MOBILITY 2045 PLAN

Adopted by the Knoxville Regional Transportation Planning Organization Executive Board | April 28, 2021

This report was prepared in cooperation with the U.S. Department of Transportation, Federal Highway Administration, Federal Transit Administration and the Tennessee Department of Transportation. The views and opinions of the author/Knoxville Regional TPO expressed herein do not necessarily state or reflect those of the U.S. Department of Transportation and Tennessee Department of Transportation.

Mobility Plan 2045 is the long-range transportation plan for the Knoxville region. Based on input from residents, stakeholders, and elected officials, it guides transportation decision-making in the region over the next two decades.

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Introduction

Planning for transportation in the six-county Knoxville region is a continuing, cooperative, and comprehensive process that promotes regional investment in sustainable growth, economic prosperity, and quality of life. This process relies on collaboration between local governments, stakeholders, and the public to set the stage for decades to come.

What is the Mobility Plan?

It's our region's vision for how people and goods will travel in the Knoxville Region over the next 25 years.

Historically, the region's residents and businesses have emphasized the importance of safe, accessible, and connected transportation options. Building on previous plans, Mobility Plan 2045 furthers those aims by aligning local priorities and federal planning factors. This plan calls for investments that accomplish the following regional goals:

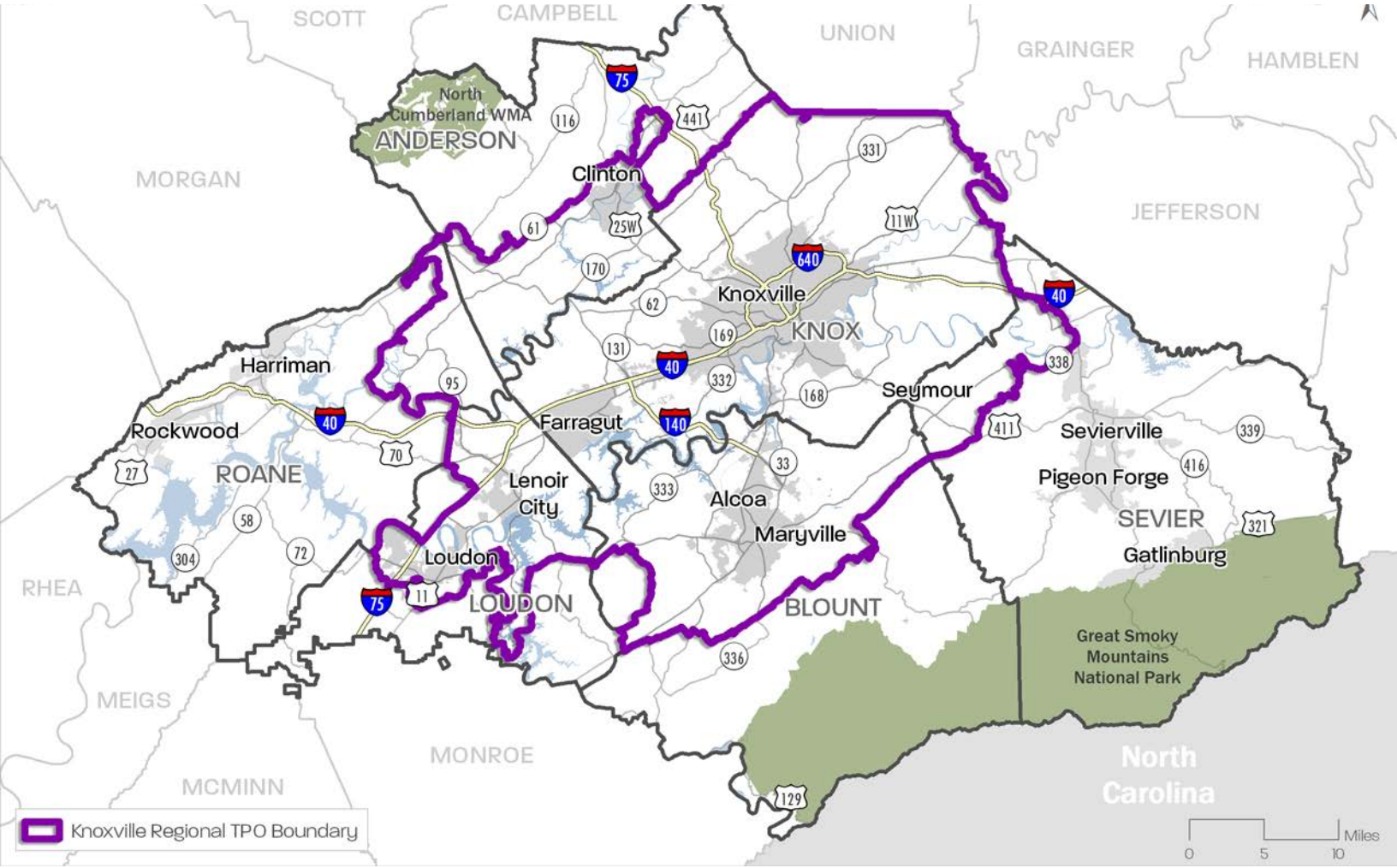
1. *Preserve and maintain our existing infrastructure through repaving projects and bridge replacements.*
2. *Improve access to services and employment with transit, bicycle, and pedestrian projects.*
3. *Reduce rates of crashes with serious injuries and fatalities and reduce the region's vulnerability to incidents and threats.*
4. *Minimize negative impacts on the environment and people's health and increase access to active transportation/physical activity for all ages.*
5. *Connect communities to opportunities and services throughout the region, particularly areas with high proportions of low income, senior, and/or minority populations.*
6. *Use our system more efficiently through technology like traffic signal coordination, real-time traffic information, and emergency response vehicles.*
7. *Preserve the natural and cultural areas that make our region unique.*
8. *Improve intermodal connections to help move freight to and through the region, reducing delay on major freight corridors and supporting business attraction and retention.*

About the TPO

The Knoxville Regional Transportation Planning Organization (TPO) is the Metropolitan Planning Organization (MPO) for our area. An MPO is a transportation policy-making organization composed of representatives of local government, Federal and State officials, providers of public transit, and officials of other transportation modes (Executive Board) as well as local engineers and planners (Technical Committee). All urbanized areas with more than 50,000 residents are required to have an MPO to ensure that federal transportation funding is spent based on a planning process that meets regional and national goals. The MPO approves the use of these funds within its planning area for highway, transit, bicycle, and pedestrian projects.

The TPO encompasses the region surrounding the major metropolitan area of Knoxville, Tennessee. Situated in east Tennessee, the TPO planning area includes all of Knox County as well as parts of Anderson, Blount, Loudon, Roane, and Sevier Counties. Member jurisdictions of the TPO also include the cities and towns of Alcoa, Clinton, Farragut, Knoxville, Lenoir City, Loudon, Maryville, and Oak Ridge.

Figure 1. TPO Planning Area



The TPO is responsible for coordinating federal transportation funding through a regional planning process. The TPO produces three core documents as part of this responsibility: The Transportation Planning Work Program (TPWP), Transportation Improvement Program (TIP), and Metropolitan Transportation Plan (MTP).

The TPWP details the planning activities and work products the TPO and the public transit providers will conduct or complete in the upcoming year. This work includes regional greenways planning, transit planning, travel demand modelling, review of development proposals, and partnerships with health departments and other stakeholders. The TPWP is updated annually and covers a two-year period.

The TIP includes a four-year schedule of projects, complete with detailed project descriptions and the cost for each phase (e.g., design/engineering, right-of-way acquisition, construction), that will occur within the timeframe of the TIP. The TIP is updated every three years.

The MTP is what we refer to as the Mobility Plan. The plan inventories existing systems, identifies goals and performance measures, and defines methods by which transportation projects of all kinds will be prioritized over the next 20 to 30 years. The Mobility Plan must be fiscally constrained, meaning that the cost of projects in this plan cannot exceed the available funding expected in the future. The Mobility Plan is updated every four years.

Federal Requirements

Aligning regional transportation needs and investments with federal and state goals is a key component of Mobility Plan 2045. The Fixing America's Surface Transportation (FAST) Act, the current federal bill, authorizes federal transportation funding for our region and across the country. The TPO uses the decision-making framework within the FAST Act, called the metropolitan transportation planning process, to guide development of Mobility Plan 2045 according to the 10 federal planning factors shown in Table 1. The eight goals adopted for Mobility Plan 2045, discussed in greater detail in Chapter 2, are carried forward from the previous plan and reinforce the national planning factors.

Table 1. Federal Planning Factors

●	Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
●	Increase the safety of the transportation system for motorized and non-motorized users.
●	Increase the security of the transportation system for motorized and non-motorized users.
●	Increase the accessibility and mobility of people and freight.
●	Protect and enhance the environment, promote energy conservation, and improve quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.
●	Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
●	Promote efficient system management and operation.
●	Emphasize the preservation of the existing transportation system.
●	Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.
●	Enhance travel and tourism.

Throughout the development of Mobility Plan 2045, residents and community leaders had the opportunity to learn about the region's transportation system, prioritize the eight regional goals, and ultimately impact future transportation investments. The public and stakeholder outreach, which included strategic engagement of traditionally underserved populations, highlighted the growth expected

in our region over the next 25 years and how striving to achieve the regional goals will help preserve our transportation system, natural environment, and quality of life.

In the following pages, Mobility Plan 2045 will examine the existing state of our region and its transportation system, the progress we have made in achieving our regional goals, the outlook for transportation funding, and for the plan for future investments.

Chapter 1. Regional Overview

Each Mobility Plan update provides an opportunity to look at how our region continues to evolve and how those changes affect residents, businesses, and the transportation system. Mobility Plan 2045 depicts our existing regional conditions and trends, including updated projections for population and employment growth, the extent of the multimodal transportation system, and trends in system performance. This chapter analyzes data from various sources using the most recent full calendar year available. The overview of our region presented in this chapter is supported by additional technical analyses provided in the Appendices.

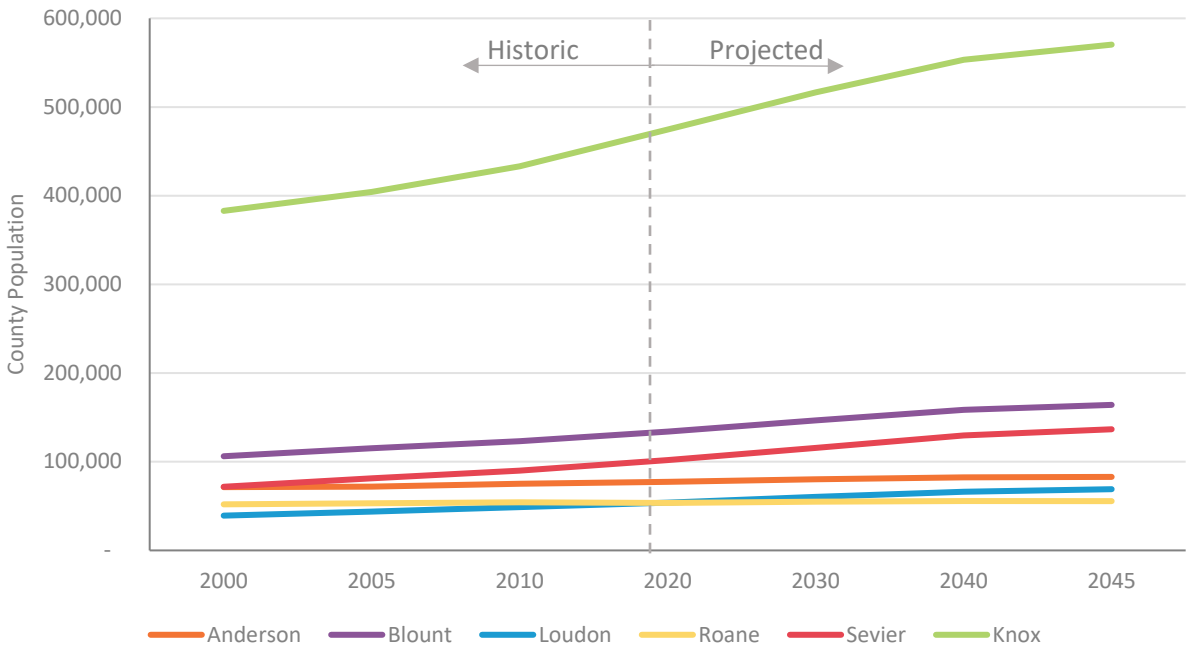
POPULATION

People and jobs are what drive our region's prosperity. A growing population and vibrant economy present opportunities for continued success. However, we must ensure that this success is responsibly planned for and shared by all.

Historically, the six-county Knoxville region has experienced steady growth with annual increases in population. In 2010, the counties within the Knoxville region were home to approximately 824,000 people, representing approximately 12% of the state's population. By 2018, our region added more than 30,000 people, with most of that growth occurring in Knox County. As the only county entirely included in the TPO planning area, Knox County represents approximately 79% of the TPO area's total population.

While surrounding counties continue to grow, Knox County has historically been the most populous county and will continue to be in the future. By 2045, the region is expected to add more than 200,000 people, putting the total population at just over one million residents. Knox County will account for approximately half of future growth, shown in Figure 1, with Blount, Loudon, and Sevier counties also expected to experience significant increases.

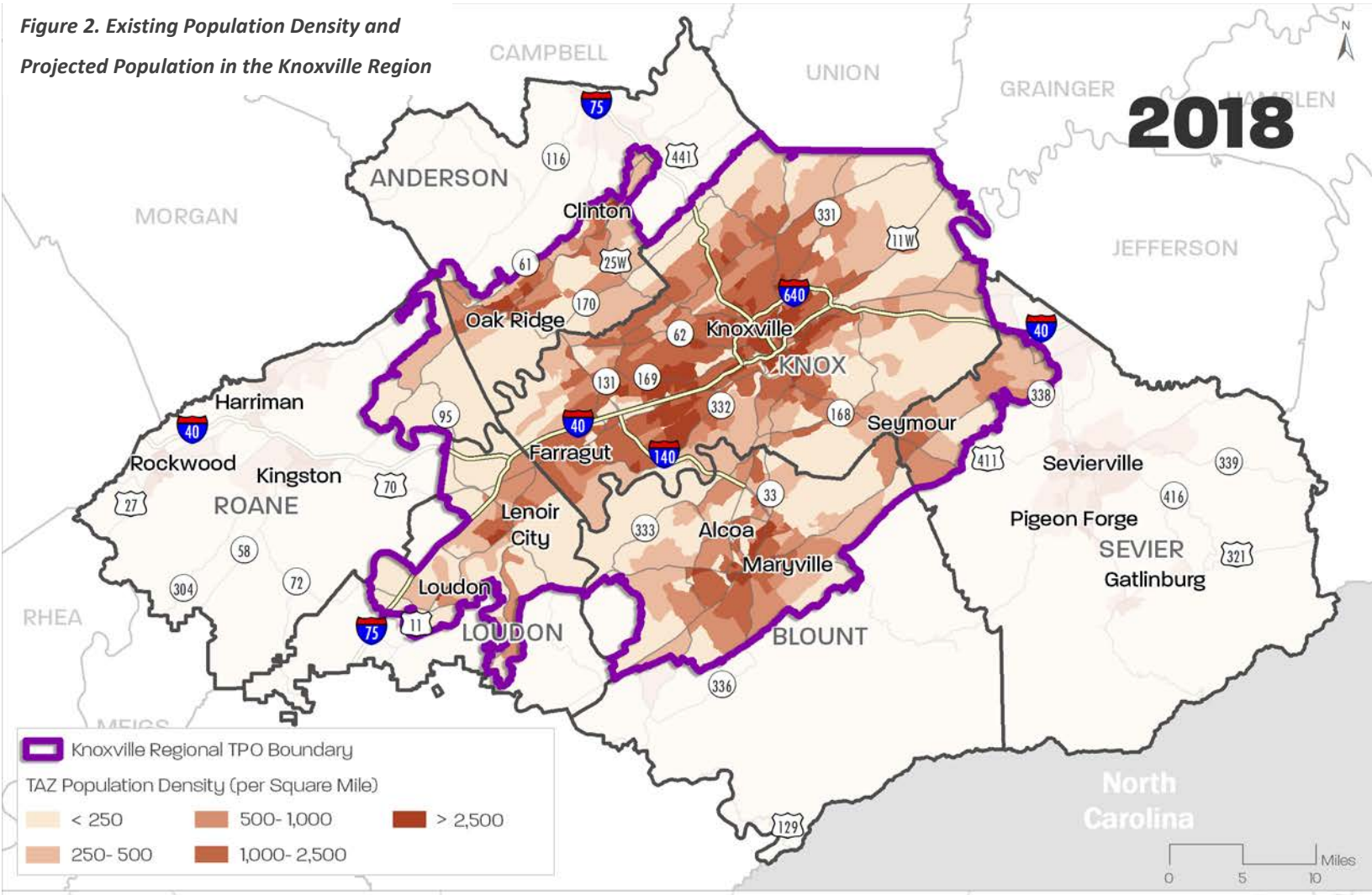
Figure 1. Regional Population Trends

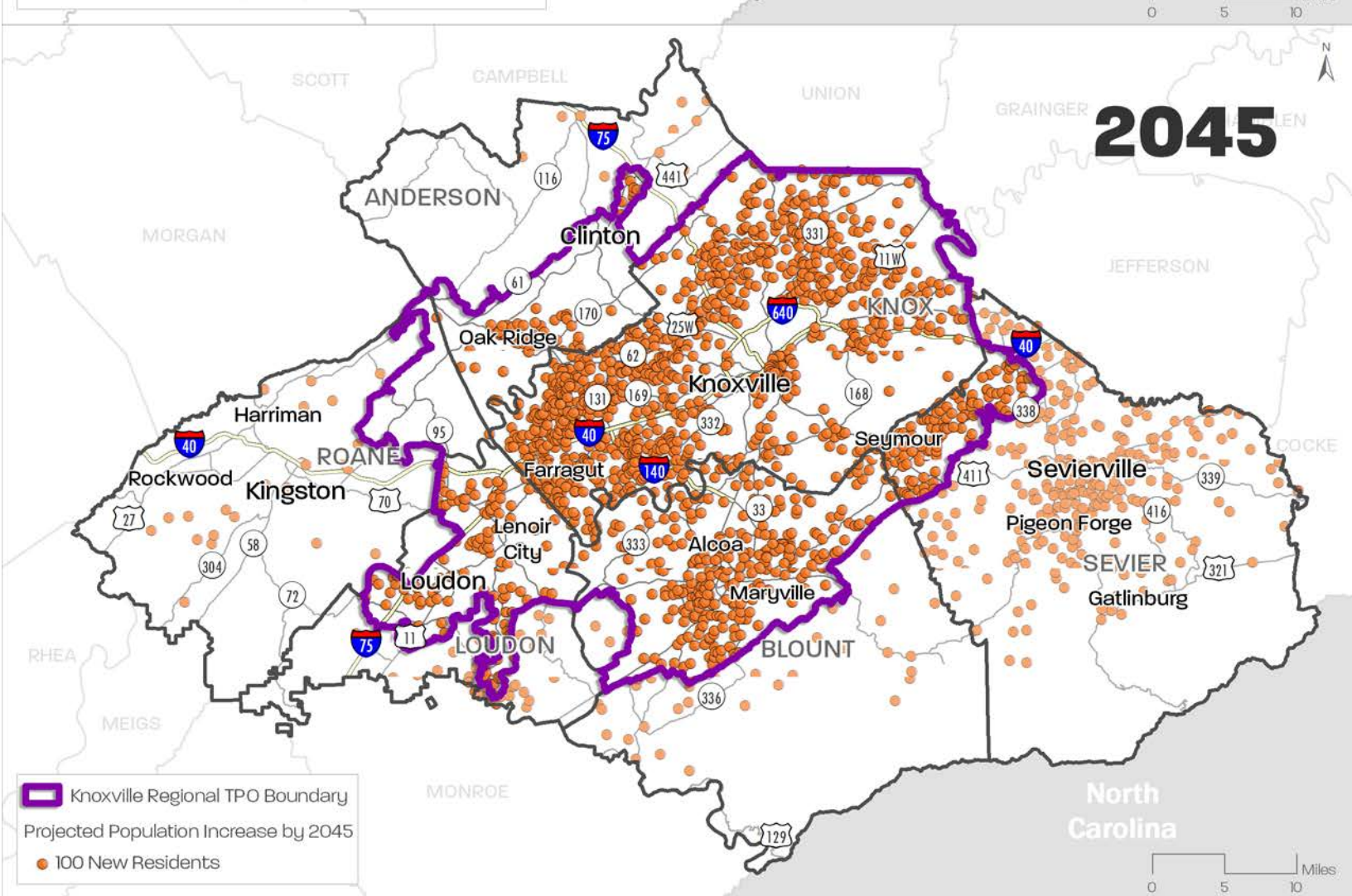


Source: Woods & Poole

Based on guidance from local jurisdictions and stakeholders, we can also understand where growth is likely to occur in greater detail. As shown in Figure 2, a large portion of population growth is expected in areas such as west and north Knox County, and Alcoa and Maryville. This distribution of growth is consistent with historical patterns with population increasing in more rural, low-density areas across the region. In turn, these growth patterns tend to make us more dependent on automobiles for daily trips like commuting to work, going to school, or running errands. They also make it more difficult to serve our population with efficient transit services, sidewalks, and bikeways.

Figure 2. Existing Population Density and Projected Population in the Knoxville Region





Total population is not the only factor to consider when planning for transportation in the region. Understanding the diverse character of the region is vital because it helps ensure that infrastructure and program investments are meeting different and unique needs. Key demographics such as poverty levels, age distribution, and household vehicle ownership are shown in the following figures. The age distribution pyramid indicates relatively modest growth with an increasing population expected in the older age cohorts. In addition, approximately 5% of households in the TPO area do not have access to a vehicle – although that figure jumps to almost 7% in Knox County, and nearly 13% live below the poverty line. These important demographics influence transportation options, preferences, and needs.

Figure 4. Households in Poverty in the TPO Area

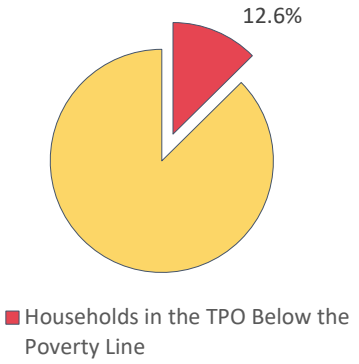


Figure 3. Population Overview in the Six-County Knoxville Region

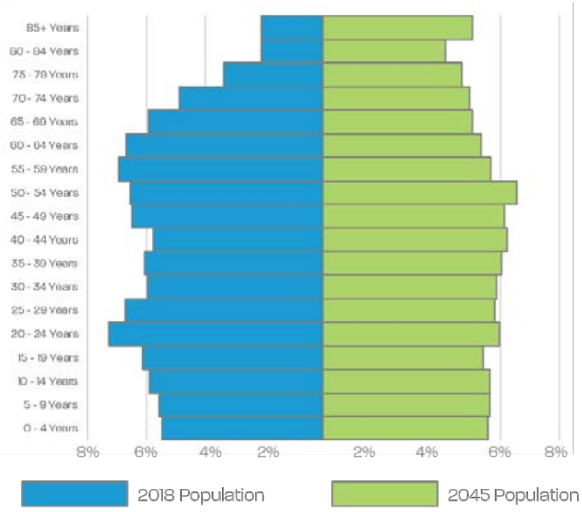
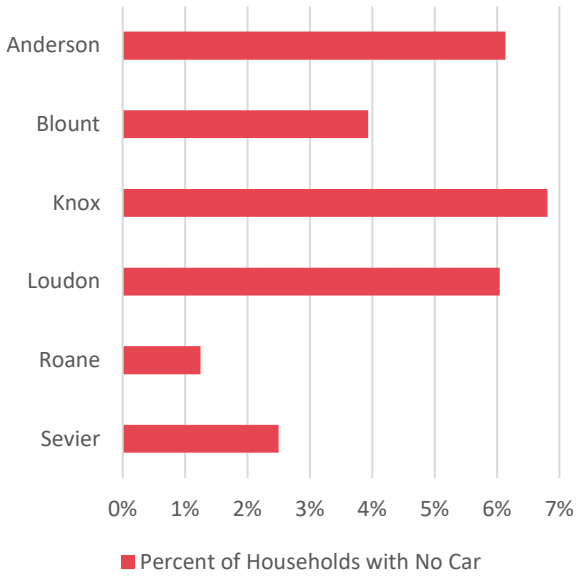


Figure 5. Households without a Vehicle in the TPO Area

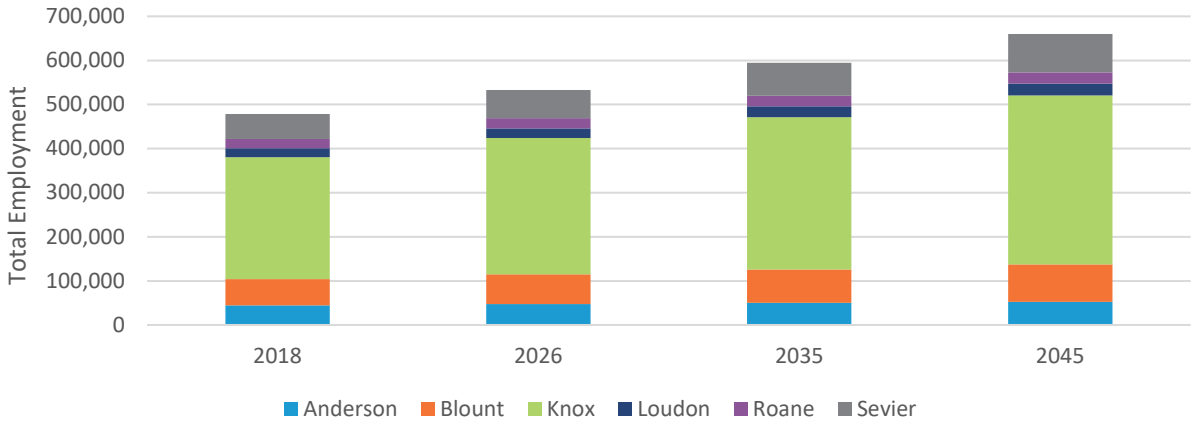


Source: 2018 5-Year ACS Estimates; 2019 Woods & Poole

EMPLOYMENT

Complementing population growth, the region's economy has also been expanding and changing. In 2018, there were approximately 478,000 jobs in the six-county Knoxville region. By 2045, the region is projected to add 181,000 jobs for a total of nearly 660,000 jobs. Approximately 60% of the region's job growth will occur in Knox County.

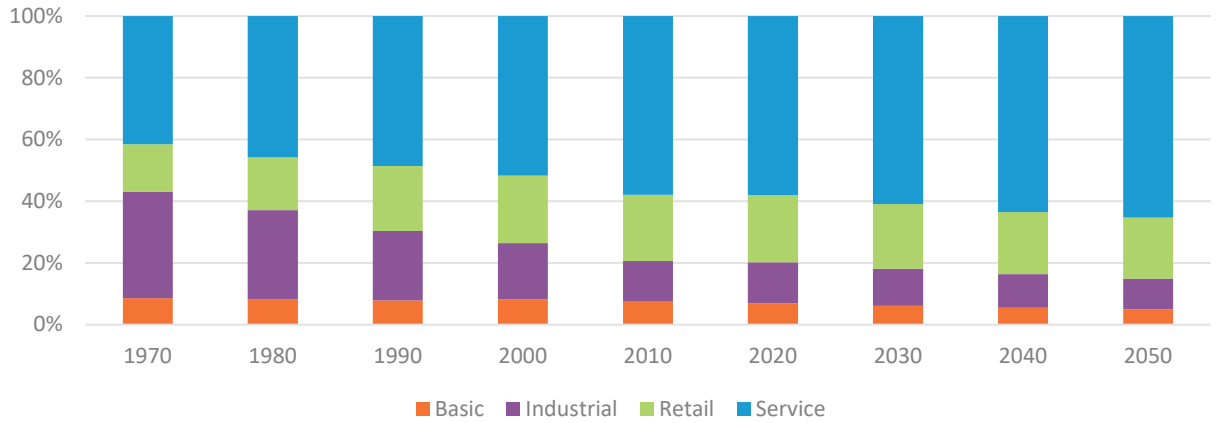
Figure 6. Projected Employment



Source: Woods & Poole

The type of employment in our region has been changing like many other urban areas across the country. Figure 7 captures the shift in regional employment from the industrial sector to the retail and service sectors since 1970. Approximately four out of five jobs are currently in the retail and service sectors, and that share is expected to increase over the next 25 years. A detailed explanation of these employment categories can be found in the Appendix.

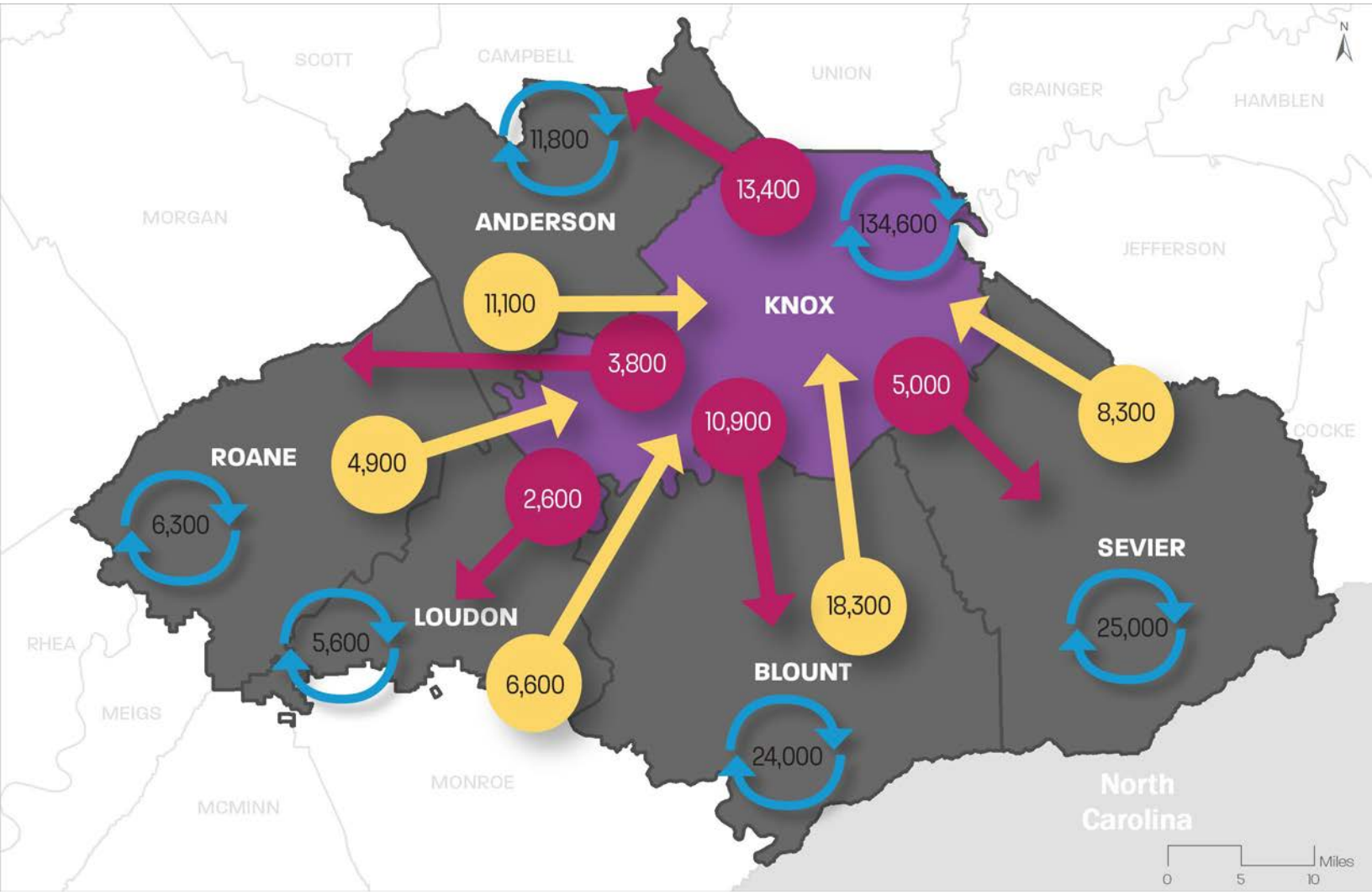
Figure 7. Employment by Sector



Source: 2019 Woods & Poole

Knox County serves as the major hub for economic activity within the region and draws commuters from each of the surrounding counties. Nearly half of all people who work in Knox County commute from outside the county. Conversely, about a third of Knox County's population commutes to a surrounding county for work. Commuting patterns in 2017 highlight the connections between each county and the important role the transportation system plays in supporting the regional economy.

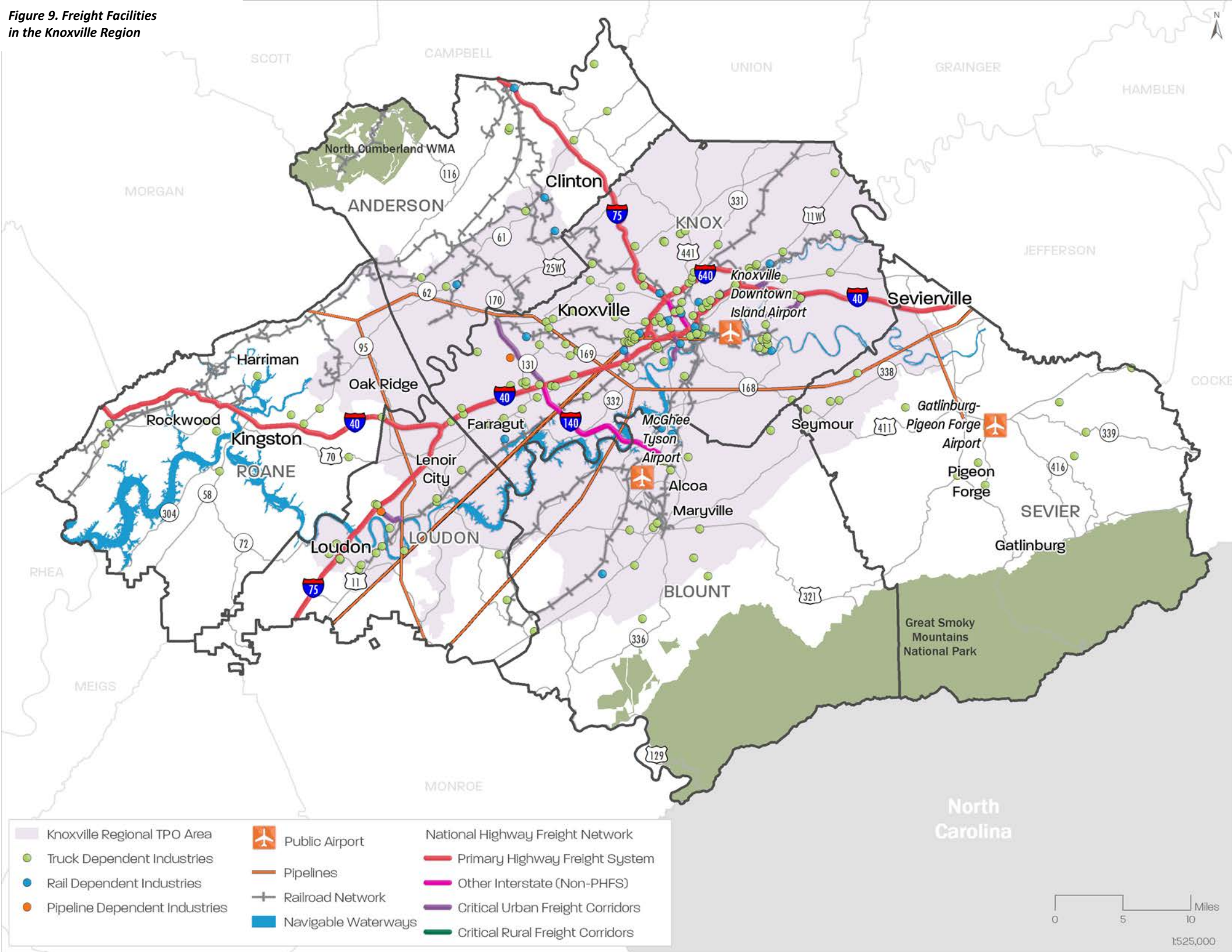
Figure 8. Regional Commuting Patterns



Source: 2017 LEHD

The movement of freight and goods also remains a critical component of the regional economy. The Knoxville region counts over 200 freight-dependent businesses, and the increasing presence of e-commerce and deliveries only adds pressure on the transportation system. Figure 9 underscores the intricate network of freight systems in the region, including highway, rail, water, aviation, and pipeline systems.

Figure 9. Freight Facilities in the Knoxville Region



Importantly, the region includes major interstate crossroads, I-40/I-75 to the west and I-40/I-81 to the east, that result in high numbers of truck trips. National data from Transearch indicates that in 2016 72 million tons of freight flowed in and out of the region each year, with more than 46 million tons transported by truck. Accordingly, there is a significant amount of commercial truck traffic on the roadways each year. Interstates 40 and 75 each see upwards of 20,000 trucks per day. Those trucks represent over $34 billion worth of imports supplying the things we need and exports fueling our local economies. With these major interstate facilities, a considerable amount of truck traffic is passing through the region each day. To address freight demands such as these, which occur across regions, the TPO participates in freight planning activities led by TDOT such as the Freight Advisory Committees (FACs) and supports TDOT in planning for statewide freight investments through the Statewide Multimodal Freight Plan, which can be found at this **link**.

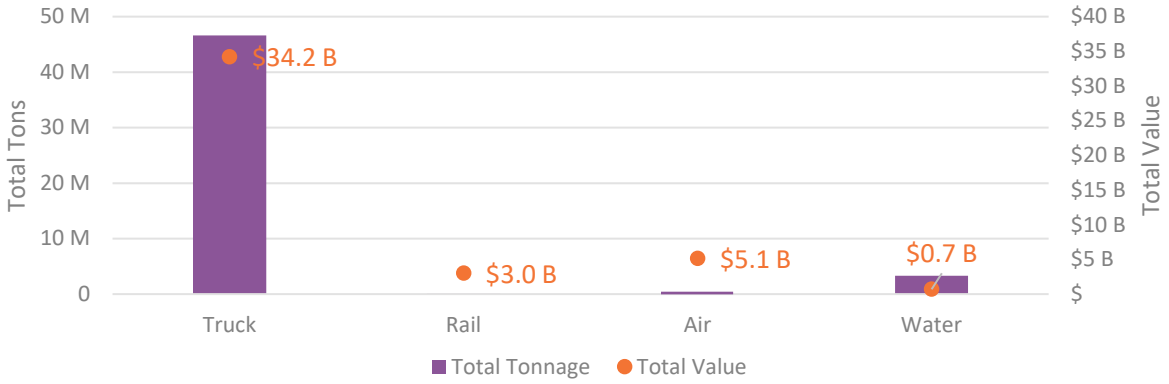
There are two Class 1 railroads operating in the region (CSX and Norfolk Southern) as well as one short line railroad (Knoxville and Holston River Railroad). From Knoxville, nearly all states east of the Mississippi River are accessible by the two Class 1 rail lines, providing direct connections to other economic hubs including a number of international ports. Rail freight typically transports heavy goods that are less time sensitive and carries approximately 20% as much tonnage as trucks in the region, or 8 million tons. The value of rail tonnage is about a 10% of the truck value with just over $3 billion transported annually via rail.

Water freight travels via barge on the Tennessee River and is typically used for bulk commodities like gravel, coal, and metals. Every year, over 50 million tons are transported on the river, with about 3 million tons starting or ending in the Knoxville region. Goods transported by water in the region are valued at approximately $700 million.

Finally, air freight is primarily shipped through the McGhee Tyson Airport in Blount County. This mode of transporting freight is reserved for high-value and time-sensitive goods. For the Knoxville region, approximately 47,000 tons of freight valued at $5 billion are transported by air each year.

By 2045, freight transportation in the region is expected to double, both by tonnage and value of commodities transported. Truck transportation is expected to see the largest increase based on tons while air freight is expected to see the largest increase in value transported by 2045.

Figure 10. Freight Distribution by Mode



Source: 2016 TRANSEARCH Data

Tourism-related businesses also play a large role in the regional economy. Statewide, tourism generated approximately $2.2 billion in revenue in 2018. Across the six-county region, visitor spending resulted in nearly $240 million in state sales tax revenues and approximately $120 million in local tax revenues in 2018. On an average day in 2018, tourist spending across the region:

- Generated **$11.8 million** in daily expenditures,
- Produced **$2.8 million** in daily payroll,
- Created **$330,000** in daily local tax revenues, and
- Created **$652,000** in daily state tax revenues.

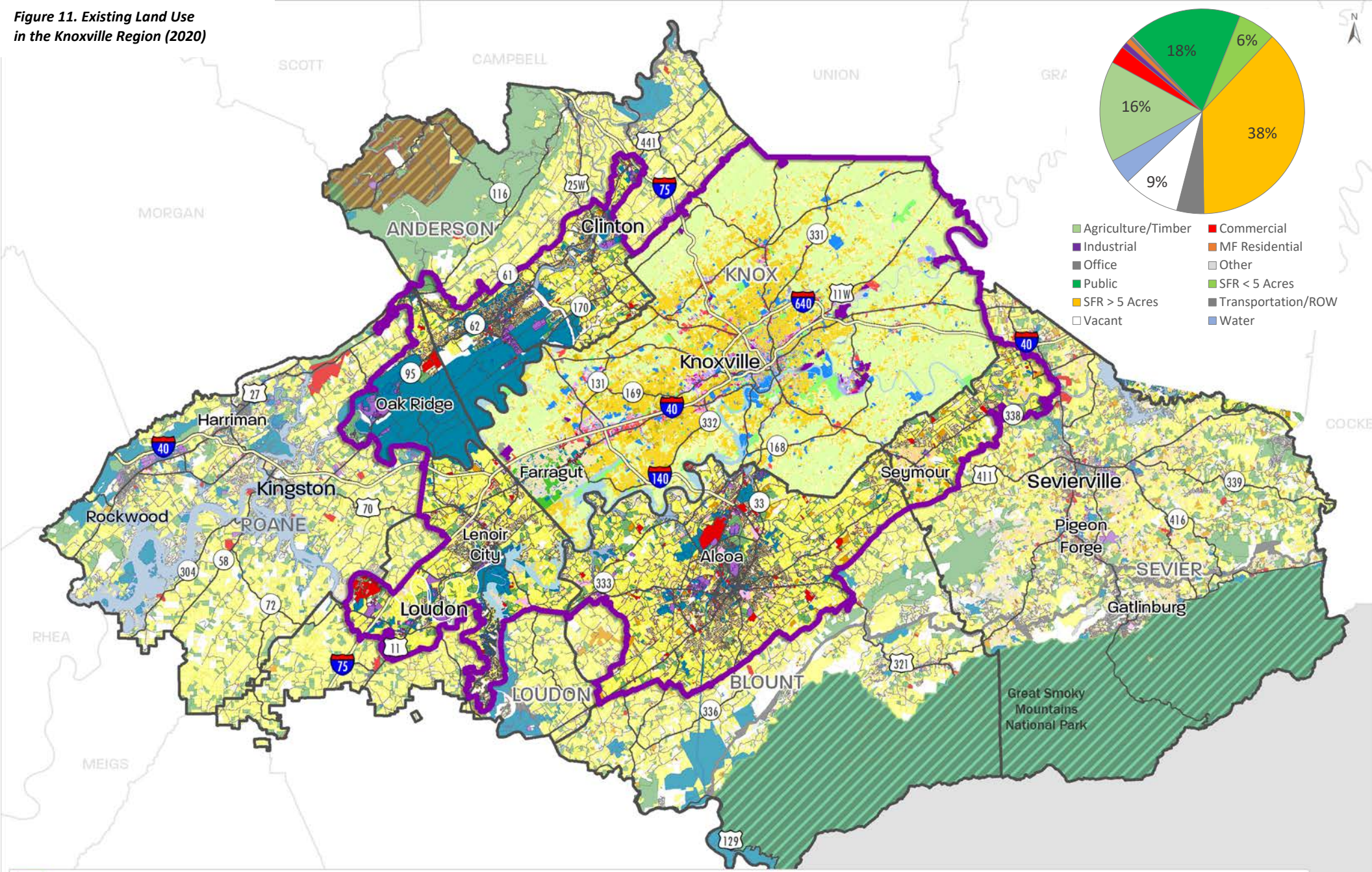
LAND USE AND DEVELOPMENT

Land use planning helps guide future growth in the region. Tools such as zoning ordinances and subdivision regulations allow each jurisdiction to manage development in their community. Effective land planning emphasizes the efficient use of resources, including transportation systems, and delivers a wide range of benefits. Ultimately, efficient development patterns create more transportation options, expanding economic opportunity, improving public health, and conserving natural resources.

As the region grows, creating more compact communities means placing destinations – like shops, schools, jobs, and parks – near where people live. These development patterns make biking and walking easier, make transit service more efficient, and offer everyone viable alternatives to the personal automobile. Even with compact development patterns, many people will still rely on cars for travel. However, the way our communities are built can impact how far and long someone needs to travel to get to their destination. Reducing travel times and distances reduces the environmental impact of travel and also improves the quality of life by providing everyone with an alternative to driving.

While land use planning occurs at the local level, it has regional impacts. The largely single-family development patterns shown in Figure 11 and high rates of commuting between counties in the Knoxville area call for coordinated local and regional transportation strategies. For example, reducing the number of shorter, local trips on regional roadways will improve longer-distance travel times and help manage system operations long term.

