census	2009 Estimate		
Joplin MSA	**67,468**	**72,825**	**+5,357**	**+7.9%**
Jasper County (entire county)	45,571	49,617	4,046	8.9%
Newton County (entire county)	21,897	23,208	1,311	6.0%

Source: U.S. Census Bureau

The primary reason for the strong growth and concentration of population in the Joplin area is that the Joplin area is a primary place of employment for the greater region. Historically, this is grounded in the Joplin area's enriched mineral resources and the resulting economies that sprung up to support the mining. Today, the Joplin area is still the economic center of the greater region. According to the Missouri Department of Economic Development, the larger employers entail the healthcare and social service industries, construction trades and manufacturers, retailers and general service providers, transportation and logistics, and educational institutions. In the Joplin MSA, generally one quarter to one third of the employment is in Newton County, and the remaining two thirds to three quarters of the employment is in Jasper County. Furthermore, half of all of the employment is within the city limits of Joplin. ***Figure 1.2*** shows the past ten years of employment estimates for the Joplin MSA. Even with the fluctuations due to the national economy, an estimated three percent gain has been experienced during this decade. Many of the strongest industries in the region are projected to grow over the next decade. The areas of employment growth will most likely occur along corridors that provide good connections within and around the Joplin area. These locations may include existing and proposed business and industrial parks, remediated former mining areas, and opportunity infills along established roadways.

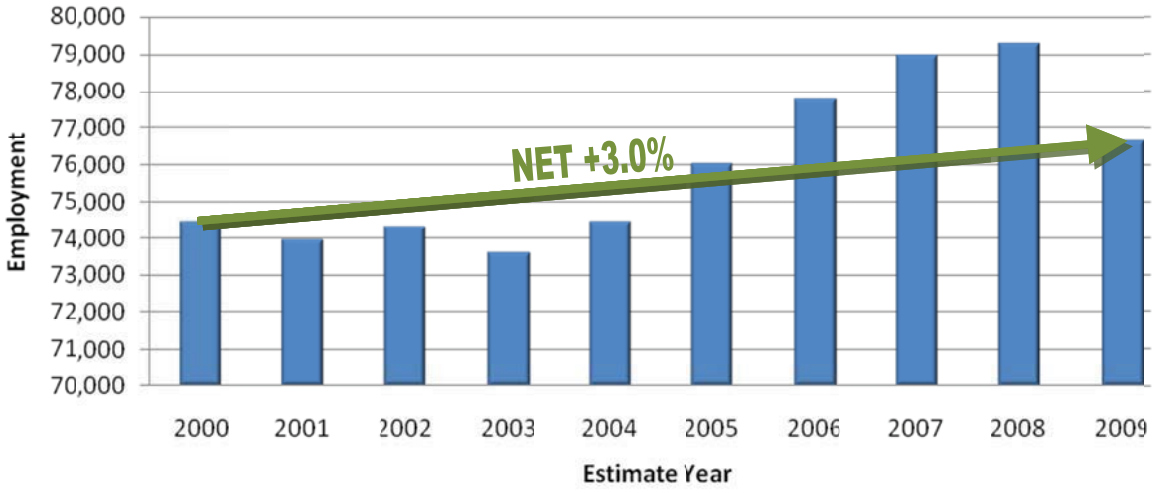


Figure 1.2: Joplin MSA Estimated Change in Employment

Source: U.S. Bureau of Labor Statistics

The importance of the Joplin area to regional employment and overall economy is evidenced by the large amount of commuting that occurs on a daily basis. The *Regional Origin and Destination Survey* conducted in 2007 revealed that 100,000 additional people travel into the Joplin area for local trips on a typical day. The Joplin area as defined in that survey was roughly equivalent to the previous JATSO Study Area as defined in the previous LRTP update. This area was estimated to have a population of approximately 75,000 in 2000. The survey also revealed that the destinations that generated the most trips were predominantly within the city limits of Joplin, which currently has approximately 50,000 residents. These top ten destinations included:

- Northpark Mall
- St. John's Regional Medical Center
- Missouri Southern State University
- Freeman Health System
- Walmart (South Range Line Road)
- East 32nd Street area
- Range Line Road
- John Q. Hammons Convention Center area
- Southwest Joplin
- Walmart (West 7th Street)

As a result, the City of Joplin's daytime population can be more than triple the resident population, and the current JATSO Study Area's population swells to approximately 200,000. None of this includes the population that only passes through the Joplin area without stopping on a daily basis. Daily, more than 30,000 people travel through the Joplin area without stopping.

The average travel time to work for the residents of the JATSO Study Area is approximately 17 minutes. This average is typically better than the surrounding region's average, which can be seen in ***Figure 1.3***.

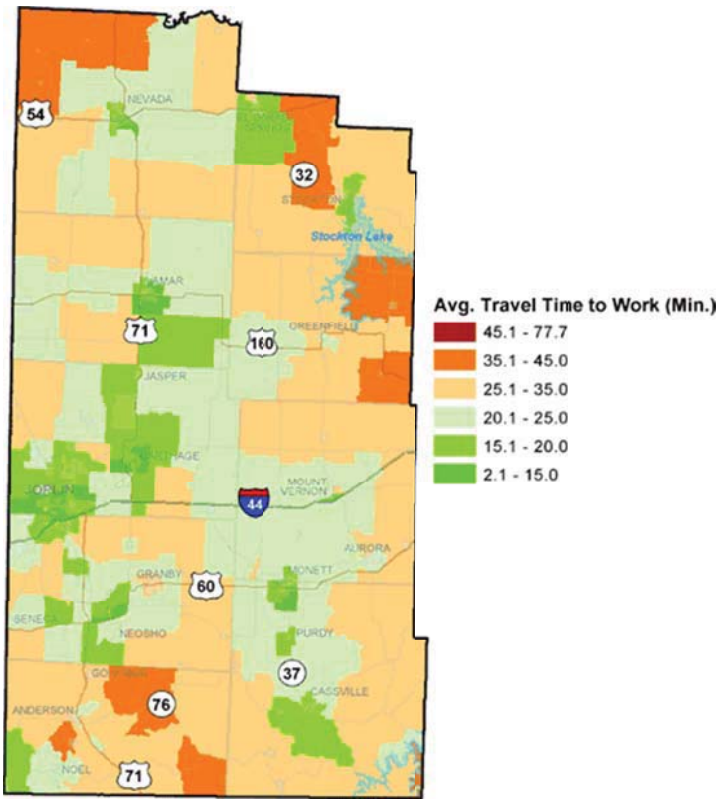


Figure 1.3: Average Travel Time to Work per Block Group in Southwest Missouri

Source: U.S. Census Bureau, prepared by Missouri Department of Economic Development

Table 1.4 shows the racial characteristics of the Joplin MSA.

Table 1.4: Joplin MSA Racial Characteristics

	2000 Census Population	2009 Estimate Population	Net Change in Population	% Change in Population
Joplin MSA	**157,322**	**174,300**	**+16,978**	**+10.8%**
White, not Hispanic	143,848	153,191	9,343	6.5%
Hispanic	4,762	9,641	4,879	100.2%
Black	1,918	2,670	752	39.2%
American Indian & Alaskan Native	2,646	2,745	99	3.7%
Asian	911	1,716	805	88.4%
Native Hawaiian & other Pacific Islander	228	361	133	58.3%
Two or more races	3,009	3,976	967	32.1%

Source: U.S. Census Bureau, prepared by Missouri Census Data Center

1.4.2 ENVIRONMENTAL ISSUES

There are several issues that arise when trying to accommodate the transportation needs of a growing and changing population. While trying to fulfill the society's desire to move goods and people, transportation planners must weigh the other effects that result from the existing and proposed transportation network. Poorly planned transportation networks can result in adverse effects to various elements of the environment, both natural and manmade, and even human populations themselves.

Environmental justice is an ideal that tries to ensure that certain populations, or segments of populations, are not disproportionally effected in a negative way by the actions of others. Federally funded plans and projects are required to follow this ideal and, as a result, the LRTP must not discriminate against or otherwise encourage any adverse effect on minority, low-income, disabled, elderly, and/or youth populations. The burdens and benefits of transportation projects must balanced between the general population and those traditionally underserved by the transportation network and in the planning and programming process.

Another environmental aspect that can be affected by the transportation network is the natural environment. All types of natural features including bodies of water, delicate ecosystems, and individual species can be adversely affected. Sometimes, impaired environmental resources such as polluted wells, poor air quality, and soil contamination can negatively affect human populations.

Air quality is of particular interest to transportation planning because cars and light trucks produce approximately one-third of the emissions that lead to the formation of ground-level ozone, a pollutant that periodically exceeds federal standards in the summer. Ozone is known to damage plants, including agricultural crops, and there is increasing scientific evidence linking urban air pollution to asthma and other respiratory problems in both children and adults. Because motor vehicles can affect both the environment and public health, one of the primary objectives of regional transportation planning must be to minimize emissions from mobile sources. Fortunately, the Joplin area currently complies with all national air quality standards.

Certainly, some degradation of natural resources can be avoided by implementing a well-planned transportation network. While not every feature can be identified at the LRTP stage, ***Figure 1.4*** illustrates the vast amount of water resources in the Joplin area that can be ruined if not properly protected. As recommended programs and projects continue along in the implementation process, a more in-depth impact assessment will be required to sufficiently identify and mitigate environmental issues for individual projects.

Similarly, there are manmade features that need to be considered when planning transportation enhancements. Some are merely cultural resources that need to be protected, such as schools, cemeteries, and other kinds of public facilities. Other manmade features, such as Superfund and other hazardous sites, need to be considered for other reasons entirely. These sites pose some different kinds of challenges when considering development patterns and environmental mitigation techniques. ***Figure 1.5*** illustrates just a fraction of the manmade features in the Joplin area that need to be considered during the transportation planning process, and just as with natural resources, a more in-depth assessment would be required with any individual project to properly evaluate these types of environmental issues.

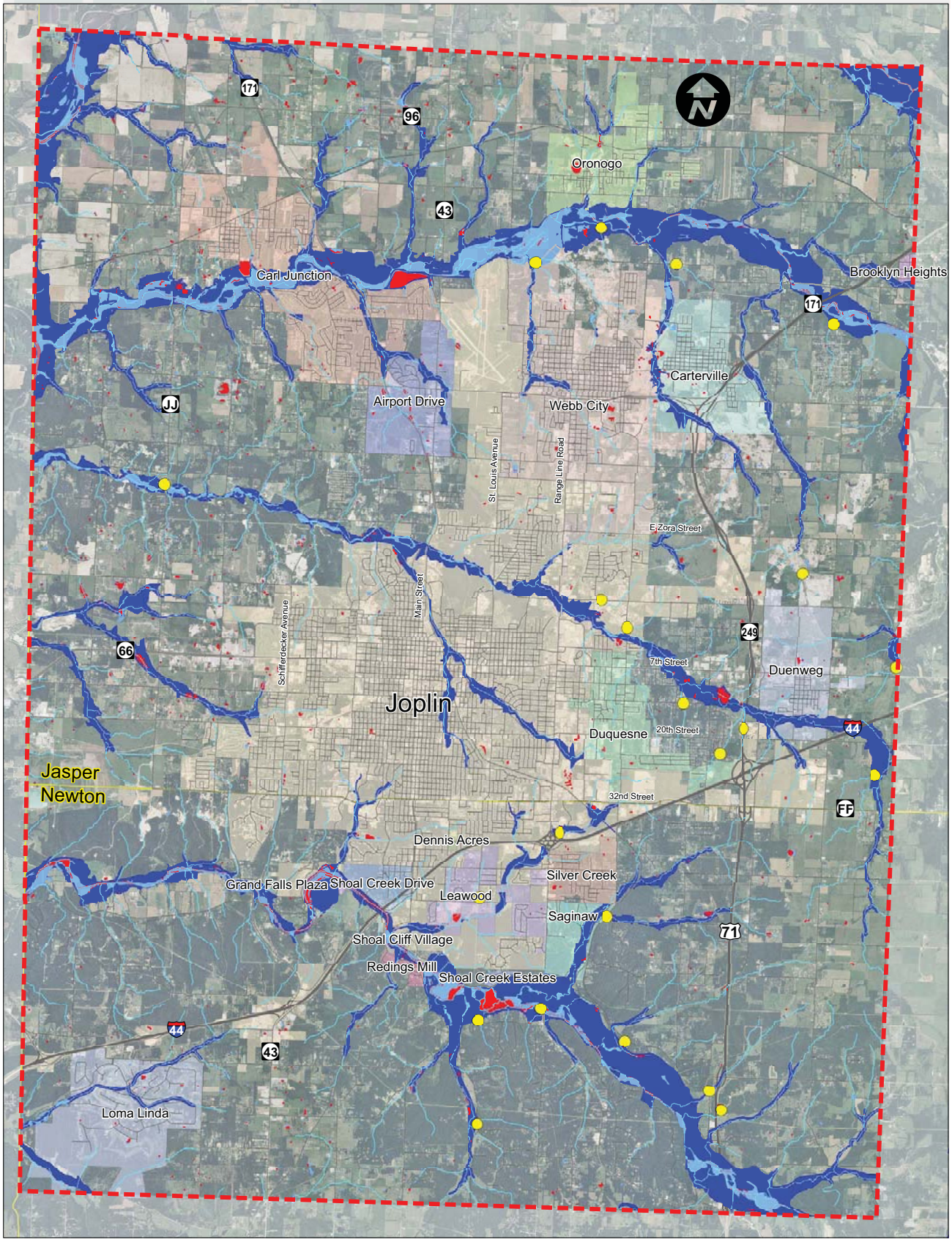
After environmental features have been identified, there are some safeguards in place that allow for the mitigation of adverse effects due to the transportation network. Some of these processes are described below:

Water Quality: Stormwater management guidelines and the employment of best management practices have been implemented to both improve water quality and protect against flooding downstream of transportation and construction projects.

Floodplain Management: Through stormwater management guidelines and flood zoning overlays, floodplain management is regulated and flooding due to increased impervious area is mitigated.

Steep Slopes: Steep slopes are regulated through the City of Joplin's engineering specifications and through the 2006 International Building Code. The preservation of slopes is important to prevent erosion and degradation of water quality, loss of topsoil, changes in natural topography and drainage patterns, and further fragmentation of forest and habitat areas.

Historic Structures: The State Historic Preservation Office within the Missouri Department of Natural Resources protects historic sites and structures by requiring the approval of a Section 106 form prior to the construction of a federally or state funded transportation project. The City of Joplin and Webb City have adopted local ordinances to protect designated historic structures.



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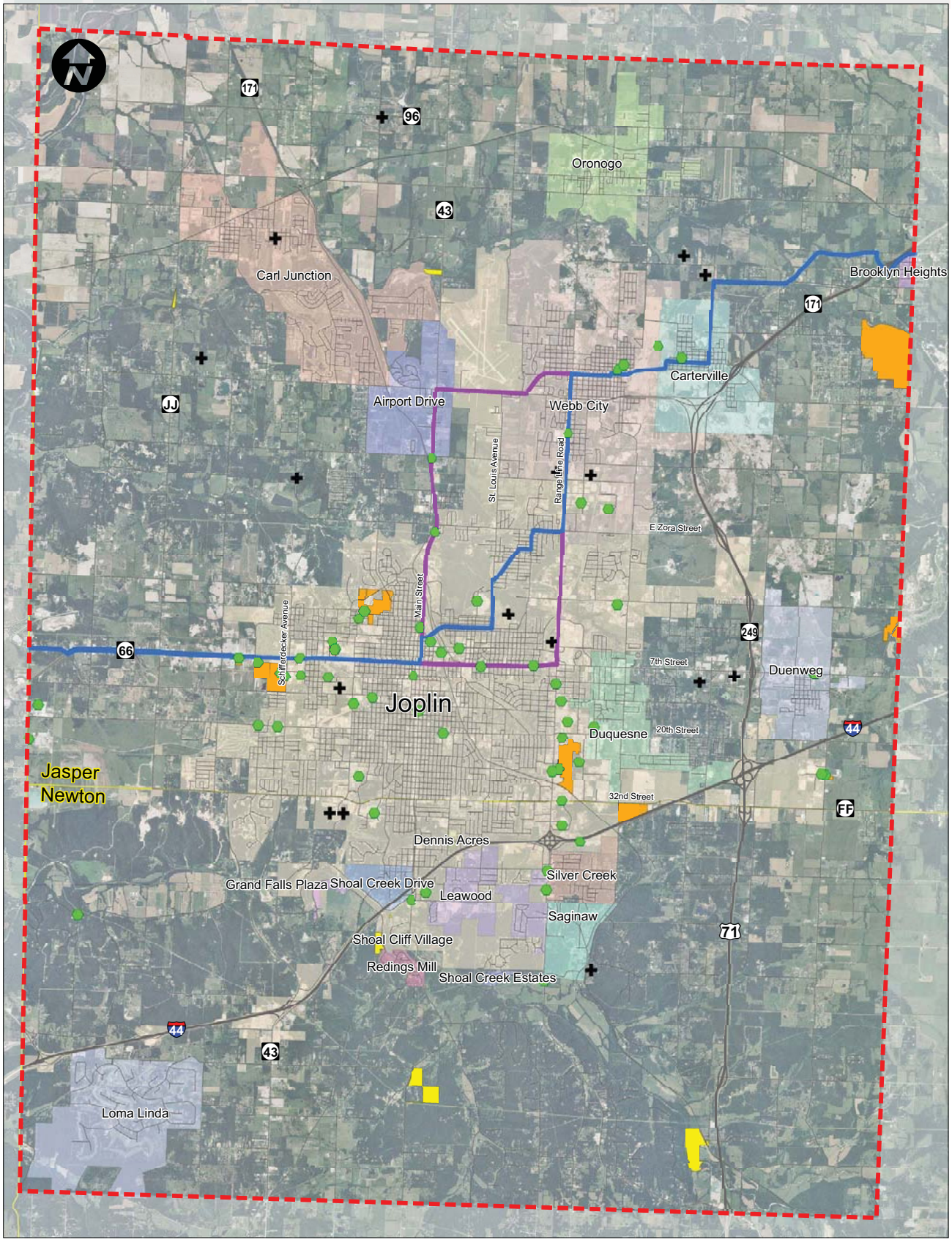
Water Resources

Figure 1.4

- JATSO Boundary
- Spring River Basin Springs Seeps
- Spring River Basin Streams
- Spring River Basin Lakes
- National Wetlands
- 100 Year Floodplain

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Man-Made Resources/Features

Figure 1.5

- JATSO Boundary
- Route 66
- Route 66 Alternate
- Cemeteries
- Hazardous Waste Generator
- Hazardous Permit Areas
- Missouri Department of Conservation

1.5 PLAN ELEMENTS

A Long Range Transportation Plan addresses all transportation modes, including automobile, public transit, rail, aviation, bicycle, pedestrian, and the movement of freight. Major plan elements include the following:

- Regional transportation goals, objectives, and policies
- Identification of future needs and priorities for transportation modes
- Estimate of conceptual costs for identified transportation improvements to provide for a fiscally-constrained plan based upon identified goals and priorities
- Background and supporting data

1.5.1 MAJOR TRANSPORTATION ISSUES

As a changing community, the Joplin metropolitan area faces many transportation challenges. Through the long range planning process, many concerns, desires, ideas, and issues were brought forth for consideration. JATSO developed their goals based on the input of citizens, municipal staff, and elected officials. The following represents a synthesis of the major transportation issues determined through this study:

- Accessibility to metropolitan employment centers, commercial areas, recreational areas, and other amenities.
- Maintaining mobility along Range Line Road, I-44, Route 171 and other important regional corridors.
- Establishing and improving access management on both existing and future corridors.
- Enhancing transit options by continuing to improve the existing transit and paratransit systems.
- Ensuring safe and convenient pedestrian and bicycle connections throughout the metropolitan area.
- Balancing land use, transportation, and environmental objectives.
- Considering maintenance implications of future improvements.

1.5.2 GOALS AND OBJECTIVES

Goals and objectives provide the framework for the development of an LRTP. They are intended to reflect local and regional values outlined in previous and ongoing planning efforts as well as the dialogue resulting from the LRTP process. In addition, goals and objectives provide an objective basis to measure the effectiveness of LRTP recommendations over time. These goals and objectives were developed as part of the previous LRTP. They were reviewed and updated with JATSO input based on the issues brought forth from the citizens, municipal staff, and elected officials.

Goals are the broad aspirations that the public have determined are most important for the Joplin area to achieve. Goals should:

- establish priorities for public and private discussion and consideration;
- identify needed public improvements and services; and
- provide benchmarks for public investment.

Objectives are stated purposes within the broader goal. Each objective relates to a goal and represents a more specific purpose. Objectives should:



- be sufficiently quantifiable to gauge the appropriateness of development applications;
- have a general timeframe; and
- be understood by both the decision-makers and the general community.

Together, goals and objectives serve as the basis for development of the LRTP recommendations and policies. As part of the LRTP, the following eight goals were identified:

Goal I: Provide for the development of a transportation system that is supported by and complements land development and enhances community development.
Objectives:

- Maintain and review standards for site development to foster well-planned development.
- Preserve right-of-way for future arterial alignments.
- Preserve the hierarchy of streets within the Joplin area and control driveway access on minor and principal arterials.

Goal II: Provide for the development and maintenance of an efficient and safer transportation system for the movement of people and goods.
Objectives:

- Increase safety by routinely identifying and addressing potential safety hazards and locations.
- Maintain the existing transportation system.
- Utilize transportation system management strategies which address access management to increase the efficiency of traffic signals and intersection operation.

Goal III: Be aware of and able to adapt to technological and federal transportation policy changes.
Objectives:

- Invest in transportation technology.
- Apply emerging and new transportation policies from state and/or Federal levels.

Goal IV: Provide for a balanced transportation system that provides a choice of travel modes for different individuals and activities.
Objectives:

- Continue to examine and secure funding for alternative transportation modes along businesses arterials such as bike paths, linear parks, trails, and public transit. Continue to create a system of bicycle routes and trails that provide connectivity between major destinations in the metro area and that are maintainable.
- Improve public transportation in the metro area by:
    - Continuing to obtain local and state funding for improved transit services.
    - Utilizing the knowledge, expertise and equipment of current service provider in the improved system.



    - Identifying transit needs and providing a plan for areas to be served by improved public transportation.
- Support airport development by providing an adequate landside infrastructure to support existing and future needs.
- Support freight movement by providing an adequate infrastructure to support existing and future needs.

Goal V: Develop transportation improvement projects consistent with budget restraints.
Objectives:

- Utilize all potential funding sources for various improvements.
- Provide additional traffic capacity through low cost improvements such as coordinated signalization and parking restrictions.

Goal VI: Provide a transportation system that enhances the economic vitality in the Joplin area.
Objectives:

- Continue to improve signage on regional routes to capture through traffic for local business.
- Improve streetscape elements in downtown areas and main streets.
- Improve infrastructure and accessibility to industrial parks.
- Provide infrastructure support for freight facilities to include transfer stations between modes.
- Continue to support development consistent with local zoning and land use policy.

Goal VII: Provide a transportation system that addresses the needs of persons without access to automobiles, including persons of low income or persons with disabilities.
Objectives:

- Meet the transportation needs of the elderly population.
- Explore transportation mobility opportunities for youth.
- Meet the transportation needs of the disabled.

Goal VIII: Maintain low environmental impact from the transportation system within the metro area.
Objectives:

- Maintain the Joplin area's air quality standards and encourage methods to reduce emissions.
- Minimize the impact of noise from arterials and freeways by incorporating noise-reducing design.
- Minimize construction of transportation facilitates in environmentally sensitive areas or mitigate transportation impacts of projects through areas of environmental concern.

Goal IX: Develop a future transportation system that encourages energy conservation.
Objectives:

- Support development of high occupancy modes such as public transit, and encourage carpools and vanpools.



- Encourage pedestrian travel by incorporating pedestrian elements into transportation projects.
- Develop street network to provide direct travel between origins and destinations.
- Utilize transportation system management improvements, such as interconnected signals to reduce vehicle delays and energy consumption.

1.6 PLAN IMPLEMENTATION

1.6.1 PLAN APPROVAL PROCESS

The LRTP goals, objectives, policies, and recommended actions were all created as a result of an inclusive public process. The approval process for the update included a review by local, state, and Federal agencies including the Missouri Department of Transportation (MoDOT), Federal Highway Administration (FHWA), and the Federal Transit Administration (FTA).

1.6.2 PLAN USE

The LRTP should be consulted by elected and appointed officials when considering development proposals, working on intergovernmental issues, outlining work programs, preparing annual budgets, and reviewing progress toward meeting identified goals. The LRTP provides supporting documentation for pursuing grants for community development activities. The LRTP should also be used as a resource for residents, property owners, and developers. While a formal update is required every five years, the document should be reviewed annually and revised as specific actions are achieved and new strategies are identified. LRTP goals should also be reviewed periodically when new circumstances or changing conditions warrant reconsideration.

SECTION 2
EXISTING CONDITIONS ASSESSMENT

There are several modes of transportation that are represented in the Joplin area. An assessment of existing conditions is necessary to establish a starting point upon which assumptions can be built. One of the single largest investments in a community is its transportation infrastructure, and the Joplin area is no different. This assessment begins the process of knowing where and what assets in which to continue to invest. Key assets of the transportation network are not limited to roadways and bridges, but also include the public transit system, bicycle and pedestrian system, aviation system, and freight infrastructure.

2.1 ROADWAY NETWORK

2.1.1 FUNCTIONAL CLASSIFICATION

A roadway network serves the flow of traffic and provides access and connectivity between communities, industries, businesses, major retail centers, and recreational areas. A good roadway network can carry traffic through an area efficiently and provide for access to local land uses. Each street by design provides a level of access to the adjacent properties and a level of traffic mobility. However, access and mobility are competing functions – as one increases, the other decreases. So roadway classifications are developed to define the relative mobility and access, and therefore, role of each street. ***Figure 2.1*** shows the relationship between access, mobility, and the overall function of a roadway.

