



Tyler Area 2045

METROPOLITAN TRANSPORTATION PLAN

December 4, 2019

This document was prepared in cooperation with:

The Tyler Area Metropolitan Planning Organization Technical Advisory Committee; and

The Texas Department of Transportation.

This plan covers a 25-year planning horizon for the Tyler Metropolitan Planning Area, encompassing much of Smith County, Arp, Bullard, Hideaway, Lindale, New Chapel Hill, Noonday, Troup, Tyler, Whitehouse, and Winona.

This document was reviewed and adopted by the Tyler Area Metropolitan Planning Organization's Transportation Policy Committee on November 21, 2019, with an effective date of December 4, 2019.

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Table of Contents

1. Overview	1-1
Metropolitan Planning Organization	1-1
Legislative Authority for the MTP	1-3
MTP Planning Process	1-4
2. Guiding Principles.....	2-1
Federal Guidelines.....	2-1
Goals and Objectives	2-2
Regional Visioning Process	2-9
2045 MTP Goals and Objectives.....	2-11
Performance Measures	2-12
3. Evaluation of Current Conditions	3-1
Methodology & Data Sources.....	3-2
Regional Growth Patterns	3-4
Roadway	3-6
Safety Needs Assessment.....	3-13
Transit	3-21
Interregional Passenger Transportation.....	3-32
Active Transportation.....	3-34
Freight	3-38
4. Transportation Strategies.....	4-1
No-Build/Other Transportation Strategies to Address Unmet Needs	4-1
No-Build/Other Transportation Strategy Recommendations.....	4-12
Build Strategies to Address Unmet Needs.....	4-14
5. System Level Impact Considerations.....	5-1
Environmental Analysis	5-2
Equity Analysis.....	5-5

Mitigation Analysis	5-13
6. PUBLIC INVOLVEMENT	6-1
TAMPO's Public Participation Plan	6-1
Summary of Stakeholder and Public Outreach Efforts	6-2
7. Financial Analysis.....	7-1
Roadway Funding Sources.....	7-1
Transit Funding Sources	7-8
Revenue Forecast Development	7-10
Cost Estimation for Proposed Projects.....	7-12
Applying Fiscal Constraint	7-13
8. Staged Improvement Plan.....	8-1
Fiscally Constrained Program of Projects	8-1
Public Transportation Projects	8-8
Local Illustrative.....	8-9

Index of Figures

Figure 1-1: MPO Study Area	1-2
Figure 2-1: Visioning Survey Values Ranked	2-10
Figure 3-1: Highest Combined Growth Areas 2018-2045.....	3-5
Figure 3-2:2018 TDM Roadway Performance	3-7
Figure 3-3: 2045 No-Build TDM Roadway Performance	3-9
Figure 3-4: 2018 Pavement and Bridge Conditions	3-12
Figure 3-5: Crash Density Heat Map Tyler MPA	3-14
Figure 3-6: Crash Count Over Time (2013 - 2017).....	3-15
Figure 3-7: Crashes with Fatalities or Serious Injuries 2013 -2017.....	3-16
Figure 3-8: Bicycle or Pedestrian Crash Count 2013-2017	3-17
Figure 3-9: Cyclist and Pedestrian Crashes and Fatal and Serious Injury Crashes	3-18
Figure 3-10: Intersection Crash Map	3-20
Figure 3-11: Current Tyler Transit Service Coverage	3-22
Figure 3-12: Transit-Dependent Population Combination Scores by Block Group	3-25
Figure 3-13: Transit Dependent Population Gaps by Block Group	3-26

Figure 3-14: Target Transit Rider Subareas by Block Group	3-28
Figure 3-15: Target Transit Rider Subarea Demand Gaps by Block Group	3-29
Figure 3-16: Tyler MPO Points of Interest.....	3-31
Figure 3-17: Metropolitan Planning Area Sidewalk Conditions	3-34
Figure 3-18: Existing Bike and Pedestrian Facilities in Tyler	3-35
Figure 3-19: North Tyler Recommended Segments for an Active Transportation	3-37
Figure 3-20: Major Freight Generators.....	3-39
Figure 3-21: 2018 Freight Network Congestion Segments.....	3-40
Figure 3-22: 2045 Freight Network Congestion Segments.....	3-41
Figure 5-1: Environmental Analysis Features	5-4
Figure 5-2: Environmental Justice Zones.....	5-7
Figure 5-3: High Concern Environmental Justice Zones	5-8
Figure 5-4: Housing & Transportation Costs.....	5-11
Figure 5-5: Project Distribution to Housing & Transportation Costs	5-12
Figure 5-6: Environmental Overlay Analysis	5-14
Figure 5-7: Environmental Justice Zones & Planned Capacity Projects	5-18
Figure 6-1: Online Visioning Tool – Feedback Map Module	6-4
Figure 6-2: Example of Board at First Open House.....	6-5
Figure 6-3: Draft Plan Open House Board Example.....	6-7
Figure 6-4: Draft MTP Public Comment Story Map	6-8
Figure 8-1: Implementation Stage Project Locations	8-2
Figure 8-2: Near-Term Stage Project Locations.....	8-3
Figure 8-3: Medium-term Stage Project Locations.....	8-4
Figure 8-4: Long-Term Stage Project Locations	8-5
Figure 8-5: Unconstrained Project Locations	8-6

Index of Tables

Table 2-1: MTP Goals & Objectives	2-11
Table 2-2: TxDOT Safety Performance Targets for FY 2019.....	2-12
Table 2-3: TxDOT Bridge & Pavement Condition Performance Targets for 2020.....	2-13
Table 2-4: System Performance Targets for 2020	2-13
Table 2-5: Transit Asset Management Performance Targets for 2022.....	2-13
Table 2-6: National Goals & Metrics.....	2-14
Table 3-1: National Goal Performance Measures- Tyler Area Current Conditions	3-3
Table 3-2: Crashes by City	3-13
Table 3-3: Crashes by Severity 2013- 2017	3-15
Table 3-4: Fatality or Serious Injury of Pedestrians and Cyclists.....	3-17

Table 3-5: Intersections with High Crash Counts.....	3-19
Table 3-6: TDP Scoring.....	3-24
Table 3-7: Points of Interest and Transit Coverage	3-30
Table 3-8: Tyler Pounds Boardings	3-32
Table 4-1: Evaluation Criteria Bonus Points.....	4-18
Table 5-1: Aggregate Environmental Justice Zones Compared to MPO	5-6
Table 5-2: Project Types	5-13
Table 5-3: Environmental Resources Buffer Sizes	5-13
Table 5-4: Number of Possible Impacts to Inventoried Water Resources.....	5-15
Table 5-5: Number of Possible Impacts to Parks and Cultural Resources	5-15
Table 5-6: Resource-Specific Impacts of Specific Projects.....	5-15
Table 5-7: Potential Mitigation Activities	5-16
Table 5-8: Potentially Impacted Environmental Justice Zones	5-17
Table 6-1: Engaged Stakeholder Groups	6-2
Table 6-2: Interview Topics & Generalized Stakeholder Concerns	6-3
Table 7-1: Historical Roadway Funding by Category	7-11
Table 7-2: Historical Transit Funding by Source	7-11
Table 7-3: Estimated Roadway and Transit Funding Summary (2020-2045)	7-12
Table 7-4: Estimated 2045 MTP Roadway Costs (in YOE).....	7-13
Table 7-5: 2020-2045 MTP Fiscal Summary	7-14
Table 8-1: Fiscally Constrained, Staged Program of Projects.....	8-7
Table 8-2: Unconstrained Projects List.....	8-8
Table 8-3: Tyler 2045 MTP Public Transportation	8-8

Overview



1. Overview

Metropolitan transportation planning is a cooperative, comprehensive, and continuous ("3-C") process. This process is conducted by the Metropolitan Planning Organization (MPO), in coordination with Texas Department of Transportation (TxDOT), transit operators, numerous stakeholders from throughout the region, and the public to create a vision for the future of the community. Though federal requirements dictate at least a 20 year planning horizon, the application of this 3-C process for the Tyler Area MPO 2045 Metropolitan Transportation Plan (MTP), is designed to assist the MPO in prioritizing short- and long-term investments in the regional transportation system over the next 25 years through analysis, collaboration with planning partners, and a proactive public participation process that involves all users of the transportation system. The update of the 20+ year planning horizon must be readdressed every 5 years for areas in attainment for air quality to ensure consistency with regional goals and needs. As such this document is an update to the current 2040 Metropolitan Transportation Plan (MTP) and will have a planning horizon of 2020 -2045. The Tyler Area MPO initiated this update in December 2018.

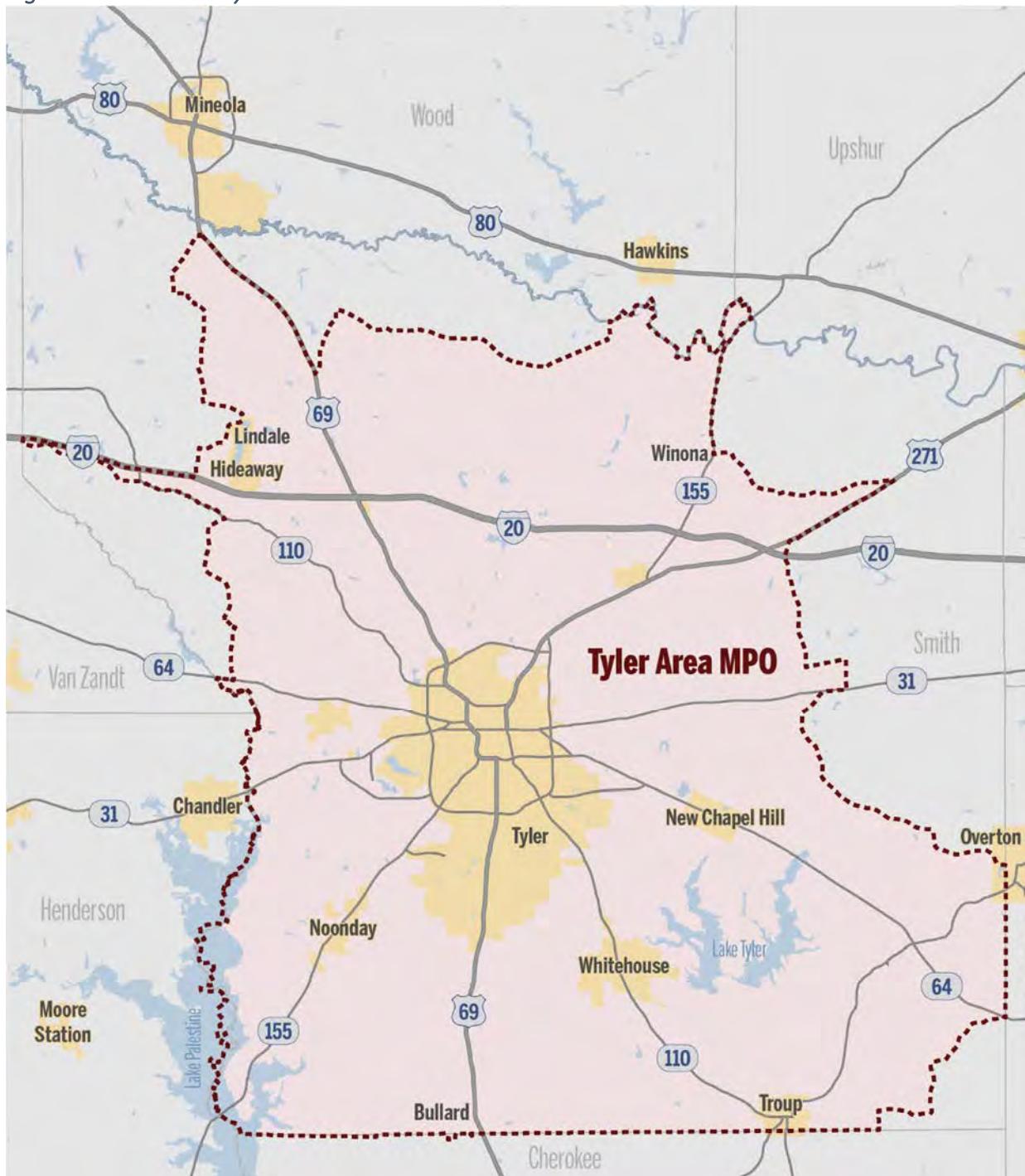
This MTP was developed over a 12-month period, during which time several rounds of public and stakeholder meetings were conducted, technical data was analyzed, existing plans and studies were compiled and reviewed, and potential projects were evaluated according to community goals and performance-based criteria. The resulting product is a comprehensive blueprint for the future of the transportation system that considers all modes and the needs of all users.

The planning area for the Tyler Area 2045 MTP encompasses much of Smith County, Texas, overlaps IH-20 and includes Arp, Bullard, Hideaway, Lindale, New Chapel Hill, Noonday, Troup, Tyler, Whitehouse, and Winona. Figure 1-1 shows the boundary of the MPO study area, as well as the location of population centers, major transportation facilities, and major environmental features within the MPO study area. These facilities and features are discussed in greater detail in chapter 3 of this MTP.

Metropolitan Planning Organization

With the passage of the Federal Highway Act of 1962, all major cities within the United States were required to adopt an MTP to guide the long-term development of the transportation system. The Act established specific rules and regulations for carrying out the long-range transportation planning process and required the formation of MPOs for any urbanized area (UZA) with a population greater than 50,000. Under federal regulations, MPOs are responsible for carrying out a continuing, cooperative, and comprehensive (3-C) planning process, in cooperation with the state and local governments, to develop the MTP and determine how best to invest federal transportation funding in the region.

Figure 1-1: MPO Study Area



Legislative Authority for the MTP

Following passage of the Federal Highway Act of 1962, Congress has passed a series of surface transportation bills that have continued to require MPOs to develop a metropolitan transportation plan to be eligible for federal funding. The most recent surface transportation legislation was the Fixing America's Surface Transportation Act (FAST Act), which was passed in 2015. The Tyler 2045 MTP was developed in compliance with this legislation.

Tyler Area MPO

The Tyler Area Metropolitan Planning Organization is the organization designated by the Governor of Texas in 1974 as being responsible, together with the State, for carrying out the provisions of 23 USC §134, 49 USC §5303 (Metropolitan Transportation Planning) and 23 CFR 450.300 et seq. (Metropolitan Transportation Planning and Programming) and is established pursuant to those same US Codes. The MPO is the forum for cooperative decision making by principal elected officials of general-purpose local governments, in the Metropolitan Planning Area (MPA).

Transportation Policy Committee

Elected and appointed officials comprise the Transportation Policy Committee (TPC), which is responsible for approving and adopting all the transportation planning activities and programs of the MPO. The TPC was established in 1974 to meet federal requirements. Membership of the TPC is governed by agreement between the affected local governments and the Governor of Texas and is reviewed periodically to ensure adequate representation of all parties. Membership consists of 11 voting members, with representatives from the following member agencies as detailed below.

REPRESENTATION	CURRENT REPRESENTATION BY	TITLE
City of Tyler	Martin Heines	Mayor
City of Tyler	Edward Broussard	City Manager
City of Tyler	Lisa Crossman	City Engineer
City of Lindale	Carolyn Caldwell	City Manager
City of Whitehouse	Susan Hargis	City Manager
City of New Chapel Hill	Riley Harris	Mayor
Smith County	Nathaniel Moran	County Judge
Smith County	Jeff Warr	County Commissioner
Smith County	Frank Davis	County Engineer
NET RMA	Gary Halbrooks	Board Member
TxDOT	Glenn Green	District Engineer

Transportation Advisory Committee

The Transportation Advisory Committee (TAC) serves in an advisory role to the Transportation Policy Committee (TPC) and is responsible for professional and technical review of work programs, policy recommendations, and transportation planning activities. Membership consists of 21 voting members who are local and state technical and professional personnel knowledgeable in the transportation field.

REPRESENTATION	CURRENT REPRESENTATION BY	TITLE
Tyler Area MPO	Heather Nick	Executive Director
Tyler Area MPO	Michael Howell	Manager
City of Tyler	Davis Dickson	Airport Manager
City of Tyler	Kyle Kingma	Principal Planner
City of Tyler	Stephanie Franklin	Managing Director of Culture, Recreation & Tourism
City of Tyler	Jimmy Toler	Police Chief
Smith Co.	Brian Capps	Smith County
Smith Co.	Robert Carlson	Smith County Sheriff's Office
TxDOT	Paul Schneider	Area Engineer – Tyler District
TxDOT	Brooke Droptini	Planning Engineer – Tyler District
TxDOT	Jeffrey Harmon	Director of TP&D – Tyler District
TxDOT	Nick Page	MPO Coordinator - TP&P Division
Tyler Transit	Leroy Sparrow	Interim Transit Manager
TCEQ	Jamie Zech	Transportation Conformity Specialist
TEDC/TACOC	Tom Mullins	President /CEO
ETCOG	Melissa Cure	Transportation Planner/Analyst
FHWA	Justin Morgan	Transportation Planner
FTA	Tony Ogboli	Federal Transit Administration
NET RMA	Barham Fulmer	Board Member
Freight	Brent Nelson	Brookshire's Grocery Company
Tyler Bike Club	Bill Lewis	President

MTP Planning Process

The planning process used for the creation of the Tyler Area 2045 MTP is prescribed by state and federal regulations, but the vision that drives the process is developed locally. This MTP visioning process, therefore, focused on gathering locally generated plans and information, as well as the knowledge and wisdom of the local community, while following the state and federal guidelines that direct the general planning process. The Tyler Area MPO is responsible for programming regional transportation projects for implementation using federal transportation funding. The MTP provides a framework for analyzing the current and future regional travel demand and creating a blueprint for addressing the future transportation needs within the MPA.

Visioning Process

The purpose of the MTP is to identify the transportation needs of the community over the next 25 years, establish priorities for funding those improvements, and chart a course for meeting the community's identified transportation needs. Establishing a community vision for the future of the transportation system

and related goals to assist in the prioritization of transportation improvements is key to ensuring the plan reflects community values. Input from key stakeholders and members of the public was solicited early and continuously throughout the development of the plan.

The process for updating the Tyler Area MTP was initiated by a series of meetings with the public, professional planners and engineers from the MPO and its member agencies, as well as State and local agencies, and other community stakeholders. The purpose of these meetings was to gather data and input on community needs and values, to establish a framework for MTP development.

Using this information, the MPO drafted a recommended vision, set of goals, and a list of evaluation criteria to assist in prioritizing transportation improvements for inclusion in the MTP.

Needs Assessment

To develop feasible and beneficial transportation solutions, it is imperative to assess the current state of the transportation system, as well as community growth trends. For the update to the Tyler Area MTP, the needs assessment included an inventory of the existing transportation system; a review of local plans; a demographic analysis to determine existing transportation demand based on current population levels; and projections of future population and employment and the associated future travel demand.

Coordination with Local Plans and Programs

Ensuring that proposed improvements are consistent with local programs, plans, and their goals and objectives, as well as supporting local values and preserving existing community resources is of vital importance to the MTP development. A review of local programs and plans was therefore conducted to ensure consistency between the metropolitan transportation planning effort and local community initiatives.

Project Call and Scoring Process

In order to incorporate the current federal planning factors into the planning process and to develop a cohesive and transparent process of ranking projects, a process was developed to assess projects according to reasonable assumptions on how they may perform in contributing to local, state, and federal goals. This process is discussed at greater length in Chapter 4.

Systems Level Analysis

System level analyses examined how the candidate projects impact community issues that are of system and region-wide concern. The study team incorporated this planning approach into the development of the MTP, which allowed for prioritization of transportation investments based on broader community issues in accordance with the community's vision.

Financial Analysis and Constraint

Fiscal feasibility is a significant priority in determining the final list of improvements. Not only does Federal Legislation mandate that the MTP be fiscally constrained and only include projects that can reasonably be expected to have adequate funding, but certain projects also require that area communities contribute local matching funds to receive federal funding. The process for establishing both estimated costs and revenues is critical for the creation of a viable MTP.

Revenue Projection

A revenue projection was developed that identified the anticipated revenue stream for local, State and Federal funds. This revenue stream was factored to account for inflation at the anticipated year-of receipt.

Project Costs

Cost is defined as the total project cost, which includes planning elements (e.g. environmental studies and functional studies); engineering costs (e.g. preliminary engineering and design); preconstruction activities (e.g. line and grade studies, right-of-way acquisition, utility relocations, and corridor preservation); construction activities; and contingencies. Project costs were calculated based on historical expenditures for similar improvements. The resulting cost estimates also included an inflation factor to account for the anticipated year-of-expenditure.

Fiscal Constraint Analysis

A fiscal constraint analysis was performed that compared the anticipated year-of-expenditure costs to the anticipated year-of-receipt revenues to determine if sufficient and timely financial resources were likely to exist to fund the proposed program of projects.

Selection of a Proposed Package of Projects

Based on the cost and revenue projections, the package of fiscally constrained projects anticipated to best accomplish community-defined goals and objectives, was selected by the TAC and then submitted to the Policy Board for review and approval. The TPC was then able to review these recommendations and make measured and fiscally constrained choices.

Adoption Process

The preliminary program of projects was approved by the Policy Board on August 26, 2019. The preliminary transportation recommendations and associated list of proposed projects resulting from the project selection and fiscal constraint analysis, along with the results of the technical analysis and public input, were included in the draft MTP document.

Public Review of the Draft Tyler Area 2045 MTP

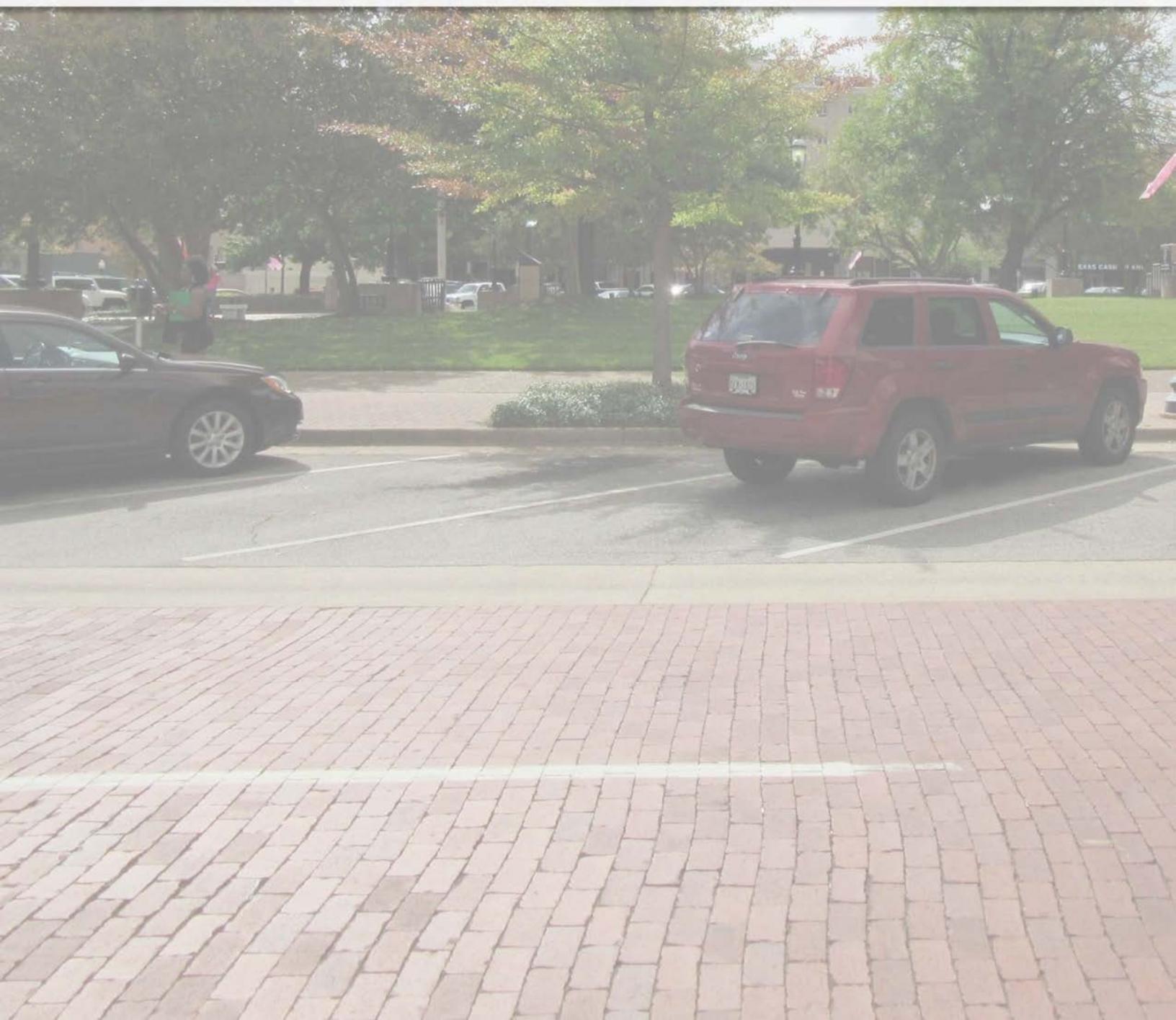
On October 10, 2019, the draft plan was presented to the public and their feedback was solicited throughout the 30-day public review period as outlined in the MPO's adopted Public Participation Plan (PPP).

Adoption of the Final Tyler Area 2045 MTP

The final MTP, which incorporated comments received during the 30-day public comment period, was presented to the Policy Board for adoption on November 21, 2019. The approved MTP has an effective date of December 4, 2019.



Guiding Principles



2. Guiding Principles

This chapter describes the process by which the vision and goals of the planning process were established. It also describes the process by which the set of performance measures – used to gauge whether the recommended program of transportation projects supports the established vision and goals – was developed. Together the vision, goals, objectives, and performance measures comprise the Tyler Area 2045 MTP’s guiding principles. The planning process used for the creation of the Tyler Area 2045 MTP is prescribed by state and federal regulations, but the vision that drives the process is developed locally.

As mentioned in Chapter 1, this MTP visioning process is focused on gathering locally generated plans and information, as well as the knowledge and wisdom of the local community, while following the state and federal guidelines that direct the general planning process. Development of the MTP includes extensive public input and requires the collaboration of regional stakeholders, including local, state, and federal agencies and governing bodies, public and private transportation providers, and the business community. All these stakeholders must work together so that the community’s visions and goals coalesce into defined principles that will guide transportation policy and investment decisions within the Metropolitan Planning Area (MPA). The resulting recommendations and proposed improvements will impact all users of the transportation system.

Federal Guidelines

In 2015, the Fixing America’s Surface Transportation (FAST) Act became the fifth intermodal surface transportation bill passed by Congress since 1991, the previous four being the Intermodal Surface Transportation Efficiency Act (ISTEA), the Transportation Equity Act for the 21st Century (TEA-21), the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), and the Moving Ahead for Progress in the 21st Century Act (MAP-21). The FAST Act and its predecessors have served as a means to provide funding to states and local governments for surface transportation planning and investment. The FAST Act authorized \$305 billion for projects related to highways, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology, and statistics programs over five fiscal years (2016 – 2020).

The FAST Act continues the eight federal planning factors established under ISTEA and expanded under SAFETEA-LU, while adding two additional factors for consideration in the planning process. The following ten factors must be considered during the planning process:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness;
2. Increase the safety of the transportation system for motorized and nonmotorized users;
3. Increase the security of the transportation system for motorized and nonmotorized users;
4. Increase accessibility and mobility of people and freight;

5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
7. Promote efficient system management and operation;
8. Emphasize the preservation of the existing transportation system;
9. Improve resiliency and reliability of the transportation system and reduce or mitigate storm water impacts of surface transportation*; and
10. Enhance travel and tourism*.

**New factors introduced by the FAST Act*

The FAST Act also continues the requirement for a continuing, cooperative, and comprehensive (3-C) long-range transportation planning process for making transportation decisions in metropolitan areas, while continuing and further defining requirements set forward in MAP-21 for state DOTs and Metropolitan Planning Organizations (MPOs) to set performance measures and goals.

Goals and Objectives

To meet the mandates of its charter as an MPO, and because a great deal of the transportation funding that will support the implementation of the Tyler Area 2045 MTP comes from the US Department of Transportation (USDOT), the Tyler Area MPO must seek to address both local and national transportation needs. The Tyler Area MPO must address the identified transportation issues of the region both in terms of local needs and the role that the region's transportation facilities play in the national transportation network. Therefore, the goals and objectives developed for the Tyler Area 2045 MTP were developed to address identified local priorities while also considering the region's role in the national transportation system. Goals and objectives provide the framework to guide decision-making about selecting and prioritizing projects that will address identified needs, and which will be included in the Tyler Area 2045 MTP. Goals provide broad statements about what the MTP is trying to achieve, and objectives are specific measurable actions to achieve the stated goal. The Tyler Area 2045 MTP goals and objectives incorporate public input, goals and objectives identified in previous planning efforts in the region, and the US Department of Transportation's national performance goals.

The Tyler Area 2045 MTP states a set of comprehensive goals and objectives that balance local need and national priorities.

The following sections describe these needs and priorities as established through public input and contained in local, State, and national policy guidance. As mentioned at the beginning of this chapter, in 2015, the FAST Act was signed into law to provide long-term funding from the federal government for surface transportation programs. The FAST Act requires that MPOs use performance-based planning processes and consider national performance goals. These national goals and objectives are as follows:

- Safety – Achieve a significant reduction in traffic fatalities and serious injuries on all public roads
- Infrastructure Condition – Maintain the highway infrastructure asset system in a state of good repair
- Congestion Reduction – Achieve a significant reduction in congestion on the National Highway System
- System Reliability – Improve the efficiency of the surface transportation system
- Freight Movement and Economic Vitality – Improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
- Environmental Sustainability – Enhance the performance of the transportation system while protecting and enhancing the natural environment
- Reduced Project Delivery Delays - Reduce project costs, promote jobs and the economy, and expedite the movement of people and goods

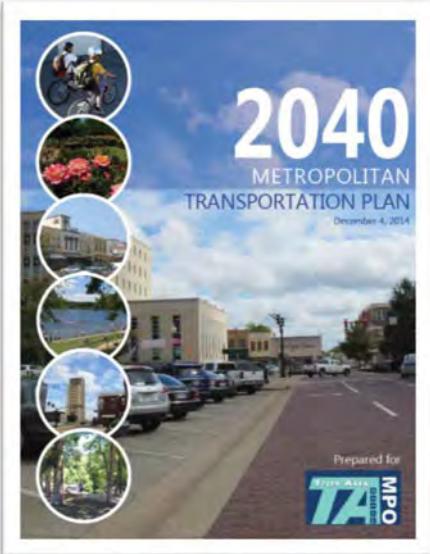
To help the MPO and the public fully understand what these national goals are designed to achieve, the FAST Act provides background information in the form of ten planning factors that identify the primary considerations affecting the interstate and national highway systems that drove the development of the goals. To ensure that federal funds will be available for improving the regional transportation system, it is important that these federal FAST Act performance goals, as well as the federal planning factors, are considered and incorporated into the development of local goals, objectives, and performance measures.

Summary of Goals and Objectives Within Local Planning Documents

In addition to reviewing national performance goals and planning factors, the project team reviewed local transportation planning documents prepared by the Tyler Area MPO and its planning partners to ensure that the goals and objectives of the 2045 MTP address and are informed by local priorities and identified needs.

Tyler Area Metropolitan Planning Organization & City of Tyler Documents

The Tyler Area Metropolitan Planning Organization and/or the City of Tyler have been the primary authors of the following documents.



2040 Metropolitan Transportation Plan

In 2014, the Tyler Area MPO reviewed its most recent transportation plan, reassessed growth trends and transportation needs, and affirmed regional transportation planning goals and assumptions. The 2040 MTP identified long-range strategies that address regional mobility through the horizon year 2040 and covers other topics such as security, environmental stewardship, and land use goals. The Tyler Area 2040 MTP projected \$66.9 million in funding for transit related projects and just over \$1.1 billion in roadway improvements to be undertaken through the year 2040.

Transportation Improvement Program

Updated every two years and covering a period of four years, the 2018 Transportation Improvement Program (TIP) provides the guide to the Federal Highway Administration (FHWA), the

Federal Transit Administration (FTA), the Texas Department of Transportation (TXDOT), and local officials for budgeting funds, as well as planning, design, and the construction of transportation and transit improvements for the near future. Projects included in the TIP were derived from the 2040 MTP and use performance management to provide key information to help decision makers “understand the impacts of investment decisions across transportation assets or modes, improve communications between decision makers, stakeholders and the traveling public, and ensure targets and measures are developed in cooperative partnerships and based on data and objective information.”

City of Tyler Master Street Plan

In 2012, the Tyler Area MPO, in conjunction with the City of Tyler, updated the 2005 Master Street Plan (MSP). The MSP serves as the long-range thoroughfare plan that serves as a tool for the City to identify locations and types of roadways needed to meet projected growth and to facilitate preservation of future corridors for the development of the transportation system. The MSP utilized the National Association of City Transportation Officials (NACTO) Context Sensitive Solutions Design manual to develop four primary context zones for street types, including urban core, general urban, suburban, and rural. The MSP held an emphasis on preserving possible future transportation corridors to better facilitate future growth and development.

Tyler Transit Route Study

In 2010, the City of Tyler developed a transit route study in order to explore solutions to develop a practical, financially feasible, and sustainable public transportation service expansion. This transit study incorporated goals and objectives from the Tyler 1st Comprehensive Plan as well as specific objectives from the 2035 MTP, and recognized the importance of transit in enhancing mobility, positively affecting economic development, and improving livability. To accomplish these goals, the study evaluated current operations, considered expansion and/or modification of current operations, and developed an alternatives decision matrix to compare and counterweigh strategies.

Tyler Transit Asset Management Plan

As required by the Federal Transit Administration, Tyler Transit updated their Transit Asset Management (TAM) Plan in 2018 to refine the process of helping deliver safe, reliable transportation. This TAM Plan includes an inventory of assets used in the provision of public transportation, including rolling stock, equipment, and facilities. The plan includes a condition assessment of capital assets and, using decision support tools, develops investment prioritization for the maintenance and replacement of transit assets with the goal of having the transit system in or moving towards a state of good repair (SGR). The development of TAM performance measures and targets is performed in collaboration to the maximum extent practicable with the State and MPO.

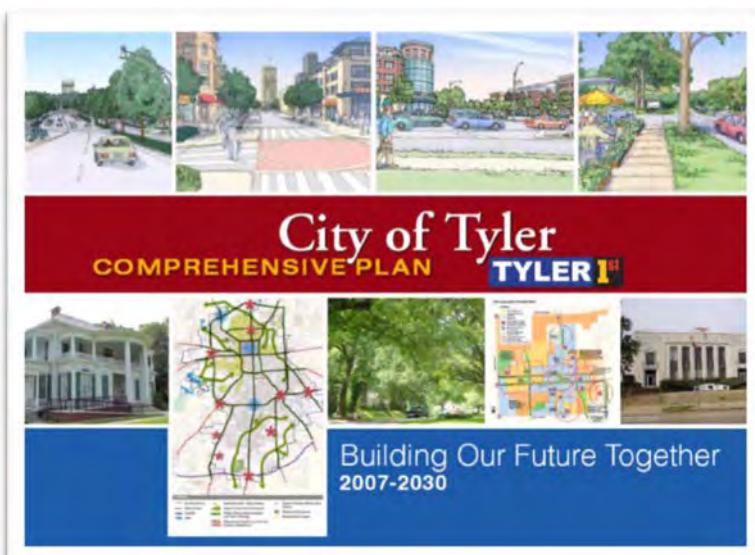
Industry Growth Initiative

Developed in 2010, the Industry Growth Initiative set out to develop a series of recommended strategies and tactics to diversify Tyler's economic base and increase economic resilience. The initiative focused on ways to enable the growth of "Innovation Economy." As part of the development of strategies to foster economic growth and resilience, the initiative recommended a number of transportation related strategies, including the development of Public Private Partnerships (PPP), supporting efforts by higher education to secure federal funding for energy research and transportation alternatives, and addressing transportation and transportation services to and around the medical/hospital district including trails. Other notable recommendations included expanding the air and rail infrastructure.

City of Tyler Comprehensive Plan Update: Tyler 1st

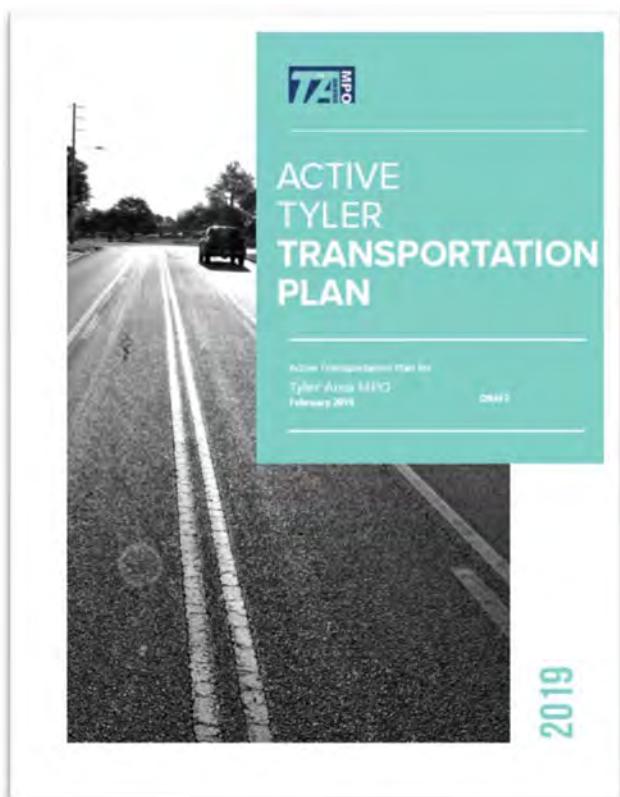
The City of Tyler Comprehensive Plan was most recently updated in 2014. This plan is designed to be updated every five years to reflect the needs and aspirations of the Tyler residents. This update addressed/updated a number of major items, including considering the creation of a Traffic Management Center (TMC) to actively manage signal operations, reviewing policies and state laws to implement shared lanes for bicycles, and reviewing and evaluating the need and possible right-of-way required for bus turnouts on major roadways, as well as developing higher speed rail service to Dallas and Shreveport. Other important considerations impacting future transportation were updates to the Future Land Use Guide and the Priority Annexation Areas. The principles guiding this plan were:

- To connect people to one another and in the community,
- To promote balanced growth,
- To provide neighborhoods that are attractive centers of community,
- To protect and enhance open spaces, parks, and trees in a connected network for recreation and a healthy environment,
- To provide transportation options,
- To reinvigorate the city center to be the downtown of East Texas,
- To preserve, enhance, and communicate Tyler's historic heritage,
- To cultivate an environment friendly to business and Tyler's medical and educational institutions, and
- To maintain excellent municipal facilities and services, maintain and enhance our strong community and regional partnerships, and to cultivate and ensure high quality education at every level.



Area Development Plans

The City of Tyler has developed three Area Development Plans (ADPs). ADPs are comprehensive plans developed for a specifically defined region of the City. The ADP provides the tools to make informed decisions, manage growth in a coordinated manner, and guide the development of the physical environment, including assessment of current land use/zoning, recommendations for future land use/zoning, and ways to assess existing and proposed roadways while considering multimodal transportation, pedestrian crossings, and landscaping, streetscaping, and architecture. The ADP districts that have been adopted include University Woods, Texas College, and Midtown.



Active Tyler

Initiated in 2018 and adopted in March of 2019, the Active Tyler Plan was developed as a tool to help guide bicycle and pedestrian improvements as well as policy level decisions for transportation projects in the Tyler Metropolitan Planning Area, with the four main goals being to encourage active transportation as a mode choice, to educate people about the benefits of bicycling and walking, to serve to create a vision for a network of facilities, and to identify steps forward. The plan reviewed current conditions and connections to existing active transportation infrastructure and performed extensive public engagement, including online engagement, workshops, popup events, and open house meetings, while reviewing population and employment densities, attractors, intersection density, level of comfort, and overlap/integration with transit service. The plan proposes specific projects and improvements while also encouraging policy level decision-making in planning and transect-based typology implementation.

Old Jacksonville Highway Corridor Study

Recognizing predicted growth rates to be approximately 18% between 2012 and 2035, TAMPO commissioned a study adopted in 2016 to identify transportation measures that will improve public safety and traffic flow, reduce motorist delay, enhance air quality, and improve bicycle and pedestrian access specifically along FM 2493. The study provides short-term operational and access management improvements and addresses bicycle, pedestrian, and transit improvements along with recommendations for long-range improvements and corridor access management guidelines.

Texas Department of Transportation (TXDOT) Plans and Documents

The following documents have been developed by or in coordination with TxDOT.