Figure 11. Existing Land Use in the Knoxville Region (2020)



TRANSPORTATION SYSTEM

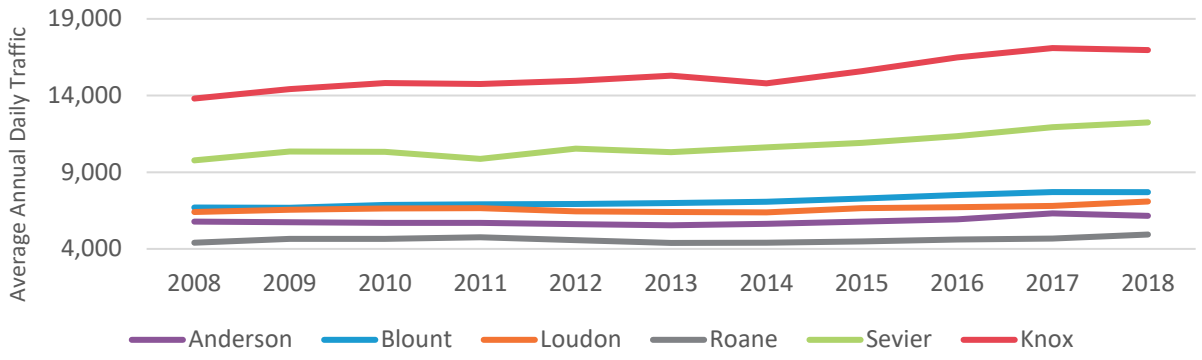
The regional transportation system impacts economic competitiveness, the quality of life for existing residents, and the potential to attract new businesses and residents. Providing connected and accessible transportation options offers everyone the opportunity to live, work, learn, shop, and play where they want. In the Knoxville region, we have highways and streets, sidewalks and bikeways, and greenways and public transit that all support local and regional travel.

Roadways

The roadway system within the Knoxville TPO area includes approximately 5,500 miles of publicly owned interstates, arterials, collectors, and local streets. These classifications reflect the function of a roadway, typically defined by the level of accessibility and mobility afforded by each facility. For instance, our interstates provide a high degree of mobility with high speeds and limited connection points. By contrast, local streets have lower speeds, but provide a high degree of access to homes, shops, and businesses via driveways. Arterial and collector roadways strike a balance between moving cars efficiently and distributing traffic to trip destinations. All roads are classified as either urban or rural and are owned, operated, and maintained by either the Tennessee Department of Transportation (TDOT) or local jurisdictions.

In planning for all roadways, the TPO uses a variety of data and tools to evaluate how the system operates and identify opportunities for improvement. Data collected by TDOT annually shows that daily traffic volumes in the TPO area have been continually increasing, which can be attributed to recent growth but can also be indicative of a continued dependence on personal automobiles in the region.

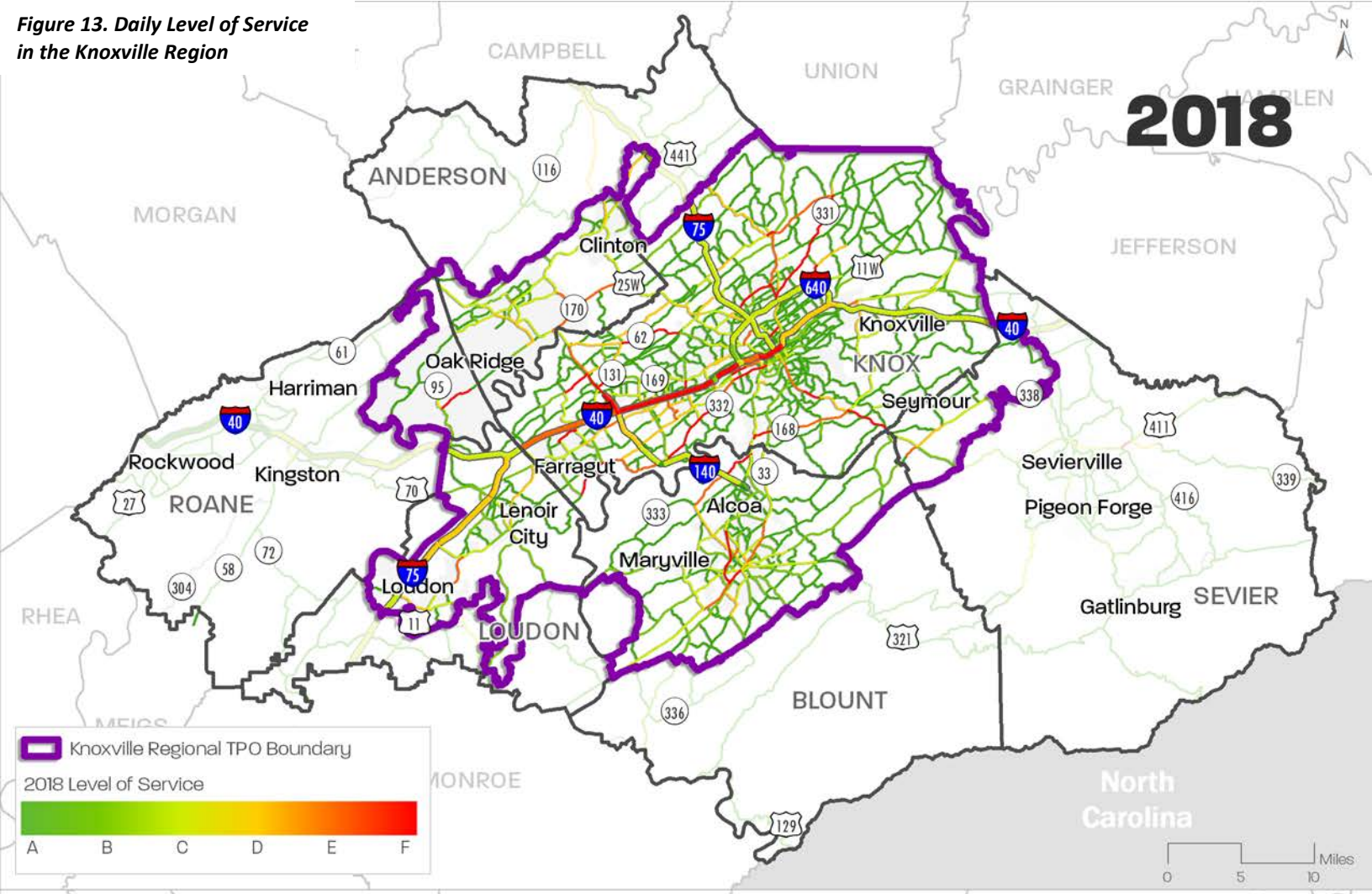
Figure 12. Historic Traffic Growth

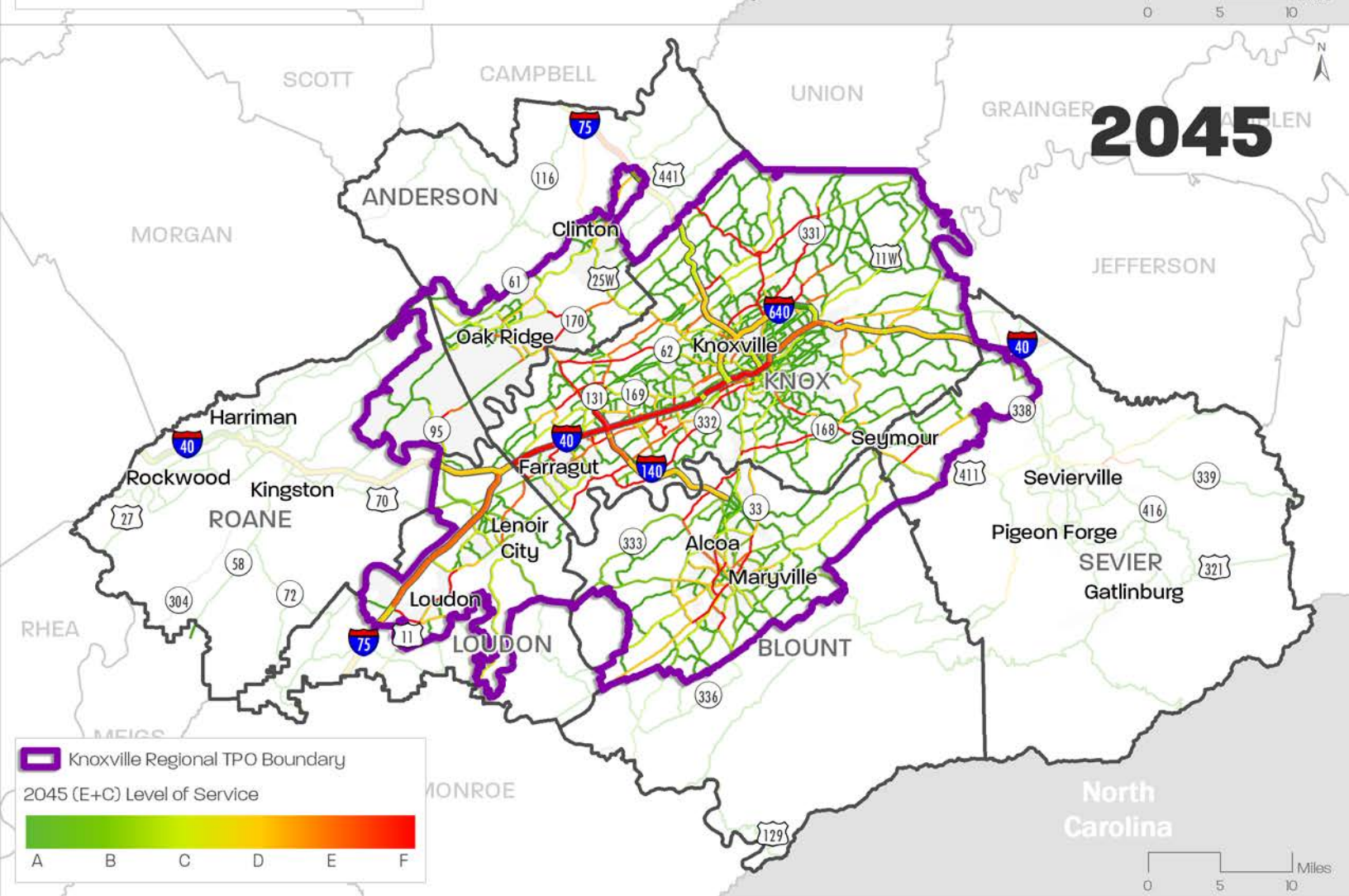


Source: TDOT

Building on this data, the TPO uses a tool called a travel demand model to evaluate how roads (those classified as collector roads and above) operate. The tool models where people live, where they want to go, how they make decisions about their trips, and what route they take between their origin and destination. The model is updated with each Mobility Plan and is currently calibrated to depict roadway operations for the year 2018 and the future year of 2045. Current and future traffic conditions are depicted using a concept called Level of Service, or LOS, which translates roadway operations into letter grades A-F. The letter grades capture how efficiently a road segment operates based on how much delay drivers experience. As shown in Figure 13, most of the road network is currently operating well, with approximately 98% of roadway miles experiencing relatively few delays over the course of a day. When we factor in projected growth over the next 25 years and previously funded improvements, the percentage of roads operating at a satisfactory level (Level of Service E or better) falls to 94%.

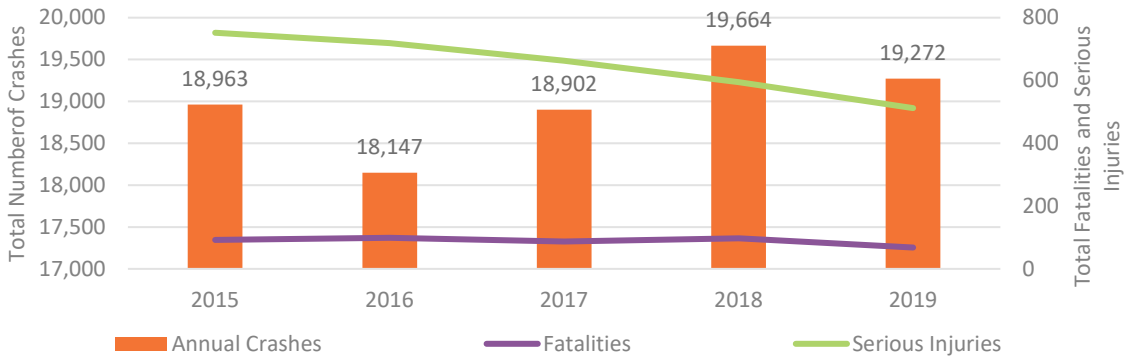
Figure 13. Daily Level of Service in the Knoxville Region





The performance of the roadway system is not solely defined by how fast cars and truck move. Safety is a high priority for all roadway users. Nearly 95,000 crashes have occurred in the TPO area over the past five years, with 407 of those crashes resulting in a fatality.

Figure 14. Crash Statistics in the TPO Area



Source: TDOT

Active Transportation

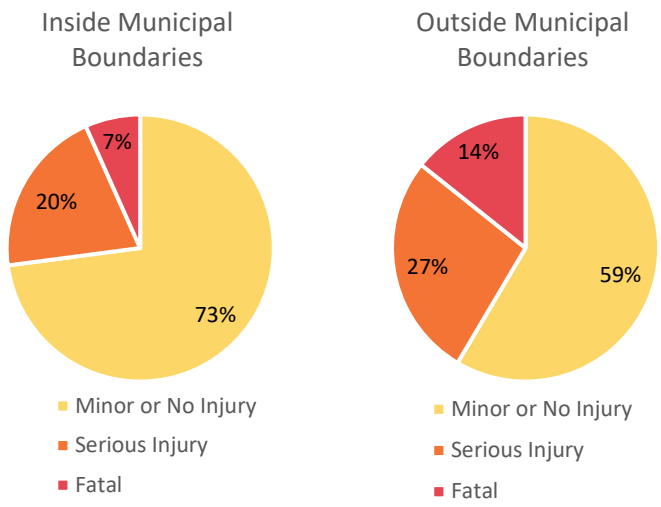
Walking is our most basic form of travel, and whether by choice or need we are all pedestrians at some point. For this reason, safe, connected, and comfortable pedestrian facilities are fundamental to an accessible and equitable transportation system. Taken together, sidewalks, bikeways, and greenways all create opportunities for affordable and healthy daily trips.

While many people will continue to rely on cars for longer trips, we understand residents need and want more transportation options. Within the Knoxville TPO area, there are approximately 920 miles of sidewalks on the 5,500 miles of roadways. Since the last Mobility Plan, the region has added nearly 20 miles of sidewalks. There are also several different types of on-street bikeways throughout the Knoxville region. The bikeway types include designated routes with shared-lane marking, bike lanes, and buffered bike lanes. The region's bikeways are located primarily in Anderson, Blount, and Knox Counties and total approximately 42 miles. Greenways are off-road active transportation facilities that are designed for use by both pedestrians and bicyclists. They often connect to sidewalks and on-street bikeways and are used by people of all ages and abilities. In total, there are nearly 130 miles of greenways in our region, with just over half of the miles located in Knox County. A current map of the region's bikeway and greenway facilities can be found online at this **link**.

When it comes to safety, people walking and bicycling are the most vulnerable in traffic crashes. Pedestrians and cyclists are less protected physically, and a crash with a motor vehicle is more likely to result in a serious injury or fatality. Over the past five years, there have been nearly 800 reported traffic crashes involving pedestrians and bicyclists in the Knoxville TPO area. Due to its population size, development pattern, and prevalence of walking and biking, approximately 50% of the region's crashes involving pedestrians and bicyclists occurred in Knox County.

Of the nearly 800 crashes involving pedestrians and bicyclists in the TPO area, 61 resulted in a fatality and 162 resulted in a serious injury. Approximately 80% of all bike and pedestrian crashes occur within city limits, yet the crashes in more rural areas tend to be more severe. Figure 15 shows the proportion of active transportation crashes by severity and geography since 2015.

Figure 15. Bicycle and Pedestrian Crash Severity



Source: TDOT

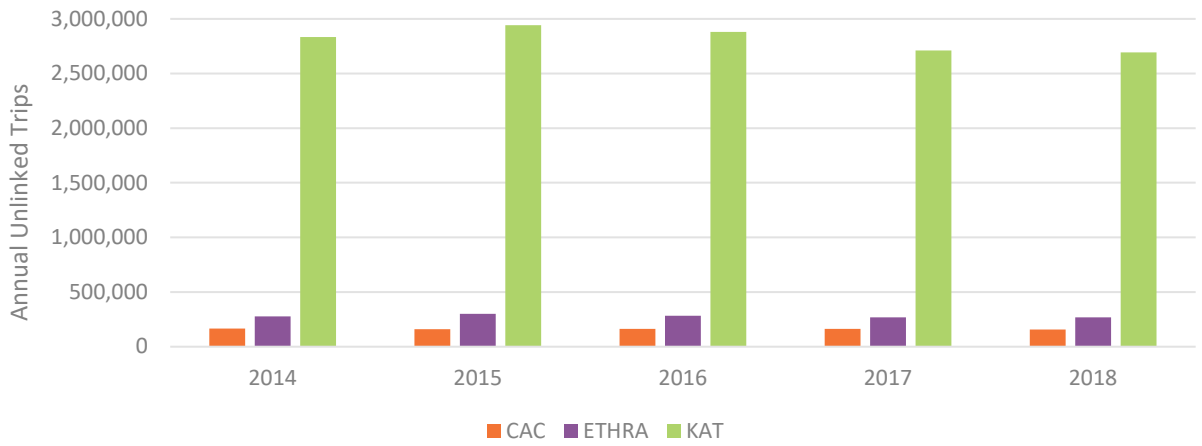
Because walking and biking trips tend to be shorter in length, local jurisdictions are typically responsible for implementing walking and bicycling facilities. In fact, there have been a number of plans completed in recent years that highlight the need for accessible, connected, and safe active transportation facilities. Across all of the plans, there are over 120 miles of greenway needs that could facilitate regional travel in the six counties. While the needs are documented in the plans, in most cases, funding sources have not been identified.

Public Transit

Coupled with sidewalks and bikeways, public transit expands the transportation options available for people to meet their daily needs. In the Knoxville region, public transit services are provided by Knoxville Area Transit (KAT), the East Tennessee Human Resource Agency (ETHRA), and Knox County Community Action Committee (CAC) Transit. Each agency offers a different type of service for residents. KAT is the largest transit agency in the region. As our only fixed-route service, the KAT system consists of 23 routes with more than 1,000 bus stops in Knoxville's urban area. By contrast, ETHRA provides demand-response transit services for 16 counties in the region, including the six counties that make up the TPO area. ETHRA's

service picks up and drops off passengers in locations according to their needs, which generally relate to medical appointments, civic destinations, and other necessary services. Knox County CAC Transit is also a demand-response service that specifically focuses on those areas of Knox County that are outside the KAT service area. Transit ridership across the region has generally remained consistent over the past few years as shown in Figure 16. According to the National Transit Database, the three services provide an average of nearly 3.3 million trips annually.

Figure 16. Annual Ridership for the Region's Transit Systems



Source: National Transit Database 2014-2018

Chapter 2. Transportation Goals, Strategies, and Performance Measures

INTRODUCTION

Performance-based planning, established in MAP-21 (the Moving Ahead for Progress in the 21st Century Act) and subsequently carried through the FAST Act, calls on regional planning agencies like the Knoxville Regional TPO to establish a framework ensuring that transportation investments help the region meet its goals. This framework is always evolving, and each update to the Mobility Plan serves as an opportunity to refine performance management.

Mobility Plan 2040 used an extensive public and stakeholder involvement process coupled with federal planning factors and emphasis areas to develop a set of eight regional goals. Four years later, these goals still represent the desires, needs, and priorities of the region and have been carried forward to guide Mobility Plan 2045. Aligned with federal planning factors, each of these goals is complemented by a set of objectives and performance measures used to consistently assess progress in achieving those goals. The pages that follow document each of the eight regional goals, the high-level strategies that better define how each goal is achieved, and the associated performance of the region's transportation system.

Table 1. Knoxville Regional TPO Goals and Performance Measures

FAST ACT PLANNING FACTORS	REGIONAL GOALS		PERFORMANCE MEASURES
SYSTEM PRESERVATION	Maintenance and Efficiency	Preserve and maintain our existing infrastructure through repaving projects, bridge replacements, access management, sidewalk repairs, and intersection improvements	▶ Condition of regional roadways ▶ Condition of regional bridges ▶ Age of transit fleet vehicles ▶ Percent of TPO funding for maintenance projects
ACCESSIBILITY AND MOBILITY	More Options	Improve access to services and employment with bicycle and pedestrian facilities, and transit services	▶ Percent commuters by active mode ▶ Change in mileage of sidewalks, bikeways, and greenways ▶ Jurisdiction implementation of ADA transition plan ▶ Transit ridership per year ▶ Number of households within a ¼ mile of high frequency transit service ▶ Percent of TPO funding for multimodal transportation
SAFETY **SECURITY**	Safety and Security	Reduce rates of crashes with serious injuries and fatalities. Reduce the region's vulnerability to incidents and threats	▶ Annual number of vehicular crashes, serious injuries, and fatalities ▶ Fatality and serious injury crash rates per 100 million VMT ▶ Annual crashes, serious injuries, and fatalities involving pedestrians and bicyclists ▶ Annual number of crashes involving commercial trucks
ENVIRONMENT, CONSERVATION, AND LAND USE	Health and Environment	Minimize negative impacts on the environment and people's health, and increase access to active transportation/physical activity for all ages	▶ Amount of criteria pollutant emission reductions ▶ 2-year and 4-year cumulative reported emission reductions, for all projects funded by CMAQ funds ▶ VMT per capita
CONNECTIVITY	Equitable Access	Connect communities to opportunities and services throughout the region, particularly areas with high proportions of low income, senior, and minority populations	▶ Number of households in very high and high priority population areas within a ¼ mile of bicycle or pedestrian facility ▶ Number of households in very high and high priority population areas within a ¼ mile of high frequency transit service ▶ Percent of TPO funding in very high and high priority areas
SYSTEM EFFICIENCY	Congestion Reduction	Use our system more efficiently through technology like traffic signal coordination, real time traffic info, and emergency response vehicles	▶ Interstate travel time reliability ▶ Non-interstate NHS travel time reliability ▶ Smart Trips Program VMT reduction parameters
RESILIENCY AND RELIABILITY	Preservation of Places	Preserve natural and cultural areas and places that make our region unique (e.g. mountains, open space, farmland, viewsheds, small communities)	▶ Percent of TPO funding located in existing urban centers ▶ Percent of TPO funding located within or along existing, major transportation corridors
ECONOMIC VITALITY **TRAVEL & TOURISM**	Economy and Freight	Improve intermodal connections to help move freight to and through the region. Reduce delay on major freight corridors	▶ Truck travel time reliability ▶ Average hours of delay on freight corridors ▶ Annual tonnage and value of exported freight ▶ Economic impact of tourism

MAINTENANCE AND SYSTEM PRESERVATION

The increasing age of transportation infrastructure nationwide has necessitated taking a comprehensive and detailed approach to how transportation agencies plan and maintain the transportation system in a state of good repair. While our state has historically had a strong commitment to maintenance and preservation compared to other areas of the country, the uncertainty of transportation funding in the past decade emphasizes the need to prioritize and reinvest in existing infrastructure. The following strategies are meant to ensure that multimodal infrastructure within the Knoxville region continues to be maintained in a state of good repair.

Preserve and maintain our existing infrastructure through repaving projects, bridge replacements, access management, sidewalk repairs, and intersection improvements.

Table 2. Maintenance and System Preservation Strategies

●	Ensure investments in preservation are adequate to continuously improve pavement, bridge, sidewalk, and greenway conditions.
●	Ensure investments in transit are adequate to keep the current fleet in a state of good repair and to maintain operations.
●	Maximize the efficiency of existing transportation assets by prioritizing limited resources on rehabilitating and replacing aging infrastructure over system expansion.
●	Employ life-cycle analyses with any capacity expansion projects and demonstrate resources for future operations and maintenance.

Performance measures related to maintenance and system preservation have been established through federal guidance. These are grouped into three principal areas that assess the condition of pavement, bridges, and transit assets in the region. Table 3 shows these performance measures as well as the state's targets.

Table 3. Federal Performance Measures and State Targets for Pavement and Bridge Conditions

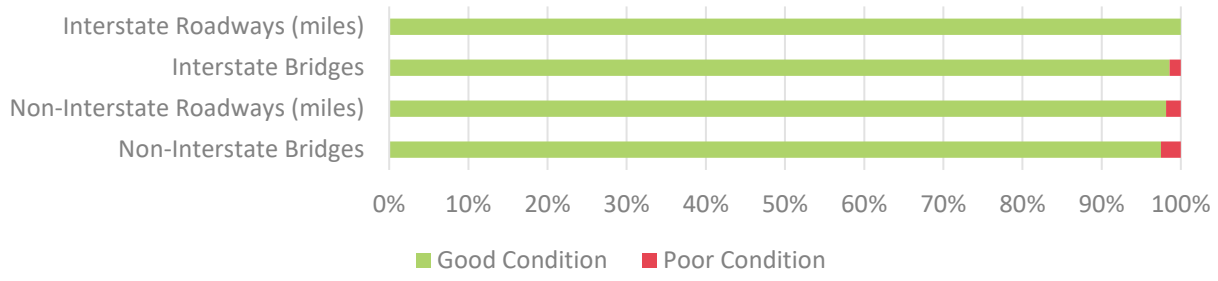
PERFORMANCE MEASURE	BASELINE (2018)	2 YEAR TARGET	4- YEAR TARGET
PERCENTAGE OF PAVEMENTS ON THE INTERSTATE SYSTEM IN GOOD CONDITION	N/A	N/A	60.0%
PERCENTAGE OF PAVEMENTS ON THE INTERSTATE SYSTEM IN POOR CONDITION	N/A	N/A	1.0%
PERCENTAGE OF PAVEMENTS ON THE NON-INTERSTATE NHS IN GOOD CONDITION	44.80%	42.0%	40.0%
PERCENTAGE OF PAVEMENTS ON THE NON-INTERSTATE NHS IN POOR CONDITION	3.24%	4.0%	4.0%*
PERCENTAGE OF NHS BRIDGES CLASSIFIED AS IN GOOD CONDITION	39.50%	36.0%	36.0%
PERCENTAGE OF NHS BRIDGES CLASSIFIED AS IN POOR CONDITION	4.90%	6.0%	6.0%

**NOTE: 4-Year targets shown are currently being re-evaluated and adjusted by TDOT as allowed under 23 CFR 490.105(e).*

Source: TDOT

Pavement condition on the region's roadways is monitored for two parts of the system: the interstates and the non-interstate portions of the National Highway System (NHS). Assessing pavement condition takes into account how rough and cracked the pavement surface is, the presence of wheel paths in the travel lanes, and any separation that causes noticeable bumps. Using data maintained and provided by TDOT on an annual basis, Figure 1 shows that the overwhelming majority of interstates in the Knoxville region are in good condition. Additionally, 98% of non-interstate portions of the NHS in the Knoxville region, such as Pellissippi Parkway, are in good condition. Similar to pavements, bridges on the NHS system are also monitored by TDOT with an overall rating determined by the condition of different parts of the bridge structure. As shown in Figure 1, approximately 99% of bridges on the NHS in the Knoxville region are in good condition.

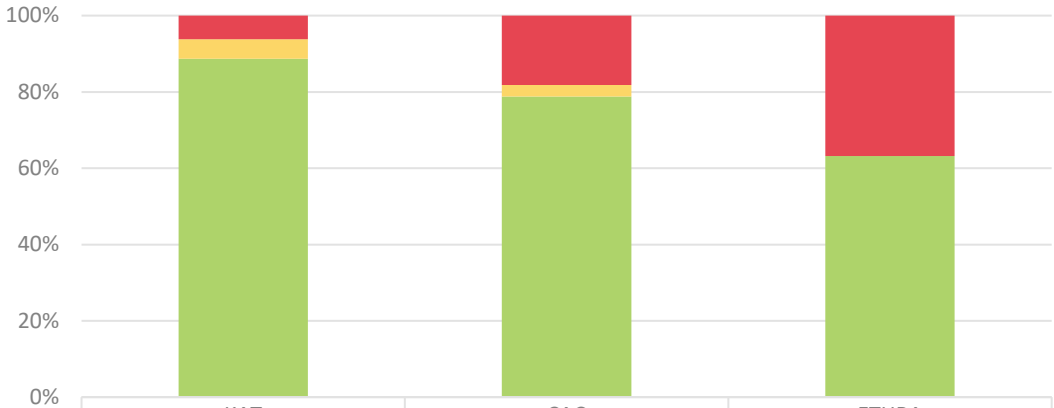
Figure 1. Roadway System and Bridge Conditions in the Knoxville Region



Source: TDOT

In addition to roadways and bridges, transit agencies across the state are required to complete a Transit Asset Management Plan (TAMP). To support the development of these plans, each transit agency must keep track of all its assets, such as vehicles, as well as their age and condition. This data is used to monitor how many transit vehicles are currently in use but beyond their useful life according to federal guidelines. In the KAT, CAC, and ETHRA fleets, 14% of the vehicles are above the applicable useful life threshold according to each agency's 2019 TAMP. Figure 2 provides further fleet details for transit agencies in the Knoxville region and Table 4 details specific targets for transit asset management.

Figure 2. Transit Fleet Inventory and Conditions



	KAT	CAC	ETHRA
Over Useful Life	6	12	7
At Useful Life	5	2	0
Under Useful Life	86	52	12

Source: 2019 Transit Agency TAM Plans

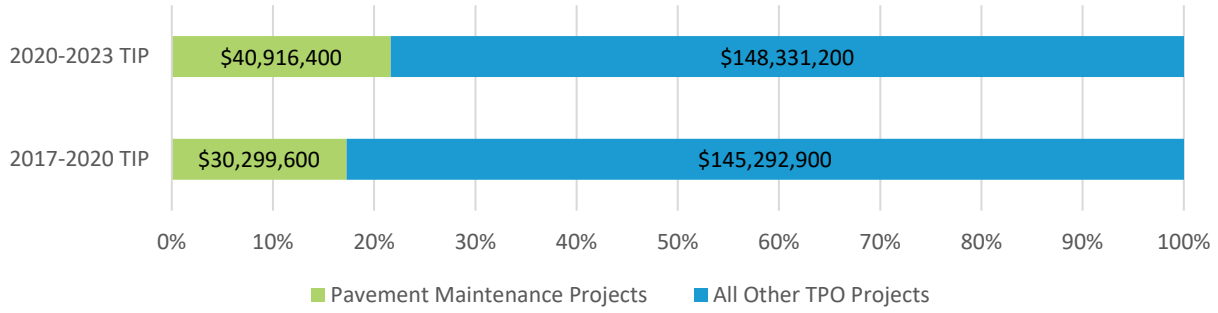
Table 4. Transit Asset Management Targets

ASSET CLASS/DEFINITION	AGENCY	TOTAL ASSETS	2021 # ASSETS IN SGR	2021 # ASSETS IN SGR BACKLOG	2021 % ASSETS IN SGR BACKLOG	2021 TARGET % ASSETS IN SGR BACKLOG
Rolling Stock - All Revenue Vehicles *% Of Revenue Vehicles That Have Met or Exceeded Their Useful Life Benchmark (ULB)*						
BUS & RUBBER TIRE VINTAGE TROLLEY (14 YEARS)	KAT	66	66	0	0.0%	< 10%
CUTAWAY (10 YEARS)	KAT, CAC, NP	79	78	1	1.3%	< 10%
CUTAWAY – LIGHT DUTY (5 YEARS)	ETHRA	20	20	0	0.0%	< 10%
FORD TRANSIT VANS (7 YEARS)	KAT, CAC	12	12	0	0.0%	<10%
MINIVAN (8 YEARS)	CAC, VAT, NP	35	26	9	25.7%	< 10%
AUTOMOBILE (8 YEARS)	CAC, VAT, NP	17	9	8	47.1%	< 10%
Equipment - Non-Revenue Vehicles *% Of Non-Revenue Vehicles That Have Met or Exceeded Their Useful Life Benchmark (ULB)*						
SUPPORT VEHICLE (8 YEARS)	KAT, CAC	18	10	8	44.4%	< 10%
Equipment – Over $50,000/Owned *% Of Equipment with A Condition Rating Below 3.0 On FTA's Transit Economic Requirements Model (TERM) Scale*						
EQUIPMENT	KAT	18	16	2	11.1%	< 10%
Facilities - All Buildings or Structures *% Of Facilities with A Condition Rating Below 3.0 On FTA's Transit Economic Requirements Model (TERM) Scale*						
FACILITIES	KAT	2	2	0	0.0%	0%

SGR = State of Good Repair, KAT = Knoxville Area Transit, CAC = Knox County CAC Transit, VAT = Knoxville Knox County CAC Volunteer Assisted Transportation Program, ETHRA = East Tennessee Human Resource Agency, NP = Non-Profit agencies that purchased vehicles through Section 5310 Enhanced Mobility for Seniors & Individuals with Disabilities

Finally, to augment the federally mandated pavement, bridge, and transit measures, the TPO has elected to internally track the percentage of spending dedicated specifically to preservation and preventative maintenance in an effort to understand the level of investment committed to preserving the transportation system. In the 2020-2023 TIP, the TPO used 21% of its budget to address maintenance needs compared to 17% in the 2017-2020 TIP (Figure 3).

Figure 3. TPO Dollars Spent on Maintenance



Source: Knoxville TPO Transportation Improvement Programs

MORE OPTIONS

Walking, bicycling, and riding transit continue to account for a relatively small fraction of travel in the Knoxville region. However, a growing number of people – because of age, ability, or other factors – rely on these transportation modes to access jobs, educational opportunities, activity centers, and essential services. This shift has led to a higher demand for alternatives to driving. The strategies in Table 5 seek to further the goal of improving access to regional opportunities for all people in the Knoxville region.

Improve access to services and employment with bicycle and pedestrian facilities, and transit services.

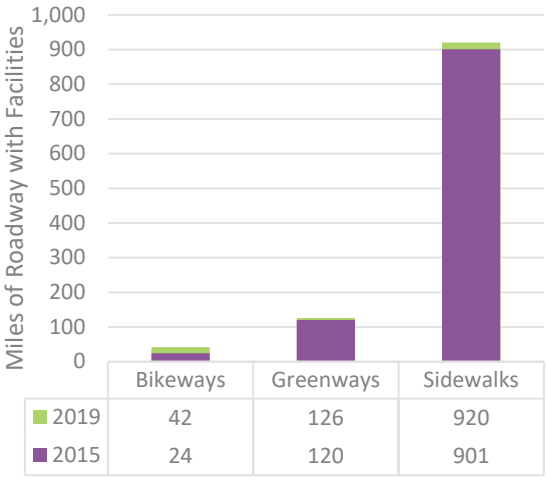
Table 5. More Options Strategies

●	Promote projects that improve multimodal connections between existing transit and surrounding communities.
●	Coordinate with implementing agencies to provide connected, safe, comfortable environments for walking and bicycling.
●	Enhance connections between activity centers through access to transit, pedestrian, and bicycle facilities.
●	Increase mobility and access to opportunities by coordinating land use and transportation planning.
●	Promote the development of bicycle and pedestrian facilities that use best practices guidance from the Federal Highway Administration (FHWA) and the National Association of City Transportation Officials (NACTO).
●	Assist in developing and implementing county and municipal bicycle and pedestrian plans.
●	Coordinate with partners to collect, maintain, and publicize bicycle and pedestrian facility and user data.
●	Assist local jurisdictions as they implement ADA transition plans.

There are currently no federally mandated performance measures related to the provision of active transportation facilities or their use. However, the TPO has identified a number of metrics, with readily available data, to track the quantity of walking, biking, and transit infrastructure as well as the accessibility to and use of those facilities.

Based on roadway data maintained by TDOT and in coordination with the region's counties and municipalities, the change in walking and biking infrastructure in the TPO area can be tracked with each Mobility Plan update. Figure 4 summarizes the existing miles of roadways in the region with active transportation infrastructure in 2015 and 2019. Bikeway miles – which include bike lanes, marked shared lanes, and buffered bike lanes – have increased 75% since the last plan. Sidewalk mileage increased approximately 2% across the region. Table 6 shows the current miles by jurisdiction for the portions within the TPO area.

Figure 4. Regional Active Transportation Infrastructure



Source: TDOT; Knoxville TPO

Table 6. Sidewalks by Jurisdiction with TPO Area

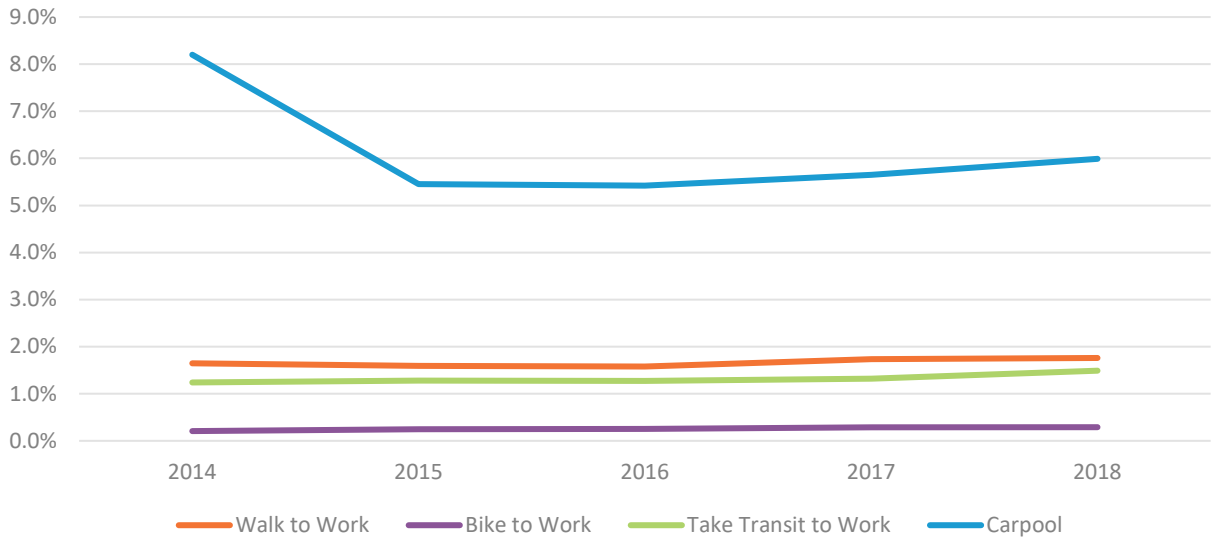
JURISDICTION	COUNTY	SIDEWALK MILES	ROADWAY MILES	SIDEWALK/ROAD RATIO
Alcoa	Blount	38.6	118.6	0.33
Clinton	Anderson	22.0	86.6	0.25
Farragut	Knox	75.5	148.9	0.51
Friendsville	Blount	0.4	18.2	0.02
Knoxville	Knox	412.8	1,134.4	0.36
Lenoir City	Loudon	16.5	78.0	0.21
Loudon	Loudon	12.5	68.2	0.18
Louisville	Blount	0.1	49.2	0.00
Maryville	Blount	68.8	188.8	0.36
Oak Ridge	Anderson/Roane	121.3	246.6	0.49
Oliver Springs	Anderson	2.7	36.7	0.07
Rockford	Blount	0.4	14.4	0.03
Sevierville	Sevier	-	4.3	-
Unincorporated All		149.0	3,313.6	0.04
	Total	**920.5**	**5,506.5**	**0.17**

Source: TDOT

Reporting on bicycle and pedestrian activity is limited by available data. Accordingly, it is common for many transportation plans to rely on U.S. Census journey-to-work data, which represents only a small fraction of total trips, to partially gauge user levels. Nevertheless, since 2015, the percent of commuters walking, bicycling, and taking transit to work has increased slightly according to this data. Coupled with a

growing population, even small increases in commuting rates with modes other than SOV reflect increased demand for pedestrian and bicycle infrastructure as well as transit service.

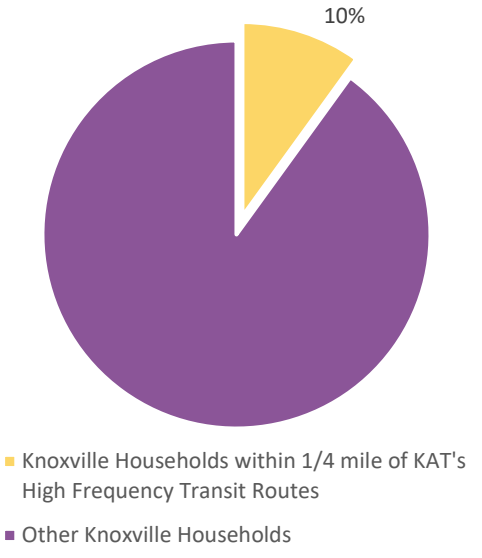
Figure 5. Percent Commuters Using Non-SOV Modes



Source: 2014-2018 ACS 5-Year Estimates

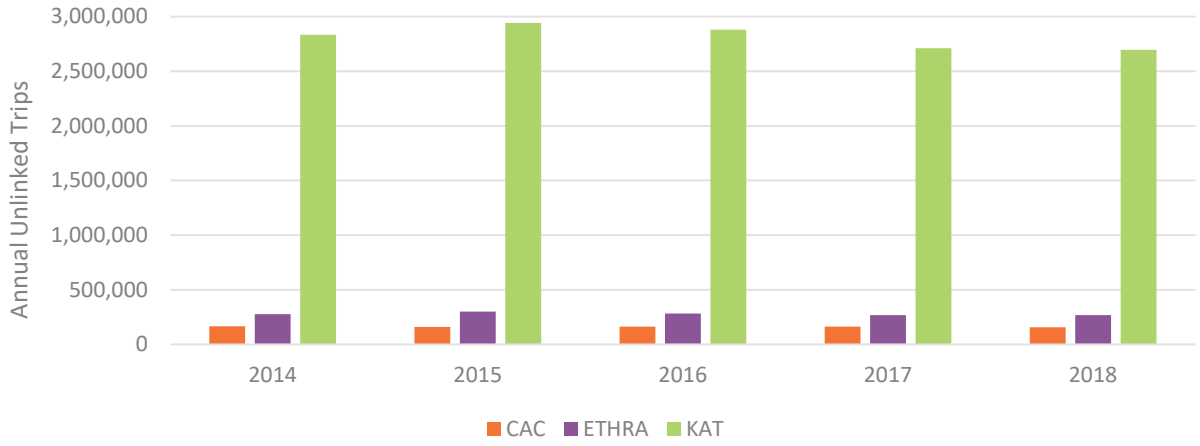
There are a number of measures we can use to track transit service in the region. Currently, just four of the 23 routes operated by Knoxville Area Transit (KAT) qualify as high-frequency routes, providing weekday service every 15 minutes in a corridor. Within the City of Knoxville, only 10% of households are within a ¼ mile of frequent transit service (Figure 6). Additionally, Figure 7 shows transit ridership across the region's three services remaining relatively constant over the past five years.

Figure 6. Households within ¼ Mile of High Frequency Transit



Source: Knoxville TPO

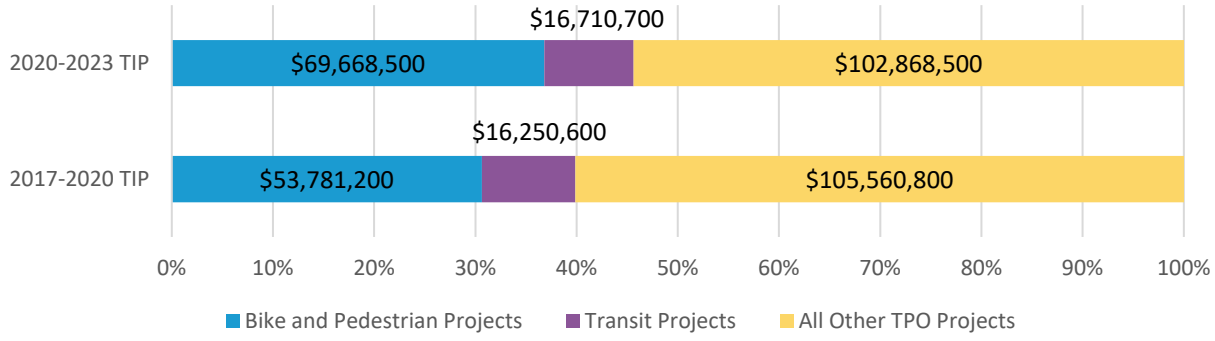
Figure 7. Transit Ridership



Source: National Transit Database 2014-2018

Finally, the TPO tracks the percent of regional funds allocated to bicycle, pedestrian, and transit infrastructure in each TIP to gauge investment levels. Funding programed by the TPO for all three modes has increased between 2017-2020 and 2020-2023. Bike and pedestrian facilities were allocated 37% of TPO selected funding in the 2020-2023 TIP, up from 31% in the 2017-2020 TIP. Transit was allocated approximately 9% of funding in both TIP cycles. While Figure 8 illustrates the funding controlled by the TPO, there are other funds allocated to these modes not reflected here.

Figure 8. TPO Funding for Multimodal Transportation



Source: Knoxville TPO Transportation Improvement Programs

SAFETY AND SECURITY

Reduce rates of crashes with serious injuries and fatalities. Reduce the region's vulnerability to incidents and threats.