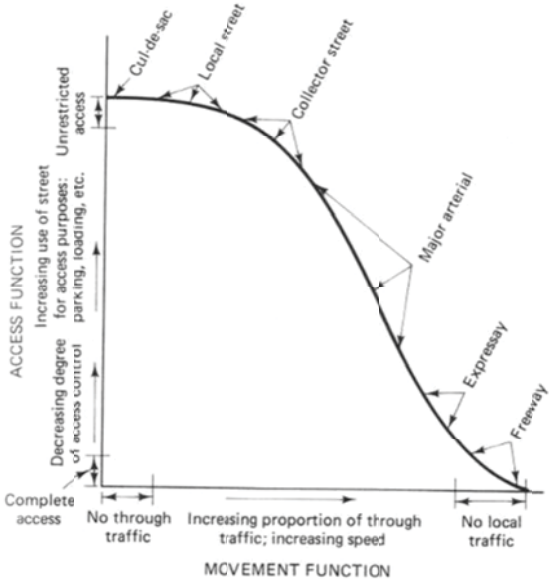
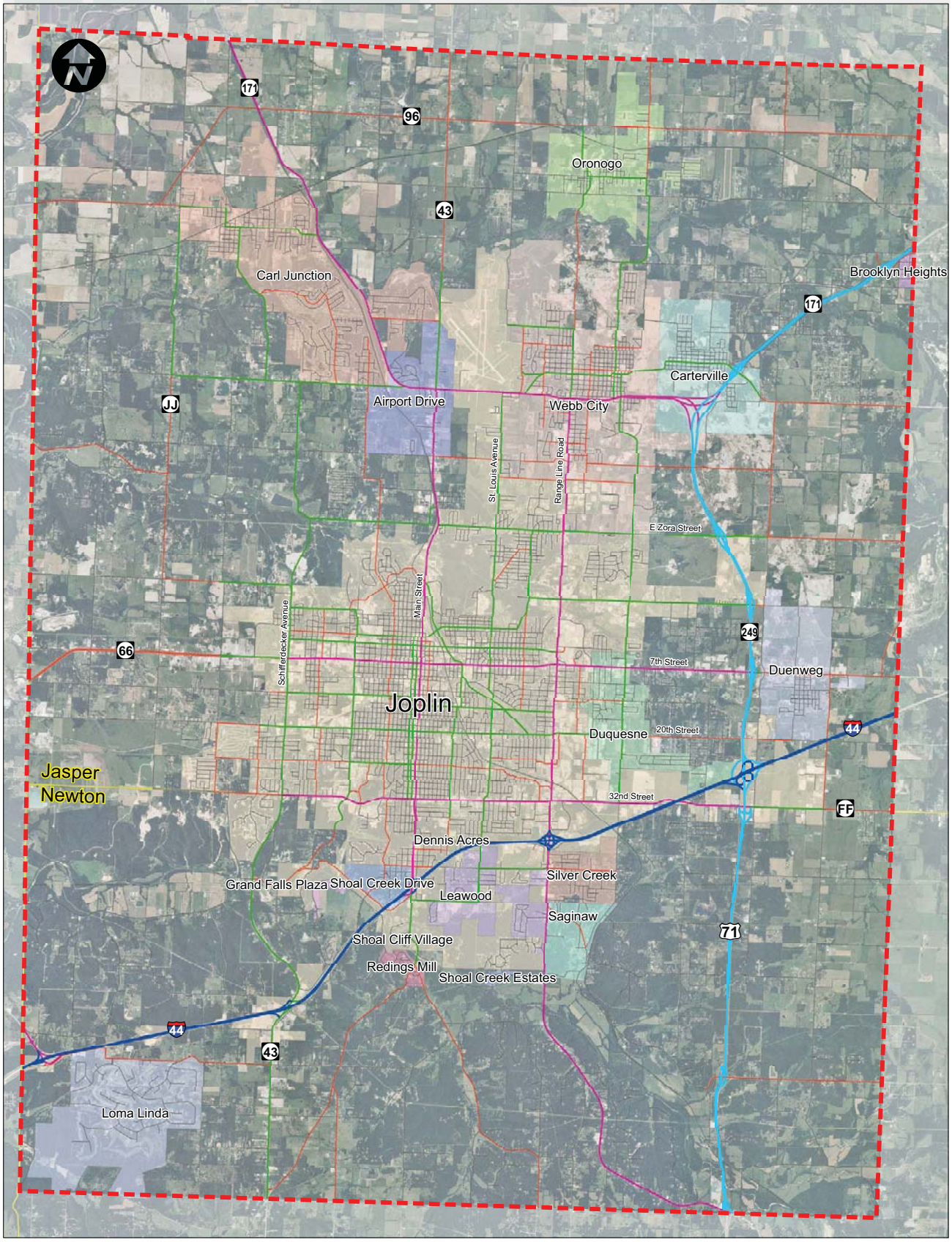


Figure 2.1: Access/Mobility Relationship
Source: Transportation Planning Handbook, ITE (2nd Edition)

As can be seen in ***Figure 2.2***, there are four basic roadway classes in the Joplin area: freeways/expressways, arterials, collectors, and local streets. Freeways and expressways provide very

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Functional Classification

Figure 2.2

INTERSTATE
FREEWAY
PRINCIPAL ARTERIAL
MINOR ARTERIAL
COLLECTOR
LOCAL
JATSO Boundary

high mobility but very limited access. Arterials have high traffic mobility but low access to adjacent lands. Conversely, local streets have the lowest mobility but allow frequent access to adjacent properties. Collector routes connect arterials and local streets together. Other criteria are also used to distinguish roadway classification such as design speed, operational standards, travel distance, and traffic volumes. By using these criteria, specific roadway classifications can be defined.

Freeways/Expressways: Roadways providing the highest traffic mobility. Access to adjacent land is carefully controlled and limited along freeways and expressways. Freeways typically serve the largest amounts of traffic for long trips and operate at high speeds. Freeways provide limited access to other roadways through the use of grade-separated interchanges but usually provide no direct access to adjacent land uses. Freeways typically include Interstate highways and some other major highways. Expressways usually flow through an urbanized area and connect to major destinations, other cities, and other major highways. Dedicated and auxiliary lanes, medians, and limited at-grade intersections are used on expressways to minimize interference to through traffic movement.

Principal and Minor Arterials: Roadways with an intermediate range of traffic mobility and access that serve moderate levels of traffic volumes, trip lengths, and operating speeds. Arterials link traffic between freeways/expressways and collectors. Access to adjacent properties is usually limited only to consolidated, shared, or larger-scale land uses. Principal arterials typically provide connections between adjacent communities and activity centers. Minor arterials interconnect with and augment the principal arterial system and serve trips of moderate length at a slightly lower level of traffic mobility than do principal arterials. The use of auxiliary lanes is desirable to preserve the traffic mobility on the roadway.

Collectors: Roadways with a low range of traffic mobility that provide more access to adjacent land uses than arterials and serve lower levels of traffic volumes, shorter trip lengths, and lower operating speeds. Collectors usually allow only two lanes of traffic but are typically wide enough to permit on-street parking. Turn lanes are desirable on collectors adjacent to larger developments and at intersections with arterial streets.

Local Streets: Roadways with the lowest range of traffic mobility and traffic volumes. Trip lengths on local streets are short and at slow operating speeds. Local streets provide immediate traffic access to and from abutting properties at the expense of the mobility of through traffic. Local streets usually provide curbs, gutters, and enclosed drainage. Local streets connect blocks within a neighborhood and connect to collector streets.

2.1.2 *Daily Traffic Counts and Level of Service*

Roadway capacities and levels of service vary as changes in land uses and travel demand are made. To evaluate the operation of roadways in the Study Area, two measures are provided: the annual average daily traffic (AADT) volume and level of service (LOS). LOS is based on comparing a roadway's capacity to AADT. That comparison places the roadway into a range from A, meaning very favorable operating conditions, to F, meaning very poor operating conditions. For urbanized areas, LOS D is typically recommended as the worst acceptable volume to capacity threshold. LOS E indicates the roadway is at capacity. ***Table 2.1*** and ***Figure 2.3*** show representative daily capacities for typical urban roadway sections.

Table 2.1: Daily Volumes and Levels of Service for Urban Streets

Type of Street	Maximum Daily Traffic Volume		
	Level of Service C	Level of Service D	Level of Service E
2-Lane Undivided	10,500	12,800	14,400
3-Lane Undivided	12,800	15,600	17,600
4-Lane Undivided	16,300	19,800	22,400
5-Lane Undivided	23,100	28,100	31,700
4-Lane Divided	23,300	28,300	32,000
6-Lane Divided	33,800	41,100	46,400

Assumptions: Peak Hour equals 10 percent of daily volume

Capacities based on signalization set to high priority with high turns

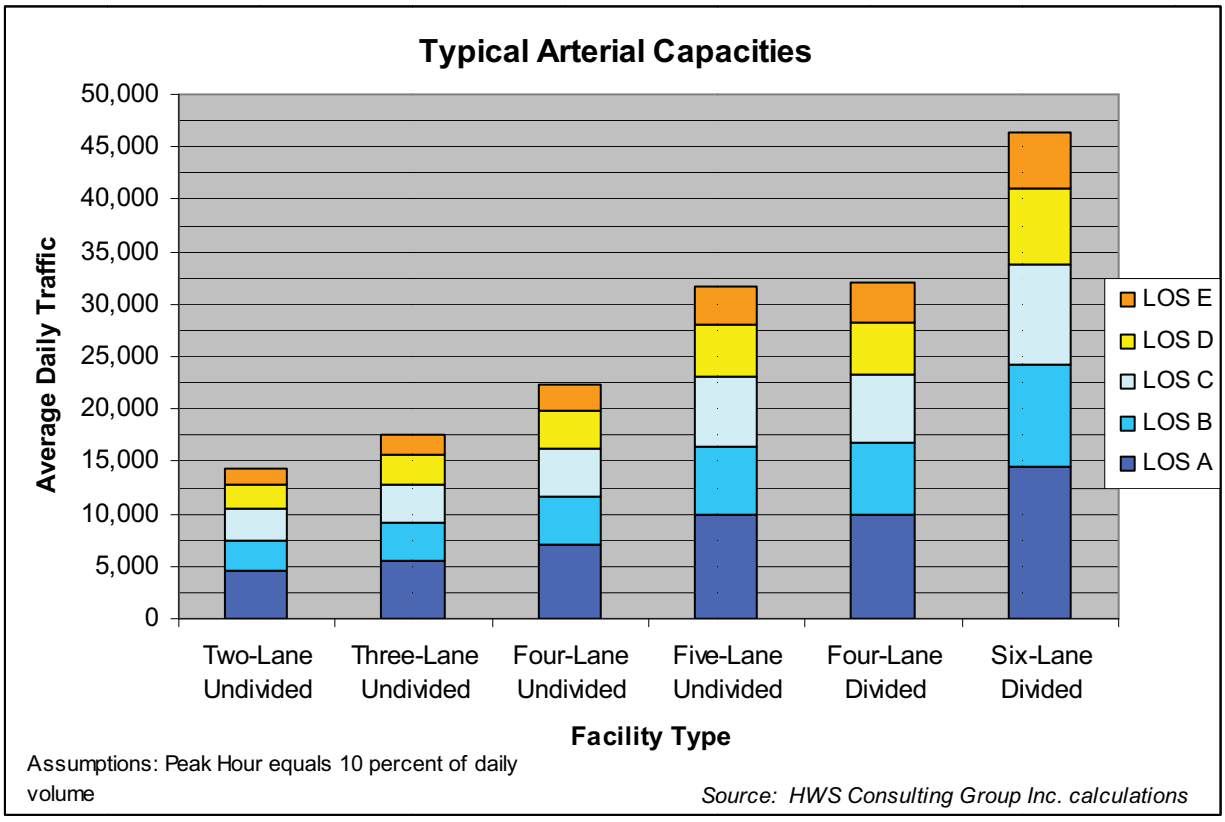


Figure 2.3: Typical Arterial Capacities

Table 2.2 shows estimated roadway LOS and volume to capacity ratios for roadways in the Joplin area. These values are based on outputs from the 2009 Base Travel Demand Model provided by JATSO. Included are segments that currently are estimated to operate at LOS D or worse and experience congestion and traffic delay during peak hours.

Table 2.2: 2009 Traffic Volumes, Capacities, and Level of Service

Street	Location		No. Lanes	V/C	AADT	LOS
	From	To				
COYOTE DR	Arbor Rd	Crow Rd	2	0.74	8,940	D
COYOTE DR	Apricot Dr	Mcclelland Park	2	0.78	9,279	D
E 4TH ST	N Range Line Rd	Turk Ave	2	0.74	9,303	D
E 7TH ST	MO Hwy 249 SB Ramps	S Spring Valley Ln	2	0.80	13,980	D
E 7TH ST	Garden Grove Rd	S Duquesne Rd	2	0.79	13,995	D
E 7TH ST	S Spring Valley Ln	Garden Grove Rd	2	0.80	14,079	D
MADISON ST	MO Hwy 171 WB	W 2nd St	2	0.73	8,897	D
MADISON ST	MO Hwy 171 EB	MO Hwy 171 WB	2	1.10	14,179	F
N 43 HWY	MO Hwy 171	Gum Rd	2	0.71	8,785	D
N RANGE LINE RD	Hodgdon Rd	S of E Newman Rd	4	0.75	27,186	D
N RANGE LINE RD	Turkey Creek Rd	N Hodgdon Rd	4	0.73	26,300	D
N RANGE LINE RD	S of E Newman Rd	E Newman Rd	4	0.75	27,223	D
RANGE LINE RD	E 6th St	E 4th St	4	0.73	26,297	D
RANGE LINE RD	E 7th St	E 6th St	4	0.75	26,827	D
RANGE LINE RD	E 10th St	E 7th St	4	0.81	28,931	D
RANGE LINE RD	E 11th St	E 10th St	4	0.81	29,024	D
RANGE LINE RD	E 22nd St	E 20th St	4	0.80	29,032	D
RANGE LINE RD	E 13th St	E 11th St	4	0.80	28,491	D
RANGE LINE RD	E 15th St	E 13th St	4	0.81	29,001	D
RANGE LINE RD	E 16th St	E 15th St	4	0.87	31,428	E
RANGE LINE RD	E 17th St	E 16th St	4	0.71	25,599	D
RANGE LINE RD	E 20th St	E 17th St	4	0.71	25,599	D
RANGE LINE RD	Mall Rd	Turkey Creek Rd	4	0.72	25,938	D
S HEARNES BLVD	Glendale Blvd	I-44 Ramp	1	0.79	5,912	D
S HEARNES BLVD	E 50th St	Glendale Blvd	3	0.72	5,471	D
S HEARNES BLVD	S of E 50th St	E 50th St	2	0.77	6,924	D
S ILLINOIS AVE	SE Murphy Blvd	E 7th St	3	0.78	11,419	D
S MAIN ST	River Rd	Norledge Pl	2	0.71	6,276	D
S MAIN ST	Norledge Pl	S of E 50th St	2	0.77	6,924	D
S RANGE LINE RD	E 24th St	E 22nd St	4	0.80	29,032	D
S RANGE LINE RD	E 29th St	E 24th St	4	0.74	26,593	D
S RANGE LINE RD	E 30th St	E 29th St	4	0.74	26,593	D
S RANGE LINE RD	I-44 Ramp	E 36th St	4	0.76	27,213	D
S RANGE LINE RD	E 44th St	Keller Dr	3	0.95	16,466	F
S RANGE LINE RD	Saginaw Rd	E 44th St	2	0.71	11,809	D
S RANGE LINE RD	Keller Dr	I-44 EB Ramps	3	0.95	16,466	F
S RANGE LINE RD	I-44 EB Ramps	I-44 EB Loops	3	0.78	14,574	D

S RANGE LINE RD	E 32nd St	E 30th St	4	0.74	26,813	D
SCHIFFERDECKER AVE	Crow Rd	W 32nd St	2	0.74	8,940	D
STATE HWY 171	Fir Rd	E of Fir Rd	2	0.74	13,193	D
STATE HWY 171	Wall St	MO Hwy 43	2	0.73	13,170	D
STATE HWY 171	E of Fir Rd	Wall St	2	0.76	13,660	D
STATE HWY D	MO Hwy 171	W 2nd St	2	0.70	8,812	D
STATE HWY HH	State Hwy AA	Split Rail Dr	2	0.73	8,373	D
US HWY 66	N Prosperity Ave	N Irwin St	2	0.79	9,677	D
US HWY 66	N Irwin St	Wolfe Dr	2	0.78	9,542	D

Figure 2.4 illustrates the estimated roadway LOS for all links in the 2009 Base model.

2.1.3 Bridge/Overpass Conditions

Bridges are the most critical of investments in the roadway network. They are relatively expensive to construct and maintain, but as with transportation infrastructure in general, these costs are offset by the long term economic benefits of the provided connections. They not only function as critical links across features that are otherwise difficult to traverse, but they also pose a very serious safety risk if they are not properly maintained – more so than other aspects of the roadway network. Usually a moderate investment in maintenance over time can save even more in rehabilitation costs that come from a lack of maintenance.

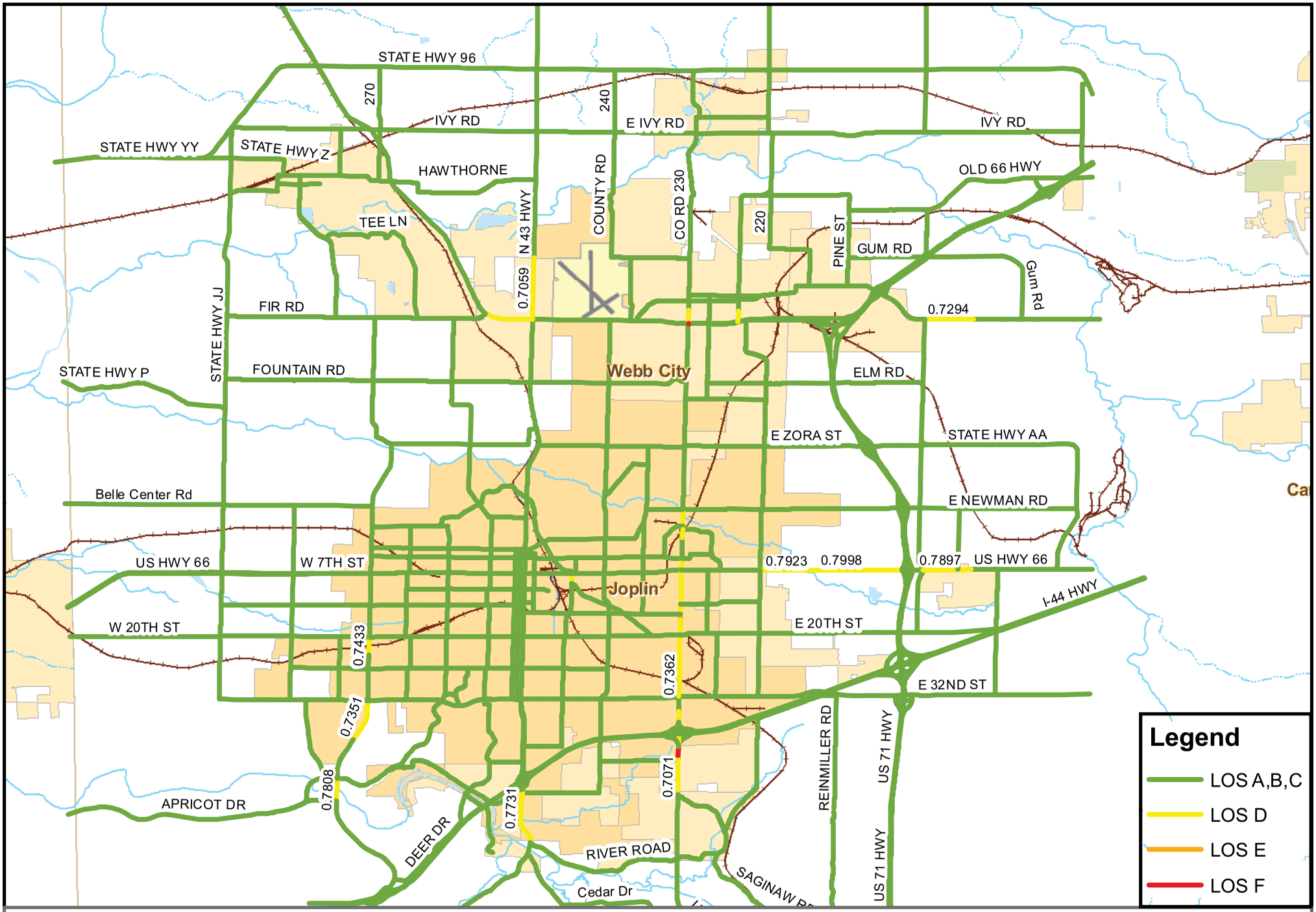
MoDOT provided information including condition ratings on 70 state bridge structures in the Joplin area as well as 99 off-system structures as of mid-2010. This information can be viewed in the appendix. The condition rating standard for state structures is shown in ***Table 2.3***.

Table 2.3: State Bridge/Overpass Rating Definitions

Very Good	No visible defects, near new condition
Good	Some slightly defective or deteriorated components
Fair	Moderately defective or deteriorated components
Poor	Defective or deteriorated components in need of replacement
Very Poor	Seriously damaged components in need of immediate repair

Source: FHWA

Based upon each condition rating, 29 of the 70 state bridges are in the "Very Poor" to "Fair" conditions. The only bridge that is rated as "Very Poor" is on Route P crossing Turkey Creek (bridge no. A0827). Only three bridges are rated as "Poor". They are the westbound Route 171 bridge over Missouri and Northern Arkansas Railroad (MNA) (bridge no. L0290), and both I-44 overpasses over Range Line Road (bridge no. L0859). ***Figure 2.5*** illustrates the location and condition of the state structures within the Study Area. Some information regarding the "Poor" and "Very Poor" bridges is summarized in ***Table 2.4***. The Route P bridge over Turkey Creek and the Route 171 bridge over MNA are both slated for rehabilitation under MoDOT's Safe and Sound Bridge Program.

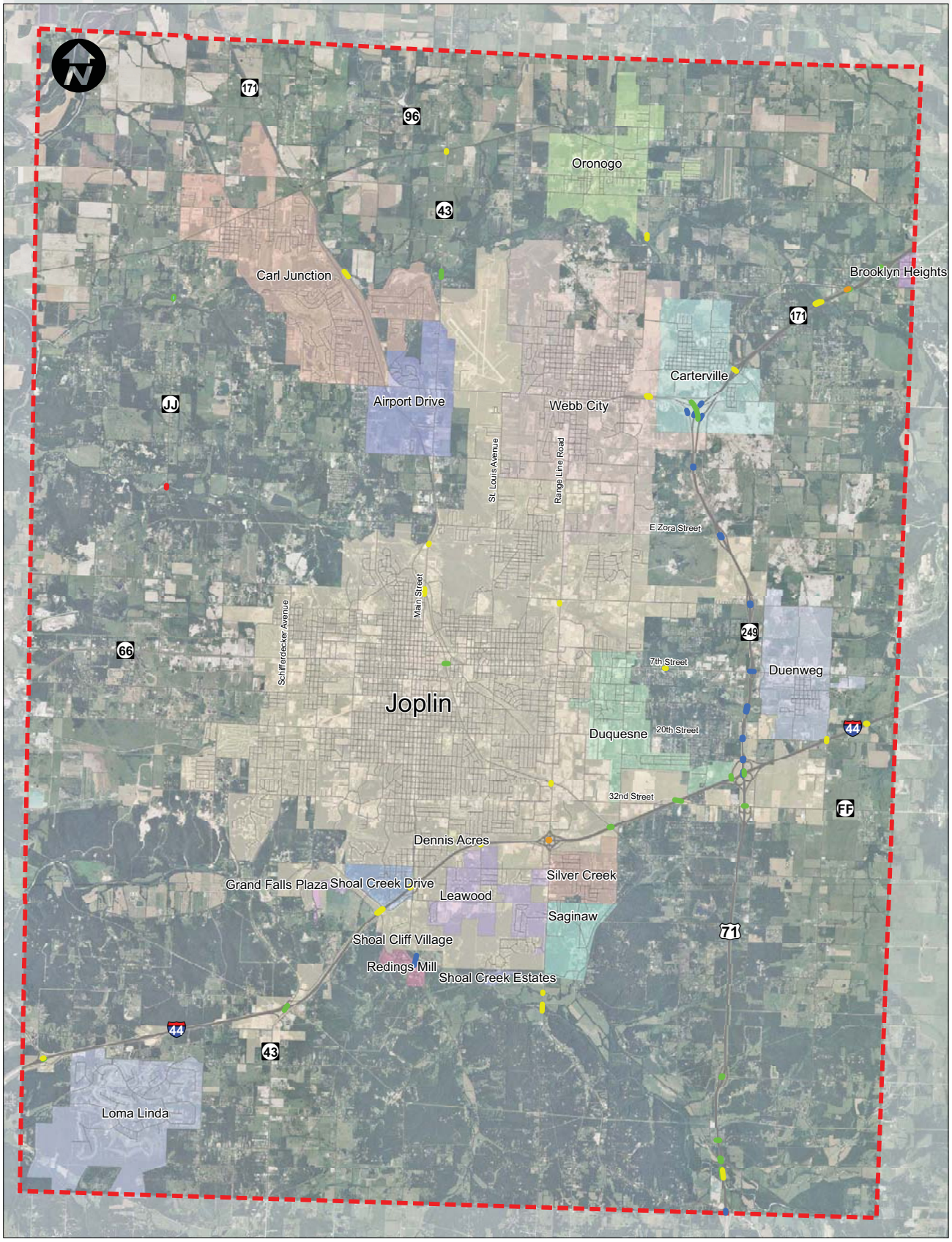


Volume to Capacity Ratio and Level of Service
2009 Base Network

FIGURE 2.4

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LONG RANGE TRANSPORTATION PLAN



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State Bridge Ratings

Figure 2.5

BRIDGE CONDITION INDEX

VERY GOOD | GOOD | FAIR | POOR | VERY POOR

Table 2.4: Bridges with Poor Ratings in the Joplin Area

Route (Bridge Number)	Feature Crossed	Rating		Year Built (Rebuilt)	Estimated AADT
		Poor	Very Poor		
Missouri P / Central City Rd. (A0827)*	Turkey Creek		1	1961	3,600
Missouri 171 – westbound (L0290)*	MNA Railroad	1		1949	5,200
Interstate 44 – eastbound (L0859)	BU 71 / Range Line Rd.	1		1960 (1988)	15,000
Interstate 44 – westbound (L0859)	BU 71 / Range Line Rd.	1		1960 (1988)	15,000

* Bridges committed for rehabilitation in MoDOT's Safe and Sound Bridge Program
Source: MoDOT

The data provided also indicated that there are seven bridges built on or before 1960 in addition to the Route 171 bridge mentioned above. Based upon the assumption that the average bridge has a 50-year lifespan, these bridges have exceeded their expected service life. Also, eight other bridges, in addition to the Route P bridge mentioned above, will be 50 years old by the year 2030.