Unified Transportation Program

Updated every year with a ten-year horizon, the Unified Transportation Program (UTP) provides an objective way to evaluate statewide and regional system performance and prioritize resources to programs and projects to improve performance. The data driven process of developing the UTP helps bridge short-term and long-range goals by identifying areas that need improvements and areas that support system performance measures and targets. \$77 billion in planned infrastructure improvements are identified over the next ten-year period in the 2020 UTP. These projects address TxDOT's strategic goals in key areas of system performance.

Strategic Highway Safety Plan

The 2017 update to the Texas Strategic Highway Safety Plan (SHSP) acknowledged a steady increase in roadway fatalities since 2012, despite efforts to improve roadway user behavior and upgrade roadway conditions. The SHSP maintains a vision of moving to zero deaths on roadways, and represents a multidisciplinary collaboration aspiring to make Texas travel safer by reducing crashes, fatalities, and injuries by focusing on seven key emphasis areas, including distracted driving, impaired driving, intersection safety, older road users, pedestrian safety, roadway and lane departures, and speeding.



Socio-economic Inputs for 2045 Tyler Area MPO Travel Demand Model

In 2017, an update to the regional travel demand model (TDM) socio-economic inputs was performed. Travel demand models provide guidance for making important decisions on future transportation infrastructure investments. The model inputs included socio-economic characteristic estimates for a 2013 base year, as well as for 2018, 2023, 2028, and 2045. The process of developing socio-economic inputs for the TDM began with a review of current and historical trends for Smith County. Base year control totals were determined through a review of various sources, such as the Texas Demographic Center estimates, Census/American Community Survey estimates, and CEDDS 2016.

Regional Visioning Process

To support the development of the Tyler Area 2045 MTP, the project team developed a series of public visioning outreach methods as a part of the robust public engagement effort associated with this plan. This involved social media, an online interactive mapping and visioning exercise, and printed out visioning surveys. These visioning tools were designed to:

1. Gather information regarding transportation needs in the region;
2. Identify deficiencies in the current transportation system;
3. Develop a community vision for future growth within the region; and
4. Identify appropriate modes and infrastructure for supporting future growth.

During the public visioning process, participants identified several deficiencies with the existing transportation system, including congested roadways, connectivity and transit cooperation throughout the region, mobility and accessibility barriers for older adults and individuals with disabilities, safety and security concerns, and a shortage of bicycle and pedestrian infrastructure. In addition to identifying transportation system deficiencies, participants completed activities to determine the most important focus areas for prioritizing projects in the MTP. These factors included increasing multimodal options, improving safety and quality of life, connecting modes of travel, and improving access.

Visioning Results

The public visioning results were essential to identifying a community vision, and participants provided valuable comments on the current state of the transportation system and identified specific needs and desires for the future transportation system. This public input was utilized by the Tyler Area MPO during the development of 2045 MTP. For example, participants' ranking of the evaluation criteria for future transportation projects helped the MPO develop performance measures to guide the evaluation of transportation system alternatives in the MTP. The final ranking of evaluation is shown in Figure 2-1.

Regional Vision Statement

The project team revisited the Tyler Area MPO's 2040 MTP vision statement and presented it back to the public. The general feedback received held the same vision to be true for the 2045 MTP:

"To develop a safe, efficient, and economically feasible multimodal transportation system that will accommodate the mobility needs of all people and goods traveling within and through the Tyler Area over the next 25 years."

Figure 2-1: Visioning Survey Values Ranked



2045 MTP Goals and Objectives

The goals and objectives outlined below were used to guide the implementation of the Tyler 2045 MTP over the next 25 years and were developed using a combination of the federal planning factors, national performance goals, regional goals as outlined in the reviewed planning documents, as well as community input gathered through the visioning process. As a result, the goals developed for the 2045 MTP include the following:

Table 2-1: MTP Goals & Objectives

Goal	Objective
Improve Transportation Efficiency	Promote the efficient use and preservation of the multimodal transportation systems and infrastructure;
Improve Safety	Improve safety on the transportation system by developing projects that reduce hazards and improve travel conditions for all transportation users;
Improve Network Continuity	Develop transportation facilities that ensure network continuity throughout the region, providing multimodal choices and a proper balance of freeways, expressways, major and minor arterials, collectors, and local streets in coordination with the county-wide 2012 Master Street Plan and other local plans;
Improved East-West Connections	Develop adequate thoroughfares for improved east-west movements through the Tyler Area and preserve existing neighborhoods by discouraging through traffic on local and collector streets;
Improve Public Transportation	Provide for improved transit services, including local bus service, commuter bus service, and passenger rail transportation;
Improve Cycling	Develop a network of bicycle facilities that is safe and accessible, and provides connections between residential areas and activity centers;
Improve Walking	Develop improved pedestrian facilities, such as sidewalks and trails, that connect residential areas to activity centers, schools, and transit services;
Improved Access	Accommodate future land development to provide access for all transportation users based on Complete Streets principles and with acceptable levels-of-service;
Rail Preservation	Promote the development and preservation of the area's rail system to support commercial businesses and maintain existing rail right-of-way;
Improve Airport Access	Develop Tyler Pounds Regional Airport into a regional hub for air transportation and improve mass transit access to the airport;
Improve Land Use Goals	Maintain consistency with adopted land use plans and ordinances;
Improve Environmental Stewardship	Support transportation projects and activities that will protect the environment and promote energy conservation;
Improve Security	Encourage transportation investments and policies that result in a higher level of security for motorists, transit users, pedestrians, and bicyclists.

Performance Measures

The goals, objectives, plans, and programs contained in Tyler Area 2045 MTP are intended to be outcome-based. The success of the program can ideally be measured in terms of what the program achieves, and the Tyler Area 2045 MTP process has included provisions and tools for measuring that expected achievement.

The Tyler Area 2045 MTP performance measures are described in this section and are intended to be quantifiable indicators of whether the policies and proposed program of projects in the Tyler Area 2045 MTP help the region achieve the desired outcomes articulated in the goals and objectives. This approach provides decision makers with the ability to objectively set policies and prioritize projects based on the project's anticipated outcomes and whether those outcomes truly address the region's transportation challenges by achieving the local, State, and national goals and objectives.

The use of an outcome-based process using objective measures in the planning process also allows the MPO to track transportation system performance as the Tyler Area 2045 MTP is implemented by tracking project performance after projects are constructed. This tracking of project performance will help the MPO determine whether the project's actual, real-world performance matches the results expected during the planning process. This approach also allows the Tyler Area MPO to meet its federal mandate for a process of continuous improvement of both the transportation system and the planning process itself.

For its 2045 MTP, the Tyler Area MPO intends to support and adopt the performance measures and targets set at the state level by TxDOT. The MPO will work to plan and program projects to contribute to the meeting of the state targets. Table 2-2 through Table 2-5 show the various performance targets established by TxDOT within the timeframes dictated by federal legislation and availability of corresponding data, while Table 2-6 shows national goals and associated metrics. Further analysis of current condition system performance for the TAMPO region is described in the following chapter.

Table 2-2: TxDOT Safety Performance Targets for FY 2019

Safety	TxDOT
Number of Fatalities	3,791
Rate of Fatalities	1.414
Number of Serious Injuries	17,751
Rate of Serious Injuries	6.55
Total Number of Non-Motorized Fatalities & Serious Injuries	2,237.6

Table 2-3: TxDOT Bridge & Pavement Condition Performance Targets for 2020

NHS Bridge Condition Targets by Deck Area	TxDOT
% of NHS bridges by deck area classified as Poor condition	0.8%
% of NHS bridges by deck area classified as Good condition	50.58%
NHS Pavement Condition Targets by Interstate and Non-Interstate Facility	TxDOT
% of Interstate pavements in Good condition	--
% of Interstate pavements in Poor condition	--
% of Non-Interstate NHS pavement in Good condition	52%
% of Non-Interstate NHS pavement in Poor condition	14.3%

Table 2-4: System Performance Targets for 2020

NHS System Performance Targets by Level of Travel Time Reliability (LOTTR)	TxDOT
IH Level of Travel Time Reliability	61.2%
Non-IH Level of Travel Time Reliability	--
Interstate Freight Performance Targets by Truck Travel Time Reliability (TTTR)	TxDOT
Truck Travel Time Reliability on the Interstate System	1.7

Table 2-5: Transit Asset Management Performance Targets for 2022

Transit Asset Management	TxDOT
% of revenue vehicles at or exceeding useful life benchmark	<15%
% of service vehicles (non-revenue) at or exceeding useful life benchmark	<15%
% of facilities rated below 3 on condition scale (TERM)	<15%
% of track segments with performance restrictions	N/A

Table 2-6: National Goals & Metrics

Goal	Performance Measure
Safety	Number of Fatalities Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT) Number of Serious Injuries Rate of Serious Injuries per 100 million VMT Number of Non-motorized Fatalities and Non-motorized Serious Injuries *Transit: Total number of reportable fatalities and rate per total vehicle revenue miles by mode. *Transit: Total number of reportable8 injuries and rate per total vehicle revenue miles by mode. *Transit: Total number of reportable events and rate per total vehicle revenue miles by mode.
Infrastructure Condition	Percentage of pavements of the Interstate System in Good condition Percentage of pavements of the Interstate System in Poor condition Percentage of pavements of the non-Interstate NHS in Good condition Percentage of pavements of the non-Interstate NHS in Poor condition Percentage of NHS bridges classified as in Good condition Percentage of NHS bridges classified as in Poor condition Transit % revenue vehicles (by type) that exceed useful life benchmark (ULB) Transit % non-revenue service vehicles (by type) that exceed ULB Transit % facilities (by group) rated less than 3.0 on Transit Economic Requirements Model (TERM) scale
Congestion Reduction	No required measures for small MPOs and/or areas in attainment for air quality
System Reliability	Percentage of person-miles traveled on the Interstate that are reliable Percentage of person-miles traveled on the non-Interstate NHS that are reliable *Transit: Mean distance between major mechanical failures by mode Truck Travel Time Reliability Index (TTRI)
Freight Movement & Economic Vitality	No required measures for small MPOs and/or areas in attainment for air quality
Environmental Sustainability	
Reduced Project Delivery Delays	No established performance measures

**Public Transportation Agency Safety Plans (PTASPs) and associated transit safety performance measures are not required to be in place until July 2020. These measures have been included here as reference to the coordinated planning process and further consideration will be applied as targets are established by relevant transit agencies.*

Current Conditions



3. Evaluation of Current Conditions

The multimodal needs assessment for the Tyler 2045 MTP has been performed to ensure that the investments recommended by the plan are able to address the needs of the region to the extent feasible within budgetary constraints. One of the first stages in the development of this plan used public and stakeholder input to reaffirm a statement of vision for the region supported by broad goal statements each with specific objectives and is discussed at greater length in Chapter 6. A set of possible objectives based on the FAST Act planning factors discussed in Chapter 2 were presented as plan Values and were discussed with stakeholders and presented to the public through the visioning process. Quantifiable and measurable system performance measures were defined for each of the objectives and these performance measures were used to identify the areas of transportation need with the region. This process of defining a vision statement with corresponding goals, objectives and performance measures is essential to a data-driven and outcomes-based decision-making process for the 2045 MTP.

Transportation system needs that are identified in this chapter through analysis of system performance as well as infrastructure or service gaps helped drive the transportation strategies and recommendations discussed in Chapter 4.

As part of the multimodal needs assessment for the 2045 MTP update, the needs of the region were analyzed for existing conditions (typically 2018) and, where possible, for the conditions that are likely to exist in 2045. Conditions for 2045 were projected using a statistical forecasting tool known as a travel demand model. Consistent with the statement of vision, the goals, and the objectives of Tyler 2045 MTP, the current conditions analysis was performed within six main categories:

- **Regional Growth Patterns** – travel demand model reviewing projected growth and travel patterns
- **Roadway** – Congestion, Interregional Passenger Travel, and Maintenance and Operations
- **Safety** – Crash data
- **Transit** – Personal travel by, fixed-route bus, or demand-response transit
- **Interregional Passenger Transportation** – Transportation outside of MPO study area
- **Active Transportation** – Personal travel by bicycling or walking
- **Freight** – Commercial travel by truck, rail, or air

Methodology & Data Sources

An important step in identifying transportation needs in the Tyler Metropolitan Planning Area (MPA) is to create an in-depth understanding of the existing population and employment trends occurring in the area. Land use patterns and demographic trends directly influence which modes of travel people use. In areas where development is spread out and land uses are separated, people are more likely to use personal automobiles and travel further distances throughout the day, whereas, areas with dense, mixed-use development typically have shorter trips and higher utilization of alternative modes of transportation, such as transit, bicycles, and walking. The roadway analysis in this chapter is largely based on traffic forecasts provided by the Tyler Area Metropolitan Planning Organization's (TAMPO's) Travel Demand Model (TDM). A TDM is a tool that forecasts travel patterns throughout a network based on roadway characteristics and transportation demand. This is predominantly determined by land use and demographic information. The TDM produces performance metrics for segments of a roadway network that indicate estimated traffic volume and average vehicle speeds for each roadway segment. The metrics provided by the TDM can be used to calculate various measures of congestion that inform the evaluation of potential deficiencies on the roadway network. The growth trends occurring in the region have an impact on the performance of the transportation system and how users will interact with the system both now and in the future, and considering these trends will help inform what types of transportation improvements are needed for the Tyler MPA over the next 25 years.

The analysis of needs for the existing transportation system and for 2045 was supplemented where necessary and/or appropriate with public or stakeholder input derived from outreach events or surveys of transportation system users. Table 3-1 summarizes the results of majority of the analysis for the existing performance measures. As discussed in Chapter 2, national performance goals serve as a base structure for transportation system performance measurement; TxDOT uses these national goals to create state-specific measures and targets. This evaluation of current conditions serves as a baseline comparison between the Tyler MPA's system performance and the system expectations set at the state level by the State of Texas. This in turn creates helps create a gauge for assessing the MPA's transportation system performance. The following table of metrics establishes a baseline for performance on the required federal measures. In the next MTP update, the Tyler MPA will be able to apply performance management principles to compare the baseline metrics against the conditions for the 2025-2050 MTP to gauge level of impact from transportation investments, and where these investments have contributed to regional and statewide goals as gauged by these metrics.

Table 3-1: National Goal Performance Measures- Tyler Area Current Conditions

National Goal	Measure(s)	TAMPO Performance	*TXDOT Targets
*Safety	Number of fatalities;	183	3,840
	Rate of fatalities per 100 million Vehicle Miles Traveled (VMT).	1.5	1.406
	Number of serious injuries;	639	17,394
	Rate of serious injuries per 100 million VMT.	5.1	6.286
	Number of non-motorized fatalities	37	**2,285
	Number of non-motorized serious injuries.	50	
	***Transit: Total number of reportable fatalities and rate per total vehicle revenue miles by mode.	-	-
	***Transit: Total number of reportable injuries and rate per total vehicle revenue miles by mode.	-	-
	***Transit: Total number of reportable events and rate per total vehicle revenue miles by mode.	-	-
Infrastructure Condition	Percentage of pavements of the Interstate System in Good condition	97.9%	--
	Percentage of pavements of the Interstate System in Poor condition	0.0	--
	Percentage of pavements of the non-Interstate NHS in Good condition	74.6%	52%
	Percentage of pavements of the non-Interstate NHS in Poor condition	6.1%	14.3%
	Percentage of NHS bridges classified as in Good condition	63.0%	50.58%
	Percentage of NHS bridges classified as in Poor condition	0.0%	0.8%
	Transit % revenue vehicles (by type) that exceed useful life benchmark (ULB)	51%	<15%
	Transit % non-revenue service vehicles (by type) that exceed ULB	0%	<15%
	Transit % facilities (by group) rated less than 3.0 on Transit Economic Requirements Model (TERM) scale	0%	<15%
Congestion Reduction	No required measures for small MPOs and/or areas in attainment for air quality	-	-
System Reliability	Percentage of person-miles traveled on the Interstate that are reliable	100%	61.2%
	Percentage of person-miles traveled on the non-Interstate NHS that are reliable	93.7%	--
	***Transit: Mean distance between major mechanical failures by mode	-	-
Freight Movement & Economic Vitality	Truck Travel Time Reliability Index (TTTRI)	1.4	1.7
Environmental Sustainability	No required measures for small MPOs and/or areas in attainment for air quality	-	-

*TxDOT Targets indicated for various years; 2020 Roadway Safety, 2020 Bridge and Pavement Conditions (--no targets indicated for interstate), 2020 System Reliability, 2022 Transit Asset Management (TAM). Roadway Safety target expressed as 5-year average.

*National Goal Performance Measures for Safety are based on a 5-year period of data.

**Target represents combined Non-Motorized Fatalities & Serious Injuries

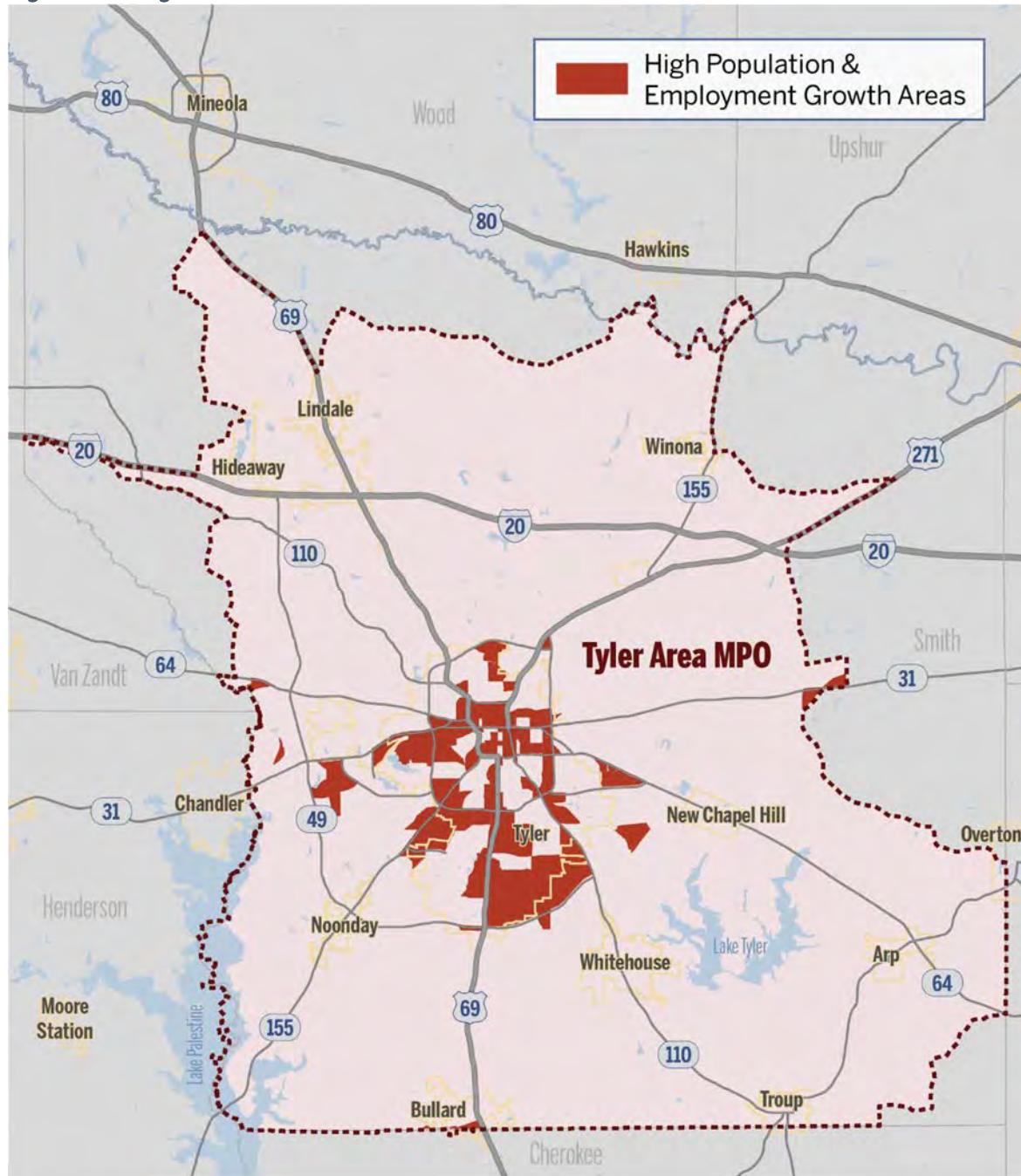
***Public Transportation Agency Safety Plans (PTASPs) and associated transit safety performance measures are not required to be in place until July 2020. These measures have been included here as reference to the coordinated planning process and further consideration will be applied as targets are established by relevant transit agencies.



Regional Growth Patterns

The growth projected in the regional TDM over the next 25 years represents growth in industry and population and affects the demands on the multi-modal transportation system. Mode choices, freight, maintenance needs, and possibilities for increase in capacity are all affected by how and where this growth happens. The transportation analysis zones (TAZ) used to group current and projected demographics are used to generate trip origins and trip destinations. Review of the regional growth patterns illustrated by the TDM is useful in understanding where and why traffic happens within a region. Analysis of the TDM shows an estimated 25 percent increase in population in the MPA, from 2018 (228,193) to 2045 (282,208). Similarly, there is an estimated 10 percent increase in employment over the same years from 105,750 jobs to 115,531 jobs. Figure 3-1 shows the areas with the highest combined population and employment projected growth by TAZ.

Figure 3-1: Highest Combined Growth Areas 2018-2045



Roadway

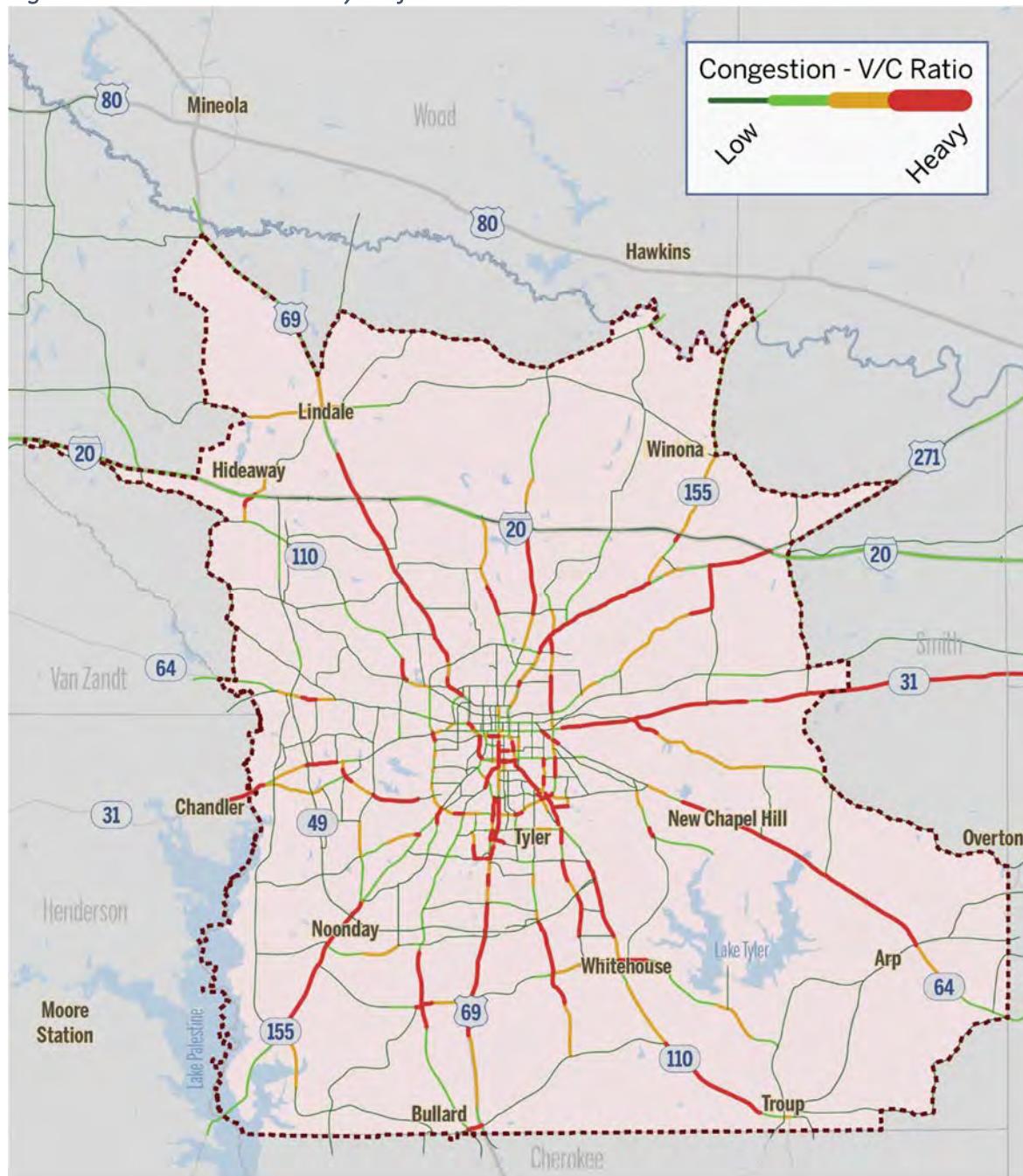
The foundation of the Tyler Area MPO area's transportation system is its roadways. Approximately 93 percent of all commuters traveling to work in the area do so by driving or riding in an automobile along the region's roadway network; this roadway infrastructure also supports other modes of transportation such as public transit. Because of this dependence on roadway, this MTP must identify where there are issues with the roadway network and determine where there are needs for improvement. The analysis and discussion in this section focus on commuter roadway travel, as well as using congestion and accessibility as key indicators of potential deficiencies. This assessment is intended to serve as a tool to pinpoint corridors experiencing high congestion throughout a typical weekday, highlight locations with accessibility concerns, and provide a baseline for evaluating roadway improvement projects.



Existing Conditions Congestion Analysis

The 2018 Existing Conditions scenario network (see Figure 3-2) shows high levels of congestion occurring along the major highways extend out from the City of Tyler that connect Tyler to surrounding municipalities (e.g. Whitehouse, Bullard, Lindale, New Chapel Hill). The TDM results suggest there is little congestion experienced on the major controlled-access roadways in the region (i.e. I-20 and Toll 49). In the City of Tyler, medium to heavy congestion is shown along the southern and eastern portions of Loop 323, as well as arterials south of SH 31 (e.g. S. Broadway Ave. Avenue/US 69, Troup Highway/SH 110, Old Troup Highway, and Golden Road).

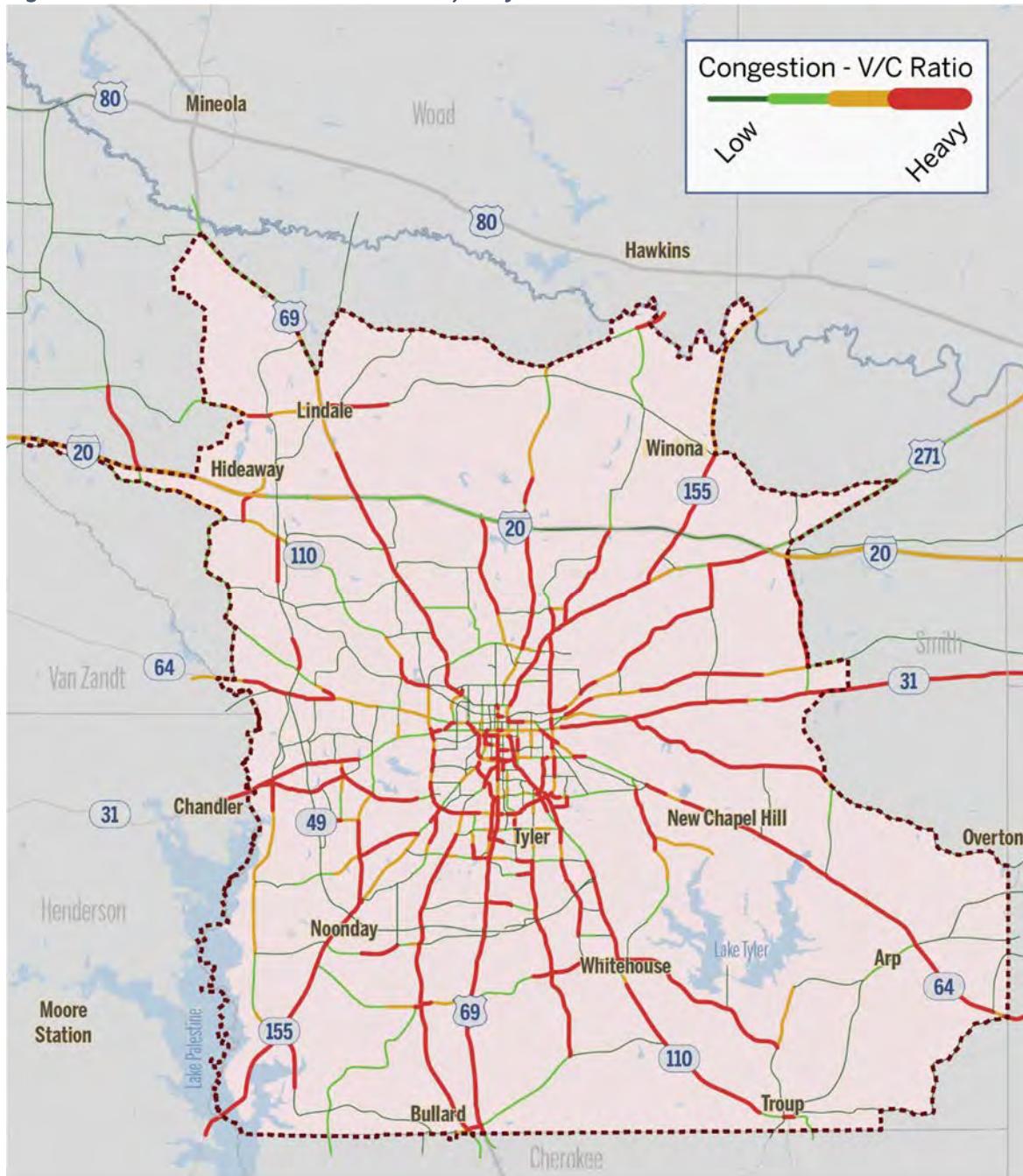
Figure 3-2:2018 TDM Roadway Performance



Future Conditions and Regional Roadway System Performance

The 2045 “No-Build” TDM scenario network (Figure 3-3) simulates no new investments past what is currently under construction or committed for construction. This “No-Build” scenario is not intended to imply a lack of future investment, rather it is intended to serve as a tool to highlight possible future network deficiencies. The 2045 “No-Build” forecasts high levels of congestion extending out along almost all major highways/principal arterials in the Tyler area. US 69, State Park Highway FM 14, and SH 155/US 271 are expected to experience heavy congestion along the entirety of the corridor from IH 20 into the City of Tyler. SH 31 East and US 69 South are expected to be highly congested for large portions of the facilities. The southern and eastern quadrants of Loop 323 are also expected to become highly congested by 2045, assuming there are no transportation improvements made before that time. Though congestion is expected to slightly worsen along portions of I-20 and Toll 49, the TDM results do not reveal any major anticipated congestion issues on these routes. In general, the highest levels of anticipated congestion occur along the major highways/arterials providing access to the City of Tyler, Loop 323, and roadways in the southern portions of the City of Tyler.

Figure 3-3: 2045 No-Build TDM Roadway Performance



Roadway Performance Conclusion

According to technical analysis of the TDM and stakeholder feedback, congestion in the TAMPO study area is currently an issue along the major highway/arterials connecting the City of Tyler and surrounding municipalities. Roadways with concerns include portions of US 69, SH 31, SH 110, and Loop 323. Over time, congestion is expected to worsen along these facilities and spread to other major roadways, such as FM 2493 and SH 155. In general, congestion is expected to become worse in areas where there is growth in population and employment. Congestion corresponds with this growth as roadways and major arterials in south Tyler (e.g. S. Broadway Ave.) are expected to become much more congested if no future transportation improvements are made. In addition to regular congestion, interviewed stakeholders were concerned about traffic management during holidays or major events and especially accessibility to hospitals and schools in the area.

Operations and Maintenance

Operational improvements and maintaining the current transportation system in a state of good repair can be an effective, lower cost strategy for improving transportation throughout the region. The following operations and maintenance (O&M) analysis identifies the condition of pavement and bridges in the TAMPO study area and aims to highlight any facilities that may require rehabilitation/maintenance. Figure 3-4 shows the locations of pavement or bridges in poor condition within the study area. Note that the map focuses on the City of Tyler, as all deficient roadways and bridges in the study area are located within Tyler.

Pavement

The pavement analysis incorporated 2017 pavement condition data from FHWA's Highway Performance Monitoring System (HPMS) and TAMPO. HPMS data provided a condition rating based on the International Roughness Index (IRI) for all National Highway System (NHS) roadways in Smith County. The roadway segment data was filtered further to only include segments that were within the TAMPO study area.¹ Based on guidance from the Code of Federal Regulations (23 C.F.R. §490.313), the IRI ratings for each roadway segment were classified into condition descriptions:

- Poor (IRI >170),
- Fair (IRI >=95 and <=170),
- Good (IRI <95).

¹ Portions of several segments extended outside of the TAMPO study area. These segments were included as major portions were still within the study area.

Bridges

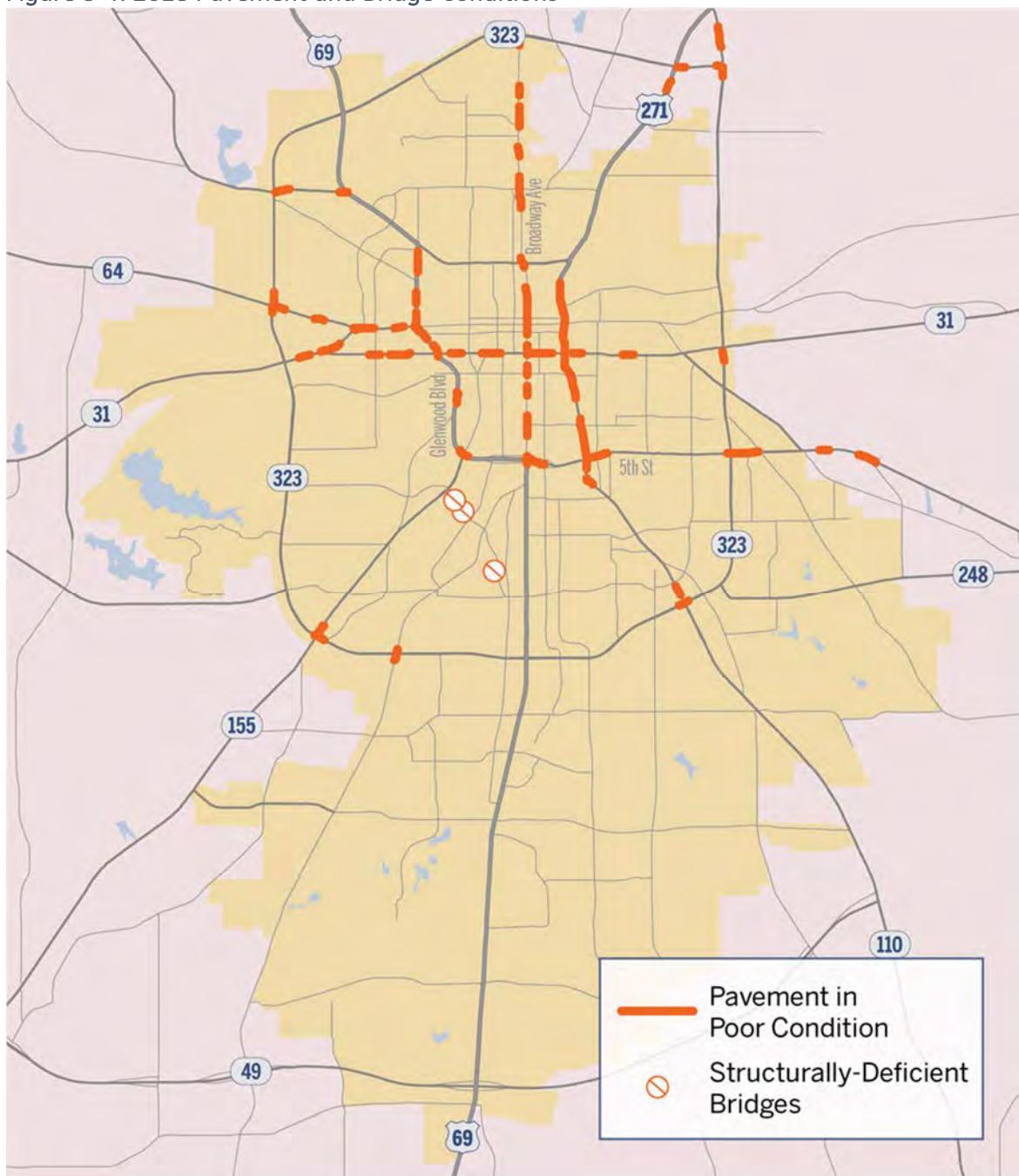
The bridge condition analysis incorporated data from TxDOT's Open GIS Data Portal, and followed guidance provided in FHWA's *Computation Procedure for the Bridge Condition Measures*², and the Code of Federal Regulations (23 C.F.R. §490.409). First, the data was sorted to only include overpassing bridges in the TAMPO Study Area that were open to vehicle traffic with a length greater than 20 feet. Next, a minimum condition rating (zero through nine) was assigned to each bridge based on the lowest condition rating (also zero through nine) among each bridges' four components (i.e. substructure, superstructure, deck, and culverts). Each bridge was then classified as follows based on its minimum condition rating:

- four or less is poor condition,
- four and five are fair condition, and
- seven or greater is good condition.

It is worth noting that the data available for these computations is based on 2018 inventory from TxDOT's Open GIS Data Portal and does not yet reflect the 2 bridge replacements on Sunnybrook Drive which opened mid-2019. Figure 3-4 does not reflect these changes and only reflects 2018 data.

² <https://www.fhwa.dot.gov/tpm/guidance/hif18023.pdf>

Figure 3-4: 2018 Pavement and Bridge Conditions



Safety Needs Assessment

A safety analysis for Smith County examines the needs of the region through the analysis of traffic crashes, injuries and the resiliency of the transportation system. Safety performance goals, measures, and targets were determined through gathering public feedback, understanding federal, state and local safety goals and completing a data-driven crash analysis process. Moving Ahead for Progress in the 21st Century (MAP-21) set national performance goals including the safety goal, “to achieve a significant reduction in traffic fatalities and serious injuries on all public roads.” FAST Act continues this goal and the United States Department of Transportation also states a safety goal to “Reduce Transportation-Related Fatalities and Serious Injuries Across the Transportation System” in the 2018-2022 strategic plan. The State of Texas also indicates safety as an important goal for all transportation users stating the need to “improve multimodal transportation safety.”

To gain a more complete understanding of the safety needs of the transportation system over the next 15 years, the safety analysis was based on patterns and characteristics of vehicle crashes on roadways. The base data was obtained from TxDOT’s Crash Records Information System (CRIS) data system for the years of 2013 – 2017. This process aids in the identification of opportunities for safety improvements for the region and specific intersections and roadways within Tyler MPA. As it is difficult to attain the necessary tools to predict future crashes for the transportation system in 2045, the safety needs assessment does not consider where crashes might occur in the future. It considers observed trends and hotspots for prioritizing safety improvements for the future.

Regional Trends

According to the CRIS data, there were a total of 27,551 crashes in Tyler MPA; however, approximately 7% of the crash records were excluded from the analysis due to incomplete location data. Of those nearly 28,000 crashes, 61% occurred in the Tyler city limits, while 32% occurred in the rural area of Smith County. The remaining crashes happened in smaller communities within the MPA. The geographic distribution of crashes in the region is depicted in Table 3-2 and with a density heat map of crashes in Figure 3-5. Figure 3-6 represents total crash count over time.