Reducing serious injuries and fatalities on the transportation system underpins every Mobility Plan. Improving the safety of the system, however, delivers additional benefits, including reduced traffic delays, improved air quality, reduced healthcare costs, reduced economic losses, and more. Additionally, the multimodal transportation system plays an integral role in the response to natural and man-made incidents and must be designed in such a way that it is resilient to extreme events. The following strategies are intended to combat unsafe roadway conditions on multiple fronts and to ensure the long-term security and resiliency of the entire transportation system.

Table 7. Safety and Security Strategies

●	Work with partners to develop strategic transportation safety plans for the region.
●	Incorporate safety issues identified in roadway/highway safety plans into the planning process.
●	Support projects and programs that focus on the safety of vulnerable road users in the region, including presentations to drivers' education classes.
●	Work with partners to integrate complete streets planning that focuses on engineering, education, enforcement, and emergency response.
●	Strengthen security initiatives with a regional communications system supporting emergency response.
●	Analyze potential impacts of extreme weather and other climate-related stressors on the transportation system and the economy.

System performance measures tied to safety have been developed based on federal requirements and guidance. The measures tracked by the TPO relate to vehicular and non-motorized crash trends. Due to the large number of interstates and other freight corridors in the region, the TPO is also tracking TDOT's information on the number of crashes involving commercial vehicles. Table 8 lists the federal performance measures related to safety as well as the state's targets, which are set annually.

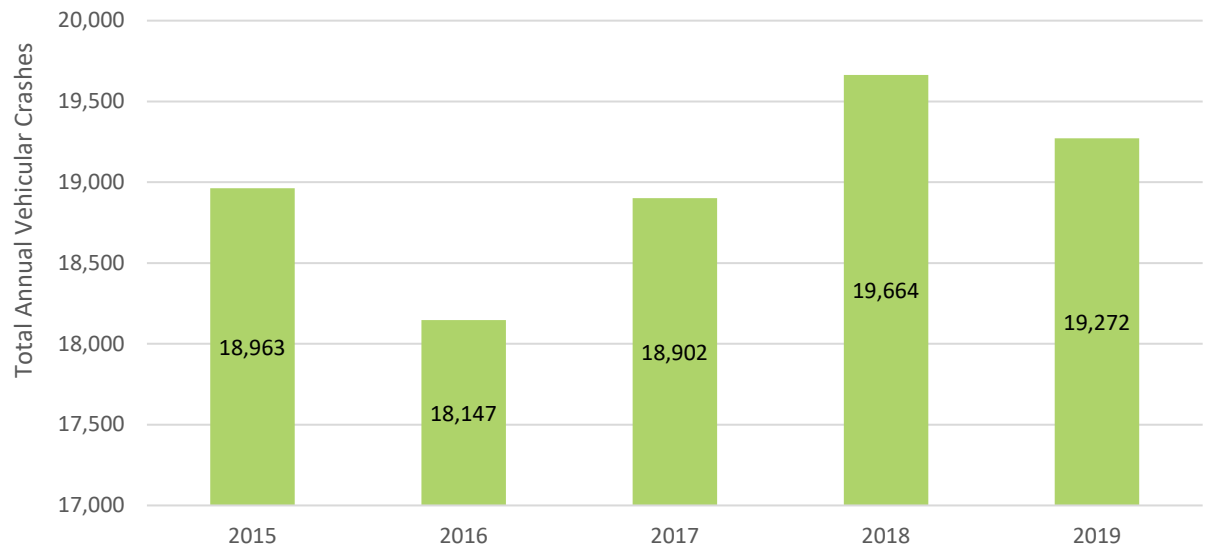
Table 8. Federal Performance Measures and Statewide Targets for Safety

PERFORMANCE MEASURE	5-YEAR ROLLING BASELINE AVERAGE (2015-2019)	5-YEAR ROLLING TARGET (2017-2021)
NUMBER FATALITIES	1,039.8	1078.8
FATALITY RATE (PER 100M VMT)	1.302	1.355
NUMBER OF SERIOUS INJURIES	6,725.8	6,227.1
SERIOUS INJURY RATE (PER 100M VMT)	8.462	8.394
NUMBER OF NON-MOTORIZED FATALITIES AND SERIOUS INJURIES	511.4	521.0

Source: TDOT

Vehicular crash trends are measured using six different metrics in the TPO area. For a look at overall crashes in the region, Figure 9 shows the total number of crashes in the TPO area between 2015 and 2019. While the totals fluctuate from year to year, they remain relatively close to the median value of 18,963 crashes during the five-year time period.

Figure 9. Total Crashes in the Knoxville Region

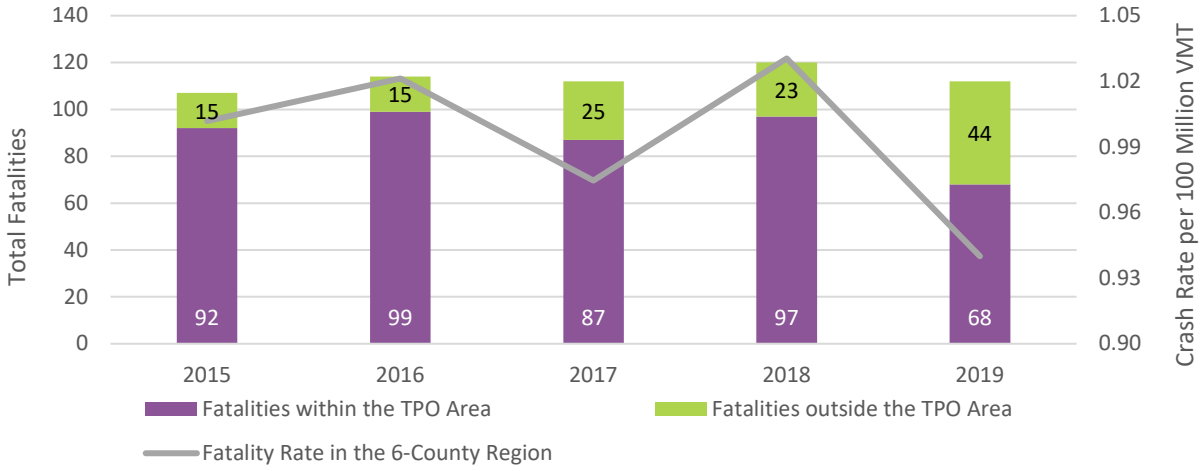


Source: TDOT

While the TPO is required to plan for and address safety issues within its boundary, certain safety metrics and trends take into account data that is available only at a county level. Crash rates, for example, are calculated using county-wide estimates of vehicle miles traveled. Figure 10 shows the number of fatalities

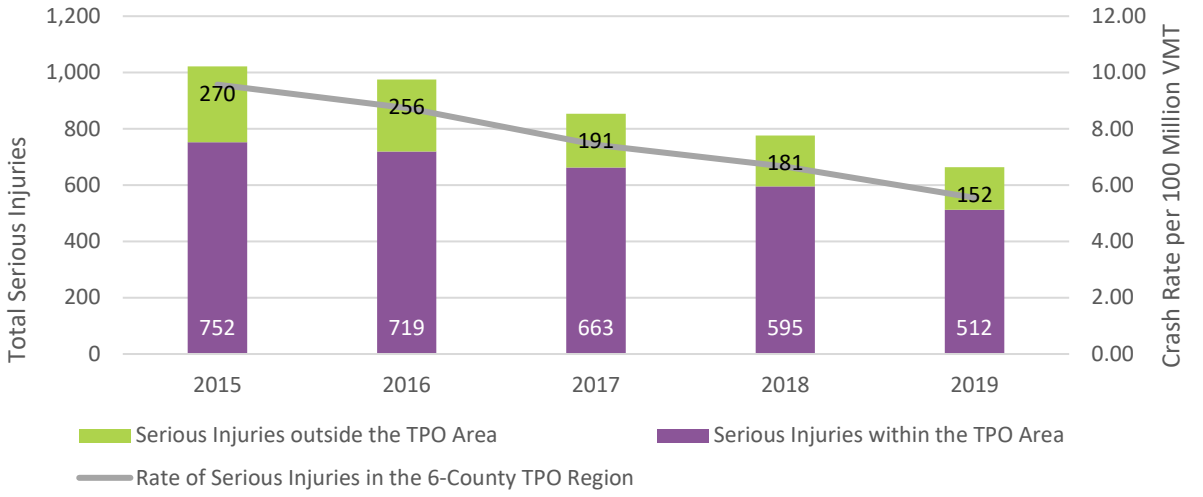
that have occurred in the region and the TPO area between 2015 and 2019 as well as the fatality rate, taking into account the extent to which residents travel by car. With a substantial decline in 2019, fatal crashes in the TPO area have decreased 35% since 2015. Figure 11 shows the number and rate of crashes that have resulted in a serious injury in the region and TPO area in the past five years. Crashes that resulted in serious injuries have decreased an average 9% annually since 2015.

Figure 10. Fatal Crash Trends in the Six-County Region



Source: TDOT

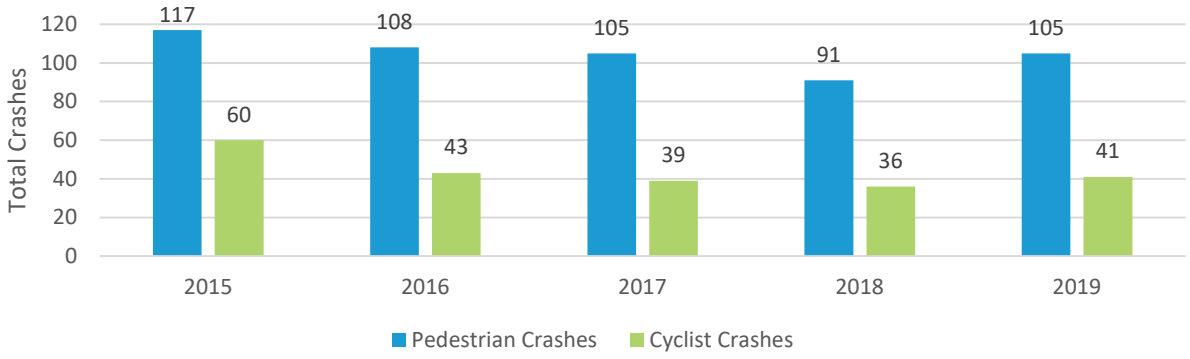
Figure 11. Serious Injury Crash Trends in Six-County Region



Source: TDOT

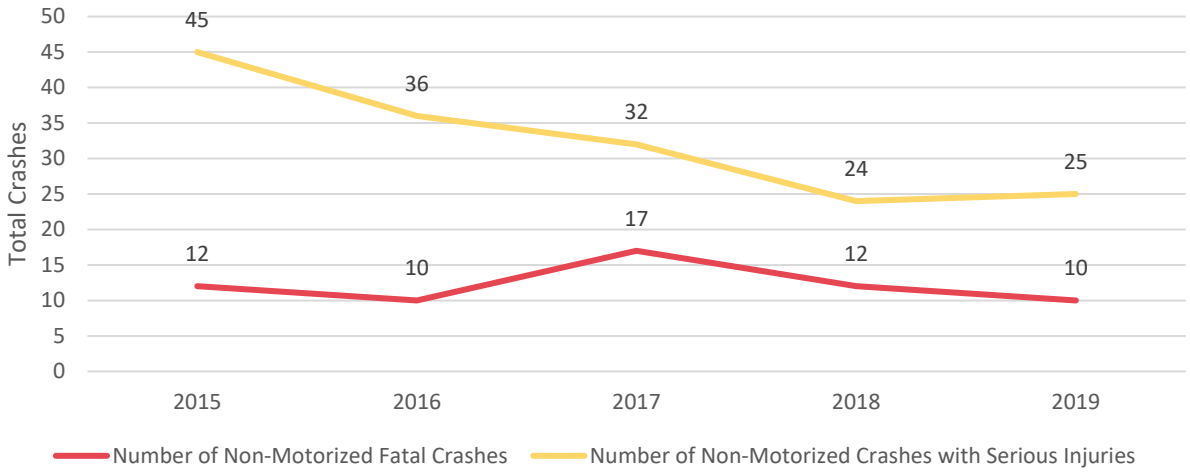
Compared to vehicular crashes, the number of crashes involving both vehicles and non-motorized roadway users is significantly lower. However, the severity of these crashes is often substantially worse for pedestrians and bicyclists, who are less protected than motorists. Figure 12 shows the number of vehicular crashes involving pedestrians and bicyclists in the TPO area, while Figure 13 shows the number of fatalities and serious injuries resulting from these crashes between 2015 and 2019. The number of crashes involving non-motorists that result in a serious injury has decreased an average of 13% annually since 2015. In 2019, approximately 24% of crashes in the TPO area involving a non-motorist resulted in a fatality or serious injury compared to only 3% of vehicular crashes.

Figure 12. Vehicular Crashes Involving Pedestrians and Bicyclists



Source: TDOT

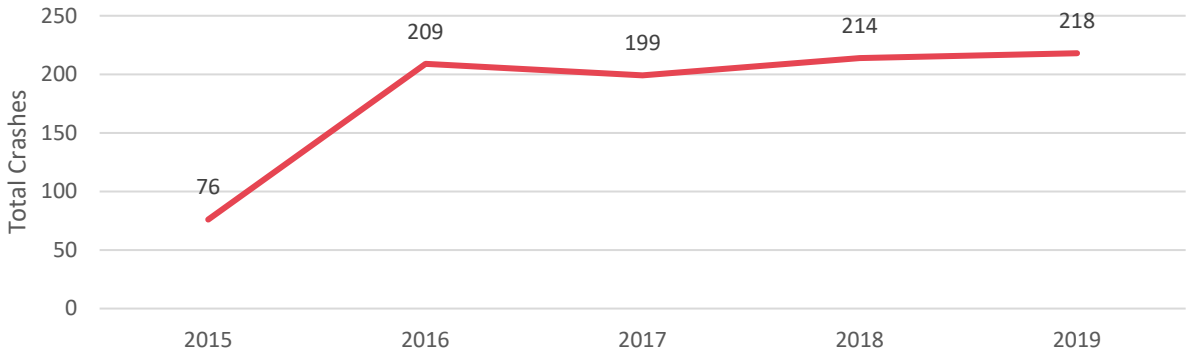
Figure 13. Non-Motorized Fatalities and Serious Injuries



Source: TDOT

Separately, TDOT collects information on the number of crashes involving commercial vehicles to help identify truck-specific safety issues on the roadway system. As shown in Figure 14, the number of crashes involving commercial vehicles in the TPO area has been trending up, with 218 crashes in 2019.

Figure 14. Crashes Involving Commercial Trucks



Source: TDOT

The analysis presented here is specific to the Knoxville region. However, additional transportation safety guidance and trends can be found in the Tennessee Strategic Highway Safety Plan (SHSP). Most recently updated in 2020, the Tennessee SHSP reports statewide crash trends, comprehensive safety strategies, safety programs, programs, and potential implementation actions. Additional information about the 2020 SHSP can be found in the Appendix.

In addition to roadway safety, the TPO also works with TDOT and the region's transit agencies to implement Public Transportation Agency Safety Plans (PTASP) as a requirement for using federal funds on transit projects. KAT, Knox County CAC Transit, and ETHRA must all develop these plans in coordination with the state and must identify performance targets to ensure continued safety and reliability of transit service. Table 9 documents the eight performance measures and 2020 performance targets for each agency.

Table 9. PTASP Performance Measures for Transit Agencies

PERFORMANCE MEASURE	KAT 2020 TARGET MB / DR	KNOX COUNTY CAC TRANSIT 2020 TARGET	ETHRA 2020 TARGET
NUMBER OF FATALITIES	0 / 0	0	0
RATE OF FATALITIES PER 100K VRM	0 / 0	0	0
NUMBER OF INJURIES	2 / 2	1	2
RATE OF INJURIES PER 100K VRM	0.07 / 0.44	0.08	0.04
NUMBER OF SAFETY EVENTS	2 / 2	1	3
RATE OF SAFETY EVENTS PER 100 VRM	0.07 / 0.44	0.08	0.06
TOTAL MAJOR MECHANICAL FAILURES	347 / 31	7	71
MILES BETWEEN MAJOR MECHANICAL FAILURES	8,455 / 14,550	180,854	65,318

Note: MB = Motor Bus, DR = Demand Response, VRM = Vehicle Revenue Miles; Source: KAT, Knox County CAC Transit, ETHRA

HEALTH AND ENVIRONMENT

Transportation investments have the potential to greatly impact public health and the environment. Reducing automobile travel, for example, simultaneously reduces energy use and improves air quality. The following strategies highlight key actions the TPO can take to ensure that public health and the natural environment remain priorities as the Knoxville region grows.

Minimize negative impacts on the environment and people's health, and increase access to active transportation/ physical activity for all ages.

Table 10. Health and Environment Strategies

●	Support projects and programs that reduce energy use and greenhouse gas production.
●	Coordinate air quality and transportation planning activities in the region through partnerships.
●	Share data and collaborate with partners to minimize the impact of projects on environmentally sensitive areas.

There are three performance measures currently tracked by the TPO related to the region's air quality. For projects receiving funds from the Congestion Mitigation and Air Quality (CMAQ) improvement program, emissions reductions are tracked if they are implemented in nonattainment and maintenance areas. For the Knoxville region, this includes all or portions of Anderson, Blount, Knox and Loudon Counties. In addition, the TPO tracks this same measure for all projects across the region even if they are implemented outside the nonattainment/maintenance areas. Table 11 outlines the federal measures and the state targets for emission reductions, and Table 12 shows the trend in emission reductions resulting from CMAQ projects in both categories since 2015.

Table 11. Federal Performance Measures for Emissions Reductions

PERFORMANCE MEASURE	4-YEAR CUMULATIVE BASELINE (2014-2017)	2-YEAR TARGET	4-YEAR TARGET
VOC (KG/DAY)	230.025	30.698	61.396*
NOX (KG/DAY)	363.399	62.840	125.680*
PM 2.5 (KG/DAY)	2.897	0.120	0.240*

**Note: 4-year targets shown are currently being re-evaluated and adjusted by TDOT as allowed under 23 CFR 490.105(e).*

Source: TDOT

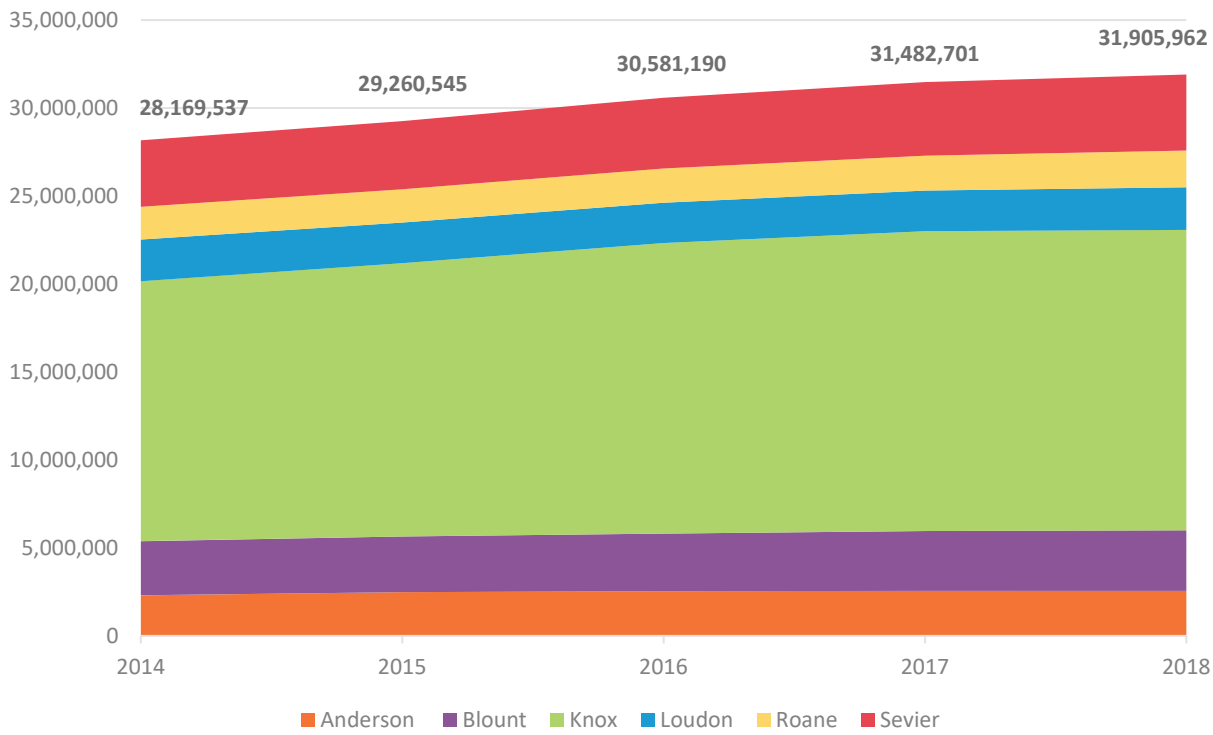
Table 12. Emission Reductions from CMAQ Projects in the TPO Area

	VOC REDUCTIONS (KG/DAY)		CO REDUCTIONS (KG/DAY)		NOX REDUCTIONS (KG/DAY)		PM2.5 REDUCTIONS (KG/DAY)	
	CMAQ Projects	Entire Region	CMAQ Projects	Entire Region	CMAQ Projects	Entire Region	CMAQ Projects	Entire Region
2015	11.65	30.356	0	373.41	36.852	77.959	1.357	2.437
2016	7.8	15.1	0	199.6	22.5	41.1	0.54	1.02
2017	0.8	0.8	0	5.61	1.63	1.63	0.06	0.06
2018	5.63	6.077	0	65.904	14.021	14.021	0.856	0.856
2019	13.94	17.33	0	83.61	96.1	96.1	6.13	6.13
2020	1.305	1.305	0	25.924	8.204	8.204	0.354	0.354

Source: Knoxville TPO

Offering more transportation options supports many regional goals, chief among them cleaner air and improved public health. To that end, tracking the number of miles traveled by vehicles each day, or daily vehicle miles traveled (DVMT), helps us understand if we need more options. Figure 15 shows that vehicular travel in the six-county region has increased approximately 13% since 2014.

Figure 15. Daily Vehicle Miles Traveled per Capita



Source: TDOT

EQUITABLE ACCESS

Transportation planning and investments are tools that can enhance access to jobs, educational opportunities, and other daily needs, particularly for vulnerable populations like older adults, low-income residents, minorities, and people with disabilities. The following strategies speak to ways the TPO can engage with, support, and enhance these priority population areas.

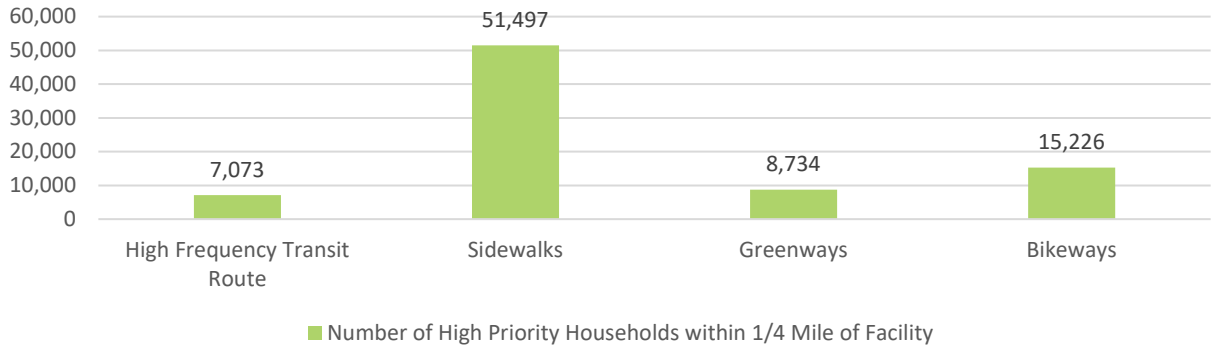
Connect communities to opportunities and services throughout the region, particularly areas with high proportions of low income, senior, and minority populations.

Table 13. Equitable Access Strategies

●	Ensure adequate funding for regional paratransit providers that serve older adults and people with disabilities.
●	Research and support initiatives and policies that stimulate job training and quality job creation in low-income and minority communities.
●	Ensure that low-income, minority, and older populations have equal access to the metropolitan planning and decision-making process through proactive outreach.
●	Prioritize projects that include multimodal access to community resources, especially for priority populations with high and very high vulnerability.
●	Work with the disability community and local agencies to ensure that all planning and implementation processes meet or exceed ADA requirements.

The TPO is tracking three measures that evaluate equitable access to opportunities across the region. The measures focus on the proximity of pedestrian and bicycle infrastructure and transit services to priority populations. The region's priority populations are characterized by those living in areas with fewer income and educational opportunities, reduced accessibility to safe places for being active, and greater vulnerability to leading a healthy and economically sustainable life. As shown in Figure 16, approximately 82,530 households in high or very high priority population areas are within a ¼ mile of these facilities and services, representing approximately 30% of all households in those areas. More information on the region's priority populations is included in the Appendix.

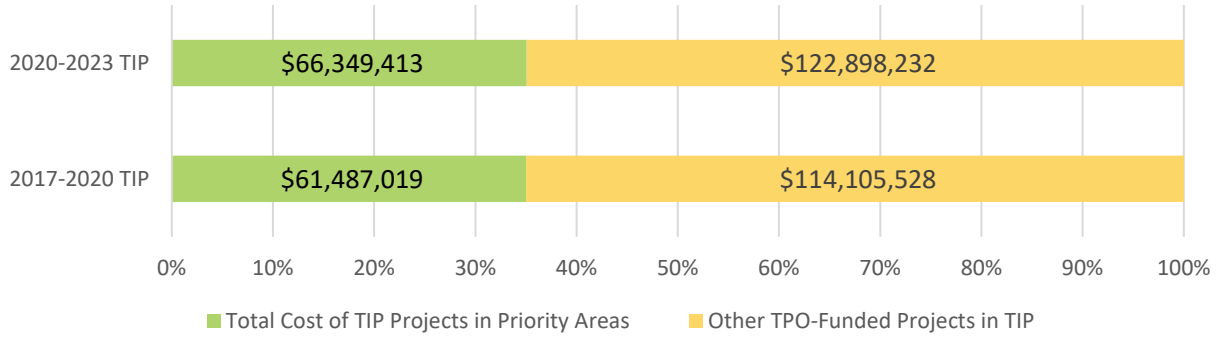
Figure 16. Access to Transit and Active Transportation for Priority Households



Source: Knoxville TPO

In addition to physical proximity, the TPO is tracking the allocation of transportation funds to these areas during each TIP cycle. Figure 17 indicates that approximately 35% of project funds for both the 2017-2020 and the 2020-2023 TIP were programmed in areas identified as high and very high priority populations.

Figure 17. TPO Funding in Areas with High and Very High Priority Populations



Source: Knoxville TPO Transportation Improvement Programs

CONGESTION REDUCTION

Traffic congestion is an ongoing challenge for many regions. Widening roadways to add capacity is expensive and often fails to provide a long-term solution for congestion, as greater road capacity encourages drivers to make more and longer trips. Therefore, the TPO's congestion reduction strategies focus on providing alternatives to driving alone and making lower-cost operational improvements before roadway capacity type projects.

Use our system more efficiently through technology like traffic signal coordination, real time traffic info, and emergency response vehicles.

To address congestion, the TPO is responsible for leading a Congestion Management Process (CMP) with each Mobility Plan update. More information on the CMP may be found in the Appendix, but in short, the CMP includes an assessment of regional congestion issues and the identification of solutions. Consistent with the goal of using the system more efficiently, the CMP helps the TPO prioritize solutions that do not increase roadway capacity by adding lanes, but rather seek to improve operational strategies, expand multimodal options, and increase the effectiveness of existing roadways. The following strategies are consistent with the goals and objectives outlined in the CMP, minimizing the need for constructing and maintaining expensive roadway widenings.

Table 14. Congestion Reduction Strategies

●	Employ the Congestion Management Process to identify projects and transportation system management strategies that reduce travel delays.
●	Promote efforts that encourage transportation alternatives to single-occupancy vehicle travel.
●	Continue to invest in regional ITS.
●	Ensure proper consideration of appropriate congestion mitigation strategies in the project development and implementation process.
●	Work with partners to facilitate coordination of transportation system operations.

The TPO is tracking four performance measures related to the severity of congestion and how it is mitigated throughout the region. The first two measures are based on federal guidance and revolve around the concept of reliability. Often, the longer travel times experienced during congested hours of

the day are not the biggest issue when it comes to congestion. Reliable travel times can be planned for and built into our daily schedules. However, when travel times vary significantly, it becomes more difficult to plan a trip. National data sources are available to track travel time reliability on both the interstate system and the non-interstate portions of the NHS. These metrics are measured by the percent of person miles traveled on each system that are considered reliable. As shown in Table 16, the reliability of travel on and off the interstate system has varied over the past eight years. Notably, travel time reliability on non-interstate roads has generally improved since 2014.

Table 15. Federal Performance Measures and State Targets for Travel Time Reliability

PERFORMANCE MEASURE	5-YEAR ROLLING AVERAGE (2013-2017)	2-YEAR TARGET	5-YEAR TARGET
PERCENT OF PERSON-MILES TRAVELED ON THE INTERSTATE SYSTEM THAT ARE RELIABLE	87.7%	85.3%	83.0%
PERCENT OF PERSON-MILES TRAVELED ON THE NON-INTERSTATE NHS THAT ARE RELIABLE	N/A	N/A	87.5%

Source: TDOT

Table 16. Percent of Person-Miles Traveled Considered Reliable in Knoxville TPO Area

	2014	2015	2016	2017	2018	2019
INTERSTATE	97.2%	94.7%	93.6%	91.9%	93.0%	93.0%
NON-INTERSTATE	67.9%	70.6%	87.0%	87.2%	85.8%	86.0%

Source: NPMRDS

Figure 18 and Figure 19 show the level of travel time reliability (LOTTR) on both the interstate and non-interstate systems, respectively, in the TPO area. The values shown represent the comparison of congested and uncongested travel times along roadway segments, with a higher value indicating that travel along a segment is more unreliable. Typically, segments with a LOTTR above 1.5 are considered unreliable, meaning that drivers can see their travel time increase more than 50% during congested times of the day. These figures also highlight the locations that most contribute to the unreliability on the roadway systems. As shown, the segment of I-40 from 17th Street to the I-75/I-640 interchange near downtown Knoxville is the most unreliable interstate travel, and the portion of US 129 Bypass from Hall Road to Bessemer Street in Alcoa is the most unreliable non-interstate travel.

Figure 18. Interstate LOTTR

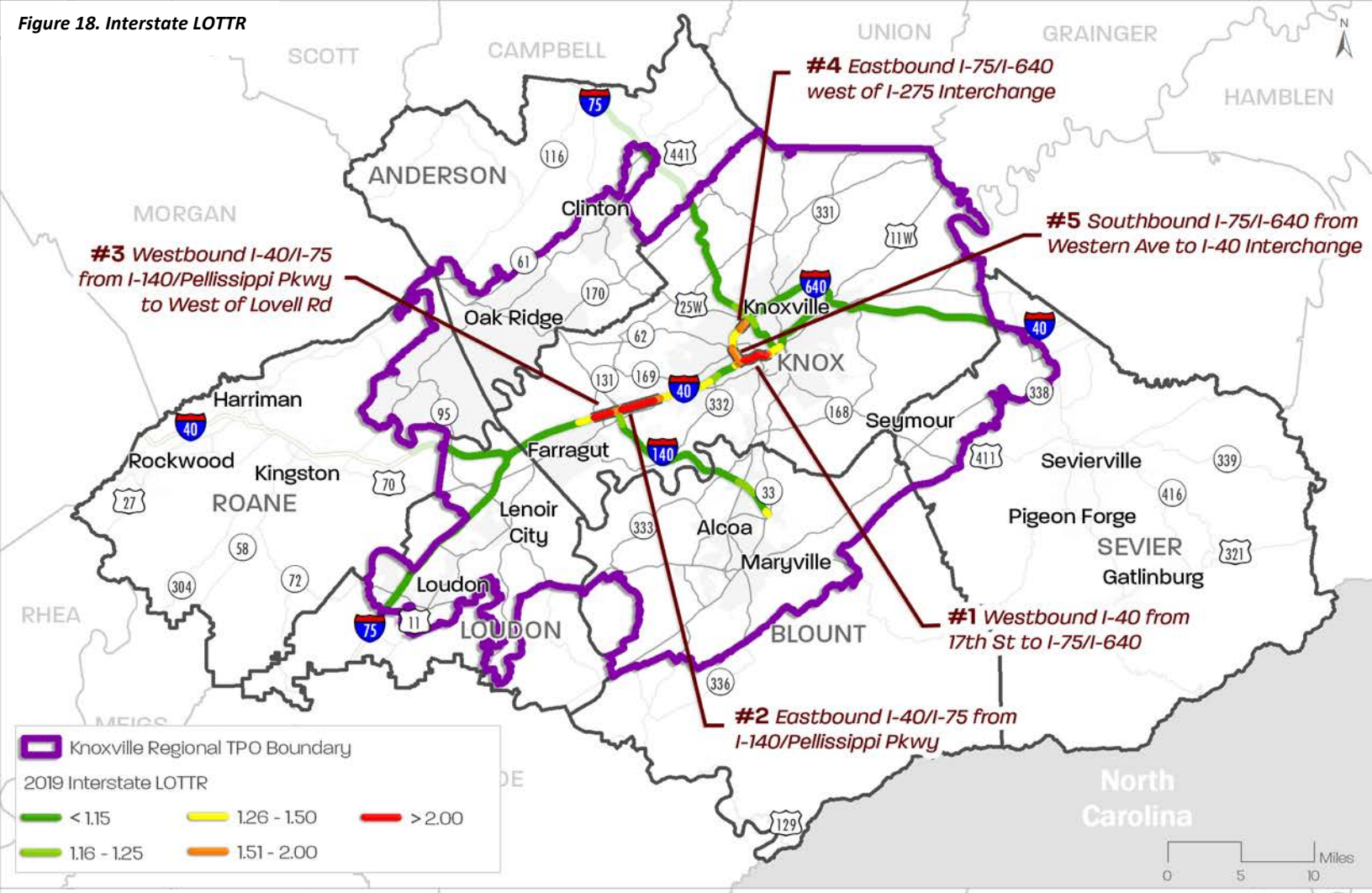
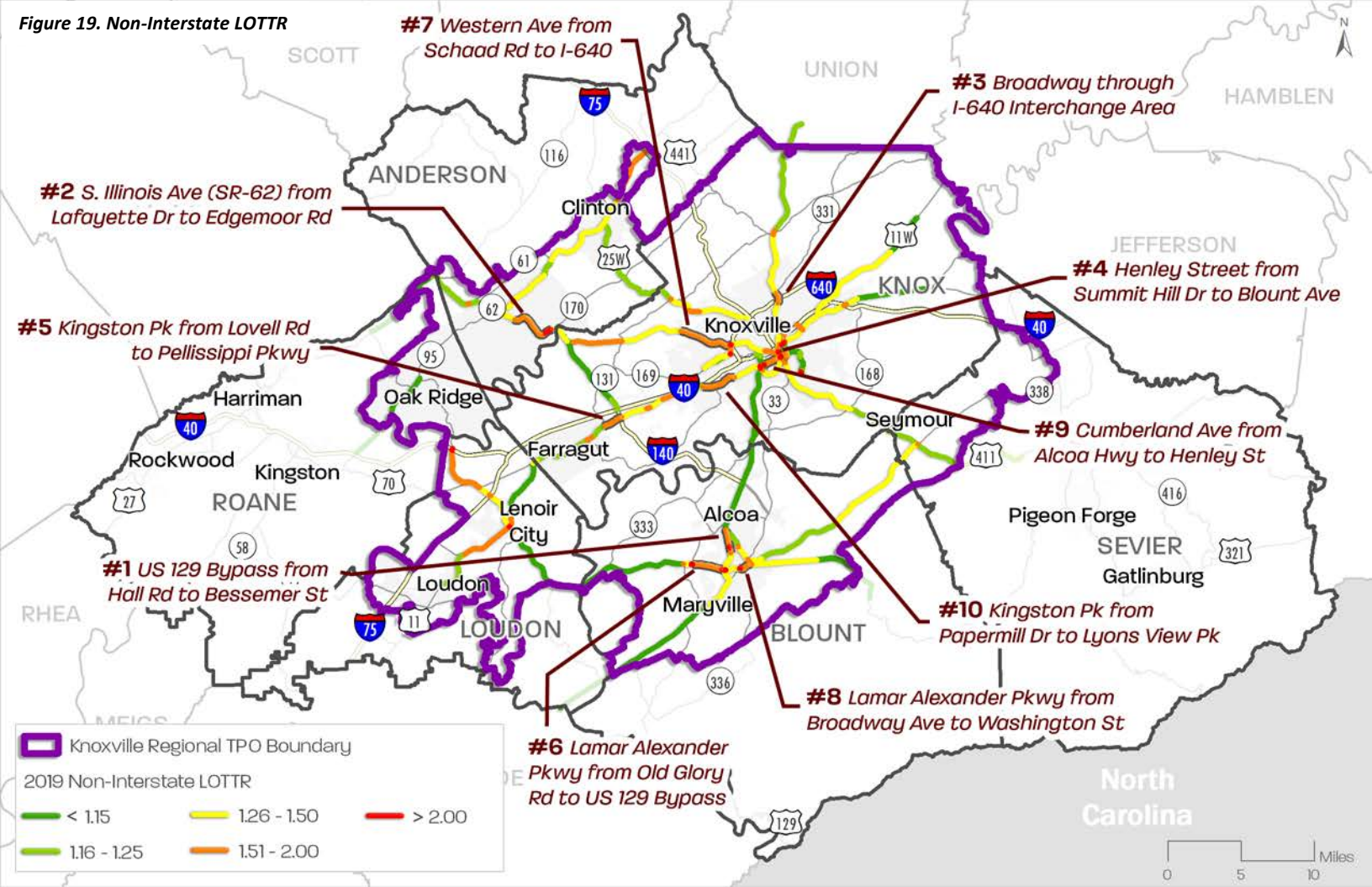


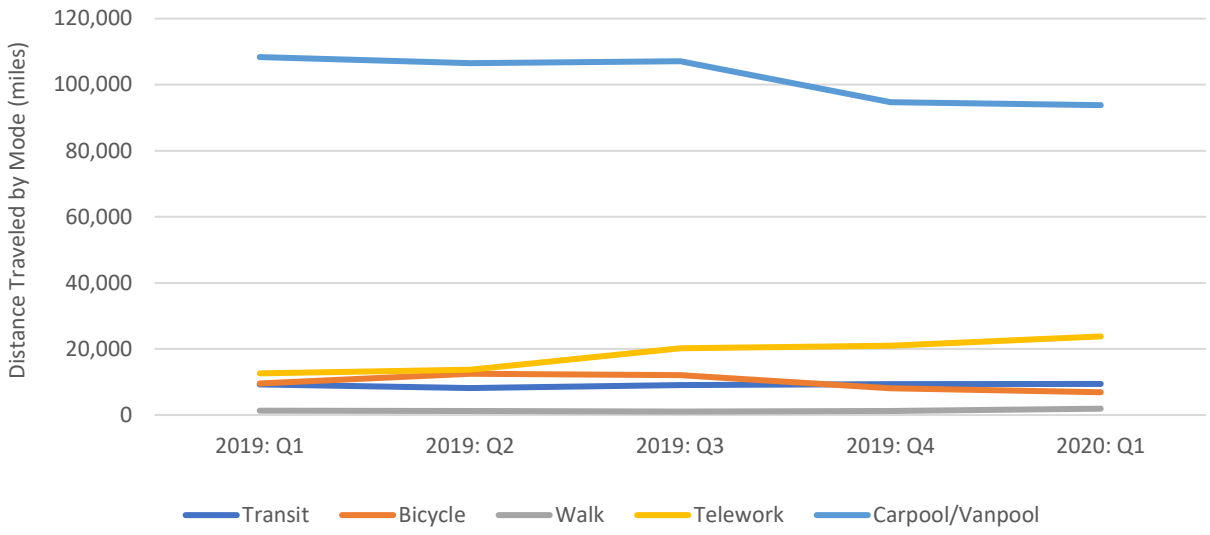
Figure 19. Non-Interstate LOTTR



There is another federal performance metric related to congestion that captures the amount of time drivers spend in peak-hour traffic. More technically, the metric is the annual hours of peak hour excessive delay per capita and is useful for showing the extent to which peak-hour congestion increases travel times. The TPO is not currently required to track this measure, but preliminary data shows that over the past four years, our residents are spending an average of just under seven hours in excessive peak-hour traffic conditions each year.

To address congestion, the TPO is also tracking the success of its Smart Trips program, which aims to reduce VMT across the region. The Smart Trips program incentivizes travel by modes other than single-occupancy vehicles (SOV) in the Knoxville region and tracks the impact of reported trips that use alternative modes. These impacts can result from increased walking and biking, reductions in vehicle miles traveled (VMT) and vehicle hours traveled (VHT), and emissions savings. Figure 20 highlights the quarterly VMT reduction by trip type as well as the environmental benefits of these same trips (Table 17).

Figure 20. Reduction in VMT from Smart Trips Participants



Source: Knoxville TPO

Table 17. Smart Trips Emissions Reductions in 2019

	GHG SAVED (LBS)	NOX SAVED (LBS)	CO SAVED (LBS)	NMOG SAVED (LBS)	PM SAVED (LBS)	HCHO SAVED (LBS)	VOC SAVED (LBS)
DROVE A CARPOOL	83,629	68	835	40	11	4	279
PASSENGER IN A CARPOOL	83,081	63	823	38	10	4	276
DROVE A VANPOOL	1,026	1	10	0	0	0	3
PASSENGER IN A VANPOOL	16,112	13	162	8	2	1	54
TRANSIT	33,005	26	332	16	4	1	111
BICYCLE	38,893	31	390	19	5	2	130
E-SCOOTER	23	0	0	0	0	0	0
WALK	4,378	3	44	2	1	0	15
TELEWORK	62,219	50	626	30	8	3	209
DROVE ALONE	0	0	0	0	0	0	0
DAY OFF-SHORT WORK WEEK	21,818	17	219	10	3	1	73
TOTAL	**344,184**	**273**	**3,442**	**163**	**45**	**15**	**1,149**

Source: Knoxville TPO

PRESERVATION OF PLACE

The Knoxville region has many unique cities, towns, and rural areas, each with its own character and identity. We are also fortunate to have unparalleled natural and cultural resources right in our back yard. Recognizing the value of these assets means aligning planning practices to ensure our resources and character are preserved. The TPO is committed to the following strategies as a means of enhancing the natural and cultural features that make our communities unique.

Preserve natural and cultural areas and places that make our region unique (e.g. mountains, open space, farmland, viewsheds, small communities).

Table 18. Preservation of Place Strategies

●	Invest in facilities and programs unique to our region.
●	Coordinate transportation investments with open space preservation.
●	Preserve and re-invest in existing transportation and utility corridors.
●	Support new community centers along transit lines and major transportation corridors.

With the goal of promoting efficient and responsible growth practices, the TPO tracks the percent of TIP funds programmed in existing activity centers and along existing major transportation corridors shown in Figure 21. The existing activity centers and major corridors are areas defined through the Plan East Tennessee (PlanET) effort that represent how the region should focus growth to preserve its character and unique qualities.

Figure 21. PlanET Centers and Corridors Concept

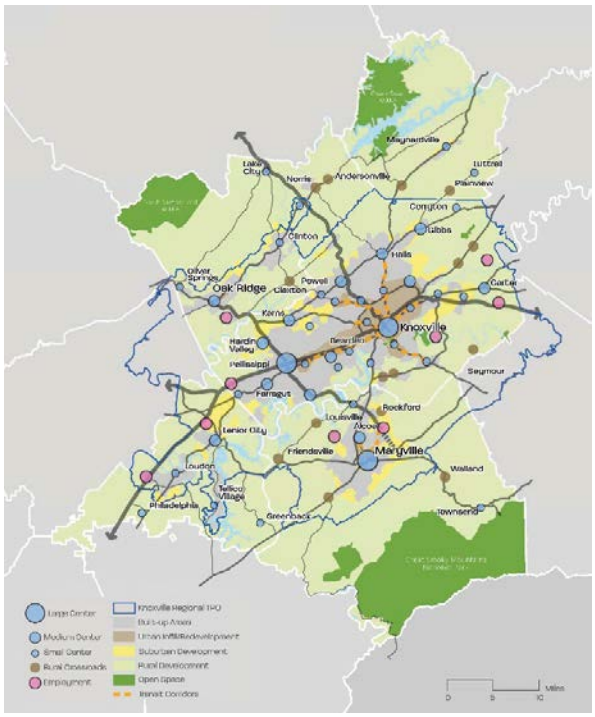
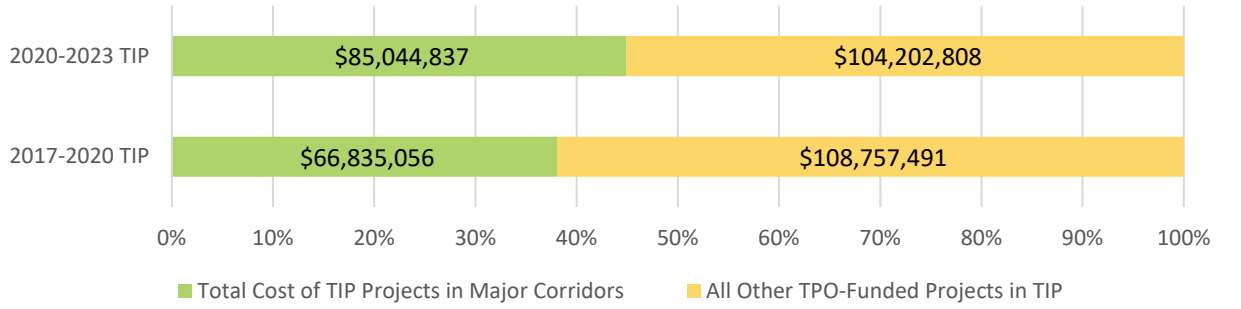


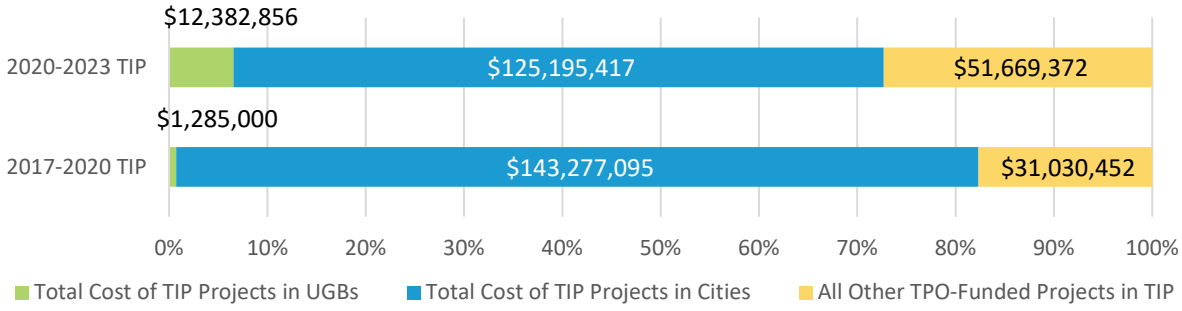
Figure 22 shows that 53% of the 2020-2023 TIP funded projects along major transportation corridors. Figure 23 indicates that 85% of funds programmed in the 2020-2023 TIP were directed to existing centers, primarily consisting of cities and their urban growth boundaries.