2.1.4 HIGH CRASH LOCATIONS

While functions of access and mobility are forefront concerns in providing an efficient roadway network, roadways have to also be safe in order to be effective. Interruptions of traffic flow, economic activity and, even more so, injury and loss of human lives are the undesirable symptoms of an unsafe roadway network.

The City of Joplin recently completed a study that identified the intersections within the Joplin city limits that have had a high susceptibility to traffic crashes. The study took into account crash numbers, crash severity, and crash rate when selecting the intersections that warranted further investigation. ***Figure 2.6*** shows the intersections that were further studied and analyzed for short-term recommendations. Along with this list of intersections, MoDOT has provided crash data for the Joplin area for the years 2005 through 2009. Using this data, the high crash locations can be identified for the areas outside of the City of Joplin also.

In addition to the intersections within Joplin that were chosen for further study, there were several additional intersections that were initially reviewed. The locations of this longer list of high crash intersections reveal trends along certain corridors. Range Line Road and 7th Street are the two corridors that had several intersections on this longer list. Outside of the City of Joplin, the trend on Range Line Road continues. High crash density continues along the Madison/Range Line corridor into Webb City. Also generally north of Joplin, Route 171 experiences high crash density. This is especially evident at major intersections such as the intersections of Route 171 and Route 43 in Airport Drive and Route 171 and Madison in Webb City. Other arterials around Joplin do not experience quite the number of crashes as these corridors. Crash rates on the freeways are typically near or below state averages for freeways with the exception of interchanges along I-44. Every interchange along I-44 in the Joplin area has at least one kind of geometric deficiency by current MoDOT standards.

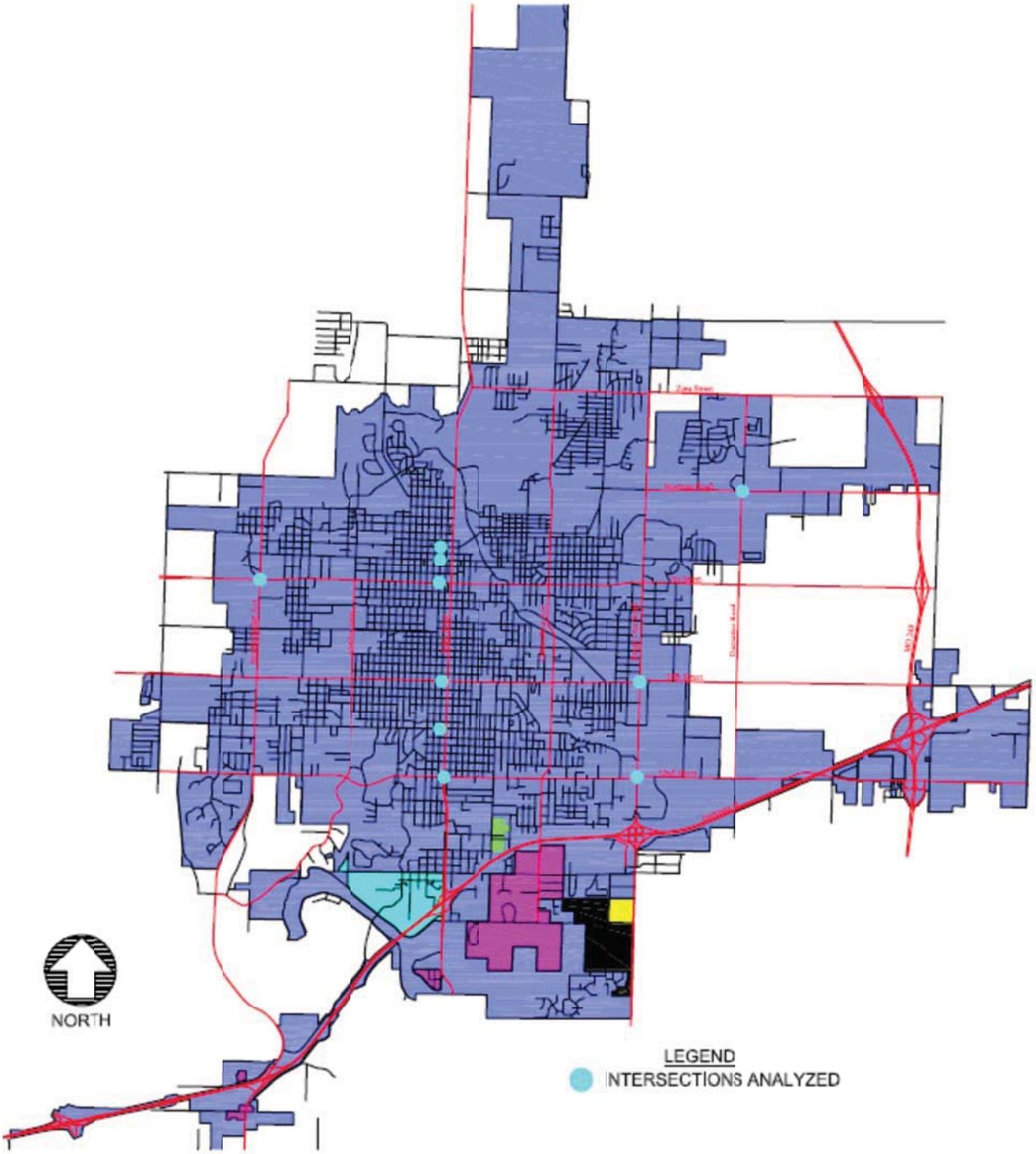


Figure 2.6: Joplin Traffic Crash Analysis Intersections

2.2 TRANSIT SYSTEM

While several types of public transportation exist in Missouri, only a portion of these systems are in place in the Joplin area. The Joplin area has no access to light rail transit as is found in only two metropolitan areas in Missouri, Saint Louis and Kansas City. Federally recognized and funded university

transportation services, as found at Missouri State University and Southeast Missouri State University, also do not exist in the Joplin area. However, other forms of public transportation, as identified by the Missouri Public Transit Association, are present in the Joplin area. Federally classified urban and rural transit systems serve portions of the JATSO Study Area as well as a myriad of human service agency systems, elderly and disabled transportation services, and a few taxicab services.

2.2.1 EXISTING TRANSIT AND PARATRANSIT SERVICES

The Joplin area has numerous agencies and services in place to provide both transit and paratransit services to the greater community. According to the HSTCC *Coordinated Public Transit – Human Services Transportation Plan, 2007* these services include:

PRIVATE AGENCIES

Health Care Transit Inc.: This organization serves disabled citizens, senior citizens, low-income citizens, and area youth, including citizens on Medicaid and Medicare, in Barton, Jasper, Newton, and McDonald Counties in Missouri as well as communities in Southeast Kansas. The provider uses a demand response system, offers a non-emergency medical service, and provides Medicaid and Medicare transport to serve its clients. Health Care Transit employs ten drivers using a fleet of eleven vehicles.

NON-PROFIT AGENCIES

Area Agency on Aging, Region X: This organization serves disabled and senior citizens in Barton, Jasper, Newton, and McDonald Counties. The provider uses a demand response system to serve its clients and operates two vehicles Monday through Friday.

Lafayette House: This organization serves disabled, low-income, and other citizens in unfortunate circumstances in Jasper, Newton, McDonald, Barry, and Lawrence Counties. The provider uses a demand response system to serve its clients and operates two vehicles Monday through Friday.

Ozark Center: This organization serves disabled citizens, senior citizens, low-income citizens, and area youth, including citizens on Medicaid, in Barton, Jasper, Newton and McDonald Counties. The provider uses a fixed route and demand response system and provides non-emergency medical service to serve its clients. The Ozark Center operates fourteen vehicles Monday through Friday and one weekend per month.

Boys and Girls Club of Joplin: This organization serves area youth in Jasper and Newton Counties. The provider uses a fixed route to serve its clients and operates three vehicles Monday through Friday.

The Independent Living Center, Inc.: This organization serves disabled, senior, and low-income citizens, including those on Medicaid, in Barton, Jasper, Newton and McDonald Counties. The provider uses a demand response system and a non-emergency medical service to serve its clients.

Cerebral Palsy of Tri-County: This organization serves disabled area youth in Jasper, Newton and McDonald Counties. The provider uses a fixed route to serve its clients and operates sixteen passenger buses Monday through Friday.

Salvation Army: This organization serves low-income citizens and homeless families in Jasper and Newton Counties. The provider uses a demand response system and a non-emergency medical service to serve its clients. The Salvation Army operates four vehicles Monday through Friday.

Metro Emergency Transport System (METS): This organization serves disabled and senior citizens in Jasper County. The provider uses a demand response system and a non-emergency medical service to serve its clients. METS operates seven ambulances in addition to wheelchair van services Monday through Friday.

OATS, Inc.: This organization serves disabled citizens, senior citizens, low-income citizens, area youth, and the general public, including citizens on Medicaid, in 87 counties in Missouri. The provider uses a demand response system, offers a non-emergency medical service, and provides Medicaid transport to serve its clients. Schedules and services vary depending on the county.

PUBLIC AGENCIES

Metro Area PublicTransit System (MAPS): This organization serves disabled citizens, senior citizens, low-income citizens, area youth, and the general public, including citizens on Medicaid, in Jasper and Newton Counties. The provider uses a deviated fixed route and a demand response system to serve its clients. MAPS is the primary provider of transit services to the core of the Joplin area.

2.2.2 PUBLIC TRANSIT OPERATIONS

While the Joplin area has numerous agencies and services in place to provide both transit and paratransit to the public, the primary provider of transit services to the Joplin area and its core is MAPS.

MAPS began as a demand response transit system operated by the City of Joplin in 1997. MAPS provided 58,630 rides to the Joplin area in that first year. In 2007, a deviated fixed route service, called the Sunshine Lamp Trolley, was added. The one route and deviated service area was expanded in 2009 with the addition of two new routes. The primary curb-to-curb service provided by MAPS encompasses a geographic area roughly 105 square miles in size generally bounded by Center Creek to the north, the Central City Road/Route JJ corridor to the west, the Douglas Fir/Route V corridor to the south, and the Jasper County Road 200 (Prosperity Avenue)/Jaguar Road/Route AA corridor to the east. This service area encompasses part of Carl Junction and all of the municipalities of Airport Drive, Carterville, Cliff Village, Dennis Acres, Duquesne, Grand Falls Plaza, Joplin, Leawood, Saginaw, Shoal Creek Drive, Shoal Creek Estates, Silver Creek, Redings Mill, and Webb City. The Sunshine Lamp Trolley service routes and the corresponding deviated service area comprise an area that is more compact than the primary MAPS service area, focusing on the more dense population and employment centers in the City of Joplin. Only a few of the other municipalities even partially fall within the deviated service area; these include Duquesne, Webb City, Leawood, and the entirety of Dennis Acres. The Sunshine Lamp Trolley service area is shown in ***Figure 2.8***.

Figure 2.7 shows the total ridership over the past ten years including the separate components of scheduled MAPS ridership and Trolley ridership.

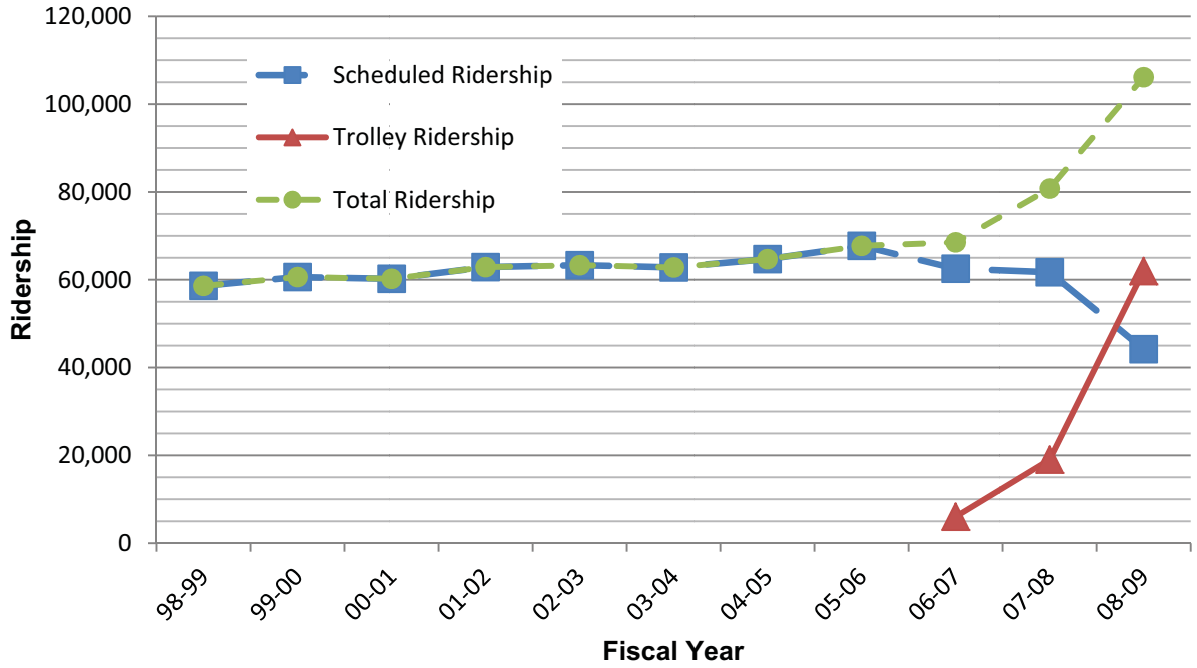


Figure 2.7: Public Transit Ridership Trends over the Past Ten Years

Source: Metro Area PublicTransit System, City of Joplin

The MAPS scheduled ridership showed steady growth until the inception of the Sunshine Lamp Trolley. However, this is not a negative point; it may merely indicate the effectiveness of the trolley route system that has been put in place. The trolley rides surpassed scheduled rides for the first time over the 2008-2009 fiscal year. Every vehicle in the MAPS and trolley system is lift-equipped and wheel chair accessible. By providing effect routes and deviated service areas, the trolley system not only serves more of the general public, but also supplants rides that would have had to be scheduled as MAPS paratransit rides in the past. There will always be a need for effective and equivalent paratransit service that is not accommodated by the transit routes already in place, but the effective placement of these transit routes may provide a more cost-effective service than transit service that does not serve the disabled public very well. So far, the trolley service seems to provide the former, a balanced route system that serves both the disabled public and the general public. As can be seen in ***Figure 2.9***, these transit services accommodate a variety of trip purposes.

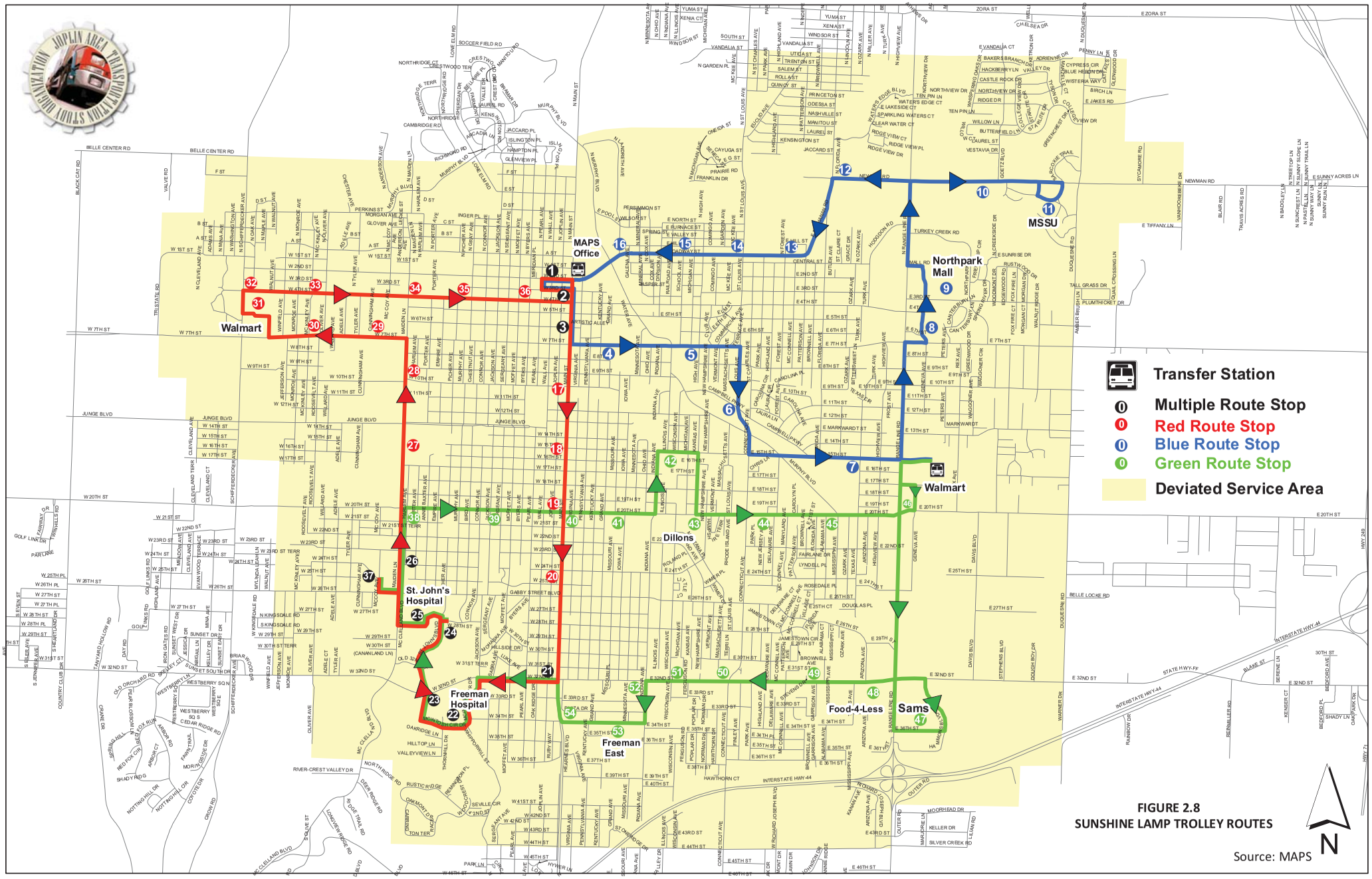


FIGURE 2.8
SUNSHINE LAMP TROLLEY ROUTES

Source: MAPS

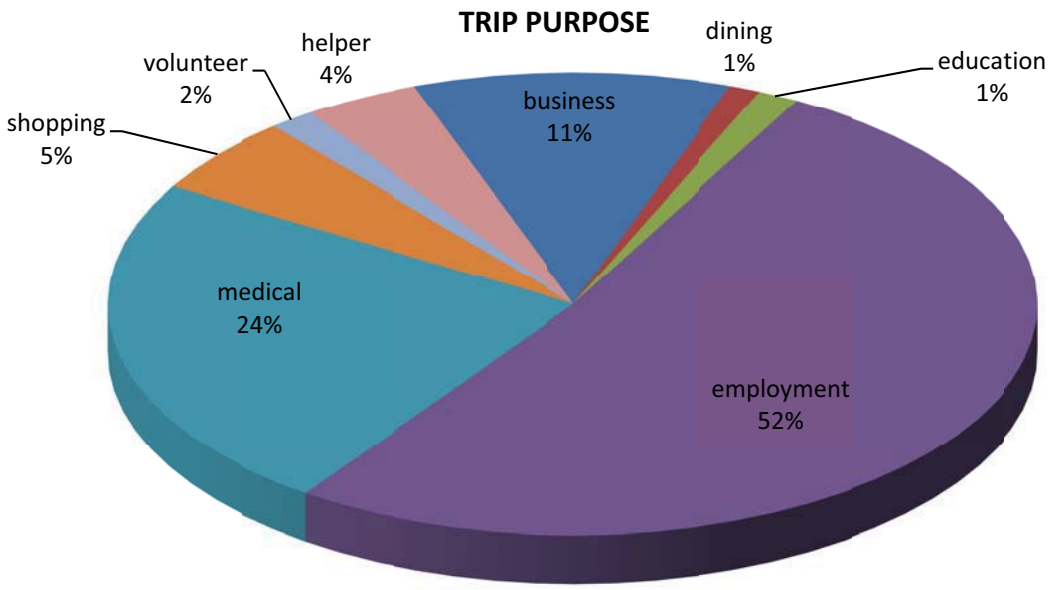


Figure 2.9: Current Purposes of Transit Trips
Source: Metro Area PublicTransit System, City of Joplin

Additionally, even with the focus of service on Joplin, fifteen percent of rides still serve residents from places other than Joplin as shown by ***Figure 2.10***.

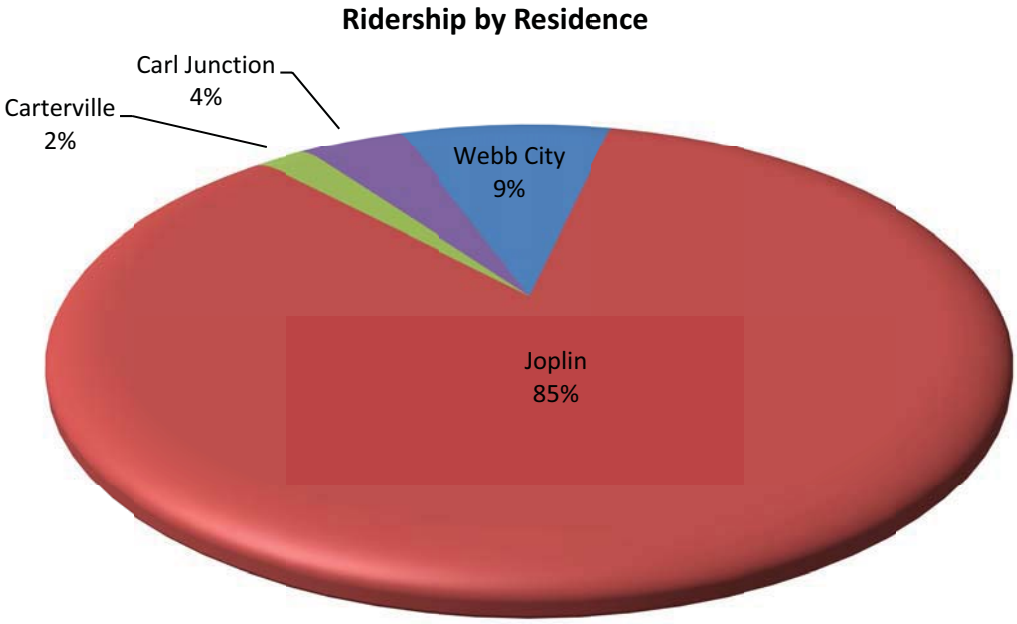


Figure 2.10: Current Residence of Riders of Transit
Source: Metro Area PublicTransit System, City of Joplin

2.2.3 PUBLIC TRANSIT FACILITIES

The Metro Area PublicTransit System has seen many expansions and enhancements over the past few years. In order to accommodate the increase in demand and services, as well as improve the existing system, upgrades in facilities have been necessary. MAPS now operates and maintains twelve vehicles between its on-demand and trolley route services. MAPS regularly utilizes federal Section 5307 funds to upgrade and replace vehicles and systems as needed. A typical service life of a transit vehicle is four years and can vary depending on several factors. American Recovery and Reinvestment Act funding of over $1 million was secured to provide several facility improvements: construct benches and shelters at various transit stops; provide improvements to the MAPS administration building; purchase vehicle equipment; and construct bus storage and maintenance facilities.

2.3 NON-MOTORIZED CIRCULATION

Alternative (non-motorized) modes of circulation such as bicycling and walking continue to be popular with many metropolitan area residents. These modes are low impact on the environment, efficient, low cost, healthy, and available to nearly everyone. While generally perceived as primarily a recreational activity, non-motorized circulation modes are also used for work-related trips. Approximately two percent (2%) of all non-motorized trips in 2000 were work-related.

These non-motorized modes provide communities with the opportunity to reduce transportation-related environmental impacts, mobile emissions, and noise while also achieving larger quality of life goals such as developing and maintaining more livable communities and neighborhoods. There is also growing interest in encouraging walking and bicycling as a way to improve public health. Increasingly, public health organizations are looking to metropolitan and state transportation plans to create more walkable and bikeable communities that encourage healthier lifestyles.