Table 3-2: Crashes by City

City	Crashes
Small MPO Cities	1,821
Rural Smith County	8,861
Tyler	16,869
Total	27,551

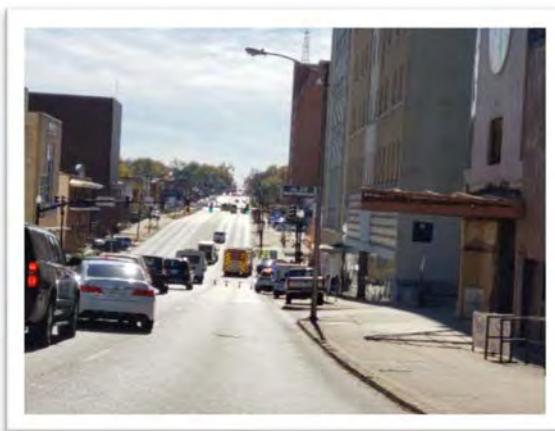


Figure 3-5: Crash Density Heat Map Tyler MPA

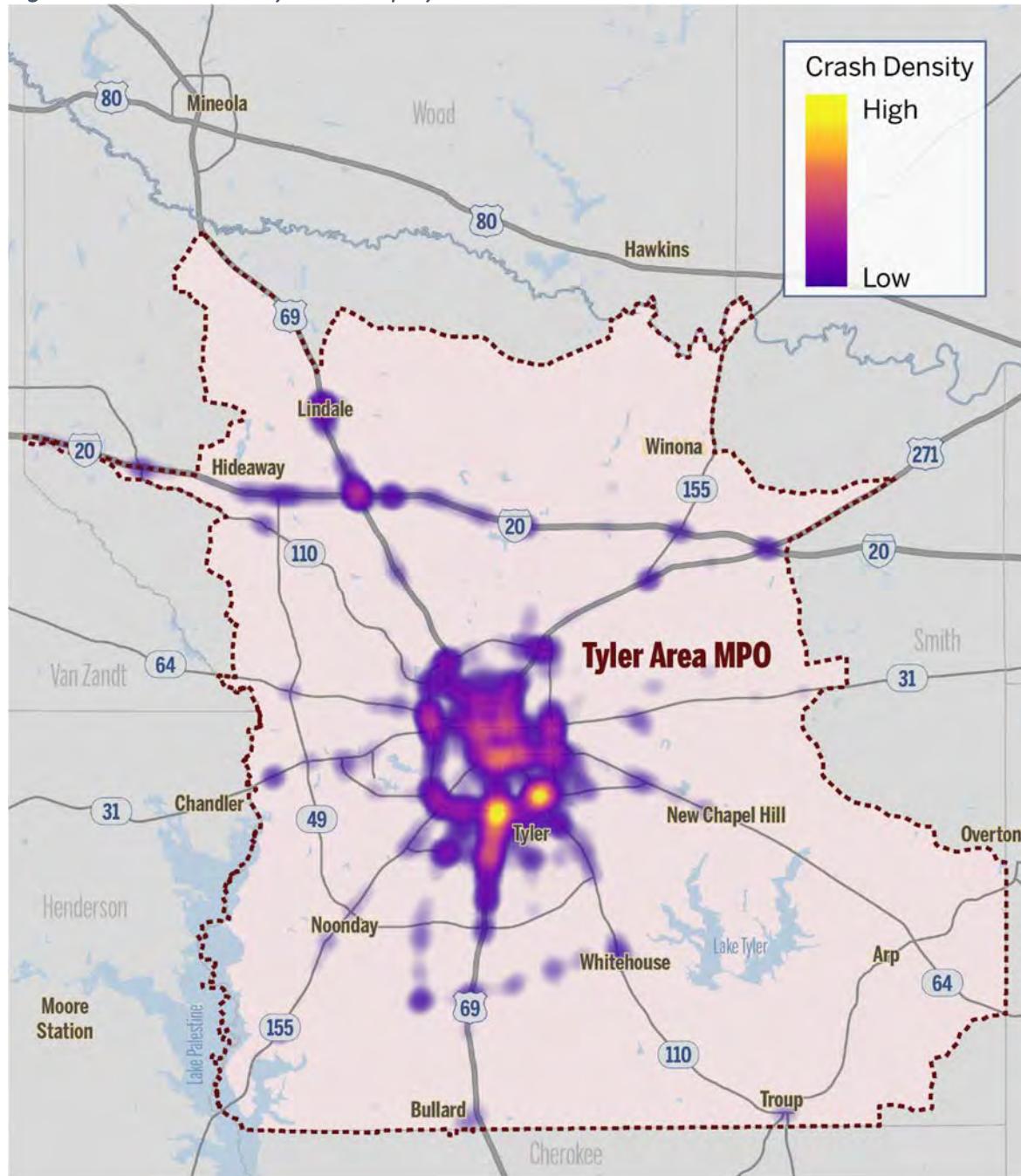
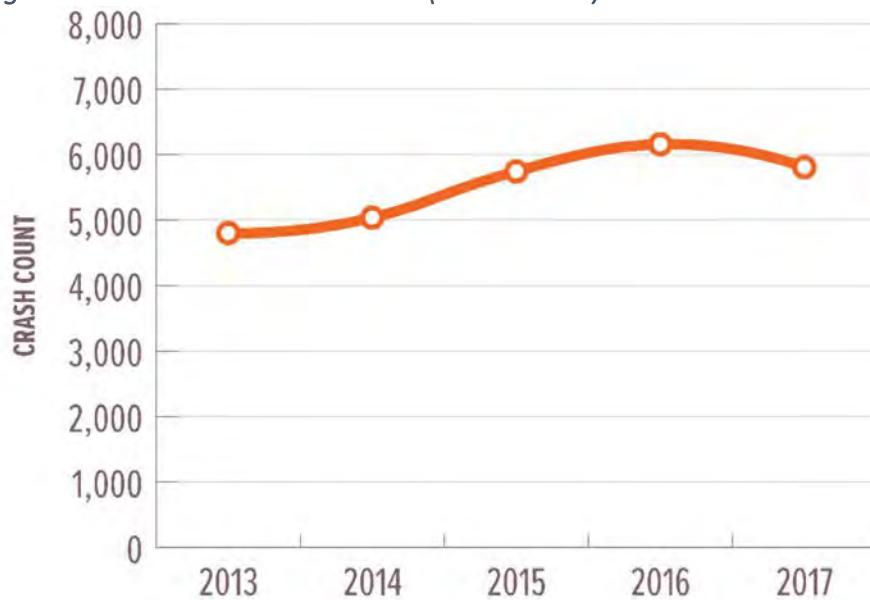


Figure 3-6: Crash Count Over Time (2013 - 2017)



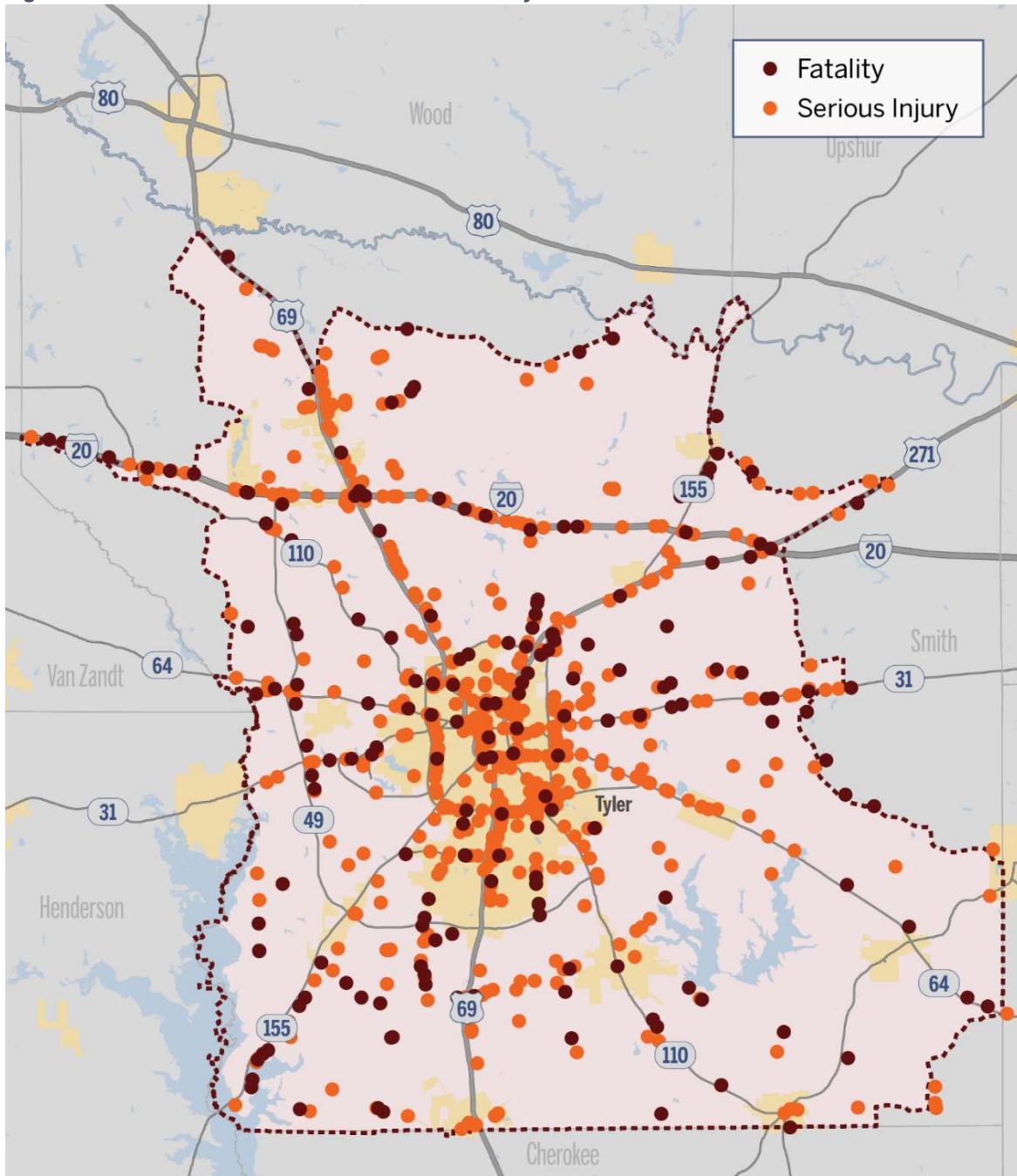
Crashes by Severity of Injury

Another planning factor is the severity of injuries in the crashes (e.g. fatal, serious injury, etc.). Over the 5-years, an overwhelming majority of the reported crashes contained no injury (66%) (Table 3-3). Of the 183 fatal crashes, there were a total of 203 fatalities. There were 800 serious injuries in the 639 serious injury crashes. In 2015, there were 46 fatal crashes in the study area, the highest number from the past 5 years. Non-Incapacitating Injuries made up 11% of total crashes, while Fatal and Serious Injury crashes combined made up almost 3% of total the crashes in the region. The project team mapped the crashes in the past 5-years that included a serious injury or fatality. As shown in Figure 3-7, crash data is clustered among US and State Highways, where higher speeds and more traffic result in higher instances of injury or death.

Table 3-3: Crashes by Severity 2013- 2017

Crash Severity	Crashes
Fatal	183
Suspected Serious Injury	639
Non-Incapacitating Injury	2,917
Possible Injury	4,849
Not Injured	18,303
Unknown	660
Total	27,551

Figure 3-7: Crashes with Fatalities or Serious Injuries 2013 -2017



Crashes Involving Pedestrians and Bicyclists

In the Tyler MPA, crashes involving cyclists or pedestrians totaled 249. Of the 249 crashes, 78% involved people on bicycles, and the remaining 22% involved people walking. Of the crashes involving cyclists, 40% resulted in fatal or serious injuries while pedestrian crashes were 16%. When combining serious injury and fatalities, these increase to 40% for bicyclists and 16% for pedestrians. (Table 3-4)

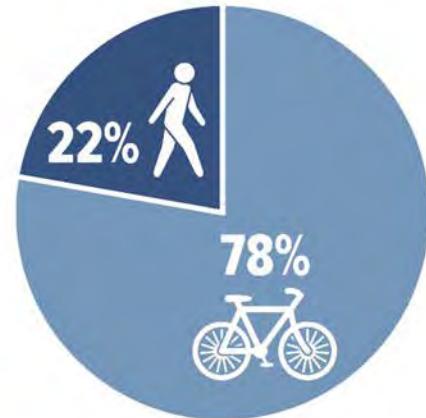
Table 3-4: Fatality or Serious Injury of Pedestrians and Cyclists

Crash Severity	Pedestrian	Bicycle
Fatality	4	33
Serious Injury	5	45
Total	9	78

Figure 3-8 compares the distribution of recorded bicycle and pedestrian crashes within the MPA between 2013 and 2017.

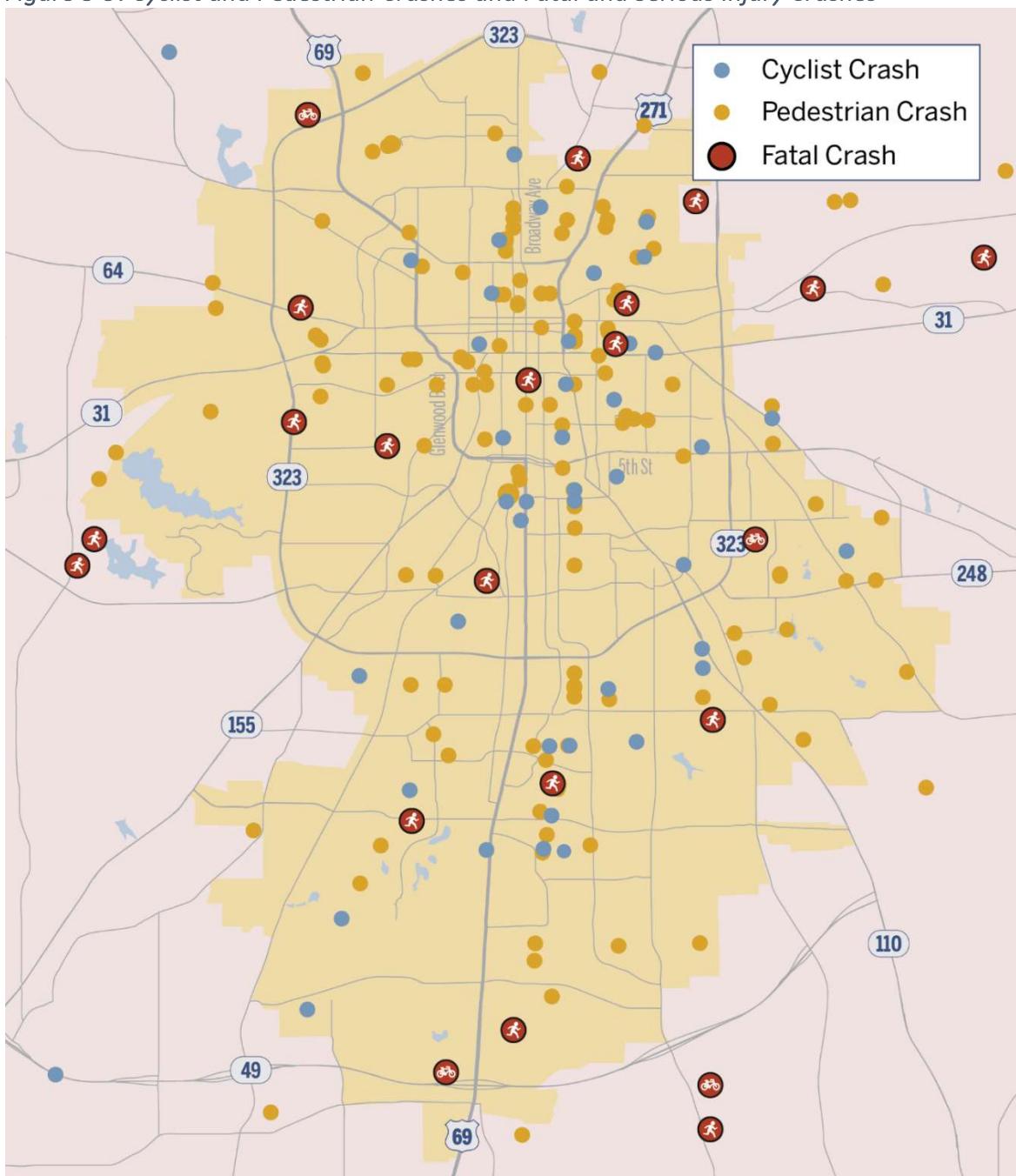
Figure 3-8: Bicycle or Pedestrian Crash Count 2013-2017

249 CRASHES
involved **bicycles or pedestrians**
over the 5-year period.



A large portion of the crashes are contained within the Tyler urbanized area, where a greater number of people walk or bike, which is shown in conjunction with the fatal and serious injuries in Figure 3-9.

Figure 3-9: Cyclist and Pedestrian Crashes and Fatal and Serious Injury Crashes



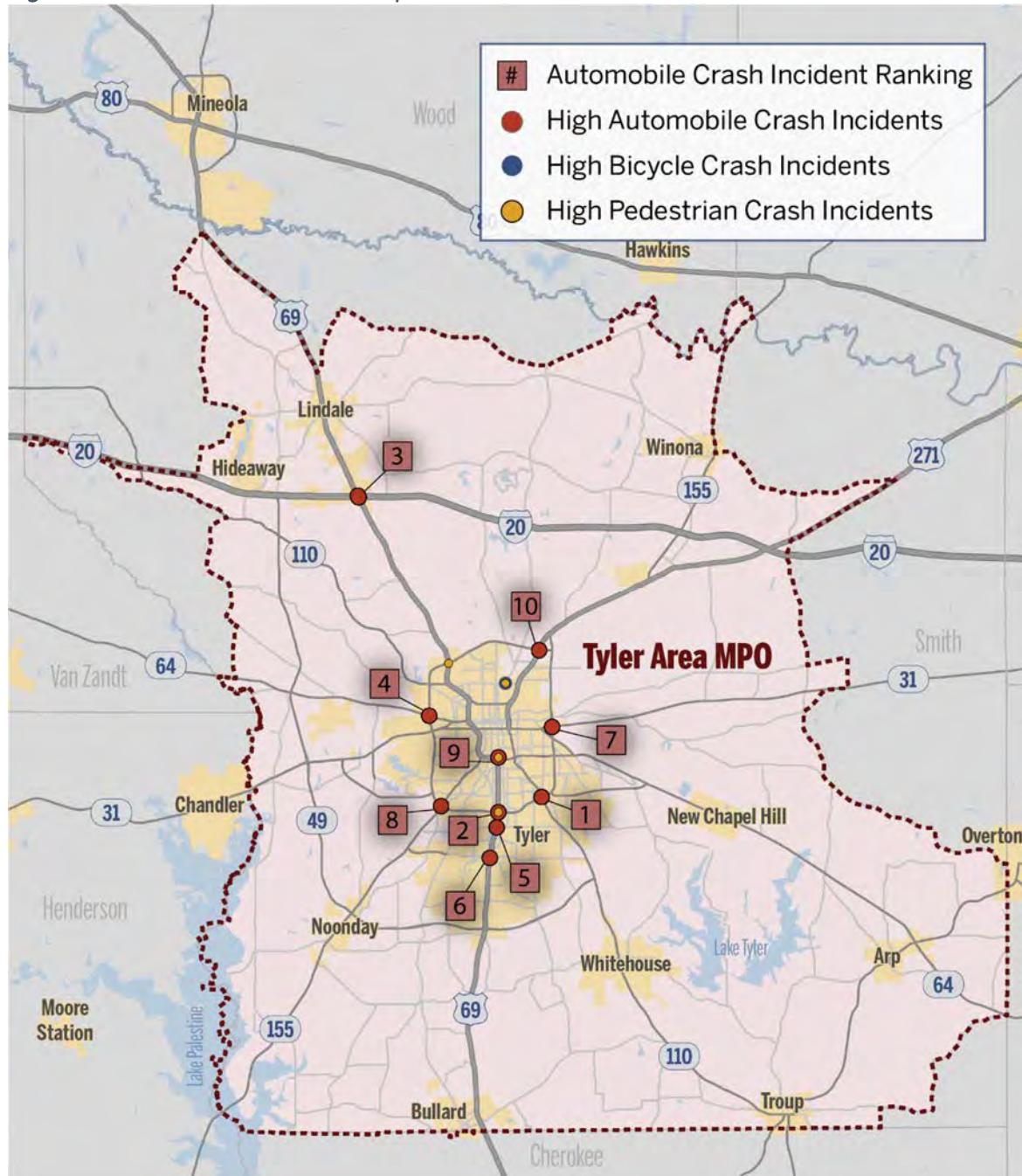
Intersection Trends

The project team performed a proximity analysis to associate intersection crashes to the nearest intersection using a 150-foot buffer. Due to the larger nature of interstate and highway intersections, 150-foot buffers were merged to encompass the entire intersection area and to count the associated crashes. Table 3-5 below displays the top ten intersections regarding total automobile crashes, while Figure 3-10 shows these locations as well as intersections with above average occurrence of bicycle and pedestrian crashes.

Table 3-5: Intersections with High Crash Counts

Rank	Intersection	Total Crashes
1	Troup Hwy / E Southeast Loop 323	333
2	S Broadway / Tx 49 Toll	267
3	IH 20 / Tx 49 Toll	201
4	W Erwin / N Northwest Loop 323	172
5	W Rice / S Broadway	170
6	W Grande / S Broadway	151
7	E Front / S Southeast Loop 323	146
8	N Frankston Hwy / W Southwest Loop 323	141
9	4 th / S Broadway	137
10	E Northeast Loop 323 / Hwy 271	136

Figure 3-10: Intersection Crash Map



Transit

The following analysis contains an inventory of existing services, an in-depth look at population employment coverage of the existing system, a gap analysis based on transit supply/demand and key destinations found within the study area. The information gathered from existing data and public engagement, guided the transit needs analysis.

Existing Service

Generating an understanding of the region's existing transit system helps identify the strengths of the system, as well as where deficiencies in service occur. Figure 3-11 displays the current fixed-route system found in the Tyler MPA.

Tyler Transit

Tyler Transit is the main transit provider in the Tyler MPA, providing roughly 200,000 trips annually through a combination of 12 buses running on 5 fixed-route services and 12 paratransit/demand response vehicles. The service area contains approximately 203 bus stops, with 76 of the stops containing some sort of shelter amenity, covering 56 square miles and serving an area population of 110,490 per the National Transit Database (NTD). All five routes run from 6:00 am to 8:15 pm Monday through Friday and from 9:00 am to 6:00 pm on Saturdays.

GoBus

GoBus is a rural demand response transit service that is operated in the 14-county region of East Texas governed and operated under the East Texas Council of Governments (ETCOG). GoBus serves the entire Tyler MPA excluding the City of Tyler. Rides must be scheduled 24hrs in advance. Service is provided Monday – Friday from 6:30 am to 5:30 pm.

NDMJ Ltd.

NDMJ is a taxi company that offers on-demand transportation services to residents in the MPA.

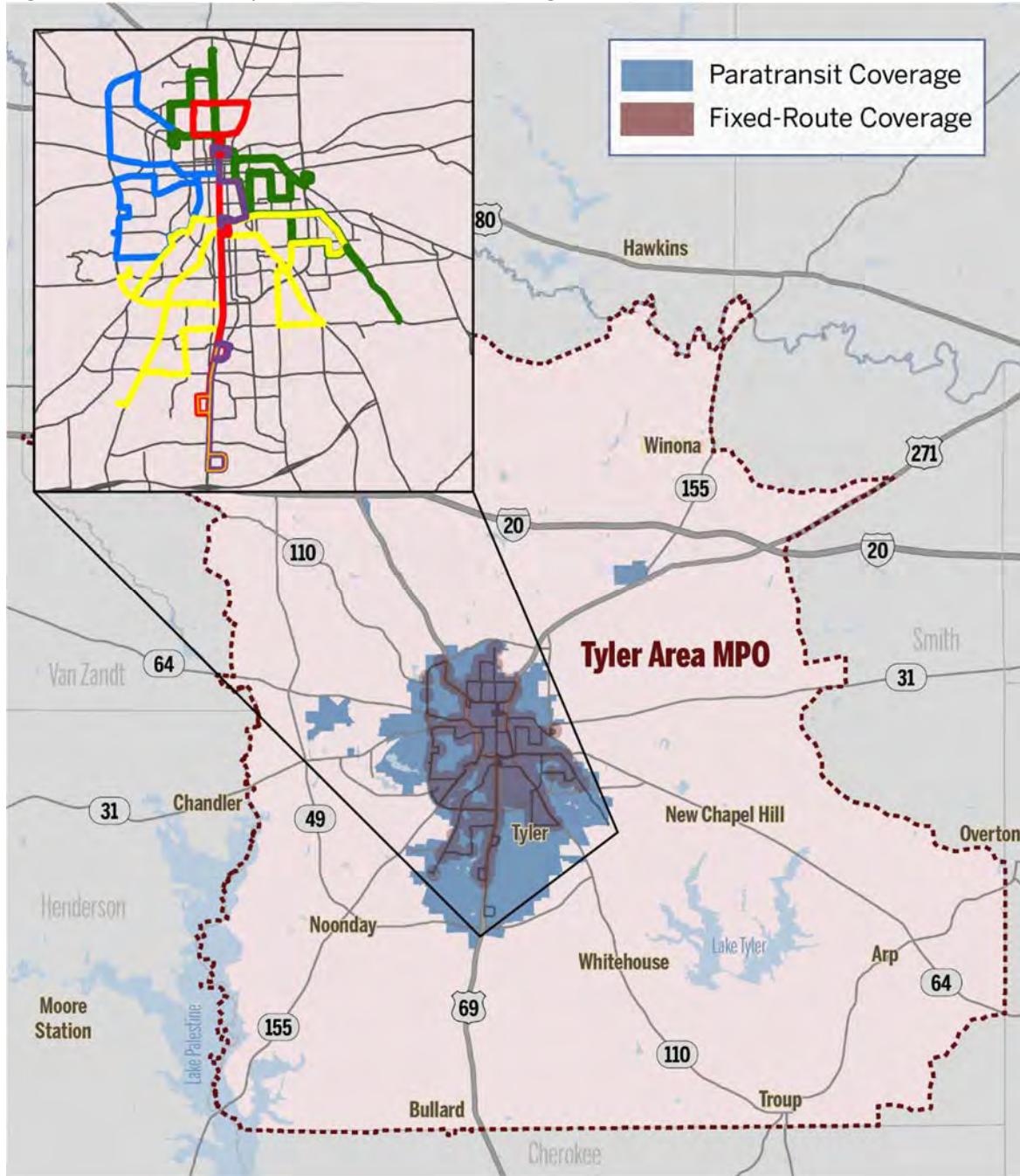
Chariot Bus Lines

Chariot Bus Lines offers fixed-route service with wheel chair access from Athens, TX to Tyler, TX once per day.

UT Health at Tyler

This shuttle offers free rides to individuals needing transportation to UT Health clinics in Tyler. Buses are wheelchair accessible and operate on a fixed-route between the Tyler Transit Depot and five UT Health Clinics. Four round trips are made per day, Monday through Friday.

Figure 3-11: Current Tyler Transit Service Coverage



Tyler Transit also provides a demand response, paratransit service in conjunction with its fixed-route system. The service provides curb-to-curb service anywhere within the City of Tyler for those who are ADA eligible. This service complements the fixed-route service area and hours of operation (excluding Sundays and Holidays) and extends coverage $\frac{1}{2}$ of a mile outside of the fixed-route coverage.

Transit Gap Analysis

In order to understand how well the current transit system serves the Tyler MPA, the project team conducted a transit gap analysis based on existing service, as well as a GIS based spatial analysis to generate measures which show transit demand and supply throughout the region. Both measures were analyzed separately regarding transit service to find specific areas where supply is currently lacking and demand is high, and vice versa.

Transit demand is inherently reliant upon concentrations of population and employment in a region. Wherever clusters of people live or work, there will be higher demand for transit services. Accordingly, a qualitative analysis looking at existing transit coverage relative to future growth of population and employment was conducted to gain an understanding of where concentrations of both metrics are projected to occur, and if these areas are in a location that falls within transit coverage. Future growth for both population and employment are based off the 2045 Tyler TDM, which was executed for 2018 (base year) and 2045 (forecast year).

Transit Dependent Population & Target Transit Riders

Transit dependent population (TDP) is an indicator for transit demand and measures captive riders (i.e. those whose mobility is almost entirely dependent on public transportation). TDP represents transit demand primarily by utilizing age (those too young to drive), household drivers, group quarters population, and household vehicles available. For the Tyler Area MPO, staff utilized a U.S. Department of Transportation (USDOT) formula (last modified in 2011 by the Capital Area Transit Authority in Lansing, Michigan) to locate regions containing larger concentrations of driving age citizens with limited to no access to personal automobiles. Analysis used data from the 2017 American Community Survey (ACS) at the block group level, which provides detailed demographic information applicable to transit-dependent population calculations not attainable from the Decennial Census. The following displays the various formula steps and necessary inputs for each step:

- Household Drivers = (population age 18 and over) - (persons living in group quarters)
- Transit Dependent Household Population = (household drivers) – (vehicles available)
- Transit Dependent Population = (transit dependent household population) + (population ages 10-17) + (non-institutionalized population living in group quarters)

While it is feasible for anyone 16 years of age and older to obtain a driver's license, it is substantially less likely that everyone between the ages of 16 and 18 own or have consistent access to a personal automobile. ACS also does not provide data sets with break points at the age of 16. Further, ACS data

does not distinguish between institutionalized and non-institutionalized populations within group quarters arrangements. Accordingly, this figure was based on the relative proportion of institutionalized to non-institutionalized populations provided by the 2010 Census.

This method for measuring transit-dependent population provides a conservative estimate and serves as a base number for transit dependency. Disabled populations, elderly populations, or people living in poverty are not specifically factored into this methodology. This approach is meant to provide an overall sense of how many people are likely to be more dependent on public transit service (5307 or 5311), while the more vulnerable populations are considered through other means of analysis which focus on specialized transportation service (5310). After completing the TDP calculation, it is measured in both TDP density and TDP percentage per block group. Both measures are given a score from 1 (low) to 5 (high) based on the following break points listed in Table 3-6.

Table 3-6: TDP Scoring

SCORE	DENSITY (PER MILE)	% OF BLOCK GROUP
1	Less than 400	Less than 30%
2	400 – 1,000	30% to 40%
3	1,000 – 1,600	40% to 50%
4	1,600 – 3,000	50% to 60%
5	More than 3,000	More than 60%

“Combination Scores” were then generated by weighting both density (75%) and percentage (25%) and inputting into the following formula:

$$\text{Combination Scores} = (.75 * \text{TDP Density Score}) + (.25 * \text{TDP Percentage Score})$$

This weighting allows for the formula to adjust for the fact that block groups vary in size, allowing the results to identify areas with high concentrations of citizens without access to a personal automobile.

Figure 3-12 displays the resulting concentration of TDP, incorporating both population density and block group percentage, by final Combination Scores. The final scale once again ranges from 1 to 5, with values closer to 1 representing block groups with low TDP, and vice versa. Figure 3-13 displays Transit-Dependent Population Gaps by Block Group.

TDP in the region tends to be concentrated within the Tyler Urbanized Area (UZA); existing transit coverage appears to cover a large portion of high TDP regions. However, coverage does appear to provide minimal service to areas in South Tyler and east along SE Loop 323.

Figure 3-12: Transit-Dependent Population Combination Scores by Block Group

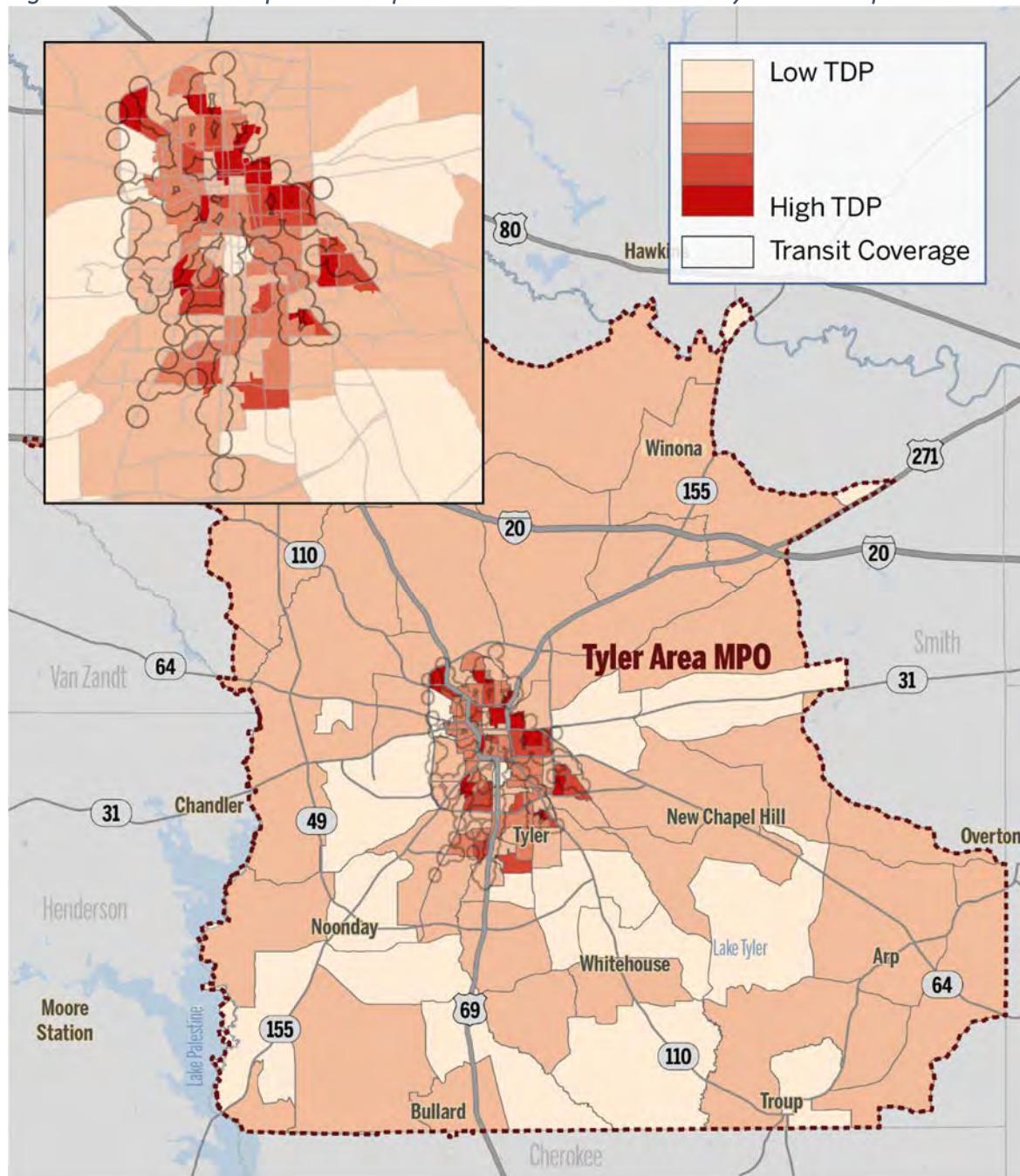
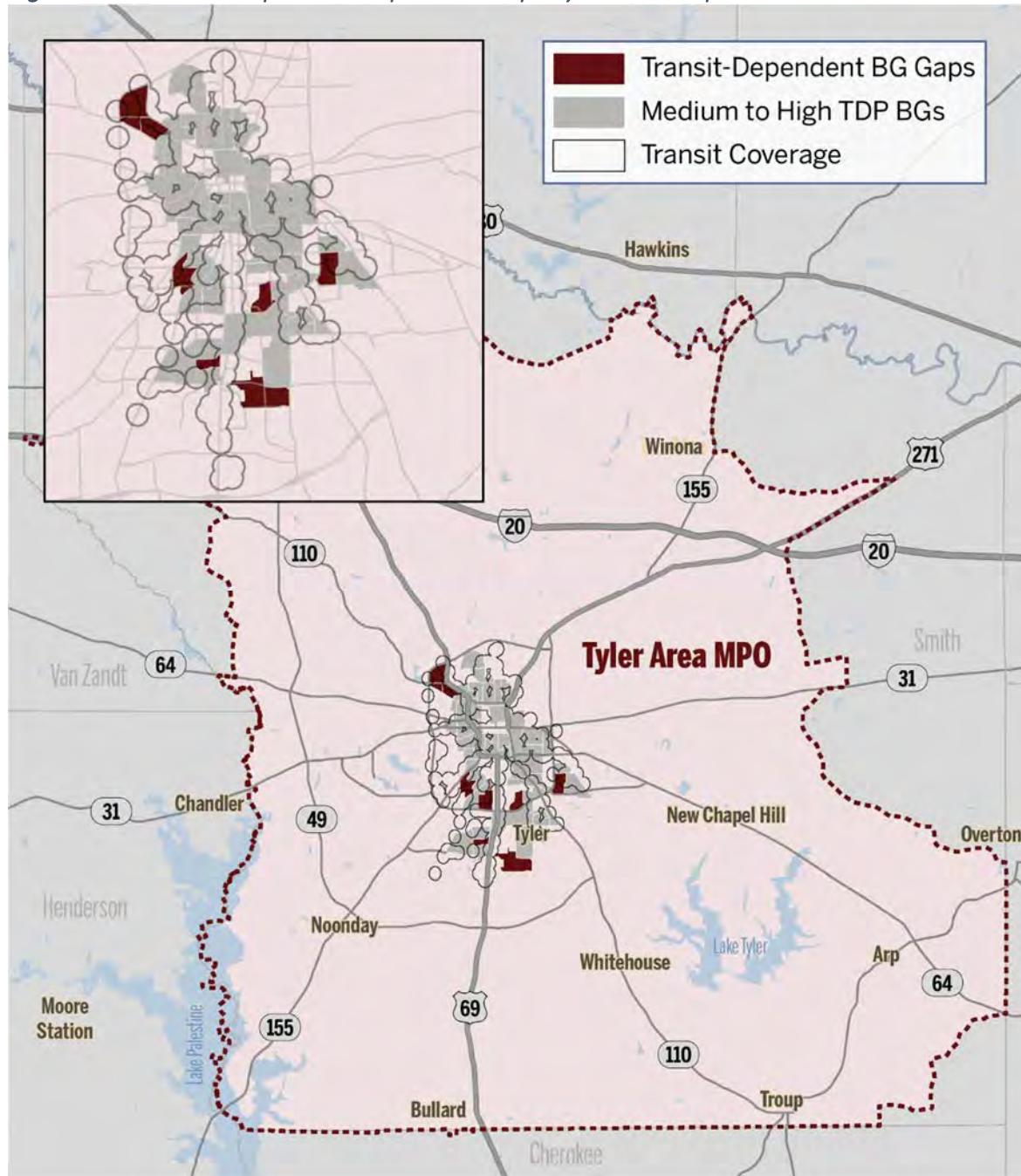


Figure 3-13: Transit Dependent Population Gaps by Block Group



Target Transit Rider Subareas

While transit-dependent population is important for quantifying transit demand, it is more specific to citizens unable to attain or drive an automobile; TDP does not include other socioeconomic metrics that would classify citizens as “Target Transit Riders,” or those more likely to need transit due to health, physical ability, and for fiscal reasons. These subgroups make up a much less conservative estimate for transit demand compared to transit-dependent population estimates. Target Transit Riders for the purpose of this study includes the elderly (citizens over the age of 65), citizens with disabilities, citizens living below the poverty line, and low-income households. All subgroup values were retrieved from the 2017 5-year ACS.

Methods used to calculate Target Transit Rider (TTR) subareas replicate those used to calculate TDP mentioned in the previous section. Combination scores for each subgroup were developed by measuring both the area’s density and population (for all four demographic subgroups) and inputting them into the combination score formula. Break points were based off natural divisions provided by Geographical Informational Systems (GIS) calculations. TTR analysis differs from TDP in that each demographic subgroup’s top ten percent block groups were selected and highlighted to show specific subregions in the MPO area containing captive transit riders. An overlay analysis was then performed to identify any subareas containing multiple TTR demographic subgroups, indicating areas in the MPO region containing high transit demand.

Figure 3-14 displays the TTR subgroups, as well as block groups containing three or more subgroups that fall within the top ten percent of a subgroup value, as located within the MPO region. Generally, TTR subgroups of interest are found within or adjacent to Tyler city limits, and therefore fall within coverage of existing Tyler Transit service. However, there remain existing demand gaps in the following locations:

- Along US 69 and N NW Loop 323 (Disabled subgroup)
- Northwest of the Toll 49/IH 20 Hwy Junction (Overlapping TTR subgroups)
- Areas adjacent to the SW Loop 323/US 69 Junction (Non-Driving subgroup)
- Southwest Tyler (Non-Driving subgroup)
- Hideaway (Non-Driving subgroup)

Figure 3-15 displays the areas experiencing TTR/demand gaps, as listed above.