Figure 22. TPO Funding along Major Transportation Corridors



Source: Knoxville TPO Transportation Improvement Programs

Figure 23. TPO Funding in Existing Activity Centers



Source: Knoxville TPO Transportation Improvement Programs

ECONOMY AND FREIGHT

A prosperous regional economy depends on many factors – including skills and availability of the workforce, accessibility to major destinations or markets, and robust multimodal transportation systems. The Knoxville region has a diverse and growing economy, and the following strategies illustrate how transportation investments can support the regional economic vitality and growth over the next 25 years.

Improve intermodal connections to help move freight to and through the region. Reduce delay on major freight corridors.

Table 19. Economy and Freight Strategies

●	Prioritize multimodal transportation and land-use investments that increase access to quality job centers, education, and job training in the region.
●	Coordinate with local development officials and implementation partners in the private sector to ensure the adequacy of transportation access to sites where quality jobs exist or where new job growth is anticipated.
●	Support transit programs that expand reverse commute possibilities and improve access to job centers.
●	Coordinate with stakeholders from the freight sector to identify challenges and opportunities.

Many of the above strategies are related to how multimodal infrastructure can support access to workers, jobs, and development opportunities. Performance measures for accessibility are discussed and reported in the context of other regional goals. To complement the accessibility measures, the TPO tracks metrics related specifically to freight and tourism in the Knoxville region.

The efficient movement of freight within and through the Knoxville region is vital to a robust economy. Recognizing the importance of the transportation system to the local economy, TDOT and the TPO measure the reliability of freight movements on the interstate system. Using nationally available data and federal guidance, Table 20 shows the state targets related to Truck Travel Time Reliability (TTTR) index on the region's interstate system. Simply put, the TTTR index is an aggregate number that compares longer travel times to normal travel times along various roadways for commercial trucks. Higher values mean that travel times, particularly for commercial trucks, are unreliable. In the world of freight, unreliable

travel times can decrease business efficiency, which can result in delayed shipments and increased costs for consumers. According to an annual report published by FHWA, the segment of I-40 between I-640 and I-275 has been ranked as one of the top 100 bottlenecks for freight in the country. Table 21 provides a snapshot of the annual average reliability for commercial trucks since 2012.

Table 20. Federal Performance Measures and State Targets for Truck Travel Time Reliability

PERFORMANCE MEASURE	5-YEAR ROLLING AVERAGE	2-YEAR TARGET	4-YEAR TARGET
TRUCK TRAVEL TIME RELIABILITY INDEX	1.35	1.35	1.33*

**NOTE: 4-Year targets shown are currently being re-evaluated and adjusted by TDOT as allowed under 23 CFR 490.105(e).*

Source: TDOT

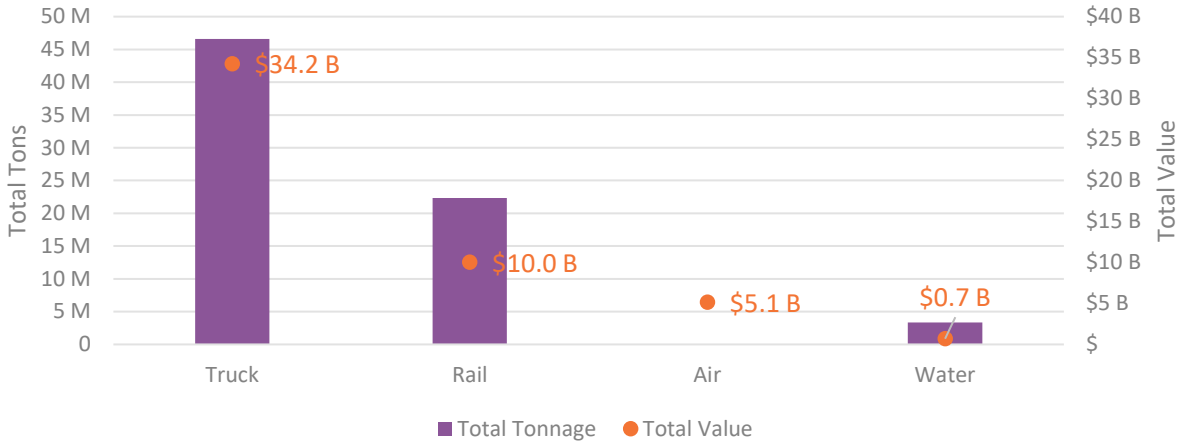
Table 21. Annual Truck Travel Time Reliability Index in the TPO Area

	2012	2013	2014	2015	2016	2017	2018	2019
TRUCK TRAVEL TIME RELIABILITY INDEX	1.27	1.29	1.33	1.36	1.36	1.43	1.49	1.43

Source: NPMRDS

In addition to monitoring how freight moves in the region, the TPO tracks the quantity of freight moving into and out of the region. Using Transearch commodity flow data purchased by TDOT, the TPO can periodically track the tonnage and value of freight imported to and exported from the region at a county level. According to 2016 data, approximately 72 million tons of freight valued at $50 billion dollars are imported to and exported from the Knoxville region annually, which includes all of Anderson, Blount, Knox, Loudon, Roane, and Sevier Counties. Figure 24 shows the contrast between the overall amount of freight going into and out of the region to its value by mode.

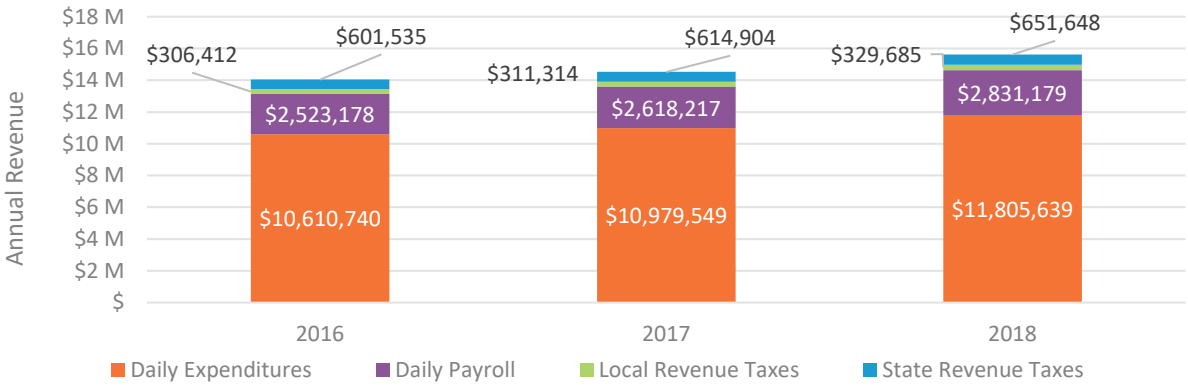
Figure 24. Freight Imports and Exports



Source: 2016 Transearch Data

Finally, tourism is a significant component of the Knoxville region's economy. Though not technically in the TPO planning area, destinations like the Great Smoky Mountains National Park, Pigeon Forge, Gatlinburg, and Dollywood all bring visitors to the area and revenues to the region's counties and municipalities. As a partner in providing access to these tourist destinations, the TPO tracks the economic impact of tourism in the six-county region using data published by the state's Department of Tourism. Figure 25 shows a breakdown of economic value brought to the region by tourism, which amounted to approximately $14.0 million, $14.5 million, and $15.6 million, respectively, per day in 2016 through 2018.

Figure 25. Daily Economic Impact of Tourism



Source: Tennessee Department of Tourism

Chapter 3. Summary of Planned Investments

INTRODUCTION

The first two chapters of this document provide an overview of our region, how it is changing and growing, and how our transportation system is performing as a result. Based on the technical analysis as well as public, stakeholder, and local official engagement, the TPO has developed a plan for addressing the existing and future needs of residents and businesses. To address those needs and help our region achieve its goals, Mobility Plan 2045 identifies funding for roadway, bicycle, pedestrian, and transit system improvements. Projects selected for funding in this plan must meet fiscal constraints, meaning that we can only plan for projects that we can reasonably expect to pay for over the next 25 years. The funds used to implement transportation projects come from a variety of federal, state, and local sources. This chapter documents the Mobility Plan's list of regional transportation projects, their prioritization, and recommended funding.

PROJECT SELECTION

The projects included in Mobility Plan 2045 are based on multiple inputs. First, the assessment of our regional transportation system and its performance provides the basis for identifying system deficiencies such as peak-hour congestion, safety issues, limited multimodal options, and needed regional connections. The results of this analysis were presented to the region's residents and stakeholders in the first round of public engagement. Armed with this information, participants were asked to identify other issues they encounter when using the transportation system. In addition, the TPO coordinated with its member jurisdictions to determine the individual needs of each county and city. This outreach process, detailed further in the Appendix, ultimately resulted in a list of candidate projects that the TPO considered for funding in Mobility Plan 2045.

To determine project funding, each project was evaluated against the region's established goals and assigned a score. This process helps ensure that available transportation funds allow us to achieve our vision. Each goal is assigned a total number of points based on approval by the TPO Technical Committee

and Executive Board. Further, our regional goals are weighted differently based on whether projects are classified as connecting “from a community to the region” or creating connections “within a community.” A typical “community to region” project is larger in scale and provides connectivity between local communities and regional economic opportunities. Types of “community to region” projects include interstate improvements, major roadway improvements, and regional greenways. Conversely, a “within community” project is typically smaller in scale and improves local connectivity to community resources. Types of “within community” projects include new roadways, intersection improvements, sidewalks, and local greenway connections.

Weights assigned to each regional goal are shown in Table 1. The maximum points any project can receive is 100 with an additional five points given if a project is consistent with local or regional plans. Table 1 also briefly explains how each goal was evaluated, using quantitative data wherever possible. TPO staff used the project scores to shape the fiscally constrained list of projects and help the region meets its mobility goals over the next 25 years.

Table 1. Regional Goals and Project Scoring System

GOAL	WITHIN COMMUNITY POINTS	COMMUNITY TO REGION POINTS	CRITERIA DESCRIPTION
CONGESTION REDUCTION	8	12	Congestion Reduction metrics prioritize projects located on routes with existing and future congestion issues and those projects that mitigate congestion without widening the road.
ECONOMY AND FREIGHT	4	9	Economy and Freight metrics prioritize projects that improve access to freight facilities, tourist destinations, and employment centers and those projects that are located on and/or improve a major freight corridor.
EQUITABLE ACCESS	13	9	Equitable Access metrics prioritize projects that provide access to multiple community resources in high priority population areas.
HEALTH AND ENVIRONMENT	13	10	Health and Environment metrics prioritize projects that improve connectivity of bicycle, pedestrian, or transit facilities, potentially reducing auto-dependency and improving air quality through reductions in vehicle miles traveled.
MAINTENANCE AND EFFICIENCY	19	19	Maintenance and Efficiency metrics prioritize projects that improve a higher-order facility based on functional classification as well as projects that minimize future maintenance needs.
MORE OPTIONS	18	17	More Options metrics prioritize projects that improve multimodal accommodations, with more priority given to high-quality facilities in areas with a higher degree of user potential.
PRESERVATION OF PLACE	9	11	Preservation of Place metrics prioritize projects that promote preferred growth concepts and those projects that do not negatively impact natural or cultural resources.
SAFETY AND SECURITY	16	13	Safety and Security metrics prioritize projects that improve facilities with known safety issues for drivers, pedestrians, and bicyclists, projects that include safety elements, and projects that provide physical or operational system redundancy.
CONSISTENCY WITH LOCAL PLANS	±5	±5	Consistency with Local Plans metrics prioritize projects that are consistent with local plans and/or projects that are supported or endorsed locally.

FINANCIAL PLAN

As mentioned, total Mobility Plan 2045 project costs are required to balance with total transportation revenues expected in the region. To that end, this section details transportation funding sources, projected funding, and the resulting project expenditures.

Funding Sources

The majority of funding for regional transportation projects comes from federal sources included in each surface transportation bill. The current federal surface transportation authorization bill, the Fixing America's Surface Transportation Act (FAST Act), expired in September 2020, but was extended for another fiscal year. While details of the next reauthorization bill are unknown, we can generally expect similar funding programs to exist. Table 2 shows the primary federal funding programs that the TPO relies upon to pay for both roadway and transit projects across the region. This table also describes the general types of projects that can be funded with each program and the non-federal matching requirement, typically sourced from either state or local revenues. In addition, Table 3 details non-federal funding programs administered by the State. More details on each of these funding sources as well as the supporting state and local revenues are provided in the Appendix.

Table 2. Federal Funding Programs

FUNDING PROGRAM	FEDERAL/NON-FEDERAL MATCH REQUIREMENTS	ELIGIBLE ACTIVITIES
NATIONAL HIGHWAY PERFORMANCE PROGRAM (NHPP)	80% / 20%	NHPP funds can be used to fund various road and bridge projects that support the condition and performance of the National Highway System (NHS) including new construction and infrastructure maintenance. NHPP projects are generally selected by TDOT in coordination with the TPO.
HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)	90% / 10%	HSIP funds can be used on any project intended to achieve a significant reduction in traffic fatalities and serious injuries on public roads. HSIP projects are selected by TDOT based on a data-driven approach to evaluating crash trends.
SURFACE TRANSPORTATION BLOCK GRANT PROGRAM (S/L-STBG)	80% / 20%	STBG funds can be used for construction and maintenance activities on most major roadway facilities, any publicly owned bridges, bicycle and pedestrian infrastructure, and transit capital projects. Both TDOT and the TPO receive separate STBG funds, referred to as S-STBG and L-STBG, respectively. S-STBG projects are selected by TDOT while the L-STBG projects are selected by the TPO.
TRANSPORTATION ALTERNATIVES (TA)	80% / 20%	As a set-aside of STBG dollars, TA funds go towards a variety of smaller scale projects like bicycle and pedestrian facilities, recreational trails, and safe routes to school projects. TA projects are selected by the TPO. TDOT also manages a separate allocation of TA funds, for which they select projects.
CONGESTION MITIGATION AND AIR QUALITY IMPROVEMENT PROGRAM (CMAQ)	80% / 20%	CMAQ funds are available to air quality nonattainment and maintenance areas to fund projects that will reduce transportation related emissions and assist counties in attaining the National Ambient Air Quality Standards (NAAQS) for ozone, carbon monoxide (CO), and particulate matter. CMAQ projects are selected by TDOT in coordination with the TPO.
FTA 5307 URBANIZED AREA	80% / 20%	FTA 5307 funds can be used for both transit capital expenses, such as buses or transit centers, and planning activities. In most cases, FTA 5307 funds cannot be used for day-to-day operation of transit services. However, ETHRA and Knox County CAC Transit use these funds for operating with a 50%/50% match requirement.
FTA 5310 ENHANCED MOBILITY	80% / 20% (capital) 50% / 50% (operating)	FTA 5310 funds can be used for both transit capital and operations needs that improve the specific mobility of seniors and individuals with disabilities.
FTA 5339 BUS AND BUS FACILITIES	80% / 20%	FTA 5339 funds can be used for transit capital projects that improve an agency's bus related facilities or fleet of transit vehicles through either rehabilitation, retrofitting, or replacement.

Table 3. State Funding Programs

FUNDING PROGRAM	STATE/LOCAL MATCH REQUIREMENTS	ELIGIBLE ACTIVITIES
IMPROVE ACT	100 % / 0%	Signed into law in 2017, the IMPROVE Act identifies over 900 roadway and bridge projects to be funded using revenues from increased fuel taxes. Projects are funded entirely by TDOT.
STATE AID	98% / 2%	Funded directly by gas tax revenues, State Aid funding is provided to county governments for the improvements or rehabilitation of roads and bridges on the State Aid System, which is a network of local selected county roads.
STATE INDUSTRIAL ACCESS (SIA)	Varies	Authorized by the State in 1959, the SIA program improves accessibility to industrial areas by providing highway access. With specific criteria in place, TDOT reviews applications for SIA projects based on their eligibility, economic impact, and physical constraints.
LOCAL INTERSTATE CONNECTOR (LIC)	50% / 50%	Authorized by the State in 1965, the LIC program provides funding for new roadways that provide residents with adequate access to the interstate system from existing local facilities. Local municipalities must submit applications for LIC projects to TDOT for approval.
MULTIMODAL ACCEESS GRANT (MMAG)	95% / 5%	The MMAG program provides funding for addressing gaps in the multimodal infrastructure along state routes with improvements such as sidewalks, safe pedestrian crossings, shared use paths, park-and-ride facilities, and bus shelters. Grant applications are accepted annually with projects selected by TDOT.
URBAN OPERATING PROGRAM (UROP)	80% / 20% (≤ $500,000) 50% / 50% (> $500,000)	UROP funding is provided to fixed route providers and can be used for both transit capital expenditures and operations. With the allocation based on urban population, these funds supplement the federal transit programs. The local match required is 20% for the first $500,000 of expenses and 50% for all expenses over $500,000.
CRITICAL TRIPS PROGRAM	100% / 0%	Critical Trip funding is allocated annually and designated for transit services outside a fixed-route provider's service area. In the Knoxville region, Knox County CAC Transit, ETHRA, and the City of Oak Ridge receive Critical Trip funding from TDOT, which can be used for both matching other federal funds and/or entirely for transit operations.

Available Revenues and Expenditures

Roadway and Active Transportation

Using historical funding allocations in both the regional Transportation Improvement Program (TIP) and the FAST Act, the TPO first developed revenue projections to estimate how much federal, state, and local funding would be available over the next 25 years. For this analysis, highway revenue sources are anticipated to grow by 2.2% annually, providing approximately $6.6 billion in new revenues for operating and maintaining the transportation system, making capital improvements to the roadway system, and addressing the mobility needs of pedestrians and bicyclists. These revenues are balanced against project costs using a 3.3% annual inflation rate for both capital and maintenance expenditures.

To determine which projects to fund and when, the TPO considers the year of expenditure cost, project scoring, funding eligibility, and local priority based on public and stakeholder input. The result is the funding of 134 roadway, bicycle, pedestrian, and transit projects, totaling $4.5 billion, over the next 25 years. The TPO has also established programs for funding safety and resurfacing projects over the life of the plan. These 'groupings' reserve funds to address needs as they arise without identifying specific projects in advance. Table 4 shows how the expected expenditures and revenues balance out to meet the federal requirements for fiscal constraint in each of the three time horizons of Mobility Plan 2045. The project expenditures in this table reflect the full project list detailed in the Appendix and shown in Figure 1 through Figure 6. In addition, the Appendix also contains a list of unfunded projects that residents and stakeholders believe would benefit the Knoxville region but that do not yet have a dedicated source of funding. If new funding becomes available or priorities shift, these projects can be moved into one of the plan horizons with a corresponding fiscal constraint analysis.

Long range transportation plans like Mobility Plan 2045 consider project funding in three timeframes called horizons. Breaking down the 25-year plan into these smaller horizons helps to better align available revenues and project needs.

Table 4. Balance of Revenues and Expenditures

2021 – 2026 HORIZON					
FUNDING SOURCE	CARRY OVER FUNDS	NEW REVENUES	TOTAL REVENUES	EXPENDITURES	REMAINING BALANCE
CMAQ	$40,749,751	$16,768,291	$57,518,043	$48,998,358	$8,519,685
HSIP	$0	$76,869,490	$76,869,490	$76,869,490	$0
LOCAL	$17,526,617	$0	$17,526,617	$12,676,484	$4,850,133
L-STBG	$48,829,019	$75,593,583	$124,422,602	$121,726,528	$2,696,074
NHPP	$0	$508,638,641	$508,638,641	$154,275,732	$354,362,909
S-STBG	$0	$47,500,900	$47,500,900	$5,356,850	$42,144,049
TA	$4,901,506	$12,600,290	$17,501,796	$13,371,475	$4,130,321
IMPROVE ACT	$0	$453,921,736	$453,921,736	$453,921,736	$0
OTHER STATE	$0	$6,707,260	$6,707,260	$5,423,330	$1,283,929
STATE/LOCAL MATCH	$23,620,069	$173,816,481	$197,436,550	$94,473,290	$102,963,260
2027 – 2035 HORIZON					
FUNDING SOURCE	CARRY OVER FUNDS	NEW REVENUES	TOTAL REVENUES	EXPENDITURES	REMAINING BALANCE
CMAQ	$8,519,685	$29,637,887	$38,157,571	$7,986,993	$30,170,579
HSIP	$0	$135,866,511	$135,866,511	$111,355,867	$24,510,644
LOCAL	$4,850,133	$0	$4,850,133	$0	$4,850,133
L-STBG	$2,696,074	$133,611,351	$136,307,425	$130,106,691	$6,200,734
NHPP	$354,362,909	$899,016,729	$1,253,379,638	$492,876,898	$760,502,740
S-STBG	$42,144,049	$83,957,647	$126,101,696	$110,052,701	$16,048,996
TA	$4,130,321	$22,270,962	$26,401,283	$10,514,721	$15,886,561
IMPROVE ACT	$0	$927,597,338	$927,597,338	$927,597,338	$0
OTHER STATE	$1,283,929	$11,855,054	$13,138,983	$0	$13,138,983
STATE/LOCAL MATCH	$102,963,260	$307,219,923	$410,183,182	$200,257,375	$209,925,807
2036 – 2045 HORIZON					
FUNDING SOURCE	CARRY OVER FUNDS	NEW REVENUES	TOTAL REVENUES	EXPENDITURES	REMAINING BALANCE
CMAQ	$30,170,579	$40,508,946	$70,679,524	$0	$70,679,524
HSIP	$24,510,644	$185,701,806	$210,212,450	$163,580,232	$46,632,218
LOCAL	$4,850,133	$0	$4,850,133	$0	$4,850,133
L-STBG	$6,200,734	$182,619,462	$188,820,195	$182,727,387	$6,092,808
NHPP	$760,502,740	$1,228,772,480	$1,989,275,220	$383,923,181	$1,605,352,039
S-STBG	$16,048,996	$114,752,977	$130,801,973	$130,729,541	$72,432
TA	$15,886,561	$30,439,861	$46,326,423	$11,552,917	$34,773,506
IMPROVE ACT	$0	$463,014,724	$463,014,724	$463,014,724	$0
OTHER STATE	$13,138,983	$16,203,441	$29,342,424	$0	$29,342,424
STATE/LOCAL MATCH	$209,925,807	$419,906,965	$629,832,773	$195,408,838	$434,423,935

Figure 1. Fiscally Constrained Projects
Anderson County

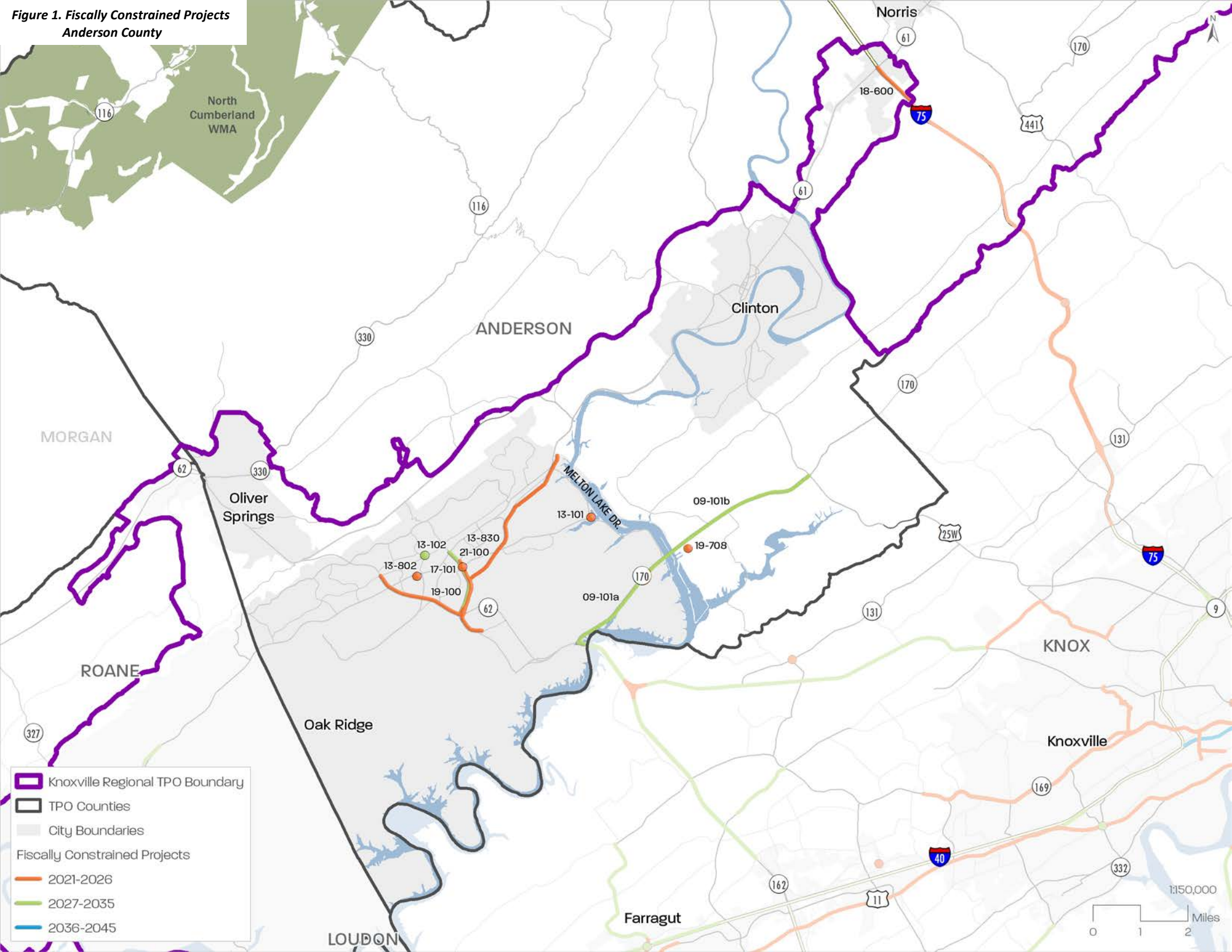


Figure 2. Fiscally Constrained Projects
Blount County

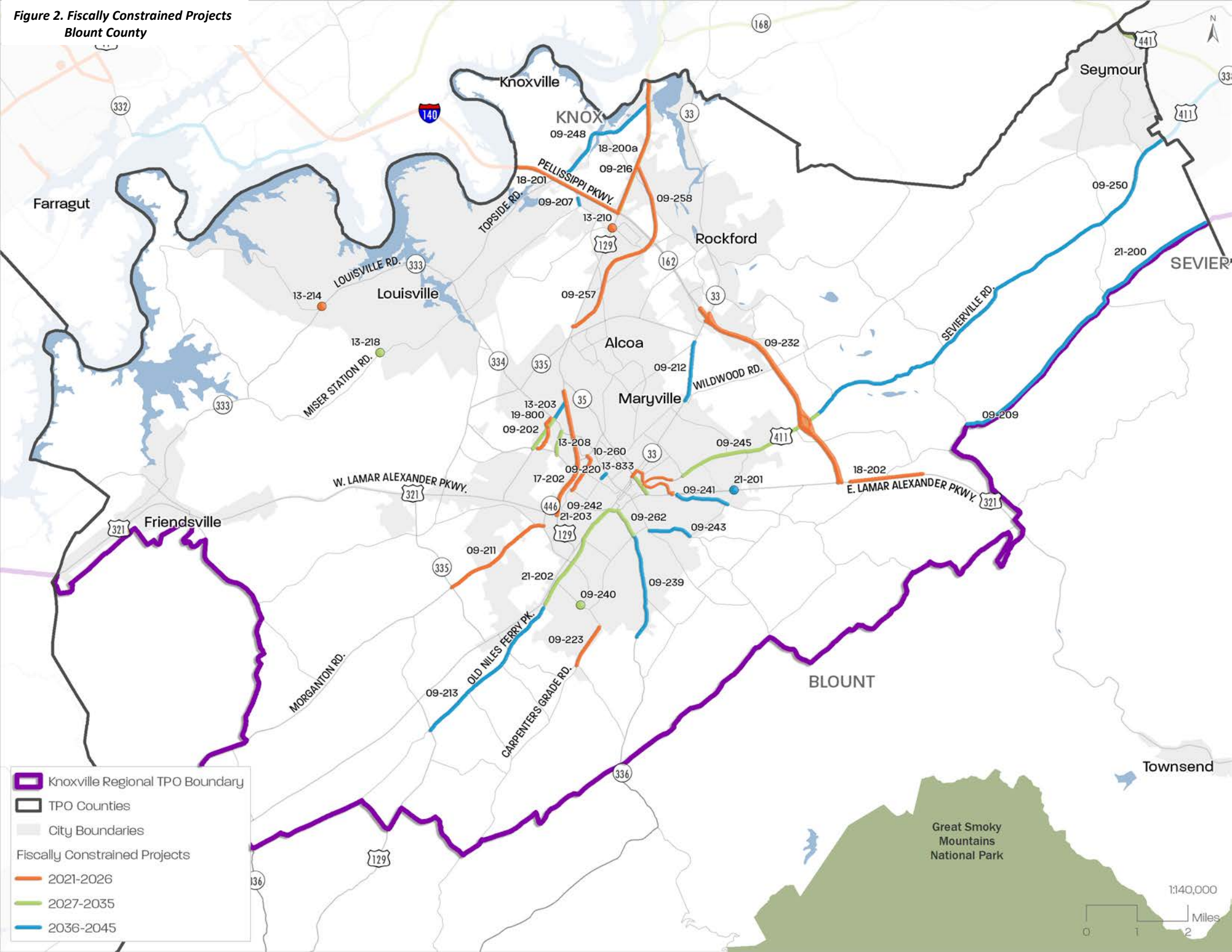


Figure 3. Fiscally Constrained Projects
Knox County

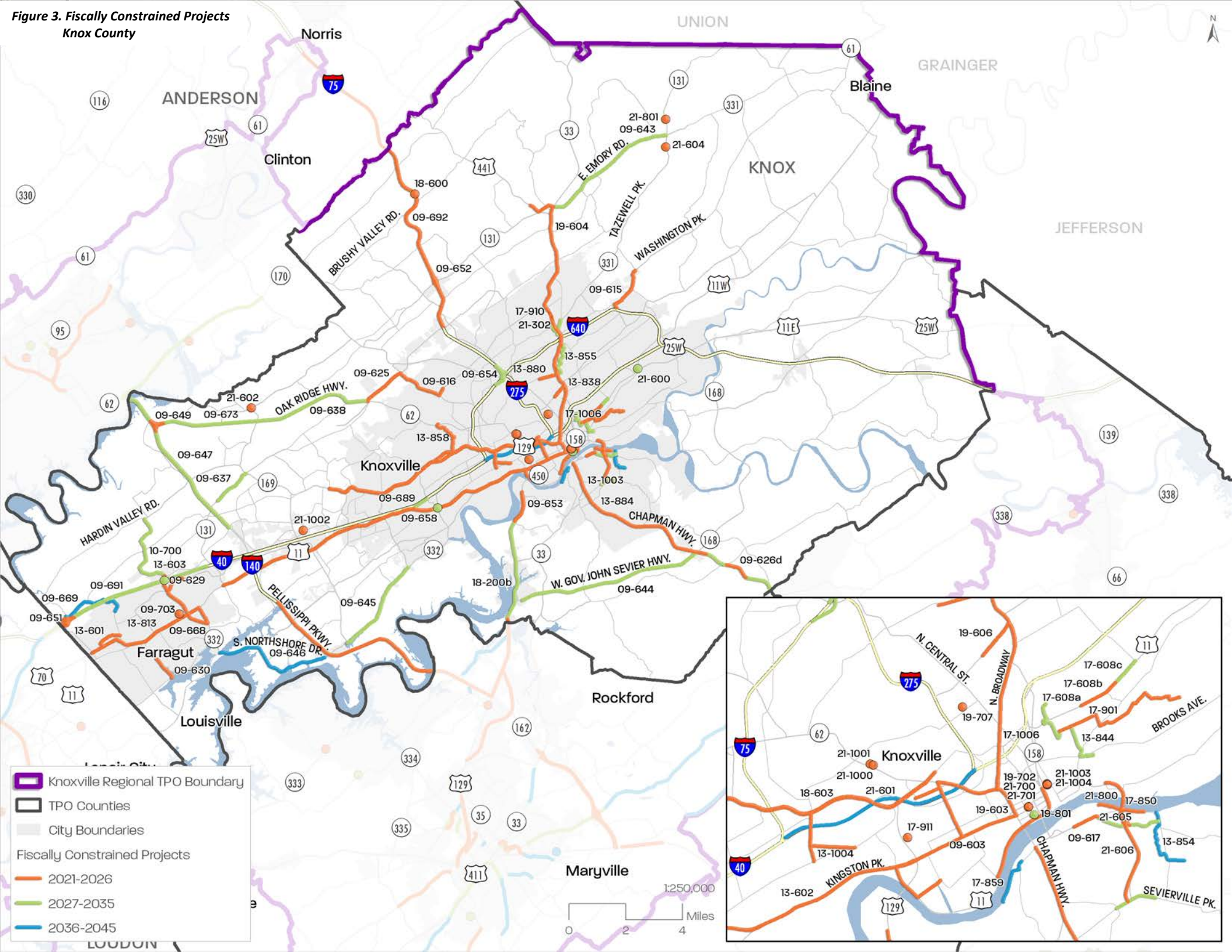


Figure 4. Fiscally Constrained Projects
Loudon County

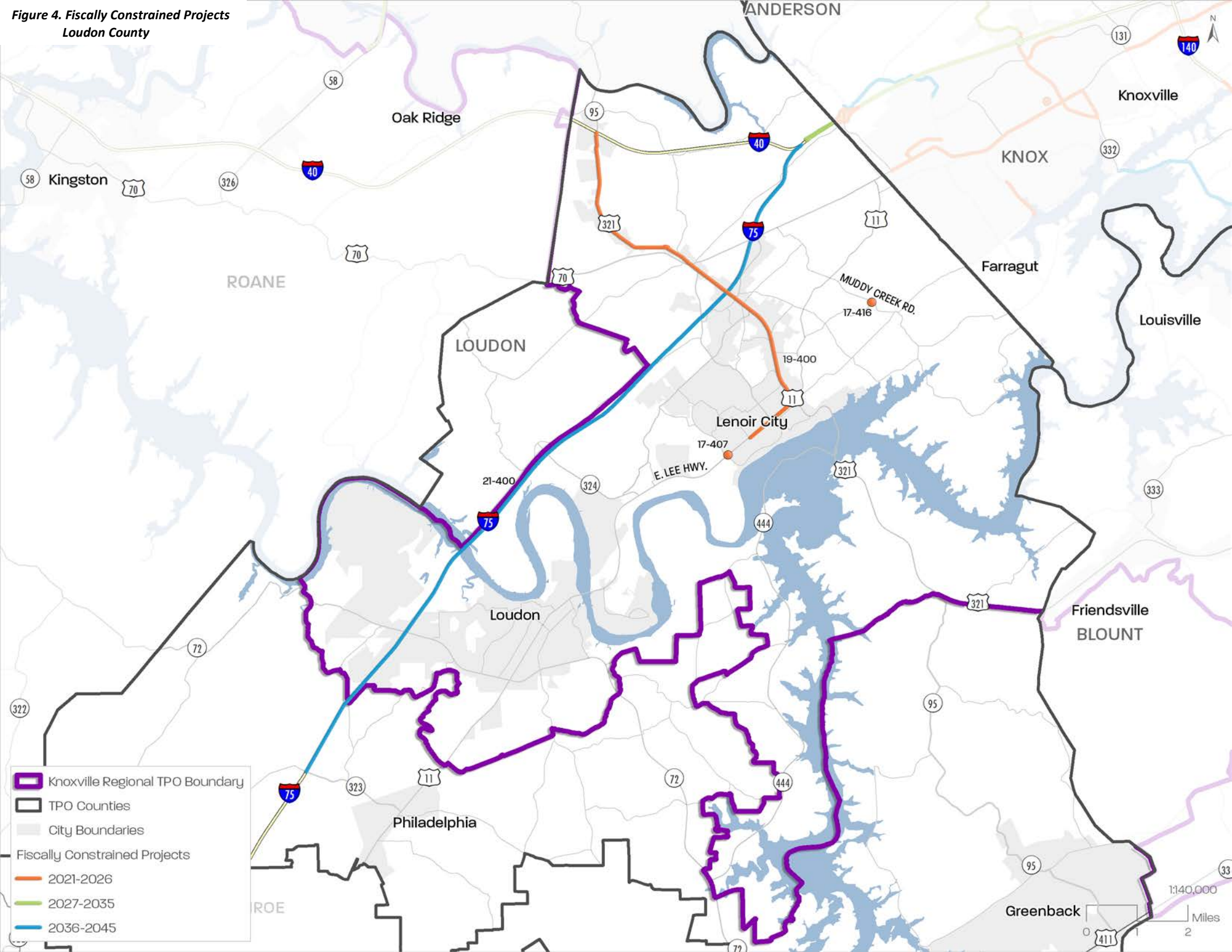


Figure 5. Fiscally Constrained Projects
Roane County

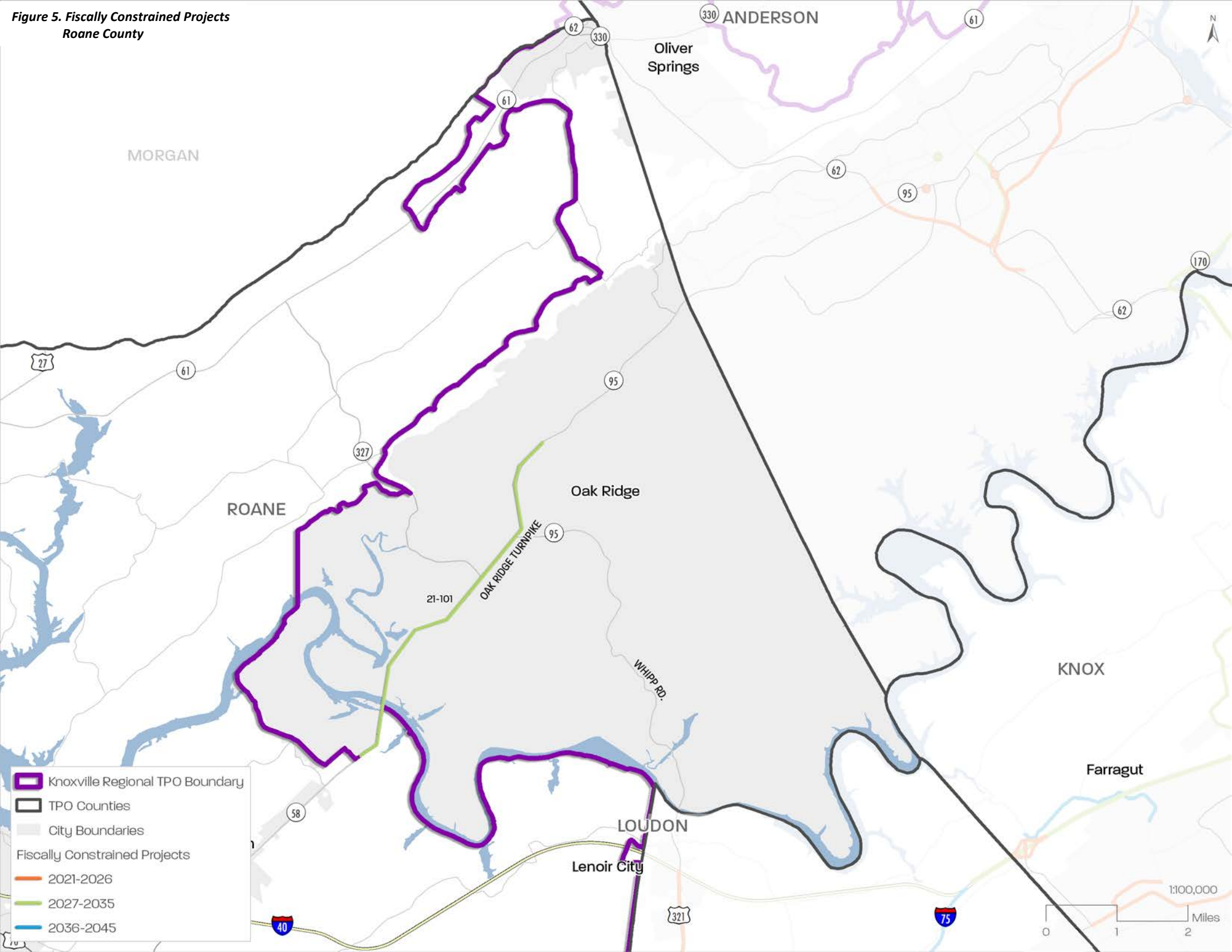
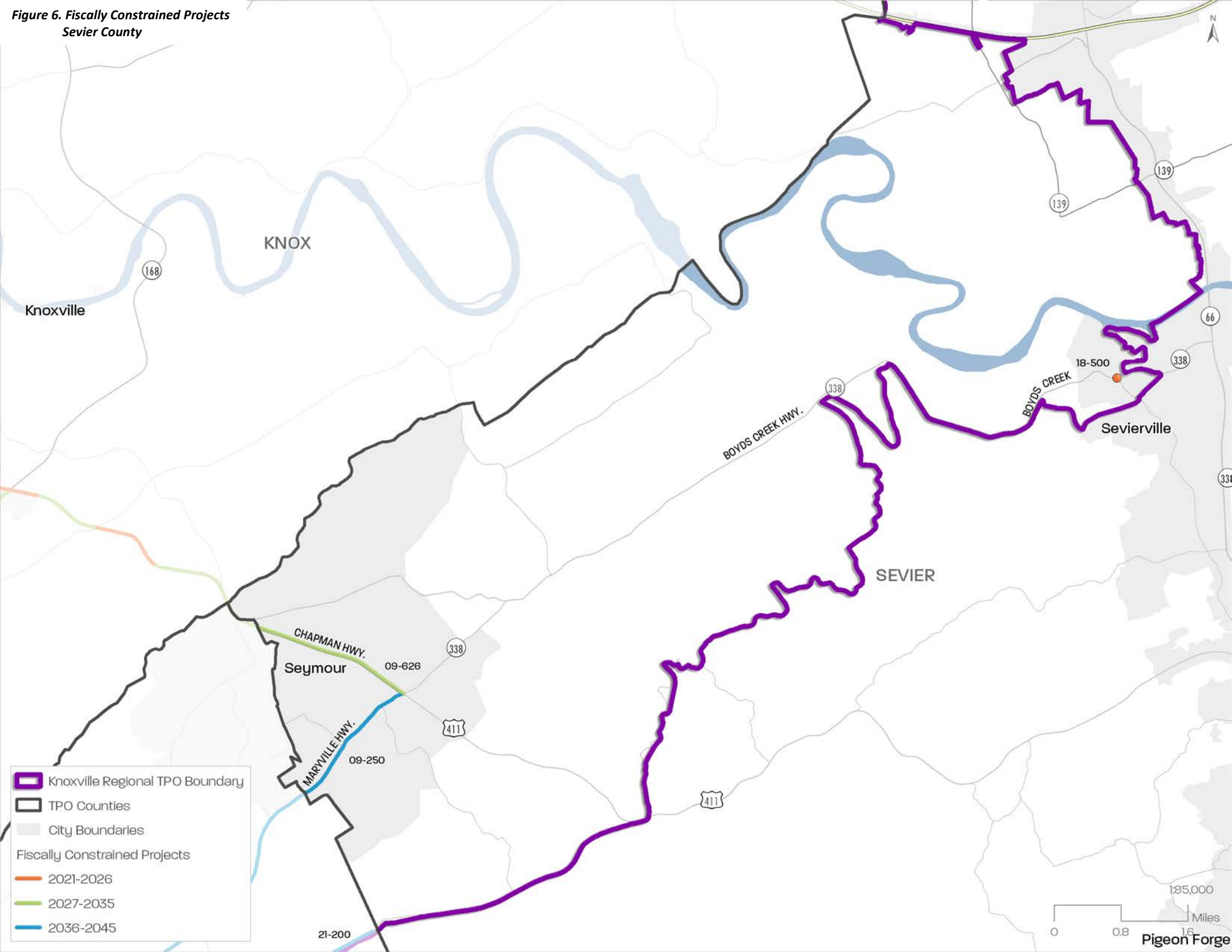


Figure 6. Fiscally Constrained Projects
Sevier County



Maintaining the Transportation System

As the transportation system grows, so do the costs associated with operating and maintaining it. To ensure that we have enough funding to cover these costs, the TPO developed projections of future operations and maintenance (O&M) needs over the life of the plan. These estimates were based on a how much local jurisdictions are spending on things like streets, sidewalks, traffic signal maintenance, roadway restriping, street lighting, and other activities. Between 2015 and 2019, local budgets indicate that the average cost of operating and maintaining a single lane mile of roadway has increased by approximately 3.3% annually. Based on the expected increase in roadway miles on the system and cost inflation over the life of the plan, Table 5 shows the anticipated funding needs for highway O&M activities in each plan horizon. Revenues for O&M activities come from a number of federal, state, and local sources. With the carryover balances identified in Table 4 particularly for the NHPP and STBG funding programs as well as the regional resurfacing program groupings, the TPO anticipates that these needs will be met as they develop.