2.3.1 PAST PLANS AND STUDIES

The JATSO area has a long tradition of effectively planning for the long term in regards to its non-motorized transportation/circulation needs at the state, metropolitan, and local levels. To ensure consistency between these past efforts and most recent JATSO Long Range Transportation Plan, the available plans were reviewed and a summary of their key recommendations are provided below.

Bicycle and Pedestrian Transportation Plan (Phases 1 & 2):
JATSO supports the long range planning efforts for non-motorized facilities in the metropolitan area. In 1999, metropolitan Joplin began a two-phased bicycle and pedestrian plan. The first phase completed in December of 1999 developed a Vision Statement and Conceptual Facilities Map. The vision in the 1999 plan was to:

- Encourage increased pedestrian and biking activity.
- Develop a comprehensive and balanced pedestrian and bicycle network for the metropolitan area.
- Emphasize “neighborhood” connections to the parks and boulevard system.
- Provide a safe and pleasant means of pedestrian and bicycle travel.
- Be practical in implementation.

Phase 2, completed in 2001, built upon the Phase 1 Conceptual Facilities Map and identified development and implementation strategies for both on-road and off-road non-motorized facilities through four distinct phases which included:

- Concept development
- Concept refinement
- Recommended priority projects
- Community input

The recommendations provided in the Phase 2 study were used as the basis for implementation of a series of off-road, on-road, rails-to-trails, and sidewalk improvements since 2001.

Missouri Statewide Bicycle Route Map

In 2004, the Missouri Bicycle Federation prepared its second version of the proposed cross-state bicycle routes. Using the Missouri Department of Transportation's (MoDOT) 10 service districts, bicycle routes were designated for the state's rural areas based on average daily traffic and general topography. Individual metropolitan areas (e.g. Joplin) as represented by the Joplin Area Transportation Study Organization are expected to develop their own respective bicycle route map that will interconnect with the proposed cross-state bicycle routes.

Three route classifications are demarcated on the map and include:

- Cross-state routes
- Connector routes
- Off-road multi-user paths

Within the current boundaries of the JATSO metropolitan study area three (3) connector routes are envisioned. These include one route from the north along Route 43 and two from the south along Highway NN and Highway C. These connector routes, when linked with the existing and proposed routes in the metropolitan area will provide greater access to municipalities throughout southwestern Missouri.

Carl Junction Transportation Plan

In 2009, Carl Junction undertook the preparation of a comprehensive transportation plan for the community. As part of this planning initiative, Carl Junction identified that promoting non-motorized travel is essential for the community to cater to needs of all its citizens. This may be achieved by building an interconnected network of pedestrian accessible transportation systems that promote social, physical, and economical health of the community.

Following a cursory review of non-motorized facilities in the City, it was found that, generally, city arterials and collectors do not have sidewalks even on one side of the road. As a result, connections to local neighborhoods, schools, and parks/trails are significantly limited for community pedestrians and bicyclists.

To help to overcome this limitation, Carl Junction identified that the following factors should be considered when prioritizing sidewalk/trail needs in conjunction with pending and future roadway enhancement projects:

- Roadway Classification – Depending on the roadway classification, typical cross-sections were recommended. Sidewalks on both sides of the street are recommended for the arterials and collectors. Sidewalks on at least one side of the road are recommended for local streets.

- Pedestrian Activity – Generally, the land use surrounding the streets dictates the level of pedestrian activity. For example, streets leading to schools and parks have a high potential for pedestrian activity and therefore, priority should be given to incorporate sidewalk facilities in these areas.

- Traffic Volume on Adjacent Streets – As the traffic on a street increases, the safety of pedestrians and bicyclists decreases unless good sidewalks and crosswalks are provided.

- Connectivity – Good connectivity between different pedestrian and bicyclist destinations is important to encourage regular walking or biking. Connectivity between housing developments, schools, and commercial centers including the downtown core center should be a priority.

City of Joplin – Citizens Park Master Plan

The City of Joplin's 2000 *Citizens Park Master Plan* identified citizens' strong interest in trails that connect parks and points of interest. This document places trails as a high community priority as well as the expansion of the existing park system, including the Nature Center in Wildcat Park.

Harry S Truman Coordinating Council Regional Transportation Plan

The HSTCC 2009-2013 Regional Transportation Plan outlines the goals and objectives for transportation improvements for communities within southwestern Missouri including the counties of Barton, Jasper, Newton, and MacDonald. The overarching goals for the 2009-2013 plan generally include:

- System preservation and safety
- Access and mobility
- Sustaining the environment
- Maintaining accountability and planning

Within each of these goals a series of specific objectives have been identified to guide the effectiveness of implementation initiatives in regards to transportation improvements within the study area.

Municipal Stakeholder Comprehensive Plans

To ensure a broad based understanding of the overall goals and objectives of the diversity of communities within the JATSO area, a cursory review of the available comprehensive plans was

undertaken. Where appropriate and feasible, bicycle/pedestrian circulation specific desires and opportunities have been incorporated into the recommendations of the non-motorized circulation section of the JATSO Long Range Transportation Plan.

2.3.2 EXISTING NON-MOTORIZED CIRCULATION FACILITIES

The Joplin metropolitan area has made significant efforts to expand the availability of non-motorized circulation facilities each year. These improvements have typically been implemented concurrently with planned roadway enhancement and reconstruction projects. In some cases, projects have been funded by other means, such as the sidewalk improvements near Kelsey Norman Elementary through Transportation Enhancement funding, the Turkey Creek Trail extension through American Recovery and Reinvestment Act (ARRA) funding (also disbursed through Transportation Enhancement funds), and sidewalk and curb ramp improvements through Community Development Block Grant (CDBG) funding. Additionally, the City of Joplin requires the construction of sidewalks on all new collector and arterial roadways.

The following is a general description of the types and locations of the various non-motorized facilities throughout the metropolitan area. It is not intended to be an all encompassing inventory by mileage, condition, width, or compliance to current regulations or design standards.

The non-motorized circulation modes are divided into two types of facilities. These include on-road facilities and off-road facilities. A brief description of each type of non-motorized facility is provided below.

On-Road Facilities:
These facilities include bicycle lanes, shared roadways, designated bike routes, and sidewalks. A bicycle lane is that portion of roadway that has been designated by signs, striping, and/or pavement markings for the sole use of bicyclists. A *Shared Roadway* is any roadway on which bicycle travel is legally allowed, although it may or may not be accompanied by corresponding signage. A designated bike route is specifically signed and often published on a supporting route map. A sidewalk is specifically designed and reserved for pedestrian use.

Off-Road Facilities:
These facilities include either separated bicycle and pedestrian facilities (such as sidewalks) or the common combined use facility referred to as a multi-use path. Off-road facilities are separated from motor vehicles by an open space or physical barrier. Off-road facilities can be provided either within a highway or street right-of way or within its own independent right-of-way, such as within vacated railroad rights-of-way (e.g. Rails-to-Trails).

Pedestrian circulation has historically been perceived and provided primarily by sidewalks abutting existing roadways. Downtown areas within municipalities have traditionally provided the most extensive network of sidewalks to facilitate the non-motorized circulation needs of employers, employees, shoppers, and where appropriate residents. Extending outside of the downtown area, the provision of sidewalks within commercial corridors and abutting residential areas appears to be largely dependent upon what year and where the particular area was developed or in some cases redeveloped. At the time of development, regulations requiring the provision of sidewalks within these areas may have been non-existent and/or poorly enforced by the municipality.

Commercial areas located along major rights-of-way such as Range Line Road appear to provide sidewalks in some areas but often lack important continuity along the length of the right-of-way as well as connections to abutting neighborhoods and land uses. Residential developments constructed over the last decade appear to be designed as more pedestrian friendly neighborhoods with continuous sidewalks required and provided along one or both sides of the street. Older residential subdivisions, such as those built immediately following World War II appear to lack sidewalks in higher concentrations and/or possess larger numbers of "gaps" in overall connectivity.

As of 2010, designated on-road/shared facilities exist in five separate locations within the City of Joplin. These routes run a combined total of approximately $4^1/_2$ miles, including:

- Along 2nd Avenue/Broadway Street from Main Street on the west to School Avenue on the east, south to Jasper Street, and east to High Avenue terminating at Joe Becker memorial Stadium Park. (1 mile)

- Along 5th Street from Main Street on the west to Kentucky Avenue on the east, north to 4th Street, and east to Murphy Boulevard terminating at Landreth Park. ($^1/_2$ mile)

- Along Schifferdecker Avenue from 32nd to 20th Street. (1 mile)

- Along Connecticut Avenue between 32nd Street and 15th Street. ($1^1/_3$ mile)

- Along Zora Street between Missouri Avenue and the Frisco Greenway Trail. (1 mile)

While the extent of existing on-road/shared facilities is limited, it should be noted that all public streets are legally available for bicyclists who must adhere to the same rules of the road as all other motorists. Off-road facilities are generally preferred for bicyclists due to the safety benefits provided by the physical separation from motor vehicles.

Since 2005, the extent of off-road facilities and "rails to trails" has grown considerably within the JATSO boundaries. There are three key off-road facilities, the Frisco Greenway Trail, Ruby Jack Trail, and Thom Station which are connected to and supported by a growing network of park trail facilities including but not limited to King Jack Park Trail, Murphy Park Trail and others.

- **Frisco Greenway Trail** – The Frisco Greenway Trail is owned and operated by the Jasper County Parks Department with maintenance assistance from the Joplin Trails Coalition, a volunteer organization. The trail is approximately 3.5 miles traversing through the cities of Joplin and Webb City from North Street in Joplin to Hwy 171 in Webb City. The trail consists of firmly compacted gravel on top of the original railroad bed foundation. Improvements to the trail have included extensions to the south such as the Turkey Creek Trail and Ozark Memorial Park Trail (funding by the ARRA) as well as new designated parking areas for trail users and trailhead signs and miles markers along its extents. There are several at-grade roadway crossings along the route which require caution for riders and passing automobiles. Riders desiring to cross Route 171 are encouraged to use the signalized intersection of Madison (Route D) and Missouri Route 171.

- **Ruby Jack Trail** – The Ruby Jack Trail is approximately 16 miles in overall length, beginning in Carthage and traveling through the towns of Oronogo, Carl Junction, and onward to the Kansas State Line. The majority of the trail is primitive in materials with only approximately 3 miles consisting of firmly packed gravel. While completely open to the public its rough substrate along the majority of the route make it best suited for hiking and mountain biking purposes. Improvements along the tail include a new bridge and trailhead signage in Carthage as well as mile marker signs along the entire length of the route.

- **Thom Station Trail** – The Thom Station Trail is Carl Junction's newest walking/biking trail providing linkages between downtown Carl Junction and the Briarbrook area. As planned, the trial will ultimately provide connections between the Ruby Jack Trail in Carl Junction and the Frisco Greenway Trail trailhead in the heart of the City of Joplin. Approximately ¾ of a mile of the trail has been completed by the City of Carl Junction with plans to extend the trail to the south as funding becomes available.

In addition to the off road/rails-to-trails facilities listed above, stakeholder communities with the JATSO area also provide a network of park trail facilities within their diversity of municipality owned and operated open spaces. These include but are not limited to the McClelland Park, Dover Park, Schifferdecker Park, McIndoe Park, Ozark Memorial Park Trail, King Jack Park Trail, and Murphy Boulevard Park Trail. The King Jack Park Trial consists of an 8-foot wide asphalt trail within the park along with connections to the Frisco Greenway Trail. Future phases plan to follow a streamway further westward to link with three other park properties within Webb City, as well as a southerly extension from King Jack Park to 17th Street. The Murphy Boulevard Park Trail is a popular walking trail in central Joplin. The trail is an 8 foot wide firmly packed gravel surface traversing the park with a length of approximately 1.5 miles.

2.4 AVIATION

The latest update to the *Joplin Regional Airport Master Plan* was in 2002, and JATSO's long range transportation planning process retains the recommendations that the airport plan put forth and summarizes subsequent implementations of those recommendations.

The Joplin Regional Airport, owned and operated by the city of Joplin, serves the commercial, military, cargo, general aviation and corporate aviation demands for much of southwestern Missouri. The airport is located directly to the north of Route 171 and east of Route 43. The management of the airport falls within the City of Joplin's Public Works Department. An Airport Manager is responsible for the oversight of the daily operations. An Airport Advisory Board, consisting of seven members appointed by the Joplin City Council, is in place to provide guidance and direction to the Airport Manager. Other airport staff consists of one airfield operations manager, four operations shift personnel, and one seasonal assistant. Airport staff is cross-trained to perform operations and maintenance duties.

2.4.1 RECENT AIRPORT DEVELOPMENTS

- 2003: A $500,000 federal grant was received and matched by a $100,000 commitment from the Joplin Business Development and Industrial Corporation (JBDIC) in support of the airport's growth. Airport officials utilized the grant monies to offer new incentives to commercial carriers to help bring additional services to Joplin.

- 2004: Federal funding was received to plan and design a new terminal to replace the nearly 60-year-old terminal building that had become an obstruction to accommodating larger jets (proximity to main runway), a security concern (proximity to general aviation facilities), and too inefficient in daily operations. In general, expansion of airside and landside facilities was not possible at this terminal.
- 2008: Construction of the new $15 million terminal was completed in addition to a new $3.5 million traffic control tower. 90% of the costs were covered through the Federal Aviation Administration; the remaining funds were supplied by the City of Joplin.
- 2009: Airside and landside improvements continued including an airfield electric vault, generator, and lighting project and a parking lot improvement.

2.4.2 EXISTING AIRPORT FACILITIES

The Airport's facilities consist of two categories: airside and landside. The airside facilities include areas on airport property directly associated with aircraft operations, such as the runways, taxiways, navigational aids, and airport lighting. The landside areas include those facilities that provide a transition from surface to air transportation such as the passenger terminal building. Support facilities include the air traffic control tower and aircraft maintenance facilities.

AIRSIDE FACILITIES

Runways: The Airport uses a three-runway system. The primary runway (Runway 18/36), is 6,500 feet long and 100 feet wide. The secondary runway (13/31 or Crosswind) is 6,503 feet long and 150 wide. The third runway (Runway 05/23) is 3,604 feet long and 75 feet wide. Runway 18/36 is paved with asphalt and is in excellent condition. Runway 05/23 is paved with asphalt and is in fair condition. Runway 13/31 has grooved asphalt in good condition.

Aprons: The primary apron was located in the southwest quadrant of the airport and consists of 133,500 square feet of concrete. It served the previous terminal and general aviation facilities. Due to the construction the new terminal facility, approximately 20,000 square yards of pavement was added north of Runway 13/31 and west of Runway 18/36 to accommodate the apron and taxiway needs of the new facility.

Lighting and Visual Aids: The airport is identified by a rotating beacon located to the northeast of the intersection of Runways 18/36 and 13/31. This beacon projects one green and one white light, 180 degrees apart. The runway ends, or thresholds, are equipped with standard threshold lighting to assist approaching aircraft identifying the runway environment. Runways 13/31 and 18/36 are equipped with high intensity runway lights. Runway 5/23 is equipped with medium intensity runway lights.

LANDSIDE FACILITIES

Terminal Building: The new airport terminal encompasses approximately 22,000 square feet. The 2-story, 5-gate terminal includes public lobby, airline operations and ticket counter areas, a private luggage screening area, a covered baggage claim area, restrooms, canopied rental car areas, a business center, offices, a training facility, board room, and storm shelters. The new terminal will also be able to accommodate future growth.

Fixed Base Operator (FBO) Facilities: The Airport presently has one Fixed Base Operator (FBO), Mizzou Aviation, to service the general aviation activities. Mizzou Aviation provides aircraft fuel, parking, hangars, flight training, aircraft rentals, charter fights, maintenance, parts and accessories and aircraft sales. Mizzou Aviation's facility is located to the southwest of the old terminal building. The office space for this building consists of approximately 5,100 square feet, including a 2,300 square foot office space addition. The hangar space consists of approximately 15,000 square feet of maintenance and aircraft storage area. Mizzou Aviation provides tie-downs for approximately 14 aircraft along the southern edge of the general aviation apron. Approximately 23 additional tie-down spaces are provided to the west of the Mizzou Aviation Facility.

Hangars: The airport owns several T-hangar facilities and several privately owned single T-hangar units are located on the airport campus as well.

2.4.3 COMMERCIAL FLIGHT OPERATIONS

Through late 2010, the airport is served by one passenger airline, Great Lakes Airlines, which provides federally-subsidized carrier commercial passenger service between Joplin Regional Airport and Kansas City International Airport. On weekdays, they offer three flights departing from Joplin and three flights departing from Kansas City. Only two flights from Joplin and two flights from Kansas City are offered on Saturdays and Sundays. The current operational contract for Great Lakes expires late in 2010.

Commercial air service in Joplin has been intermittent since the deregulation of the airline industry. The inconsistency of air service, combined with the residual effects of the 9/11 terrorist attacks, proximity to larger airports, rising fuel costs, and other economic factors, has led to a decline of enplanements since a peak of over 40,000 annual enplanements in the 1990s. The last ten years have seen a number of commercial carriers try to maintain a presence in the Joplin market despite the downward trend. The year 2009 produced no more than 4000 enplanements for Great Lakes Airlines. Nevertheless, interest in the Joplin market is still strong as evidenced by the recent bids to replace Great Lakes Airlines as Joplin's carrier. The bids for the service have come from American Eagle and Air Choice One. If selected, each proposed to offer flights to airports with larger markets than the current connection does, Dallas-Fort Worth and St. Louis respectively. Both of these proposals created the potential for enplanement trends in Joplin to reverse and stabilize. American Eagle won the bid and will begin its contract late in 2010.

2.5 FREIGHT

Across the United States and the world, goods (freight) are moved using many modes of transportation. These modes can be grouped into four categories: boat, plane, train and truck. As the Joplin region is not connected by navigable waters, freight is not moved by boat. None of the major product air shipping companies, such as UPS and Fed-Ex, operate out of the Joplin Regional Airport limiting the amount of air cargo within the region. Rail and trucking are the two major sources of regional freight transportation.

2.5.1 RAIL

The Joplin area moves freight by rail through service of three railroads:

- Kansas City Southern (KCS)
- Burlington Northern Santa Fe (BNSF)
- Missouri and Northern Arkansas (MNA)

KCS and BNSF are Class I railroads, meaning they have annual gross revenues of more than $250 million. MNA is a Class II railroad, which means it has annual gross revenues of at least $20 million but no more than $250 million. KCS runs north-south in direction and connects Kansas City and Dallas. BNSF connects regions throughout the country including Chicago, Texas, California and the Pacific Northwest. MNA is primarily a regional railroad that connects to local areas throughout Southwestern Missouri and Northern Arkansas.

2.5.2 TRUCKING

The Joplin region is historically known for being a powerhouse in the trucking industry on a per capita basis and continues to thrive as a centrally located Midwest hub with great Interstate and highway access. The major routes connecting the Joplin region are I-44 and US-71. Increased freight opportunities are being made possible by the current push through KC SmartPort to make Kansas City an international inland port. As part of this effort, US-71 is being improved to be reclassified as Interstate 49. The Joplin region will benefit from both the roadway improvements and the increase in freight being shipped from the Midwest.

The Joplin region experiences significant trucking activity and is home to over 30 trucking companies. In total, it is estimated the Joplin trucking companies gross over ½ billion dollars annually and employ over 5000 people, locally. Con-Way Truckload Inc., Tri-State Motor Transit Co., Tni (usa) Inc. Aacto, D & D Sexton Inc., Transport Distribution Company TDC, and Bed Rock Inc Tri-State Motor Transit Co. are the area's largest trucking companies. ***Table 2.5*** lists the major trucking companies in the Joplin region.

Table 2.5: Major Area Trucking Companies

	Company Name	City	Local Employees	Location Type	Annual Sales Volume
1	Con-Way Truckload Inc	Joplin	2,440	HQ	$250,000,000*
2	Tri-State Motor Transit Co	Joplin	1,135	Single Location	$59,500,000
3	Tni (usa) Inc Aatco	Duenweg	220	Single Location	$8,000,000
4	D & D Sexton Inc	Carthage	218	Single Location	$26,034,199
5	Transport Distribution Company T D C	Joplin	190	HQ	$30,900,000
6	Bed Rock Inc Tri-State Motor Transit Co	Joplin	174	HQ	$25,000,000*
7	Transport Distribution Company	Joplin	150	Single Location	$20,000,000
8	Frontier Leasing Inc	Joplin	85	Single Location	$9,400,000
9	Dependable Transport Inc	Carterville	68	Single Location	$5,200,000
10	Jeff Asbell Excvtg & Trckg Inc	Carl Junction	65	Single Location	$7,900,000
11	Dyno Nobel Transportation Dispatch Office	Carthage	60	Branch	$6,000,000*
12	R & R Trucking Incorporated	Duenweg	60	HQ	$69,973,128

13	USF Holland Inc USFreightways	Joplin	59	Branch	$6,000,000*
14	WC Transport Inc	Webb City	40	Single Location	$4,000,000
15	L & P Transportation LLC L&P Transportation 0s00	Carthage	40	Single Location	$4,000,000*
16	Mpf Inc Crossroads Transportation	Carthage	38	Single Location	$4,300,000
17	Buesing Bulk Transport Inc Buesing Bulk	Carthage	25	Branch	$2,100,000*
18	L P and F Inc	Joplin	25	Single Location	$2,100,000
19	C & C; Fleet Service, SHIKLES TRUCKING, & TRANSPORT	Duenweg	22	Single Location	$2,400,000
20	Standard Trnsp Svcs Inc	Joplin	20	HQ	$2,000,000*
21	Queen City Air Freight Inc	Joplin	18	Single Location	$1,500,000
22	J C C Trucking Inc	Joplin	17	Single Location	$1,100,000
23	Queenscity Air Frieght Inc	Joplin	17	Single Location	$1,300,000
24	Thompson Capital Inc CARS ON THE MOVE	Carthage	17	Single Location	$3,362,265
25	J & L Transportation	Joplin	16	Single Location	$3,200,000
26	Fleenor Bros Enterprises Inc	Carthage	14	Single Location	$2,500,000
27	Harbor Freight Tools Usa Inc	Joplin	11	Branch	$1,000,000*
28	Atbt Inc	Joplin	11	Single Location	$1,000,000
29	Vitran Express Inc	Joplin	10	Branch	$500,000*
30	Neosho Trucking Inc	Neosho	10	Single Location	$540,000
31	Michael W Baker Mick Baker Trucking	Joplin	10	Single Location	$50,000
32	Huntington Woods Logistics Inc Cert. Express Logistics	Neosho	10	Single Location	$6,248,386
33	Servant Enterprises Inc Action Moving	Joplin	10	Single Location	$375,000
34	Auto Truck Transport Corp	Joplin	10	HQ	$500,000*
Total Estimated Local Employees & Annual Sales Volume			**5,315**		**$567,982,978**

Source:

Current year data is for the year 2009, 5 year projected data is for the year 2014. More About Our Data. Demographic data © 2009 by Experian/Applied Geographic Solutions. Traffic Count data © 2009 by DataMetrix. All rights reserved. Business List data © 2009 by D&B®. All rights reserved. All D&B information is powered by DUNSRightTM, D&B's Quality Process. This information was provided by the Joplin Area Chamber of Commerce

* *Annual Sales Volumes not reported - estimated based on similar number of local employee*

At a regional level, the major freight corridors, as depicted in ***Figure 2.11***, in the Joplin metropolitan area are:

- Interstate 44;
- Range Line Road/US 71 Business Route;
- MO Rte. 249;
- US Rte. 71;
- 32nd Street;

- 7th Street/MO Rte. 66;
- Main Street/MO Rte. 43;
- McArthur Blvd./MO Rte. 171;
- Schifferdecker Avenue
- 20th Street
- Duquesne Road

These regional freight corridors serve the Range Line commercial area, the Joplin Regional Airport, downtown Joplin, the St. John's/Freeman West medical area, the Joplin Airpark & Industrial Park, the Crossroads Center Business Park, the Joplin Southern Industrial Park, the Joplin – Webb City Industrial Park, Cedar Grove Industrial Park, and the Joplin Western Industrial Park.

2.5.3 INDUSTRIAL PARKS

There are several major industrial areas in the Joplin metro area:

- Crossroads Center Business Park
- Joplin Airpark & Industrial Park
- Joplin Southern Industrial Park
- Joplin Webb City Industrial Park
- Joplin Western Industrial Park
- Cedar Grove Industrial Park

The largest industrial park, Crossroads Center Business Park, is located southeast of the metropolitan area. It covers the area just south of I-44, north of Route FF (32nd Street) and to the eastside of Jasper County Road 190 (Prigmore Avenue). The Crossroads Industrial Park has 670 acres, and has been noted as one of the top sites for expansion in the country. Industries located in the Park presently include Communication Solutions and Technology (CST), Great Outdoor, Component Packaging, Bruner Fabrication, and Standard Transportation. This industrial park has excellent access to I-44 and US-71.

Located south of the Joplin Regional Airport and Missouri Route 171, the Joplin Air Park & Industrial Park sits just west of St. Louis Avenue. In addition to being close to the airport, this location has great access to Route 171 providing connections to the regional Interstate and highways.

One of the larger industrial parks, Joplin Southern Industrial Park, is located in the southeast portion of the metropolitan area. It covers the area just north of Route FF, south of 20th Street, and aast of Davis Boulevard. It includes Gulf States Paper Company and the Pillsbury Company. Nearby on Route FF is the distribution center of Conway Freight Trucking.

Another industrial area located in the northeast part of the metropolitan area is the Joplin – Webb City Industrial Park. The park is located generally north of Zora Street, south of Cardinal Road, east of Range Line Road, and west of Duquesne Road. It includes such freight forwarders as Airborne Express, Federal Express and XPEDX.