Figure 3-14: Target Transit Rider Subareas by Block Group

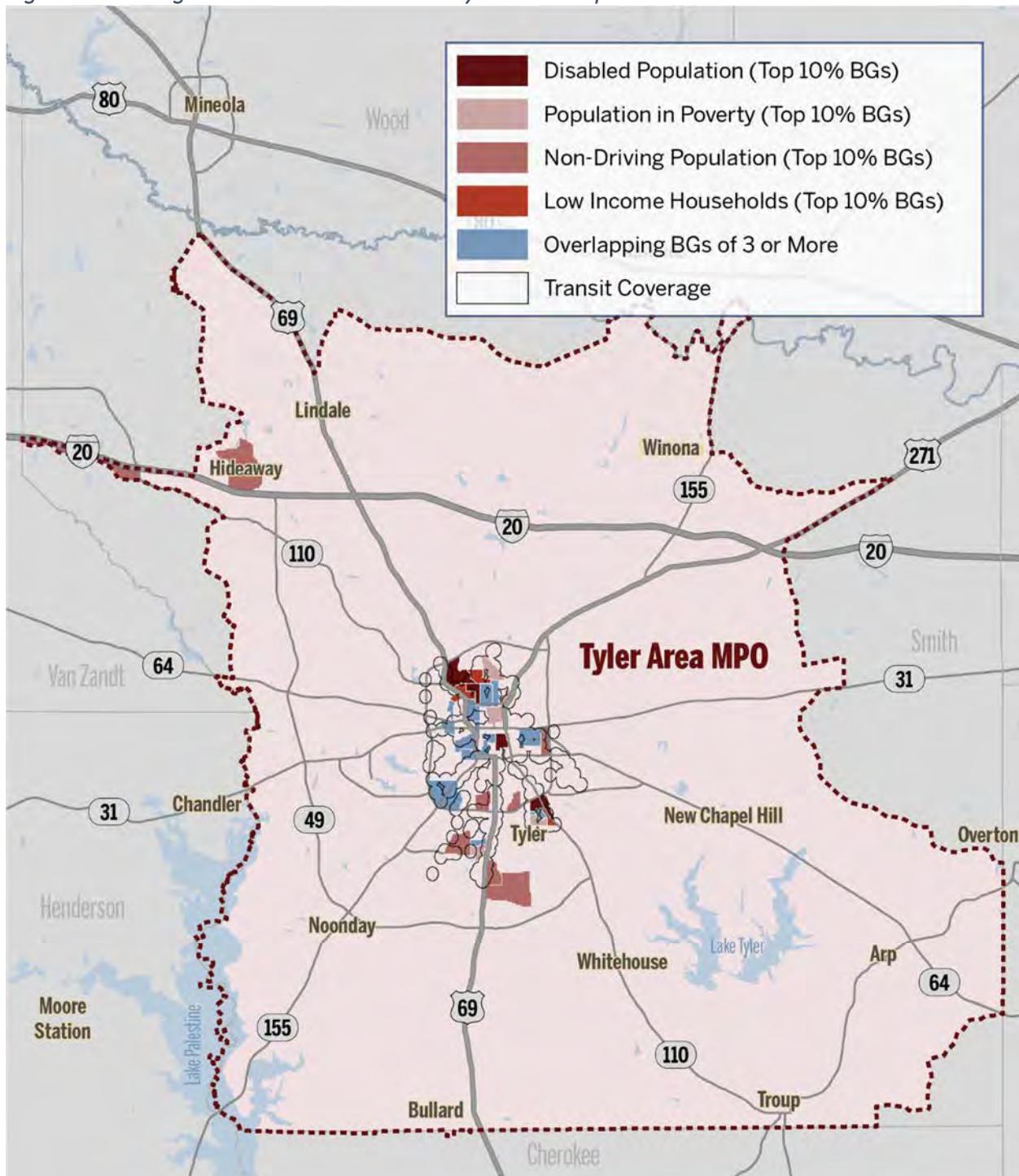
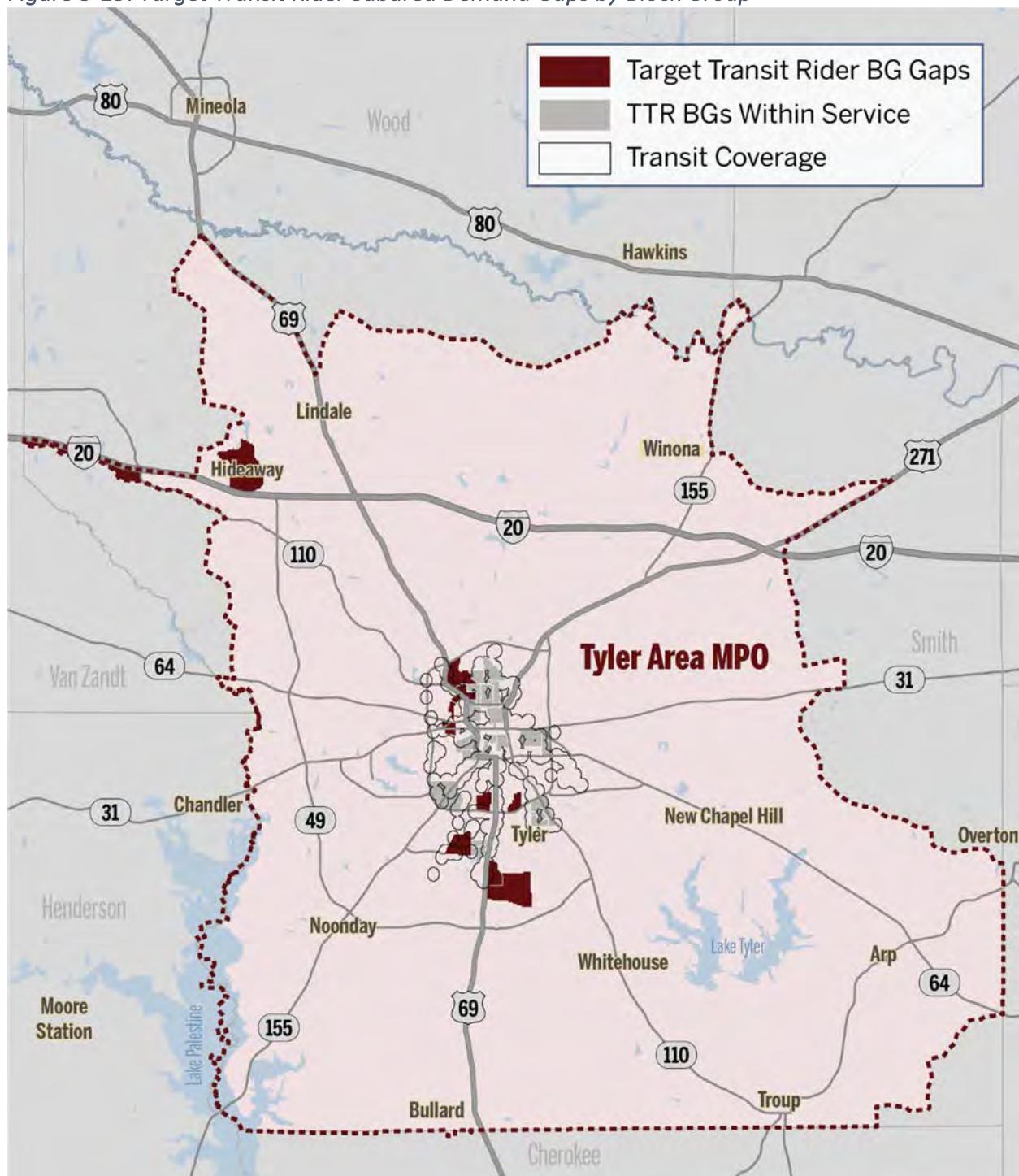


Figure 3-15: Target Transit Rider Subarea Demand Gaps by Block Group



Transit Supply

Transit supply is represented by the quality of service (e.g. route frequency, span of service, weekend/night coverage, etc.) and amenities (e.g. shelters, real time updates, etc.) provided to the general public through existing transit coverage. Currently, Tyler Transit provides the same span of service (6 am to 8:15 pm weekdays/9 am to 6 pm Saturday), and same frequency (60-minutes) for all routes, except for a minor variation in service coverage on Saturday (there is a slight reduction from coverage south on HWY 69). Because of the lack of disparity in existing supply conditions, an analysis on coverage regarding points of interest (POI) within the MPO region has been conducted to display how well the current fixed route system is serving important destinations found in the area. Table 3-7 displays the amount of POIs captured within exiting transit coverage by category. Land use/establishments considered POIs in this study are as follows:

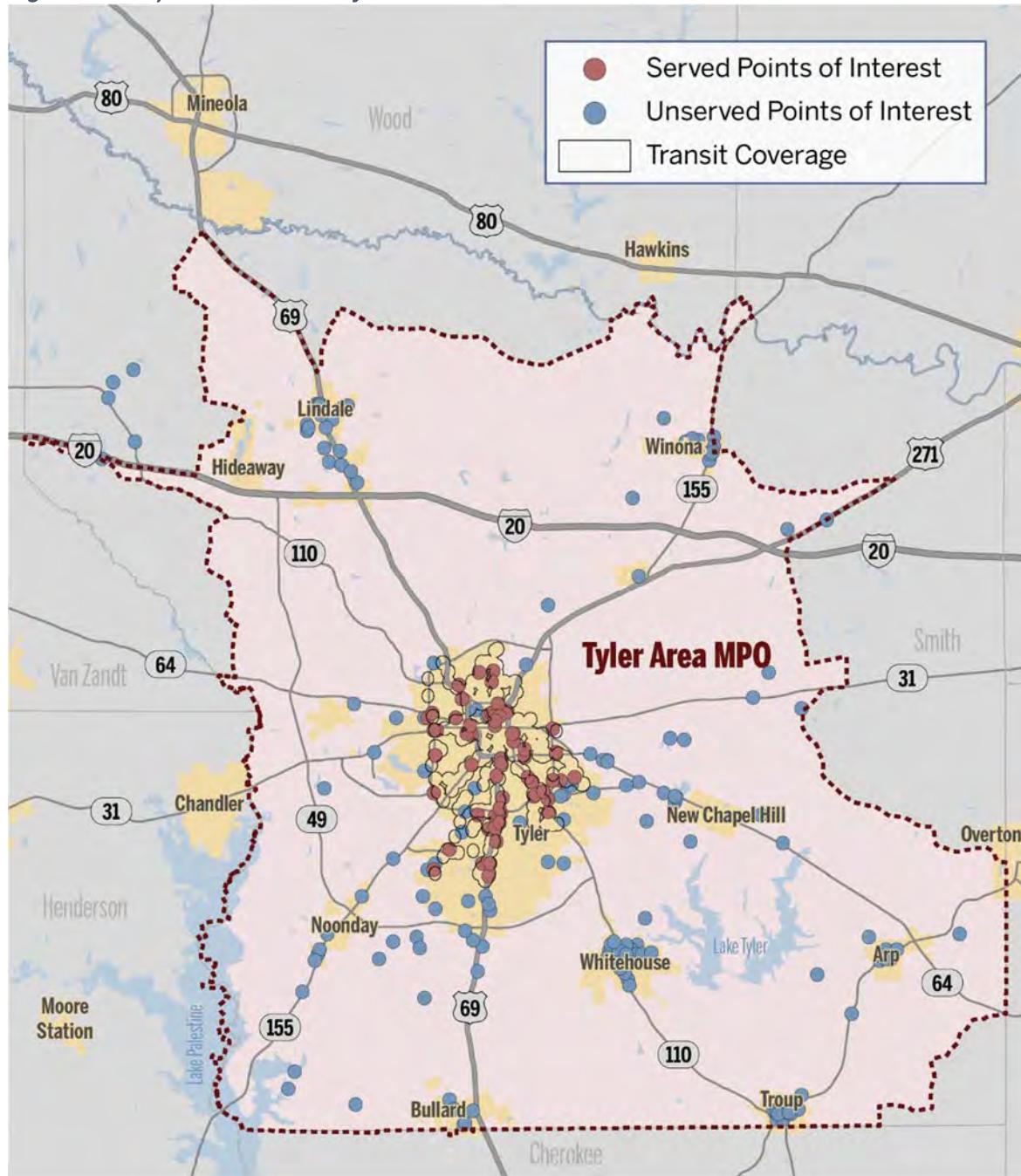
- Retail Centers
- Schools (K-12)
- Religious Institutions
- Hospital Facilities
- Higher Educations (University and Community College)
- Grocery Stores
- Government Facilities (Local, State, and Federal)

Table 3-7: Points of Interest and Transit Coverage

	Total	Covered	Not Covered	% Covered
Retail	8	7	1	88%
Schools	44	9	35	20%
Religious	93	6	87	6%
Hospital	7	5	2	71%
Higher Edu	4	3	1	75%
Grocery	34	16	18	47%
Gov	32	17	15	53%
Total	222	63	159	28%

Figure 3-16 shows the spatial distribution of POI in the planning area. Tabular data displays over 70% of hospital retail and higher education POIs to fall within fixed-route coverage. Schools and religious facilities had the lowest coverage percentage (20% and 6%, respectively). This is due to the lack of fixed-route service in rural MPO areas; both POI categories contain a substantial amount of locations outside of the Tyler UZA where all transit is currently provided. Accordingly, POIs within the Tyler UZA are adequately covered by existing transit service. However, all surrounding cities must either rely on demand response transit or other modes of transportation to connect to destinations throughout the MPA. Like the transit demand analysis, it appears that transit supply is lacking in the expanding South Tyler region.

Figure 3-16: Tyler MPO Points of Interest



Interregional Passenger Transportation

Though this MTP focuses on transportation within the TAMPO study area, it is also important to consider and evaluate the options for people traveling to and from other parts of Texas and the United States. The Tyler metro area is an economic, educational, and medical hub for northeast Texas, and there is a need for accessible transportation alternatives to get people in the region to the resources and services that are provided in the study area. Conversely, there is a need for those living within the study area to access resources or services provided outside of the region, such as the airport in Dallas/Fort Worth which provides connections to all over the United States. The following sections provide an overview of various interregional passenger transportation services to and from the Tyler MPA and identify any potential service needs or opportunities for improvement.

Air

Tyler Pounds Regional Airport primarily provides commercial passenger services within the region. The airport is located about 7 miles (roughly a 10- to 15-minute drive) west of downtown Tyler just off TX-64. Currently, commercial service at the airport includes a non-stop service between Dallas-Fort Worth International Airport via American Eagle and a non-stop to Denver by Frontier Airlines which was added in 2019. Table 3-8 shows only the number of passenger boardings at Tyler Pounds Regional Airport between 2013 and 2017. Boarding numbers over this time period saw a decrease due to United Airlines discontinuing service in 2016 amid airport improvements, construction and expansion which temporarily reduced the size of aircraft that could be accommodated.

Table 3-8: Tyler Pounds Boardings

Year	Boardings	% Change
2013	85789	-
2014	86625	1.0%
2015	72294	-16.5%
2016	52494	-27.4%
2017	49653	-5.4%

Source: Federal Aviation Administration



Inter City Bus

Tyler area travelers have several options when it comes to interregional bus services. Greyhound provides intercity bus service through its station in downtown Tyler, with direct service (i.e. service which requires no transfers) to Longview, TX; Dallas, TX; and Shreveport, LA. The station in downtown Tyler is located less than half a mile from Tyler Transit's Downtown Transit Depot, providing a walkable connection between the two services.

As mentioned in the previous section, GOBUS service provides individuals in rural portions of Smith County access to other rural areas in the region, provided they schedule their trip up to a day ahead of time and only during the weekday. GOBUS does not currently provide service into any urban areas in the region. Though there are likely perceived barriers for a rural transit district to offer service into urban areas, this type of service could expand the opportunities for those living in rural areas to access the goods and services provided in cities like Tyler. At a minimum, coordination between urban and rural transportation services should occur on a regular basis. Opportunities may also exist to expand service hours or days.

Other private interregional/intercity bus services include the airport shuttle bus companies ETX Shuttle of Tyler and Airport Shuttle Service of East Texas, as well as Errands for All operating out of Longview, TX. ETX and Airport Shuttle both provide services from Tyler and surrounding municipalities in the TAMPO study area (e.g. Arp, Bullard, Whitehouse, Lindale, Hideaway) to the major airports in the region including Dallas/Fort Worth International, Dallas Love Field, and Shreveport Regional. Most of these services require scheduling or advanced reservations. "Errands for All" provides shuttle services between East Texas Regional Airport in Longview and Tyler Pounds Regional Airport. Each of these services provide important regional connections to other parts of Texas and the United States.

Conclusion

Interregional passenger transportation needs are difficult to identify given the wide variety of potential travel destinations for those living in and those traveling to the TAMPO study area. Nevertheless, there are opportunities to improve upon the services that are currently offered and provide better (i.e. cheaper or faster) connections to other regional hubs. One such improvement that does not necessarily require any additional capital funding is improved coordination and partnerships among the agencies that currently provide service. This can be achieved through regular communication and meetings with all transportation providers in the region, as well as continued support in implementing recommendations provided by EasTexConnects Committee.

Active Transportation

TAMPO has recently adopted an active transportation plan titled “*Active Tyler*.” This active transportation plan was developed by Toole Design on behalf of the MPO to assess the current conditions and needs for active transportation and propose facilities and strategies for the Tyler MPA. Projects and strategies from *Active Tyler* have been included in this MTP update. Active Tyler elements that coincide with planned improvements have been reviewed by the MPO and TxDOT and included in roadway projects where feasible or appropriate.

Current Conditions

Active Tyler identified just over 5 miles of bike lanes and multiple paved or dirt surface trails within the City of Tyler limits. The communities surrounding City of Tyler in MPA did not have any identified existing facilities. Figure 3-18 shows the location of bike lanes and trails in the Tyler UZA. Figure 3-17 shows a graphical representation of the conditions of current sidewalks within the MPA.

Figure 3-17: Metropolitan Planning Area Sidewalk Conditions

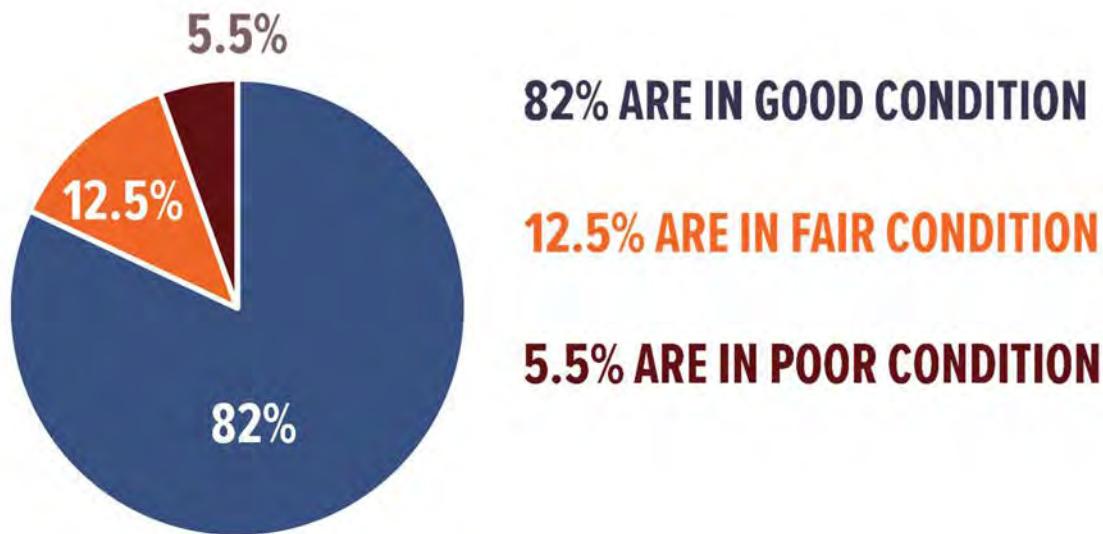
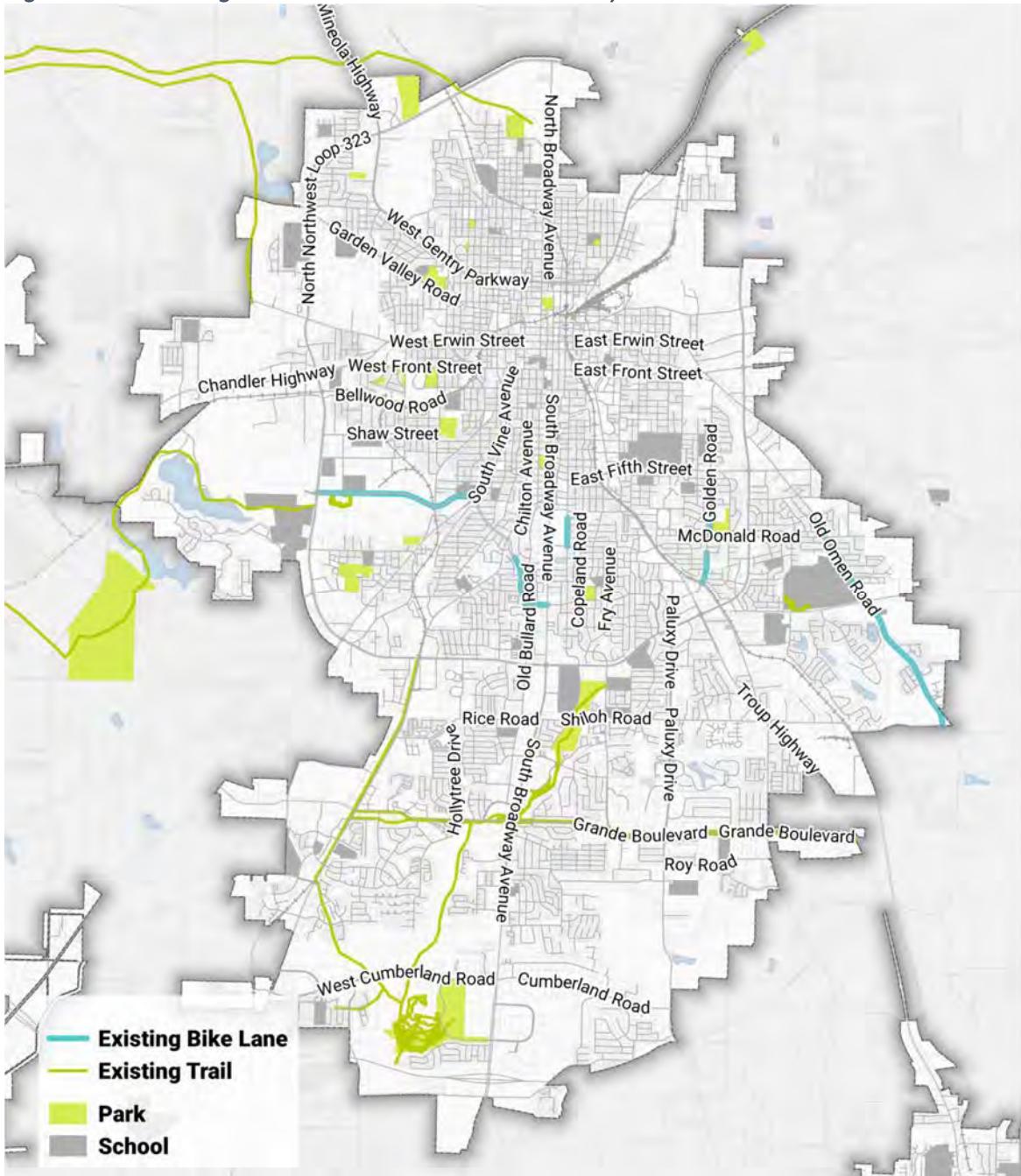


Figure 3-18: Existing Bike and Pedestrian Facilities in Tyler



Source: TAMPO Active Tyler Transportation Plan (2019), courtesy of Toole Design

Public and Stakeholder Outreach

The *Active Tyler* plan used the information received from public outreach feedback as the groundwork for developing recommendations. Four unique opportunities were available for public participation for the project team to better understand values and concerns regarding an active transportation network in the TAMPO planning area. Opportunities to become involved in the public process included:

- Partnering workshops to engage stakeholders
- Pop-Up events at local destinations where active transportation regularly occurs
- Open house meeting for the community to learn and provide feedback
- Online engagement to capture specific concerns in the roadway network and collect feedback via survey

Themes from Outreach

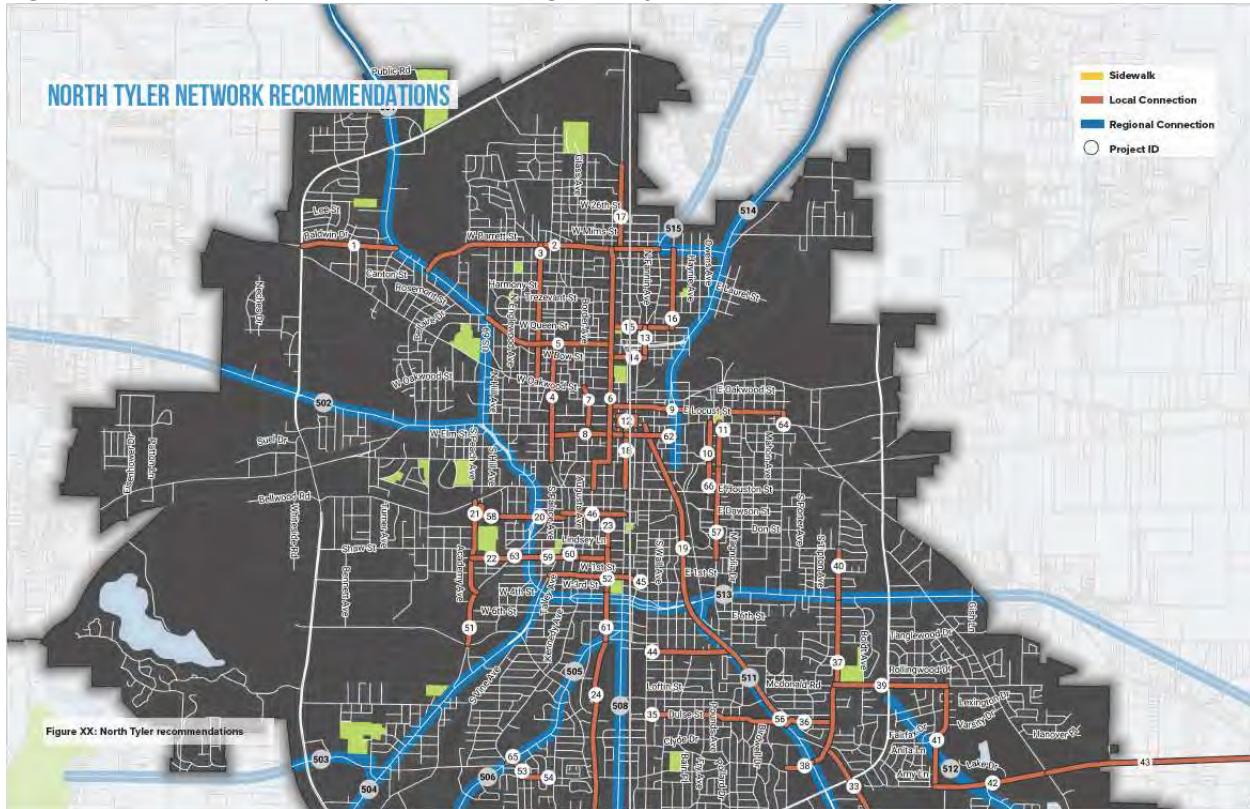
As data was analyzed from all feedback responses, similar responses became apparent and were grouped into themes. Results of the public outreach have shown:

- People in the greater Tyler area care about bicycling and walking.
- People want to bicycle and walk more, and they will as facilities improve.
- Connectivity to trails and off-road facilities are important for recreation and transportation.
- There are concerns about unsafe roadways and intersections.

Network Development

Using five separate technical analysis looking at Demand, Equity, Bicycle Network, Bicycle Level of Comfort, and Pedestrian Walkability Zones and together with the results from public outreach, the *Active Tyler* plan makes recommendations to improve access to active transportation in the following four categories: Regional, Local, Sidewalk and Horse Trail. Rather than creating recommendations for specific facilities types, the plan identifies street segments where facilities can be improved or added, to provide a safe and comfortable active transportation network. Figure 3-19 shows recommendations in the downtown Tyler area. Though the plan does not give facility type recommendations for each segment, it does provide a method by which to prioritize and select the most appropriate facility for a given roadway. The plan concludes with policy and practice strategies for the future implementation of the plan, coupled with funding opportunities and the local, state and federal level.

Figure 3-19: North Tyler Recommended Segments for an Active Transportation



Source: TAMPO Active Tyler Transportation Plan (2019), courtesy of Toole Design

Freight

In addition to considering the movement of people, this MTP update also considers how goods (i.e. freight) are transported within and through the region. Current freight conditions are particularly important to evaluate because freight mobility is one of the ten planning factors that must be considered in metropolitan transportation planning, as required by the FAST Act. Freight transportation is also a major contributor to the local economy and potential catalyst for economic growth in related industries.

Figure 3-20 identifies freight generators and base year truck volumes. Natural resources extraction, utilities, construction, manufacturing, wholesale trade, and transportation/warehousing jobs were identified as industries that produce freight. The concentration of freight generators and industrial/manufacturing zones around railroad lines demonstrates the importance of rail in the freight system of the Tyler region.

The figure also includes an outline of the freight network to show the relationship between facilities. The intermodal terminal facility is located along IH-20 and a railroad junction. Significant patterns in relation to freight are mentioned in the following section.

There is high connectivity between the intermodal facility, the state freight network and the Tyler Pounds Regional Airport through highways and major roads in the area. The intermodal facility allows rail and truck transfer and the Tyler Pounds Regional Airport now has air and truck transfer capabilities.

Figure 3-21 and Figure 3-22 compare the freight network congestions levels from 2018 to the forecast year of 2045.

Figure 3-20: Major Freight Generators

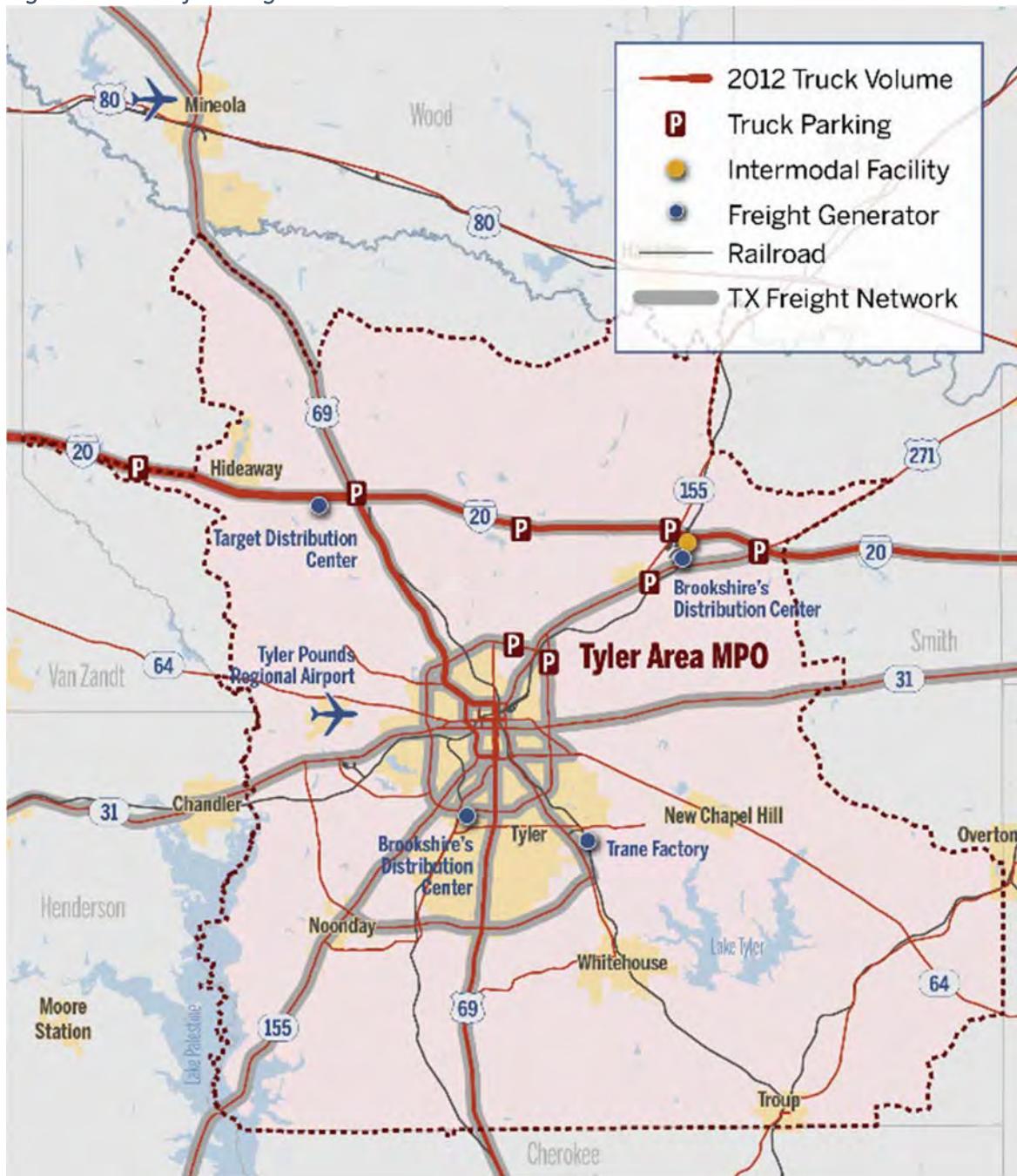


Figure 3-21: 2018 Freight Network Congestion Segments

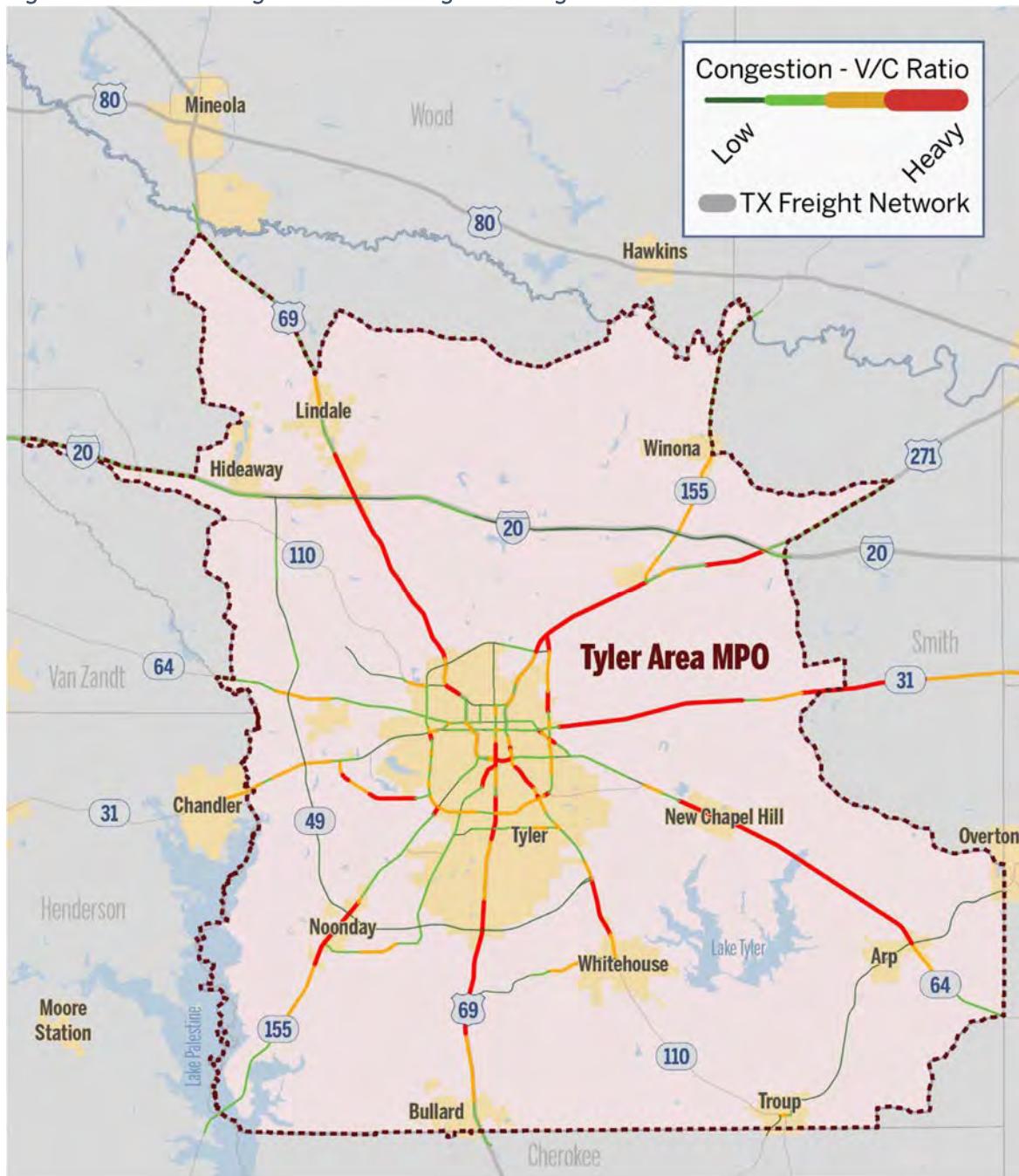
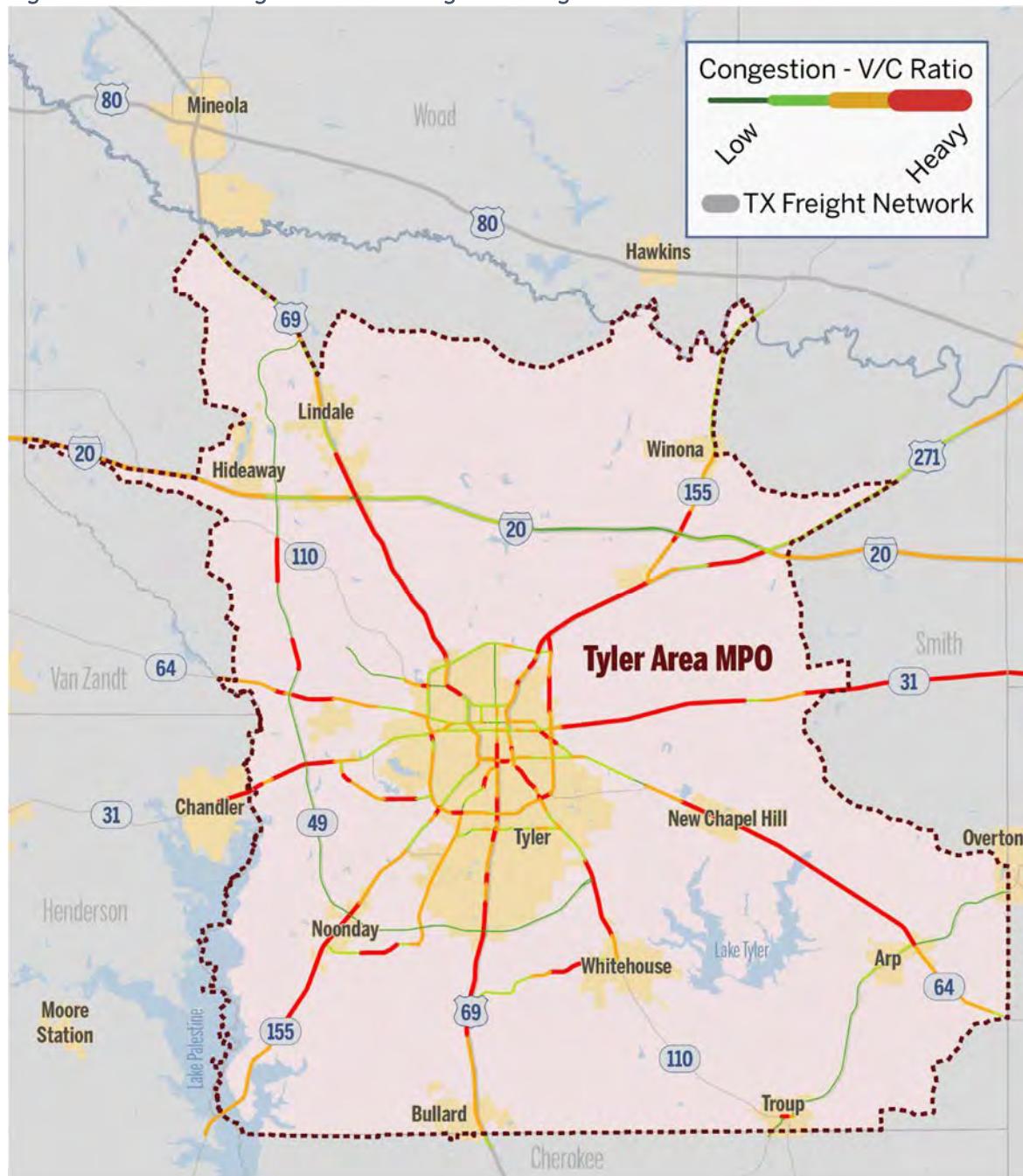
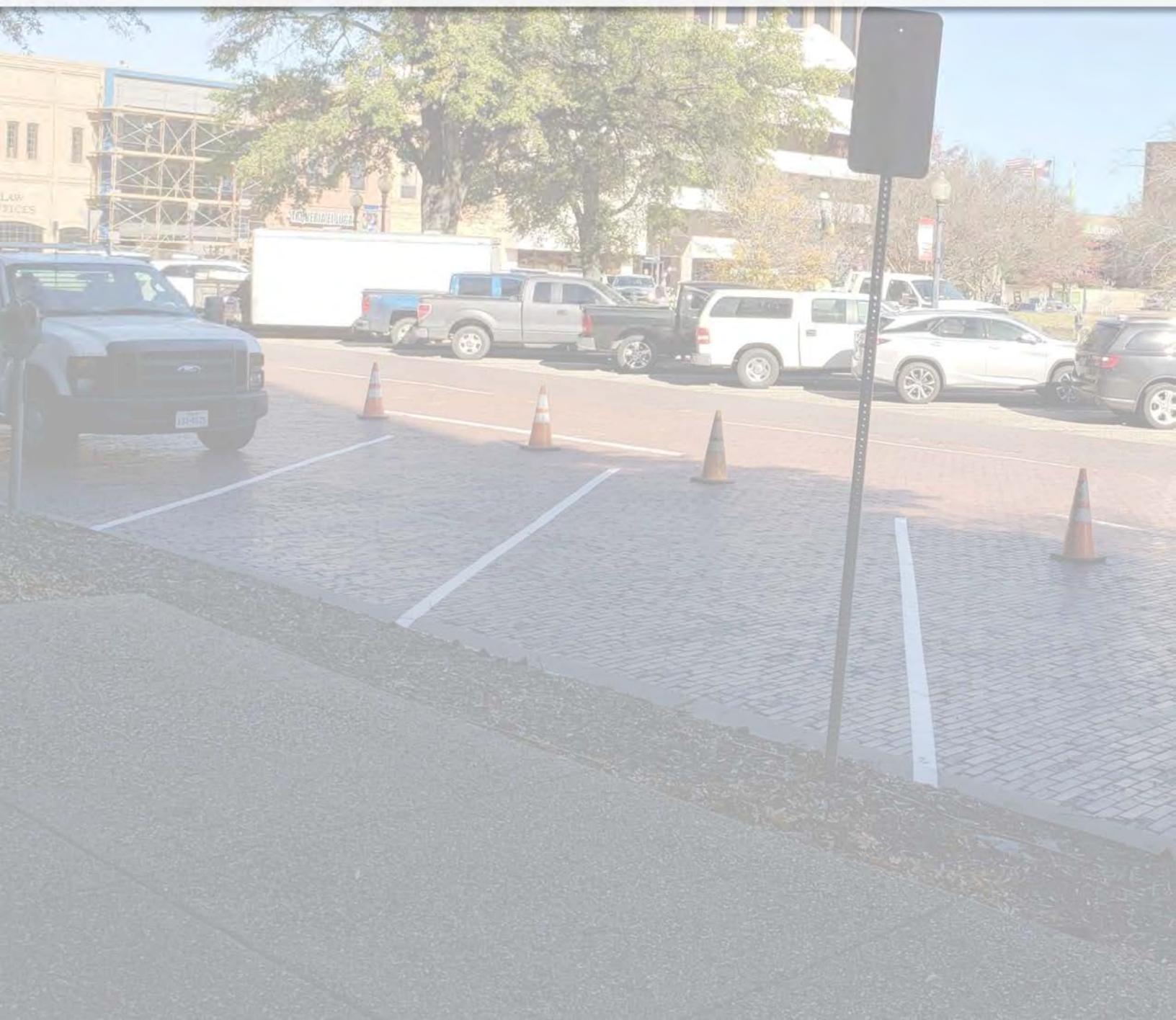


Figure 3-22: 2045 Freight Network Congestion Segments



Strategies



4. Transportation Strategies

Adding roadway capacity to the transportation system cannot address all mobility needs in the region. While funding is always the primary constraint, some needs are best met through the adoption of “no-build” and “other transportation” strategies which do not require the expansion of existing facilities or construction of new roadway facilities in the transportation network. Therefore, the MTP planning process included the consideration of no-build strategies such as travel demand management (TDM) and transportation system management and operations (TSM&O), in addition to build strategies, (e.g. facility construction projects).