Table 5. Projected Highway O&M Expenditures

JURISDICTION	2021 – 2026	2027-2035	2036-2045	TOTAL
Anderson County	$15,917,974	$30,587,935	$46,433,035	$92,938,945
City of Clinton	$3,899,758	$7,493,763	$11,375,667	$22,769,188
City of Oak Ridge	$15,431,898	$29,653,891	$45,015,139	$90,100,928
Blount County	$21,706,329	$41,710,821	$63,317,775	$126,734,925
City of Alcoa	$2,305,035	$4,429,349	$6,723,832	$13,458,216
City of Maryville	$3,398,360	$6,530,279	$9,913,081	$19,841,721
Knox County	$38,301,190	$73,599,459	$111,725,301	$223,625,950
Town of Farragut	$4,665,781	$8,965,752	$13,610,173	$27,241,707
City of Knoxville	$59,889,133	$115,082,791	$174,697,744	$349,669,668
Loudon County	$4,846,841	$9,313,677	$14,138,329	$28,298,848
Lenoir City	$2,090,897	$4,017,861	$6,099,186	$12,207,944
City of Loudon	$1,256,975	$2,415,400	$3,666,621	$7,338,997
Sevier County	$21,424,989	$41,170,199	$62,497,102	$125,092,291
TDOT	$45,265,042	$86,981,179	$132,038,992	$264,285,214
TOTAL	**$240,400,203**	**$461,952,356**	**$701,251,977**	**$1,403,604,542**

Transit

Federal programs are the most significant source of funding for our region's three transit agencies, Knoxville Area Transit (KAT), Knox County Community Action Committee (CAC) Transit, and the East Tennessee Human Resource Agency (ETHRA). A number of other state and local revenues are also used to fund the daily operational and capital needs of these transit services. Similar to the fiscal constraint analysis for roadway expenditures, the transit analysis began with an estimation of projected revenues. Historic funding levels as well as consultation with representatives of KAT, Knox County CAC Transit, and ETHRA were used to determine expected funding levels over the life of Mobility Plan 2045. This analysis was based on the average annual growth rates of different funding sources over the past five years, which are shown for both transit operating and capital revenues in Table 6. Overall, we expect approximately $1.2 billion in revenues for transit over the next 25 years.

Table 6. Projected Transit Revenues

	SOURCE	GROWTH RATE	2021 – 2026	2027-2035	2036-2045	TOTAL
OPERATING	Federal	2.0%	$36,045,286	$66,660,149	$97,967,362	$200,672,797
	State	3.0%	$35,852,657	$71,450,167	$115,259,693	$222,562,517
	Local	3.0%	$94,170,438	$176,602,116	$260,020,167	$530,792,721
	Fares	1.0%	$12,867,786	$20,801,085	$25,405,665	$59,074,536
	Other	1.0%	$18,927,937	$30,597,466	$37,370,597	$86,896,000
	Total Operating		**$197,864,104**	**$366,110,983**	**$536,023,484**	**$1,099,998,571**
CAPITAL	FTA	2.5%	$19,042,143	$34,413,771	$48,369,981	$101,825,895
	TDOT	2.5%	$2,380,268	$ 4,301,721	$6,046,248	$12,728,237
	Local	2.5%	$2,380,268	$4,301,721	$6,046,248	$12,728,237
	Total Capital		**$23,802,679**	**$43,017,213**	**$60,462,477**	**$127,282,369**
		Total	**$221,666,783**	**$409,128,196**	**$596,485,961**	**$1,227,280,940**

To determine the capital needs for transit, the TPO reviewed each agency's Transit Asset Management (TAM) Plan. These plans document the number and type of transit vehicles owned by each agency as well as their age and condition. Based on this information, we can determine approximately when each vehicle should be replaced and how much it will cost based on a 2.5% annual inflation rate. As detailed further in the Appendix, 586 vehicle replacements totaling approximately $205 million are needed over the life of the plan.

In addition to capital costs, the region's transit agencies incur significant costs to operate their services. Data from individual agencies, collected nationally and locally, was used to determine expected revenues

needed for KAT, the Knox County CAC Transit, and ETHRA operating costs. Over the past five years, the total annual operating costs have averaged nearly $25 million for the region. These costs are expected to grow by 3% annually over the life of the plan.

Table 7 summarizes the available transit revenues and expenses across the three agencies in the region in each plan horizon. As shown, the anticipated funding needed to maintain current standards in our transit systems is expected to outpace the available revenues. This means that new funding sources, such as grant opportunities, must be pursued or the quality of our transit services could decrease over time. It is likely that additional grants, such as those from the CMAQ program or TDOT's Office of Multimodal Transportation Resources Division Improve Act competitive grants, will be needed to purchase new transit vehicles. If additional funding is not available, transit vehicles will need to remain in service past their assumed useful life in order to meet fiscal constraint. Historically, it is not uncommon for transit vehicles to remain in service beyond the federal useful life standard.

Table 7. Total Transit Revenues and Expenses

	SOURCE	2021 – 2026	2027-2035	2036-2045	TOTAL
REVENUES	Federal	$55,087,429	$101,073,921	$146,337,344	$302,498,693
	State	$38,232,925	$75,751,889	$121,305,941	$235,290,755
	Local	$96,550,705	$180,903,837	$266,066,414	$543,520,957
	Fares	$12,867,786	$20,801,085	$25,405,665	$59,074,536
	Other	$18,927,937	$30,597,466	$37,370,597	$86,896,000
	Total Revenues	**$221,666,782**	**$409,128,198**	**$596,485,961**	**$1,227,280,941**
EXPENSES	Operating	$191,160,129	$358,491,306	$527,824,760	$1,077,476,195
	Capital	$31,425,247	$87,251,346	$86,076,019	$204,752,614
	Total Expenses	**$222,585,376**	**$445,742,654**	**$613,900,780**	**$1,282,228,809**
	% Difference (Revenues/Expenses)	**-0.4%**	**-8.2%**	**-2.8%**	**-4.3%**

AIR QUALITY CONFORMITY

As an air quality non-attainment area, the TPO must demonstrate that its transportation plans and programs will meet air quality conformity requirements. This ensures that federal funds are not spent on projects that cause or contribute to new violations of the National Ambient Air Quality Standards (NAAQS), increase the frequency or severity of NAAQS violations, or delay timely attainment of the NAAQS.

Using the travel demand model tool maintained by the TPO as well as an EPA mobile source emissions model, the TPO estimates emissions for future years based on changing demographics, implementation of roadway projects, emission rates for different pollutants, operating speeds on the region's roadways, and local weather conditions. The estimated emissions are then compared to allowable limits dictated by Tennessee's State Implementation Plan, or SIP. With the projects selected for funding in the Mobility Plan, it is anticipated that our region is in compliance with all air quality standards. More detailed information can be found in the full Conformity Determination Report.

CONCLUSION

Mobility Plan 2045 lays out a roadmap to efficiently use transportation revenues and address mobility needs in the Knoxville region over the next 25 years. Supported by technical analysis and engagement with residents and stakeholders, the TPO will use this document to guide future decision-making as projects move from plan to implementation.

MOBILITY PLAN 2045

Appendix A

Commonly Used Acronyms

A. COMMONLY USED ACRONYMS

A

AADT	Average Annual Daily Traffic
AASHTO	American Association of State and Highway Transportation Officials
ADA	Americans with Disabilities Act of 1990
ADT	Average Daily Traffic
AUA	Adjusted Urbanized Area
AVL	Automatic Vehicle Location

B

BAC	Bicycle Advisory Committee
BEA	Bureau of Economic Analysis
BLS	Bureau of Labor Statistics
BRR	Bridge Replacement and Rehabilitation funds
BRT	Bus Rapid Transit
BTS	Bureau of Transportation Statistics

C

CAA	Clean Air Act
CAAA	Clean Air Act Amendments of 1990
CAC	Knoxville-Knox County Community Action Committee
CAFE	Corporate Average Fuel Economy Standards
CBD	Central Business District
CDR	Conformity Determination Report
CFR	Code of Federal Regulations
CMAQ	Congestion Mitigation and Air Quality Improvement Program
CMP	Congestion Management Process
CON	Construction
CSA	Combined Statistical Area
CO2	Carbon Dioxide

D

DMS	Dynamic Message Sign
DOE	Department of Energy

E

EA	Environmental Assessment
EIS	Environmental Impact Statement
EJ	Environmental Justice
EPA	Environmental Protection Agency
ETQG	East Tennessee Quality Growth
ETDD	East Tennessee Development District
ETHRA	East Tennessee Human Resource Agency

F

FAA	Federal Aviation Administration
FAST Act	Fixing America's Surface Transportation Act
FEMA	Federal Emergency Management Agency
FFP	Financially Feasible Plan
FHWA	Federal Highway Administratior
FLH	Federal Lands Highway Program
FMCSA	Federal Motor Carrier Safety Administration
FOIA	Freedom of Information Act
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FY	Fiscal Year

G

GHG	Greenhouse Gases
GHSO	Governor's Highway Safety Office
GIS	Geographic Information System

H

HBRRP	Highway Bridge Replacement and Rehabilitation Program
HHS	Department of Health and Human Service
HOV	High Occupancy Vehicle
HOT	High Occupancy Toll
HPMS	Highway Performance Monitoring System
HPP	High-Priority Projects
HSTCC	Human Services Transportation Coordination Committee
HTF	Highway Trust Fund
HUD	Department of Housing and Urban Development

I

IAC	Inter-agency Consultation
IHS	Interstate Highway System
IM	Interstate Maintenance funds
IRI	International Roughness Index
IT	Information Technology
ITS	Intelligent Transportation System

K

KAT	Knoxville Area Transit
KCP	Knoxville Commuter Pool
KRTPO	Knoxville Regional Transportation Planning Organization
KTA	Knoxville Transportation Authority

L

LAMTPO	Lakeway Area Metropolitan Transportation Planning Organization
LEED	Leadership in Energy and Environmental Design
LIC	Local Interstate Connector Program
LOS	Level of Service
LRMP	Long Range Mobility Plan
LRT	Light Rail Transit
L-STBG	Local Surface Transportation Block Grant

M

MAP-21	Moving Ahead for Progress in the 21st Century Act
MCSA	Micropolitan Statistical Area
MKAA	Metropolitan Knoxville Airport Authority
MOA	Memorandum of Agreement
MOVES	Motor Vehicle Emission Simulator
MPA	Metropolitan Planning Area
MPG	Miles Per Gallon
MPO	Metropolitan Planning Organization
M&O	Management and Operations
MSA	Metropolitan Statistical Area
MTP	Metropolitan Transportation Plan
MVEB	Motor Vehicle Emission Budget

N

NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPP	National Highway Performance Program
NHS	National Highway System
NHTSA	National Highway Traffic Safety Administration
NOx	Nitrogen Oxides
NPS	National Park Service
NSBP	National Scenic Byways Program

O

O&M	Operating and Maintenance

P

PE	Preliminary Engineering
PL	Planning Funds
PlanET	Plan East Tennessee
PM2.5	2.5 micron Fine Particulate Matter
ppm	parts per million

R

RMP	Regional Mobility Plan
ROW	Right of Way
RPO	Rural Planning Organization
RTP	Recreational Trails Program

S

SHSP	Strategic Highway Safety Plan
SIA	State Industrial Access Program
SIP	State Implementation Plan
SOGR	"State of Good Repair"
SOV	Single Occupancy Vehicle
SPR	State Planning and Research Funds
SR	State Route
STIP	Statewide Transportation Improvement Program
S-STBG	State Surface Transportation Block Grant

T

TA	Transportation Alternatives
TAZ	Traffic Analysis Zone
TDEC	Tennessee Department of Environment and Conservation
TDOH	Tennessee Department of Health
TDM	Travel Demand Management
TDOS	Tennessee Department of Safety
TDOT	Tennessee Department of Transportation
TIP	Transportation Improvement Program
TMA	Transportation Management Area
TMC	Traffic Management Center
TNSHPO	Tennessee State Historic Preservation Office
TOD	Transit-Oriented Development
TPO	Transportation Planning Organization
TPR	Transportation Planning Report
TPWP	Transportation Planning Work Program
TRB	Transportation Research Board
TVA	Tennessee Valley Authority
TWRA	Tennessee Wildlife Resource Agency
TYS	McGhee Tyson Airport

U

UC	Urban Cluster (as defined by the Census Bureau)
USDOT	United States Department of Transportation
USGS	United States Geological Survey
UTK	University of Tennessee at Knoxville
UA	Urbanized Area (as defined by the Census Bureau)

V

V/C	Volume to Capacity Ratio
VHT	Vehicles Hours Traveled
VMS	Variable Message Sign
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds

MOBILITY PLAN 2045

Appendix B

Commonly Used Terms

B. COMMONLY USED TERMS

#

8-Hour Ozone Standard: Measures the maximum level of exposure over an 8-hour average timeframe. The 1997 Ozone Standard effective on June 15, 2004, set the maximum level at 84 ppb; the 2008 Ozone Standard effective on May 27, 2008, set the maximum level at 75 ppb; and the 2015 Ozone Standard effective on December 28, 2015, set the maximum level at 70 ppb.

A

Accessibility: People's overall ability to reach desired services and activities (together called opportunities), and therefore the time and money that people and businesses must devote to transportation.

Access Management: A set of techniques that state and local governments can use to limit access points to highways, major arterials, and other roadways for the purpose of improving the safety and efficiency of roadways.

Adaptive Reuse: Rehabilitation or renovation of existing buildings or structures for uses other than the current ones.

Affordable Housing: Housing that a low- or moderate-income household can occupy without spending more than 30% of household income. Also incorporates the idea of quality (safe and decent dwelling), choice of location, and an adequate supply.

Americans with Disabilities Act (ADA): Federal legislation outlining specific rights of disabled people, and providing that publicly funded mass transit agencies must provide complementary paratransit service within the fixed-route service area to those persons unable to use fixed-route service because of a disability.

Arterial Roadway: A major roadway facility with the primary function of traffic movement that connects activity centers in the region.

Auto Occupancy: The number of persons per automobile, including the driver.

Average Annual Daily Traffic (AADT): The total volume of traffic on a highway segment for one year, divided by the number of days in the year.

B

Bicycle Advisory Committee (BAC): An appointed committee composed of representatives of various government agencies, law enforcement officials, and private citizens interested in bicycle issues. The BAC advises the TPO in the process of planning and developing bicycle facilities and promoting bicycle use in the TPO area.

Bicycle Facilities: A general term denoting improvements and provisions made by public agencies to accommodate or encourage bicycling, including bike lanes, bikeways, parking and storage facilities, and shared lanes not specifically designated for bicycle use.

Bike Lane: A portion of a roadway, sharing the same right-of-way with motorized vehicles, but designated for the preferential or exclusive use of bicyclists.

Bikeway: A generic term for any road, street, lane or path that is specifically designated for bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.

Brownfield: Industrial or commercial property that is abandoned or underused and environmentally contaminated, especially one considered as a potential site for redevelopment.

Bus Rapid Transit (BRT): A high-quality bus-based transit system that delivers fast and reliable service. It does this through the use of dedicated lanes and off-board fare collection.

C

Capital Improvement Program: An itemized program for a multi-year prospective period, subject to regular review, setting forth the schedule, timing, and details of specific contemplated capital improvements by year, together with their estimated cost, the need for each improvement, financial sources, and the financial impact that the improvements will have on the local governmental unit or school district.

Carpool: Transportation by auto, on a scheduled or unscheduled basis, with at least two occupants.

Circulator System: Means of movement provided within a major activity center (such as a regional business concentration or community) for going from place to place within the center; such a system may be entirely pedestrian or may use transit.

Clean Air Act (CAA): The U.S. Clean Air Act, referring to the Air Pollution Control Act of 1955, as amended.

Collector Roadway: A minor roadway facility primarily serving to provide access to and from local streets and adjacent land uses.

Commuter Rail: Public transportation mode using passenger trains operating on railroad right-of-way. Generally, commuter rail systems are integrated with other regional transit providers to permit transfers throughout a region.

Comprehensive Plan: Plan for the development of an area, which recognizes the physical, economic, social, political, aesthetic, and related factors of the community involved.

Conformity: An analysis demonstrating that a transportation plan, program, or project conforms with the State Implementation Plan purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of such standards; and that such activities will not cause or contribute to any new violation of any standard in any area; increase the frequency or severity of any existing violation of any standard in any area; or delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.

Congestion: Overloading of roadway with vehicles (see Level of Service).

Congestion Management Process (CMP): A systematic process designed to emphasize effective management of existing transportation facilities through the use of travel demand and operational strategies.

Congestion Mitigation and Air Quality Improvement Program (CMAQ): A federal program that provides funding for projects that contribute to the attainment of the National Ambient Air Quality Standards (NAAQS). Eligible projects include intersection projects, transit projects, bicycle and pedestrian projects, and Transportation Systems Management and Operations initiatives.

Congestion Pricing: The use of fees that are charged to manage traffic and avoid congestion, also called “value pricing.”

Conservation: Natural resources management to prevent waste, destruction, or degradation.

Coordinated Public Transit Human Service Transportation Plan: A unified, comprehensive strategy for public transportation services delivery that identifies the transportation needs of individuals with disabilities, older adults, and

individuals with limited incomes, lays out strategies for meeting these needs, and prioritizes services.

Corridor Studies: Typically, corridor studies focus on a segment of a particular travel corridor or travel shed. A corridor study may look at land use, access issues, capacity, level of service, geometrics, multiple modes of travel, and safety concerns. The study then analyzes alternatives and makes recommendations.

Cost-Sharing: Contractual arrangement whereby a local unit of government or other governmental body enters into an agreement to pay for part of a physical facility or a service; includes subscription transit service.

D

Degradation: A decline to a lower condition, quality, or level.

Demand Management: A set of strategies that promote increased efficiency of the transportation system by reducing the incidence of single occupant vehicle travel.

Demand-Response: Any type of public transportation involving flexibly scheduled service that is deployed upon a person's request for a trip.

Density: Number of dwelling units per net residential acre of land.

Design Hour Volume: Traffic volume used to determine the appropriate design features of a roadway.

Developable Land: Land that is suitable as a location for structures and that can be developed free of hazards to, and without disruption of, or significant impact on, natural resource areas including surface waters, wetlands, floodplains, parks, and steep slopes.

E

Environmental Justice: 1994 executive order requiring analysis of the effects of federally funded programs, plans and actions on racial minority populations and low-income populations.

Exempt Project: Projects that are determined to be exempt from the requirement to determine air quality conformity such as safety, maintenance, certain transit and other projects as determined through Interagency Consultation. These projects may proceed toward implementation even in the absence of a conforming transportation plan and TIP.

F

FAST Act: Fixing America's Surface Transportation (FAST) Act (Pub. L. No. 114-

94) was signed into law on December 4, 2015. Most recently in 2020 the FAST Act was extended, providing transportation funding for another fiscal year.

Federal Highway Administration (FHWA) Metropolitan Planning (PL) Funds: Source of planning funds allocated in UPWP in accordance with 23 U.S.C., Section 134.

Financial Constraint: The requirement that the proposed projects in the transportation plans for an area must not have costs that exceed the reasonably expected revenues.

Fixed-Route Transit: Service that follows a specified route of travel with identified stops for passengers and an established schedule; regular-route transit.

Forecast: A calculation of change, for example in population, households, and jobs based on data about current conditions (e.g., the 2010 Census) that is extrapolated into the future.

Freeway: A divided highway with two or more lanes for the exclusive use of traffic in each direction, and with full control of access and egress.

Functional Classification: Classification of roadways according to their primary function— mobility for through trips or access to adjacent lands. This system is used to designate roads as interstates, arterials, collectors, and local streets.

G

General Aviation: All aviation activity other than that of the scheduled air carriers and the military. General aviation includes single- and twin-engine aircraft with gross weights ranging from 2,000 to 60,000 pounds.

Grade Separation: Intersection of traffic by provision of crossing structures, underpasses or overpasses; interchanges.

H

Headway: The amount of time between successive arrivals of a bus on a fixed bus route.

High-Occupancy Vehicle (HOV) Lanes: Highway lanes reserved for vehicles carrying more than one person. The specific number of people in the vehicle or class of vehicles who can use this facility is established locally. These lanes are officially denoted with a diamond marking and are sometimes called “diamond lanes.”

Highway Performance Monitoring System (HPMS): Summary information obtained from a sample of the arterial and collector functional systems to assess

highway condition, performance, air quality trends, and future investment requirements.

Household: Group of all the people who occupy a housing unit.

Housing Stock: An inventory or description of a community's existing residences by age, condition, structure type, number of bedrooms, rental cost, or value.

Impact Fees: Charges to individuals or groups intended to supplement existing funding and to account for the increased use of public facilities or services.

Incident Management System: An Intelligent Transportation System monitoring process that provides traffic operators with the tools to allow quick and efficient response to crashes, hazardous spills, and other emergencies. Redundant communications systems are used to link data collection points, transportation operations centers, and travel information portals.

Infill: Development or redevelopment of land that has been bypassed, remained vacant, and/or is underused.

Infrastructure: Fixed facilities, such as sewer lines and roadways that serve existing and new development and redevelopment.

Intelligent Transportation System (ITS): Development or application of technology (electronics, communications, or information processing) to improve the efficiency and safety of surface transportation systems. ITS is divided into five categories that reflect the major emphasis of application: Advanced Traffic Management Systems, Advanced Traveler Information Systems, Advanced Public Transportation Systems, Automatic Vehicle Control Systems, and Commercial Vehicle Operations.

Intensity of Development: Relative measure of development as defined by characteristics such as the number of dwelling units per acre, number of employees, amount of traffic generated, and amount of site covered.

Interagency Consultation (IAC): The formal process used to involve stakeholder agencies in the determination of air quality conformity.

Intermodal: Denotes the seamless movement of people or cargo between transport modes (for example, rail to truck).

Intermodal Facilities: Transportation facilities that provide for linkages between travel modes.

L

Land Use Categories: Standardized system for classifying and designating the appropriate use of properties.

Level of Service (LOS): As related to highways, the different operating conditions that occur on a lane or roadway when accommodating various traffic volumes. It is a qualitative measure of the effect of traffic flow factors, such as speed and travel time, interruption, freedom to maneuver, driver comfort and convenience, and indirectly, safety and operating costs. It is expressed as levels of service "A" through "F." Level "A" is a condition of free traffic flow where there is little or no restriction in speed or maneuverability caused by presence of other vehicles. Level "F" is forced-flow operation at low speed with many stoppages.

Life-Cycle Maintenance: Concept of keeping a facility useable at least through its design life by conducting scheduled maintenance.

Limited English Proficiency (LEP) Plan: A plan to help recognize and communicate with people who do not speak, read, write and/or understand English very well.

Local Government: Municipal units of government such as counties, cities, and towns.

Local Roadway: A road, usually with low traffic volume, designed to serve adjacent development rather than through traffic.

Long Range Transportation Plan (LRTP): See Regional Mobility Plan (RMP).

Low Impact Development: Management and preservation techniques used to restore aquatic, terrestrial, and biologic natural resources.

Low Income: Household income that is 80% or less of the area median income, as defined by the U.S. Department of Housing and Urban Development.

M

Maintenance Area: An area that was previously in nonattainment of an air quality standard and is required to demonstrate the ability to maintain the standard.

Major Construction: Projects that construct or reconstruct a roadway to significantly alter its operations and/or appearance.

Median Income: Income measure used by the U.S. Department of Housing and Urban Development. The median income of a population is the level at which half the

population has a higher income and half has a lower income.

Metropolitan Transportation Plan (MTP): See Regional Mobility Plan (RMP)

Mixed Use: A single building containing more than one type of land use or a single development of more than one building and use, where the different land uses are in close proximity, planned as a unified, complementary whole, and functionally integrated with transit, pedestrian access and/or parking areas.

Mobility: The ability to travel from one place to another.

Motor Vehicle Emission Budget (MVEB): Established by the SIP, it sets out the maximum levels of emissions from on-road mobile sources for an area.

MOVES: EPA's Motor Vehicle Emission Simulator (MOVES) is a state-of-the-science system that estimates emissions for mobile sources at the national, county, and project level for criteria air pollutants, greenhouse gases, and air toxics.

Moving Ahead for Progress in the 21st Century Act (MAP-21): The federal transportation bill passed in 2012. It restructured many transportation funding programs and provided two years of funding.

Multifamily Housing: Residential structure with two or more separate dwelling units.

Multimodal: Utilizing more than one means of transportation.

Multimodal Link: The connection between two or more passenger transportation methods (such as bicycle, walking, automobile and transit).

N

National Ambient Air Quality Standards (NAAQS): Minimum air quality standards established by the Clean Air Act Amendments of 1990.

National Highway System (NHS): Transportation system consisting of approximately 155,000 miles of highway that provides an interconnected system of principal arterial routes serving major population centers, major transportation facilities, major travel destinations, interstate and interregional travel and meeting national defense requirements.

Noise Abatement: The attempt to reduce the amount and level of noise on and around airports, especially during takeoffs and landings, partly through special operational restrictions and proper land use planning for areas affected by aircraft noise.

Nonattainment Area: An area designated by the U.S. Environmental Protection Agency as not being in attainment of the national standard for a specified pollutant.

Nonpoint Source Pollution: Sources of pollution that are less definable and usually cover broad areas of land such as agricultural land with fertilizers that are carried away by runoff or automobile pollution.

O

Observed Peak-Hour Flow: Highest flow rate of traffic over a one-hour duration during a 24-hour period that has been measured and reported.

Off-Peak Period: Time of day outside the peak period (see peak period).

Operational Improvement: Capital improvement consisting of installation of traffic surveillance and control equipment, computerized signal systems, motorist information systems, integrated traffic control systems, incident management programs, and transportation demand and system management facilities, strategies and programs.

Ordinance: Law or regulation set forth and adopted by a governmental authority, usually a city or county.

Oxides of Nitrogen (NOx): An emission resulting from the process of fuel combustion.

Ozone: A secondary pollutant formed by the combination of VOCs and NOx in the presence of sunlight.

P

Paratransit Services: Transit service that provides generally more flexible and personalized service than fixed-route transit, using a variety of vehicles, such as large and small buses, vans, cars and taxis. Paratransit can serve a particular population, such as people with disabilities, or can be assigned to serve the general population. Paratransit is frequently provided in less densely populated areas and used at times and in areas where trip demands are less concentrated, such as during weekends and evenings in urban settings.

Park and Ride: Travel arrangement where people drive to a transit center, transfer station or terminal, park in the designated place, and use a transit vehicle for their ultimate destinations.

Peak Hour: Hour during the peak period when travel demand is highest.

Peak Period: The weekday time period when traffic is usually heaviest.

Person Trip: One-way journey between two points by one person in a vehicle.

PM2.5: Air pollutant particles with a diameter of 2.5 micrometers or less, small enough to invade even the smallest airways of the lung. These particles generally come from activities that burn fossil fuels, such as traffic, smelting, and metal processing.

Point Source Pollution: A discrete source from which pollution is generated before it enters receiving waters, such as a sewer outfall, smokestack, or industrial waste pipe.

Preservation: Preservation activities are directed toward the elimination of deficiencies and major cost replacement of existing transportation facilities. Preservation is not meant to include work that will increase the level of service by the addition of traffic lanes.

Principal Arterials: High-capacity highways that make up the metropolitan highway system.

Project: Group of tasks or methods designed to accomplish a specific purpose.

Q

Qualified Transportation Fringe Benefits: Employers may provide employees with transportation benefits, the value of which is exempt from federal taxes up to specified annual limits. Qualified transportation benefits include transit passes, rides in a commuter highway vehicle, or reimbursement for commuting by bicycle.

R

Ramp Metering: Electronically regulated flow of vehicles to increase capacity of through lanes and improve safety.

Ramps: Connections to and from freeway facilities to the arterial and collector roadway system.

Redevelopment: Process by which an existing building, structure, or developed area is adaptively reused, rehabilitated, restored, renovated and/or expanded.

Regional Mobility Plan (RMP): Requirement for the metropolitan transportation planning process under the FAST Act, must have a minimum of 20-year horizon and be updated every four years in metro areas with greater than 200,000 population.

Regionally Significant Project: A project on a facility that serves a regional transportation need and would normally be included in the modeling of an area's transportation network. These projects must be accounted for specifically in the regional air quality analysis.

Rehabilitation: Roadway improvements intended to correct conditions identified as deficient without major changes to the cross section. These projects should consist of removal and replacement of base and pavement, shouldering and widening and drainage correction as needed.

Reinvestment: Investment in redevelopment, infill, or adaptive reuse.

Resilience: The ability of the transportation system to provide and maintain an acceptable level of service or functionality in the face of major shocks or disruptions to normal operations.

Ridership: The total number of riders on a vehicle, trip, route or system over an identified period of time.

Ridesharing: A service with two or more persons in the vehicle such as a prearranged carpool, vanpool or subscription bus. Carpooling and vanpooling intended primarily to serve the work trip.

Route Deviation: A service operating on a fixed route from which vehicles may deviate to pick up or drop off passengers. Requests for route deviation may come by phone via radio contact with the driver or may be requested by a passenger upon boarding. Deviation from the route may include a premium charge for the extra service. Generally, this strategy utilizes a small vehicle.

Routine Maintenance: Roadway maintenance consisting of snow and ice control, mowing, sweeping, periodic applications of bituminous overlays, seal treatments, milling, crack routing and filling and base repair. These treatments are intended to help ensure the roadway can be used to the end of its design life. These projects are ineligible for federal funding.

S

Signal Preemption: Technology that triggers the green go-ahead on meters or traffic lights to allow transit vehicles to more quickly move through freeway ramp entrances or intersections.

Smart Growth: Pro-growth approach to guiding development into more convenient patterns and into areas where infrastructure allows growth to be sustained over the long term. It envisions developments of complementary land uses, including affordable and lifecycle housing, retail and offices, on interconnected streets amenable to walking, bicycling, or using transit or car to reach destination.

Special Transportation Services: Transit services provided on a regular basis to elderly and disabled persons who are unable

to use regular means of transportation. Rides are provided through a variety of public and private entities, including social services and transit agencies, using lift-equipped vans, taxis, buses and volunteer drivers.

Staging: A plan that documents the planned timing of development and growth in an area so that the development and growth are coordinated with needed public infrastructure in accordance with the adopted policies and plans.

State Implementation Plan (SIP): A federally approved State Plan that documents emission control strategies for criteria pollutants (such as carbon monoxide, nitrogen dioxide, ozone, lead, particulate matter, and sulfur dioxide), which are applicable in air quality nonattainment and attainment/ maintenance areas to protect the air quality in the air shed. State Implementation Plans can be extensive, containing state regulations or other enforceable documents and supporting information such as emission inventories, monitoring networks, and modeling demonstrations.

Stormwater: Surplus surface water generated by rainfall and snowmelt that does not seep into the earth but flows overland to rivers, lakes, or streams.

Surface Transportation Block Grant (STBG): One of the core federal highway funding programs. Flexible funding that may be used by states and localities for projects to preserve or improve conditions and performance on any Federal-aid highway, bridge projects on any public road, facilities for non-motorized transportation, transit capital projects and public bus terminals and facilities.

Sustainable Development: Development that maintains or enhances economic opportunity and community well-being while protecting and/or restoring the natural environment upon which people and economies depend. Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs.

T

Telecommuting: Eliminating or reducing commuter trips by routinely working part- or full-time at home or at a satellite workstation closer to home.

Throughput: Number of vehicles that can pass a point on a roadway or pass through an intersection over a specified period of time. Can be equated to capacity if considering vehicles alone.

Tolls: Fee collected for the use of a road.

Traffic Analysis Zone (TAZ): A small geographic area for which socioeconomic data is estimated in the TPO's travel demand model.

Traffic Calming: Techniques such as speed humps, narrow lanes and traffic circles used to slow traffic in primarily residential neighborhoods.

Traffic Signal Control Systems: Degree of traffic management of an arterial is grouped and defined as follows:

- *Fixed time* – Traffic signals on an arterial are controlled locally through a time clock system. In general, the progression of a through band (the amount of green time available along an arterial at a given speed) along the arterial in the peak direction is determined by past experience and is not a function of immediate traffic demand.
- *Semi-actuated* – Traffic signals along the arterial are designed to maximize the green time on the major route in the major direction. Timing and through band are based upon historical records. Use of green time on the minor leg depends on real-time demand and maximized based upon total intersection delay.
- *Interconnection* – A traffic signal system in which data collected at individual signals is shared with a central processor or controller. Adjustments in traffic signal control can be made based upon incoming data as opposed to historical data.
- *Optimization* – The process in which a traffic signal or system is modified to maximize the number of vehicles passing through the intersection for all approaches or on the major road in the peak direction.
- *Real-time adaptive control* – An advanced traffic control system that incorporates current technologies in communications, data analysis, and traffic monitoring to provide real-time traffic control of arterials, corridors or roadway networks.

Transit Advantages: Facility improvements that offer travel-time benefits and connections to multi-occupant vehicle services such as bus lanes, ramp meter bypasses, HOV lanes, transit stations, and major park-and-ride lots.

Transit Centers: Locations where timed-transfer connections between transit modes are facilitated. Transit centers are usually at shopping centers or other high-pedestrian locations.

Transit Dependence: Reliance on transit for travel needs because of age-related or economic limitations and/or physical or mental disability.

Transit Facility: The property, structures and other improvements used to provide mass transportation for passengers including park and ride stations, transfer stations, and parking lots.

Transit Market Area: The geographic area that draws riders of the transit system.

Transit Route: An existing or planned route for public transit service in the plan of the relevant transit service provider.

Transit Stations: Stops along rail lines and busways.

Transit Trip: Person trip as a passenger of a transit vehicle.

Transportation Control Measure (TCM): Any measure that is specifically identified and committed to in the applicable implementation plan that is either one of the types listed in Section 108 of the Clean Air Act Amendments, or any other measure for the purpose of reducing emissions or concentrations of air pollutants from transportation sources by reducing vehicle use or changing traffic flow or congestion conditions. Examples of TCM include programs for improved transit service, employer-based transportation management plans, trip-reduction ordinances, traffic flow improvement programs, programs and facilities for telecommuting, and other programs and ordinances to facilitate non-automobile travel, such as the use of bicycles.

Transportation Corridor: A defined area through which people move from one major center to another or from a major center to a dispersal area. A transportation corridor may contain several transit routes and highways.

Transportation Demand Management (TDM): Programs and methods to reduce effective traffic demand. In the broadest sense, any activity or facility that reduces motor vehicle trips would fall within this classification. The highest priority in the region is given to reducing single-occupant vehicle trips in the peak periods. Techniques that might be utilized are carpooling, vanpooling, transit, alternative work hours, transportation management associations, and land development or ordinances that discourage motor vehicle trips and encourage walking, biking, ridesharing and transit trips.

Transportation Disadvantage (TD): Those persons who, because of physical or mental disability, income status, or age are unable to transport themselves or to purchase transportation and are, therefore, dependent on others to obtain access to health care, employment, education, shopping, social activities, or other life-sustaining activities.

Transportation Enhancement (TE) Program/Transportation Alternatives (TA): A federal funding program under SAFETEA-LU Sections 1113, 1122 and 6003 that apportions a 10% set-aside of the Surface Transportation Funding Program to transportation enhancements such as provision of bicycle and pedestrian facilities, provision of safety and educational activities for pedestrian and bicyclists, acquisition of scenic easements and scenic or historic sites, scenic or historic highway programs, land rehabilitation and operation of historic transportation buildings, preservation of abandoned railway corridors, control and removal of outdoor advertisement, archeological planning and research, environmental mitigation, and environmental museums. MAP-21, passed in 2012, replaced this program with Transportation Alternatives (TA), which encompasses most activities previously funded under Transportation Enhancement, plus some additional activities. The TA program was continued under the FAST Act.

Transportation Impact Fee: An assessment levied by local governments against land development activity to help mitigate its impact to the existing transportation infrastructure by funding transportation improvements required to provide for public services and facilities needed to service the proposed new growth in land development.

Transportation Improvement Program (TIP): A three-year document listing a four-year program of projects with some phase of work to be implemented such as design, right-of-way or construction.

Transportation Management Area (TMA): Areas subject to special requirements under the federal transportation bill that benefit from preferential treatment with regard to air quality needs and local authority to select transportation projects. Any urban area over 200,000 in population is automatically a TMA, which subjects it to additional planning requirements but also entitles it to funds earmarked for large urbanized areas under the Surface Transportation Block Grant Program.

Transportation Planning Organization (TPO): Each urbanized area in the U.S. with greater than 50,000 population must have an MPO (Metropolitan Planning Organization) in order to coordinate transportation planning. In the Knoxville region, this entity is referred to as a TPO.

Travel Demand Forecasting Model: A computer software tool developed to estimate the travel activity of a region based

on the correlation between household-level characteristics and travel behavior.

Trip Attraction Variables: Based on employment conditions, trip attraction variables are used by the Regional Transportation Analysis traffic demand model to simulate the attraction of vehicle trips to various destination points.

Trip Production Variables: Based on land use conditions and population statistics, trip production variables are used by the traffic demand model to simulate the generation of vehicle trips from various points of origin.

U

User Cost: Total dollar cost of a trip to a user for a particular mode of transportation. Includes out-of-pocket costs such as transit fares, gas, oil, insurance, and parking for autos plus a valuation of implicit cost, such as waiting and travel times.

V

Vanpool: Paratransit service by van on a scheduled or unscheduled basis with at least five persons as occupants.

Vehicle Miles of Travel (VMT): VMT is calculated from the average daily traffic volume multiplied by the length of roadway.

Vehicle Trip: A one-way journey made by an auto, truck or bus to convey people or goods.

Volatile Organic Compounds (VOC): VOCs are emitted in the storage and use of fuel, solvents, and many industrial and consumer chemicals, as well as from vegetation.

MOBILITY PLAN 2045

Appendix C
Existing Conditions

C. EXISTING CONDITIONS

Situated in eastern Tennessee, the Knoxville Regional TPO planning area is approximately 2,677 square miles in size and includes all of Knox County as well as parts of Anderson, Blount, Loudon, Roane, and Sevier Counties. The purpose of this document is to provide an overview of the existing state of the region and its multimodal transportation system. The report is organized to provide information on the expected growth in the region, land use and development patterns, the roadway system, safety and crash history, the active transportation system and users, public transportation systems, freight infrastructure and commodity flows, and technology in transportation.

PROJECTED GROWTH, LAND USE, AND DEVELOPMENT PATTERNS

This section describes the community structure of the Knoxville Regional TPO planning area, as it relates to population and employment trends and forecasts as well as the current and future land use activities within the Knoxville Regional TPO planning area.

Existing and Future Population

In 2018, the total population of the 6-county Knoxville region was just over 877,000, which represents approximately 13.3% of the state's population. By 2045, the Knoxville region is projected to see over 200,000 more residents, putting the total population of the region well over 1 million people. Table C-1 shows the expected increase in population from 2018 to 2045 by county. Based on 2018 estimates, approximately 79% (693,463) of the region's residents live within the TPO planning area. Figure C-1 illustrates the region's population by Traffic Analysis Zone. (A Traffic Analysis Zone [TAZ] is a special area that is delineated by state or local transportation officials for traffic related analysis. TAZs usually consist of one or more census blocks, block groups, or tracts.) Figure C-2 illustrates the growth expected by county.

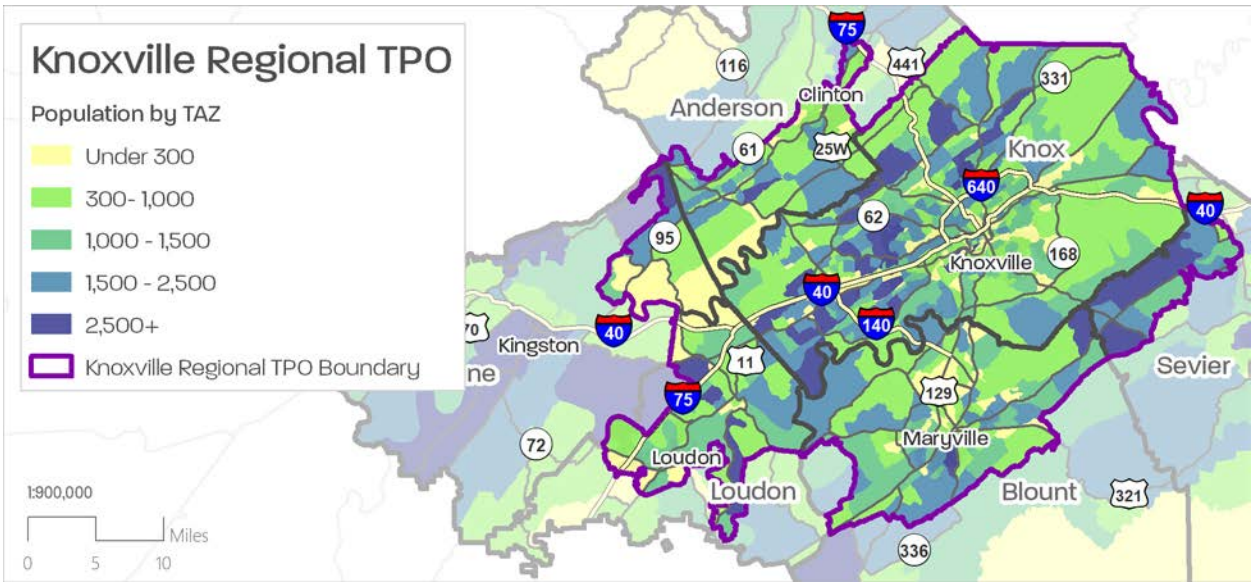
Key demographic factors (Figure C-3) highlight several important regional population characteristics. The population over the age of 65 is expected to double by 2045. In addition, approximately 5% of the region's households do not have access to a vehicle, and nearly 13% are below the poverty line. These characteristics have implications for the way transportation services are provided throughout the region.