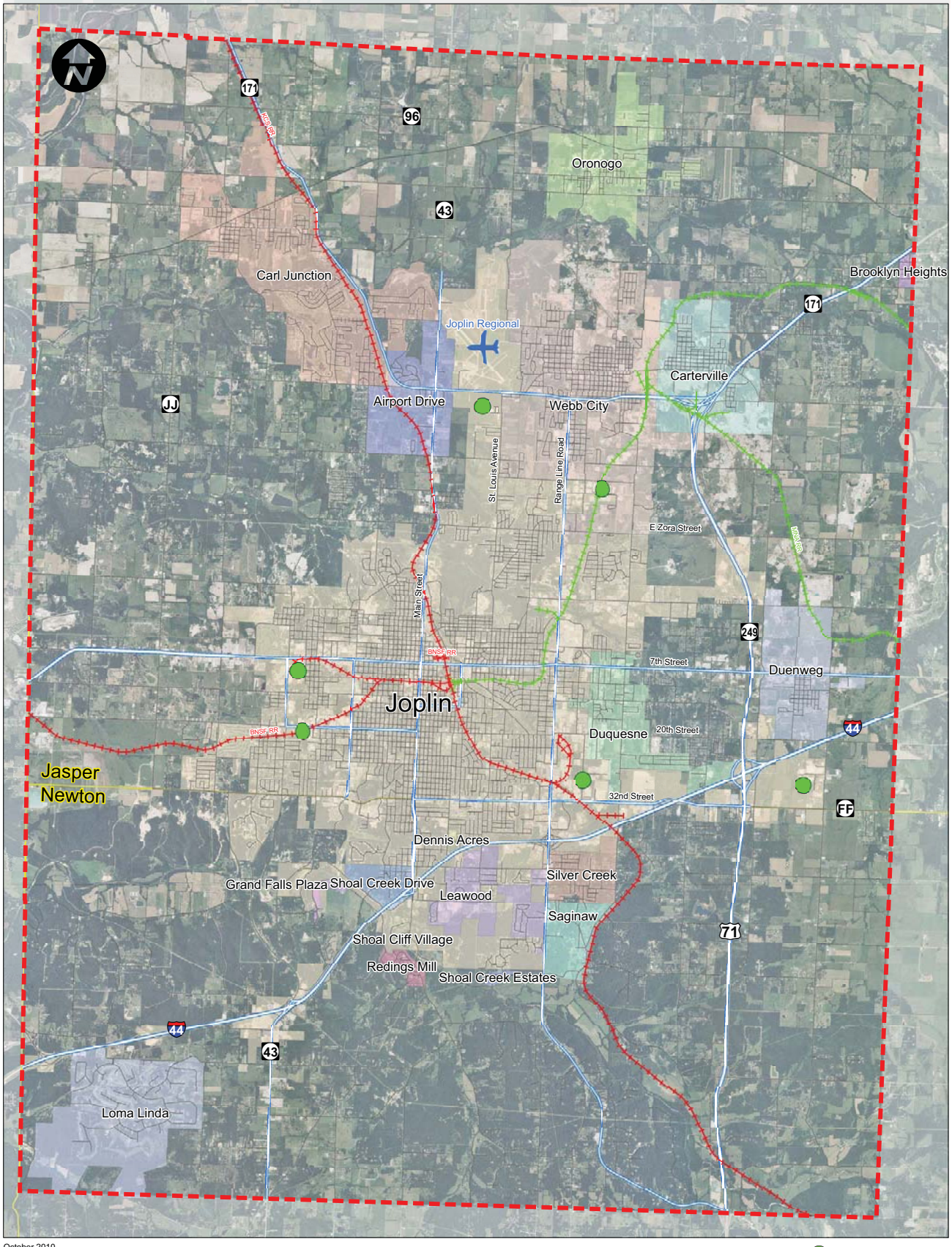
Two smaller industrial areas, Joplin Western Industrial Park and Cedar Grove Industrial Park, are located on the west side of the Joplin area east of Schifferdecker Avenue at 7th Street and 20th Street,

respectively. Both of these locations provide rail access and will see growth potential with the proposed West Corridor improvements.

In and around these industrial areas, there are a number of large manufacturing firms that are responsible for significant goods movement activity. Some of the largest include: Eagle-Pitcher, a maker of chemicals, batteries, fabricated metal products and auto parts; Able Body Corporation, a maker of truck bodies; Pillsbury, a maker of frozen foods; and Tamko Roofing Products.

JOPLIN AREA TRANSPORTATION STUDY ORGANIZATION

LONG RANGE TRANSPORTATION PLAN



October 2010

CJW

Freight Network

Figure 2.11

Major Freight Corridors
Roads
Class 1 Railroads
Non-Class 1 Railroads
Industrial & Business Parks
JATSO Boundary
Joplin Regional Airport

SECTION 3
2030 MODAL RECOMMENDATIONS

A Long Range Transportation Plan provides guidance and recommendations on needs and improvements that can affect the region's transportation system. These enhancements can be varied in nature and scope. They can range in size from multi-million dollar capital improvement projects that provide or enhance connectivity across the region to traffic signal upgrades to altering a transit route to include an additional stop. Some recommendations may require only a policy change to implement, and some may not come to fruition until closer to the 2030 planning horizon. Furthermore, some may be completed over a short duration, but some may require a continual effort by JATSO, MoDOT, and municipal staff to implement and maintain.

There are several viable mobility options that can be utilized to improve operation and performance of the transportation system. Some ways to improve the efficiency of the transportation network along a corridor that is projected to experience traffic congestion include:

- Roadway construction
- Transportation System Management
- Transportation Demand Management
- Public Transportation

3.1 2030 TRAVEL DEMAND MODEL

JATSO staff provided a travel demand model that was used to forecast travel demand for various scenarios for the year 2030. In long range planning studies, travel demand models are used to determine future travel volumes on the roadway system given anticipated growth. Existing traffic conditions were determined by comparing the most recent available traffic counts with street and highway capacity. After the existing conditions are assessed, a common practice in assessing future transportation conditions is to examine what transportation problems could be expected if no additional improvements to the roadway system were made beyond what is currently funded or currently under construction. This is called an existing plus committed network (E + C). The committed projects that were included are those projects contained in the Transportation Improvement Program (TIP) or included in dedicated local funding such as the Joplin 10-Year Transportation Program that is funded by a 10-year transportation tax. A list of committed projects included in the 2030 E+C network is shown in ***Table 3.1***.

Table 3.1: Committed Projects in 2030 E+C Network

Roadway	From	To	Description
Zora Street	Main Street (MO 43)	-	New Interchange
Zora Street	Main Street (MO 43)	Range Line Road	Widen to 4 Lanes
7th Street	Duquesne Road	MO 249	Widen to 4 Lanes
Schifferdecker Ave.	7th Street	32nd Street	Widen to 4 Lanes
Maiden Lane	9th Street	30th Street	Widen to 4 Lanes

The primary purpose of performing forecasts of future traffic patterns is to be able to identify where breakdowns or capacity problems in the transportation system will occur or worsen. While one can look at individual segments that are anticipated to be congested, perhaps the more appropriate action is to look at the anticipated condition of the overall corridor. ***Table 3.2*** tabulates the projected volumes, capacities and levels of service for roadway segments included in the Year 2030 E+C network.

Table 3.2: 2030 E+C Forecasted Traffic Volumes, Level of Service for Selected Links

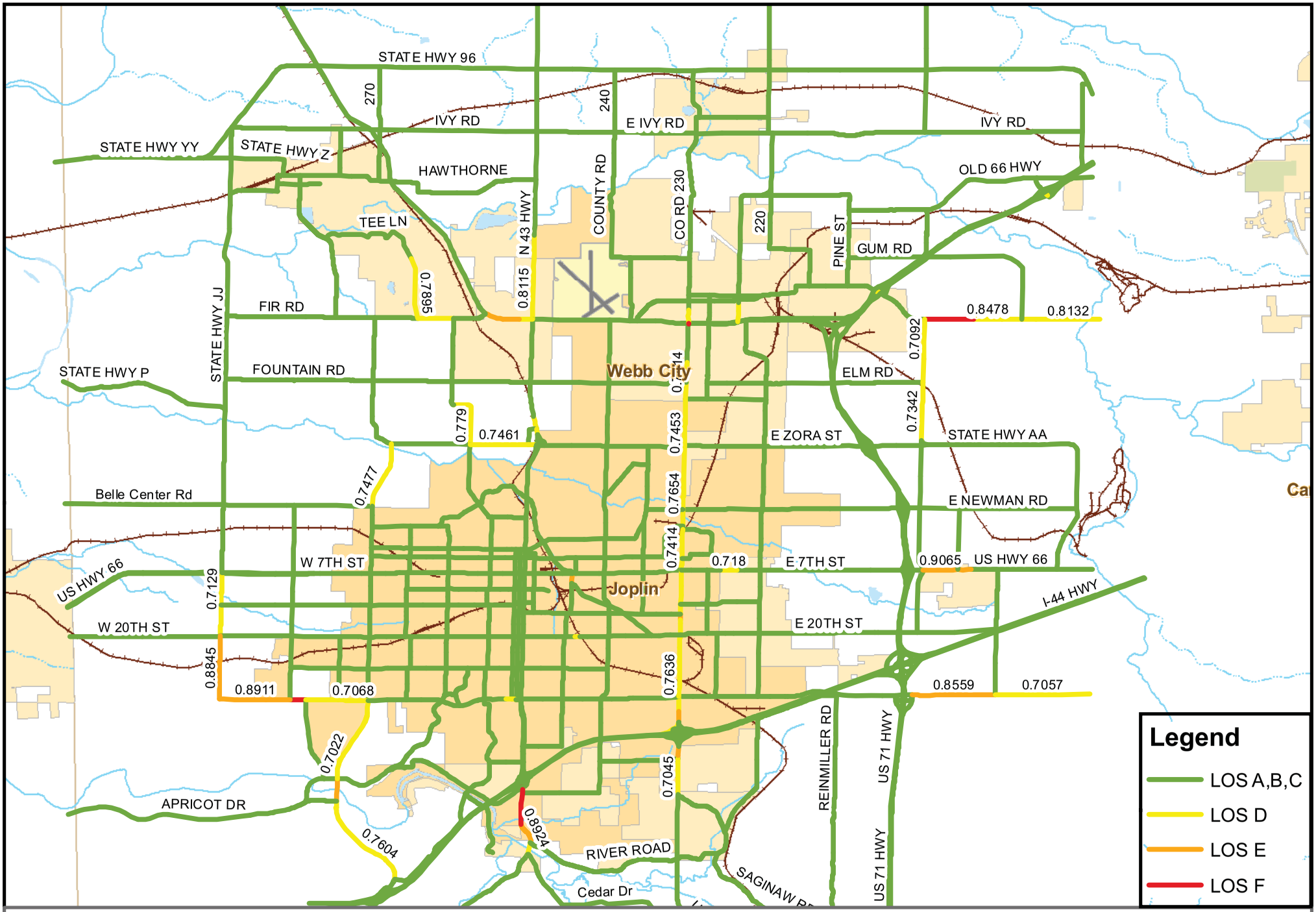
Roadway	Location		No. Lanes	V/C	AADT	LOS
	From	To				
BRIARBROOK DR	Fir Rd	Briarbrook Ln	2	0.79	10,219	D
CENTRAL CITY RD	W 20th St	W Junge Blvd	2	0.73	9,225	D
CENTRAL CITY RD	US Hwy 66 EB	US Hwy 66 WB	2	0.76	7,553	D
CENTRAL CITY RD	W Junge Blvd	US Hwy 66	2	0.71	8,905	D
CENTRAL CITY RD	Newton Rd	W 20th St	2	0.88	11,400	E
COYOTE DR	Arbor Rd	Crow Rd	2	0.75	9,505	D
COYOTE DR	Apricot Dr	Mcclelland Park	2	0.88	10,830	E
COYOTE DR	N of Deer Dr	S of Apricot Dr	2	0.76	9,279	D
COYOTE DR	S of Apricot Dr	Apricot Dr	2	0.76	9,279	D
COYOTE DR	Mcclelland Park	Arbor Rd	2	0.70	8,845	D
COYOTE DR	Deer Dr	N of Deer Dr	2	0.76	9,279	D
E 20TH ST	Wisconsin Ave	S Michigan Ave	4	0.76	19,319	D
E 32ND ST	US 71 Ramp	S Prigmore Ave	2	0.86	10,970	E
E 7TH ST	S Northpark Ln	Van Winkle St	4	0.72	25,435	D
E ZORA ST	N Upland Rd	N Main St Ramp	2	0.70	8,529	D
FIR RD	Briarbrook Dr	Lone Elm Rd	2	0.71	9,179	D
I-44 RAMP	I-44 WB On	S Rangeline Rd	1	0.71	6,609	D
MADISON ST	MO Hwy 171 WB	W 2nd St	2	0.76	9,471	D
MADISON ST	MO Hwy 171 EB	MO Hwy 171 WB	2	1.25	15,125	F
N 43 HWY	Old Hwy 43	Center Creek Dr	2	0.70	8,636	D
N 43 HWY	Gum Rd	Old Hwy 43	2	0.71	8,723	D
N 43 HWY	MO Hwy 171	Gum Rd	2	0.81	10,208	D
N LONE ELM AVE	Zora St	Hickory Hills Dr	2	0.78	9,915	D
N MAIN ST	Zora St Ramp	E Veterans Way	4	0.77	27,473	D
N MAIN ST	E Veterans Way	E Eaglewood Rd	4	0.78	28,330	D
N RANGE LINE RD	Hodgdon Rd	S of E Newman Rd	4	0.80	29,327	D
N RANGE LINE RD	Turkey Creek Rd	N Hodgdon Rd	4	0.77	27,633	D
N RANGE LINE RD	E Newman Rd	Waters Edge Blvd	4	0.77	27,731	D
N RANGE LINE RD	Waters Edge Blvd	E Zora St	4	0.75	27,199	D
N RANGE LINE RD	E Zora St	Enterprise	4	0.75	27,083	D
N RANGE LINE RD	S of E Newman Rd	E Newman Rd	4	0.80	29,373	D

N RANGE LINE RD	Enterprise	W Cardinal Dr	4	0.70	25,567	D
N SCHIFFERDECKER AVE	Belle Center Rd	S of W Zora St	2	0.75	9,562	D
N SCHIFFERDECKER AVE	S of W Zora St	W Zora St	2	0.73	9,310	D
NEWTON RD	Central City Rd	Ashwood Ln	2	0.89	11,486	E
NEWTON RD	Ashwood Ln	S Country Club D	2	0.89	11,486	E
OLD 66 BLVD	MO 171 EB Ramp	MO 171 WB Ramp	2	0.73	5,391	D
RANGE LINE RD	Mall Rd	Turkey Creek Rd	4	0.76	27,136	D
RANGE LINE RD	E 4th St	Mall Rd	4	0.74	26,012	D
RANGE LINE RD	E 6th St	E 4th St	4	0.79	27,980	D
RANGE LINE RD	E 7th St	E 6th St	4	0.79	28,335	D
RANGE LINE RD	E 10th St	E 7th St	4	0.84	30,122	D
RANGE LINE RD	E 11th St	E 10th St	4	0.84	30,265	D
RANGE LINE RD	E 22nd St	E 20th St	4	0.83	30,236	D
RANGE LINE RD	E 13th St	E 11th St	4	0.82	29,480	D
RANGE LINE RD	E 15th St	E 13th St	4	0.84	30,180	D
RANGE LINE RD	E 16th St	E 15th St	4	0.91	33,129	E
RANGE LINE RD	E 17th St	E 16th St	4	0.75	27,332	D
RANGE LINE RD	E 20th St	E 17th St	4	0.76	27,471	D
S HEARNES BLVD	Glendale Blvd	I-44 Ramp	1	0.99	7,408	F
S HEARNES BLVD	S of E 50th St	E 50th St	2	0.97	12,302	F
S HEARNES BLVD	E 50th St	Glendale Blvd	3	1.07	14,044	F
S ILLINOIS AVE	SE Murphy Blvd	E 7th St	3	0.87	12,615	E
S MADISON AVE	W Cardinal Dr	W 17th St	4	0.72	26,250	D
S MADISON AVE	W 17th St	W 14th Dt	4	0.74	26,950	D
S MAIN ST	River Rd	Norledge Pl	2	0.89	11,282	E
S MAIN ST	Norledge Pl	S of E 50th St	2	0.97	12,302	F
S RANGE LINE RD	E 24th St	E 22nd St	4	0.83	30,236	D
S RANGE LINE RD	E 29th St	E 24th St	4	0.76	27,782	D
S RANGE LINE RD	E 30th St	E 29th St	4	0.76	27,782	D
S RANGE LINE RD	E 36th St	E 32nd St	4	0.78	27,950	D
S RANGE LINE RD	I-44 Ramp	E 36th St	4	0.85	30,740	E
S RANGE LINE RD	E 44th St	Keller Dr	3	0.85	16,009	E
S RANGE LINE RD	Saginaw Rd	E 44th St	2	0.70	12,489	D
S RANGE LINE RD	Keller Dr	I-44 Ramps	3	0.85	16,009	E
S RANGE LINE RD	E 32nd St	E 30th St	4	0.77	27,980	D
SCHIFFERDECKER AVE	Crow Rd	W 32nd St	2	0.75	9,505	D
STATE HWY 171	Fir Rd	E of Fir Rd	2	0.86	15,303	E
STATE HWY 171	Wall St	MO Hwy 43	2	0.85	15,182	D
STATE HWY 171	E of Fir Rd	Wall St	2	0.88	15,691	E
STATE HWY 43	Douglas Fir Rd	S of Cedar Dr	2	0.71	12,520	D
STATE HWY 86	State Hwy NN	River Rd	2	0.74	9,156	D

STATE HWY AA	N of Elm Rd	State Hwy HH	2	0.71	7,892	D
STATE HWY AA	S of Elm Rd	Elm Rd	2	0.73	8,171	D
STATE HWY AA	E Zora St	S of Elm Rd	2	0.73	8,171	D
STATE HWY AA	Elm Rd	N of Elm Rd	2	0.74	8,256	D
STATE HWY D	W 2nd St	W Church St	2	0.75	9,324	D
STATE HWY D	MO Hwy 171	W 2nd St	2	0.80	10,032	D
STATE HWY FF	S Prigmore Ave	County Rd 180	2	0.71	9,054	D
STATE HWY HH	County Rd 190	County Rd 188	2	0.85	9,458	D
STATE HWY HH	County Rd 188	E of County Rd 188	2	0.85	9,466	D
STATE HWY HH	Split Rail Dr	County Rd 190	2	0.85	9,430	D
STATE HWY HH	Hwy 171 SB Ramp	Hwy 171 NB Ramp	2	0.74	6,177	D
STATE HWY HH	State Hwy AA	Split Rail Dr	2	0.96	10,899	F
STATE HWY HH	E County Road 188	MPO Boundary	2	0.81	9,001	D
US 71 RAMP	SB Ramp	at E 32nd St	2	0.75	8,644	D
US 71 RAMP	NB Ramp	at E 32nd St	2	0.79	8,805	D
US HWY 66	N Prosperity Ave	N Irwin St	2	0.91	11,059	E
US HWY 66	N Irwin St	Wolfe Dr	2	0.92	11,271	E
W ZORA St	N lone Elm Ave	N Upland Rd	2	0.75	9,370	D
W 32ND ST	S Pearl Ave	S Wall Ave	4	0.71	25,802	D
W 32ND ST	S Wall Ave	S Joplin Ave	4	0.74	24,885	D
W 32ND ST	S Country Club R	S Catnip Ln	2	0.97	12,362	F
W 32ND ST	Iron Gates Rd	S Schifferdecker	2	0.71	8,912	D
W 32ND ST	S Catnip Ln	Iron Gates Rd	2	0.71	8,987	D

The locations where traffic volumes would approach or exceed capacity for a Year 2030 E+C network is shown in ***Figure 3.1***. These locations identified where future traffic congestion is anticipated include:

- Route 171 – The section of Route 171 between Fir Road and Route 43 in Airport Drive is predicted to be congested.
- Range Line Road – Many sections of Range Line Road are projected to approach capacity in the year 2030.
- Several corridors that tie into existing freeway interchanges are expected to approach or reach capacity, particularly along I-44.



Volume to Capacity Ratio and Level of Service
2030 E+C Network

FIGURE 3.1

3.2 ROADWAY RECOMMENDATIONS

3.2.1 ROADWAY CONSTRUCTION

Building new roads or widening existing roads can help alleviate congestion by providing increased roadway capacity for all types of motorized vehicles. In some cases, new or improved roads also improve access to a particular area within the region.

A number of roadway needs and projects were identified through analysis of the forecasted future traffic, stakeholder interviews, and public input. Some of the projects identified that involve adding through and turn lane capacity include:

- Construction of a new West Corridor near/along Central City Road connecting Route 171 to I-44 to reduce through traffic and truck traffic on city routes.
- Widening of Route 171 from Route 43 to the west past Carl Junction
- Widening of Zora Street between Range Line Road and Route 249 from 2 through lanes to 4 through lanes.
- Connection of a 4-lane Zora Street from Route 43 (Main Street) to the proposed West Corridor.
- Widening of Schifferdecker Avenue to 4 through lanes from Route 66 (7th Street) to Zora Street
- Widening of the Duquesne/Hall corridor from 32nd Street north through Webb City
- Widening of 32nd Street from Schifferdecker Avenue to Central City Road to include a center two-way left-turn lane
- Widening of Black Cat Road from Route 66 (7th Street) to 32nd Street to include a center two-way left-turn lane
- Widening of St. Louis Avenue from Zora Street to Route 171 to include a center two-way left-turn lane

A summary of potential roadway improvement projects is listed in ***Table 3.3.*** The table also includes projects already committed in the current JATSO Transportation Improvement Program that are programmed for 2011 and beyond. The project identification numbers have been assigned arbitrarily and do not reflect any prioritization. Project evaluation and prioritization as part of this LRTP update is described in Section 4. Committed projects are identified by their TIP number. Projects included in the previous LRTP have retained their identification number for traceability purposes. In some cases, such projects have been broken down in shorter segments and are identified by number and letter.

TABLE 3.3
POTENTIAL ROADWAY PROJECTS

	No.	Route	From	To	Description
Proposed Roadway Projects	101a	West Corridor	I-44	MO 66	New highway construction w/ limited access (Scoping TIP # 09HS-10)
	101b	West Corridor	MO 66	MO 171	New highway construction w/ limited access (Scoping TIP # 09HS-10)
	102a	MO 171	MO 43	Fir	Widen road (2 to 4 lane w/median & left-turn lanes) (Scoping TIP # 29HS-10)
	102b	MO 171	Fir	RTE Z/Pennell	Widen road (2 lane to 4 lane divided) (Scoping TIP # 29HS-10)
	102c	MO 171	RTE Z/Pennell	MO 96	Widen road (2 lane to 4 lane divided) (Scoping TIP # 29HS-10)
	102d	MO 171	MO 96	MPO boundary	Widen road (2 lane to 4 lane divided)
	103	Zora	Range Line	MO 249	Improve and Widen road (2 lane to 4 lane w/median & left-turn lanes)
	104	Zora	West Corridor	Main	Improve and Widen road (2 lane to 4 lane w/median & left-turn lanes)
	105a	Schifferdecker	MO 66	Zora	Widen road (2 lane to 4 lane w/median & left-turn lanes)
	135	20th	Intersection w/KCS	-	Grade separation
	106a	Duquesne	7th (MO 66)	Newman	Widen road (4 lane to 4 lane w/median and left-turn lanes)
	106b	Duquesne/Hall	Newman	17th (W.C.)	Widen road (2 lane to 4 lane w/median and left-turn lanes)
	107	Hall	17th (W.C.)	Hawthorne	New roadway construction & Intersection at Centennial
	108	Range Line	Interchange w/ I-44	-	Reconstruct interchange
	109a	MO 43	Intersection w/ 171	-	Access management and intersection improvements
	113a	Fir	Peace Church	MO 171	Improve and add center turn lane and roundabouts
	113b	Fir	Joplin	Peace Church	Improve and add center turn lane and roundabout
	115	Newman	Duquesne	MO 249	Improve and add center turn lane
	116a	MO 66	Maiden	Schifferdecker	Improve and add center turn lane (Scoping TIP # 28HS-10)
	116b	MO 66	Maiden	Range Line	Access management and intersection improvements (Scoping TIP #28HS-10)
	117	20th	West Corridor	Schifferdecker	Improve and add center turn lane
	118a	32nd	Schifferdecker	Country Club	Improve and add center turn lane
	118b	32nd	Country Club	West Corridor	Improve and add center turn lane and roundabouts
	136	15th	Intersection w/ KCS		Grade separation
	119	St. Louis/Prairie Flower	Zora	MO 171	Improve and add center turn lane
	122	Black Cat	Newton	MO 66	Improve and add center turn lane
	124	17th	Oronogo	Range Line	New roadway construction
	127	RTE Z	RTE YY	MO 171	Improve and add center turn lane and roundabouts
	128	CR 190	Interchange w/ I-44	-	Construct interchange
	134a	RTE FF	Intersection w/ Davis	-	Intersection improvement
	137	Madison	Daugherty	Stadium	Improve and add center turn lane
	138	Connecticut	50th	Highlander	New roadway construction
	139	Duquesne	Overpass at I-44	-	New overpass construction
	140	Connecticut	Overpass at I-44	-	Improve overpass to 4 lane
	141	20th	Duquesne	MO 249	Improve and add center turn lane
	142	Jackson	Bridge at Shoal Creek	-	Improve bridge at Shoal Creek
	143	Maiden	Perkins	Murphy	Realign and improve
	144	Douglas Fir	State Line	Range Line	Preserve corridor for east/west arterial
	106a	Duquesne	32nd	7th	Widen road (2 lane to 5 lane)
	109b	MO 43	MO 171	Carl Junction	Improve and add center turn lane
	145	MO 66	Prosperity	CR 190	Improve and add center turn lane
	110	MO 171	Hall	Main	Access management and intersection improvements
	111a	Madison	MO 171	13th (W.C.)	Access management and intersection improvements
	111b	Range Line	13th (W.C.)	15th	Access management and intersection improvements
	111c	Range Line	Intersection w/ 15th	-	Access management and intersection improvements
	111d	Range Line	15th	I-44	Access management and intersection improvements
	121	Peace Church	Zora	Fir	Improve roadway
	125	Carl Junction Rd.	Madison	RTE D	New roadway construction
	126	44th	Overpass at I-44	-	New overpass construction
	130a	MO 96	RTE JJ	RTE D	Access management and intersection improvements
	130b	MO 96	Intersection w/ RTE D		Turn lane improvements
	131	RTE D	Hawthorne	MO 96	Improve and construct new bridge
	132	RTE D	Intersection w/ Ivy	-	Intersection improvement
	133	RTE FF	Intersection w/ Reinmiller	-	Intersection improvement
	146	Old 71 (Tipton Ford)	Bridge at Shoal Creek	-	Bridge replacement
Projects Already Programmed					
	TIP #03HL-10	20th	Intersection w/ Main	-	Intersection improvements
	TIP #03HL-11	26th	Maiden	Schifferdecker	Improve and add center turn lane
	TIP #02HL-11	Zora	MO 43	Range Line	Widen road (2 lane to 5 lane)
	TIP # 01HL-10	Zora	Interchange at Main	-	Interchange construction and RR grade separation
	TIP #01HL-11	Schifferdecker	MO 66	32nd	Widen road (2 lane to 5 lane)
	TIP #04HL-11	Broadway/Buchanan	Florida	St. Louis	Improve and add center turn lane
	TIP #05HL-11	St. Louis	Broadway	Zora	Improve and add center turn lane
	J-TC0516	26th	Intersection w/ Main	-	Intersection improvements
	TIP # 02HL-10	Maiden Ln.	9th-17th	20th-30th	Widen road (4 to 5)
	TIP # 7HS-11	MO 171	Interchange w/RTE HH	-	Ramp improvements

Of the roadway improvement projects given consideration, 19 projects were evaluated in the 2030 E+C travel demand model to compare the effects of each on the regional roadway network. ***Table 3.4*** summarizes the output from separate model runs with each project added to the network by itself. Model data used for comparison includes the change in vehicle miles traveled and vehicle hours traveled, which is a measure of delay. A visual representation of the projects' effects on the roadway network is included in the appendix.