This chapter provides a description of the process used to develop a fiscally unconstrained plan for meeting the transportation needs of the community. Given the limited availability of funding to meet all the needs identified in Chapter 3, both “build” and “no-build” strategies to address unmet needs are considered in the unconstrained plan. Applying fiscal constraints to the process and creating a fiscally constrained plan are described in Chapter 7, with the resulting fiscally constrained plan of projects listed in Chapter 8. Prioritized projects outside of the constrained plan are included in the MTP as a listing of unconstrained or unfunded needs projects.

No-Build/Other Transportation Strategies to Address Unmet Needs

Building new roads and adding capacity to existing roadways is not only expensive, but often takes years to complete, as projects must go through the planning, environmental, design, and construction phases. Given the limited availability of funding for transportation projects and rising congestion levels, state, regional, and local agencies are increasingly relying on TDM, TSM&O, and “Complete Streets” strategies to improve the performance of existing roadways. These strategies do not require the construction of new roadways or additional lanes of capacity, and therefore are often referred to as “no-build” or “other transportation” strategies. While there is a “build” component to some of these, the investment required is generally far less significant than constructing new or expanding roadway facilities.

The following sections provide recommendations for incorporating best practices in TDM, TSM&O, Complete Streets, and other no-build strategies into the transportation planning process for the Tyler Area Metropolitan Planning Organization (TAMPO) Metropolitan Planning Area (MPA).

While TAMPO is not directly responsible for implementing transportation projects, it works closely with local member jurisdictions to explore and evaluate the regional significance and appropriateness of these strategies for reducing congestion and improving the performance of the existing transportation system.

Travel Demand Management

TDM strategies seek to reduce congestion on existing roadways by reducing the overall number of cars using roads or by redistributing cars away from congested areas and peak periods of travel. Encouraging the use of alternative modes of transportation (such as transit, biking, or walking) and increasing the number of travelers in each vehicle are the primary ways in which TDM strategies reduce single-occupant vehicle demand on existing roadways. Simply put, transportation demand can be managed by providing travelers with a wide range of efficient and accessible choices for reaching their destination.

With limited funding available to address congestion through increasing roadway capacity, TDM is a cost-effective means to improve use of the transportation system. TDM strategies are designed to accomplish the following:

- Improve mobility and accessibility by expanding and enhancing the range and quality of available travel choices;
- Reduce congestion and improve system reliability by decreasing the number of vehicles using the roadway;
- Increase safety by addressing congestion, which is generally related to higher occurrences of traffic incidents; and
- Improve air quality by reducing the number of vehicle miles traveled, thereby saving energy, and decreasing the number of short trips that are largely responsible for the proportion of emissions generated from cold starts.

Best Practices

Strategies to Increase Vehicle Occupancy

Carpool, vanpool, and school-pool programs encourage travelers with common destinations, particularly employment and school destinations, to share vehicles. These can be based on informal arrangements between individuals or formally arranged through ride-matching services. Available research indicates that improving awareness, trust, and willingness to ride with strangers, as well as flexibility in scheduling, may help to increase carpool use. Incentives are another effective tool for encouraging ride sharing.

[Encourage Employers to Incentivize Ride Sharing](#)

Ride sharing encourages users to share their rides through carpooling, vanpooling and/or school pooling. TAMPO can play a valuable role in working with area employers and schools to develop employer-based incentives to encourage ride sharing, such as tax incentives and preferential parking. A variety of employer-based incentives for carpooling are discussed in greater detail later in this section. In addition, the use of Transportation Network Companies (TNCs), such as Uber and Lyft, which operate in the MPA, can encourage shared rides.

Ride Sharing Resources

Resources that may help to increase the use of ride sharing include “Frequently Asked Questions” (FAQs) that address the benefits of carpooling, tips for finding other carpoolers, advice on how to organize pick-ups and drop-offs, carpooling etiquette, and safety concerns, among others.

Employer-Based Tools & Incentives

The commute to and from work is a significant contributor to traffic congestion along area roadways, particularly during peak travel times. TDM strategies that focus on employer-based tools and incentives can be an effective way to reduce travel by single-occupant vehicles by coordinating ride-sharing among employees, encouraging the use of alternative modes for work trips, shifting work trips away from peak hours, and reducing work travel times and the number of overall trips.

Employer-based TDM strategies fall into four separate categories:

- Encouraging employees to travel by alternative modes;
- Shifting trips away from peak periods of travel and reducing the total number of trips;
- Providing route information to divert commuters from congested routes; and
- Using location-specific solutions - such as locating in developments with a mix of employment, residential, and service uses - to shorten the work commute and reduce the need for midday trips.

Regional transportation planning entities can actively work with area employers to reduce congestion by expanding the transportation options available to their employees (e.g. van service providing rides from Whitehouse to a Tyler office). Educating area employers regarding options available and their benefits to employers, employees, and the community as a whole can go a long way towards increasing the number who travel via alternate modes or during different times.

Strategies to Increase Travel by Transit, Bicycle, or Walking

In order to reduce the number of trips by private automobile, strategies to increase travel by transit, bicycle, or walking in the TAMPO MPA generally focus on the following objectives:

- Expanding the service area of the transit system and connect infrastructure, which can reach more people and connect them to a greater number of destinations within the region;
- Improve the quality of the service, which increases the convenience, comfort, ease of access, and affordability of the mode and makes people more willing to choose it; and
- Educate the public on the availability of the various non-automobile transportation options and services and provide resources to help travelers navigate the region.

The following sections detail mode-specific strategies that could be considered for implementation in the TAMPO MPA.

Transit Strategies

Improving the quality of transit services (i.e. ETCOG - GoBus and Tyler Transit) involves strategies that shorten the overall travel times, increase traveler's comfort both while waiting for the bus and when on-board, and provide added flexibility with travel time and destinations.

Transit can also provide a less expensive means of travel compared to personal automobiles. National statistics have shown that commuters that switch from driving to transit for their daily commute can save more than \$9,000 annually. However, providing new routes or increased levels of transit service must always be balanced against funding availability.

As discussed in Chapter 3, the existing transit services in the MPA include Tyler Transit and Chariot Bus Lines, which provide fixed-route services, and NDMJ Ltd., Tyler Transit, UT Health at Tyler, and ETCOG - GoBus, which provide paratransit demand response services. Chariot Bus Lines provides a fixed route service that connects the MPA and Athens, Texas. Additional improvements in the transit system with real impacts on mobility can be achieved through occasional reassessment and analysis of service and route alignment, both of which can be achieved through relatively low-cost studies.



Tyler Transit. Source: Google Earth 2019

Active Transportation Strategies

Active transportation refers to non-motorized modes of travel, such as walking, bicycling, or using a wheelchair. Because these modes provide some of the most fundamental means of mobility and accessibility available to individuals, it is crucial for the metropolitan planning process to consider the needs of active transportation users. In addition, active transportation can provide communities with opportunities for enhanced recreation, leisure, and tourism by creating pedestrian and bicycle networks that allow people to spend time outdoors and encourage economic development.



The active transportation strategies considered for the Tyler Area 2045 MTP are sourced from the Active Tyler Plan (ATP) which was adopted by the MPO in March of 2019. The development of the ATP consisted of a current condition and needs assessment, design guidelines for active transportation facilities, a public outreach process, a project identification and prioritization process, and guidelines for implementation and funding. The strategies and policies included in the plan aim to create a safe, accessible, and connected network

for active transportation users of all ages, abilities, and comfort levels. The plan also included a Complete Streets policy approved by the MPO that individual member jurisdictions could adopt or use as a template to create their own policies.

Bicycle Strategies

During the development of the ATP, the existing bicycle facilities in the region included off-road paths/trails and roadway shoulders. Therefore, the plan recommended the expansion of the bicycle network using strategies such as:

- Creating priority bicycle corridors along major regional thoroughfares to connect cyclists to major destinations and creating contiguous corridors to increase the connections within the more urban parts of the network;
- Using a context-sensitive approach to upgrade roadway shoulders or add new shoulders in appropriate locations for use by cyclists in rural parts of the MPA;
- Creating bicycle lanes in appropriate locations to expand the network in the urban core of the region; and
- Identifying locations where the use of bicycle signage and pavement markings can denote the use of existing facilities by bicyclists, thereby increasing safety for both bicyclists and other facility users.

Additionally, in 2018 the City of Tyler approved planning and design of over 50 miles of bike lanes across the City of Tyler. These routes, collectively called the Bike Stripe Program, will connect three college campuses within the city—UT Tyler, Texas College, and Tyler Junior College.

Pedestrian Strategies

Existing pedestrian facilities were reviewed during the development of the ATP, which consisted of sidewalks and some crosswalks at various intersections in the urbanized area of the region. The ATP classified areas into pedestrian zone hotspots, which have a higher concentration of intersections in a smaller area, and they also have existing sidewalk networks in place. These areas may benefit the most from new or improved infrastructure that encourages walking. Most of the contiguous stretches of sidewalk are in the urban core of the City of Tyler. Sidewalks become sparser as the network moves farther from the urban core. The plan recommends expanding the pedestrian infrastructure network and increasing connectivity using the following strategies:

- Creating priority pedestrian corridors along major roadways in the urban areas to improve regional mobility and create connections. This also includes creating linked corridors that further increase connections within the expanded network by linking to priority corridors from major destinations and neighborhoods;
- Installing pedestrian crossings/crosswalks in appropriate locations that tie into existing or proposed sidewalks throughout the urban areas of the region; and
- Ensuring that new pedestrian infrastructure and amenities are compliant with the Americans with Disabilities Act of 1990.



Trail Strategies

The existing off-road trails and paths in the region include a handful of facilities that are not well connected to one another, though many of them connect to other active transportation facilities such as roadway shoulders or sidewalks. The ATP's recommended strategies to improve the trails network in the MPA include the following:

- Expanding the existing trail network by adding new trails and enhancing connectivity within the network by creating new segments to link existing trails;
- Connecting the expanded trail network to the existing and expanded pedestrian and bicycle networks; and
- Creating safe crossings where trails intersect major roadways.

Additionally, the ATP recommended a regional horse trail. This conceptual regional equestrian trail would link the Texas Rose Horse Park to the Mineola Nature Preserve. An additional link to Old Sabine Bottom Wildlife Management Area was also proposed. This natural surface route would follow existing stream corridors.

Land Use Considerations

Typical development patterns have generally encouraged a separation of land uses. Additionally, there has been an overall trend toward less dense development, particularly in the planning and design of suburban neighborhoods. These land use factors significantly impact travel, requiring more trips to be made by automobile due to the increased distances between origins and destinations. TAMPO can work with local planning partners to encourage land use policies that facilitate the use of alternative modes of transportation and reduce the number of automobile trips.

Smart Growth

“Smart Growth” generally refers to the protection and preservation of valuable natural and cultural resources through encouraging more compact development patterns that optimize use of existing transportation infrastructure. Smart Growth development is characterized by higher population and employment densities and a mix of land uses, which increases the viability of public transportation, walking, and biking as transportation modes. Since Smart Growth principles encourage redevelopment and infill development within existing developed areas, investment in the transportation system is focused on the maintenance and operation of existing roadway infrastructure and providing safe opportunities to travel by bike or foot, rather than on building costly new roadways in previously undeveloped areas. It is important to note that Smart Growth does not mean building dense high-rise structure or pitting modes against one another, but instead is a context-sensitive approach to encouraging a better mixture of land uses specific to the MPA.

Complete Streets

The concept of “Complete Streets” is rooted in the idea that roads should be built with all users in mind, not just the private automobile. While Complete Streets principles include many TDM and TSM&O strategies, the concept focuses less on improving traffic conditions and more on the livability of places. Complete Streets strategies address the needs of all users of the transportation system, including the young and the old, the disabled, and users of transit or non-motorized forms of transportation. They yield a wide range of benefits related to safety, equity, access, economic development, air quality, health, and livability. While policies adopted by local governments represent most Complete Streets policies adopted nationwide, MPOs can be integral partners in promoting and implementing Complete Streets strategies. As part of the development and adoption of the Active Tyler Plan, TAMPO developed and adopted a Complete Streets policy that was then offered to local member jurisdictions as a template for developing their own policies.

Transportation System Management & Operations

Transportation System Management and Operations (TSM&O) strategies seek to improve the performance of existing roadways through increased efficiency and throughput of people on current infrastructure. TSM&O strategies not only rely on traffic engineering solutions (such as signal synchronization and access management) to optimize the existing system but also rely on resource utilization, infrastructure, personnel, and data management strategies to extend the useful life of the existing transportation system and improve its reliability.

Maintenance

Infrastructure maintenance is a critical aspect of transportation system management and operations. Most infrastructure management agencies prefer to schedule routine repairs and inspections instead of embarking on ad-hoc patching and repairing. Schedule management for inspection and street repairs will enable city and county personnel to efficiently use limited resources. Regularly scheduled roadway resurfacing is necessary to provide uniform improvements to the existing roadways and to extend their useful life. Older roads, especially those built according to discontinued standards, should be reviewed in order to upgrade deficient sections based on modern design standards.

In the MPA, the cities, county, and TxDOT have maintenance plans and schedules for transportation infrastructure in their jurisdictions. The Smith County Bond program passed in 2017 provides local funding to rehabilitate and modernize county roads. This program results in significant savings by preempting additional costs typically incurred by incremental costs of repairing deteriorating roadways.

Electronic Infrastructure

Transportation infrastructure is no longer limited to concrete pavement and asphalt. Recent improvements in operations and data collection methods have led to digital controls and integrated computer networks that require maintenance and management. Older technologies are being systematically replaced with newer options.

Some of the opportunities for advancing the MPA's electronic infrastructure come in the form of Intelligent Transportation Systems (ITS), which includes technologies that improve transportation safety and mobility by integrating advanced communications into infrastructure and vehicles. The following electronic infrastructure have the potential to provide the MPA with improved safety and mobility for the transportation network:

- **Traveler Information Systems (TIS) on Dynamic Message Signs:** TIS is a strategy that involves sharing information about trip departures, routes, and travel time with travelers to inform them about existing and expected conditions and help them make better decisions about when, where, and how they travel. This can be accomplished via websites, telephone hotlines, television, and radio, and particularly with dynamic messaging signs, which are digital signs that are installed along roadways and are updated with real-time travel information. The region is actively working

on corridor timing/ITS regional infrastructure implementation. This information can be provided for a variety of transportation modes.

- **Signal Preemption for Emergency Vehicles:** Signal preemption is a technology that allows emergency vehicles to change signal cycles, allowing them to advance through traffic lights efficiently and safely. A preemption device is located on mast arms and detects/alters signal cycles when emergency vehicles approach the intersection. This technology is most effective along roadways in which emergency vehicles will typically need to travel longer distances, or intersections where minor arterials/roads connect to larger road classifications. The end goal for signal preemption is to reduce overall response rates for emergency vehicles.
- **Video Detection (or other types of non-pavement invasive detection) at Signalized Intersections:** Also known as a traffic detector, video detection as well as non-pavement invasive detection allow for the collection of traffic information, such as vehicle presence, volume, speed, and occupancy.

It is important to note that while red light cameras are considered to be a form of ITS, on June 1, 2019 the State of Texas enacted House Bill 1631 banning the use of this infrastructure with an effective date of September 1, 2019.

TAMPO should continue to explore opportunities to improve the electronic infrastructure of the region as technologies continue to improve and become more cost effective.

Traffic Signal & Intersection Improvements

Roadway users encounter traffic control signage and intersection signals on nearly every route they travel. While the primary function of intersection traffic control is to improve safety at intersections, it is also often a significant source of delay. Improper signage and poor signal timing results in unnecessarily long queues and impacts the reliability of the transportation system. Improving signage, signal timing, and equipment is a cost-effective way to facilitate traffic flow along a corridor.

Currently, projects for signal upgrades on TxDOT “on-system” roadways are programmed by the DOT. Upgrades on the local network are also programmed by the DOT and coordinated with Tyler.

TAMPO can continue to work with its planning partners to identify corridors which would benefit from traffic signal improvements and to prioritize projects.

Traffic Signal Optimization

The timing and phasing of signalized intersections should be reviewed periodically, especially in areas of the MPA experiencing rapid development or increased commercial activity. In locations with significant wind and severe weather concerns, mast arm and pole dimensions should be designed appropriately. Traffic signals can also be coordinated along a corridor or throughout an entire system. As traffic volumes increase, signal coordination can be used to optimize high priority traffic corridors and increase the throughput of critical thoroughfares.

Adaptive signal control, which adjusts the timing of traffic lights based on real-time travel conditions, can also provide significant relief to congested corridors and cut costs associated with traffic signal timing data collection and computation.

Proactive efforts are being carried out by the City of Tyler, as the City is funding an on-going study for traffic signal optimization. Similarly, TAMPO is actively coordinating efforts to work towards implementing corridor timing/ITS regional infrastructure. When implemented, traffic signal progression and timing can be coordinated within the MPA, and real-time travel conditions will be used to adjust where necessary.

Access Management

Access management refers to the regulation of the number of access points between a development and the adjacent roadway network. Many access management solutions involve installation of roadway medians where feasible to guide turning movements to the appropriate locations and improve traffic flow and safety.

Targeted Traffic Enforcement

Consistent and reliable enforcement of traffic laws helps address public concerns about traffic issues. Focused speed studies (using radar trailers and traffic counters) and enforcement can be employed in the MPA to discourage speeding on residential streets.

Traffic Calming

Because there are many instances where the number of aggressive drivers is greater than human resources can address, many cities and counties have implemented various “self-enforcing” speed and volume control devices. Most of these measures are referred to as “traffic calming.” These physical devices can assist law enforcement in influencing driver behavior. Traffic calming is often controversial and can be challenging to discuss.

Most traffic calming measures are applied to residential streets, though certain measures can be applied to higher volume roadways as well. Broadly defined, the goals of traffic calming measures are:

- To slow down the average vehicle speeds for a particular roadway;
- To address excessive volumes for a particular roadway; and
- To make drivers aware of the context and surroundings of specific roadways.

Traffic calming measures can sometimes impact access and response time for emergency personnel. Representatives of fire, police, and emergency services departments should be involved in the review of proposed traffic calming devices. TAMPO can work with its planning partners and emergency response agencies to identify locations suitable for traffic calming implementation.

Traffic Incident Management

Traffic Incident Management (TIM) consists of a planned and coordinated process to detect, respond to, and quickly clear traffic incidents so that traffic flow may be restored as safely and quickly as possible. Effective TIM strategies reduce the duration and impacts of traffic incidents and improve the safety of motorists, crash victims, and emergency responders. Traffic incident management involves coordination among a number of public and private sector partners, including:

- Law enforcement
- Emergency management and preparedness
- Fire and rescue
- EMS
- Towing and recovery
- Transportation departments
- Hazardous materials contractors
- Public safety communications
- Traffic information media

Traffic Data Collection

As transportation technology grows increasingly sophisticated, obtaining the amount of data required by new traffic optimization interfaces presents significant challenges to TAMPO due to fiscal constraints. Automated traffic data collection creates an opportunity for transportation management agencies to receive a continuous supply of traffic data at a low cost. Because automated traffic data collection gathers data in real-time, it facilitates many of the demand responsive TSM&O strategies discussed earlier in this chapter (such as traffic signal optimization). New types of traffic data collection, such as Bluetooth and Wi-Fi detectors, are particularly appealing due to their lower operational and maintenance costs compared to in-road loop detectors. These types of detectors have the added benefit of being able to gather traveler information beyond traditional roadway vehicles to include bicycle and pedestrian roadway users.

Currently, TAMPO and its local member jurisdictions use data collected by TxDOT, including traffic counts, Vehicle Miles Traveled (VMT), vehicle classification, etc. The MPO uses this data and coordinates with TxDOT and local member jurisdictions on a regular basis. The MPO and its member jurisdictions do not currently have the resources or funding to collect or purchase much of this data, so the MPO utilizes data made available by its state and federal partners.

Leveraging Emerging Technologies

In addition to the implementation of one or more of the ITS mentioned above, the emergence of new technologies and the adoption of policies and legislation will provide future decision makers with a whole new tool kit of strategies to implement.

Connected & Autonomous Vehicles

Connected and autonomous vehicles (CAV) can be integrated into existing ITS architecture and could potentially improve mobility, traffic operations, and safety. Automated public transportation could help reduce congestion and the space needed to accommodate single-occupant vehicles, while also potentially improving efficiency and reducing fatalities and severe injuries due to fewer drivers on the road. This technology could also benefit freight and economic growth, since improved travel times and traffic operations could have positive impacts on the economic vitality of rural and urbanized areas within the region. The National Association of City Transportation Officials (NACTO) provides some advice and guidance about CAV in their “Blueprint for Autonomous Urbanism,” found at nacto.org/blueprint, and the Society of Automotive Engineers (SAE) and the National Highway Traffic Safety Administration (NHTSA) are working to provide guidance for safety and programming levels of automation. The TAMPO staff can help the development and deployment of these technologies throughout the region by beginning discussions on policy and land use, as well as keeping its planning partners informed about developments in autonomous vehicle technology.

Smartphone Applications

As previously mentioned, TNCs and rideshare applications for smartphones are already influencing how people are choosing to commute. Uber’s “Express Pool” service utilizes traffic analytics and routing software to reduce backtracking and rerouting to pick up multiple passengers, as was the case with their “UberPool” service. In exchange for significant discounts and more direct routing, riders are picked up within two blocks of their origins, and dropped off within two blocks of their destinations, which entails passengers walking more at the beginning and end of their trips.

Smartphones are also already being used to improve transit service and user experience with route information apps as well as instant payment and rider subscription services. TAMPO can continue to work with its planning partners to enhance the functionality of smartphone transit applications to further encourage travelers to use transit.

No-Build/Other Transportation Strategy Recommendations

The no-build strategies discussed in this chapter are cost-effective and efficient methods for improving the transportation system and can be implemented or expanded upon independent of or in conjunction with build strategies (discussed in the section below). The following list provides a summary of the no-build recommendations for TAMPO that will help improve transportation options and efficiency in the region:

- Encourage continued coordination of the metropolitan transportation planning process with the development of local transportation and comprehensive plans to promote the inclusion of facilities and systems related to transit, biking, and walking;
- Encourage transportation planning partners to consider cost-effective, no-build strategies, such as TDM, TSM&O, and Complete Streets design prior to investing in roadway capacity improvements;
- Work with large area employers to explore and implement employer based TDM tools and incentives;
- Consider giving funding preference to projects that incorporate TDM and TSM&O strategies, reflect Complete Streets design principles, or set regional multi-modal transportation goals and objectives through a robust public involvement process;
- Heart of Tyler Main Street Program, which is a non-profit organization with a mission to restore and revitalize downtown Tyler and a commitment to creating high-quality places and building stronger communities through preservation-based economic development. Any proposed transportation improvements that impact the downtown area should be coordinated with Heart of Tyler Main Street so that efforts and resources can be aligned.



Build Strategies to Address Unmet Needs

This section builds upon the work completed as part of the Needs Assessment discussed in Chapter 3 to identify deficiencies in the MPA's transportation network. This section outlines the project call and prioritization process used in this MTP using FAST Act planning factors and community values gathered during the visioning process.

Transportation Project Identification

Projects were identified by reviewing existing MPO planning documents (such as the Active Tyler Plan) and ongoing planning efforts (such as 2018-2022 Transportation Improvement Program). In addition, MPO planning partners and member jurisdictions (such as the City of Tyler, Smith County, and TxDOT) were invited to either submit new projects through the 2045 Call for Projects, or update or maintain previously submitted projects considered in the 2040 MTP. All projects submitted were incorporated into a project list that moved on to an initial technical review by MPO and project staff prior to being advanced to the project prioritization and selection process. A number of projects were noted as illustrative as they were either locally funded and/or off system.

Each project included in the Draft Unconstrained 2045 MTP Project List for scoring included detailed project descriptions and was compared through GIS analysis to the proposed improvements in the ATP. Additional descriptions were added for projects where ATP components may be possible for inclusion, noting what type of Active Tyler component would be included in the project.

Project Prioritization & Selection

The Technical Advisory Committee incorporated the federal planning factors and feedback received during the visioning process to help determine regional priorities and develop the final project list.

Planning Factors & Project Evaluation Criteria

As discussed in Chapter 2, the FAST Act requires the transportation planning process for metropolitan areas to consider strategies and projects that address ten planning factors.

Based on these planning factors, a specific set of project evaluation criteria was developed for TAMPO to ensure each aspect of the factors was taken into consideration in assessing the merits of the proposed projects. The scoring criteria are in no particular order:

1. **Improves Safety:** Safety is defined as protection against unintentional harm and relates to both motorized and non-motorized modes of travel. Examples of improved safety include the following:
 - Reduction in the number of automobile crashes;
 - Reduction in the number of crashes involving non-motorized users.

2. **Improves Security:** Security is defined as protection against intentional harm and relates to both motorized and non-motorized modes of travel. Examples of improved security include the following:
 - Reduction of the risk of individual acts of criminal behavior on a transit line; or
 - Improvement in emergency response capabilities in case of an act of terrorism.
3. **Improves System Resiliency and Reliability:** Impacts to resiliency and reliability of the transportation system can relate to increasing connections, improving system condition, or quality of life issues. Resilience can be defined as the capacity to recover quickly from drastic change. Examples of improved to system resiliency and reliability include the following:
 - Increasing connections, especially for evacuation and recovery;
 - Improvements in system condition (state of good repair).
4. **Promotes Efficiency:** Efficiency is promoted by improved system management, the preservation of the existing transportation system, and reduction in costs. Examples of the promotion of efficiency in the transportation system include:
 - Improvement in the operations and management of the system;
 - Institution of a regular repair and maintenance program; or
 - Implementation of traffic signalization coordination and ITS infrastructure.
5. **Improves Access:** Improving access involves control and management of the entrance and exit points to a transportation facility for people and freight. Increasing the number of access points does not necessarily improve access. Improved access is based on a balance between the number of access points and the efficient movement of traffic through the transportation facility. Examples of ways in which access could be improved are:
 - A reduction in the number of driveways that enter a major arterial; or
 - Development of a hierarchical master street plan that includes roadway design based on use.
6. **Conserves Energy:** Conserving energy involves reductions in energy used per person per trip. Examples of ways in which energy may be conserved through investments in the transportation system include:
 - A reduction in the use of single occupancy vehicles;
 - Decrease in congestion or delay.
7. **Increases Multi-modal Options:** Increasing multimodal options for both people and freight involves increasing availability and variety of modes of travel. Examples of ways this could be achieved include:
 - Expansion of the fixed route transit system into previously unserved areas;
 - An increase in the number of streets with sidewalks; or
 - An increase in intermodal freight transfer facilities.
8. **Connects Modes of Travel:** Connecting modes of travel involves direct linkages between various options of travel for people and goods. Connecting modes of travel relates not only to

the ease of movement of people and goods within the community, but also to external destinations – regional, national, and international. Some examples of connecting modes of travel are:

- Improved connection to intermodal freight transfer facilities for freight;
- Connecting sidewalks and bicycle facilities to transit stops.

9. **Increases Connections:** The connectivity of the transportation network and circulation system is measured through the ease by which people and goods can move to their desired destinations. Examples of ways in which connections could be increased are:

- Increasing network connectivity, such as new or improved north/south and east/west regional connections;
- Development of grid-based subdivisions rather than cul-de-sac development.

10. **Reduce Congestion:** Congestion is defined as a roadway system operating at speeds below that for which it was designed. Examples of ways in which congestion could be reduced are:

- The addition of turning lanes; or
- Improvements to signalization;
- Added capacity.

11. **Preserves Right of Way (ROW):** Preservation of rights-of-way refers to purchasing land before development occurs in anticipation of future expansion of the transportation system. Examples of ways in which rights-of-way could be preserved include:

- The purchase of enough land to build a four-lane highway even though the current plans only call for the construction of a two-lane facility, when appropriate; or
- The purchase of land at points along an interstate where future entrances are planned but where no development currently exists.

12. **Protects the Environment:** Methods for protecting the environment are as unique as the local environments that they serve. Therefore, examples of ways in which a transportation system can impact the environment are myriad. Examples of ways to protect the environment are:

- Not building roads in environmentally sensitive areas; or
- Building projects that reduce idling time for large trucks.

13. **Reduces Stormwater Impacts:** Reduction to stormwater impacts in the development and maintenance of the transportation system involves increased coordination with local, state, and federal agencies already addressing stormwater impact mitigation as well as planning for mitigating strategies where the transportation system could possibly affect outfall and regional drainage patterns. Examples of ways to reduce storm water impacts include:

- Projects with drainage design extending and incorporating outfall beyond the immediate right of way;
- Leveraging existing drainage infrastructure and discouraging growth into areas necessitating intensive drainage design.

14. **Improves Quality of Life:** The transportation system can have both positive and negative impacts on the quality of life in a community. Examples of ways that a transportation system could have a positive impact on the quality of life are:

- A reduction in mobility gaps experienced by low-income communities; or
- A reduction in the time that families spend commuting to school and work.

Examples of ways that the transportation system can have a negative impact on the quality of life in a community are:

- Addition of access points to a neighborhood that encourages through traffic that endangers children at play; or
- Widening of roadways to improve port access that also encourages truck traffic carrying hazardous materials through residential neighborhoods.

15. **Supports Economic Development Goals:** Though it is important for the transportation system to support the economic vitality of a region at large, projects in an MTP can tie directly to goals and objectives outlined in Economic Development plans such as the Industry Growth Initiative. Examples of supporting economic development goals include:

- Supporting public private partnerships;
- Providing better access to areas identified for the development of an “Innovation Economy;”
- Competitively connecting Tyler to the Dallas mega-region.

16. **Supports Land Use Goals:** Supporting land use goals involves addressing and supporting goals and objectives identified in regional and subarea land use development plans such as the Tyler 1st and Area Development Plans. Examples of supporting land use goals include:

- Accommodating regional traffic flow by proactively planning for future corridors and alternate routes, as well as identifying and develop specific gateways;
- Providing safe pedestrian connections to and from areas of high pedestrian density such as UT Tyler, Tyler Junior College, and UT Health East Texas (formerly the East Texas Medical Center).

17. **Enhances Travel and Tourism:** Projects that positively affect travel and tourism may tie to increasing multimodal options, improving quality of life, or improving transportation to and around natural, cultural, and historic assets identified as points of interest to tourism. Examples may include:

- Connecting trails to existing Tourist destinations like the Rose Garden;
- Improvements in transit service to areas of interest;
- Decreasing peak loading conditions in and around events.

Visioning Workshop Feedback

During the visioning process, the public and stakeholders were asked to rank the evaluation criteria based on their personal preferences. The results were combined to assign a final ranking of the evaluation criteria based on community values. **Table 4-1** shows the rankings of the evaluation criteria resulting from the visioning process and the assigned weights applied for each criterion. The weights were applied as a multiplier for each project's score on that associated criterion.

Table 4-1: Evaluation Criteria Bonus Points

Evaluation Criteria	Points
Increases Multi-modal Options	3.00
Reduce Congestion	2.82
Improves System Resiliency and Reliability	2.64
Reduces Stormwater Impacts	2.64
Improves Access	2.45
Promotes Efficiency	2.27
Connects Modes of Travel	2.09
Increases Connections	2.09
Improves Quality of Life	1.91
Enhances Travel and Tourism	1.91
Improves Safety	1.73
Improves Security	1.73
Conserves Energy	1.55
Protects the Environment	1.55
Preserves ROW	1.18
Supports Land Use Goals	1.18
Supports Economic Development Goals	1.00

Once the initial criteria had been tabulated, TxDOT, MPO staff, and the Technical Advisory Committee reviewed the preliminary prioritization process results to assess the community benefits of proposed transportation projects while considering project readiness, project staging, while incorporating the federal metropolitan planning factors and the community-driven goals and objectives established during the visioning phase. The process combined technical judgement about the project's ability to meet national and state performance measures and local goals with sponsor-provided information about the purpose and need for the project, project readiness, and funding availability.

The prioritization process, when paired with the Fiscal Constraint analysis, resulted in a prioritized list of Implementation, near-, mid-, and long-term transportation improvements. The Technical Advisory Committee and Transportation Policy Committee reached consensus on the preliminary Draft Project List for the Draft MTP on August 13, 2019. The Final Project List is shown in Chapter 8 and was presented to the public for the 30-day comment period beginning Oct 10, 2019. Chapter 8 also provides corresponding maps to identify projects in each stage of the plan, as well as project tables with detailed project information.

Impact Analysis



5. System Level Impact Considerations

Metropolitan transportation planning is not solely concerned with the best way to move people and goods. In addition to mobility concerns, the planning process also examines the interaction of proposed transportation improvements with the natural and human environment. For the purposes of the MTP, potential impacts on environmental resources and quality of life in the region are evaluated at a system-wide level.

A more detailed analysis of the specific impacts associated with a project is typically performed later in the project development process to fulfill requirements under the National Environmental Protection Act (NEPA).

The primary goal of the Environmental and Equity Assessment is to evaluate whether the proposed program of unconstrained potential transportation improvements may negatively impact the environment or result in disparate impacts to certain populations. It is intended to serve as a guide for implementing agencies and elected officials as projects progress through the development process.

While it is not always possible to avoid negative impacts to environmentally sensitive areas, the goal of the environmental mitigation analysis is to balance the need for transportation improvements with environmental protection and quality of life considerations and, where possible, increase access to natural and cultural resources in the region. Mitigation activities should be considered during all phases of project planning, design, construction, and maintenance.

In addition to environmental and cultural resources, the Environmental and Equity Assessment addresses environmental justice considerations to ensure both the benefits and the burdens of the transportation system are distributed equitably across the region. The term environmental justice first emerged in the metropolitan transportation planning discussion in 1994 with the issuance of Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. The executive order was based upon Title VI of the Civil Rights Act and is meant to ensure that minority and low-income populations are not adversely affected by federal actions.

Identifying potential impacts on the environment, as well as low-income and minority populations, involves a three-step process that includes:

- Defining and developing an inventory of environmental resources/minority and low-income populations;
- Identifying and assessing the potential impacts of proposed transportation improvements on these resources; and
- Addressing possible mitigation activities system wide.

Environmental Analysis

One element of the Environmental and Equity Assessment involved conducting an analysis on the environmental features, environmental hazards, and cultural assets that exist in the Metropolitan Planning Area (MPA).

This analysis identified the types of features, hazards, and assets that are present in the region and considered their distribution and concentration. This information not only provides a more holistic picture of the current state of the planning region – it also informed the project prioritization process where proposed transportation projects were ranked based on various evaluation criteria, including whether each project would have a positive, neutral, or negative impact on the environmental and cultural/community/civic elements in the region.

Existing Environmental Features & Hazards

Within the MPA there are a few sizeable waterbodies such as lakes and large ponds, and there are approximately 2,069 miles of running water features, such as creeks, streams, and rivers, with a relatively even distribution throughout region. Floodplains extend out from many of these water features, with larger concentrations of floodplains in the north and southwest parts of the MPA. Floodplains can impact transportation projects and infrastructure, so the locations of floodplains were considered during the project scoring process. In addition, areas classified as wetlands are scattered throughout the region, with the largest spans of wetlands in the southwest and east central portions of the MPA. The largest lake in the region is Lake Palestine which is around 23,600 acres in size. A portion of the Carrizo Aquifer is in the MPA which is recharged with water from rainfall or streams that infiltrate the outcrop of the aquifer located just outside the MPO boundary, on the northwest side. Wetlands are environmentally sensitive areas that could potentially be impacted negatively by transportation systems and were also considered during the project scoring process.

A set of potential environmental hazards were also identified in the MPA. There are 31 solid waste collection facilities within the MPA. Most of these facilities are located in the central and southwest portions of the MPA, however there are also a handful of facilities scattered around the region.