Table C-1. Knoxville Region Population Projections (2018-2045)

	2018		2045		CHANGE (2018-2045)	
GEOGRAPHY	County	TPO Area	County	TPO Area	County	TPO Area
ANDERSON	76,482	51,189	82,896	56,475	6,414 (8%)	5,286 (10%)
BLOUNT	131,349	110,537	164,108	139,685	32,759 (25%)	29,148 (26%)
KNOX	465,289	465,289	570,352	570,688	105,063 (23%)	105,399 (23%)
LOUDON	53,054	37,618	69,028	49,746	15,974 (30%)	12,128 (32%)
ROANE	53,140	3,143	55,563	3,211	2,423 (5%)	68 (2%)
SEVIER	97,892	25,687	136,609	37,042	38,717 (40%)	11,355 (44%)
REGION	**877,206**	**693,463**	**1,078,556**	**856,847**	**201,350 (23%)**	**163,384 (24%)**

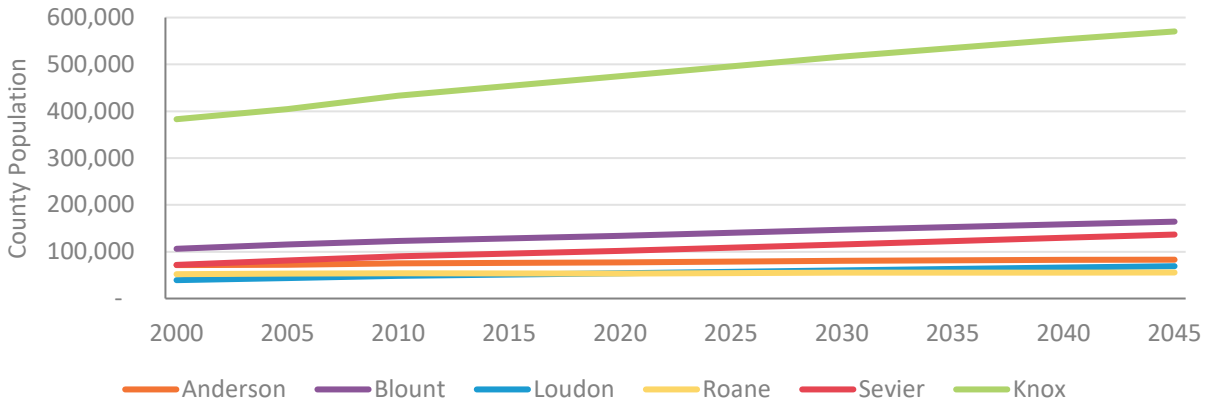
Source: Woods & Poole, 2019, US Census

Figure C-1. Knoxville Region Population by Traffic Analysis Zone (2018)



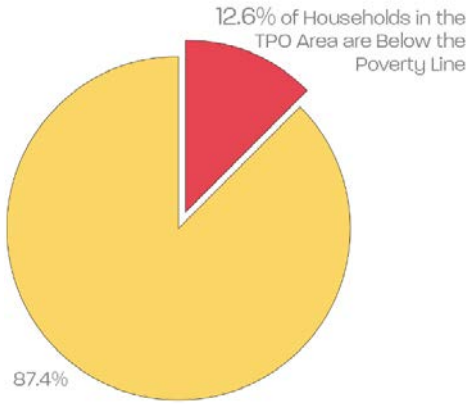
Source: TDOT; INRIX

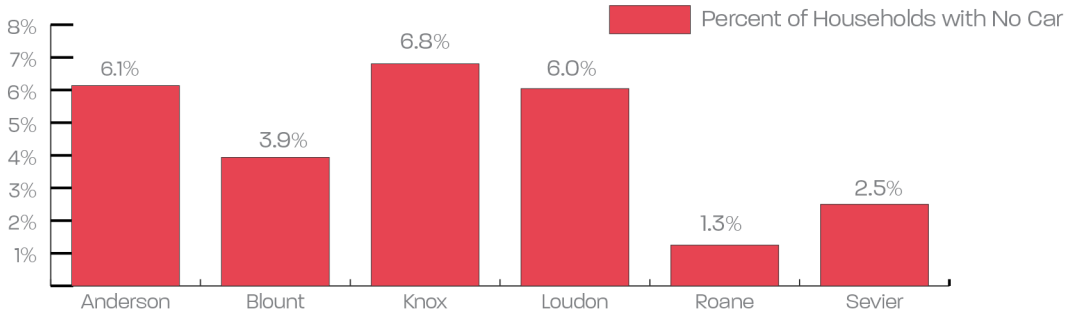
Figure C-2. Historic and Projected Population (1970-2045)



Source: Woods & Poole, 2019, US Census

Figure C-3. Current and Projected Population Characteristics (2018, 2045)





Source: Woods & Poole, 2019, US Census

Existing and Future Employment

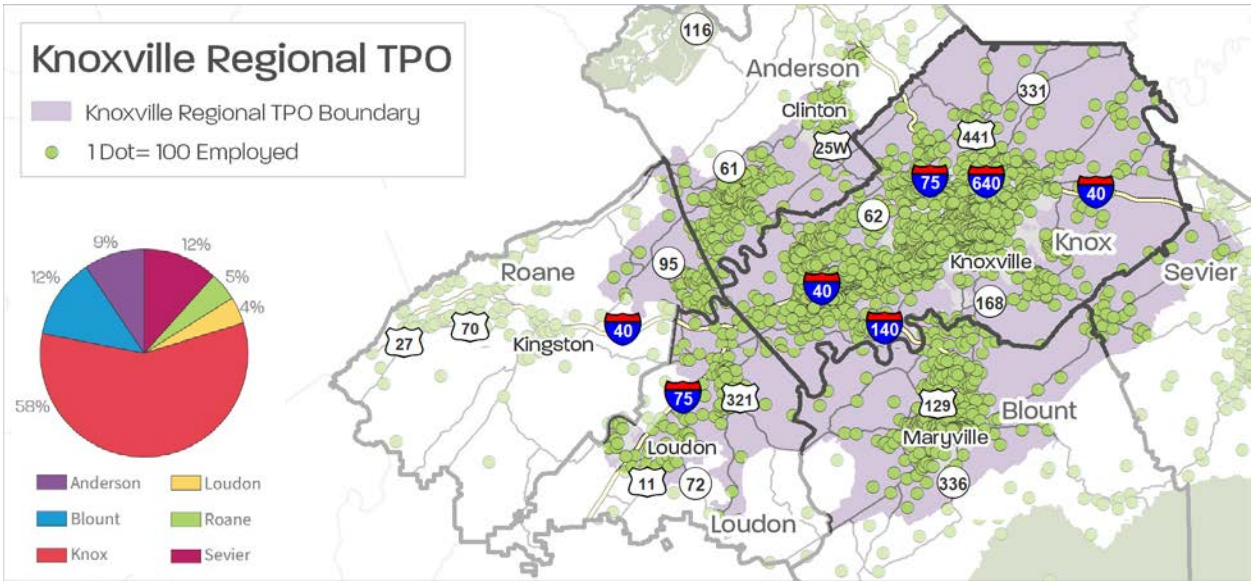
In 2018, there were approximately 478,000 jobs in the 6-county Knoxville region, or approximately 18% of the state's employment. By 2045, the Knoxville region is projected to add approximately 181,000 more jobs, a 38% increase. Table C-2 illustrates the projected increase in employment from 2018 to 2045. Figure C-4 depicts the region's current employment density across the region and the share of jobs by county.

Table C-2. Knoxville Region Employment Projection (2018-2045)

	2018		2045		CHANGE (2018-2045)	
GEOGRAPHY	**COUNTY**	**TPO AREA**	**COUNTY**	**TPO AREA**	**COUNTY**	**TPO AREA**
ANDERSON	44,399	38,955	52,536	45,607	8,137 (18%)	6,652 (17%)
BLOUNT	59,662	56,406	84,839	81,063	25,177 (42%)	24,657 (44%)
KNOX	276,450	276,450	383,318	383,318	106,868 (39%)	106,868 (39%)
LOUDON	19,993	17,730	26,507	23,657	6,514 (33%)	5,927 (33%)
ROANE	21,755	6,056	25,638	8,003	3,883 (18%)	1,947 (32%)
SEVIER	55,952	4,234	86,823	7,062	30,871 (55%)	2,828 (67%)
REGION	478,211	399,831	659,661	548,710	181,450 (38%)	148,879 (37%)

Source: Bureau of Labor Statistics, Woods & Poole Economics 2019, Census Non-Employer Statistics

Figure C-4. Knoxville Region Employment Density and Share of Jobs by County (2018)



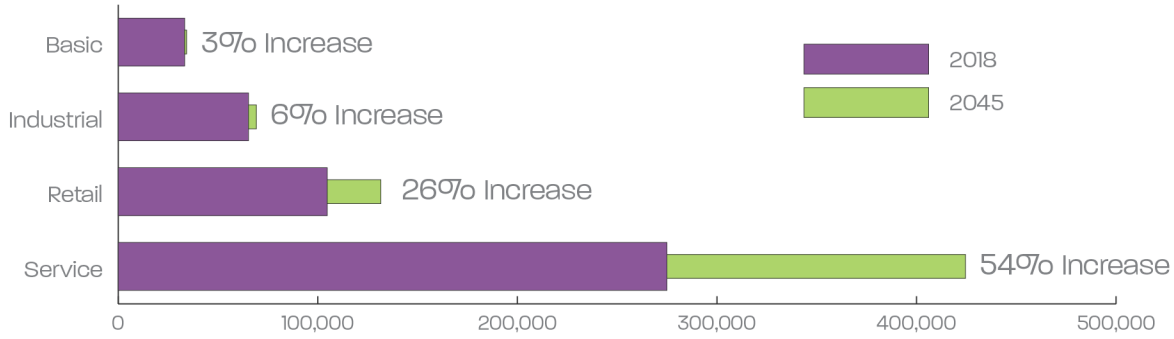
Source: Knoxville Regional TPO

Jobs in the Knoxville region are classified into the four categories:

- Basic: Farm, Forestry, Fishing, Related Activities and Other, Mining, Construction, Utilities
- Industrial: Manufacturing, Wholesale Trade, Transportation and Warehousing
- Retail: Retail Trade, Accommodation and Food Services
- Service: Information, Finance and Insurance, Real Estate and Rental and Lease, Professional and Technical Services, Management of Companies and Enterprises, Administrative and Waste Services, Educational Services, Health Care and Social Assistance, Arts, Entertainment, and Recreation, Accommodation and Food Services, Other Services Except Public Administration, Government

Figure C-5 illustrates the breakout of jobs in the region by the four categories for 2018 and forecasts for 2045. Although each type of employment is expected to see an increase over the next 25 years, substantial increases are expected in the retail and service sectors.

Figure C-5. Employment by Sector in Knoxville Region (2018, 2045)



Source: Knoxville Regional TPO; Woods & Poole, 2019; NAICS

Within the Knoxville region, there are several large employers that draw their workforce from across the region. Current data shows that, while Knox County is home to about 58% of jobs in the region, the surrounding counties also contribute significantly to the economy. Data on commuting patterns indicates that the region's counties are dependent on each other when it comes to job opportunities. Table C-3 summarizes commuting patterns between the counties in the Knoxville region in the form of an origin-destination matrix. Note that residents of the region who commute to counties outside the 6-county Knoxville region are not shown here.

Table C-3. Knoxville Region Commuting Patterns (2017)

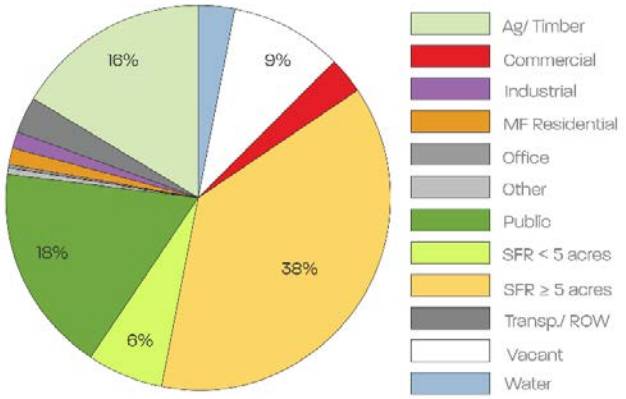
	EMPLOYMENT LOCATION					
RESIDENT LOCATION	**ANDERSON**	**BLOUNT**	**KNOX**	**LOUDON**	**ROANE**	**SEVIER**
ANDERSON	11,822	996	11,064	350	2,043	478
BLOUNT	1,429	23,924	18,292	1,271	485	1,983
KNOX	13,379	10,942	134,574	2,647	3,788	4,979
LOUDON	1,175	1,527	6,592	5,607	738	207
ROANE	3,187	633	4,899	1,005	6,320	222
SEVIER	393	1,680	8,287	150	133	25,033

Source: 2017 Longitudinal Employer-Household Dynamics (LEHD)

Existing Land Use

Land use planning and policy help guide growth and development. While zoning regulations define what is currently allowed on specific properties, land use policy looks into the future and describes desired development patterns. Land use is inherently linked to transportation and affects how residents in the region travel.

Figure C-6. Land Uses in the Knoxville Region (2019)



Property data for Anderson, Blount, Loudon, Roane, and Sevier Counties was obtained from the IMPACT CAMA system created by the Tennessee Office of the Comptroller, which classifies land uses into general categories such as single-family dwellings and agricultural land. Land uses for Knox County, which has its own classification system, were reclassified into the IMPACT CAMA land use categories shown in Figure C-6 for purposes of providing a regional overview.

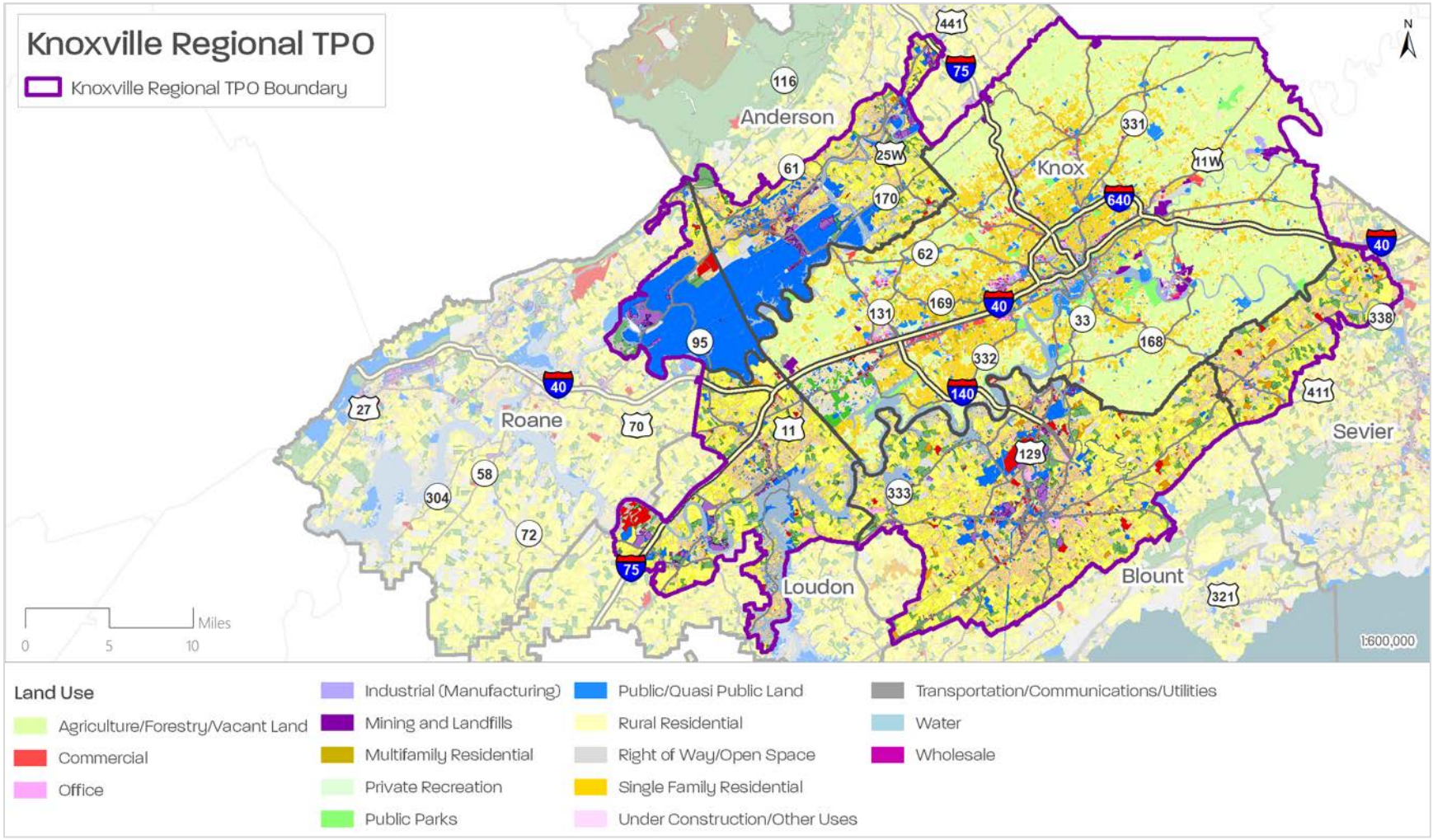
Within the counties that make up the Knoxville region, almost 40% of the land is used for single-family residential homes that each have 5 acres or more of land (SFR ≥ 5 acres in Figure C-6). The second highest land use in the region is public land, a significant portion of which is the Great Smoky Mountains National Park stretching along the southeastern border of Blount and Sevier Counties.

Recent Changes

Since Mobility Plan 2040 was initiated in 2015, the Knoxville region has continued to see steady growth in all six counties. In Knox County alone, 9,594 building permits have been issued since 2014. Of these, 22% were for new residential construction. The heat map in Figure C-8 shows areas within the county that had the densest concentration of building permits issued. High-density clusters of construction are seen near Karns, Farragut, and downtown Knoxville.

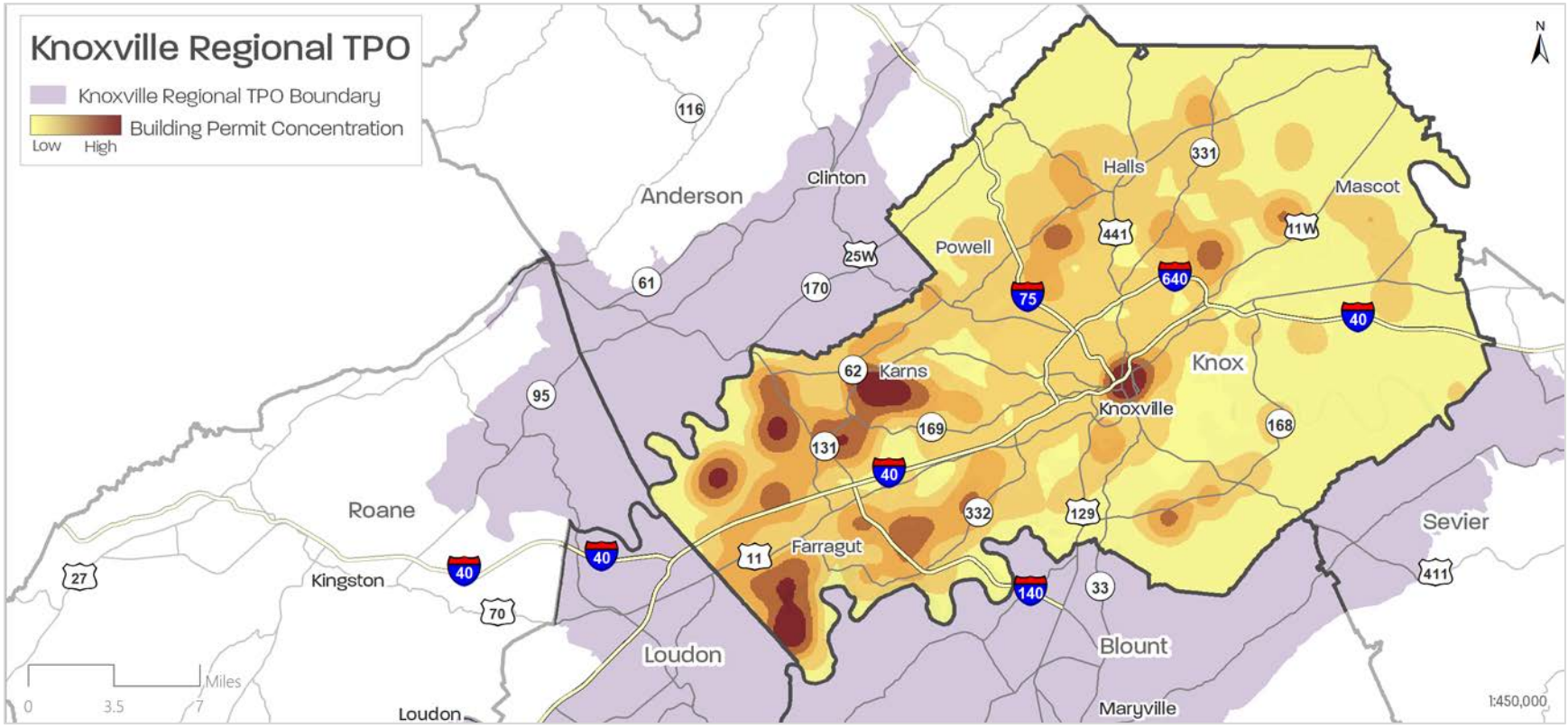
Regional employment growth has fueled population increases. In 2018, Scapa Healthcare moved to Knox County, bringing 150 jobs. DENSO Robotics and Manufacturing is the fourth largest employer in the region with approximately 4,100 employees in Maryville. In 2017, the company announced an expansion that brought 1,000 new jobs to Blount County. Increases in job opportunities and residential growth across the region have placed greater demands on all types of public infrastructure, including transportation systems.

Figure C-7. Land Uses in the Knoxville Regional TPO Area (2019)



Source: Knoxville-Knox County Planning; Tennessee Comptroller of the Treasury

Figure C-8. Knox County Building Permit History (2014-2019)



Source: Knoxville-Knox County Planning

ROADWAY SYSTEM

Existing Roadway System

Within the Knoxville TPO planning area, there are over 5,500 miles of roadways. Roadways are organized by functional classification based on their role in the overall system. Some roadways, like interstates and arterials, emphasize mobility and longer trips, while others, like local streets, help people access neighborhood destinations. Functional classification also differentiates between roadways considered urban or rural. Within the TPO area, approximately 87% of roadways are classified as urban facilities. Table C-4 shows the breakdown of mileage by functional classification within the Knoxville TPO area.

Table C-4. Mileage of Roadways by Functional Classification (2019)

	FUNCTIONAL CLASSIFICATION	MILES OF ROADWAY
RURAL	Interstate	16.5
	Other Principal Arterials	13.6
	Minor Arterials	16.5
	Major Collector	51.04
	Minor Collector	109.4
	Local	498.4
	Total Rural Roadways	705.4
URBAN	Interstate	76.3
	Other Freeways/Expressways	7.5
	Other Principal Arterials	226.2
	Arterials	350.4
	Major Collectors	228.3
	Minor Collectors	419.1
	Local	3,503.5
	Total Urban Roadways	4811.3
	TOTAL TPO AREA	**5,516.7**

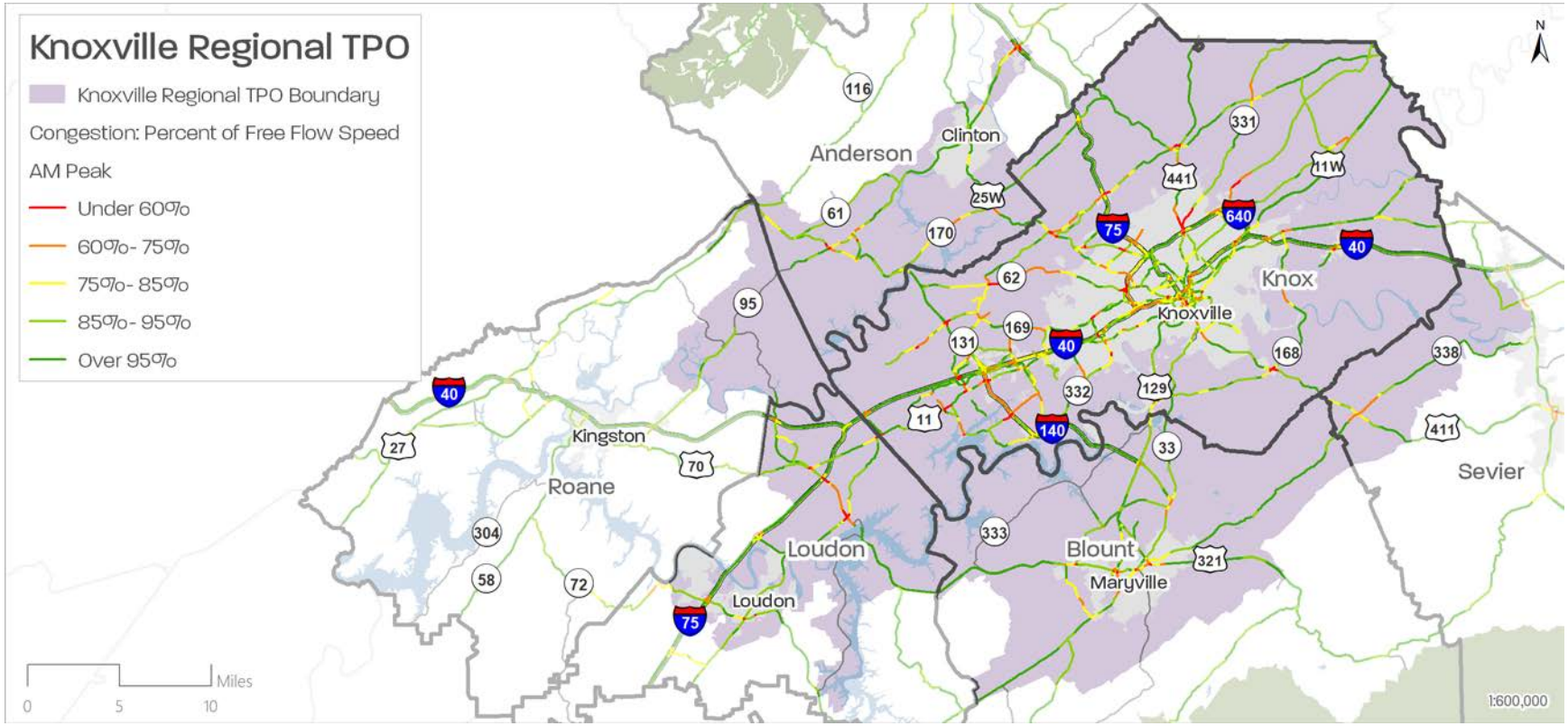
Source: TDOT

Existing Roadway Operations

The Tennessee Department of Transportation (TDOT) collects traffic volume data on most major roadways within the region. This data is reported as Annual Average Daily Traffic, or AADT, and depicts the number of motor vehicles that travel on any roadway during an average day of the year. While traffic volumes are one indication of roadway utilization, comparing the demand for a facility with roadway capacity provides a picture of facility usage. Anonymous data from devices with GPS (like smart phones, watches, etc.) can be used to see where drivers experience delays on the roadway system. This data, purchased from INRIX, was used to examine roadway congestion across the Knoxville region by looking at the average speeds experienced during 15-minute periods throughout weekdays in September of 2018. This allows for the identification of local AM and PM peak periods and examination of their severity.

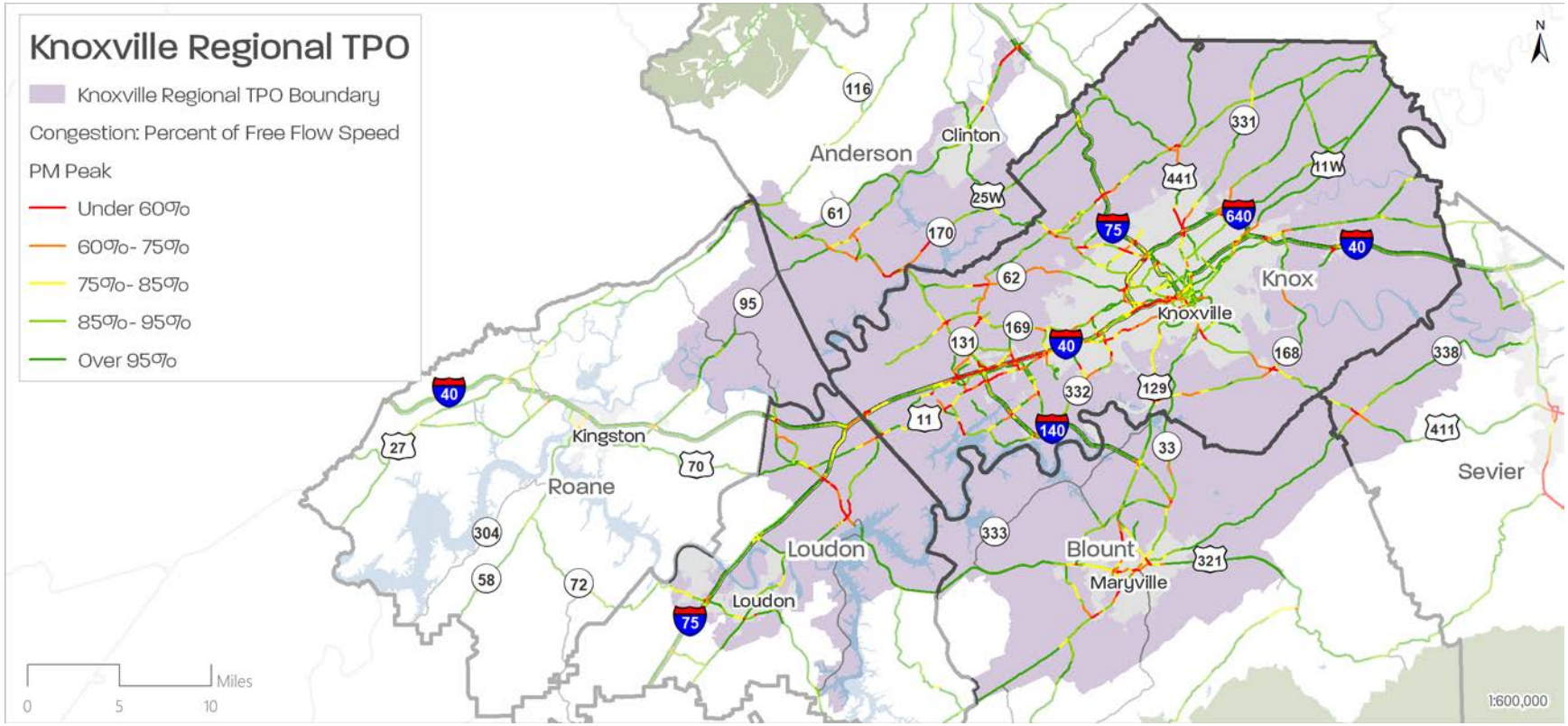
As shown in Figure C-9 and Figure C-10, many of the TPO roadways experience some amount of delay during the AM peak (from 7 to 9 AM) and the PM peak (from 4 to 6 PM). The color scales in these maps represent a “percent of congestion,” which compares how fast vehicles are actually traveling compared to the speed limit. Lower percentages indicate that vehicles on a roadway are experiencing heavier congestion and incurring more delay in their trips.

Figure C-9. Morning Peak Congestion (2018)



Source: INRIX 2018

Figure C-10. Afternoon Peak Congestion (2018)



Source: INRIX 2018

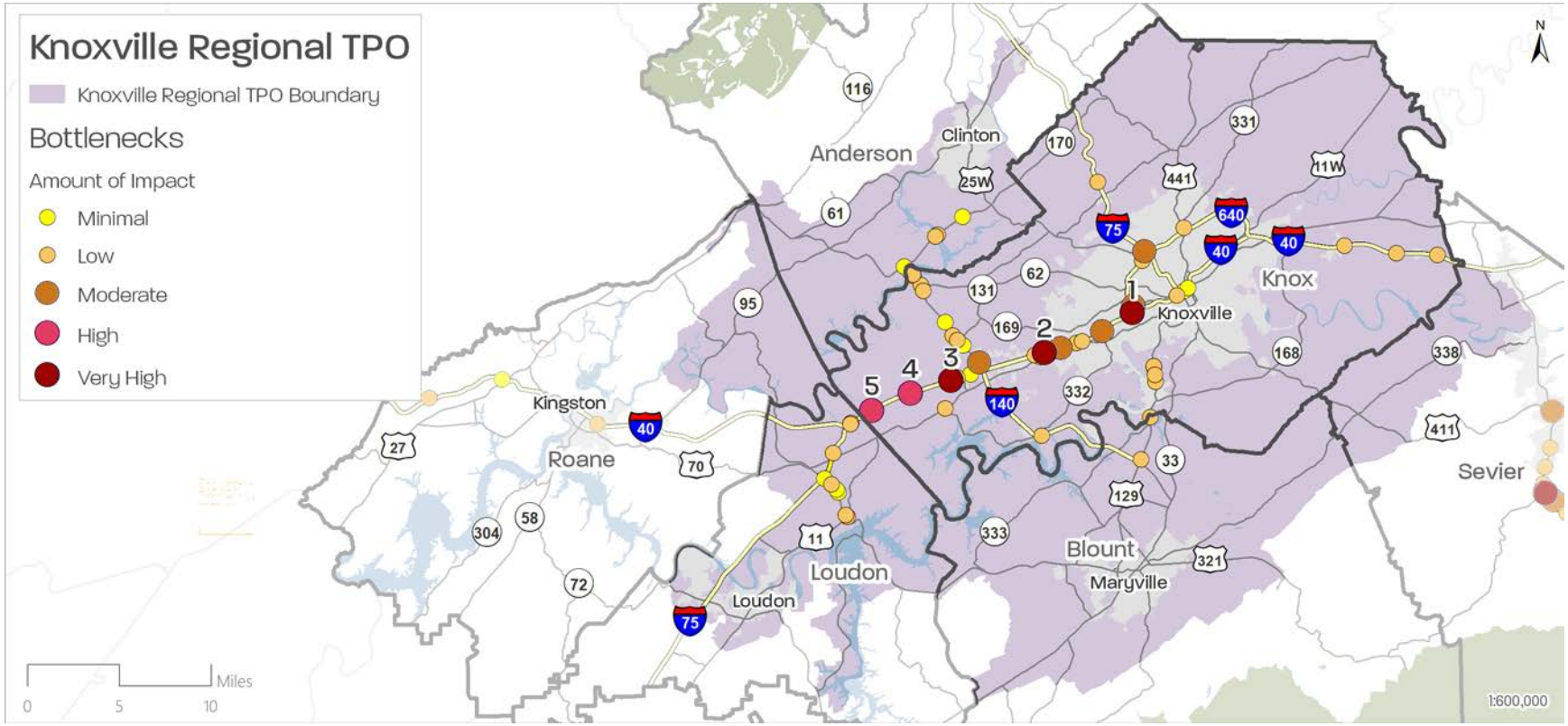
In addition to identifying congestion levels, INRIX data provides the ability to identify the specific locations where congestion begins to build. These locations, referred to as bottlenecks, are where speeds on a roadway segment drop to 65% or below of the free flow speed and cause at least two minutes of delay to motorists. A bottleneck is considered ”cleared” when speeds return to 75% of the free flow speed. According to the INRIX data for September 2018, there were 433 bottlenecks identified on roadways in the TPO area. These bottlenecks are characterized by their relative impact, how long they last (duration), how far they impact (spatial length), and how often they occur (frequency). Table C-5 summarizes the top five bottleneck locations based on the combined impact of these three factors. Figure C-11 depicts where those bottlenecks are located within the Knoxville Regional TPO planning area. The top bottleneck locations in the Knoxville Regional TPO planning area are all on the interstate system.

Table C-5. Top 5 Bottleneck Locations in Knoxville Regional TPO Planning Area (2018)

	LOCATION DESCRIPTION	AVERAGE DURATION	AVERAGE LENGTH	NUMBER OF OCCURRENCES
1	I-40 Westbound Exit 385 to I-75/I-640	66 minutes	3.2 miles	49 per month
2	I-40 Eastbound Exit 379 to Bridgewater, Walker Springs, and Gallaher View Roads	55 minutes	3.9 miles	24 per month
3	I-40 Westbound Exit 373 at Campbell Station Road	62 minutes	4.3 miles	14 per month
4	I-40 Westbound / I-75 South Interchange	89 minutes	7.3 miles	5 per month
5	I-40 Eastbound / I-75 Northbound Interchange	22 minutes	3.0 miles	36 per month

Source: INRIX 2018

Figure C-11. Top Bottleneck Locations in Knoxville Regional TPO Planning Area (2018)

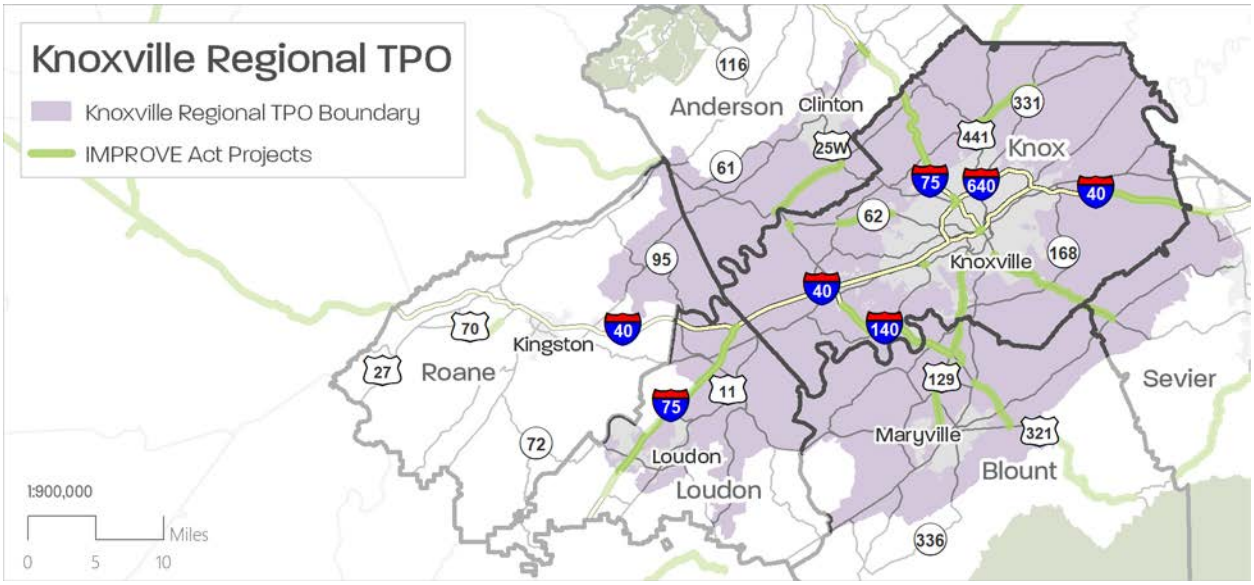


Source: INRIX 2018

Recent Changes

There have been significant changes made to the roadway system since the development of the Knoxville Regional TPO's Mobility Plan 2040. Though Mobility Plan 2040 was adopted in 2017, it did not account for new revenues made available through the Improving Manufacturing, Public Roads and Opportunities for a Vibrant Economy Act, or IMPROVE Act, which became Tennessee law in 2017. Using revenues from various tax increases, including diesel and gasoline, the IMPROVE Act laid out a list of projects for the Tennessee Department of Transportation to construct over the next 15 years. Within the Knoxville Regional TPO planning area, there were 37 roadway projects identified in the 2017 IMPROVE Act, as shown in Figure C-12.

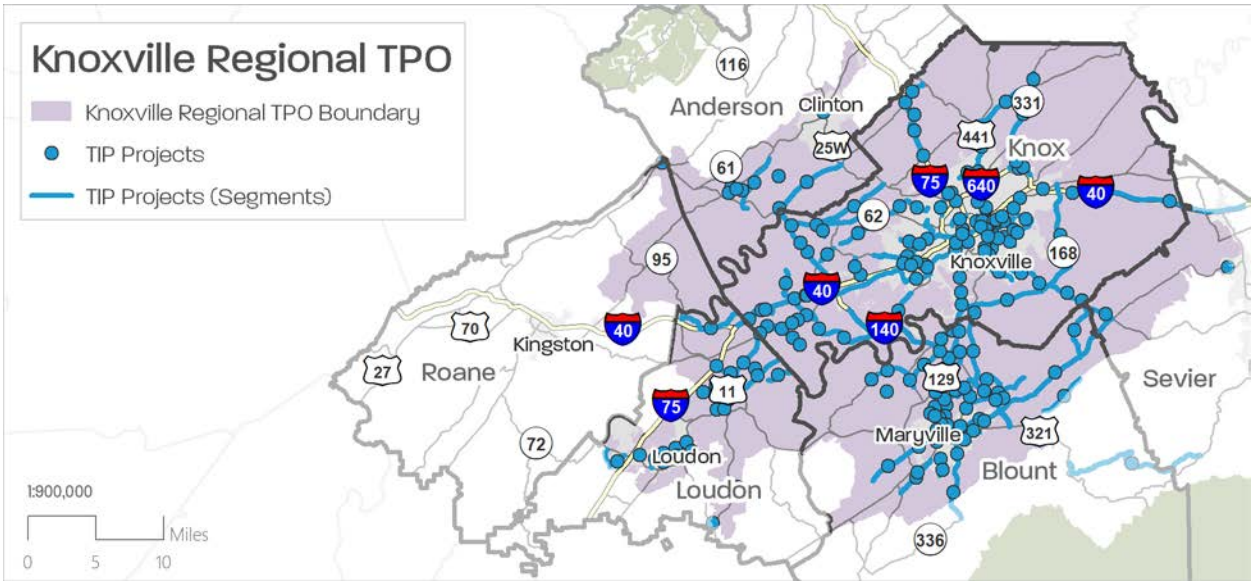
Figure C-12. Knoxville Regional TPO Improve Act Projects (2019)



Source: TDOT

In addition to the IMPROVE Act projects, the Knoxville Regional TPO has updated their Transportation Improvement Program (TIP), which covers the federal fiscal years of 2020 – 2023. The Knoxville Regional TPO planning area has 79 projects in the current TIP, as shown in Figure C-13. In addition to federal funding sources and projects, there are state-led planning efforts that include the Knoxville Regional TPO area. Two of these efforts are the I-75 and the I-40/I-81 Interstate Corridor Studies, which take a multimodal approach to identifying deficiencies on the interstates and make recommendations related to safety, operations, congestion, freight, and other issues.

Figure C-13. Knoxville Regional TPO TIP Projects (2018)

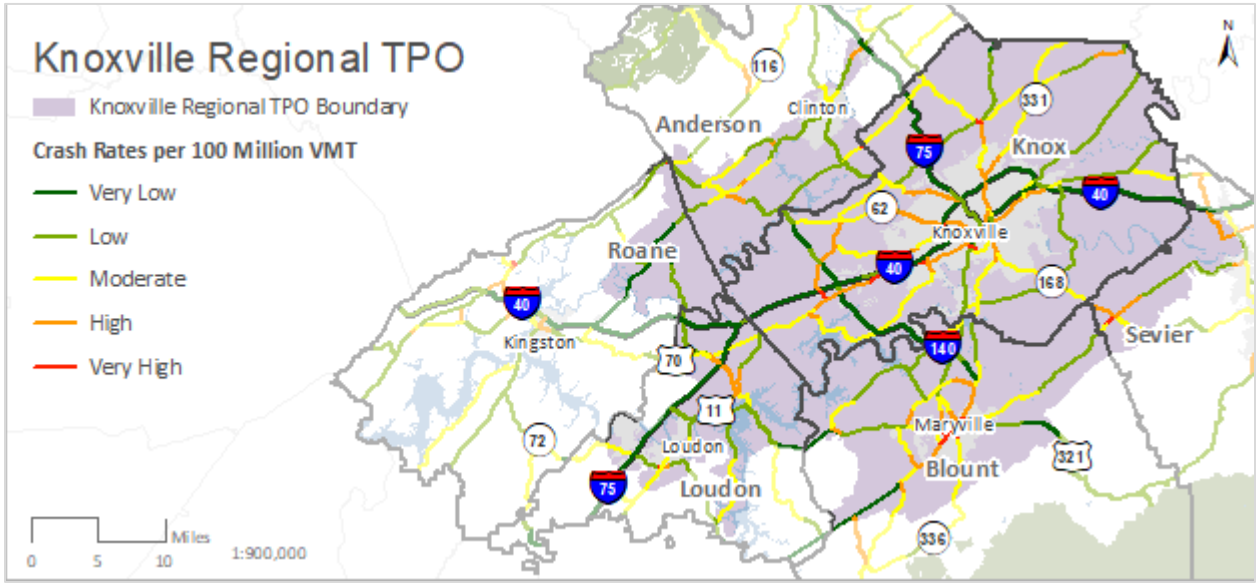


Source: Knoxville Regional TPO

Roadway Safety

Safety is a top priority in planning for all roadway users. In addition to obstructing roadways and causing delays, crashes can result in severe injuries or the irreplaceable loss of life. Between 2015 and 2019, there were approximately 95,000 crashes in the Knoxville Regional TPO area. Figure C-14 illustrates the crash rate for various roadway segments. These rates take into account the number of crashes that occur each year as well as the number of vehicles traveling along the roadways. Crash rates in the TPO are highest among the primary arterial routes through Knox County, such as US-11 (Kingston Pike), SR-131 (Lovell Road), and SR-9 (Clinton Highway). Approximately 70% of roadway crashes from 2015-2019 occurred within cities inside the TPO boundary, such as Knoxville and Maryville, likely due to their concentration of population and employment.

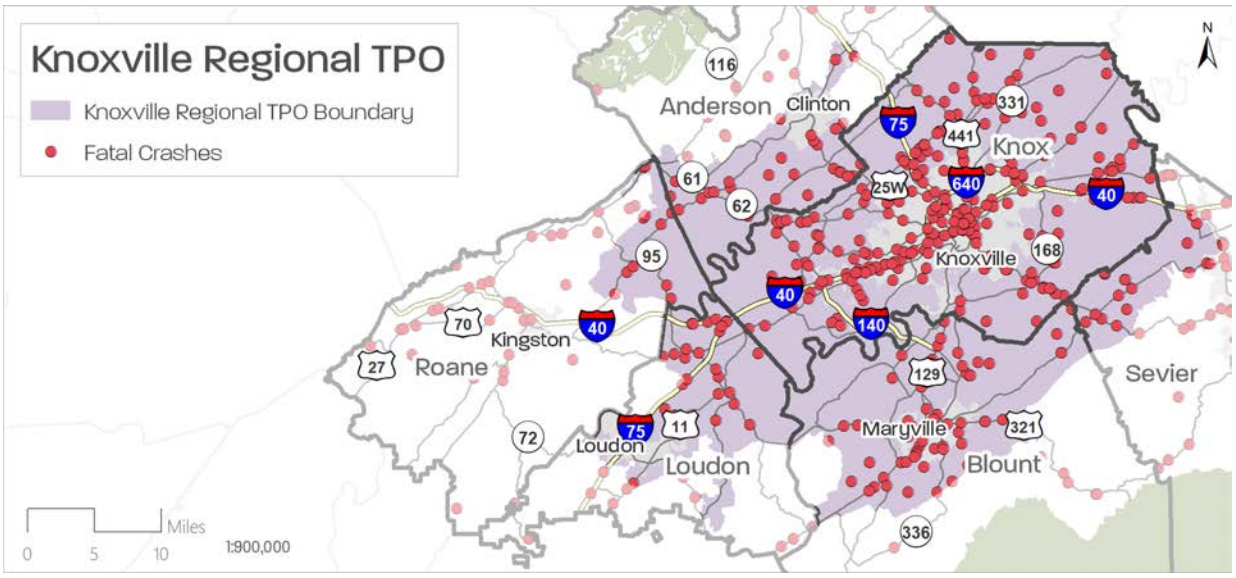
Figure C-14. Crash Rates within the Knoxville Regional TPO (2015-2019)



Source: TDOT

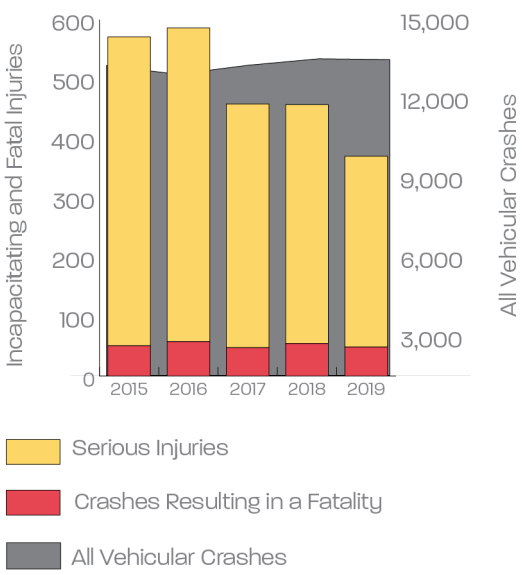
While crash rates describe the frequency of crashes on roadways, crash severity data points to locations where more people are killed and seriously injured. Within the TPO area, 25% of crashes in rural areas resulted in a fatality or injury while 18% of crashes in urban areas resulted in a fatality or injury. Throughout the six counties that make up the Knoxville TPO, there were 565 crashes that resulted in 585 fatalities in the past five years. Of the total fatal crashes, 407 occurred within the TPO region, shown in Figure C-15.