Table 3.4: Travel Demand Model Output: Summary of Project Comparison

2030 Alternative	Vehicle Miles Traveled (VMT)	Vehicle Hours Traveled (VMT)	Daily Δ Delay (Hours)	Daily Δ Miles
E+C	3069210.17	73283.75	0	0
101a	3058120.32	72300.59	-983.2	-11090
101b	3070150.52	73141.26	-142.5	940.4
102a	3068073.46	73180.35	-103.4	-1137
102b	3068289.25	73202.49	-81.26	-920.9
102c	3069220.33	73283.03	-0.72	10.16
102d	3069210.17	73280.49	-3.26	0
103	3068656.51	73186.34	-97.41	-553.7
104	3068142.45	73454.5	170.8	-1068
105a	3070019.53	73135.17	-148.6	809.4
135			-73284	-3E+06
106b	3067901.44	73143.25	-140.5	-1309
107			-73284	-3E+06
108			-73284	-3E+06
109a	3069703.08	73252.42	-31.33	492.9
116b	3069308.51	73124.42	-159.3	98.34
136			-73284	-3E+06
124	3068605.75	73322.63	38.88	-604.4
128			-73284	-3E+06
134a	3069240.73	73282.56	-1.19	30.56

3.2.2 *Transportation System Management*

Transportation System Management (TSM) looks at improving traffic operations within a given corridor or location by examining solutions other than adding lane capacity. This can include a variety of options including traffic signal improvements, limiting or consolidating driveways and intersections, and monitoring to respond to incidents.

Traffic signal timing has a greater impact on transportation system efficiency than any other operational measure available to the JATSO jurisdictions. Delays experienced in roadway travel have been steadily increasing during the past 20 years. Delays at traffic signals contribute an estimated 25 percent to this total. Therefore focusing on traffic signal timing is tremendously beneficial to regional mobility.

Traffic professionals have long recognized the value of designing effective signal timing and maintaining that timing to meet changing travel patterns and characteristics. Ten years ago, the U.S. General Accounting Office reported, "Properly designed, operated, and maintained traffic control signal systems yield significant benefits along the corridors and road networks on which they are installed. They mitigate congestion and reduce accidents, fuel consumption, air pollutants and travel times. These benefits are documented in numerous evaluations, provided to us (the GAO) by FHWA, states, cities and other sources, that compared before-and-after results when signal systems were installed expanded, or retimed. …For example, the state of Washington recently completed studies quantifying the benefits of upgrading and coordinating signal control equipment and retiming existing signals for six signal systems. These studies showed an annual fuel reduction of 295,500 gallons and annual reduction in vehicle delays of 145,000 vehicle hours." Another agency recently notes that a program of regular signal timing updates has a benefit/cost ratio of 55:1, with an estimated annual user savings of $64 million. (*Source: National Transportation Operations Coalition)*

The City of Joplin and MoDOT District 7 continue to make advances in improving and maintaining the traffic signal system(s). Adaptive traffic signal operation has recently been installed at seven intersections on 20th and 26th Streets in Joplin, and MoDOT is considering its implementation to a greater extent on its roadway system including along Range Line (Business 71). MoDOT reviews and updates signal timing along its corridors on a regular basis and quantifies the effects of such improvements through its *Tracker* performance measuring initiative. The City and MoDOT also collaborate to provide cross-coordination where their routes intersect, including timing improvements to Main Street (MO 43) and 7th Street (MO 66) that were implemented in spring of 2010.

Implementation of intelligent transportation systems (ITS) is a specific TSM strategy that improves transportation safety and mobility and enhances productivity through the use of advanced communications technologies. ITS technologies encompass a broad range of wireless and wire line communications-based information and electronics technologies.

Another TSM approach is access management. Access management is the systematic control of the location, spacing, and operation of driveways, median openings, interchanges, and street connections to a roadway. The purpose of access management is to provide access to land developments in a way that still preserves the safety and traffic movement of the transportation system.

The City of Joplin currently implements access management along major corridors for both greenfield and redevelopment/infill when the opportunity presents itself. Access management should be continued in all cases; however, cooperation between MoDOT and local jurisdictions is required to successfully implement a standard level of access management across the region. Policies and guidelines should support the consolidation of driveways along arterial streets, encourage shared access easements, and provide for clear functional areas of intersections of public roads.

Potential TSM projects include but are not limited to:

- Intersection improvements and access management to Route 43 from Zora Street to Joplin Regional Airport.

- Intersection improvements and access management to Route 171 from Route 43 to Hall Street.
- Intersection improvements and access management to Range Line Road/Madison Street from I-44 to Route 171
- Addition of turn lanes and additional access management to Route 66 (7th Street) from Schifferdecker Avenue to North Park Lane.
- Better access management along 32nd Street between Schifferdecker Avenue and Duquesne Road.
- Continued traffic signal timing and coordination review and updates, especially along arterial roadways.

3.2.3 *Transportation Demand Management*

Transportation Demand Management (TDM) is an approach that seeks to reduce the number of vehicles that use the transportation system. The most common way is to encourage commuters to share their rides so that more people can move through a roadway segment with the same for fewer numbers of vehicles. In some cases, lanes are reserved for carpools or transit vehicles to encourage use by providing time savings during peak congestion. Other strategies include encouraging telecommuting or variable work hours that allow persons to avoid traveling during the commuter peaks. Businesses are encouraged to support TDM strategies.

3.3 Transit System

The existing transit system in the Joplin area has been successful in providing travel options for both the disadvantaged public and commuters in general. Human service agencies have been successful in obtaining funding through federal Section 5310 funds to pay for transit vehicles. Similarly, the Metro Area PublicTransit System (MAPS) has utilized a variety of funding sources to supplement other revenue streams. MAPS has implemented or is currently implementing most of the recommendations provided in previous LRTPs. These recommendations include:

- Replacement program for vehicles: even with expansion of services and increase in the number of vehicles, MAPS has a program in place to continually replace and upgrade vehicles as needed.
- Upgrade of reservation and tracking systems: A $244,032 grant through federal Section 5309 funds along with a 20% local match will continue the upgrade the information technology used by MAPS. This latest enhancement will provide access to a dispatch system from every vehicle and the utilization of a web portal for public reservation use.
- Upgrades to facilities: the new construction of vehicle storage and maintenance facilities as well as the upgrades to transit stops will prove beneficial to both the operators and users of MAPS.
- Expansion of transit service: both the introduction of deviated fixed routes and the adjustment of service times have led to an increase in riders served by MAPS.

The successes of the past several years aside, MAPS needs to continue to provide quality transit and paratransit service to the Joplin area. Opportunities exist to increase these services. Some recommendations are vital to the continued success of MAPS while others are suggested only if they continue to be desired by the general public and are feasible for implementation.



CONTINUAL RECOMMENDATIONS

Vehicle Operations, Replacement, and Maintenance: The maintenance and replacement program for transit vehicles needs to be continued. At the current level of twelve vehicles, an average of two to three vehicles needs to be replaced every year. So far, MAPS has been successful in keeping the age of its transit fleet to a recommended level. No matter how desired a certain service becomes, no expansion or otherwise change in service should be allowed to inhibit the ability of MAPS to properly maintain and replace transit vehicles. If any service expansion outpaces MAPS operational capabilities, undesirable financial or liability situations may arise.

SHORT TERM RECOMMENDATIONS

Expansion of Service Hours: The existing service hours of both the trolley system and the curb-to-curb service have been expanded and encompass standard work hours, but there may be potential riders that have nonstandard work hours. Some industries, such as the medical field, have shift work that encompasses all hours of the day and every day of the week. There may be other activities that are underserved by public transit, such as weeknight and weekend religious services. For these and other various reasons, MAPS should investigate these potential needs to see how to better serve the public.

Turnout Improvements to Trolley Stops: Many of the existing trolley stops have benefited from enhancements such as shelters and benches. These enhancements certainly make the existing riders more comfortable and may attract more riders because residents tend to notice stops that they did not know existed before the enhancements and/or are more willing to engage public transit as a result of those improvements. As certain trolley stops continue to be used more heavily than others, some should be identified for other potential enhancements such as vehicle turnouts. Turnouts provide a refuge for the transit vehicle while passengers load and unload. This not only increases safety and setback from the roadway of the transit stop, but also provides decreases in traffic delay along the adjacent roadway.

LONG TERM RECOMMENDATIONS

Expansion of Service Areas: The trolley system has been beneficial in the effective consolidation of services into more cost-effective deviated fixed-route service. Further increases in ridership may be experienced with the addition of trolley routes that serve other areas in the JATSO Study Area. Input encountered during LRTP public meetings suggests that there may be interest in expanded routes that serve the southwest portion of Joplin as far south as 32nd Street and as far west as Schifferdecker Avenue. Additionally, expansion to specific activity centers were suggested including industrial parks, safe after-school destinations, and more Range Line Road destinations. Furthermore, other cities may benefit from trolley service. All of these options should be considered and reevaluated as the Joplin area grows and needs arise. Regarding trolley stops on Range Line, the use of turnouts or stops along frontage roads such as Geneva Avenue may allow this corridor to be more fully utilized without hindering other vehicular traffic.

3.4 NON-MOTORIZED CIRCULATION

Based upon the foundations of the 2001 *Bicycle and Pedestrian Transportation Plan* as well as the goals, desires, and recommendations collected from stakeholder interviews and review of the various municipal plans/programs, a series of non-motorized (pedestrian/bicycle) opportunities have been identified. These opportunities build upon and complement the existing framework of non-motorized facilities currently located throughout the JATSO area. The opportunities are divided into on-road and off-road classifications and are depicted in ***Figure 3.2***.

3.4.1 ON-ROAD FACILITY OPPORTUNITIES

- Include pedestrian sidewalks in conjunction with the various planned/proposed roadway and intersection improvements within the JATSO study area. A list of planned/proposed improvement projects with potential to include pedestrian sidewalk enhancements is included under the roadway section of this report.

- Sidewalk enhancement and/or installation at/near existing and proposed education institutions should be continued to provide and promote safe trips to/from school.

- Bicycle/pedestrian actuation and signal at the intersection of 13th Street and Madison Street in Webb City should be installed to enhance pedestrian safety.

- Evaluate existing inaccessible pedestrian facilities to formulate a plan to address and correct these locations to meet all ADA standards.

- Where currently missing, install sidewalks along commercial corridors (e.g. Range Line Road between 13th Street and I-44) to facilitate pedestrian circulation and enhance safety. Consideration should be given to installation of a pedestrian overpass near the intersection of Range Line and Hammons Boulevard to enhance pedestrian crossings.

- Evaluate the potential to and where feasible encourage the installation of shared bicycle facilities in conjunction with planned/proposed roadway improvements. These may include but are not limited to:

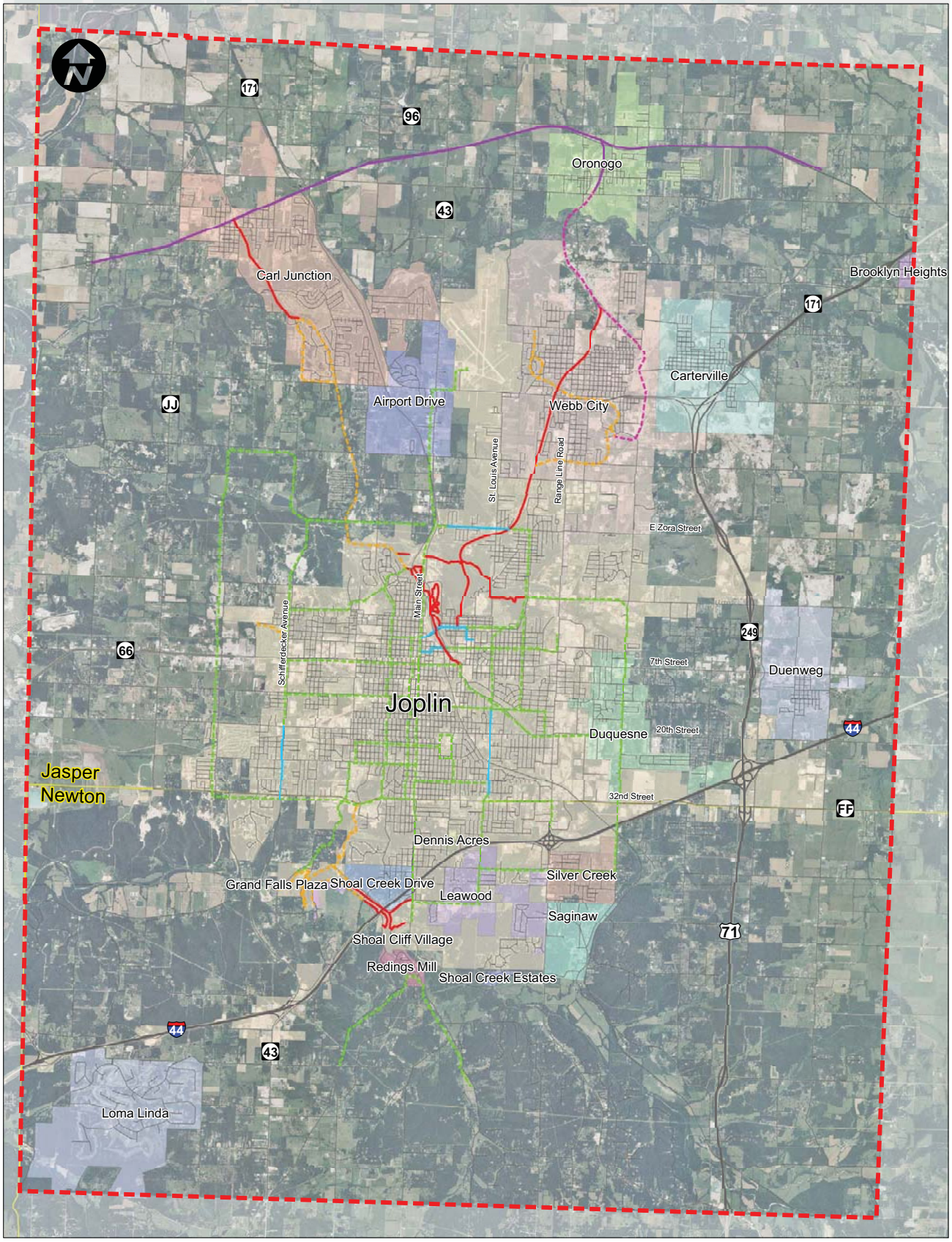
  - Zora Street from West Corridor to Main Street
  - Schifferdecker Road from MO66 to Zora Street
  - Duquesne Road/Hall Road from 7th Street to 17th Street in Webb City
  - 32nd Street from Schifferdecker Road to Country Club Drive
  - Black Cat Road from Newton Road to MO66
  - Duquesne Road at the I-44 Overpass
  - Connecticut Avenue at the I-44 Overpass
  - Duquesne Road from 32nd Street to 7th Street
  - Peace Church Avenue from Zora Street to Fir Road
  - 15th Street at the Kansas City Southern railroad grade separation

- Consider additional shared road lanes along Main Street and Joplin Avenue between A Street and 7th Avenue to provide enhanced north-south connections within the downtown core.

- Consider linking the designated State bicycle connector routes south of Redings Mill along Highway NN and Highway C via a shared road routes along Redings Mill Road/Main Street. Connection to the off-road bike route in Spiva Park should also be considered.

JOPLIN AREA TRANSPORTATION STUDY ORGANIZATION

LONG RANGE TRANSPORTATION PLAN



August 2010

CJW

Paths & Trails

Figure 3.2

- Trail Existing Shared Road
- Trail Existing Off Road
- Trail Existing "Rails to Trails"
- Trails Proposed Shared Road
- Trails Proposed Off Road
- Trails Proposed "Rails to Trails"
- JATSO Boundary

3.4.2 OFF-ROAD FACILITY OPPORTUNITIES

- Coordinate with the Missouri Department of Transportation (MoDOT) to enhance regional bicycle connections by linking the Ruby Jack Trail to the designated State bikeway connector route along Route 43.

- Assist Carl Junction where feasible in the continued extension and enhancement of the Thom Station Trail further south toward Joplin.

- Continue enhancement of the Ruby Jack Trail through the installation of firmly packed gravel riding/hiking material. These efforts should be focused within the municipal boundaries of JATSO stakeholder members such as Carl Junction and Oronogo.

- Connect the Turkey Creek Trail to Missouri South State University (MSSU) to the North Park Mall through a combination of off-street and on-street/sidewalk improvements along Newman Avenue as well as a pedestrian bridge across Turkey Creek.

- Establish connections between the trails in McClelland Park, McIndoe Park, and Shoal Creek to increase circulation alternatives for area bicyclists and walkers.

- Include trail facilities as part of future roadway improvements to Hall Street between 17th Street and Hawthorne Road.

- Include trail facilities as part of future roadway improvements to Fir Road between Peace Church Avenue and MO 171.

- Include trail facilities as part of future roadway improvements to 17th Street between Oronogo Street and Range Line Road.

- Enhance signage at trail/roadway crossing areas such as Zora Street and the Frisco Trail to enhance pedestrian/rider safety. Consider installation of additional direction signage to encourage riders that arrive by automobile to park at the North Street trailhead for the Frisco Trail.

- Continue to encourage land donations where geographically appropriate to facilitate future connections/extensions of existing trail facilities as well as development of new facilities within the JATSO study area.

3.5 AVIATION

Commercial airline service and enplanements have continued to decline over the past decade. However, Joplin Regional Airport has seen significant upgrades over the past decade and is positioned well to accommodate an increase in demand for services. An extensive program of both airside and landside improvements consistent with the *Joplin Regional Airport Master Plan* have been implemented.

While most of the large expenditures recommended in the *Joplin Regional Airport Master Plan* have been provided, preservation of the existing infrastructure and addressing needs as they arise will be an ongoing effort. Continuation of the maintenance recommendations and smaller upgrades as stated in

the *Joplin Regional Airport Master Plan* will be necessary until the planning horizon for that study comes closer. At that time, a new master plan update will be needed.

In the meantime, the Joplin Regional Airport should take advantage of Federal Aviation Administration grants to supplement ongoing costs and provide funding for unique opportunities as they come available.

Additionally, the airport should continue its effort to connect to larger hubs in the expectation that enplanement numbers can increase – even to the point that Joplin Regional Airport may be able to come out from under the federal Essential Air Service program and provide a more sustainable commercial air service to the Joplin area. The American Eagle contract is a good start for this trend.

3.6 FREIGHT

The regional freight hauling community has provided input into this plan directly through the stakeholder public input process. Stakeholder participants shared a number of signal coordination, roadway widening and intersection improvement projects that would be beneficial to the freight hauling community. Many of the projects suggested by the freight stakeholders are within the scope of projects suggested as part of the LRTP process.

Improving Duquesne Road, Zora Street, Schifferdecker Avenue and 20th Street were identified as key routes to improve the efficiency of moving freight. These routes are all included in the recommended projects. Duquesne from 7th to 17th Street is recommended for widening from 2 to 4 lanes; Zora is recommended to be widened, in two projects, from Range Line to MO 249 and from the future West Corridor to Main; and Schifferdecker is recommended to be widened from MO 66 to Zora.

Grade separations with the Kansas City Southern (KCS) RR on both 20th Street and 15th Street were noted as needed improvements and are included in the recommended projects. Constructing an interchange on I-44 at CR 190 was considered a critical project for the trucking community, providing better access and improving the safety of all motorists by removing a large percentage of the truck traffic from the existing MO 249 and I-44 interchange. There is a high volume of trucks in this area serving the Crossroads Industrial Park.

One of the items discussed that is not part of a traditional infrastructure improvement is creating a designated truck route network and signing them accordingly. The overall stakeholder comments are included as an appendix to the report.

One of the recommendations from the Joplin Metropolitan Area Long Range Transportation Plan, 2005 Update was to form a Freight Advisory Committee (FAC) to review and rate the region's TIP regarding potential improvements to freight mobility and access. Since the 2005 update there has been a group formed called the Joplin Industrial Development Authority (JIDA) to review and approve requests for industrial area permits.

SECTION 4
FINANCIAL PLAN

The financial plan addresses existing and potential funding resources available for implementation of the transportation plan. The needs and projects identified in a Long Range Transportation Plan should not be viewed as an unfunded wish list. The recommendations provided should be encompassed in a feasible, financially-constrained plan that can realistically be implemented over the next 20 years.

The first step is to identify funding sources and mechanisms available for transportation improvements in the Joplin region along with their potential value. The next step is to prepare cost estimates for the roadway, public transit, non-motorized, and other enhancements recommended in the plan and evaluate the potential benefits of each. Once the recommended projects are prioritized based on cost/benefit analysis and tempered by revenue streams that the metropolitan area can reasonably expect over the next 20 years, a fiscally sound plan with the most benefit to the Joplin regional transportation system can be produced.

4.1 FUNDING SOURCES

Anticipated revenues through the year 2030 come primarily from federal, state, and local governments. Most federal and state funding programs are generally administered by MoDOT through allocation to local jurisdictions or implementation of projects on the state highway system. Many new roadway improvements can be financed through shared expenditures from the private sector and from public means. MoDOT, county and local jurisdictions should continue working together to partner in funding transportation projects and seek opportunities to leverage private funding to share in implementing improvements that benefit all parties.

4.1.1 FEDERAL HIGHWAY PROGRAMS

There are several funding programs available through the Federal Highway Administration (FHWA) that could be applicable for funding projects in the Joplin area. These programs include the following:

- **National Highway System (NHS)** funds are available for use on designated NHS routes including freeways, expressways, and most principal arterial highways.
- **Interstate Maintenance (IM)** funds are used for substantial maintenance and reconstruction of Interstate highways and cannot be used for capacity improvements.
- **Surface Transportation Program (STP)** funds can be used for a variety of transportation improvement projects including roads, bridges, public transportation, bicycle and pedestrian facilities, and other transportation improvements. Metropolitan areas with a population greater than 200,000 such as the Kansas City, St. Louis and Springfield metropolitan areas, receive a minimum amount that must be used on projects within the region.
- **Bridge (BR)** funds are used for bridge rehabilitation and replacement projects. A portion of these funds are sub-allocated to counties in Missouri for use on local bridge projects.
- **Congestion Mitigation and Air Quality (CMAQ)** funds are available for projects that improve air quality through congestion relief and other strategies.
- **STP-Safety Program (STP-S)** funds are available to all cities and counties to implement improvements that reduce the number of accidents at high accident locations. Projects are prioritized at the state level.

- **Rail-Highway Grade Crossing Program (STP-RR)** is a statewide program for grade crossing improvements and is based on a prioritized ranking of grade crossings in the state.
- **Transportation Enhancement Program (TE)** provides funds for three project categories: 1) Historic, 2) Scenic and Environmental, and 3) Bicycle and Pedestrian Facilities.