Existing Cultural, Community, & Civic Assets

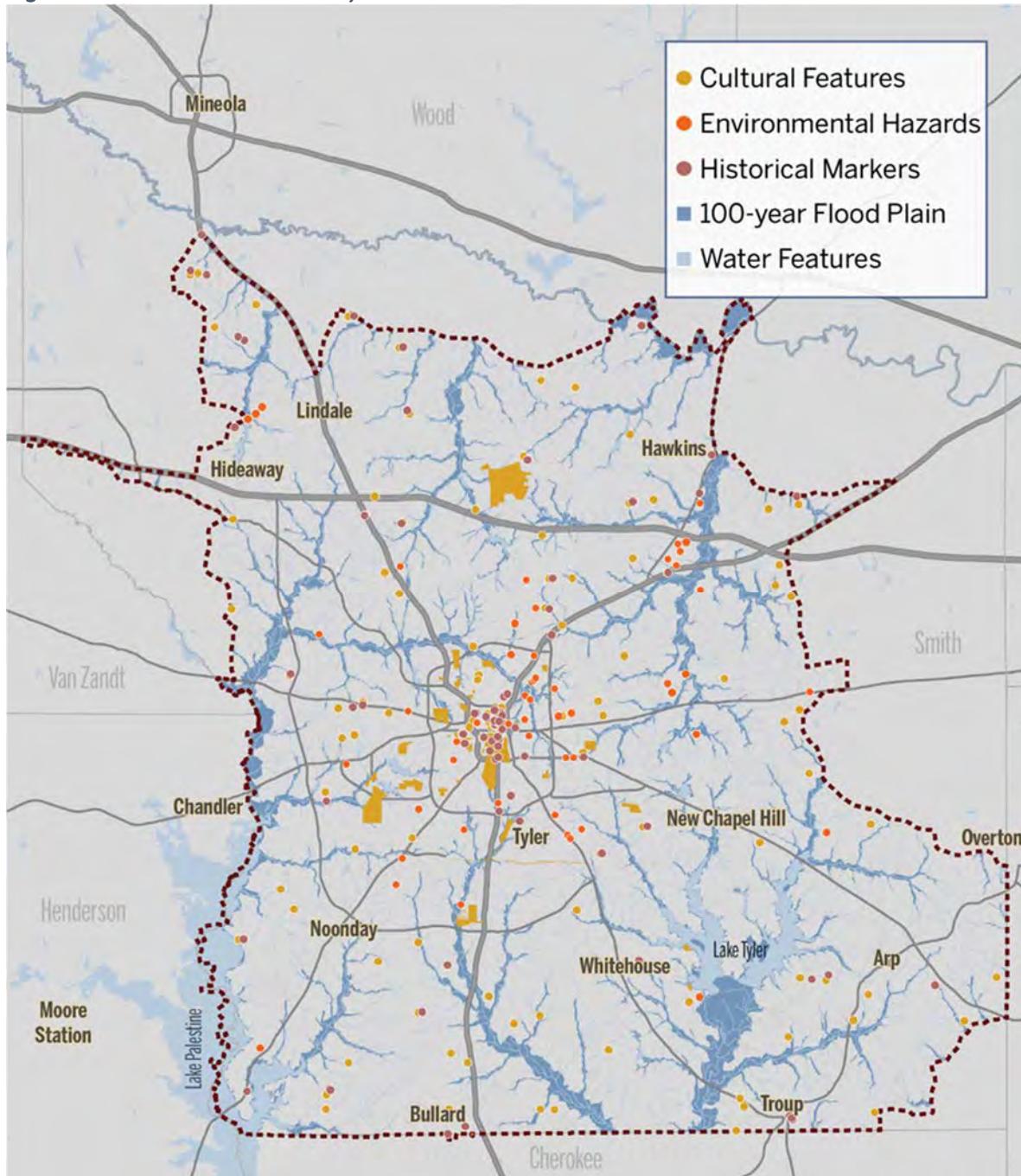
While the purpose of identifying environmental features/hazards is rooted in eventually analyzing whether proposed transportation projects can avoid or minimize the potential for damaging sensitive environmental features or exposing people to hazards, the purpose of identifying cultural, community, and civic assets is to ensure the future transportation system provides the community with adequate access to these assets.

The community assets include both historical and cultural features. In the City of Tyler there are 6 historic districts: Azalea Residential, Brick Streets Neighborhood, Short-Line Residential, East Ferguson, and Donnybrook Duplex Residential. Of the 84 total historical markers in Smith County, 51 of them are in the City of Tyler, 10 in Lindale, three in Troup and the remainder are spread throughout the county. Out of the seven museums located in the region, six are in the City of Tyler including Tyler Rose Museum, the Carnegie History Center, and Harrold's Model Train Museum. There are 80 cemeteries spread throughout the county. The largest park in the region is the Tyler State Park with a total of 990 acres located north of IH-20, and there are more than 30 other parks in the region. These assets include the following:

- Museums
- National Register properties, historic districts, and monuments
- Cemeteries
- Parks
- City halls and courthouses
- Community centers
- Community services

Similar to the environmental hazards, these assets are primarily clustered within Loop 323, particularly in the downtown Tyler area. There are also numerous assets distributed throughout the rest of the MPA. Figure 5-1 shows the various environmental features/hazards and cultural, community, and civic assets identified in this analysis.

Figure 5-1: Environmental Analysis Features



Conclusions from the Environmental Conditions Analysis

This environmental analysis shows that the MPA contains a mixture of sensitive environmental features, hazards, and cultural assets that could be impacted by decisions about the transportation system now and in the future. Floodplains are spread throughout the MPA, surrounding rivers, creeks, and streams. Larger concentrations of wetlands are found mostly in the southern half of the MPA, with one notable concentration in the northwest. Environmental hazards and cultural assets, including historic districts, are mostly clustered within the Loop in the central part of the region. Each of these environmental and cultural factors was considered during the project scoring process to determine whether the proposed projects in the unconstrained program could potentially impose any negative impact on the existing natural and human environments of the MPA.

Equity Analysis

Environmental Justice as defined by the U.S. Environmental Protection Agency is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Environmental Justice impact analysis is a critical component to transportation planning. Transportation projects have long lasting impacts on communities. Therefore, it is critical to the planning process to establish and ensure fair and equitable transportation policies and funding decisions so that no group of people (by race, ethnicity, or socioeconomic status) should receive unfair treatment or bear a disproportionate share of negative environmental consequences as a result of decisions made by all levels of government.

The following section defines Environmental Justice zones in the MPA. These zones were established to be used in the project scoring process to determine the impacts of planned transportation projects on Environmental Justice communities.

Environmental Justice Zones

Environmental Justice zones in the MPA were identified by determining historically underserved and vulnerable communities. Using block group data from the 2017 American Community Survey, Environmental Justice zones were defined as having at least two of the following criteria:

- High Minority Population – Block groups with a percentage of minorities greater than the MPA's total percentage of minorities (41%).
- Households in Poverty – Block groups with 20% or more of households living in poverty.
- Limited English Proficient Population – Block groups with the top 10% highest percentage of limited English proficient population.

Figure 5-2 shows where the Environmental Justice zones are located within the MPA. The Environmental Justice zones are concentrated in the central part of the region with a few exceptions in the northeast and southern part of the region.

Table 5-1 describes the Environmental Justice zones demographic profile compared to the region at large.

High concern Environmental Justice zones were also identified. These block groups were identified as high concern due to meeting all three of the above-mentioned criteria. These zones will be given heightened attention during the impact analyses which will review the potential footprint of proposed transportation projects to ensure that they do not adversely impact these communities. As such, projects that include public transportation and active transportation facilities will be reviewed to ensure these populations are being provided with adequate access to the transportation system.

Figure 5-3 displays areas containing high concern Environmental Justice zones in further detail.

Table 5-1: Aggregate Environmental Justice Zones Compared to MPO

	EJ Zones	High Concern EJ Zones	MPO
Total Population	106,300	10,997	222,277
Total Minority Population	68,400	9,984	90,732
Percent Minority Population	64%	91%	41%
Total Limited English Proficient Households	2,112	632	8,679
Percent Limited English Proficient Households	6%	21%	11%
Total Households Living in Poverty	26,139	3,123	35,438
Percent Households Living in Poverty	25%	28%	16%

Figure 5-2: Environmental Justice Zones

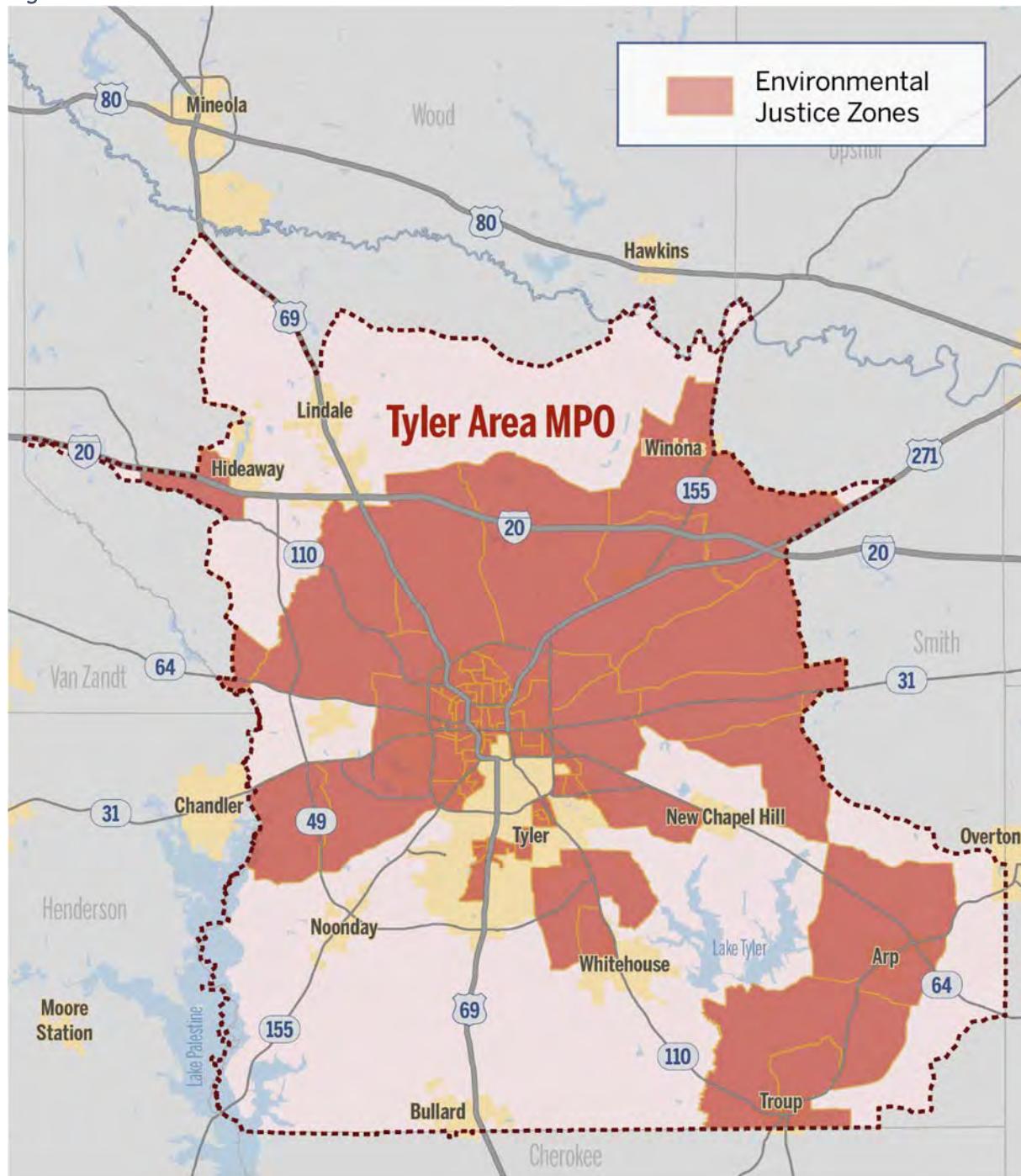
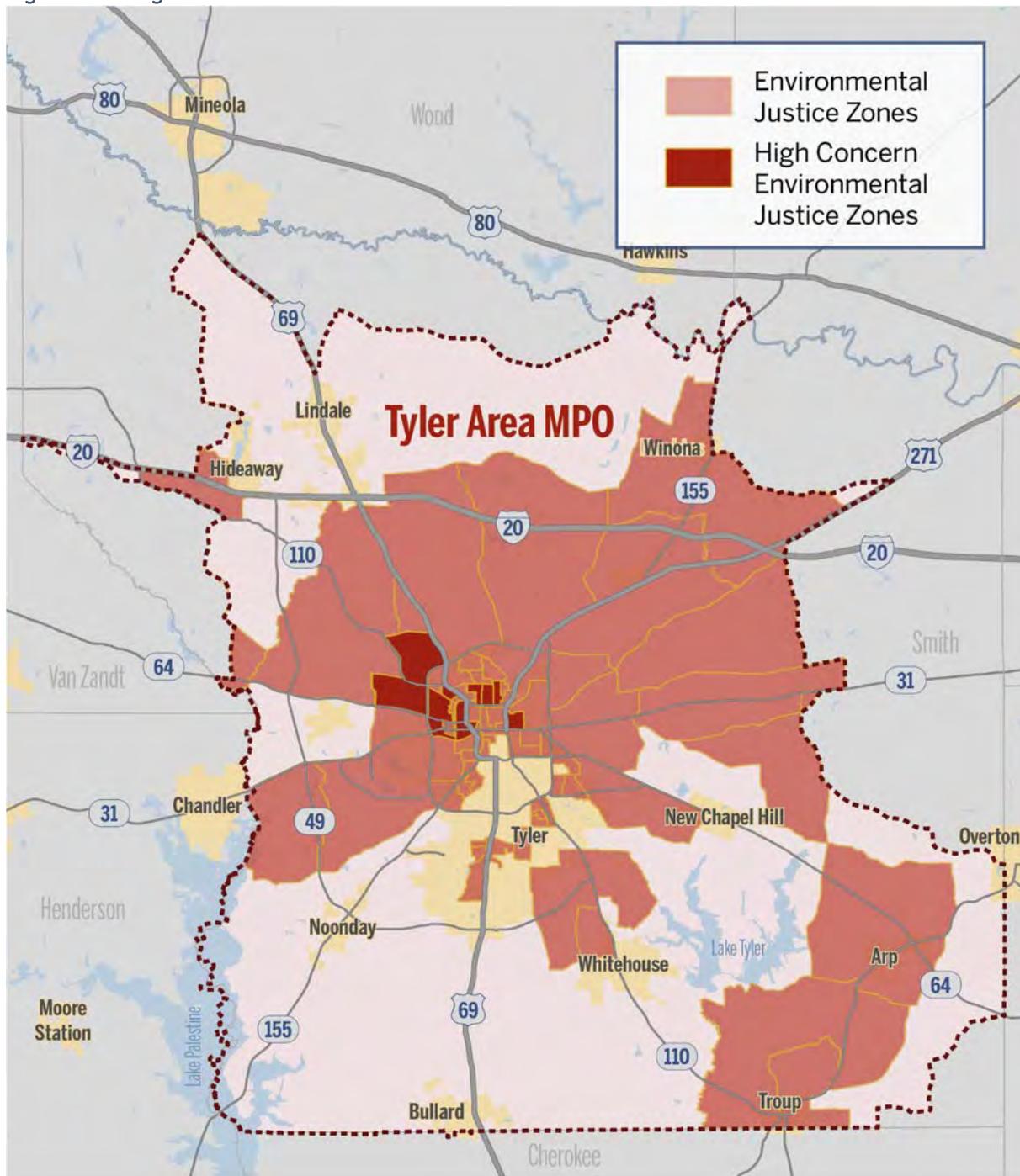


Figure 5-3: High Concern Environmental Justice Zones



Housing & Transportation Costs

Housing and transportation costs are often considered key indicators for a region's affordability. While housing is generally the singular criteria for looking at regional affordability, a household's transportation expenditure tends to be the second-largest expense. Together these two key expenditures as a portion of household income provide a better understanding potential impacts of transportation investments and resources within the region. These costs are not always direct indicators of livability and equity as they do not directly counterbalance household incomes to regional cost of living. For the sake of this analysis, these costs are included to highlight the equitable distribution of proposed transportation improvements.

Using the Housing + Transportation Affordability Index¹ data, Figure 5-4 identifies transportation and housing costs by block group as a percentage of household income throughout the region.

According to the Index, housing and transportation costs reaching 45% of household income is considered unaffordable. Transportation costs consider well- factors² that drive household transportation costs including the following:

- Neighborhood characteristics such as block density, regional household intensity, employment access, transit connectivity.
- Household characteristics such as commuters per household, household size, automobile ownership, automobile usage, and public transit usage.

The MPA's highest housing and transportation costs are located within the southwestern part of the region while much of the area outside the central core shows similar high H+T cost ratios. This is likely due to high transportation costs associated with rapid regional growth and auto-dependency. In other words, transportation costs are higher in areas that are dependent on owning and driving for transportation whereas the central part of the region has greater access to transit and employment. Growth happening south of the UZA is also driven by choice and socioeconomic factors. People who can afford to drive and want more land chose housing and transportation options within their means and within these defined terms. In turn, planned transportation projects proposed by this planning process consider how to alleviate transportation costs in these areas by linking multi-modal projects to areas of high employment and destinations, while equitably distributing planned improvements that support mobility choices throughout the region.

¹ The Center for Neighborhood Technology's Housing and Transportation (H+T) Affordability Index - <https://htaindex.cnt.org/>

² The Center for Neighborhood Technology's Housing and Transportation (H+T) Affordability Index – H+T Index Methods - https://htaindex.cnt.org/about/HTMethods_2016.pdf

Conclusion from the Equity Conditions Analysis

This equity analysis was utilized during the project scoring process to consider the potential impacts that proposed transportation projects may have on historically underserved and vulnerable communities and ensure that the groups will not be disproportionately affected by any negative consequences of the prioritized projects. In addition, this analysis highlighted areas of the MPA that merited heightened consideration for projects that enhance mobility choice such as new transit, bicycle, and pedestrian network facilities. Such projects can lessen the transportation cost burden on vulnerable communities and facilitate greater access to the region. Figure 5-5 shows the distribution of both MTP projects and Active Tyler projects in comparison to the mapped housing and transportation costs.

Figure 5-4: Housing & Transportation Costs

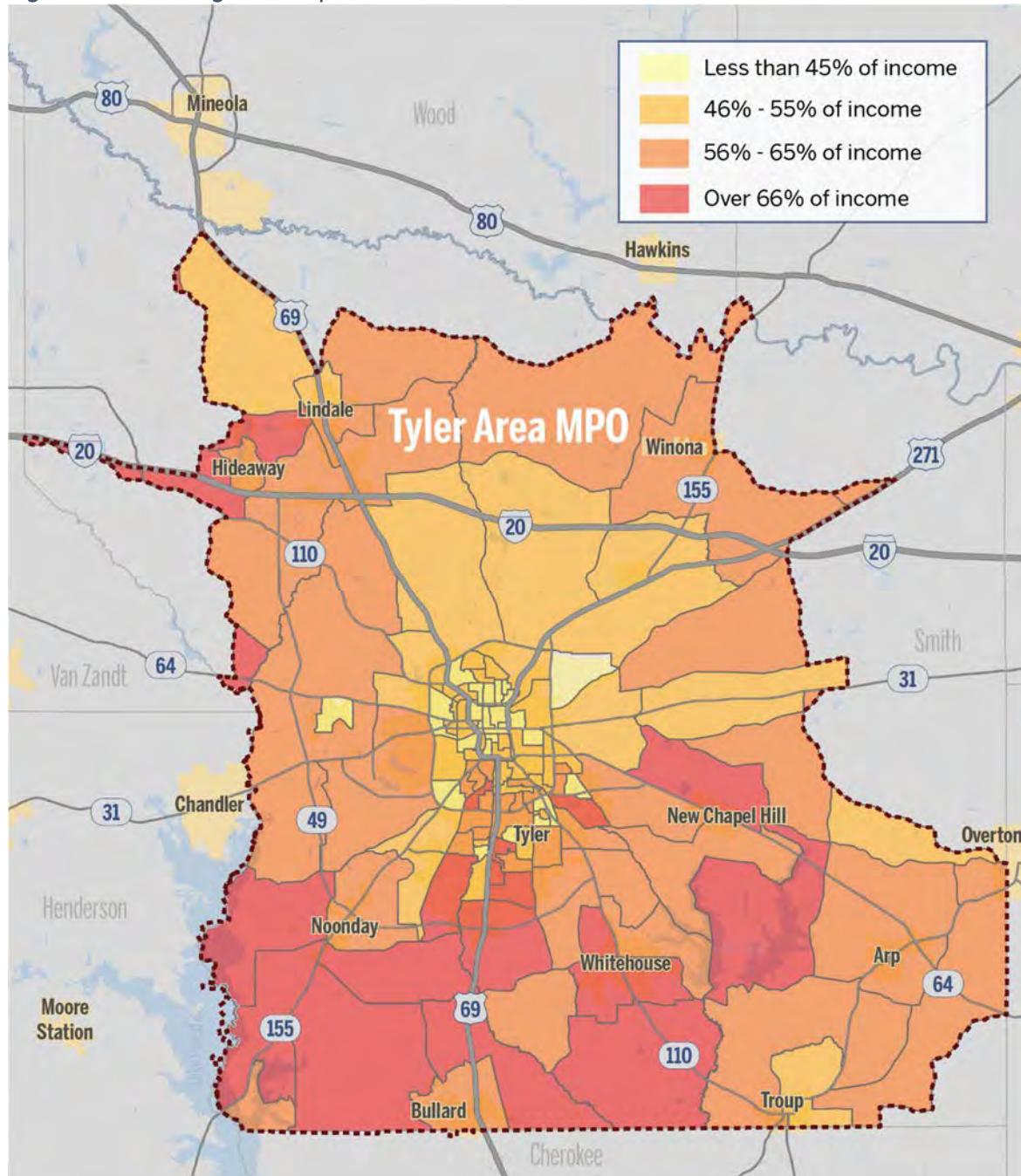
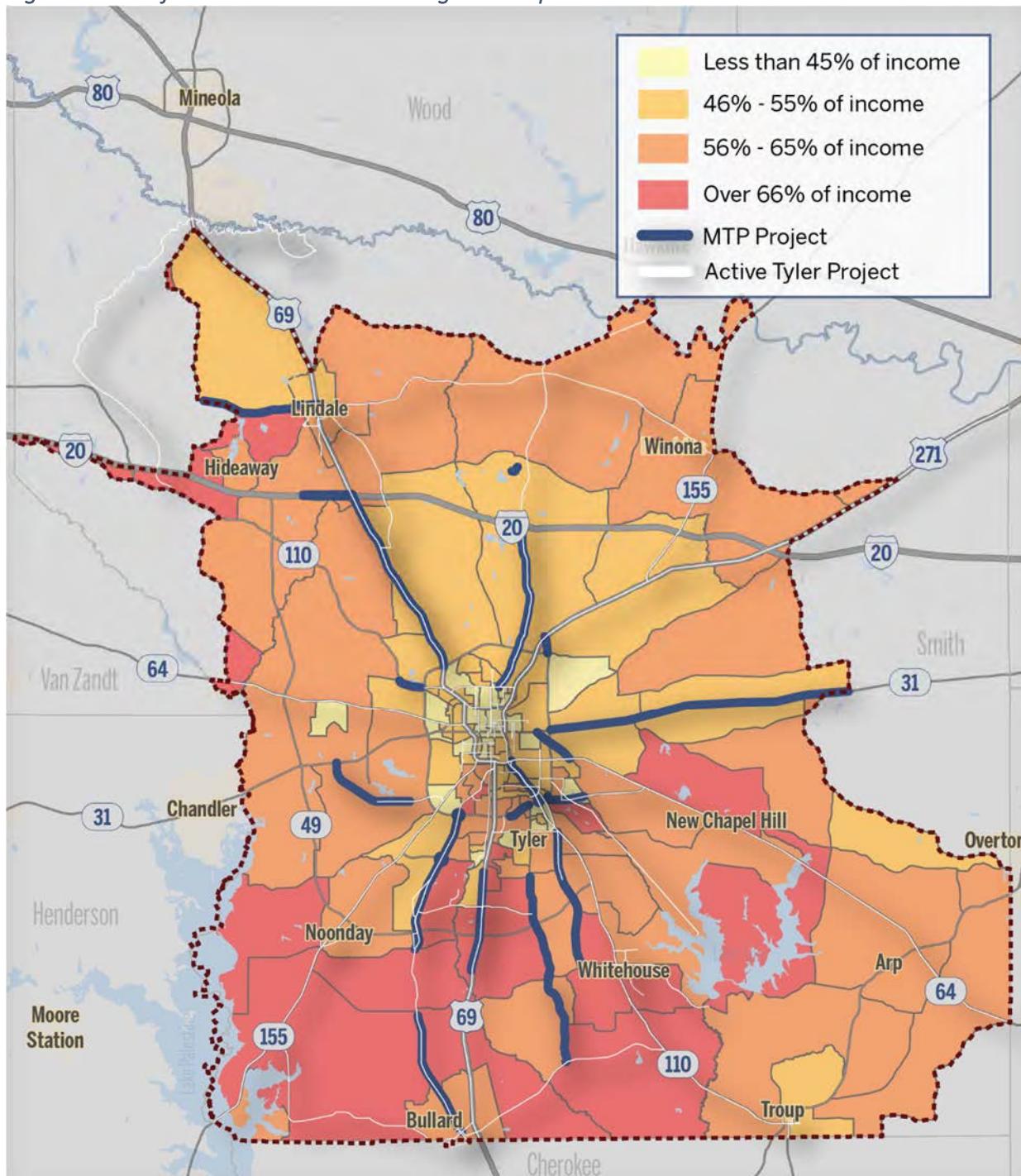


Figure 5-5: Project Distribution to Housing & Transportation Costs



Mitigation Analysis

Transportation projects proposed for inclusion in the 2045 MTP have the potential to impact important environmental areas, culturally significant sites, and environmental justice communities within the MPA. This analysis incorporates the environmental and equity analyses from above to identify potential impacts and mitigation measures for planned transportation projects in the region.

Environmental Mitigation Analysis

The data and information used to conduct the analysis included flood plain maps from the Federal Emergency Management Agency (FEMA), wetlands maps from the U.S. Fish and Wildlife Service, historic sites from the National Register of Historic Places, and state and federal wildlife protection resources. These inventoried resources are shown in

In order to determine how projects identified in this plan might affect these resources, an FHWA-endorsed GIS methodology originally developed by the Southeast Michigan Council of Governments (SEMCOG) was employed. The analysis assembles projects into types, and then buffer zones are generated and mapped for each type of project. For the sake of this analysis, only capacity projects were considered to have potential impacts on the mapped data. Table 5-2 presents the number of proposed capacity projects for each project type included in the 2045 MTP.

Table 5-2: Project Types

Project Type	Total Number of Proposed Projects
New/Expanded Roadway	21
Safety Improvements	2
Active Transportation	12

Table 5-3 summarizes the buffer sizes assigned to each resource being examined. Once buffer sizes were determined, buffers and environmental resources were mapped to identify areas of overlap, as these are areas where an impact is possible. Figure 5-6 displays the buffer zones and environmental and cultural resources in the region.

Table 5-3: Environmental Resources Buffer Sizes

Environmental Resource	Buffer Extent
Floodplains	0.25 miles
Wetlands and Other Waters	0.25 miles
Cemeteries	250 feet
Historic Sites	250 feet
Parks	250 feet

The buffer sizes were determined based on the type of environmental resource being examined, meaning smaller “areas of influence” were computed depending on the environmental resource. Figure 5-6 shows how some resources, such as recreation areas and historic sites, may only be impacted by projects in close physical proximity, while others (such as water resources) may still be impacted by a project some distance away.

Figure 5-6: Environmental Overlay Analysis

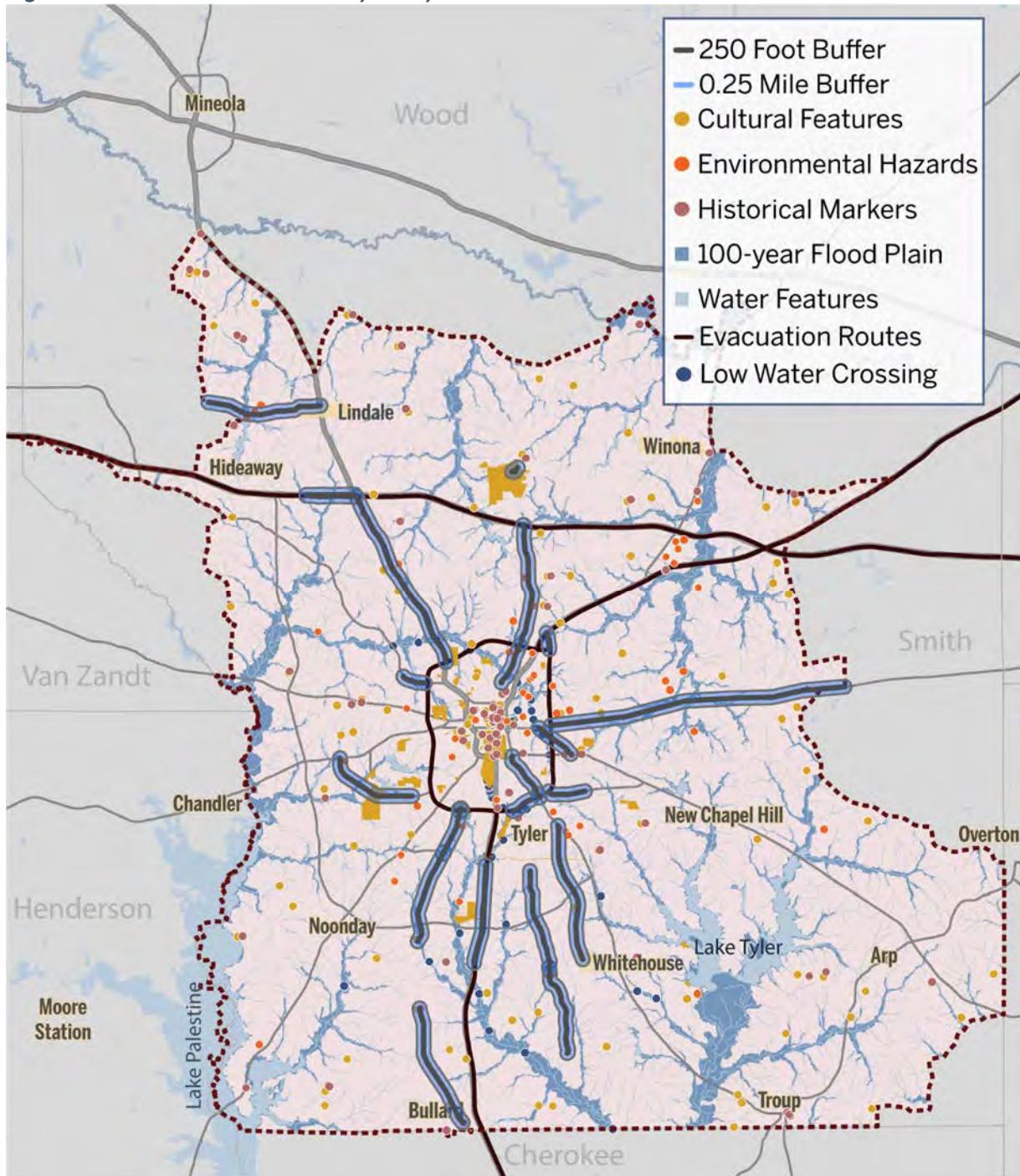


Table 5-4 and Table 5-5 quantify the number of possible impacts to the inventoried resources for capacity projects. The list of potential impacts presents some concerns for cultural resources including Greenbriar Lake, Hide-A-Way Lake and four historic sites in the region. Water bodies and floodplains have the highest risk for the potential impact on water resources due to the planned projects. The list of proposed projects presents few concerns regarding historic resources and landmarks.

Table 5-6 lists the cultural resources impacted by the proposed transportation projects.

Table 5-4: Number of Possible Impacts to Inventoried Water Resources

Water Resource	Number of Resources Impacted by Roadway Projects
Lakes	3
Streams/Rivers	355
Floodplain - Zones	4

Table 5-5: Number of Possible Impacts to Parks and Cultural Resources

Cultural Resource	Number of Resources Impacted by Roadway Projects
Cemeteries	0
Historic Sites	4
Museums	0
Parks	1

Table 5-6: Resource-Specific Impacts of Specific Projects

2045 MTP Project ID	Specific Resource
6	Henry Gary House
6	Milburn-Gary House
35	Flint Cemetery
35	Bullard Water Well

Potential Mitigation Activities

This analysis of potential environmental impacts is intended to function as a resource for agencies and elected officials that will ultimately implement any of these transportation projects. Detailed, project-level analysis is required in order to definitively identify adverse impacts from specific projects. The buffer analysis is a useful method for narrowing the focus of such studies, but it should be noted that proximity or overlap of a project buffer and environmental resource alone does not mean an impact is present nor does the lack of an overlap indicate that an impact will not occur. Federal regulations require the metropolitan planning process to include “a discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan.” FHWA recommends an ordered approach to mitigation known as “sequencing” that involves understanding the affected environment and assessing transportation effects through project development. This ordered approach involves:

- Avoiding the impact altogether;
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation;

- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or
- Compensating for the impact by replacing or providing substitute resources.

Recognizing that the type and the level of mitigation activities will vary depending on the scope of the project, Table 5-7 provides a toolbox of mitigation measures and general areas where these activities can be implemented. These measures are intended to be regional in scope and may not necessarily address potential project-level impacts. As a proposed project progresses through the project development process, mitigation should be an integral part of the alternatives development and the analysis process in order to maximize effectiveness.

Table 5-7: Potential Mitigation Activities

Resource	Mitigation Measures
Wetlands or water resources	Avoidance, minimization, compensation: <ul style="list-style-type: none"> • Preservation • Creation • Restoration • In-lieu fees • Riparian buffers • Design exceptions and variances Environmental compliance monitoring
Forested and other natural resources	Avoidance, minimization <ul style="list-style-type: none"> • Replacement property for open space easements to be of equal fair market value and of equivalent usefulness • Design exceptions and variances Environmental compliance monitoring
Agricultural areas	Avoidance, minimization <ul style="list-style-type: none"> • Design exceptions and variances Environmental compliance monitoring
Endangered and threatened species	Avoidance, minimization <ul style="list-style-type: none"> • Time-of-year restrictions • Construction sequencing • Design exceptions and variances • Species research/fact sheets • Memoranda of Agreements for species-specific management Environmental compliance monitoring
Ambient air quality	Environmental compliance monitoring <ul style="list-style-type: none"> • Transportation control measures • Transportation emission reduction measures
Cultural Resources	Avoidance, minimization <ul style="list-style-type: none"> • Landscaping for historic properties • Preservation in place or excavation for archeological sites • Design exceptions and variances Environmental compliance monitoring
Parks and recreation areas	Avoidance, minimization, mitigation <ul style="list-style-type: none"> • Design exceptions and variances • Environmental compliance monitoring

Environmental Justice Mitigation Analysis

A critical step in the metropolitan planning process is to identify the potential impacts of planned projects on environmental justice communities in the region.

displays the earlier identified environmental justice zones and the planned capacity projects. As stated earlier, project-scale studies should be conducted in the planning and environmental phases of each project to determine actual impacts on these communities.

Table 5-8 summarizes the number of capacity projects that may impact identified environmental justice areas. Of the 52 block groups identified as environmental justice zones, 16 are potentially impacted by planned projects. 58% of the roadway projects (14 out of 24) may potentially impact Environmental Justice Zones.

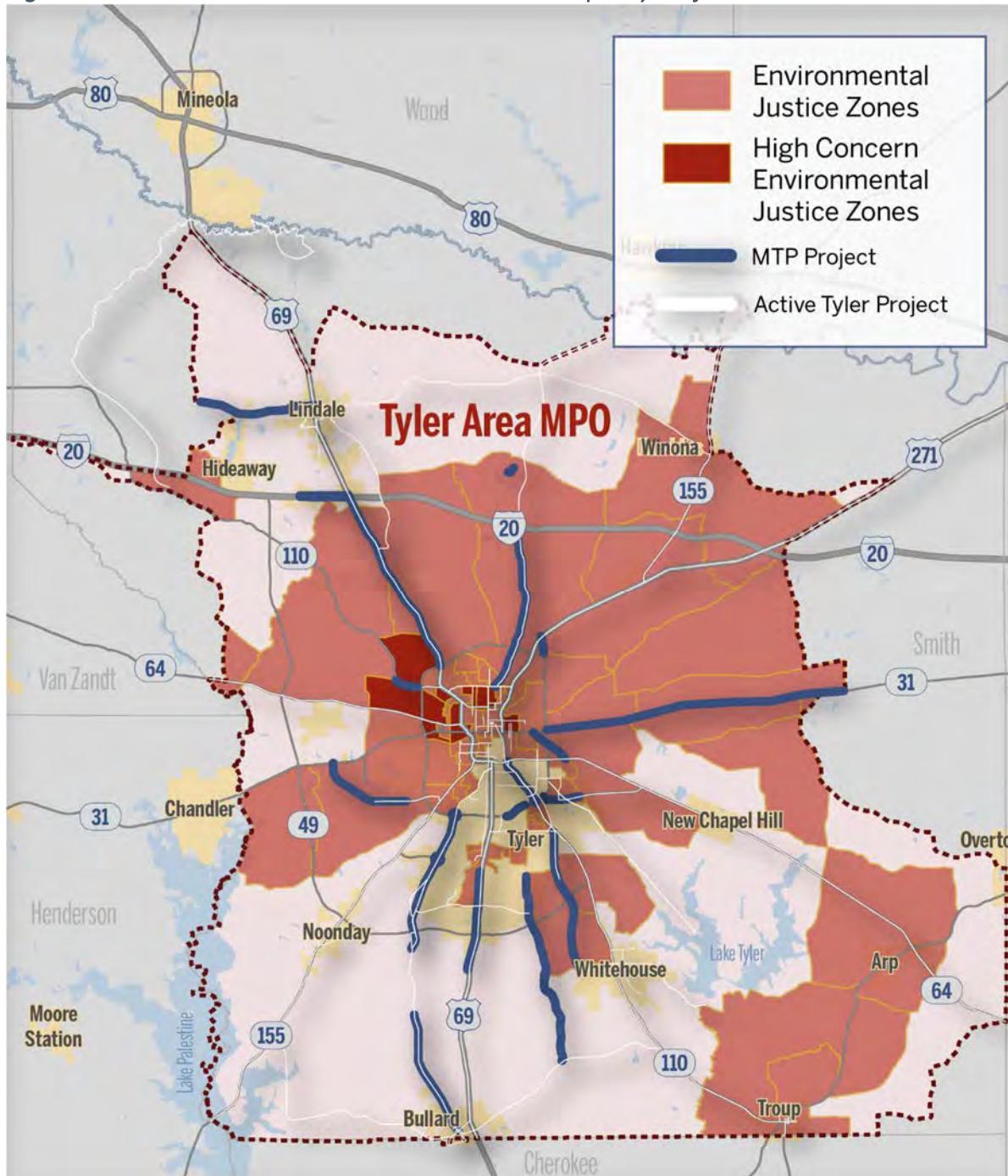
Table 5-8: Potentially Impacted Environmental Justice Zones

	Total Block Groups	Block Groups Impacted	% of Block Groups Impacted	Number of New/Expanded Roadways
Environmental Justice Zones	52	16	31%	14

Like the environmental mitigation analysis, a more detailed, project-level analysis is performed to better understand the likely impacts of transportation projects on environmental justice communities. The proximity of projects to environmental justice populations may have both positive and negative impacts. For example, it is assumed that the mobility, access, and safety benefits of most projects accrue most strongly to those areas in close proximity to the project. Therefore, if the project objectives are consistent with the travel market needs of adjacent communities, the project is viewed as having a positive impact.

On the other hand, the physical impacts of project construction and footprint also have the greatest negative impacts on adjacent communities. Large infrastructure projects whose objectives are not consistent with community needs represent potential negative impacts. Examples include the construction of a new rail line that may create safety and noise pollution concerns, the construction of a new roadway that divides an existing community or creates barriers to other resources and/or activities, or improvements that may increase freight traffic or the movement of hazardous materials through low-income communities. The key consideration in determining unintended consequences or disparate impacts to environmental justice communities is how the project objectives meet the community's transportation needs. TAMPO is committed to working with project sponsors to mitigate negative impacts on environmental justice communities using measures such as impact avoidance or minimization and context-sensitive solutions. This commitment is further illustrated by efforts such as the Active Tyler Plan and the fact that 13 of the 25 fiscally constrained projects outlined in the final chapter of this MTP contain implementation elements of the Active Tyler Plan.

Figure 5-7: Environmental Justice Zones & Planned Capacity Projects



Public Involvement



6. PUBLIC INVOLVEMENT

Public involvement is the heart and backbone of a well-developed Metropolitan Transportation Plan (MTP). The collaborative nature of public involvement is essential and valuable to the planning process. Public and stakeholder involvement in the development of the Tyler 2045 MTP was encouraged early in the process and throughout plan development using the Tyler Area Metropolitan Planning Organization's (TAMPO's) Public Participation Plan (PPP). The primary components of this public participation process for this MTP were as follows:

- Consultation on Regional Transportation Needs (Stakeholder Engagement)
- Development of a Community Vision
 - Online Public Visioning Tool
 - Paper Survey Distribution
- Review of Technical Analyses Performed as Part of Plan Development (Open House Meeting)
- Open House Kick off 30-Day Review of the Draft Tyler 2045 MTP

TAMPO's Public Participation Plan

TAMPO maintains and implements a PPP, which was last updated in July of 2018. The purpose of the PPP is to provide guidelines for the tools and timelines that should be used for public involvement during the development of the MPO's planning documents, such as the MTP, the Transportation Improvement Plan (TIP), and the Unified Planning Work Program (UPWP). Through the implementation of the PPP, TAMPO is able to ensure that public participation continues to be a critical component of the transportation planning processes. This is important because it allows the MPO to consider a diverse array of values and points of view from the communities that it serves. Early and continuous public involvement enables the MPO to make better informed decisions, improves quality through collaborative efforts, and builds mutual understanding and trust between the MPO and the public. Recognizing the importance of public participation, TAMPO uses procedures that:

- Provide timely information about transportation issues and processes to citizens, affected public agencies, representatives of transportation agency employees, private providers of transportation, other interested parties and segments of the community affected by transportation plans, programs and projects;
- Provide reasonable public access to technical and policy information used in the development of plans and the TIP and open public meetings where matters related to the Federal-aid highway and transit programs are being considered;
- Require adequate public notice of public participation activities and time for public review and comment at key decision points, including, but not limited to, approval of plans and programs;
- Demonstrate explicit consideration and response to public input received during the planning and program development processes; and
- Seek out and consider the needs of those traditionally underserved by existing transportation systems, including but not limited to elderly, disabled, low-income and minority households.