Figure C-15. Fatal Crashes within the Knoxville Regional TPO (2015-2019)



Source: TDOT

Figure C-16. Crashes in Knox County (2015-2019)



Source: TDOT

Knox County, with its higher concentration of jobs and population, has the largest number of severe crashes in the TPO area. The number of crashes resulting in one or more serious injuries in Knox County has decreased 38% over the past five years to 321 incidents in 2019. The number of crashes resulting in a fatality has remained generally the same, with approximately 50 occurring in Knox county each year. Though the vast majority of Knox County's roadways are local, most crashes (47%) occur on arterial roadways, due to higher speeds and volumes.

The TPO takes seriously its role in reducing the number of fatal and serious injury crashes in our region. This commitment is demonstrated through the ranking of projects for this plan, which awards additional points to projects that improve safety, that provide multimodal facilities, and for areas with disadvantaged populations.

In addition to the analysis above, additional safety priorities are outlined in Tennessee's Strategic Highway Safety Plan (SHSP). Updated in 2020, the SHSP is a cooperative effort between TDOT, the Tennessee Department of Safety and Homeland Security, the Federal Highway Administration (FHWA), and the

Federal Motor Carrier Safety Administration (FMCSA) that identifies crash trends and strategies to mitigate safety concerns across the state. Crash data on fatalities and serious injuries is collected from both state and national sources, which link back to federal safety performance measures and identify 16 contributing factors to these crashes. Table C-6 documents the factors and the resulting number of fatalities associated with each from 2014-2018 in the six-county Knoxville region. As the table shows, fatal crashes often involve multiple factors. Of note, data on fatalities resulting from secondary crashes and train-vehicle crashes was not readily available at the county level even though these are crash types tracked in the SHSP.

Using statewide crash data, the SHSP is intended to reduce the number of fatalities and serious injuries in Tennessee with a strategic focus on the aforementioned contributing factors which are categorized in the following six emphasis areas: data collection and analysis, driver behavior, infrastructure improvements, vulnerable roadway users, operational improvements, and motor carrier safety. These emphasis areas are the foundation for mitigation strategies. Based on crash trends shown in Table C-6 and the mitigation strategies identified in the SHSP, the Knoxville region could potentially benefit from TDOT's Road Safety Audit (RSA) and Local Road Safety Initiative (LRSI) programs to reduce fatalities resulting from lane and road departures and address geometric and signage deficiencies. In addition, educational and advocacy initiatives can be utilized to increase seatbelt usage and reduce impaired driving incidents.

Table C-6. Fatalities by Contributing Factor in Six-County Knoxville Region (2014-2018)

CONTRIBUTING FACTORS	2014	2015	2016	2017	2018	TOTAL
ALL FATAL CRASHES	135	120	139	128	127	649
IMPAIRED DRIVING	39	32	24	31	32	158
LARGE TRUCK	9	6	12	11	8	46
SPEEDING /AGGRESSIVE DRIVING	31	23	29	24	23	130
ROADWAY DEPARTURE	88	80	83	84	77	412
INTERSECTION RELATED	15	19	26	16	30	106
MOTORCYCLIST	14	17	24	18	20	93
PEDESTRIAN	15	11	14	17	12	69
BICYCLIST	0	0	1	5	2	8
UNRESTRAINED OCCUPANTS	51	42	37	31	26	187
SENIORS (65+)	30	29	29	31	41	160
TEEN DRIVERS (13-19)	19	10	20	8	19	76

INATTENTIVE, DISTRACTED, AND DROWSY DRIVERS	11	11	9	3	7	41
WORK ZONE	1	4	1	1	3	10

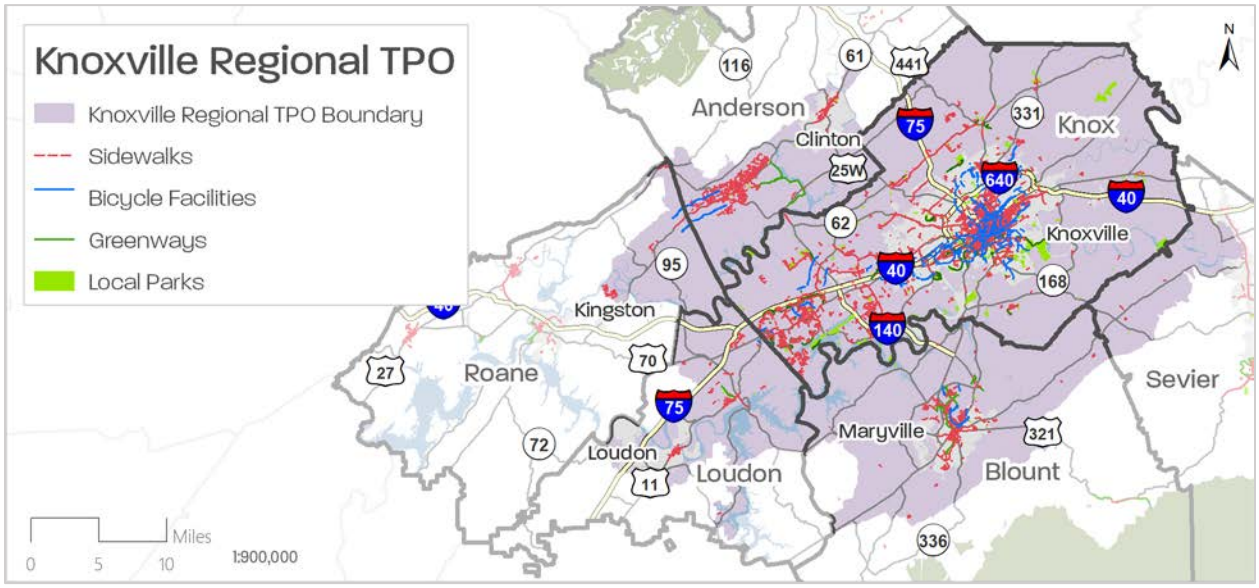
Source: Fatality Analysis Reporting System (FARS)

ACTIVE TRANSPORTATION

Existing Active Transportation System

Facilities for pedestrians and bicyclists are present throughout the region and have been expanding over the past five years. Sidewalks are present in most urban areas, with many jurisdictions having some bikeways and greenways. (Bikeways include several types of on-street bike facilities, including bike lanes and shared-lane markings.) Figure C-17 shows where active transportation facilities are located throughout the region.

Figure C-17. Active Transportation Facilities in the Knoxville TPO Region (2019)



Source: Knox County GIS, 2019 TDOT ETRIMS

During the planning process for Mobility 2040, plan participants highlighted the need for additional sidewalks, greenways, and bikeways as a funding priority. Since that plan was adopted, significant increases in bicycle and pedestrian facilities have been made in the TPO's six counties.

The TPO regularly provides funding to projects that include sidewalks, greenways, and bikeways, either as part of larger projects or as stand-alone active transportation projects, to increase the availability of walking and bicycling as safe modes of transportation. Local policies and investment are crucial to this effort as well, and TPO staff encourages local policies that require active transportation facilities with new development and redevelopment

Table C-7. Regional Bicycle and Greenway Facilities Inventory (2020)

COUNTY	BIKEWAYS	GREENWAYS
ANDERSON	8 miles	9 miles
BLOUNT	4 miles	27 miles
KNOX	30 miles	73 miles
LOUDON	--	2 miles
ROANE	--	4 miles
SEVIER	--	13 miles
TOTAL REGION	42 miles	128 miles

Source: Knox County GIS, TDOT

Table C-7 includes an inventory of bikeways and greenways by county. Table C-8 shows the miles of sidewalk by jurisdiction in the TPO area as well as those miles outside the TPO area but in the 6-county region. In addition, this table highlights the ratio of sidewalk miles to centerline miles of roadway, showing the relative proportion of infrastructure in each jurisdiction. Greenway systems have experienced strong growth in the Knoxville Regional TPO area, with 128 miles of greenways now available.

Table C-8. Sidewalk Mileage by Jurisdiction (2020)

TPO DESIGNATION	JURISDICTION	COUNTY	SIDEWALK MILES	ROADWAY MILES	SIDEWALK/ROAD RATIO
Inside TPO Area	Alcoa	Blount	38.6	118.6	0.33
	Clinton	Anderson	22.0	86.6	0.25
	Farragut	Knox	75.5	148.9	0.51
	Friendsville	Blount	0.4	18.2	0.02
	Knoxville	Knox	412.8	1,134.4	0.36
	Lenoir City	Loudon	16.5	78.0	0.21
	Loudon	Loudon	12.5	68.2	0.18
	Louisville	Blount	0.1	49.2	0.00
	Maryville	Blount	68.8	188.8	0.36
	Oak Ridge	Anderson/Roane	121.3	246.6	0.49
	Oliver Springs	Anderson	2.7	36.7	0.07
	Rockford	Blount	0.4	14.4	0.03
	Sevierville	Sevier	-	4.3	-
	Unincorporated All		149.0	3,313.6	0.04
		Total	**920.5**	**5,506.5**	**0.17**

Table C-8. Sidewalk Mileage by Jurisdiction (2020) (cont.)

TPO DESIGNATION	JURISDICTION	COUNTY	SIDEWALK MILES	ROADWAY MILES	SIDEWALK/ROAD RATIO
Outside TPO Area	Gatlinburg	Sevier	16.9	107.4	0.16
	Greenback	Loudon	0.2	17.9	0.01
	Harriman	Roane	20.3	80.9	0.25
	Kingston	Roane	10.3	65.4	0.16
	Norris	Anderson	2.0	26.0	0.08
	Philadelphia	Loudon	-	10.2	-
	Pigeon Forge	Sevier	38.2	94.0	0.41
	Pittman Center	Sevier	0.0	25.1	0.00
	Rockwood	Roane	15.8	62.1	0.25
	Rocky Top	Anderson	5.1	18.3	0.28
	Sevierville	Sevier	56.6	158.6	0.36
	Townsend	Blount	2.4	11.4	0.21
	Unincorporated All		3.5	2,601.4	0.00
		Total	**171.2**	**3,278.7**	**0.05**

Source: TDOT

Facility Accessibility

The Americans with Disabilities Act (ADA) became law in 1990. Public entities with 50 or more employees are required to develop a transition plan describing how they will come into full compliance with the ADA. Despite the fact that the ADA has been the law for 30 years, many governments created transition plans only recently, out of concern for losing federal and state transportation funding.

ADA transition plans are relevant to transportation planning because they often include an inventory of sidewalks, trails, traffic signals, buses, and other transportation facilities, with information about whether these items are accessible to people with disabilities. The accessibility of pedestrian facilities and public transit is especially important because people with disabilities who are under 65 are more likely to rely on these forms of transportation. Table C-9 includes information about ADA transition plans in the Knoxville region.

Table C-9. Status of ADA Transition Plans

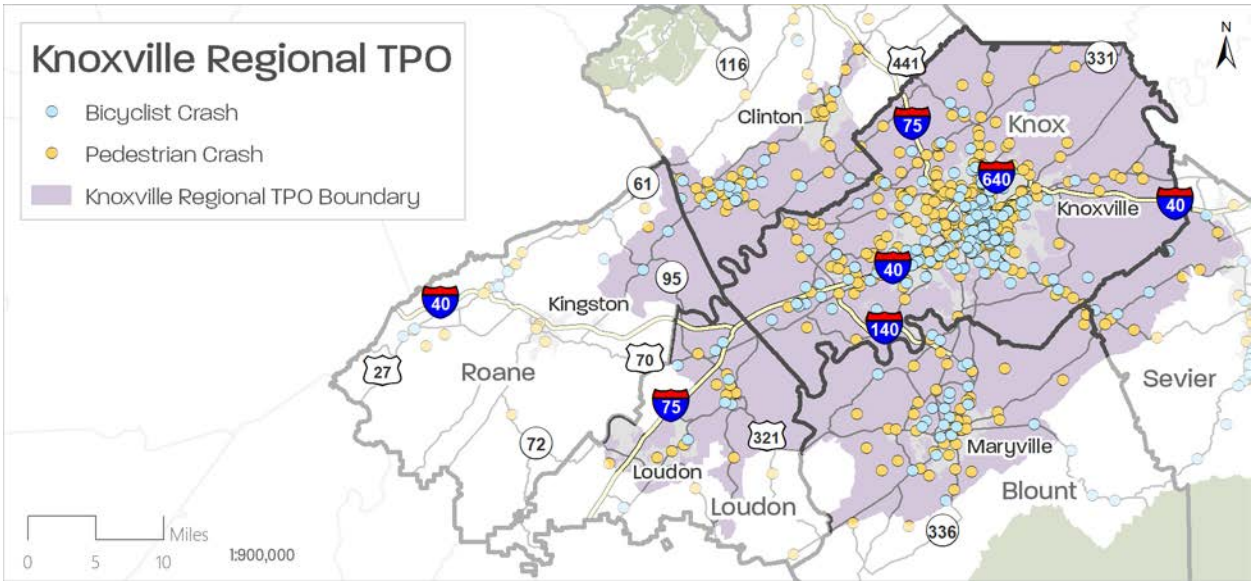
LOCAL GOVERNMENT	STATUS OF ADA TRANSITION PLAN	DOES THE PLAN ASSESS PEDESTRIAN FACILITIES FOR ACCESSIBILITY?
CITY OF ALCOA	Complete	Yes
ANDERSON COUNTY	Complete	Not applicable; no sidewalks or greenways in unincorporated Anderson County
BLOUNT COUNTY	Complete	Not applicable; all sidewalks and greenways in unincorporated Blount County are covered under maintenance agreements with incorporated areas
CITY OF CLINTON	Complete	Yes
TOWN OF FARRAGUT	Complete	Yes
KNOX COUNTY	Complete	Yes
CITY OF KNOXVILLE	Complete	No
LENOIR CITY	Complete	Yes
CITY OF LOUDON	Complete	Yes
LOUDON COUNTY	Complete	Yes
MARYVILLE	Complete	Yes
OAK RIDGE	Complete	Yes
SEVIER COUNTY	Complete	Not applicable; no sidewalks or greenways in unincorporated Sevier County
CITY OF SEVIERVILLE	Complete	Yes

Active Transportation Safety

Across the U.S. and within the Knoxville region, people who are walking, bicycling, and rolling are more vulnerable to injury and death compared with people traveling by motor vehicle. For this reason, the TPO has created a database and public map of traffic crashes involving people walking and bicycling in the Knoxville Region. The goal of building the database is to better understand patterns where these types of crashes are occurring, and the factors that contribute to them, so that the number and severity of crashes can be reduced through engineering, education, and other interventions. Making streets and roads safer for people walking and bicycling also tends to make them safer for drivers as well. This dataset is based on reports made to police of crashes involving a motor vehicle. The number of crashes reported to police is likely just a fraction of actual traffic crashes involving people walking or bicycling. An online survey conducted by Bike Walk Knoxville in 2019 found that for every pedestrian or bicycle traffic crash reported to police one additional crash went unreported and 30 near-miss incidents occurred.

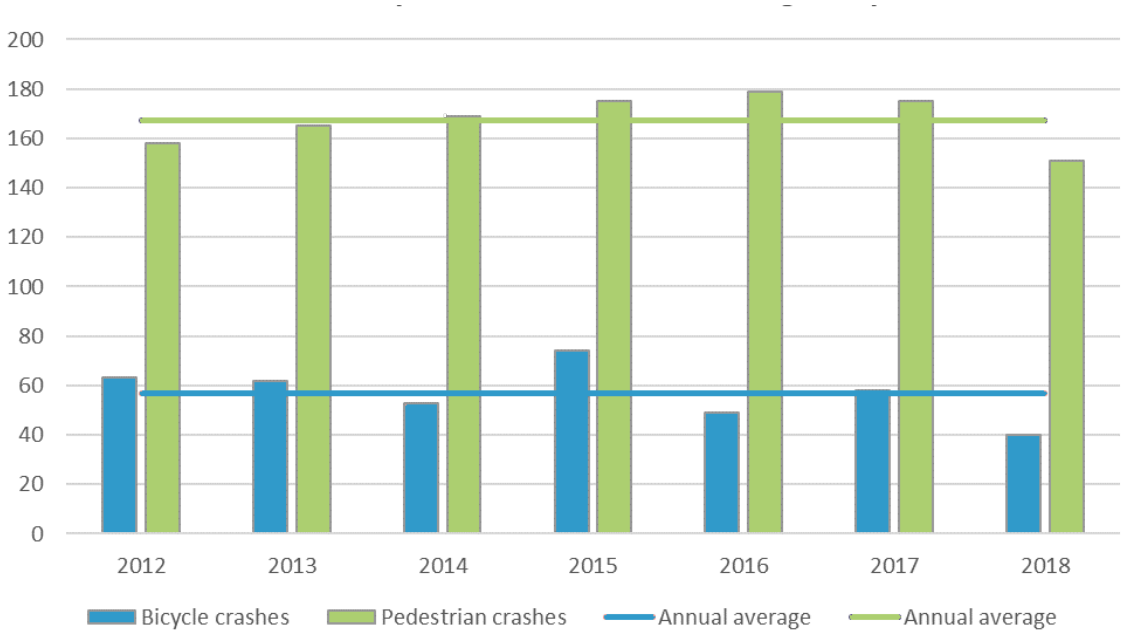
Since 2015, 911 vehicular crashes involving a bicyclist or pedestrian occurred in the six-county region, most of which happened within the Knoxville Regional TPO area. Figure C-18 shows the location of these crashes in the TPO Region. Overall, there have been 274 vehicular crashes involving bicyclists and 637 vehicular crashes involving pedestrians since 2015. Figure C-19 illustrates the annual trends in non-motorized crashes.

Figure C-18. Bicycle and Pedestrian Crashes within the Knoxville TPO Region (2015-2019)



Source: TDOT

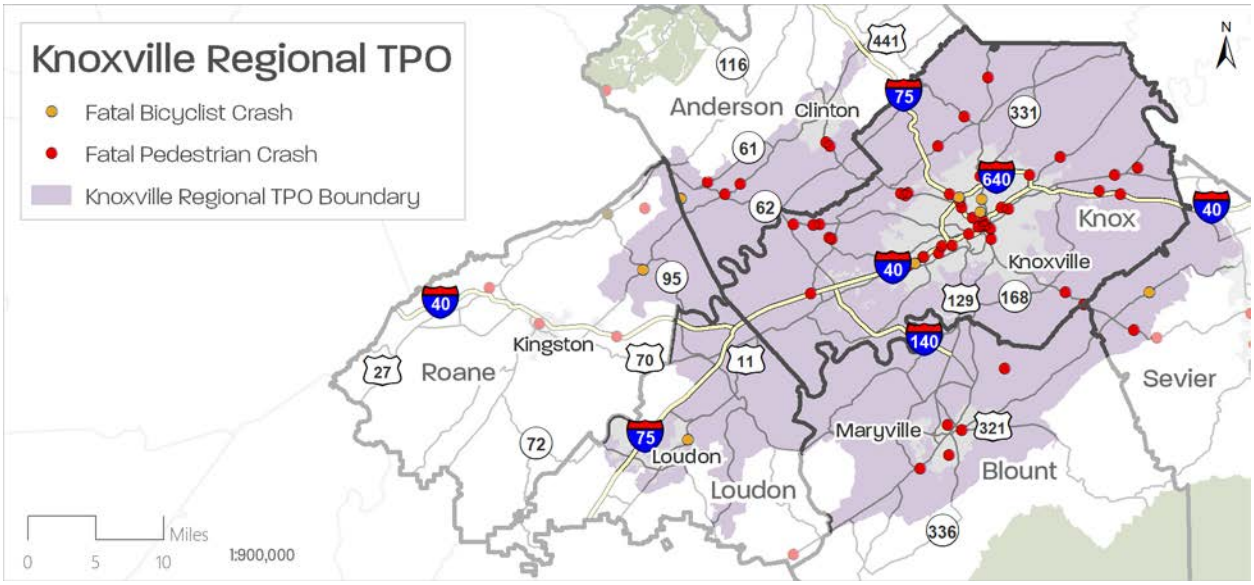
Figure C-19. Regional Trends in Bicycle and Pedestrian Crashes (2012-2018)



Source: Knoxville Regional TPO

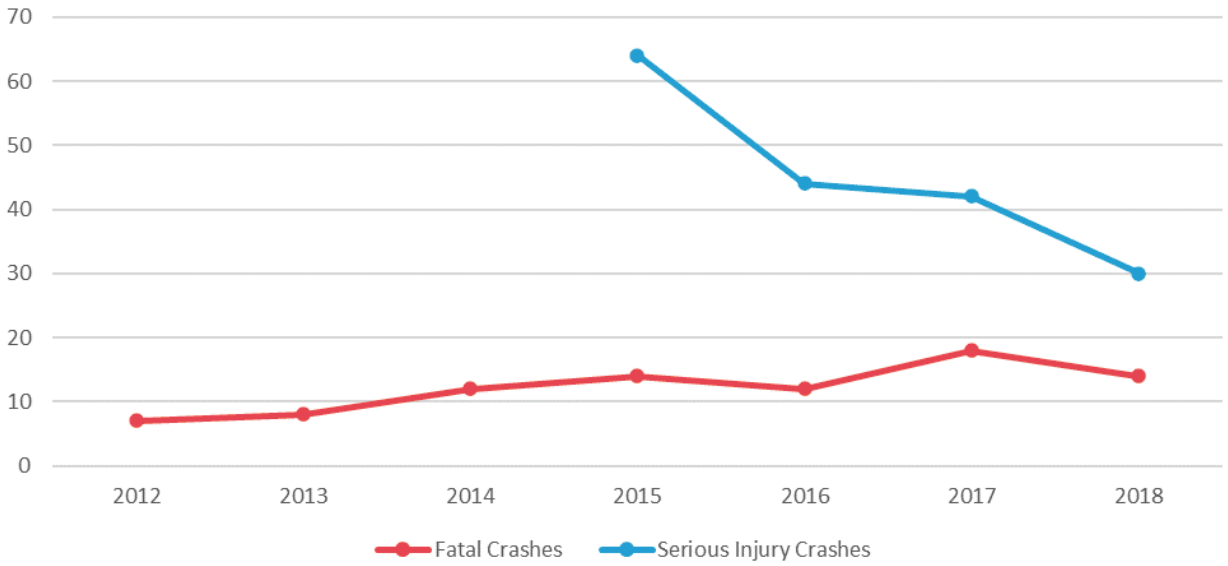
Approximately 23% of pedestrian crashes and 20% of bike crashes in the six-county region result in serious injuries. Figure C-20 shows all bike and pedestrian fatalities in the region since 2015. Figure C-21 illustrates trends for fatal and severe crashes involving pedestrians and cyclists in recent years.

Figure C-20. Bike and Pedestrian Fatalities in the Knoxville TPO Region (2015-2019)



Source: TDOT

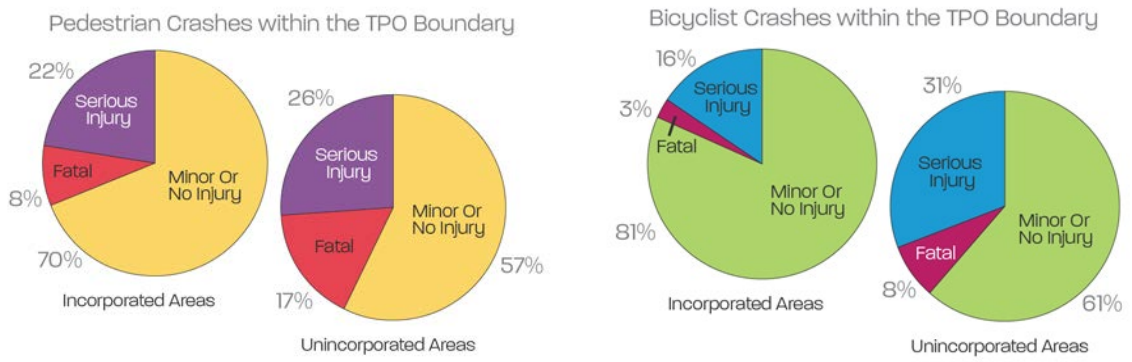
Figure C-21. Regional Trends in Fatal and Severe Injury Bicycle and Pedestrian Crashes



Source: Knoxville Regional TPO

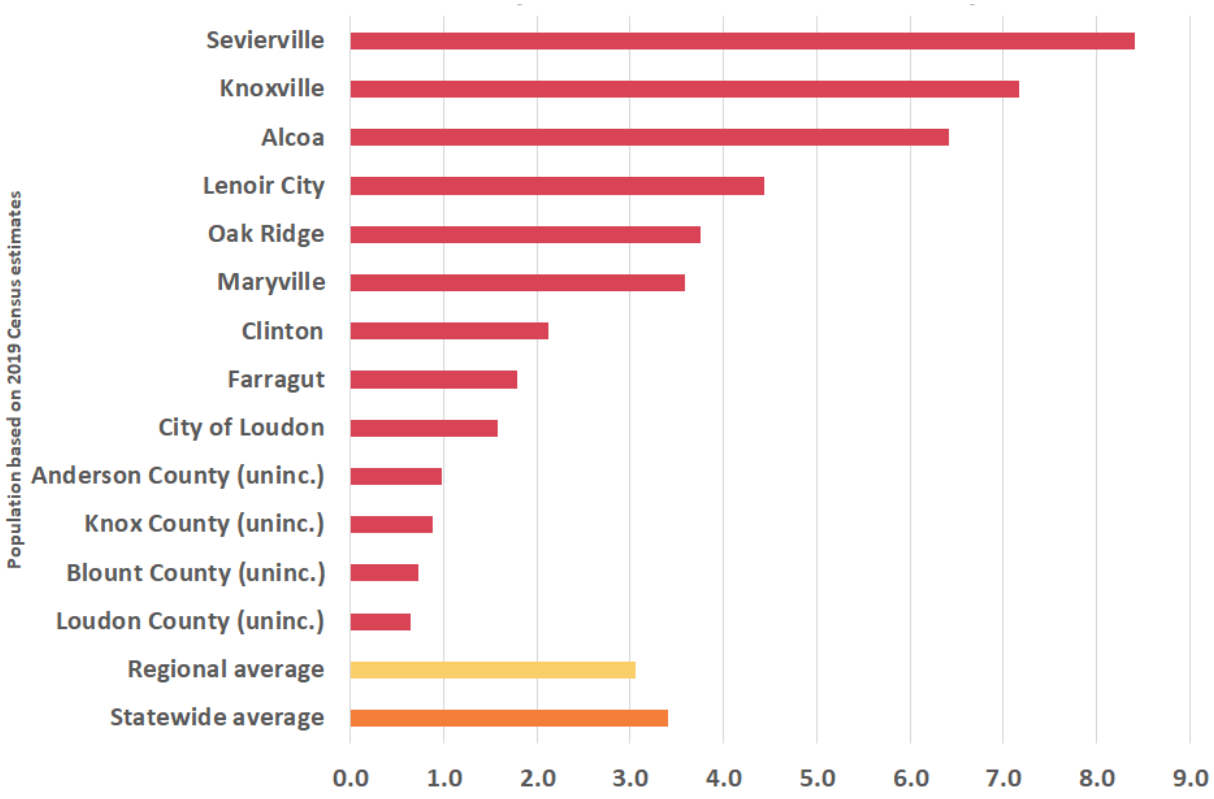
Within the TPO itself, approximately 80% of bike and pedestrian crashes occur within incorporated areas, yet the crashes in unincorporated areas tend to be more severe. Figure C-22 highlights crash severity by location in greater detail, and Figure C-23 shows the total number of bicycle and pedestrian crashes normalized by population in the region.

Figure C-22. Severity of Bike and Pedestrian Crashes in the Knoxville Regional TPO Area (2015-2019)



Source: TDOT

Figure C-23. Annual Pedestrian and Bicycle Crashes per 10,000 Population (2012 - June 2019)



Source: Knoxville Regional TPO

Active Transportation System Use

There is no consensus across the U.S. for the best way to measure the number of people walking, bicycling and using other modes of active transportation. Cities, MPOs and states are using many different methodologies to capture this information, while innovations in technology are creating new possibilities every day. Recent innovations include the use of cameras that can distinguish among people using various active modes, as well as the use of GPS data from mobile devices to estimate the number of people using active transportation in a given geography.

For many years the TPO has collected data on active transportation manually and has also made some use of automated technology to count users on various greenways around the region. The resulting data has been used sporadically, and the TPO is evaluating these programs to determine the best way to gather data that is meaningful to the transportation planning process.

Active Transportation Programs

The TPO has partnered with multiple agencies and groups in recent years to create programs that expand safety and access for people walking and bicycling. While roadway design plays a pivotal role in pedestrian and bicycle safety, education and enforcement initiatives encourage safe travel behavior across all modes.

Educational Programs

TPO staff and community volunteers work with high schools in the region to offer training on driving safety around people walking and bicycling. As some schools phase out traditional driver's education programs, this curriculum is being offered through wellness classes and private driving schools.

Since 2016, the TPO has partnered with other agencies to organize the Active Knox Speaker Series. As of December 2020, the series has hosted 13 speakers from across the U.S., plus two additional series featuring local panels. The topics have covered various aspects of walkability and active living, and the goal of the series is to educate community members and decision-makers on the key components of walkability and sustainable development. The series is primarily funded by a grant from the Tennessee Department of Health, with additional local sponsors.

The TPO has also helped to have community volunteers trained as League Certified Instructors (LCI) through the League of American Bicyclists to offer quality bike education in the region. The LCI programs

typically include bicycle rodeos, which educate children on the basics of safe riding, and classes for adults, which focus on safe bike commuting practices.

Safety Initiatives

Other recent programs have centered around building partnerships to advance specific issues related to pedestrian and bicycle safety. In recent years, the TPO has applied for and received technical assistance for the following projects:

- The Walkability Action Institute: The Walkability Action Institute is sponsored by the National Association of Chronic Disease Directors, part of the Centers for Disease Control and Prevention (CDC). In 2016, the team focused on revising local zoning ordinances in Knoxville to enhance walkability.
- The Complete Streets Consortium Series: Teams from Knoxville, Chattanooga and Nashville received technical assistance from Smart Growth America in 2017-18. The Knoxville team focused on the North Broadway corridor, and the team continues to coordinate the various projects in the vicinity of Broadway.
- The Road to Zero Coalition: A team led by TPO staff received technical assistance in 2019 from America Walks, with a focus on getting to zero pedestrian fatalities. The team identified three action items related to expanding and sharing crash data and began implementation in late 2019. One of the action items was coordinating the joint review of fatal traffic crashes.

Joint Fatal Crash Review

The TPO organized the first joint fatal crash review in February of 2019 and has since held them every six months. The goal is to discuss fatal traffic crashes in Knox County and share relevant information among law enforcement, engineering, planning, and public health officials. Initial reviews were separately with the Knoxville Police Department and the Knox County Sheriff's Office, but subsequent reviews have involved both agencies, along with the Tennessee Highway Patrol. Other participating agencies include the Knox County Health Department, the Knox County Medical Examiner, and engineering staff from Knoxville, Knox County and Farragut. The City of Maryville holds a similar joint review of serious traffic crashes between law enforcement and engineering staff.

Law Enforcement Training

The TPO partnered with the Federal Highway Administration in 2019 to host a training for local law enforcement officers and engineering staff on sharing information in order to prevent fatal and serious injury crashes. The trainer was a FHWA staff member and former law enforcement officer. The training focused on empowering law enforcement officers who handle traffic crashes to recognize and speak up about unsafe road conditions with the goal of preventing serious crashes. Seventeen officers from 13 agencies participated, along with four engineers from local governments.

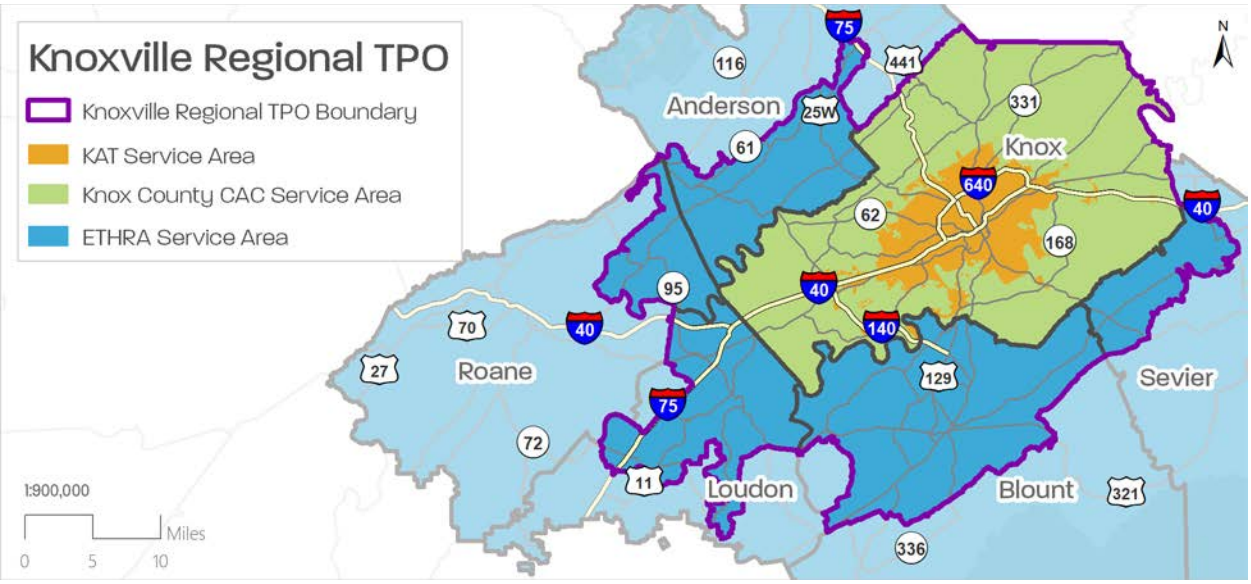
Proactive Enforcement of the 3-Foot Law

At the urging of Bike Walk Knoxville, the Knoxville Police Department began a program of proactive enforcement of the 3-foot safe passing law in 2018. TPO staff participated in the planning of the enforcement program and assisted with community engagement throughout the initial enforcement phase. State law and Knoxville ordinance both require that drivers give bicyclists at least 3 feet of space when passing them. Additional enforcement equipment was paid with funding from the National Highway Traffic Safety Administration, which is studying the effects of enforcement on driver passing distance.

PUBLIC TRANSIT

Within the Knoxville Regional TPO planning area there are a variety of public transportation and transit services that serve the community. These agencies include Knoxville Area Transit (KAT), the East Tennessee Human Resource Agency (ETHRA), and the Knox County Community Action Committee (CAC) Transit. Figure C-24 shows the service areas of these providers in the TPO area. The University of Tennessee, located in Knoxville, also has an on-campus fixed route system but does not utilize FTA funding.

Figure C-24. Existing Transit Service Areas (2020)

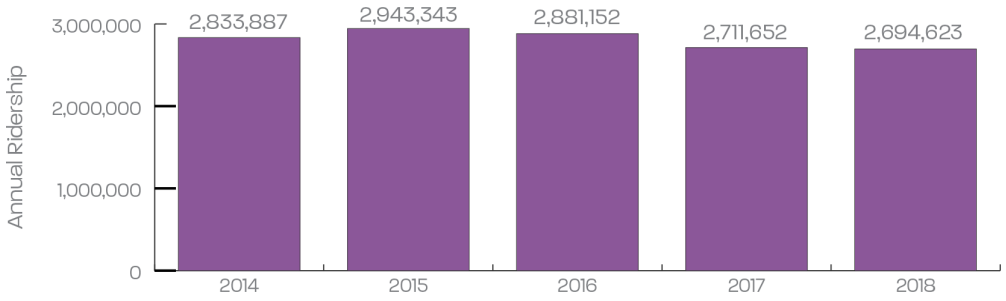


Source: Knoxville Regional TPO

Knoxville Area Transit

KAT is the largest provider of public transit in the TPO planning area, serving the urban area of Knoxville. KAT provides fixed-route bus service, downtown trolley circulators, and door-to-door paratransit service. The KAT system consists of 23 routes with 1,000 bus stops and offers many different types of fares from single ride passes to 30-day unlimited passes. Figure C-25 illustrates the annual ridership for KAT from 2014 through 2018 based on the National Transit Database (NTD) reports. According to the data, there were nearly 2.7 million riders in 2018.

Figure C-25. Knoxville Area Transit Annual Ridership Data (2014-2018)

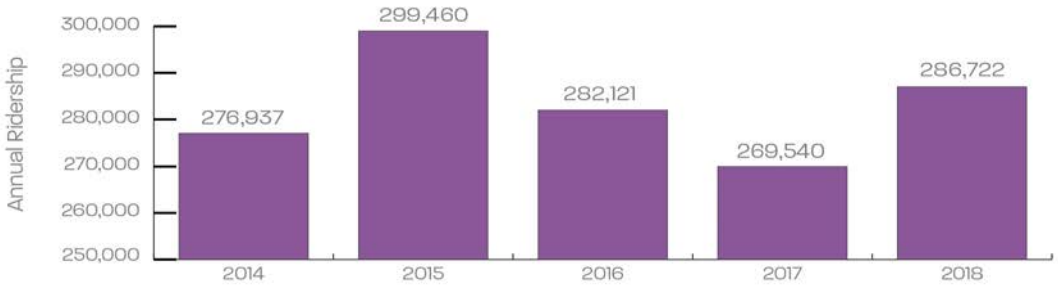


Source: National Transit Database (2014-2018)

East Tennessee Human Resource Agency

ETHRA provides transit services for 16 counties in the region, including the six counties that are part of the Knoxville Regional TPO. ETHRA provides demand response services, where vehicles typically pick up and drop off passengers in locations according to passenger needs. Figure C-26 illustrates the annual ridership for ETHRA services from 2014 to 2018. ETHRA provided service for over 286,000 residents across the 16-county service area, which is a 3.5% increase in annual ridership from 2014.

Figure C-26. ETHRA Annual Ridership Data (2014-2018)

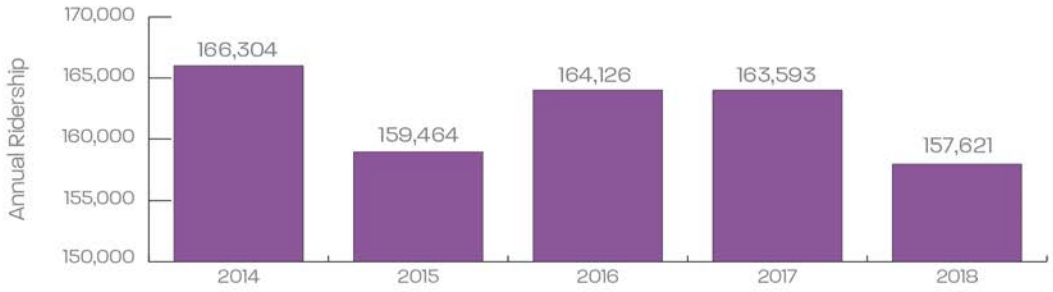


Source: National Transit Database (2014-2018)

Knox County Community Action Committee Transit

The Knox County CAC Transit is a demand-response transit service that provides transportation services to those in Knox County outside the Knoxville city limits, as well as those in Knoxville who are outside of the KAT service area. Knox County CAC Transit provides transportation service Monday through Saturday from 5 a.m. to 9 p.m. Figure C-27 illustrates the annual ridership for Knox County CAC Transit from 2014 to 2018.

Figure C-27. Knox County CAC Transit Annual Ridership Data (2014-2018)



Source: National Transit Database (2014-2018)

Recent Changes

As mentioned previously, the IMPROVE Act was passed in 2017 and provides additional funding for transportation investments with a focus on roadway projects. However, the legislation also has provisions related to transit funding. TDOT uses this funding source, in addition to the FTA capital grant programs, to administer public transit capital funding through a competitive grant process conducted each year. The IMPROVE Act also allows the state's largest urban areas, including Knoxville, to create dedicated transit funding through local referendum.

In addition to new funding opportunities, the TPO updated its Human Services Transportation Coordination Plan in December of 2020. The plan takes a comprehensive look at the existing transit services provided in the region with the goal of prioritizing certain projects to meet the mobility needs of residents, specifically residents with disabilities, seniors, and low-income households.

FREIGHT INFRASTRUCTURE AND COMMODITY FLOWS

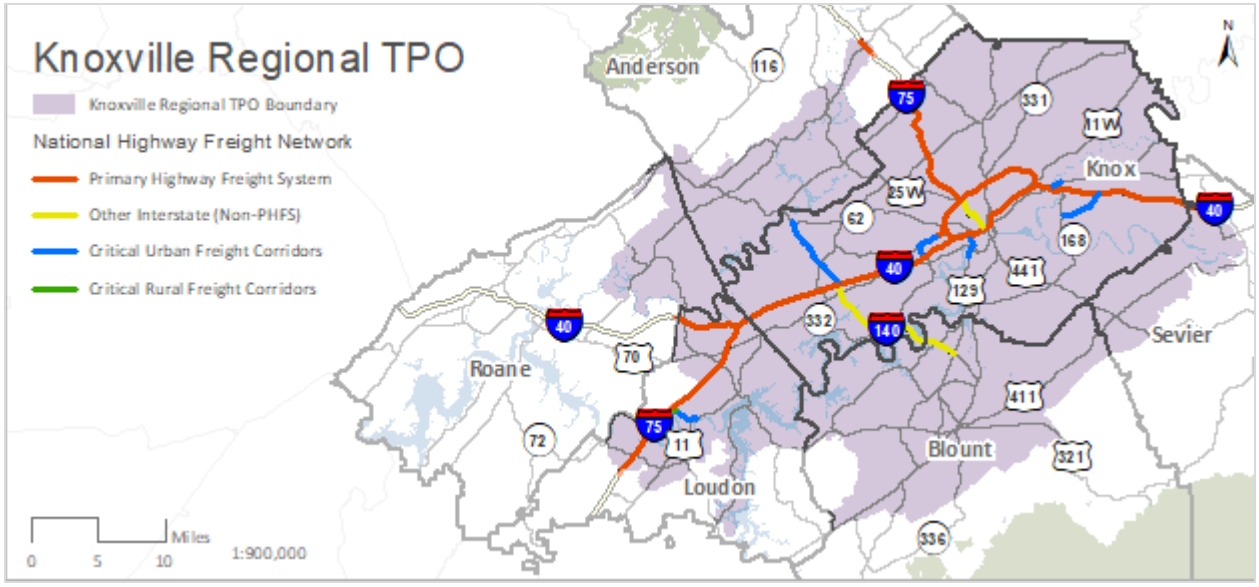
Freight plays a key role in the Knoxville region's economy through five primary modes: highway, rail, water, air, and pipeline. To analyze the movement of freight in the region, TRANSEARCH data for 2016 was used to assess both the tonnage and value of commodities that are imported to and exported from the six-county Knoxville region.

Multimodal Freight Systems

Highway

The transportation system in the Knoxville Regional TPO area has approximately 5,500 miles of roadways, including over 90 miles on the interstate system. In addition to interstates, there are a number of roadways that are designated as part of the National Highway Freight Network (NHFN). The NHFN was established with the federal FAST Act in 2016 as a means of strategically directing federal resources and policies toward maintenance and performance of the freight transportation system. The Federal Highway Administration divides the NHFN into four roadway classifications: Primary Highway Freight System, Other Non-PHFS Interstates, Critical Urban Freight Corridors, and Critical Rural Freight Corridors. Within the TPO planning area there are 115 miles of these federally designated freight facilities as shown in Figure C-28.