4.1.2 Federal Transit Programs

There are several funding programs available through the Federal Transit Administration that could be applicable for funding projects in the Joplin area. These programs include the following:

- **Section 5303-05 Program** provides funding for the planning of transit projects.
- **Section 5307 Program** provides funds to urban areas for transit capital and operating expenses.
- **Section 5309 Program** provides funds and discretionary grants for fixed guideway capital improvements. It also provides capital assistance for new and replacement buses and related equipment and facilities.
- **Section 5310 Program** provides capital funding for transportation programs serving elderly and disabled customers.
- **Section 5311 Program** provides capital and operating funds to rural public transportation programs. These funds cannot be used in urban areas.
- **Section 5316 Job Access & Reverse Commute Program** is based on a formula that is dependent on population. This program aids disadvantaged persons or communities which may have little or no access to automobiles and have a need to use public transit to access jobs located outside the typical commuter areas.
- **Section 5317 New Freedom Program** was established to provide new public transportation services and alternatives beyond those required by the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) that assist individuals with disabilities with transportation, including transportation to and from jobs and employment support services.

4.1.3 Missouri Department of Transportation Programs

There are several funding programs available through the Missouri Department of Transportation (MoDOT) that could be applicable for funding projects in the Joplin area. These programs include the following:

- **State Road Fund:** MoDOT's transportation revenues are derived from several sources, including motor fuel taxes, transportation related fees including vehicle taxes, licenses and fees, federal-aid funds, bond issues and other miscellaneous sources. The Major categories for highway expenditures include:
  - Maintenance – Regular, routine roadway and bridge treatments that sustain existing highway conditions.
  - Preservation – Activities that protect the infrastructure and extend facility service life.
  - Modernization – Upgrades to system safety, functionality and overall operational efficiency, without adding physical capacity.
  - Expansion – Activities focused on adding capacity or new facilities/services.

  These funds can be allocated by MoDOT for use on highway and bridge projects in the Joplin area.
- **State Road Bonds:** MoDOT is authorized to issue debt backed by State Road Fund revenues, with borrowing limits established by the legislature through amendments to the State Highway Act.

- **Other State and Federal Funds:** MoDOT also administers funds from a variety of state and federal sources for other modal activities. These include allocations and discretionary grants from the Federal Transit Administration (FTA) under various programs for transit capital, operating and/or planning assistance in non-urban areas; allocations and discretionary grants from the Federal Aviation Administration (FAA); funding from the State Aviation Trust Fund; and annual State General Fund appropriations for the Missouri Elderly and Handicapped Transportation Assistance Program (MEHTAP). MoDOT also provides a small amount of state funding for transit operations.

  The remaining funding for other modes comes from state sources, which include the Aviation Trust Fund, General Fund appropriations, and allocation of motor fuel and vehicle user fees.

4.1.4 *Local Funding Programs*

Local funding for transportation improvements in the Joplin metropolitan area comes primarily from sales taxes. The City of Joplin currently has two transportation sales taxes for funding improvements to the transportation system. Joplin has a ½ cent transportation tax that will generate an estimated $5,662,500 for 2011. The tax is used for aviation, new projects, maintenance of the current system and transit. The highway system receives about $5.3 million for new improvements that include street maintenance, street cleaning, traffic control, and traffic signal maintenance, through this tax.

In addition, Joplin passed a 3/8-cent sales tax for capital improvements for street projects in August of 2004. It is estimated that this tax will generate approximately $4,246,875 for 2011. The capital improvement tax funds specific projects within the MPO area.

The two sales taxes produce sufficient revenue to ensure that local non-federal matching funds are available for projects listed in the TIP and to maintain and operate the locally owned and/or operated portions of the Federal-aid system. The Transportation Sales Tax is a permanent sales tax with no sunset clause. The Capital Improvement Sales Tax is a ten-year tax and is scheduled to expire in 2014. Projected revenues for 2011 are estimated to provide approximately $5.96 million for new roadway capital improvement projects.

The City of Carl Junction currently has a ½ cent transportation sales tax that generates approximately $110,000 annually. The tax revenues primarily provide funding for the city's street maintenance program.

The city of Webb City also has a ½ cent transportation sales tax program that generates approximately $690,000 and a 3/8-cent capital improvements sales tax that generates approximately $515,000 annually. With approximately $981,500 committed for operations, maintenance, and debt service, it is estimated the two programs will generate approximately $220,500 for roadway capital improvements.

The City of Oronogo also has a ½ cent transportation sales tax that is estimated to generate approximately $24,500, which is committed almost entirely toward street maintenance and debt service to a recent bond initiative that financed construction of many local roadway improvements.

4.1.5 OTHER FUNDING PROGRAMS

In addition to municipal sales tax programs, other means of financing transportation improvements are available through the following programs.

- **Community Improvement Districts (CID):** A community improvement district (CID) may be created for the purpose of financing a wide range of public facilities, improvements or services within a municipality. A CID is either a separate political subdivision with the power to impose a sales tax, a special assessment or a real property tax, or a nonprofit corporation with the power to impose special assessments. A CID may fund public facilities or improvements within its boundaries, including, but not limited to, the following: sidewalks, streets, alleys, bridges, ramps tunnels, overpasses and underpasses, traffic signs and signals, utilities, drainage, water, storm and sewer systems and other site improvements.

  A CID is created by filing with the municipality where the proposed district will be located a petition signed by property owners that (1) collectively own at least 50% of the assessed value of the real property within the proposed district and (2) are more than 50% per capita of all owners of real property within the proposed district. The petition must include a five-year plan that describes the purposes of the proposed district, the services it will provide, the improvements it will make and an estimate of the costs of the project. Once the petition is filed, the governing body of the municipality shall hold a public hearing and may approve the creation of the proposed district by ordinance. A CID may be created as either a political subdivision or a nonprofit corporation.

  Once created, a CID that is created as a nonprofit corporation can finance the costs of a project through the imposition of special assessments for those improvements that specifically benefit the properties within the district. A CID that is created as a political subdivision can finance the costs of a project through the imposition of (1) special assessments for those improvements that specifically benefit the properties within the district; (2) property taxes; or (3) a sales tax up to a maximum of 1%. Either type of CID may finance the costs of a project through the imposition of fees, rents and charges for district property or services or grants, gifts and donations.

  A CID may also issue bonds, notes and other obligations and may secure any of such obligations by mortgage, pledge, assignment or deed of trust of any or all of the property and income of the district. However, the bonds or other obligations of a CID that is created as a nonprofit corporation will not be tax-exempt.

- **Transportation Development District (TDD):** A transportation development district ("TDD") is a separate political subdivision that may be created to fund, promote, plan, design, construct, improve, maintain and operate one or more transportation-related projects or to assist in such activity. A TDD can finance any transportation-related improvement, including any bridge, street, road, highway, access road, interchange, intersection, signing, signalization, parking lot, bus stop, station, garage, terminal, hangar, shelter, rest area, dock, wharf, lake or river port, airport, railroad, light rail, or other mass transit and any similar or related improvement or infrastructure. However, before construction or funding of any project, a TDD is required to submit the proposed project, together with the proposed plans and specifications, to the Missouri Highways and Transportation Commission and/or the local transportation authority for their prior approval.

A "local transportation authority" is a county, city, town, village, county highway commission, special road district, interstate compact agency, or any local public authority or political subdivision having jurisdiction over any bridge, street, highway, dock, wharf, ferry, lake or river port, airport, railroad, light rail or other transit improvement or service. A TDD may be created by petition of (1) at least fifty registered voters within the proposed district, (2) if there are no registered voters within the district, the owners of all of the real property located within the proposed district or (3) the governing body of any local transportation authority in which a proposed project may be located. In addition, two or more local transportation authorities may adopt resolutions calling for the joint establishment of a district and then file a petition requesting its creation. In all cases, the petition is filed in the circuit court of the county in which the proposed project is to be located.

Once the petition is filed, the circuit court will certify the petition for voter approval by the qualified voters within the boundaries of the proposed district. A "qualified voter" means (1) any registered voter residing within the proposed district or (2) if no persons eligible to be registered voters reside within the proposed district, the owners of real property located within the proposed district.

Once created, a TDD can finance the costs of a project through the imposition of (1) special assessments for those improvements that specifically benefit the properties within the district; (2) a property tax in an amount not to exceed $0.10 per $100 of assessed valuation; (3) a sales tax up to a maximum of one percent; or (4) tolls and fees for use of the project. A TDD may also issue bonds, notes and other obligations and may secure its obligations by mortgage, pledge, assignment or deed of trust of any or all of the property and income of the district.

A transportation development district (a "TDD") can only finance transportation-related improvements, while a CID can finance a wide-array of public improvements and services. A TDD can finance improvements that benefit the property within its boundaries; a CID generally cannot spend money on projects outside of its boundaries. TDD bonds can have a 40-year maturity, while CID bonds are limited to 20 years. A TDD property tax cannot exceed $0.10; there is no limit on the CID property tax.

- **Transportation Corporations:** A transportation corporation may be created to fund, promote, plan, design, construct, maintain or operate any transportation-related project in connection with the Missouri highways and transportation system. A transportation corporation can only be used for projects that are owned by the State. Any city, county or private party may create a transportation corporation by filing an application and preliminary plans and specifications for a proposed project with the Missouri Highways and Transportation Commission (the "Commission").

  Following the submission of the application, the Commission will hold a public hearing and the governing body of each county, city, town or village in which all or part of the project is located must approve the project. Upon approval at the local level, the corporation's articles of incorporation must be approved by the Commission and filed with the Secretary of State. The corporation may issue bonds, notes or other obligations to pay all or any part of the cost of a project. The obligations may be payable out of any of the property and revenues of the corporation. Such revenues may include payments derived from other entities pursuant to an intergovernmental cooperation agreement and fees, tolls and charges charged by the

corporation for use of the project. Unlike a TDD, a transportation corporation has no ability to impose special assessments, property taxes or sales taxes.

Source: *Missouri's Economic Development Tools: A Practical Guide to Building a Better Missouri*

4.1.5 TOTAL PROJECTED FUNDING 2011-2030

This is an uncertain time for transportation funding projections, particularly at the federal and state levels. The federal authorization act, Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), expired on September 30, 2009. Beginning October 1, 2009, Congress approved continuing resolutions to provide federal funding to states. In March 2010, Congress passed the Hiring Incentives to Restore Employment (HIRE) Act, which extends surface transportation programs until December 31, 2010. The HIRE Act contains provisions needed to keep the federal transportation program solvent, including a transfer of $19.5 billion from the General Fund to the Highway Trust Fund. The HIRE Act restores $8.7 billion of obligation authority that was rescinded from the highway program on September 30, 2009 due to the provisions of SAFETEA-LU. This action restores the spending authority to $42 billion, the amount designated in the final year of SAFETEA-LU. The extension was intended to give Congressional lawmakers time to pass another multi-year transportation act to replace SAFETEA-LU. However, at this time Congress has yet to pass to such a bill.

Federal funding for JATSO roadway improvement projects are assumed to match the projections included in the current TIP through 2014 and continue from that point to increase at one percent (1%) annually through 2030.

In addition to federal funding uncertainty, state transportation revenues are stagnant and are not keeping pace with inflation and remain volatile. MoDOT has therefore taken a conservative approach to estimating future funding in the State Transportation Improvement Plan. As such state funding projections for highway/bridge construction expenditures also reflect the reduction in spending over the next five years as construction of the American Recovery and Reinvestment Act of 2009 (ARRA) projects throughout the state continue toward completion. Projected state funding for JATSO roadway improvement projects are based on the following assumptions: 1) the percentage of District 7 funding allocated to JATSO roadway improvement projects (not including debt service, operations & maintenance, etc.) will continue at the same rate (19%) as identified in the current TIP; 2) District 7 funding of roadway improvement projects will decrease proportionally with projected highway/bridge expenditure projections included in the current STIP; and 3) state funding will begin to increase at one percent (1%) annually in 2016 through 2030.

Of the local funding sources, the City of Joplin's and City of Webb City's Transportation Sales Tax and Capital Improvement Sales Tax programs are anticipated to make the greatest contribution toward funding the identified roadway improvement projects.

Table 4.1 provides a summary of projected funding available for roadway capital improvements over the next 20 years.

TABLE 4.1
ESTIMATED FUNDING PROJECTIONS FOR ROADWAY IMPROVEMENTS

Funding Agency	Program	Projected 2011 Revenues	Committed for O&M		Available for New Projects		Estimated Revenues Available for Roadway Projects			
			Percent	Amount	Percent	Amount	TOTAL 2011-2015	TOTAL 2016-2020	TOTAL 2021-2030	TOTAL 2011-2030
FHWA	STP Small Urban Funds	$277,679	0%		100%	$277,679	$1,464,704	$1,545,605	$3,331,755	**$6,342,063**
	BRO (Jasper)	$213,244	0%		100%	$213,244	$1,125,132	$1,200,420	$2,587,663	**$4,913,214**
	BRO (Newton)	$225,763	0%		100%	$225,763	$1,194,508	$1,288,004	$2,776,462	**$5,258,974**
	Earmark Funding	$6,771,000	0%		100%	$6,771,000	$6,771,000	$0	$0	**$6,771,000**
MoDOT	State Motor Veh. Allocation to MPO	$4,990,906	100%	$4,990,906	0%	$0	$0	$0	$0	**$0**
	State Revenue (MoDOT Funding)*									
	Taking Care of System	$13,000,000	81%	$10,530,000	19%	$2,470,000	$7,586,319	$5,601,542	$12,074,864	**$25,262,725**
	Safety	$11,000,000	81%	$8,910,000	19%	$2,090,000	$6,419,193	$4,739,766	$10,217,193	**$21,376,152**
	Flexible	$2,000,000	81%	$1,620,000	19%	$380,000	$1,167,126	$861,776	$1,857,671	**$3,886,573**
	Emerging Needs	$0		$0	100%	$0	$0	$0	$0	**$0**
Joplin	1/2 Cent Transportation Sales Tax	$5,700,000	70%	$3,990,000	30%	$1,710,000	$8,601,300	$9,631,510	$24,109,505	**$42,342,315**
	3/8 Cent CIP	$4,250,000	0%	$0	100%	$4,250,000	$21,377,500	$23,937,964	$59,921,284	**$105,236,748**
Carl Junction	1/2 Cent Transportation Sales Tax	$110,000	100%	$110,000	0%	$0	$0	$0	$0	**$0**
Webb City	1/2-cent Transportation Sales Tax	$690,000	90%	$621,000	10%	$69,000	$347,070	$388,640	$972,840	**$1,708,550**
	3/8-cent CIP	$515,000	70%	$360,500	30%	$154,500	$777,135	$870,215	$2,178,315	**$3,825,665**
Oronogo	1/2-cent Transportation Sales Tax	$24,426	100%	$24,426	0%	$0	$0	$0	$0	**$0**
							$56,830,987	**$50,065,442**	**$120,027,552**	**$226,923,981**

* Reflects State funding to entire District 7

4.2 ROADWAY FINANCIAL PLAN

4.2.1 ROADWAY IMPROVEMENT PROJECT COSTS

In order to determine the financial feasibility of the potential roadway improvement projects identified in Section 3, a planning level cost estimate was developed for each project as itemized in ***Table 4.2*** on the following page. Project estimates are based on a number of sources including previous estimates for programmed projects, input from JATSO and the Missouri Department of Transportation, and the range of incremental costs from similar construction projects throughout the Joplin region and southwest Missouri. Given a range of incremental costs, further evaluation of each potential project was performed to assign an appropriate level of cost as low, medium, or high based on availability of existing rights-of-way, number of existing points of access, number of and location of existing utilities, geographic constraints, etc. Cost estimates will need to be refined as JATSO agencies begin scoping and project development for each.

The total estimated cost for identified potential roadway improvement projects is approximately $491 million. The portion of estimated funding resources summarized in Section 4.1 that are available for street and highway improvements over the 20 year period totals $227 million, which equates to an approximate $264 million funding gap. Therefore, prioritization of projects is necessary to develop the fiscally constrained long range project list.

TABLE 4.2
POTENTIAL ROADWAY PROJECT COSTS

	No.	Route	From	To	Length (mi.)	Description	Cost (2010)
Proposed Roadway Projects	101a	West Corridor	I-44	MO 66	7.0	New highway construction w/ limited access (Scoping TIP # 09HS-10)	$65,625,000
	101b	West Corridor	MO 66	MO 171	9.0	New highway construction w/ limited access (Scoping TIP # 09HS-10)	$84,375,000
	102a	MO 171	MO 43	Fir	0.6	Widen road (2 to 4 lane w/median & left-turn lanes) (Scoping TIP # 29HS-10)	$2,520,000
	102b	MO 171	Fir	RTE Z/Pennell	2.5	Widen road (2 lane to 4 lane divided) (Scoping TIP # 29HS-10)	$12,000,000
	102c	MO 171	RTE Z/Pennell	MO 96	2.1	Widen road (2 lane to 4 lane divided) (Scoping TIP # 29HS-10)	$7,560,000
	102d	MO 171	MO 96	MPO boundary	1.1	Widen road (2 lane to 4 lane divided)	$3,960,000
	103	Zora	Range Line	MO 249	2.4	Improve and Widen road (2 lane to 4 lane w/median & left-turn lanes)	$10,080,000
	104	Zora	West Corridor	Main	4.4	Improve and Widen road (2 lane to 4 lane w/median & left-turn lanes)	$18,480,000
	105a	Schifferdecker	MO 66	Zora	2.1	Widen road (2 lane to 4 lane w/median & left-turn lanes)	$8,820,000
	135	20th	Intersection w/KCS	-	-	Grade separation	$15,000,000
	106a	Duquesne	7th (MO 66)	Newman	1.0	Widen road (4 lane to 4 lane w/median and left-turn lanes)	$2,504,000
	106b	Duquesne/Hall	Newman	17th (W.C.)	2.0	Widen road (2 lane to 4 lane w/median and left-turn lanes)	$7,204,000
	107	Hall	17th (W.C.)	Hawthorne	3.0	New roadway construction & Intersection at Centennial	$10,806,000
	108	Range Line	Interchange w/ I-44	-	-	Reconstruct interchange	$15,000,000
	109a	MO 43	Intersection w/ 171	-	-	Access management and intersection improvements	$1,000,000
	113a	Fir	Peace Church	MO 171	1.4	Improve and add center turn lane and roundabouts	$4,445,600
	113b	Fir	Joplin	Peace Church	0.5	Improve and add center turn lane and roundabout	$1,652,000
	115	Newman	Duquesne	MO 249	1.8	Improve and add center turn lane	$4,507,200
	116a	MO 66	Maiden	Schifferdecker	1.0	Improve and add center turn lane (Scoping TIP # 28HS-10)	$3,602,000
	116b	MO 66	Maiden	Range Line	3.0	Access management and intersection improvements (Scoping TIP #28HS-10)	$6,000,000
	117	20th	West Corridor	Schifferdecker	2.0	Improve and add center turn lane	$7,204,000
	118a	32nd	Schifferdecker	Country Club	1.0	Improve and add center turn lane	$3,602,000
	118b	32nd	Country Club	West Corridor	1.0	Improve and add center turn lane and roundabouts	$3,602,000
	136	15th	Intersection w/ KCS		-	Grade separation	$15,000,000
	119	St. Louis/Prairie Flower	Zora	MO 171	2.0	Improve and add center turn lane	$7,204,000
	122	Black Cat	Newton	MO 66	2.0	Improve and add center turn lane	$7,204,000
	124	17th	Oronogo	Range Line	0.2	New roadway construction	$800,000
	127	RTE Z	RTE YY	MO 171	2.7	Improve and add center turn lane and roundabouts	$13,530,000
	128	CR 190	Interchange w/ I-44	-	-	Construct interchange	$15,000,000
	134a	RTE FF	Intersection w/ Davis	-	-	Intersection improvement	$500,000
	137	Madison	Daugherty	Stadium	0.6	Improve and add center turn lane	$2,820,000
	138	Connecticut	50th	Highlander	0.8	New roadway construction	$3,200,000
	139	Duquesne	Overpass at I-44	-	-	New overpass construction	$5,200,000
	140	Connecticut	Overpass at I-44	-	-	Improve overpass to 4 lane	$3,500,000
	141	20th	Duquesne	MO 249	1.8	Improve and add center turn lane	$6,483,600
	142	Jackson	Bridge at Shoal Creek	-	-	Improve bridge at Shoal Creek	$1,200,000
	143	Maiden	Perkins	Murphy	0.2	Realign and improve	$960,000
	144	Douglas Fir	State Line	Range Line	8.5	Preserve corridor for east/west arterial	$35,700,000
	106a	Duquesne	32nd	7th	2.0	Widen road (2 lane to 5 lane)	$9,600,000
	109b	MO 43	MO 171	Carl Junction	1.3	Improve and add center turn lane	$4,682,600
	145	MO 66	Prosperity	CR 190	1.0	Improve and add center turn lane	$3,602,000
	110	MO 171	Hall	Main	0.4	Access management and intersection improvements	$480,000
	111a	Madison	MO 171	13th (W.C.)	0.6	Access management and intersection improvements	$300,000
	111b	Range Line	13th (W.C.)	15th	4.0	Access management and intersection improvements	$2,000,000
	111c	Range Line	Intersection w/ 15th	-	-	Access management and intersection improvements	$750,000
	111d	Range Line	15th	I-44	1.9	Access management and intersection improvements	$950,000
	121	Peace Church	Zora	Fir	2.1	Improve roadway	$3,150,000
	125	Carl Junction Rd.	Madison	RTE D	0.5	New roadway construction	$1,800,000
	126	44th	Overpass at I-44	-	-	New overpass construction	$5,000,000
	130a	MO 96	RTE JJ	RTE D	9.1	Access management and intersection improvements	$2,000,000
	130b	MO 96	Intersection w/ RTE D		-	Turn lane improvements	$550,000
	131	RTE D	Hawthorne	MO 96	2.0	Improve and construct new bridge	$3,000,000
	132	RTE D	Intersection w/ Ivy	-	-	Intersection improvement	$550,000
	133	RTE FF	Intersection w/ Reinmiller	-	-	Intersection improvement	$550,000
	146	Old 71 (Tipton Ford)	Bridge at Shoal Creek	-	-	Bridge replacement	$1,200,000
Projects Already Programmed							
	TIP #03HL-10	20th	Intersection w/ Main	-	-	Intersection improvements	$1,500,000
	TIP #03HL-11	26th	Maiden	Schifferdecker	1.0	Improve and add center turn lane	$1,900,000
	TIP #02HL-11	Zora	MO 43	Range Line	2.0	Widen road (2 lane to 5 lane)	$2,000,000
	TIP # 01HL-10	Zora	Interchange at Main	-	-	Interchange construction and RR grade separation	$15,000,000
	TIP #01HL-11	Schifferdecker	MO 66	32nd	2.0	Widen road (2 lane to 5 lane)	$2,200,000
	TIP #04HL-11	Broadway/Buchanan	Florida	St. Louis	0.7	Improve and add center turn lane	$1,300,000
	TIP #05HL-11	St. Louis	Broadway	Zora	1.5	Improve and add center turn lane	$1,800,000
	J-TC0516	26th	Intersection w/ Main	-	-	Intersection improvements	
	TIP # 02HL-10	Maiden Ln.	9th-17th	20th-30th	1.4	Widen road (4 to 5)	$4,000,000
	TIP # 7HS-11	MO 171	Interchange w/RTE HH	-	-	Ramp improvements	$3,757,000
						TOTAL	$491,472,000

4.2.2 PROJECT EVALUATION AND PRIORITIZATION

In order to compare the projects objectively, an evaluation process was developed that accounts for traffic operations, project costs and socio-economic factors. The project alternative evaluation criteria are shown below in ***Table 4.3***.

Table 4.3: Potential Project Alternative Evaluation Criteria

ISSUES	METHOD OF MEASUREMENT	UNITS
Traffic Operation Factors		
Traffic Flow and Congestion	VHT statistics from travel demand model	Daily vehicle hours traveled (VHT)
Reduced Trip Length	VMT statistics from travel demand model	Daily vehicle miles traveled (VMT)
Project Costs		
Construction Costs	Estimated cost of construction in 2010 dollars	Dollars
Socio-Economic Factors		
Roadway User Economic Analysis	Use VMT and VHT statistics to determine benefits compared to construction costs	B/C Ratio

Notes on the above evaluation criteria are as follows:

- **Traffic Operation Factors –** the traffic operations factors included analysis of the traffic flow, congestion and trip length.
  - In order to analyze the traffic flow and congestion for each potential project alternative, the Travel Demand Model (TDM) was used to determine the change in daily Vehicle Hours Traveled (VHT) for each individual alternative compared to the 2030 E+C Network. For the intersection and interchange alternatives, the change in VHT was calculated using the intersection average delay calculations as described in the Highway Capacity Manual.
  - The projected change in trip length was calculated for each alternative by using the TDM, which calculated the change in Vehicle Miles Traveled (VMT) for each alternative.
- **Project Costs** – planning level construction costs were developed for each potential project alternative using year 2010 dollars.
- **Socio-Economic Factors** – an important criterion in evaluating each potential project alternative is roadway user economic values. The benefits are compared with the costs (B/C ratio) to determine the economic feasibility over a 20-year period.
  - The cost takes into account for depreciation, which includes constructing the proposed improvement minus the residual values based on the useful lives of the various construction elements. The assumed life cycle for pavement and structures is 30 years and 50 years, respectively. The portion of total estimated construction cost allocated to pavement and structures was estimated for each project and ranged from 20 to 25 percent for pavement costs and 20 to 40 percent for structures.
  - The benefit includes the economic benefit to the roadway user by the change in travel time and travel distance as determined by the TDM. For each alternative, benefits were

estimated for the same two analysis years, 2009 and 2030, consistent with the analysis years of the TDM.

- To include time savings in the evaluation, it is necessary to place a monetary value on the time saved. For the purpose of this study, values of time based on mean wage rates in the Joplin metropolitan area are used. The value of time used is $15.84.
- The savings in Vehicle Miles Traveled for each project alternative was determined using a cost of $0.50 per mile, which is the current estimated average vehicle cost per mile allowed by the Internal Revenue Service for tax purposes.