Summary of Stakeholder and Public Outreach Efforts

As part of the PPP, TAMPO maintains a distribution list of interested groups and individuals, including state, county, and local government officials, Chambers of Commerce, community groups, special interest groups, transportation providers, freight companies, etc. These individual stakeholders and groups also receive notices or flyers via regular mail or email notification at least 72 hours prior to any public meeting, public review period, or public comment period. The federal transportation legislation expands the listing of interested parties to be engaged during the development of long-term transportation plans. TAMPO staff works to ensure that these interested parties have reasonable opportunities to comment on projects of the short-term and long-term transportation plans. Federal regulations require expanded consultation and cooperation with agencies and officials responsible for other planning related activities within the Metropolitan Planning Area (MPA). The MPO shall consult with agencies and officials that are affected by transportation in the development of the short- and long-term transportation plans. A full listing of agencies and officials with whom the MPO may consult can be found in the PPP. Over the course of the 2045 MTP development process, TAMPO undertook a series of public and stakeholder outreach efforts to better understand the needs, challenges, and opportunities for the existing transportation system, as well as the vision and goals the communities in the region have for the future of the transportation system over the next 25 years. The various outreach efforts are described in the following sections.

Stakeholder Interviews

In November 2018, TAMPO conducted a series of interviews with different groups of stakeholders from various backgrounds and localities throughout the region. These stakeholders represented interested parties represented as stakeholder groups in Table 6-1. Stakeholder interviews occurred both in group and individual settings. The 21 stakeholder groups were asked questions that they were best suited to answer regarding current conditions of the transportation system in the MPO. Topics and generalized stakeholder concerns about the transportation system discussed during the interviews are listed in Table 6-2.

Table 6-1: Engaged Stakeholder Groups

Stakeholder Group	Stakeholder Group	Stakeholder Group
City of Tyler	TxDOT	Smith County
NET RMA	Tyler Bike Club	Chamber of Commerce
City of Bullard	City of Winona	Emergency Responders
Transit Agencies	City of Lindale	Freight
Churches/Non-Profits	Higher Education	Natural Resources
Tyler Pounds Airport	Medical Institutions	City of New Chapel Hill
City of Whitehouse	City of Noonday	School Districts

Table 6-2: Interview Topics & Generalized Stakeholder Concerns

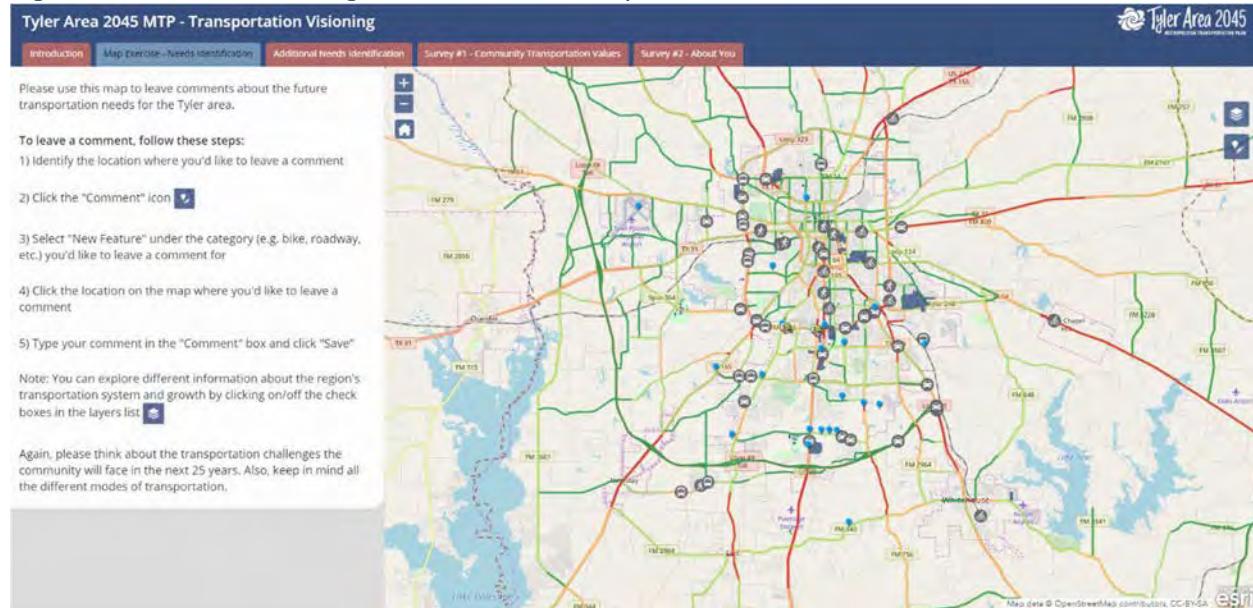
Interview Topics	Generalized Stakeholder Concerns
Roadway and Traffic Congestion	<p>South Broadway experiences consistent congestion</p> <p>Shiloh and Cumberland Road are both major arterials that are experiencing noticeable congestion</p> <p>The construction of school facilities and developments is creating congestion and impacting response times for emergency vehicles</p>
Safety Concerns	<p>Emergency access: many roadways provide poor access; schools are inaccessible during peak congestion</p> <p>These issues may be resolved with Travel Demand Management; staggering pickup/drop-off times at schools</p> <p>Other safety concerns focused on poor lighting and signaling, high speeds, and lacking infrastructure (such as medians and sidewalks)</p>
Freight	<p>Freight representatives want grade separation at major intersections</p> <p>Freight traffic has been able to increase due to Cumberland Extension</p> <p>Need for designating a freight network with data provided by freight operators</p> <p>Challenges include: unsignalized intersections (left turns are difficult), limited access to loop 323, and inadequate acceleration distance for the on ramps accessing IH-20</p>
Public Transportation	<p>Current service is viewed as inconvenient and unreliable</p> <p>Need to change mindset towards using transit to create mode shifts in long-term</p> <p>Rural and low-income, unincorporated areas are poorly served; need for regional transportation authority or better coordination</p>
Mobility, Accessibility, and Connectivity	<p>Poor overall connectivity due to lacking infrastructure for pedestrians and cyclists; poor transit connections as well</p> <p>Accessibility comes in three categories: emergency, pedestrian, and school access</p> <p>Poor accessibility plays a larger barrier for low-income, non-drivers, and senior citizens; limits their independence</p>
Biking and Walking	<p>Need more sidewalks, bike lanes, and hiking trails throughout region</p> <p>Road user awareness needs to increase to change stigma related to biking on Tyler roadways and increase the number of cyclists on the road</p> <p>These improvements would help improve connectivity regionally, decrease congestion, and invest in the quality of life for future generations</p>
Natural Resources Growth	<p>Preservation of green space and improvements to drainage systems</p> <p>Current growth patterns are encouraging sprawl and making public transportation difficult</p> <p>Growth includes college campuses, retirement homes, and apartment complexes</p> <p>Infrastructure can't compete up with growth rates and meet capacity, resulting in congestion</p>

Visioning Process

The purpose of the TAMPO 2045 MTP visioning process was to solicit the public for input regarding their values and priorities for the future of the transportation system in the region. The feedback received helped inform the goals and objectives for the MTP and played a role in shaping the process used to prioritize transportation improvement projects proposed for inclusion in the plan. Public feedback received from the online tool (discussed below) was used to create a component of the project score weighting process. The project scoring process is discussed in further detail in Chapter 4, which covers transportation strategies for the MPA. The visioning process for the TAMPO 2045 MTP consisted primarily of an online tool that was custom developed for TAMPO's MTP development process. This tool consisted of modules that both provided information to the public about the plan development process and requested input about community values and existing conditions in the region. These modules included a survey that gathered basic information about the participants and their transportation usage; an exercise where participants were asked to distribute hypothetical and constrained monetary values to the various planning factors involved in the plan development process; and an interactive map of the region where participants could place comments in exact locations regarding specific needs or issues related to transportation at those locations.

The online tool was opened on January 1st and closed on April 23rd. During this time the tool received a total of 56 survey responses and 47 comments on the interactive map. Figure 6-1 is a screenshot of the feedback map module from the online tool.

Figure 6-1: Online Visioning Tool – Feedback Map Module



Review of Technical Analyses – Current Conditions Public Open House

TAMPO hosted two public open houses during the development of the 2045 MTP. The first was held on March 20th, 2019 with the purpose of presenting the work done to-date on the development of the plan, which included educational aspects about what an MTP is and why the MPO needs to develop one, as well as the results of the Current Conditions Assessment discussed in Chapter 3. The first public open house consisted of a set of exhibit boards that displayed information about the plan and the analyses using text, graphics, and maps. Laptops set to the Online Visioning Tool as well as paper surveys for additional feedback were made available at this open house. Figure 6-2 shows an example of one of the boards displayed at the open house.

Figure 6-2: Example of Board at First Open House

MULTI-MODAL NEEDS ASSESSMENT

ROADWAY ANALYSIS

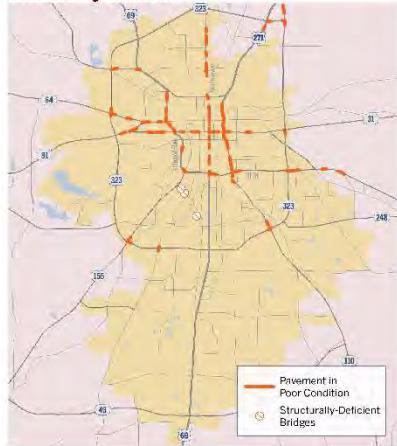
The majority of travel in the region takes place on the region's roadway network, which includes expressways, highways, and major arterial roadways. The Tyler 2045 MTP relies on the regional Travel Demand Model and detailed stakeholder input to explore current and future roadway performance.

Operations and Maintenance

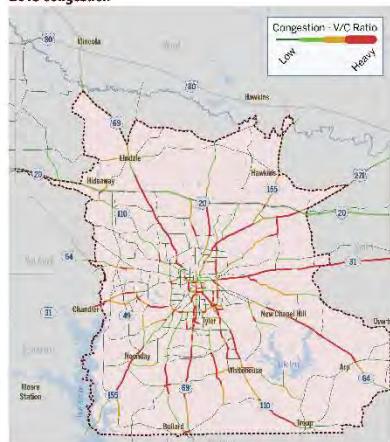
Implementing operational improvements and maintaining the current transportation system in a state of good repair can be effective, lower cost strategies for improving transportation throughout the region. The operations and maintenance (O&M) analysis for the Tyler Area 2045 MTP determines the condition of pavement and bridges in the TAMPO study area and aims to identify any facilities that may require rehabilitation/maintenance. Of the 328 bridges included in the analysis, three were identified as being in poor condition. All three of these structurally-deficient bridges are the West Mud Creek Tributary at the following general locations:

- Whittle St. just west of Sunnybrook Dr.
- Sunnybrook Dr./Azalea Dr. intersection
- Sunnybrook Dr./Camellia Dr. intersection

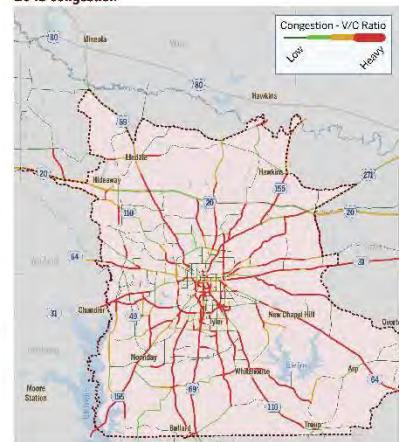
Road and Bridge Conditions



2018 Congestion



2045 Congestion



No-Build Congestion Performance

The maps above display the possible congestion outcome if no improvements are made to the transportation system beyond those already programmed or under construction. The map on the left displays current congestion while the map on the right uses the population and employment projections for 2045 to forecast future travel patterns.

In the ongoing visioning Survey, 51% of Survey Respondents so far believe congestion to be the most important regional transportation issue.

*Annual hours of delay for Automobile and truck traffic is expected to almost triple by 2045.
Source: 2018 Texas Department of Transportation Congestion Report





Draft Plan Open House

The second and final public open house was held on October 10th, 2019 and served to kick off the 30-day public comment period for the Draft Tyler 2045 MTP. This second open house provided the public with an overview of the draft 2045 MTP, including the proposed program of projects, and solicitations for feedback. Like the first open house, the second open house included a set of exhibit boards to convey information about the draft plan and the proposed projects using text, graphics, and maps. Figure 6-3 shows one of the boards used to facilitate feedback from attendees. Additionally, the project team created an ArcGIS Online story map to host a digital copy of the draft plan. The story map also allowed the public to navigate the proposed plan of fiscally constrained projects, and to provide feedback on the plan. Figure 6-4 shows a screenshot of the story map. A full listing of public comments received during the public comment period is listed in an appendix.

Figure 6-3: Draft Plan Open House Board Example

GUIDING VALUES AND PLAN RESULTS

Vision Statement
"To develop a safe, efficient and economically feasible multi-modal transportation system that will accommodate the mobility needs of all people and goods traveling within and through the Tyler Area over the next 25 years."

The Tyler Area 2045 team has developed a draft list of 12 values that will help guide how we prioritize transportation investments in the MTP. These values are presented through an ongoing survey.

Results from public participation in the online feedback process helped rank the guiding values used to guide part of the decision making process for future investments.

↑ **Reduce Congestion**
 
Improve Public Transportation
 
Encourage Walking
 
Increase Connections and Access
 
Improve Safety and Security
 
Encourage Cycling
 
Encourage Environmental Stewardship and Resilience
 
Preserve Existing System
 
Guarantee Equitable Transportation Improvements
 
Support Land Use Goals
 
Improve Airport Access
Enhance Economic Development

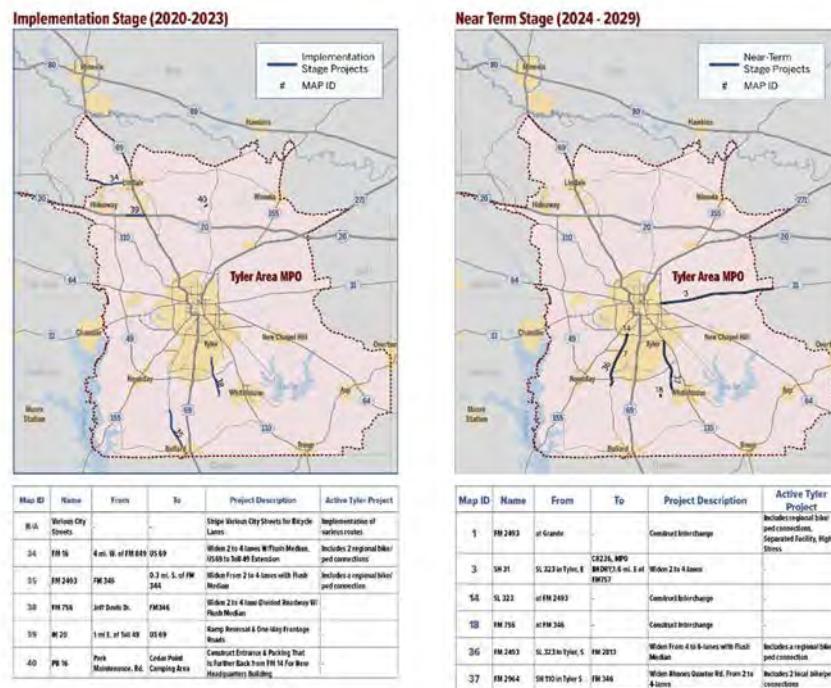
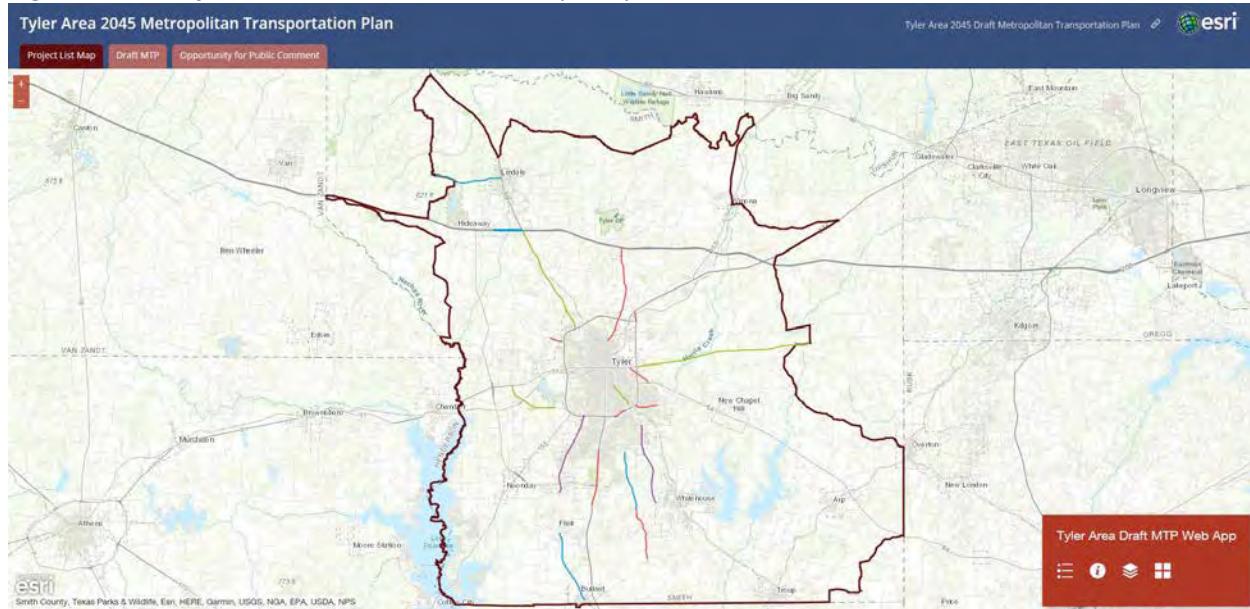


Figure 6-4: Draft MTP Public Comment Story Map



Financial Analysis

7. Financial Analysis

Federal regulations mandate that investments proposed in an MTP must show “fiscal constraint” by providing enough information to demonstrate that projects included in the plan can likely be implemented using committed, available, or reasonably available revenue sources, meaning that the funding available for projects must be able to reasonably support anticipated cost of the projects. This fiscal constraint process should also demonstrate reasonable assurances that the transportation system is being adequately operated and maintained.

This chapter includes a primer on funding categories, sources, and dollar amounts reasonably anticipated to be available to fund projects included in the Tyler Area 2045 MTP. It also outlines the process by which funding levels were established to determine the amount of funds available and discusses project cost development for year of expenditure (YOE).

Because federal regulations stipulate that the financial forecast consider inflation, funding and costs discussed in this chapter were estimated in year-of-receipt and year-of-expenditure dollars, respectively.

Roadway Funding Sources

The funding estimated to be available for projects in the Tyler Metropolitan Planning Area (MPA) through the lifespan of the 2020 Unified Transportation Program (UTP) was used in conjunction with an analysis of historical spending by category to establish base year funding assumptions. These base year revenues were extrapolated to complete the estimated funding forecast for the duration of the MTP. The categories of funding within the UTP represent an allocation of federal transportation funds combined with State monies, a portion of which is sub-allocated to each Texas MPO based on agreed-upon formulas. There are also several different sources of State revenue in Texas for transportation investments, but the most significant sources of the Texas state program are from motor fuel tax allocations, motor vehicle registration fees, severance tax allocations, and voter-approved constitutional amendments Proposition 1 and Proposition 7, which redirect funding from the general fund to be spent on transportation projects. The revenue that the State receives from the State revenue sources and the Federal funding sources are gathered into the State Highway Fund (SHF).

The TxDOT Tyler District makes project-level decisions in close coordination and consultation with the MPO to assure that the development of a multi-year program of projects that is established within available annual budget amounts reflects the needs and goals of the region while following Federal and State guidance. The following sections describe the UTP Funding Categories as well as local and other possible funding sources for transportation investments in the Tyler MPA.

Category 1: Preventive Maintenance & Rehabilitation

This category covers funding for preventive maintenance and rehabilitation on the existing state highway system, including pavement, signs, traffic signals, and other infrastructure. Preventive maintenance works to preserve, rather than improve the structural integrity of the pavement or structure. Rehabilitation funds can be expended on any highway in the state highway system and are intended for the rehabilitation of existing main lanes, structures, and frontage roads, including approved preventive maintenance measures. The installation or rehabilitation of signs and their appurtenances, pavement markings, thermoplastic striping, traffic signals, and illumination systems, including minor roadway modifications to improve operations, are also allowed under this category. Funds can be used to install new traffic signals as well as modernize existing signals. Projects are selected at the district level using a performance-based prioritization process that assesses districtwide maintenance and rehabilitation needs. Funds are allocated by the Texas Transportation Commission (TTC) through the formula allocation program.

Category 2: Metropolitan & Urban Area Corridor Projects

The TTC allocates funds in this category to each MPO in the state by formula. For MPOs with population less than 200,000 within the MPA, such as Tyler, the distribution formula includes considerations for total vehicle miles traveled (on and off system), population, lane miles (on system), truck vehicle miles traveled (on system), percentage of census population below the federal poverty level, centerline miles (on system), congestion, and fatal and incapacitating crashes within the MPA. MPOs help develop projects in consultation with TxDOT districts through the metropolitan planning process using a performance-based prioritization process that assesses mobility needs within the MPA. Project types may include roadway widening (both freeway and non-freeway), interchange improvements, and roadway operational improvements, and must be located on the state highway system. Project funding is authorized by the TTC.

Category 3: Non-Traditionally Funded Transportation Projects

Funding from sources not traditionally part of the State Highway Funding (SHF), such as state bond financing under programs such as Proposition 12, Proposition 14, Texas Mobility Fund, pass through financing, regional revenue and concession funds, and local participation funding, are included in this category. These funds are approved by legislation through the TTC, Minute Orders, and local government commitments. Additionally, Federal earmarks or special federal programs are allocated within Category 3.

Category 4: Statewide Connectivity Corridor Projects

Funds in Category 4 may be used for mobility and added capacity projects on major state highway system corridors, which serve the mobility needs of statewide connectivity between urban areas and corridors serving mobility needs throughout the state. Corridors are composed of a network of connected highways that includes the Texas Trunk System, the National Highway System (NHS), and connections from these to major ports on international borders or Texas water ports. Selection of these projects by

the TTC is based on analysis of three corridor types; mobility, connectivity, and strategic. These funds are allocated by the TTC to TxDOT districts, who select projects within approved corridors in consultation with MPOs, the Transportation Planning and Programming Division (TPP), and TxDOT Administration using a performance-based evaluation.

Category 5: Congestion Mitigation & Air Quality Improvement

Funds in this category may be used for projects selected by MPOs in consultation with TxDOT and funded by the district's Allocation Program. The TTC allocates money based on population percentages within areas failing to meet air quality standards. Failing to meet these air quality standards is also known as being in non-attainment for air quality. These funds are popularly known as Congestion Mitigation and Air Quality (CMAQ) funds. This category is not applicable to the Tyler Area MPO as the MPO is in attainment. Should the Tyler Area MPO become a non-attainment area, CMAQ funding may become available.

Category 6: Structures Replacement & Rehabilitation

Funding within this category is provided through three main programs - the Highway Bridge Program, the Railroad Grade Separation Program, and the Bridge Maintenance and Improvement Program. Within the Highway Bridge Program, bridges are selected statewide based on eligibility and prioritized based on sufficiency ratings. Eligible bridges have a deficiency status of "structurally deficient" or "functionally obsolete" and have sufficiency ratings below a score of 80. Within the Railroad Grade Separation Program, projects are selected based on a cost-benefit index rating that encompasses vehicle and train traffic, accident rates, casualty costs, and personnel and equipment delay costs. The index is used to select at-grade railroad crossing elimination projects or uses vertical clearance and roadway characteristics for selecting railroad underpass replacement or rehabilitation projects.

Within the Bridge Maintenance and Improvement Program, projects are selected statewide based on identified bridge maintenance/improvement needs to aid in ensuring the management and safety of the state's bridge assets. For projects that are selected, all bridge elements will meet a predetermined condition threshold after rehabilitation. These programs replace eligible bridges on and off the state's highway system that are considered functionally obsolete or structurally deficient. A minimum of 15% of the funding in this category must go toward replacement or rehabilitation of off-system bridges. This funding also eliminates at-grade highway-railroad crossings through the construction of highway overpasses or railroad underpasses and rehabilitates or replaces deficient railroad underpasses on the state highway system.

Category 7: Metropolitan Mobility & Rehabilitation

Funds in this category are part of a federal program that distributes money to MPOs with an urbanized area population of 200,000 or greater, known as transportation management areas (TMAs). The projects are selected by the MPO through coordination with TxDOT. The Tyler Area MPO is not currently designated as a TMA, however, this funding may become available if the MPO becomes a TMA.

Category 8: Safety

Funding in this category is provided through four programs; the Highway Safety Improvement Program (HSIP), Railroad Crossing Program, Safety Bond Program, and the Systematic Widening Program. The HSIP focuses on safety-related projects on and off the state highway system using the safety improvement index. The index uses three years of crash data to evaluate and rank projects' likely impacts and improvements to the safety of travelers. Workforce development, training, and education activities are also eligible uses of HSIP funds.

Funding within the Railroad Crossing Program is set aside from the HSIP for safety improvements to reduce the number of fatalities, injuries, and crashes at public grade crossings. Funds can be used for the installation of automatic railroad warning devices at railroad crossings both on and off the state highway system. Projects are selected from a statewide inventory list, which is prioritized by a rail-crossing-specific safety index using a crash prediction formula. This index uses a grade crossing safety database known as Texas Railroad Information Management System (TRIMS). The program provides incentive payments to local governments for closing crossings, improving signal preemption, and coordination of train control signals, and improves passive warning devices to comply with federal guidelines.

The Safety Bond Program addresses the safety improvement index, roadway safety characteristics, and anticipated time required to complete a candidate project. Allocations for this program are approved by the TTC and managed as an allocation program on a statewide basis. Projects are evaluated, ranked, prioritized, and selected by the Traffic Rail Foundation (TRF).

The Systemic Widening Program funds improve roadway safety features to prevent severe crash types on the state highway system. Projects are evaluated using roadway safety features for preventable severe crash types. Projects are evaluated, ranked, prioritized and selected by the Traffic Operations Division.

High Risk Rural Roads projects previously authorized remain in Category 8. Future High-Risk Rural Roads projects will be managed under the HSIP if required by special rule. The Safe Routes to School projects previously authorized remain in Category 8. Future Safe Routes to School projects will be managed under the Transportation Alternatives Program guidelines in Category 9.

Category 9: Transportation Alternatives Set-Aside Program

The FAST Act eliminates the MAP-21 Transportation Alternatives Program (TAP) and replaces it with a set-aside of Surface Transportation Block Grant (STBG) program funding for transportation alternatives (TA). These set-aside funds include all projects and activities that were previously eligible under TAP, encompassing a variety of transportation projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school projects, community improvements such as historic preservation and vegetation management, and environmental mitigation related to stormwater and habitat connectivity.

Category 10: Supplemental Transportation Projects

This category includes transportation-related projects that do not qualify for funding in other categories, such as:

- Landscape and aesthetic improvement;
- Erosion control and environmental mitigation;
- Construction and rehabilitation of roadways within or adjacent to state parks, fish hatcheries, and similar facilities;
- Replacement of railroad crossing surfaces;
- Maintenance of railroad signals;
- Construction of replacement of curb ramps for accessibility to pedestrians with disabilities;
- Improvement to the safe movement of motor vehicles at or across the land border between the United States and Mexico;
- Facilities that are located on or adjacent to or provide access to federal lands;
- Other miscellaneous federal programs.

Category 11: District Discretionary

This category includes projects eligible for federal or state funding selected at the district engineer's discretion. Projects are selected at the district level. The TTC allocates funds through the formula allocation program. The TTC may supplement the funds allocated to individual districts on a case-by-case basis to cover project cost overruns, as well as energy sector initiatives, however, these funds are not intended to be used for right-of-way acquisition

Category 12: Strategic Priority

Projects with specific priority for the state fall within this category. The TTC selects projects which generally promote economic opportunity, increase efficiency on military deployment routes, retain military assets in response to the federal military base realignment and closure report, or maintain the ability to respond to both man-made and natural emergencies. The TTC approves pass through financing projects in order to help local communities address their transportation needs.

Potential Local Funding Sources

Any costs not covered by federal and state programs are typically the responsibility of the local governmental jurisdictions. Local funding can come from a variety of sources, including property taxes, sales taxes, user fees, special assessments, and impact fees. Local funding is also critical to maintain eligibility for several federal and state funding sources due to the usual requirements for a "local match" – which is typically around 20% of total project costs for federal funding sources.

Property and Sales Tax

Property taxes are historically the most prominent source of funding for local governments in the United States (property taxes account for roughly 80% of all local tax revenues). Sales taxes include the retail sales tax which is imposed on a wide array of commodities. The rate is typically a uniform percentage of the selling price. In addition to general sales taxes, with voter approval a county or city can levy a local option sales tax, which is a special-purpose tax appended onto a state's base sales tax rate. One such example is the City of Tyler Half-Cent Sales Tax that helps pay for public infrastructure. The sales tax was approved by Tyler voters in November of 1995 and has generated considerable investments in local infrastructure over the last twenty-four years. These investments have included things like arterial improvements, bike lanes, airport improvements, water utilities, and drainage infrastructure, amongst a number of other improvements. This sales tax helps keep the City of Tyler from accruing debt while investing in infrastructure.

Tax Increment Reinvestment Zones

A Tax Increment Reinvestment Zone (TIRZ) is a designated political subdivision within Texas where Tax Increment Financing (TIF) occurs. These zones allow local governments to raise additional revenue to subsidize local projects without directly raising taxes in their jurisdiction. In the report of Biennial Registries of Reinvestment Zones for Tax Abatements and Tax Increment Financing from 2018, there are five listed active TIRZs in Smith County. The revenues generated help fund specific improvements, including but not limited to:

- Parking, driveways, and roadway work
- Sewer and water system improvements
- Underground utilities, drainage, and/or detention ponds
- Public buildings, facilities, parks, parking, and economic development
- Exterior lighting, landscaping, greenspace, and sidewalks

Special Assessments

Special assessments refer to a method of generating funds for public improvements where the cost of a public improvement is collected from those who directly benefit from the improvement. A primary example would be new streets being financed by special assessment. Accordingly, the owners of property adjacent to the new streets are assessed a portion of the cost of the facility based on the amount of frontage they own along (in this example) the new roadway.

Municipal Bonds

Municipal bonds are issued to raise money to support a variety of public works projects. These bonds are issued by municipal governments upon approval of the voting public and can help fund transportation projects. In 2017 Smith County passed a \$39.5 million Road Bond for road and bridge construction as well as major road improvements. This bond is serving to rehabilitate and modernize county roads that serve as regional connectors. By proactively repairing transportation assets ahead of schedule through this bond program, Smith County is able to incur significant savings, as costs to repair or replace increase incrementally over time. Property tax and sales tax funds can be utilized on a pay-as-you-go basis to pay off general obligation bonds or the revenues generated from the project can be used to pay off revenue bonds.

Toll Roads

Another non-traditional method of funding the construction of controlled access roadways is to construct the roadway as a tolled facility and sell revenue bonds to build the toll road based on the premise that anticipated toll revenues are used to repay the bonds. Toll roads can be built by the state or through an agreement with a private contractor. A toll road has the ability to generate project revenue, which means projects can be fully or partially financially self-sufficient. As toll roads are generally funded by revenue bonds backed by the anticipated toll revenues, toll road projects have the ability to be started sooner and completed quicker than projects relying on the incremental allocation of federal funding. Toll equity allows state funds to be combined with other funds to build toll roads. Toll conversion allows the TTC to transfer segments of any non-tolled state highway to a county or regional toll authority for operation and maintenance, which provides local authorities another option that can accelerate maintenance and expansion improvements. Toll 49 is the only tolled facility within the study area and is managed by the North East Texas Regional Mobility Authority (NET RMA). A regional mobility authority (RMA) is a political subdivision formed by one or more counties to finance, acquire, design, construct, operate, maintain, expand, or extend transportation projects. RMAs have considerable authority over transportation decisions within their communities and may also seek grants or loans from TxDOT.

To support RMA operations, revenue can be generated from various sources, including tolls, fares, or other charges from transportation projects; proceeds from the sale or lease of the project; and proceeds from the sale or lease of adjoining property. The NET RMA encompasses a total of twelve counties, including Bowie, Cass, Cherokee, Gregg, Harrison, Panola, Rusk, Smith, Titus, Upshur, Van Zandt, and Wood. Expansions to the current Toll 49 extent have been identified as a regional need.

Transit Funding Sources

Section 5303 & 5304 Planning Programs

The Section 5303 Metropolitan Planning and Research Program provides planning funding for MPOs. This funding is formulary and TxDOT provides the needed local match through transportation development credits (TDCs). The States also receive Section 5304 Statewide Planning and Research funding, which is awarded to eligible entities for planning purposes.

Section 5307 Urbanized Area Formula Program

Section 5307, the Urbanized Area Formula program (49 U.S.C. 5307) makes federal funding available to urbanized areas for transit capital and operating assistance and for transit-related planning activities. Funding for the formula program is determined based on the level of transit service provision, population, and other factors.

Section 5310 (Enhanced Mobility of Seniors and Individuals with Disabilities)

The Enhanced Mobility program provides formula funding to assist in meeting the transportation needs of seniors and persons with disabilities when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs. The purpose of this program is to enhance mobility for seniors and persons with disabilities by providing funds for programs to serve the special needs of transit dependent populations beyond traditional public transportation services and paratransit services. Funds from the 5310 program can be used for both capital improvements and operating expenses. However, at least 55% of program funds must be used on capital projects that are public transportation projects planned, designed, and carried out to meet the special needs of seniors and individuals with disabilities when public transportation is insufficient, inappropriate, or unavailable. The remaining 45% of program funds may be used for the following:

- Public transportation projects that exceed the requirements of the Americans with Disabilities Act (ADA);
- Public transportation projects that improve access to fixed-route service and decrease reliance by individuals with disabilities on complementary paratransit; and
- Alternatives to public transportation that assist seniors and individuals with disabilities.

Funds are apportioned for urbanized and rural areas based on the number of seniors and individuals with disabilities. The federal share for capital projects (including acquisition of public transportation services) is 80%; the federal share for operating assistance is 50%.

Section 5311 (Formula Grants for Rural Areas)

This formula-based program (49 U.S.C. 5311) provides states and tribal governments with funding for administration, capital, planning, and operating assistance to support public transportation in rural areas, defined as areas with fewer than 50,000 residents. A percentage of funds in this program are set aside for

the Intercity Bus Program, the Rural Transit Assistance Program (RTAP), Public Transportation on Indian Reservations, and the Appalachian Development Public Transportation Program.

Intercity Bus

As part of the Section 5311 program, Federal law requires a State to set aside at least 15% of its Federal Transit Administration (FTA) rural program funding to support intercity bus services, unless intercity bus service needs have been met.

Section 5339 (Bus and Bus Facilities)

This formula-based program (49 U.S.C. 5339) provides capital funding to states and designated recipients to replace, rehabilitate, and purchase buses, vans, and related equipment, and to construct bus-related facilities and is intended to assist in financing the evaluation of all reasonable modal and multimodal alternatives and general alignment options for identified transportation needs in a specific, broadly defined travel corridor. Funds may be used to assist state and local governmental authorities in conducting alternatives analyses when at least one of the alternatives is a new fixed guideway system or an extension to an existing fixed guideway system. The transportation planning process of alternatives analysis includes:

- An assessment of a wide range of public transportation or multimodal alternatives, which will address transportation problems within a corridor or subarea;
- Steps to provide ample information to enable the secretary to evaluate project justification and local financial commitment;
- Steps to support the selection of a locally preferred alternative; and
- Steps to enable the local MPO to adopt the locally preferred alternative as part of the long-range transportation plan.

Transportation Development Credits (TDCS)

In Texas, the Public Transportation Program is authorized by the Texas Transportation Commission to use up to \$15 million in TDCs to help provide the required non-Federal match for FTA programs. These TDCs can be combined with FTA funding and awarded to eligible public transportation providers or awarded to eligible recipients who receive Federal funding directly from FTA.

TA Set-Aside Program

This program provides opportunities to expand transportation choices and enhance alternative transportation infrastructure. Each State DOT reviews FHWA's guidance and develops rules to administer their TA Set-Aside Program according to that State's priorities.

Other FTA Formula and Competitive Funding Programs

There are several other FTA grant programs with funding available. Most of these grant programs are focused on fixed guideway systems or on temporary assistance.

Section 5309 (Capital Investment Grants)

The Capital Investment Grant (CIG) Section 5309 program is a discretionary grant program for funding major transit capital investments. This includes heavy rail, commuter rail, light rail, streetcars, and bus rapid transit. By law, projects seeking CIG funding must complete a series of steps over several years to be eligible for funding. New Starts and Core Capacity projects are required by law to complete the Project Development and Engineering phases in advance of receipt of a construction grant agreement. Small Starts projects are required by law to complete the Project Development phase in advance of receipt of a construction grant agreement. By law, FTA rates projects at various points in the process, evaluating project justification and local financial commitment according to statutory criteria. FTA provides policy guidance on the CIG process and the evaluation criteria on their website.

Section 5337 (State of Good Repair Program)

The purpose of 49 U.S.C. 5337, a new grant program, is to maintain public transportation systems in a state of good repair. This program replaces the Fixed Guideway Modernization Program, Section 5309. Funding is limited to fixed guideway systems (including rail, bus, rapid transit, and passenger ferries) and high intensity bus (buses operating in high occupancy vehicle lanes). Projects are limited to replacement and rehabilitation or capital projects required to maintain public transportation systems in a state of good repair.

Flexible Federal Funding Sources

Funding from the NHPP, the STBG, and TA Set-Aside can be “flexed” to transit projects, with certain eligibility restrictions depending on the funding source.

Local Revenue

Local revenue is derived primarily from user fees in the form of bus fares and coupon pass sales, but also comes from advertising, contract services, and other miscellaneous revenue sources.

Revenue Forecast Development

Historically, transportation improvement projects in the Tyler MPA have been funded through a combination of Federal, State, or local dollars, with NET RMA contributing funding towards select Toll 49 segments. Historical funding from 2000 to 2019 is summarized in Table 7-1 and Table 7-2 for both roadway and transit.¹ For the sake of this analysis, the UTP funding categories have been grouped into mobility and non-mobility corresponding to either the type of category or type of project application. Non-mobility funds are hereafter generalized as “Maintain It” and mobility funding has been classified as “Build It.”

¹ For an exact breakdown of Federal, State, and local shares, this funding data was compiled from project-level information contained in historical Transportation Improvement Programs (TIPs) for the Tyler Urbanized Area, as well as Statewide Transportation Improvement Programs (STIPs), provided the project was implemented within the Tyler Metropolitan Area.

Over the past twenty years, State and Federal funding in the region totaled almost \$488 million. For the “Maintain It” funding categories (Categories 1 and 6), approximately \$209 million were received, equivalent to 26 % of total funding. A review of the “Build It” categories showed that almost \$288 million, a 34 % share of the total amount, had been expended within the study area. Over that time period approximately \$47.7 million or 6 % of roadway funds have come from government earmarks, while \$29 million (4 %) have come from the NETRMA through Toll Revenue and Bonds, and local monies have contributed 31 % of roadway funding over that period, or almost \$249 million.

Table 7-1: Historical Roadway Funding by Category

Roadway Funding	Historical (2000-2004)	Historical (2005-2009)	Historical (2010-2014)	Historical (2015-2019)
Build It	\$56,772,403	\$149,241,411	\$17,915,000	\$54,802,023
Maintain It (Cat 1 & 6)	\$65,966,856	\$31,168,623	\$32,641,481	\$79,329,282
Total Federal & State	\$122,739,259	\$180,410,034	\$50,556,481	\$134,131,305
Gov't Earmarks (TxDOT/MPO/City)	\$0	\$37,900,000	\$9,814,146	\$0
NETRMA (Toll Revenue, Bonds)	\$0	\$0	\$29,000,000	\$0
Local	\$52,376,974	\$42,075,978	\$79,730,701	\$74,679,925
Combined Roadway Funds	\$175,116,233	\$260,386,012	\$169,101,328	\$208,811,230

Table 7-2: Historical Transit Funding by Source

Transit Funding	Historical (2000-2004)	Historical (2005-2009)	Historical (2010-2014)	Historical (2015-2019)
Tyler Transit Federal	\$3,335,789	\$5,673,808	\$6,603,943	\$8,415,487
Tyler Transit State	\$1,802,662	\$1,448,279	\$1,464,698	\$1,078,277
Tyler Transit Local	\$605,172	\$2,148,001	\$1,935,269	\$3,504,189
Toll Credits (Transit)	\$0	\$659,125	\$0	\$75,183
Total Transit	\$5,743,623	\$9,929,213	\$10,003,910	\$13,073,136

Based on the analysis of rolling averages, it was determined that the more recent historical funding figures (2015 or later) combined with current UTP funding provided a better base line for the revenue projections, as special earmarks for Toll 49 in earlier years would otherwise have created unrealistic future revenue expectations.