Of the 55 roadway and bridge projects considered, 15 projects were evaluated individually to determine the system-wide impact of each in the Travel Demand Model. These 15 projects were identified by JATSO staff and the consulting team during an initial screening of uncompleted projects that were included in the last LRTP update and projects identified through the stakeholder and public involvement process. Projects with the greatest perceived benefit to the region, which could most effectively be evaluated by the macro gravity travel demand model previously developed by JATSO. The remaining proposed projects were prioritized through other means by comparing volume/capacity ratios, project costs, traffic crash data, potential impact to economic development, relation to other phased improvements, and relative potential to be funded.

The quantified benefit based on travel demand model output for each of the potential project alternative included in the model analysis is listed in ***Table 4.4***.

A summary of benefit/cost evaluation for the 15 projects included in the model is presented in ***Table 4.5.***

TABLE 4.4
COMPARISON OF PROJECT OPERATIONAL COST SAVINGS

Alternative	2009 (Base Year)					2030 (Horizon Year)					Total Savings 2009-2030 ($1,000's)
	Vehicle Miles Traveled (VMT)	Vehicle Hours Traveled (VHT)	Daily Δ Delay (Hours)	Daily Δ Miles	YR 2009 Savings ($1,000's)	Vehicle Miles Traveled (VMT)	Vehicle Hours Traveled (VHT)	Daily Δ Delay (Hours)	Daily Δ Miles	YR 2030 Savings ($1,000's)	
E+C	2,403,177	54,647	0.0	0	0	3,069,210	73,284	0	0	0	0
101a	2,397,318	54,364	-283.7	-5859.2	$ 2,709.72	3,058,120	72,301	-983.2	-11089.85	$ 7,708.14	$ 54,248.40
101b	2,403,521	54,574	-73.3	343.6	$ 360.85	3,070,151	73,141	-142.5	940.35	$ 652.21	$ 5,563.54
102a	2,402,693	54,604	-43.5	-483.8	$ 339.85	3,068,073	73,180	-103.4	-1136.71	$ 805.27	$ 6,087.35
102b	2,402,827	54,593	-54.5	-350.4	$ 379.04	3,068,289	73,202	-81.3	-920.92	$ 637.88	$ 5,634.59
102c	2,403,147	54,646	-1.1	-30.1	$ 11.74	3,069,220	73,283	-0.7	10.16	$ 2.31	$ 97.11
102d	2,403,177	54,646	-1.4	0.0	$ 8.21	3,069,210	73,280	-3.3	0	$ 18.85	$ 144.37
103	2,402,788	54,569	-78.5	-389.5	$ 524.72	3,068,657	73,186	-97.4	-553.66	$ 664.23	$ 6,829.29
104	2,402,638	54,647	-0.8	-538.8	$ 103.07	3,069,176	73,248	-36.1	-34.22	$ 215.08	$ 1,716.82
105a	2,403,482	54,571	-76.2	304.5	$ 385.05	3,070,020	73,135	-148.6	809.36	$ 711.32	$ 6,004.88
135	2,403,411	54,502	-145.6	234.2	$ 799.06	3,069,593	73,092	-191.5	382.37	$ 1,037.34	$ 10,514.51
106b	2,402,183	54,580	-67.8	-993.8	$ 573.25	3,067,901	73,143	-140.5	-1308.73	$ 1,051.16	$ 8,905.14
107	2,399,840	54,661	13.5	-3336.8	$ 530.92	3,064,838	73,334	50.6	-4372.4	$ 505.59	$ 6,171.29
116b	2,403,797	54,597	-50.2	619.9	$ 177.27	3,069,808	73,227	-56.9	598.03	$ 219.83	$ 2,286.93
136	2,403,387	54,544	-103.1	209.8	$ 557.68	3,069,503	73,144	-140.1	293.02	$ 756.76	$ 7,483.75
124	2,401,932	54,617	-30.1	-1245.3	$ 401.28	3,068,606	73,323	38.9	-604.42	$ (114.48)	$ 2,461.01

TABLE 4.5
ROADWAY PROJECT BENEFIT/COST ANALYSIS SUMMARY

No.	Route	From	To	(mi)	Description	Total Savings	Depreciation	Benefit/Cost
101a	West Corridor	I-44	MO 66	7.0	New highway construction w/ limited access (Scoping TIP # 09HS-10)	$54,248,000	$19,281,010	2.81
101b	West Corridor	MO 66	MO 171	9.0	New highway construction w/ limited access (Scoping TIP # 09HS-10)	$5,563,540	$24,789,870	0.22
102a	MO 171	MO 43	Fir	0.6	Widen road (2 to 4) (Scoping TIP # 29HS-10)	$6,087,350	$656,272	9.28
102b	MO 171	Fir	RTE Z/Pennell	2.5	Widen road (2 to 4) (Scoping TIP # 29HS-10)	$5,634,590	$3,125,106	1.80
102c	MO 171	RTE Z/Pennell	MO 96	2.1	Widen road (2 to 4) (Scoping TIP # 29HS-10)	$97,110	$1,968,817	0.05
102d	MO 171	MO 96	MPO boundary	1.1	Widen road (2 to 4)	$144,370	$1,031,285	0.14
103	Zora	Range Line	MO 249	2.4	Improve and Widen road (2 to 4)	$6,829,290	$2,625,089	2.60
104	Zora	West Corridor	Main	4.4	Improve and Widen road (2 to 4)	$1,716,820	$4,812,663	0.36
105a	Schifferdecker	MO 66	Zora	2.1	Widen road (2 to 4)	$6,004,880	$2,296,953	2.61
135	20th	Intersection w/KCS	-	-	Grade separation	$10,514,510	$5,528,494	1.90
106b	Duquesne/Hall	Newman	17th (W.C.)	2.0	Widen road (4 to 5)	$8,905,140	$1,876,105	4.75
107	Hall	17th (W.C.)	Hawthorne	3.0	New roadway construction & Intersection at Centennial	$6,171,290	$520,851	11.85
116b	MO 66	Maiden	Range Line	3.0	Access management and intersection improvements (Scoping TIP #28HS-10)	$2,286,930	$1,562,553	1.46
136	15th	Intersection w/ KCS		-	Grade separation	$7,483,750	$5,528,494	1.35
124	17th	Oronogo	Range Line	0.2	New roadway construction	$2,461,010	$208,340	11.81

Notes/Assumptions:
1. $15.84/hr value of time
2. 7% discount rate
3. $0.50/mile traveled
4. Structure Life = 50 years, Pavement Life = 30 years
5. Depreciation = Total Project Cost - Total Residual Value

4.2.3 FISCALLY-CONSTRAINED ROADWAY IMPROVEMENT PLAN

As previously discussed, the portion of estimated funding resources summarized in Section 4.1 that are available for street and highway improvements over the 20 year period totals $227 million. As part of developing the fiscally constrained long range roadway improvement plan, the projected revenue streams have been grouped in three analysis periods: Short-Term (2011-2015), Mid-Term (2016-2020), and Long-Term (2021-2030). The roadway improvement projects were then grouped into these analysis periods to match anticipated funding levels based on project costs and the prioritization process described in Section 4.2.2. The resulting 20-year fiscally constrained roadway improvement plan is summarized in ***Table 4.6*** and illustrated in ***Figure 4.1***. The projects are listed in relative order of priority based on the criteria described in ***Table 4.3***.

Although the remaining proposed projects should be considered visionary long-term unfunded needs, agencies whose jurisdictions in which these projects would exist should look for additional funding opportunities as future land use (re)development occurs or through creative financing programs as described in Section 4.1.4.

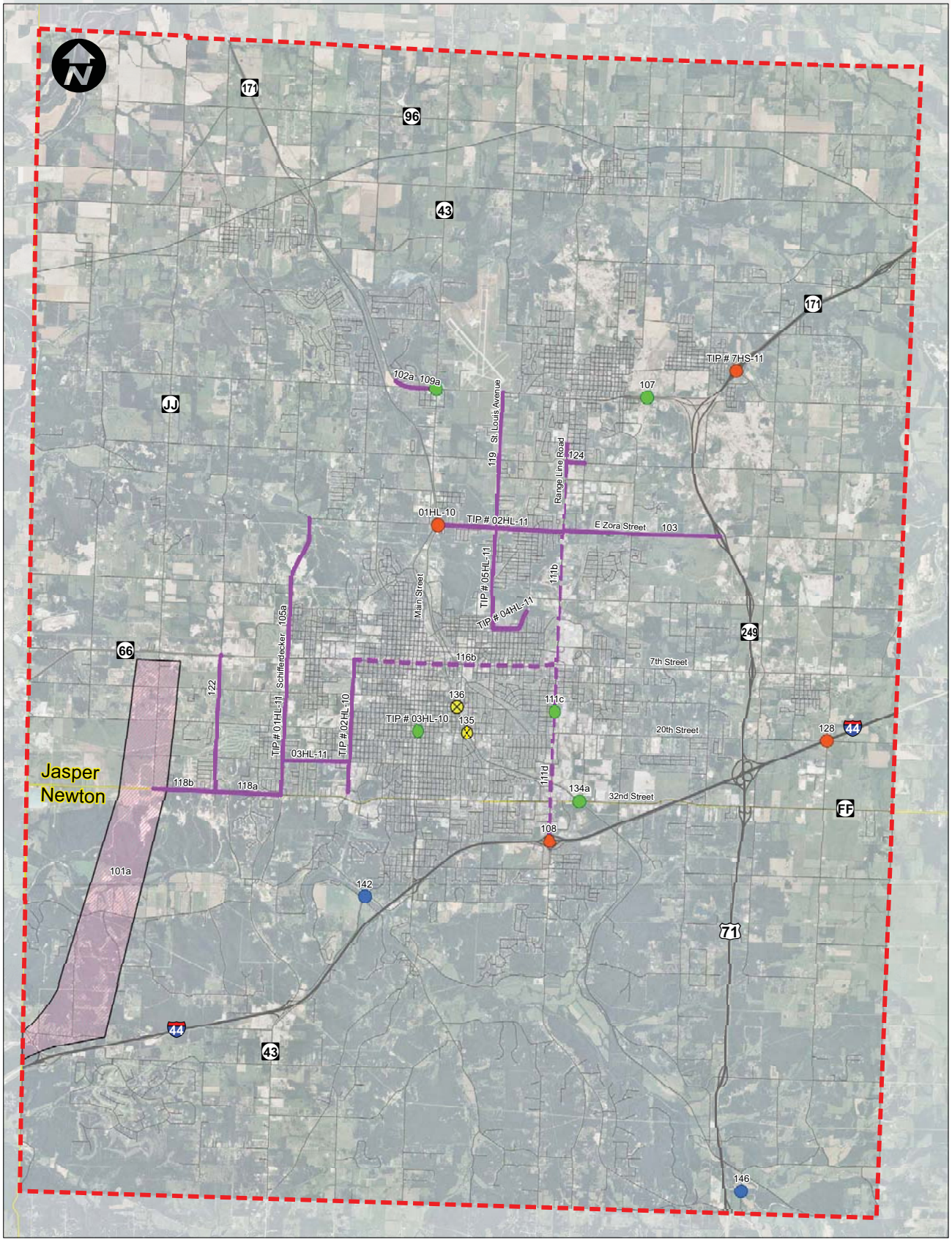
TABLE 4.6
RECOMMENDED FISCALLY-CONSTRAINED 2030 ROADWAY IMPROVEMENT PLAN

	No.	Route	From	To	(mi.)	Description	Cost (2010)	2011-2015	2016-2020	2021-2030
Proposed Roadway Projects	101a*	West Corridor	I-44	MO 66	7.0	New highway construction w/ limited access (Scoping TIP # 09HS-10)	$65,625,000	$500,000		$54,475,456
	111c	Range Line	Intersection w/ 15th	-	-	Access management and intersection improvements	$750,000	$772,500		
	118b	32nd	Country Club	West Corridor	1.0	Improve and add center turn lane and roundabouts	$3,602,000			$4,840,787
	102a	MO 171	MO 43	Fir	0.6	Widen road (2 to 4) (Scoping TIP # 29HS-10)	$2,520,000	$2,597,600		
	111b	Range Line	13th (W.C.)	15th	4.0	Access management and intersection improvements	$2,000,000	$2,060,000		
	118a	32nd	Schifferdecker	Country Club	1.0	Improve and add center turn lane	$3,602,000		$4,300,976	
	111d	Range Line	15th	I-44	1.9	Access management and intersection improvements	$950,000	$978,500		
	135	20th	Intersection w/KCS	-	-	Grade separation	$15,000,000		$17,910,784	
	108	Range Line	Interchange w/ I-44	-	-	Reconstruct interchange	$15,000,000	$15,450,000		
	107	Hall	17th (W.C.)	Hawthorne	3.0	New roadway construction & Intersection at Centennial	$10,806,000	$2,060,000		
	134a	RTE FF	Intersection w/ Davis	-	-	Intersection improvement	$500,000	$515,000		
	105a	Schifferdecker	MO 66	Zora	2.1	Widen road (2 to 4)	$8,820,000			$11,853,342
	128	CR 190	Interchange w/ I-44	-	-	Construct interchange	$15,000,000			$20,158,746
	116b	MO 66	Maiden	Range Line	3.0	Access management and intersection improvements (Scoping TIP #28HS-10)	$6,000,000	$2,500	$7,164,314	
	116a	MO 66	Maiden	Schifferdecker	1.0	Improve and add center turn lane (Scoping TIP # 28HS-10)	$3,602,000	$2,500		
	122	Black Cat	Newton	MO 66	2.0	Improve and add center turn lane	$7,204,000			$9,681,574
	109a	MO 43	Intersection w/ 171	-	-	Access management and intersection improvements	$1,000,000	$1,030,000		
	103	Zora	Range Line	MO 249	2.4	Improve and Widen road (2 to 4)	$10,080,000		$12,036,047	
	136	15th	Intersection w/ KCS		-	Grade separation	$15,000,000		$17,910,784	
	124	17th	Oronogo	Range Line	0.2	New roadway construction	$800,000			$1,075,133
	119	St. Louis/Prairie Flower	Zora	MO 171	2.0	Improve and add center turn lane	$7,204,000			$9,681,574
	101b	West Corridor	MO 66	MO 171	9.0	New highway construction w/ limited access (Scoping TIP # 09HS-10)	$84,375,000	$500,000		
	142	Jackson	Bridge at Shoal Creek	-	-	Improve bridge at Shoal Creek	$1,200,000		$1,432,863	
	146	Old 71 (Tipton Ford)	Bridge at Shoal Creek	-	-	Bridge replacement	$1,200,000	$1,236,000		
Projects Already Programmed										
	TIP #03HL-10	20th	Intersection w/ Main	-	-	Intersection improvements	$1,500,000	$1,500,000		
	TIP #03HL-11	26th	Maiden	Schifferdecker	1.0	Improve and add center turn lane	$1,900,000	$1,900,000		
	TIP #02HL-11	Zora	MO 43	Range Line	2.0	Widen road (2 to 4)	$2,000,000	$2,000,000		
	TIP # 01HL-10	Zora	Interchange at Main	-	-	Interchange construction and RR grade separation	$15,000,000	$8,240,000		
	TIP #01HL-11	Schifferdecker	MO 66	32nd	2.0	Widen road (2 to 4)	$2,200,000	$2,200,000		
	TIP #04HL-11	Broadway/Buchanan	Florida	St. Louis	0.7	Improve and add center turn lane	$1,300,000	$1,300,000		
	TIP #05HL-11	St. Louis	Broadway	Zora	1.5	Improve and add center turn lane	$1,800,000	$1,800,000		
	TIP # 02HL-10	Maiden Ln.	9th-17th	20th-30th	1.4	Widen road (4 to 5)	$4,000,000	$4,000,000		
	TIP # 7HS-11	MO 171	Interchange w/RTE HH	-	-	Ramp improvements	$3,757,000	$3,757,000		
						TOTAL	$315,297,000	$54,401,600	$60,755,769	$111,766,612

* Allocation of funding for West Corridor reflects a phased construction reduction in scope to match future available funds.

JOPLIN AREA TRANSPORTATION STUDY ORGANIZATION

LONG RANGE TRANSPORTATION PLAN



September 2010

CJW

Fiscally-Constrained
Roadway Plan
Figure 4.1

- JATSO Boundary
- West Corridor
- Roadway Improvement
- Access Management
- Bridge
- Railroad Crossing
- Interchange
- Intersection

4.3 TRANSIT FINANCIAL PLAN

Funding for the Metro Area PublicTransit System comes from a variety of sources. ***Figure 4.2*** shows the funding breakdown by jurisdiction.

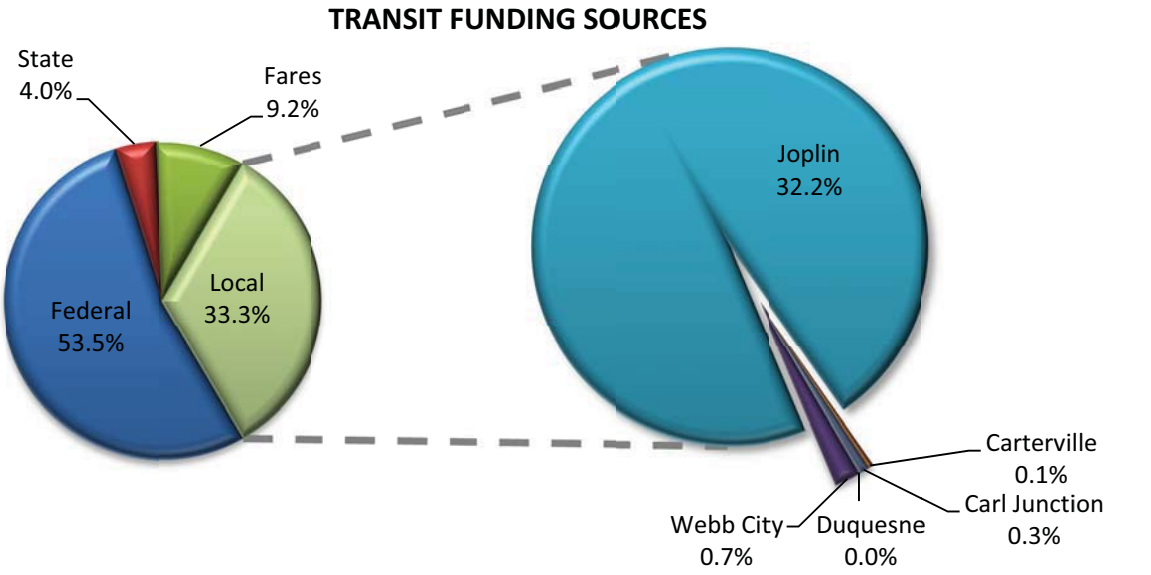


Figure 4.2: MAPS Funding Share by Jurisdiction

Source: Metro Area PublicTransit System, City of Joplin

Information from MAPS and the TIP provide the following estimates of current funding for transit. ***Table 4.7*** shows the funding breakdown by both funding category and jurisdiction.

Table 4.7: Estimated Federal, State, and Local MAPS Funding through TIP

FEDERAL	STATE	LOCAL	FARES	TOTAL
Operating				
$1,702,263	$286,268	$1,453,531	$535,000	$3,977,062
Capital				
$816,207	$0	$180,593	$0	$996,800
TOTAL				
$2,518,470	$286,268	$1,634,124	$535,000	$4,973,862

Source: Transportation Improvement Program

4.3.1 LOCAL FUNDING

Local non-federal matching funds for transit operations and capital expenses come from the City of Joplin's transportation sales tax. The tax is dedicated to funding transit and improvements to the transportation system. The ½ cent transportation sales tax generates approximately $5.9 million annually, which approximately 2.2 million is used for the transit system. The transportation sales tax is a permanent tax and does not have an expiration date.

4.3.2 COMMUNITY MATCH

In addition to local funding provided by the City of Joplin, the four largest communities within MAPS service area provide funding for operations. This includes the communities of Webb City, Carl Junction, Duquesne, and Carterville. At the end of MAPS fiscal year, each community is invoiced for the number of rides provided. For every pick-up ride provided to each community, one dollar is billed to that respective community. It is assumed each participating community will continue to provide funding through the next 20 years.

4.3.3 STATE FUNDING

The MAPS will receive $10,527 from MoDOT for transit operations in FY 2011. It is assumed MAPS will continue to receive this same level of funding for the next 20 years for transit operations.

4.3.4 FEDERAL FUNDING

FTA Section 5307 Assistance aids local government by reimbursing 80% of the cost for eligible capital and planning expenditures and 50% for operating expenditures. FTA Section 5310 Assistance is a program that provides aid for the elderly and individuals with disabilities. Capital assistance to organizations providing specialized services for the elderly and disabled are eligible for 80% reimbursement for the cost of vehicles.

4.3.5 SUMMARY OF TRANSIT FUNDING

The portion of estimated funding resources are available for transit over the 20 year period totals approximately $30 million as tabulated in ***Table 4.8***.

Table 4.8: Project Transit Revenue/Expenses, 2011-2030

	SOURCE		TOTAL 2011-2030
REVENUE	Local Match	$	11,000,000
	Community Match	$	600,000
	FTA 5307	$	15,000,000
	Fare Revenue	$	3,000,000
	State Funds	$	400,000
	TOTAL	**$**	**30,000,000**
EXPENSE	Capital 80/20	$	7,000,000
	Operational 50/50	$	23,000,000
	TOTAL	**$**	**30,000,000**

Funding estimates are based upon information contained in the Transportation Improvement Program (TIP) and information provided by JATSO, MoDOT and MAPS. These amounts do not reflect a potential increase in funding from local sources or state sources which could then lead to an increase in federal funding. An increase in local or state funding is needed to implement the short and long term recommendations described in Section 3.

4.4 AVIATION FINANCIAL PLAN

The annual operating expenses for the Joplin Regional Airport has been between $1.7 and $1.9 million for the past two years. Significant financing sources for the airport come from the City of Joplin transportation sales tax, service charges and user fees, and federal grants. The federal grant funds fluctuate from year to year and typical pay for capital improvements. The total net assets of the airport have increased to approximately $22 million over the past few years.

Given that no significant capital improvements are expected in the near future, no significant federal grants should be expected either. If service charges and fees remain constant, the airport only will have approximately $1.0 million to spend annually at present funding levels. The addition of American Eagle commercial services may increase annual user fees, but it is likely that the airport will continue to experience a shortfall funding. Unless other sources of funding are identified, the airport's net assets will decline.

4.5 NON-MOTORIZED FINANCIAL PLAN

It is recognized that implementation of all of the potential non-motorized improvement opportunities identified previously may be beyond the financial feasibility of JATSO and its member communities during the anticipated life of this plan (i.e. 2030). As a result, it is imperative that JATSO and its member municipalities strategically assess the benefit of each improvement concurrent with identification and solicitation of the necessary funding for the project. This will require a coordinated and sustained effort. The guiding objective is to efficiently package non-motorized transportation improvement with the funding for other planned transportation infrastructure improvement projects thereby gaining an economy of scale in execution of each project above what would have been possible if implemented individually.

In addition to the various funding methods available for motorized transportation improvements a series of targeted funding options are also available for non-motorized improvements. These funding options will require a more detailed evaluation prior to project implementation to determine their specific applicability to the desired non-motorized improvements.

Transportation Enhancement Program:
The Transportation Enhancement Program requires each state to reserve 10 percent of its Federal Surface Transportation Program funds annually for designated Transportation Enhancement activities to ensure transportation spending supports more than just roads. This program provides funding through a competitive selection process for transportation related activities other than routine highway and bridge construction. Transportation Enhancement funds are available for a variety of project types, that are located in both rural and urban communities. These projects help create more travel choices by providing funding to construct sidewalks, bike lanes and to convert abandoned railroad rights of way to trails. Communities may also use the Transportation Enhancement Program to revitalize local regional economies by restoring historic buildings, renovating streetscapes or providing transportation museums and visitor centers.

Community Development Block Grant Program (CDBG):
The Community Development Block Grant Program is administered by the U.S. Department of Housing and Urban Development (HUD) through its Office of Community Planning and Development. The

primary objectives of CDBG is to benefit low- and moderate- income persons, aid in the prevention or elimination of slums and blight, meet other community development needs having a particular urgency because existing conditions pose a serious or immediate threat to health. Through these objectives, CDBG has been used to enhance public facilities such as sidewalks, paths, and streets and remove barriers by providing curb ramps and other accessible paths. HUD decides the quantity of each grant by use of a formula that takes into account community need.

Recreational Trails Program - Department of Natural Resources:
The Recreational Trails Program was authorized in the 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The Recreational Trails Program is a federal-aid assistance program that helps states provide and maintain recreational trails for both motorized and non motorized recreational trails uses. Annual funding for this program is approximately $1,000,000. The program provides funds for many recreational trail uses, such as pedestrian (hiking, running, wheelchair use), bicycling, inline skating, equestrian, cross-country skiing, off-road motorcycling, all-terrain vehicle riding and four-wheel driving. The Department of Natural Resources holds a competitive grant round each year and distributes the funding in response to recreational trail needs within the state. The Recreational Trails Program encourages trail enthusiasts to work together to provide a wide variety of recreational trail opportunities.

Missouri Safe Routes to School Program:
Missouri Safe Routes to School Program (SRTS) was created by Section 1404 of the SAFETEA-LU in 2005. The Highway Safety Division is responsible for administration of SRTS federal funds. The funding is used to provide safer biking and walking accommodations for children in kindergarten through eighth grade, including those with disabilities. There are two areas eligible for funding, behavioral and infrastructure. Behavioral activities may be used for public awareness and outreach campaigns, traffic education, and enforcement efforts. Infrastructure projects include engineering and construction efforts such as sidewalks, crosswalks, lighting and bike racks. State, local, and regional agencies, schools, and non-profit organizations may submit applications to MoDOT to receive a grant from federal safe routes to school funds.

Source: MRPC Regional Transportation Plan Chapter 7