Based on a trend analysis of the funding received over the last 20 years and accounting for nonrecurring fund occurrences, an average compounded annual growth rate (CAGR) of 2.23 percent per year was assessed for Federal and State roadway funding for considerations of the year-of-receipt growth adjustment and inflation.

The project-level year-of-expenditure cost associated with the respective implementation phase (short- or long-term) were based on the phase's mid-term inflation factor.

City of Tyler half-cent sales tax funding for transportation improvements was considered in the revenue forecast, albeit at a lower limit (25 percent) than what can be drawn from according to City code.

Transit funding has steadily increased over the past 20 years. To assume a more conservative growth trend, a trend analysis was conducted for funds received since 2008.

The project team worked in close coordination with the TxDOT Tyler District to verify assumptions and to include additional projected funding factors, such as the extension of Prop 1 funds expected out to year 2034. Additional considerations were also applied to projected funding for Category 2 based on statewide formula funding changes resulting from the Rio Grande Valley (RGV) MPO merger (Hidalgo County MPO, Harlingen-San Benito MPO, and Brownsville MPO). The RGV MPO merger has expected impacts on the rebalancing of the Category 2 funding allocations to other MPOs like TAMPO. Based on these assumptions, projections were developed for expected Federal, State, and local funding for the stages of this plan. Funding within the first two stages of the plan is closely associated either with grouped projects or obligated to specific projects through the TIP and/or UTP. Outlying stages covering the remaining years of the plan incorporate the above-mentioned assumptions to project reasonable expectations for available funding. Roadway and transit funding summaries by stage are shown in Table 7-3.

Table 7-3: Estimated Roadway and Transit Funding Summary (2020-2045)

Stage (Years)	Estimated Roadway Funding	Estimated Transit Funding
Implementation (2020-2023)	\$115,535,212	\$10,568,788
Near Term (2024-2029)]	\$253,796,489	\$20,772,636
Medium Term (2030-2035)	\$289,624,240	\$23,705,053
Long Term (2036-2045)	\$526,991,827	\$28,268,753
Total	\$1,185,947,768	\$83,315,230

Cost Estimation for Proposed Projects

As fiscal constraint is a key component of the MTP, considerations of the cost of the proposed transportation improvements is a key step. For the purpose of estimating fiscal constraint in the MTP, Federal regulations define “total project cost” to include:

- Planning elements (e.g. environmental studies and functional studies);
- Engineering costs (e.g. preliminary engineering and design);
- Preconstruction activities (e.g. ROW acquisition);
- Construction activities; and
- Contingencies.

The following assumptions guided the development of cost figures for the proposed projects, as well as the cost estimation for maintenance and operation of the existing transportation system.

- Since Federal regulations do not require that the cost of maintenance and operations activities be broken out into individual project costs, the funding needed for maintenance and operations of the transportation infrastructure was accounted for on a system-wide level.
- The funding required for an individual project does not only encompass the cost of construction, therefore, the cost estimates used to determine fiscal constraint also included engineering costs (20%) and right-of-way related expenses (10%), as well as a calculation for contingencies (30%). In reality, these expense percentages vary by project and by project type, however, for the sake of planning level estimates, a standard adjustment was applied.
- Whenever a detailed engineering estimate for a particular project was not available, planning-level, generalized unit cost figures were used to assess the cost of each of the project's components. These generalized unit cost figures were based on the outputs provided by TxDOT's online sketch planning tool, which is a component of the online statewide planning map. This tool is for planning purposes only and calculates construction costs using an average project cost by type from August 2003 to August 2013 in 2013 dollars. These costs were then indexed to 2020 year of expenditure (YOE) as a base year cost.
- In the absence of detailed local inflation information for construction-related activities, an inflation rate of 4.0% was used based on TxDOT guidance.

Both typical improvement costs and local knowledge of other project costs were used to develop cost estimates for the projects considered for the MTP. In keeping with federal regulations, cost estimates were computed in YOE dollars using the inflation factors outlined above in accordance with FHWA and TxDOT guidance. Table 7-4 displays the aggregate total estimated project costs for each stage addressed by the MTP. Each stage also includes programmatic cost estimates for general system maintenance and operation. The complete list of projects considered for inclusion in the MTP, along with estimated YOE costs, can be found in Chapter 8.

Table 7-4: Estimated 2045 MTP Roadway Costs (in YOE)

Stage (Years)	Estimated Costs
Implementation (2020-2023)	\$100,590,694
Near Term (2024-2029)]	\$230,153,586
Medium Term (2030-2035)	\$286,197,776
Long Term (2036-2045)	\$498,766,110
Total	\$1,115,708,166

Applying Fiscal Constraint

The anticipated total program funding for both highway and transit is expected to be just under \$1.27 billion over the 25-year planning horizon of the MTP. Total anticipated program costs are estimated to be just under \$1.12 billion in YOE dollars. Because the total program funding is expected to be greater than

program costs the Tyler 2045 Metropolitan Transportation Plan is fiscally constrained. In accordance with TxDOT's UTP process, the first ten years of the plan (2020-2029) are also fiscally constrained by funding category. Table 7-5 shows the fiscal summary for the 2019-2045 MTP.

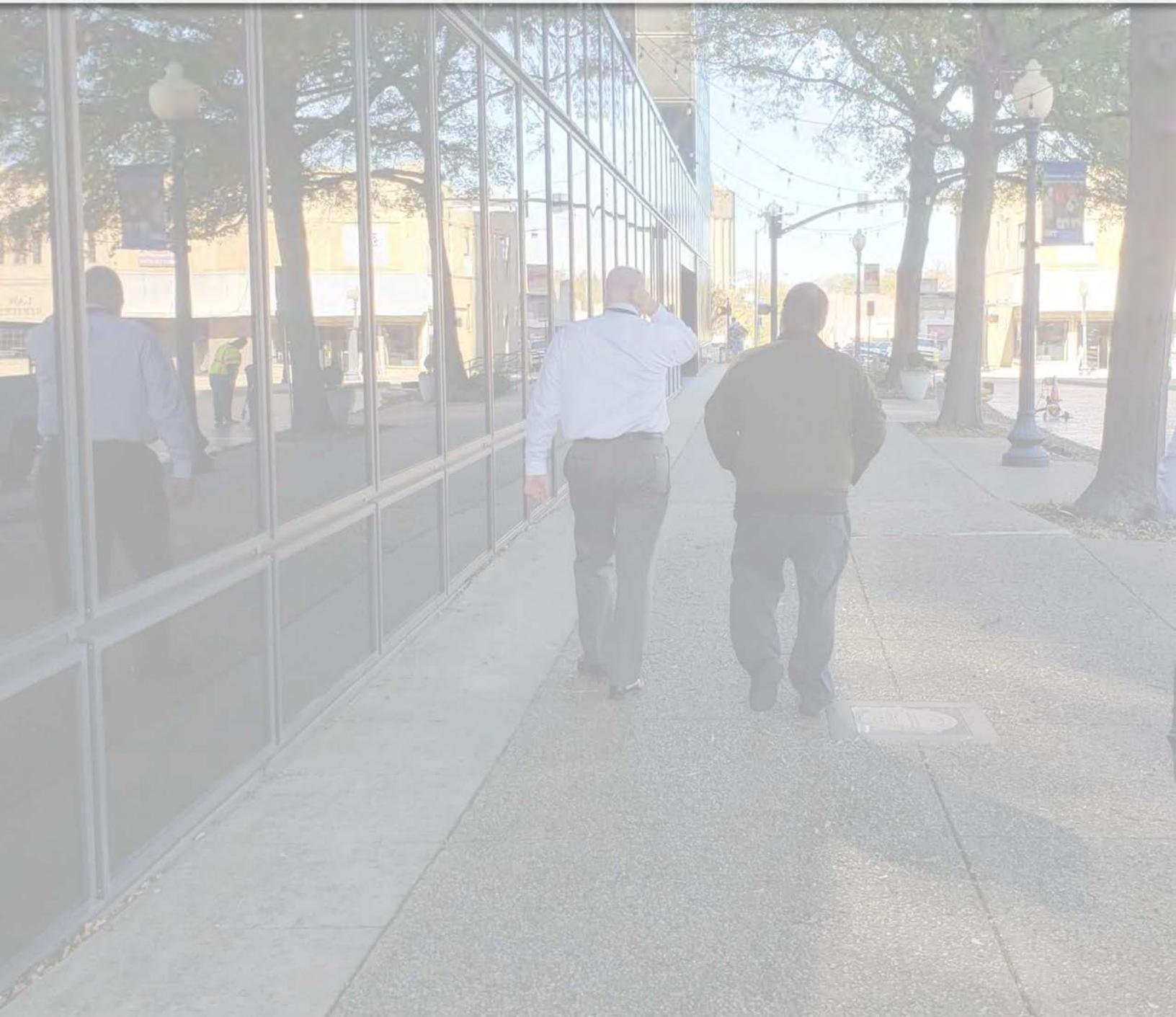
Table 7-5: 2020-2045 MTP Fiscal Summary

	Estimated Funding	Estimated Costs
Roadway	\$1,185,947,768	\$1,115,708,166
Transit	\$83,315,230	\$83,315,230
Total	\$1,269,262,998	\$1,199,023,396

Additional projects were submitted through the call for projects (discussed in Chapter 4) which exceeded the funding availability projected through this financial analysis. These projects represent both regionally significant high priority projects, such as IH 20 widening and the Toll 49 Expansion, as well as other proposed projects intended to impact regional mobility that currently do not have available or identified funding. These unconstrained projects or “unfunded needs” amount to approximately \$1.16 billion in 2020 YOE total project costs.



Plan of Projects



8. Staged Improvement Plan

This section includes maps and tables that illustrate the plan of projects in the Tyler Area 2045 MTP. The fiscally constrained projects have been grouped into four periods/stages based on related transportation improvement programming and planning documents and staging of revenue forecasts discussed in Chapter 7. The first stage, Implementation, was set up to accommodate and coincide with projects in the next Transportation Improvement Program (TIP). The following stage, the Near-Term stage includes projects occurring within the newly adopted 2020 Unified Transportation Program (UTP). The years covered by the stages of this plan are separated as following:

- 2020-2023 Implementation
- 2024-2029 Near-Term
- 2030-2035 Medium-Term
- 2036-2045 Long-Term

In addition to fiscally constrained project lists and locations, this chapter includes a listing of unconstrained projects. These projects reflect possible future transportation needs that fall outside of reasonable expectations of infrastructure funding over the next twenty-five years.

Fiscally Constrained Program of Projects

The following maps (Figure 8-1 through Figure 8-4) show the locations of the fiscally constrained projects in the Tyler Metropolitan Planning Area by the four project periods/stages, while Figure 8-5 shows the unfunded needs or fiscally unconstrained projects. Table 8-1 shows the fiscally constrained project list with associated estimated year of expenditure costs. Though the development of these estimated costs has been discussed in greater detail in Chapter 7, estimated costs are still shown in this chapter for transparency and communication with the public. Table 8-2 shows the unconstrained project list for the Tyler Area MPO. The fiscal constraint and ranking of these projects is the result of a continuous, comprehensive and collaborative process between TxDOT Tyler District, MPO staff, and the MPO committees.

Figure 8-1: Implementation Stage Project Locations

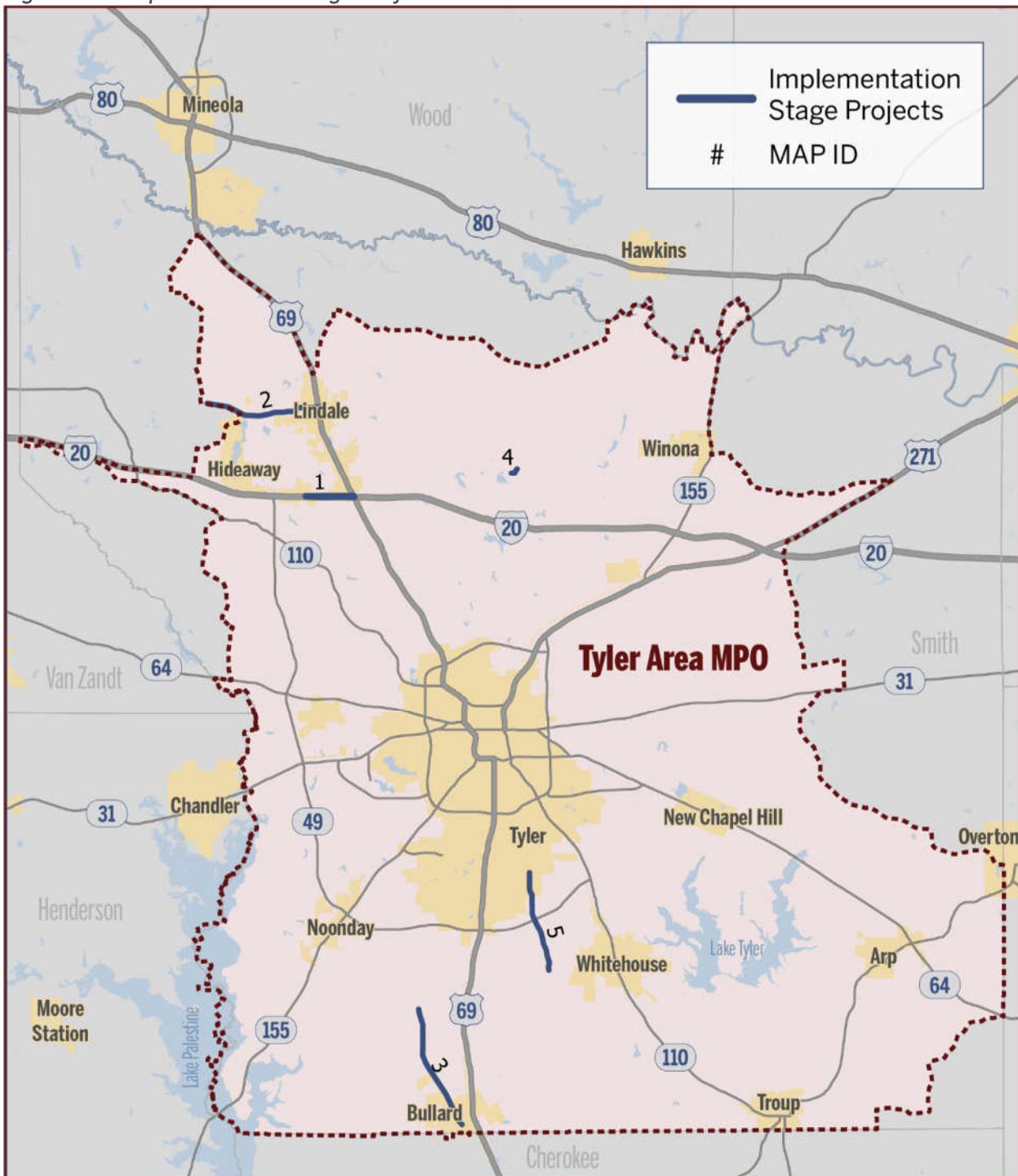


Figure 8-2: Near-Term Stage Project Locations

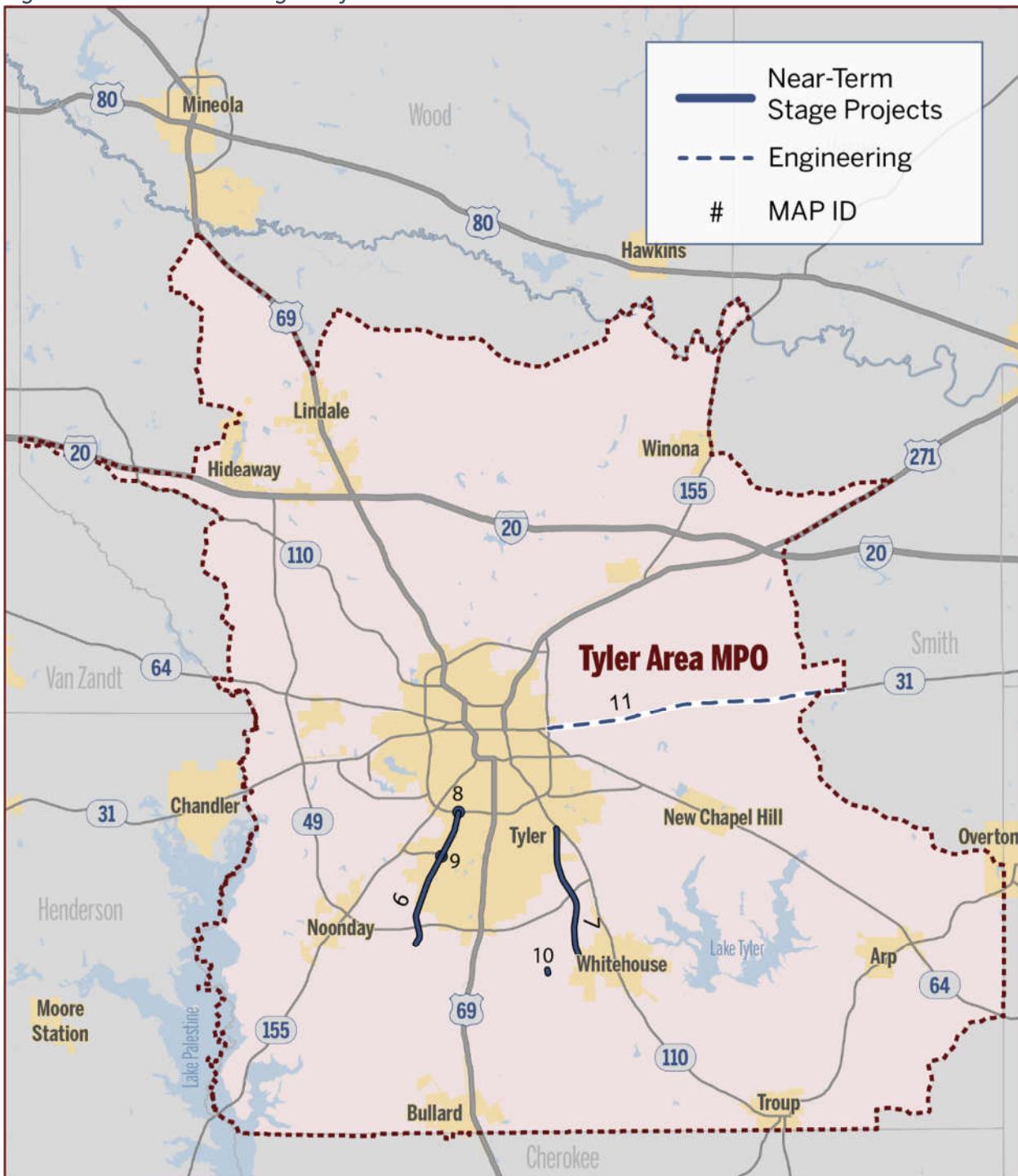


Figure 8-3: Medium-term Stage Project Locations

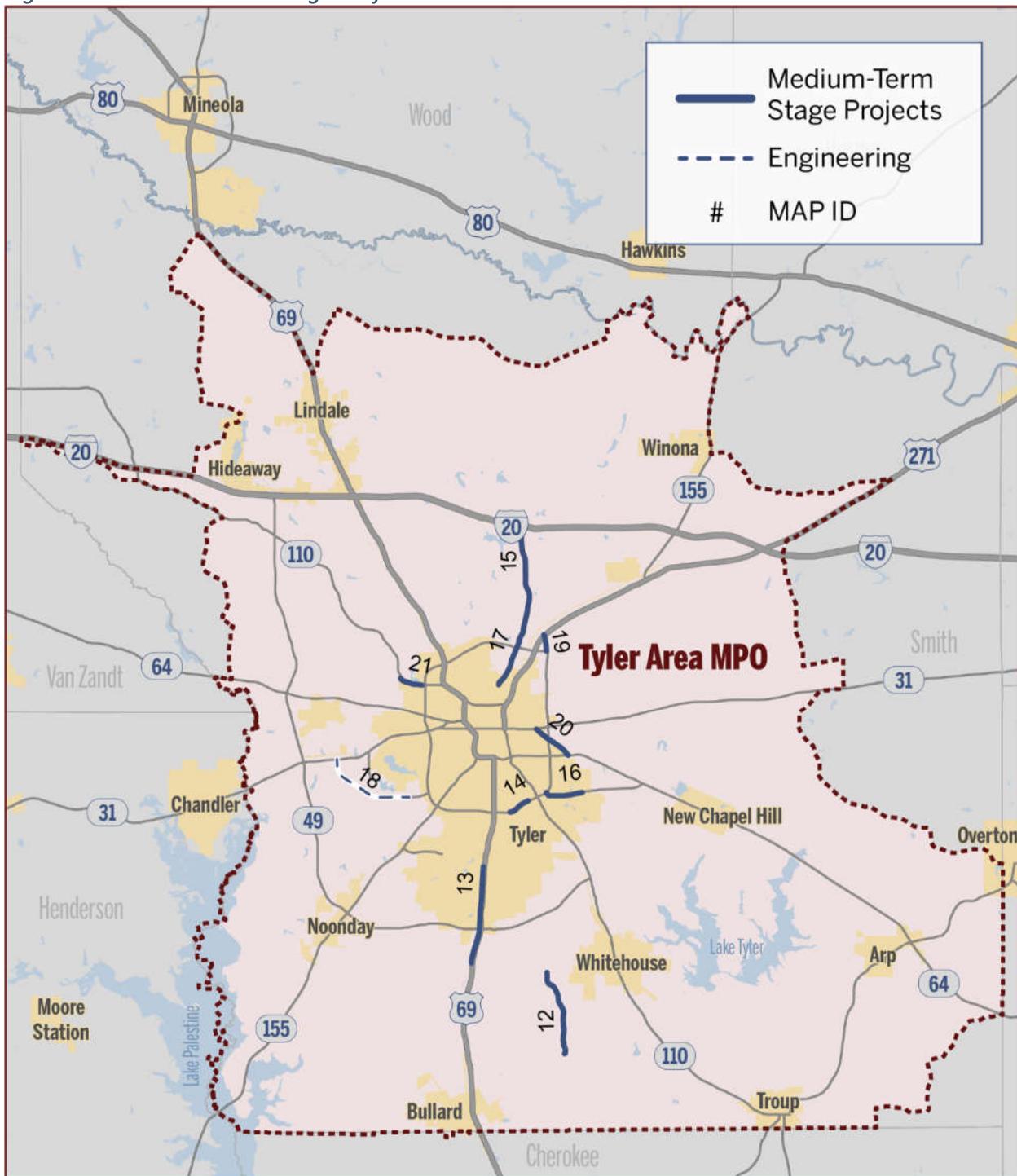


Figure 8-4: Long-Term Stage Project Locations

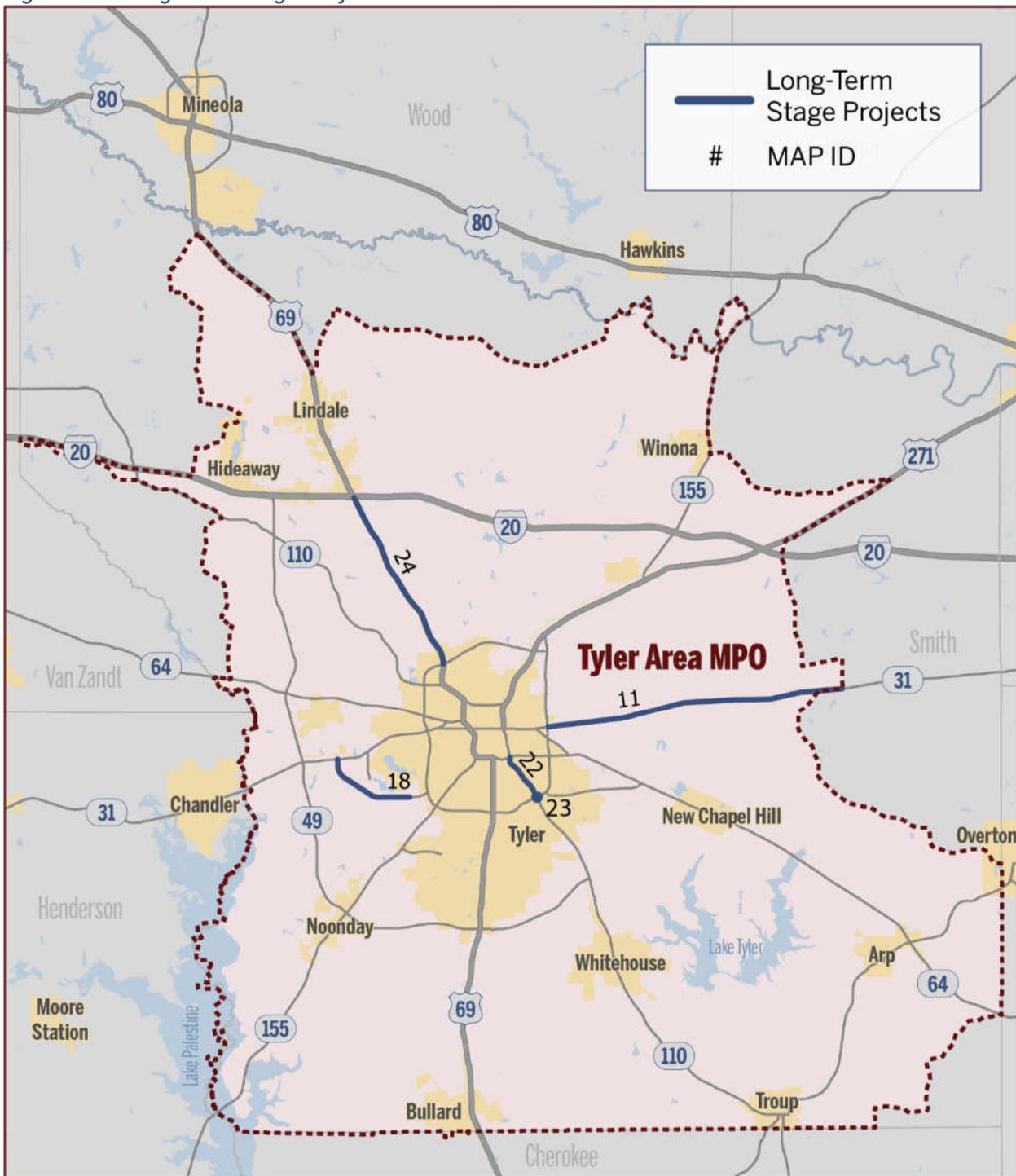


Figure 8-5: Unconstrained Project Locations

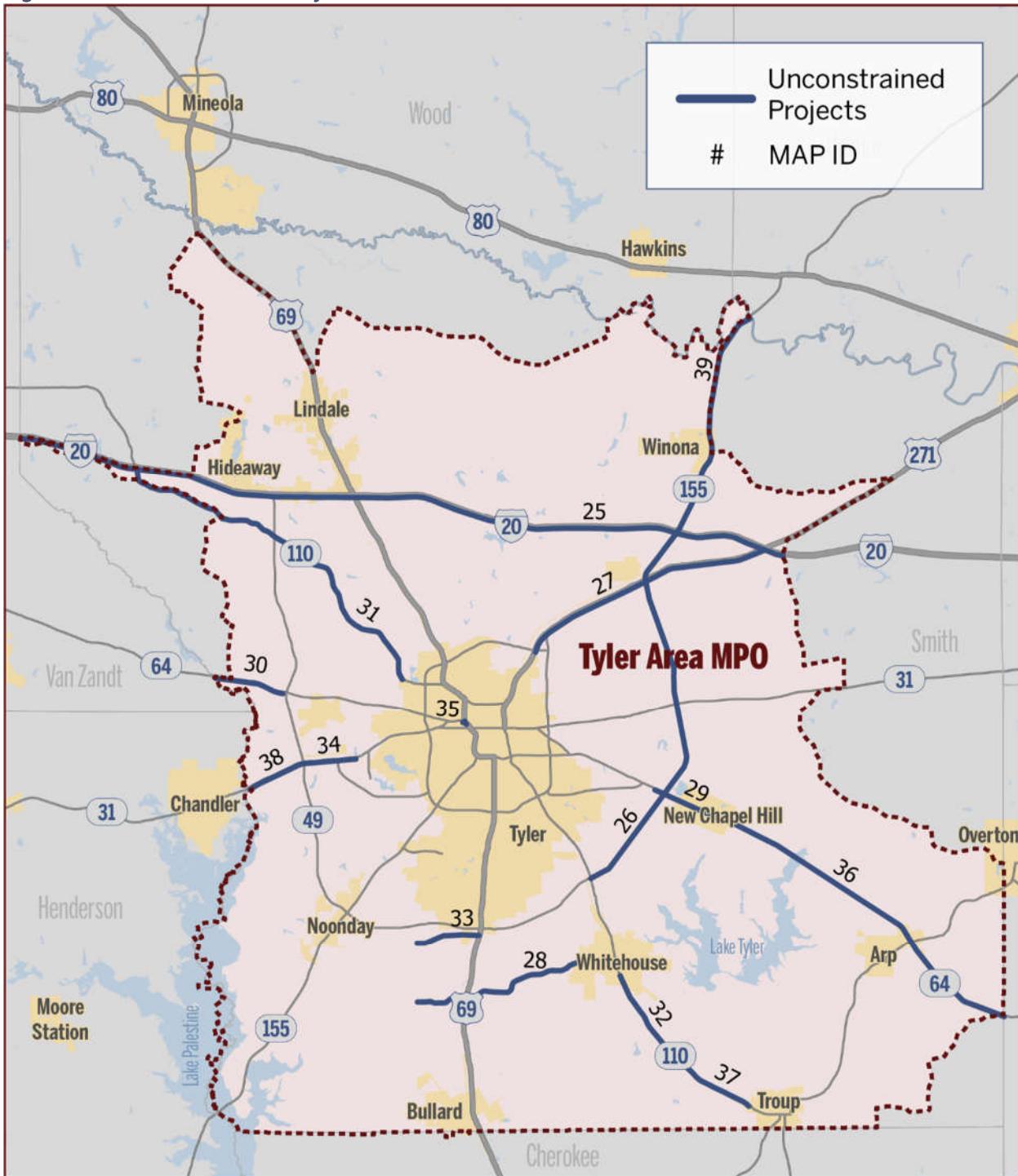


Table 8-1: Fiscally Constrained, Staged Program of Projects

Stage	CSJ	Project/Roadway	From	To	Project Description	2020-2023	2024-2029	2030-2035	2036-2045	Map ID
Implementation	0910-16-144	Various City Streets			Stripe Various City Streets for Bicycle Lanes	\$1,175,658				N/A
	0910-16-153	Various	FM 849	EJ Moss Intermediate School	Add 1.25 miles of sidewalk along FM 849 from Perryman Rd to Wood Springs Rd to Eagle Spirit Dr to EJ Moss	\$1,044,555				N/A
	0910-16-162	Various	Stewart Park	Peete Elementary	Construct 12 feet wide multipurpose trail		\$3,544,823			N/A
	0910-16-185	Various	At Various Locations	in Tyler	FY 25 TRF Signal Upgrades. Construct traffic signal upgrades to optimize coordination at various intersections inside the City of Tyler.		\$1,300,000			N/A
	0910-16-186	Various	Various Location	within the Tyler MPO Limits	FY 26 TRF Signal Improvements. Traffic signal improvements including the installation of updated signal detection within the Tyler MPO Limits.		\$500,000			N/A
	0910-16-187	Various	At Various Locations	in Tyler	FY 27 Pedestrian Upgrades. Construct pedestrian infrastructure technology upgrades for pedestrians such as push buttons at various intersections inside the City of Tyler.		\$500,000			N/A
					Future Trail Project			\$2,738,602		N/A
	0495-04-069	IH 20	1 mi. E. of Toll 49	US 69	Ramp Reversal & One-Way Frontage Roads		\$60,368,000			1
	0522-04-032	FM 16	4 mi. W. of FM 849	US 69	Widen 2 Lanes to 4 Lanes W/Flush Median, US69 to Toll 49 Extension		\$24,740,000			2
	0191-03-083	FM 2493	FM 346	0.3 mi. S. of FM 344	Widen From 2 Lanes to 4 Lanes with Flush Median		\$69,493,846			3a
Near Term	0191-03-091	FM 2493	FM 346	0.3 mi. S. of FM 344	Construct separated bike lanes and sidewalks in coordination with widening project		\$1,400,000			3b
	0606-01-007	PR 16	Park Maintenance. Rd.	Cedar Point Camping Area	Construct Entrance & Parking That Is Further Back from FM 14 For New Headquarters Building		\$905,036			4
	0492-04-034	FM 756	Jeff Davis Dr.	FM346	Widen 2 Ln Road to 4 Lane Divided Roadway W/Flush Median		\$61,360,000			5
	0191-03-084	FM 2493	SL 323 in Tyler, S	FM 2813	Widen From 4 Lanes to 6 Lanes with raised Median. Subject to the MPO's preferences adopted on June 17, 2021.		\$189,850,302			6
	3021-01-0009	FM 2964	SH 110 in Tyler S	FM 346	Widen Rhones Quarter Rd. From 2 Lanes to 4 Lanes		\$29,002,891			7
		FM 2493	at Grande		Construct Interchange		\$34,821,346			9
	0492-04-041	FM 756	at FM 346		Construct Interchange		\$37,752,000			10
	0424-01-054	*SH 31	SL 323 in Tyler, E	CR236, MPO BNDRY, 1.6 mi. E of FM757	Widen 2 To 4 Lanes				\$195,101,655	11
	0889-05-009	FM 756	AT FM 346	FM 344	Widen Paluxy from 2 Lanes To 4 Lanes W/Flush Median			\$29,153,472		12
	0191-01-089	US 69	Southtown Dr.	1 mi. S OF FM 2813	Widen 4 To 6 Lanes			\$133,687,661		13
Medium Term		SL 323	At Donnybrook, Copeland	Paluxy Dr.	Intersection Improvements			\$11,982,740		14
		FM 14	IH 20	SL 323	Widen 2 to 4 Lanes			\$47,933,110		15
		SS 248	SL 323	Old Omen Rd.	Medians, Landscape, pedestrian bridge at Old Omen			\$16,001,963		16
		FM 14	Loop 323	MLK Jr, Blvd	Widen to 4-lane minor arterial with Center Turn Lane			\$16,353,721		17
	**SS 364	SH 31 / SW OF CR1162 (RR BRG) Tanya, E	Scenic Dr / N of Greenbriar E of Scenic Dr		Widen 2 To 4 Lanes / Widen for Center Turn Lane In 2-Lane Sections			\$67,278,802		18

Long Term	Loop 323 Extension	Loop 323 NE	US 271	Widen from 2 to 4 lanes	\$6,452,942	19
	SL 142	SH 31	SH 64	Widen 2 To 4 Lanes & Improve SH 64 Intersection	\$17,366,542	20
	SH 110	Old New Harmony Rd.	SL 323	Widen 2 to 4 Lanes	\$7,265,625	21
	SH 110. South	5th Street	Golden Road	Widen to A 6-Lane Divided Principal Arterial	\$34,353,362	22

* Map ID 11, the project to widen State Highway 31 from SL 323 in Tyler to CR236 at the MPO boundary, 1.6 mi. E. of FM 757, is shown in the Near-Term stage, with construction costs shown in the Long-Term stage. Due to the project's priority advance work, such as design and engineering may be done by TxDOT staff in the years within the Near-Term.

**Map ID 18, a project to improve South Spur 364 has been shown in the Medium-Term stage with construction costs in the Long-Term stage for similar considerations.

Table 8-2: Unconstrained Projects List

Project/ Roadway	From	To	Project Description	Est Project Cost (2020)	MAP ID
SL 323	AT SH 110		Construct Interchange	\$100,026,474	23
US 69	IH 20	SL 323	Widen 4 To 6 Lanes	\$102,005,817	24
IH 20	Van Zandt C/L	E OF US 271	Widen from 4 to 6 lanes and upgrade to design standards	\$538,627,305	25
Toll 49 Expansion E	HWY 110	HWY 271	New 2 Lane Tollway	\$280,714,765	26
US 271	Loop 323	IH 20, East	Widen from 4 to 6-lane divided principal arterial	\$91,699,971	27
FM 346	FM 2493	FM2964	Widen to 4 lanes	\$35,718,997	28
SH 64	CR 220	YANCY, N OF FM 3226	Widen 2 to 4 lanes	\$22,442,727	29
SH 64, West	FM 2661	County Line	Widen to a 4-lane divided principal arterial	\$22,237,035	30
SH 110	IH 20	Old New Harmony Rd.	Super 2	\$15,373,430	31
SH 110	Hagan Rd	FM 344	Widen to 4 lanes	\$23,776,949	32
FM 2813	FM 2493	US 69	Widen 2 to 4 lanes	\$12,663,437	33
SH 31, West	FM 206	FM 2661	Widen from 4 to 6 lanes	\$31,830,462	34
US 69	AT SH64/Erwi n		Improve intersection	\$7,412,345	35
SH 64, East	FM 3226	County Line	Widen to a 4-lane divided principal arterial	\$56,852,685	36
SH 110	FM 344	Troup CL/Blackjack Rd	Super 2	\$4,567,389	37
SH 31, West	FM 2661	County Line	Widen from 4 to 6 lanes	\$8,242,527	38
SH 155	Upshur C/L	US 271	Super 2	\$12,341,206	39

Public Transportation Projects

According to the funding presented in the Financial Plan - Chapter 7, approximately \$83,315,230 will be available for operating and capital expenditures over the life of this MTP. Table 8-3 represents the transit funding source breakdown through 2045 by stage.

Table 8-3: Tyler 2045 MTP Public Transportation

Transit Source Breakdown	Implementation (2020-2023)	Near Term (2024- 2029)]	Medium Term (2030-2035)	Long Term (2036- 2045)
Tyler Transit Federal	\$6,924,578	\$13,513,681	\$15,421,371	\$18,390,295
Tyler Transit State	\$1,528,800	\$2,513,930	\$2,868,815	\$3,421,120

Tyler Transit Local	\$2,115,410	\$4,745,025	\$5,414,867	\$6,457,338
Total	\$10,568,788	\$20,772,636	\$23,705,053	\$28,268,753

Local Illustrative

Local Illustrative projects represent off system projects with regional impacts that either are completely funded locally or do not yet have funding identified. Projects shown in are not the entirety of all municipal capital improvements within the MPA. Rather the listing is intended to illustrate the local commitment to improving and maintaining the transportation system beyond what is funded by Federal and State tax dollars.

Project/ Roadway	From	To	Project Description	Location
Cambridge Road	South Broadway Ave	Jeff Davis Dr	Widen to 2-lane major collector with CTL	Tyler
Crow Rd	Old Noonday Rd	Old Jacksonville Hwy	Widen to 2-lane major collector with CTL	Tyler
Cumberland Rd	South Broadway Ave	Paluxy Dr	Widen to 4-lane minor arterial with CTL	Tyler
Donnybrook Ave	Shiloh Rd	East Rieck Rd	Extend road and widen to 2-lane major collector	Tyler
Earl Campbell Pkwy	South Southwest Loop 323	Chandler Hwy	Extend road as a 4-lane divided minor arterial	Tyler
New Copeland Rd	East Grande Blvd	Jeff Davis Dr	Construct new 4-lane minor arterial	Tyler
North Broadway Ave	Blackfork Creek	North Loop 323	Widen to 4-lane minor arterial with CTL	Tyler
Shiloh Rd	Walmart Driveway	Old Omen Rd	Extend road as a 4-lane minor arterial with CTL	Tyler
South Fleishel Ave	East Houston St	East Front St	Widen to 2-lane major collector with CTL	Tyler
South Porter Ave	East Front St	Devine St	Widen to 2-lane major collector with CTL	Tyler
CR 1113 (Lake Placid Rd)	SH 155	CR 1141	Widen to 2-lane major collector	County
CR 1139 (Indian Creek Rd)	Spur 364	CR 1113 (Lake Placid Rd)	Extend road and widen to 2-lane collector	County
CR 1261 (Big Eddy Rd)	FM 2868	SH 155	Upgrade east portion to a minor arterial	County
CR 2133	FM 346 East	Southpoint Rd	Widen to 2-lane major collector	County
CR 2174 (Wildwood Dr)	FM 756	CR 2171 (Willingham Rd)	Extend road as a 2-lane minor arterial with CTL	County
CR 2175 (Fowler Rd)/CR 2134 (Dudley Rd)"	CR 2171 (Willingham Rd)	CR 2138 (Concession Rd)	Widen to a 2-lane minor arterial with CTL	County

CR 431 (Jim Hogg
Rd)

IH 20

FM 16

Widen to a 4-lane minor arterial

County