Figure C-28. National Highway Freight Network in the Knoxville TPO Area (2020)



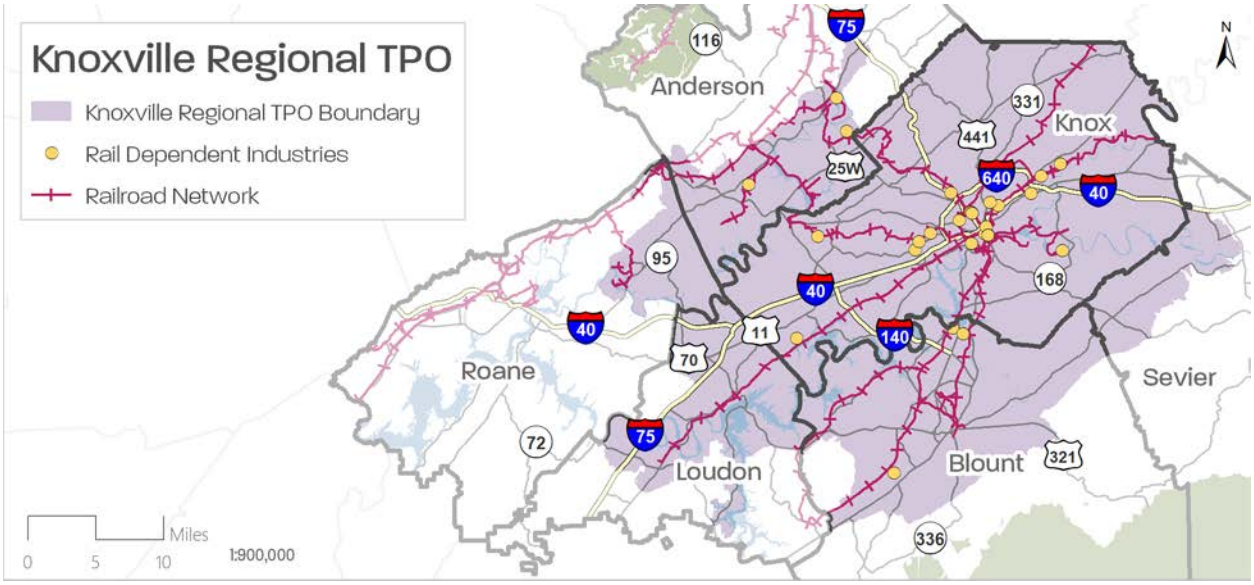
Source: FHWA

Rail

Within the Knoxville region there are 530 miles of railroad that are used by various rail companies for transporting freight in and out of the region. There are two Class I rail lines located in the region, Norfolk Southern Railway and CSX Transportation. The Norfolk Southern Railway is a rail network encompassing approximately 36,100 track miles in 22 states and serving 43 ports and major markets throughout the eastern United States. The rail lines in the Knoxville region form part of the Crescent Corridor line that Norfolk Southern operates. In Tennessee, the Crescent Corridor connects Bristol to Chattanooga, through Knoxville. Inside of Knoxville, the Knoxville & Holston River Railroad (KXHR) serves the urban core, operating 22 miles near Interstates 40 and 75. An interchange with Norfolk Southern allows the KXHR to transport freight items nationally. Additionally, the KXHR is occasionally used as a passenger train for special events.

CSX Transportation is a network encompassing nearly 36,800 miles in 23 states and serving 70 ports, also in the eastern U.S. with a large presence in Tennessee. Two of their major networks cross the state, the Southeastern Corridor and the Coal Network. CSX Transportation owns the most rail mileage in Tennessee with coverage in east, middle, and west Tennessee and serves all the state's major cities directly. Figure C-29 illustrates the rail system that runs through the Knoxville Regional TPO planning area in conjunction with industries designated as "rail-dependent" based on NAICS code. These include businesses that are directly related to line haul railroads and their supporting activities.

Figure C-29. Railroad Network in the Knoxville TPO Area (2020)



Source: Infogroup

Water

Although water freight makes up the smallest portion of freight transport in East Tennessee, it plays a critical role in East Tennessee's economy and industrial growth. There are 401 miles of navigable waterways along the Tennessee River, supporting the transport of goods to and from the TPO planning area. The Fort Loudoun Lock in Lenoir City is one of five locks along the eastern segment of the Tennessee River.

Aviation

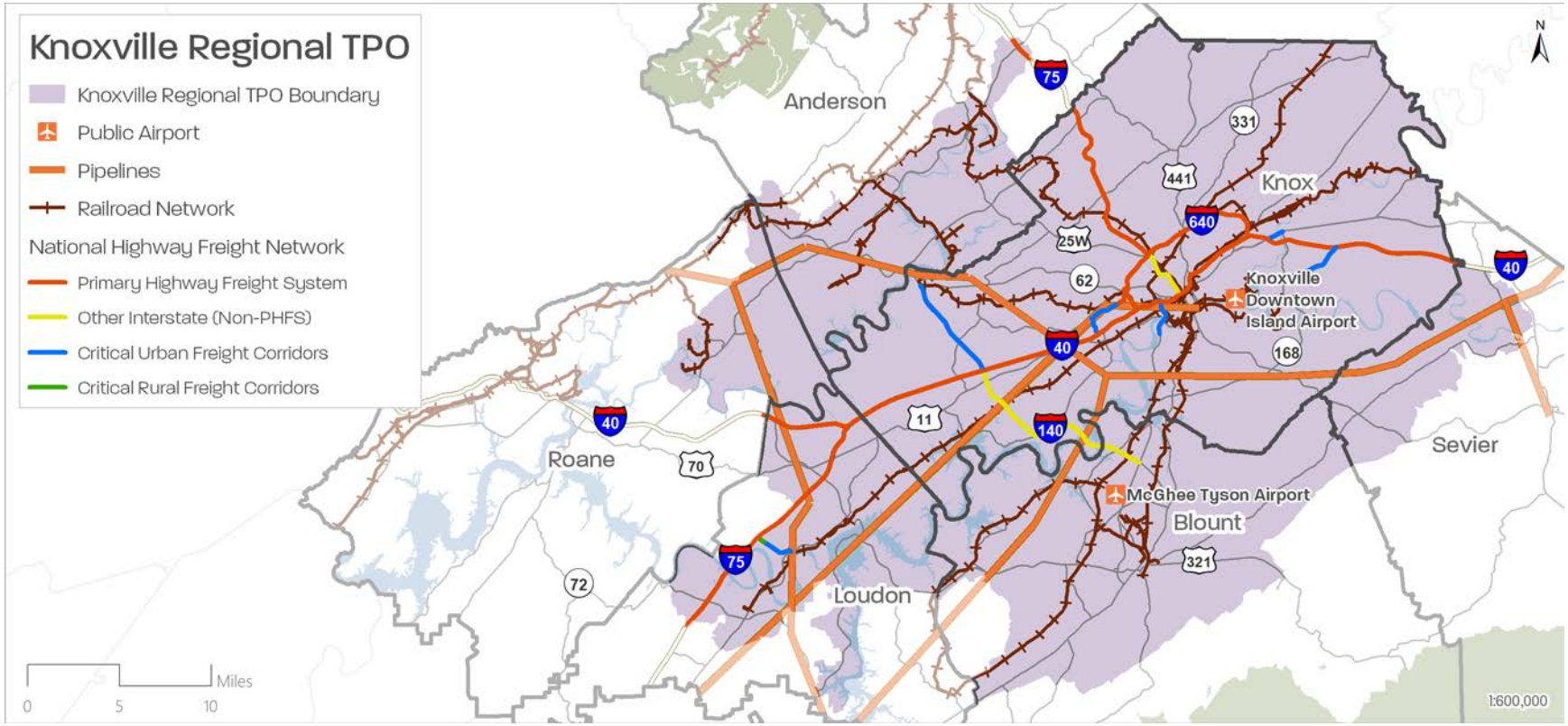
The Knoxville region has 23 airports across the six counties, two of which are in the TPO's planning area: the McGhee Tyson Airport and the Knoxville Downtown Island Airport. McGhee Tyson, a public and military airport located in Alcoa, is the only airport that provides freight services for the TPO planning area. Owned by the Metropolitan Knoxville Airport Authority, it is served by several major airlines and provides employment for approximately 2,700 people. Freight airlines serving the McGhee Tyson Airport include Ameriflight, FedEx Express, and UPS Airlines.

Pipelines

The East Tennessee Natural Gas Pipeline extends 1,510 miles from eastern Tennessee to Virginia, transporting natural gas at a capacity of 1.86 billion cubic feet per day. The pipeline is interconnected with

other lines, including Texas Eastern Transmission Gas Pipeline, Tennessee Gas Pipeline, Columbia Gas Pipeline, Southern Natural Gas Pipeline, and the Midwestern Gas Transmission Company Gas Pipeline. Figure C-30 shows all the freight infrastructure facilities in the Knoxville Regional TPO area.

Figure C-30. Knoxville Regional TPO Freight Facilities (2020)

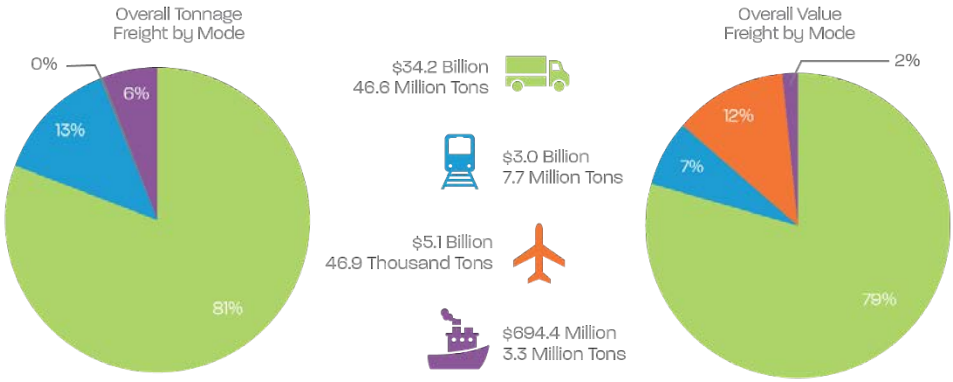


Source: FHWA; US Energy Administration

Commodity Flows

TRANSEARCH data, purchased by the Tennessee Department of Transportation (TDOT), provides county-level data related to freight commodities that are imported and exported throughout the region for 2016 and 2045. According to this data, approximately 58 million tons of freight valued at $43 billion dollars are imported to and exported from the six-county Knoxville region. As shown in Figure C-31, commercial truck freight accounts for the largest percentage of both tonnage and commodity value imported to and exported from the region. With an average semi-truck carrying 40 tons, the total commercial truck freight equates to over 1.1 million trucks on the region's roadways each year. Air freight transports fewer but more expensive commodities. Less than 1% of the total commodities transported are a short distance trip as part of a longer overall move, such as from a ship to a warehouse, also known as drayage.

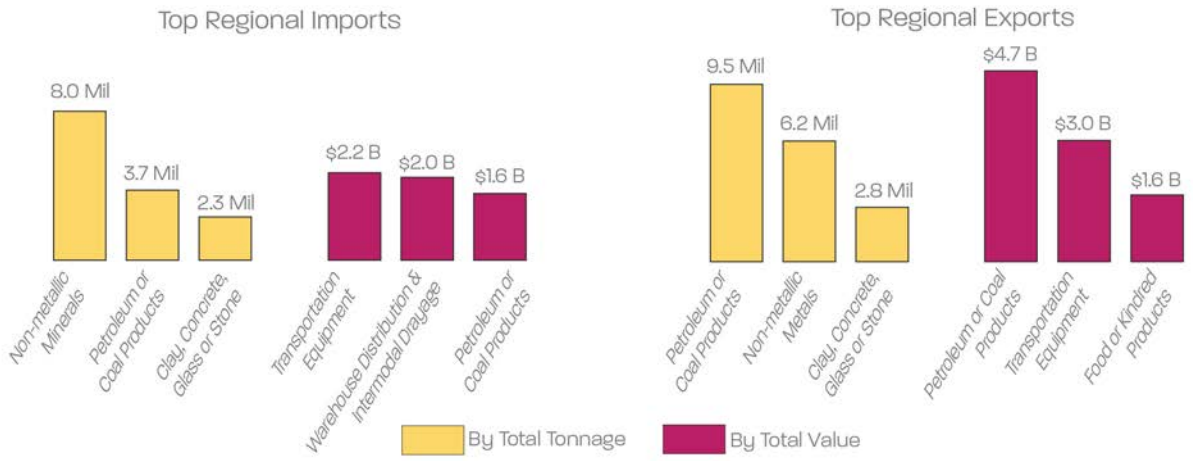
Figure C-31. Freight Distribution by Mode (2016)



Source: 2016 Transearch

Figure C-32 shows the top three imports and exports from the region by both tonnage and value. Petroleum or coal products represent the highest value and largest tonnage commodity exported from the region. Non-metallic minerals are the largest import for the region by tonnage and include materials such as crushed stone and aggregate. By value, transportation equipment is the top import, and includes fully assembled motor vehicles and parts.

Figure C-32. Top Commodities by Tonnage and Value (2016)



Source: 2016 Transearch

By 2045, freight tonnage transported into and out of the six-county Knoxville region is expected to nearly double resulting in nearly $100 billion in commodity value transported over the region's freight infrastructure. The majority of this increase will be seen in the movement of freight by truck, which is consistent with national trends in freight transportation. Knox County is expected to see significant increases in freight tonnage and value as shown in Table C-10.

Table C-10. Projected Freight Increases by County, 2016-2045

COUNTY	2016 TONNAGE	2045 TONNAGE	2016 VALUE	2045 VALUE
ANDERSON COUNTY	3,039,095	3,946,717	$6,310,940,518	$11,817,450,043
BLOUNT COUNTY	5,796,564	10,703,726	$11,272,503,379	$25,923,698,694
KNOX COUNTY	28,959,870	62,349,346	$19,937,251,609	$43,908,269,919
LOUDON COUNTY	11,665,256	21,991,063	$3,140,047,824	$5,505,872,205
ROANE COUNTY	3,963,175	3,914,810	$743,031,276	$1,106,712,749
SEVIER COUNTY	4,210,322	7,632,988	$1,671,066,181	$3,501,856,911
TOTAL	**57,634,282**	**110,538,649**	**$43,074,840,785**	**$91,763,860,522**

TECHNOLOGY

Technology in transportation is constantly evolving and changing the way people interact with one another, work, make trips, and purchase goods and services. New and emerging technologies in transportation offer the potential for a safer, more efficient transportation system; more connectivity globally and locally; and streamlined business practices. Technology may also help improve safety and traffic congestion. In addition, the relatively new advances in shared and micro-mobility services are changing the way people make shorter trips in urban areas like Knoxville.

Intelligent Transportation Systems

Intelligent Transportation System (ITS) technologies work to improve safety and mobility, reduce environmental impacts, and enhance productivity through the integration of advanced information and communication technologies into the transportation system. The Knoxville Regional ITS Architecture was first developed in 2000 and has since been updated multiple times. The Regional ITS Architecture goes hand in hand with an ITS Deployment Plan that identifies long-term ITS strategies broken down into incremental investments that can be funded by various agencies. The Knoxville TPO is currently updating the Regional ITS Architecture and Deployment Plan.

Transportation System Management and Operations

The goal of Transportation System Management and Operations (TSM&O) strategies is to maximize the performance of the existing system, typically the roadway system, before resorting to adding capacity in the form of additional travel lanes. Maximizing the existing system helps communities, like those in the Knoxville region, use limited resources efficiently to improve roadway safety and operations, air quality, and the quality of life more generally. Through their Congestion Management Process (CMP), the Knoxville Regional TPO has identified the following approaches to integrate the use of technology into the day-to-day operations of the transportation system:

- Intelligent Transportation Systems (ITS) investments that allow for real-time communication of roadway conditions to travelers
- Traffic signal coordination whereby travel times along a corridor can be improved using adjustments to traffic signal timings

- Incident management tools that help divert traffic and maintain safe traveling conditions during non-recurring congestion events such as weather conditions and vehicle crashes
- Travel Demand Management (TDM) strategies such as commuter choice and incentive programs

These initiatives will be re-evaluated and updated through Mobility Plan 2045 and its corresponding CMP effort. Of note is that the TDOT Region 1 Traffic Management Center (TMC) is located in Knoxville and continuously monitors roadway conditions in the TPO area. It uses a variety of technologies including CCTV cameras, speed detection, dynamic message signs, and portable variable message signs.

Micromobility and Shared Mobility Options

Advances in wireless technologies have created an opportunity for app-based services to play an increasing role in transportation, particularly in denser urban environments. Over the past few years, this has manifested itself in two primary forms – micromobility and shared mobility – which can overlap. Micromobility modes include lower-speed vehicles that are designed primarily for shorter urban trips, such as bicycles and electric scooters. When micromobility devices are shared, they can be docked, meaning users have to return them to a specific location, or dockless, allowing users to leave them secured anywhere within a service area.

Shared mobility refers to a transportation mode that is accessible to multiple people on an as-needed basis and can apply to bicycles, electric scooters, and automobiles. Shared mobility options allow people to have access to a variety of modes when they need them without incurring the costs associated with ownership and maintenance. In addition to bike-share and scooter-share systems, rideshare companies such as Uber and Lyft are examples of shared mobility options.

Within the Knoxville Regional TPO area, there are a number of shared mobility options available, primarily in Knoxville. Pace is a semi-dockless bike-sharing service operated through an app that requires users to return bikes either at a Pace bike rack or a public rack. SPIN provides the community with dockless scooters that can be used for short trips in certain parts of the city. Similar to other urban areas, shared and micromobility companies are continuously attempting to fill a need in the transportation market within the Knoxville region.

Connected and Autonomous Vehicles

Connected and Autonomous Vehicle (CAV) technologies gather information about roadway and travel conditions and may allow vehicles to eventually operate independently of drivers. Connected vehicles use technologies such as wireless communications, smart infrastructure, GPS navigation, and others to create platoons of automobiles and trucks. In addition, connected vehicles can provide information back to agencies (e.g., TMCs) to aid in the active management of the transportation system. Autonomous vehicles use similar information and communication technologies to support driverless or semi-driverless travel. There are various levels of autonomous vehicles, with assisted braking or steering functions already incorporated into many vehicle designs today.

Fully connected and autonomous vehicles (CAVs) will one day become a reality on our roadways. Even today, most newer cars are operating with some level of automation through features such as driver assistance, automated braking, and dynamic cruise control. It is important that, as a planning body, we remain proactive in understanding the potential issues and benefits that come from the implementation of CAVs on our roadways, allowing our region to more fully reap the benefits of this emerging technology.

Public vs. Private Responsibilities

Private industry will likely remain a key driver in CAV adoption and innovation, with public agencies taking a role in identifying barriers for CAV implementation and fostering opportunities for public/private partnerships. The primary role of local governments in our area will unlikely change significantly throughout CAV adoption, with the main challenges being the regulatory novelty of CAVs and the uncertainties associated with the emerging technology. USDOT recommends that local governments prepare for automated vehicles through the following measures:

- Review laws and regulations that might create barriers to testing and deploying automated vehicles.
- Adapt policies and procedures to account for automated vehicles.
- Assess infrastructure elements, such as road markings and signage, so that they are conducive to the operation of CAVs.
- Stay abreast of technological developments as CAV technology progresses.
- Understand the near-term opportunities that automation may provide.

- Consider how land use, including curb space, might be affected.
- Facilitate safe testing and operation of CAVs on local streets.
- Engage with citizens throughout the CAV implementation process

Phases of CAV Adoption

Given the novelty of CAV technology at this point, and the costs associated with infrastructure improvements to fully implement CAVs, a phased approach is the most rational and likely approach. This would also help to reduce sharp and significant impacts to industries, allowing for greater time to adjust to new operating environments and technological developments. The determining factor for each phase is the level of automation available in most vehicles operating on the roadway at the time. These phases have no clearly defined beginning and end, instead they represent a slow progression through the various phases with considerable overlap. The four phases discussed are based off of the Society of Automotive Engineers' (SAE) levels of autonomous vehicles, ranging from driver assistance technology in Phase 1, to full automation in Phase 4.

Potential Issues and Benefits Surrounding Automated Vehicle Technology

Connected and Autonomous Vehicles (CAVs) present a host of potential issues and benefits that must be taken into consideration at all phases of development and integration.

Potential Issues

Issues and negative impacts associated with CAV integration primarily center around safety concerns during the initial development and integration phases, as well as financial impacts. Perhaps the two major issues surrounding implementation of CAVs are the significant costs associated with maintenance and infrastructure upgrades necessary for full implementation, as well as the potential budget shortfalls and industry shakeups associated with their displacement of current modes of transport. Widespread CAV adoption could lead to urban areas within our region seeing shrinking revenues from parking fees, licensing fees, and traffic fines, as well as reductions in gas taxes.

Potential Benefits

While there potentially are, and likely will remain, issues with CAV adoption and integration, the probable benefits to the region and transportation network are numerous and substantial. The National Highway Traffic Safety Administration (NHTSA) has highlighted four main areas of potential benefit regarding CAVs: Safety, efficiency, mobility, and economic/societal benefits.

Perhaps the most significant benefits our region might see from widespread CAV implementation are primarily economic and societal. Traffic collisions and their resulting congestion would greatly be reduced with fully autonomous vehicles, significantly improving both quality of life, as well as workplace productivity. A 2010 NHTSA study showed that motor vehicle crashes in that year cost $242 billion in economic activity, including $57.6 billion in lost workplace productivity, and $594 billion due to loss of life and decreased quality of life from injuries.

Full CAV integration also has the potential to greatly increase access to the transportation network as costs are potentially lowered per trip through innovations such as autonomous taxis, ride-share systems, and even leasing/renting vehicles directly from manufacturers. These lower costs would provide benefits in equity as senior citizens, low-income households, and other vulnerable populations have greater access to the economic and quality of life benefits transportation provides.

MOBILITY PLAN 2045

Appendix D
Congestion Management Process

D. CONGESTION MANAGEMENT PROCESS

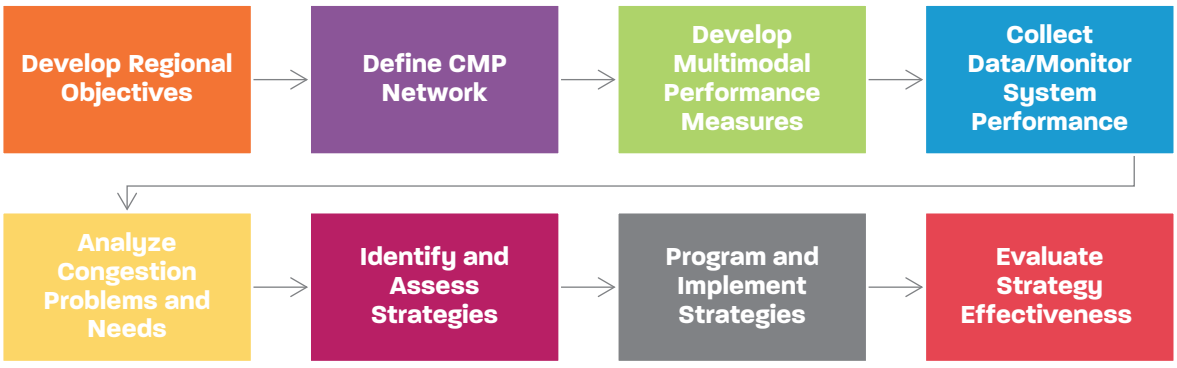
INTRODUCTION

Following enactment of the Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005, a Congestion Management Process (CMP) is required of regional agencies to effectively plan for managing roadway congestion, now and in the future. This data-driven, performance-based approach is required for all metropolitan areas with a population of 200,000 or greater, known as Transportation Management Areas (TMAs). In short, a CMP considers congestion and its causes within a region, then identifies possible remedies in a comprehensive approach.

A CMP is made up of several elements that are performed in a continuous and ongoing process. This process begins with the identification of broad regional objectives that relate to transportation system performance and congestion, which ties back to the FAST Act Planning Factor, "Promote efficient system management and operation." The process then repeats itself as the transportation system is continuously monitored and regional objectives are reassessed. In the Knoxville region, this typically occurs in concert with each 4-year update of the Mobility Plan.

Specific methods and approaches for CMPs are outlined in federal requirements and are left to agencies to develop and integrate in the ways that best fit a specific region. The Federal Highway Administration (FHWA) emphasizes that an effective CMP should identify congested locations and causes of congestion; develop strategies to mitigate congestion along with an evaluation of those potential strategies; propose alternative strategies that best address the causes and impacts of congestion; and track and evaluate the impact of previously implemented CMP strategies. FHWA considers the CMP an 8-step process, as shown below and described in the remainder of this document.

Figure D-1. 8-Step Congestion Management Process



STEP 1: DEVELOP REGIONAL OBJECTIVES

The first step in the CMP is to develop a series of regional objectives that are consistent with the overall goals of the TPO's Mobility Plan. These objectives help to first identify how the TPO wants to address congestion across the region and then establish a data-driven process for doing so. The TPO has eight regional goals that guide its planning processes, three of which directly relate to the CMP. These three goals, outlined below, highlight the desire of the TPO to manage urban congestion by providing more travel options, improving safety for all roadway users, and maximizing the efficiency of the current roadway system.

- More Options – In an effort to reduce the number of single-occupant vehicles (SOVs) on the road and provide options for residents who, by choice or need, do not have access to a vehicle, the TPO strives to improve access to services and employment with transit, bicycle, and pedestrian projects.
- Safety and Security – Knowing that safety incidents are not only a threat to our quality of life, but are also a source of nonrecurring congestion, the TPO is committed to reducing rates of crashes with serious injuries and fatalities, and reducing the region's vulnerability to incidents and threats.
- Congestion Reduction – With the diminishing financial and physical feasibility of continuously widening roadways to address congestion, the TPO prioritizes ways to use our system more efficiently through technology like traffic signal coordination, real-time traffic information, and emergency response.

All eight regional goals, including these three, were reviewed and ranked during the first round of public and stakeholder engagement. From that process, it was determined that improving safety and security was ranked as the top priority, providing more options was ranked fourth, and reducing congestion was ranked sixth. To complement these goals, a series of objectives were developed in the 2040 Mobility Plan process and still hold true today. Table D-1 lists the objectives directly supporting the CMP as well as the corresponding performance measures further detailed in Step 3.

Table D-1. Mobility Plan Goals and Related CMP Objectives

FAST ACT PLANNING FACTORS	MOBILITY PLAN GOALS		RELATED CMP OBJECTIVES	CMP PERFORMANCE MEASURES
ACCESSIBILITY AND MOBILITY	More Options	Improve access to services and employment with transit, bicycle and pedestrian projects	▶ Promote projects that improve multimodal connections between existing transit and surrounding communities. ▶ Enhance connections between activity centers through access to transit, pedestrian, and bicycle facilities. ▶ Assist in developing and implementing municipal bicycle and pedestrian plans.	▶ Number of Multimodal Facilities (Sidewalks, Bikeways, and Transit)
SAFETY **SECURITY**	Safety and Security	Reduce rates of crashes with serious injuries and fatalities. Reduce the region's vulnerability to incidents and threats	▶ Work with partners to develop strategic transportation safety plans for the region. ▶ Incorporate safety issues identified in roadway/highway safety plans into the planning process. ▶ Support projects and programs that focus on safety of vulnerable road users in the region, including current presentations to high school drivers' education classes. ▶ Work with partners to integrate complete streets planning that focuses on engineering, education, enforcement, and emergency response.	▶ Total Crashes (2015-2019) ▶ Crash Severity Index
SYSTEM EFFICIENCY	Congestion Reduction	Use our system more efficiently through technology like traffic signal coordination, real-time traffic information, and emergency response vehicles	▶ Employ the Congestion Management Process to identify projects and transportation system management strategies that reduce travel delays. ▶ Promote efforts that encourage transportation alternatives to single-occupancy vehicle travel. ▶ Continue to invest in regional ITS. ▶ Ensure proper consideration of appropriate congestion mitigation strategies in the project development and implementation process. ▶ Work with partners to facilitate coordination of transportation system operations.	▶ V/C Ratio ▶ Level of Travel Time Reliability (LOTTR) ▶ Travel Time Index (TTI) ▶ Bottleneck Density

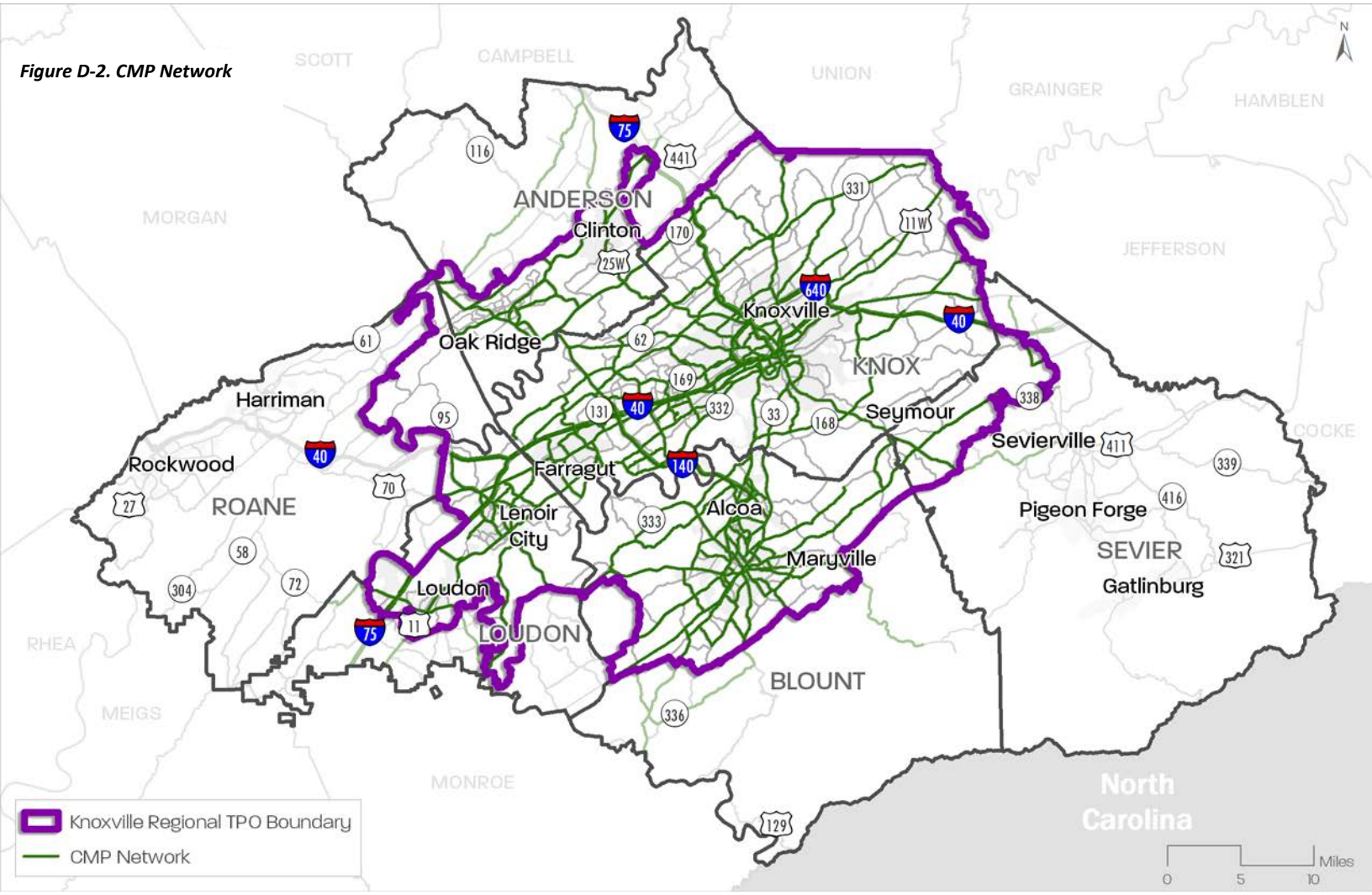
The importance and role of each objective was emphasized throughout the early engagement of CMP stakeholders. The Mobility Plan 2045 update offered a unique chance to coordinate the development of the long range transportation plan, the CMP, and the Regional ITS Architecture and Deployment Plan. Knowing that there was significant overlap between CMP and ITS stakeholders and the objectives of both efforts, the TPO created a single committee to provide input on both. This committee was composed of representatives from police and fire departments, public works and engineering departments, transit agencies, bicycle and pedestrian coordinators, travel demand management (TDM) program administrators, TDOT, and others from the TPO and each of its member jurisdictions.

To initiate CMP development, a series of stakeholder meetings was conducted in July and August of 2020 and was coordinated with the kick-off meeting for the Regional ITS Architecture development. In total, there were 10 separate meetings supporting the CMP effort, organized by geographic area and/or agency type. Due to the COVID-19 pandemic, these meetings were all facilitated virtually. For each meeting, initial data analysis using the TPO's travel demand model and travel time data was presented to highlight existing congestion issues and identify potential opportunities for mitigating congestion without widening the roadways. The data, analysis, and range of congestion-mitigation options explored were discussed in these meetings and are described in more detail throughout this document.

STEP 2: DEFINE CMP NETWORK

The second step of a CMP is to define the network for evaluation. The personal automobile is the predominant mode of transportation in the Knoxville region and the main source of congestion on the region's roadway system. The TPO's regional travel demand model is used throughout the planning process to analyze and illustrate to stakeholders and the public the extent of congestion on the roadway system, which impacts all users. The roadway network included in the model is a solid foundation on which to build the CMP network. It includes much of the federal-aid system – roads functionally classified as collector or higher – and data is consistently available for most of these segments. The detail and geographic boundary of the CMP network are shown in Figure D-2 . In terms of roadway mileage, the CMP network includes just over 1,000 roadway miles, representing approximately 20% of all roadways within the TPO area, the most congested of which are presented in Table D-2 and Table D-4. This network is further broken down into 360 distinct corridors based on geometric design, county boundaries, and logical termini. This process allows the TPO to better align the assessment of congestion issues with how projects are implemented. Though not part of the travel demand model network, the region's multimodal facilities including bikeways, walkways, and transit services, were discussed as part of the CMP development.

Figure D-2. CMP Network

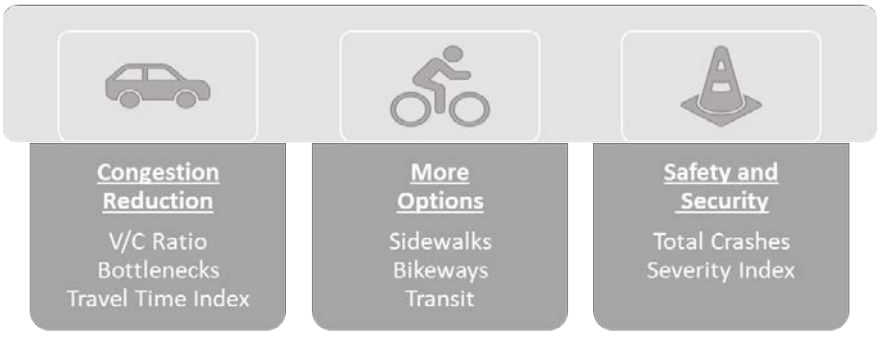


STEP 3: DEVELOP MULTIMODAL PERFORMANCE MEASURES

In tandem with the CMP network identification, a set of multimodal performance measures were also established for use in communicating and discussing regional congestion and its causes. Historically, the CMP has pulled measures from travel demand model outputs, primarily the volume-to-capacity ratio (v/c ratio). As a quantitative measure for how much available roadway capacity is being consumed, this metric is typically converted to a level of service (LOS), which is generally understood by the public and stakeholder groups. In addition to v/c ratios, archived travel time and speed data from INRIX, a traffic data analytics firm, was used to assess the number of times a bottleneck occurred on the corridors that make up the CMP network. The travel time index (TTI) was also obtained for corridors using this data source, which provides a comparison of peak hour travel times to off-peak travel times and is indicative of the intensity of congestion on a roadway segment. All of these metrics align with the CMP objective for reducing congestion.

The above metrics evaluate congestion and its impacts. However, there are other metrics used in the project prioritization process that relate to the specific causes of congestion. More specifically, the number of crashes on corridors and a crash severity index were developed for use in the CMP. These metrics assess potential safety issues that could be sources of nonrecurring congestion and align with the CMP objective related to safety. The presence of multimodal facilities along corridors was used as a performance metric related to the CMP objective of more multimodal options. Knowing that walking and biking trips are typically shorter in length, provision of these facilities can in some cases impact regional congestion caused by commuting. Potentially more likely is that walking and biking trips can reduce congestion by removing short-distance trips from the roadway network. In addition to the measures listed above, which are specific to corridors, there are a number of system-level metrics tracked by the Knoxville region included in Chapter 2 of the Mobility Plan.

Figure D-3. CMP Multimodal Performance Measures for Corridors



STEP 4: COLLECT DATA AND MONITOR SYSTEM PERFORMANCE

Performance measures were selected based on the availability of data and how they align with the TPO's regional Mobility Plan goals and CMP objectives. These metrics were also selected for use in the CMP because it is expected they will continue to be available in the future. Data sources for the performance metrics as well as their availability follow:

- Corridor-level v/c ratios and LOS for base and future horizon years were derived from the travel demand model outputs. This data should be available for use in the CMP with each Mobility Plan update.
- Quantification of bottleneck density and corridor TTI were developed using data from INRIX and the National Performance Management Research Data Set (NPMRDS) made available through the Regional Integrated Transportation Information System (RITIS) platform. This data is currently available for the National Highway System (NHS), although recent data agreements through TDOT have increased the geographic expanse of this data through INRIX.
- Presence of sidewalks, bikeways, greenways, and fixed route transit service along corridors were sourced using road inventory data from TDOT's ETRIMS network as well as GIS files maintained by the TPO and its member jurisdictions.
- The number of crashes, and by proxy the severity index, on each CMP corridor was derived using data from TDOT's ETRIMS database, which utilizes crash data from the statewide TITAN platform.

Figure D-4 through Figure D-8 on the following pages highlight the performance of the CMP network based on these metrics, with the data also presented in Table D-5 later in this document. As shown in Figure D-4, the primary vehicular congestion issues as measured through v/c ratios exist largely within Knox County and urban centers in the surrounding counties. While these metrics are associated with an entire corridor, it is feasible that a high v/c ratio and consequently a lower LOS could be caused by spot congestion issues such as an intersection bottleneck at the corridor termini. In addition, the v/c ratios are based on a daily capacity calculated for a 2018 "Existing + Committed," or E+C, network. This means that the generalized capacities for corridors were increased on roadways where a project is far enough along in the development process to be considered "committed' even if it is not constructed yet. Overall, there are 28

unique corridors that make up approximately 78 miles of the CMP network currently operating at LOS F based on v/c ratios.

Figure D-5 displays the 2020 TTI for the PM peak period. As mentioned, the TTI of a segment is a comparison of travel times along a segment during peak and off-peak periods and is indicative of the intensity of congestion. This data was obtained for the month of February 2020 in order to assess traffic conditions prior to the COVID-19 pandemic. It is available at a much more disaggregate segmentation, but not for all CMP segments. However, the available data indicates that many of the region's most intense peak hour congestion is experienced near major intersections and along the I-40/I-75 corridor. Table D-2 lists the most unreliable five interstate and 10 non-interstate segments in the TPO area based on the level of travel time reliability (LOTTR). The LOTTR value compares the 80th and 50th percentile travel times along a corridor and indicates how dependable or consistent travel is during different time periods from day to day. Higher values represent less predictable travel conditions, and segments with LOTTR values over 1.5 are considered unreliable. The segments in Table D-2 are all considered unreliable. To illustrate which segments impact the most travelers, the segments are ranked and sorted in descending order based on daily traffic volumes. Projects implemented on segments such as these should include elements that will significantly reduce congestion in these areas.

Table D-2. Most Unreliable Interstate and Non-Interstate Segments

	RANK	SEGMENT	LOTTR
INTERSTATE	1	Eastbound I-40/I-75 from I-140/Pellissippi Pkwy to Bridgewater Rd	2.29
	2	Westbound I-40 from 17th St to I-75/I-640	2.66
	3	Westbound I-40/I-75 from I-140/Pellissippi Pkwy to west of Lovell Rd	2.24
	4	Southbound I-75/I-640 from Western Ave to I-40 Interchange	1.68
	5	Eastbound I-75/I-640 west of I-275 Interchange	1.83
NON-INTERSTATE	1	US 129 Bypass from Hall Rd to Bessemer St	1.70
	2	S. Illinois Ave (SR-62) from Lafayette Dr to Edgemoor Rd	1.99
	3	Broadway through I-640 Interchange area	1.57
	4	Henley St from Summit Hill Dr to Blount Ave	1.67
	5	Kingston Pk from Lovell Rd to Pellissippi Pkwy	1.63
	6	Lamar Alexander Pkwy from Old Glory Rd to US 129 Bypass	1.77
	7	Western Ave from Schaad Rd to I-640	1.52
	8	Lamar Alexander Pkwy from Broadway Ave to Washington St	1.57
	9	Cumberland Ave from Alcoa Hwy to Henley St	1.69
	10	Kingston Pk from Papermill Dr to Lyons View Pk	1.71

To complement this data, Figure D-6 shows the density of bottlenecks that occur along each CMP segment. Normalized by segment length, the analysis of bottleneck density on each corridor helps isolate those specific locations or corridors that may have spot congestion issues. A list of major bottlenecks in the TPO area can be found in Appendix C.

Figure D-7 depicts the relative availability of multimodal facilities. The maximum number of multimodal facilities that a corridor can have is three, indicating that the corridor has sidewalks, bikeways, and transit service, and a corridor with a value of zero has none of these facilities. As expected, Knoxville and other urban centers have more multimodal facilities available, which, when accessible and safe, can help mitigate congestion issues locally. Figure D-8 displays the crash severity index for all CMP corridors, which is calculated by weighting the number of fatalities and serious injuries along a corridor using five years of data. The severity index can be used to indicate which facilities have a higher proportion of crashes resulting in fatalities and injuries. A higher index value indicates that a corridor tends to have more severe crashes compared to others in the region, which can be seen on many of the region's more rural facilities.

Figure D-4. 2018 Volume-to-Capacity Ratios

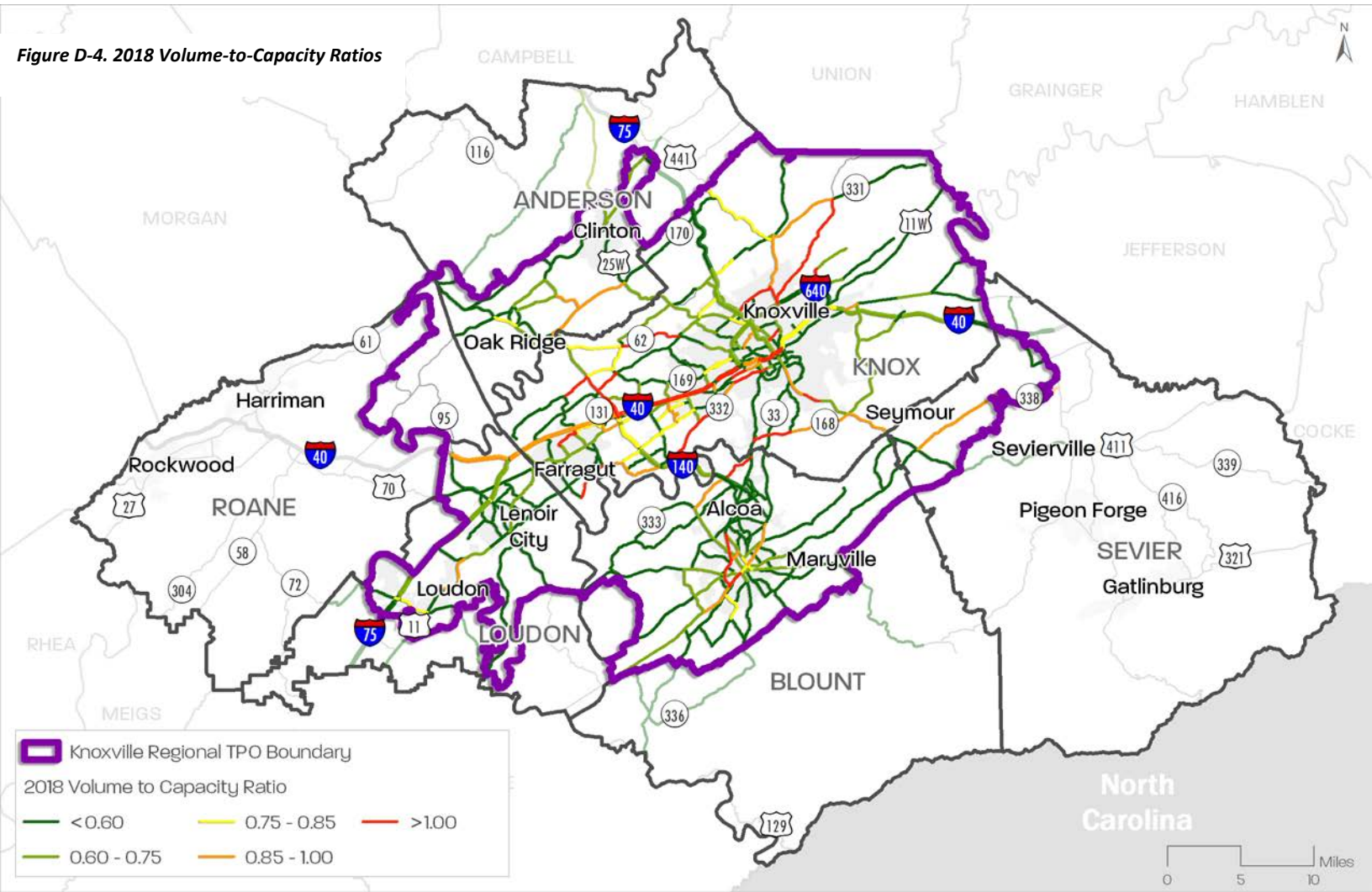


Figure D-5. 2020 Travel Time Index

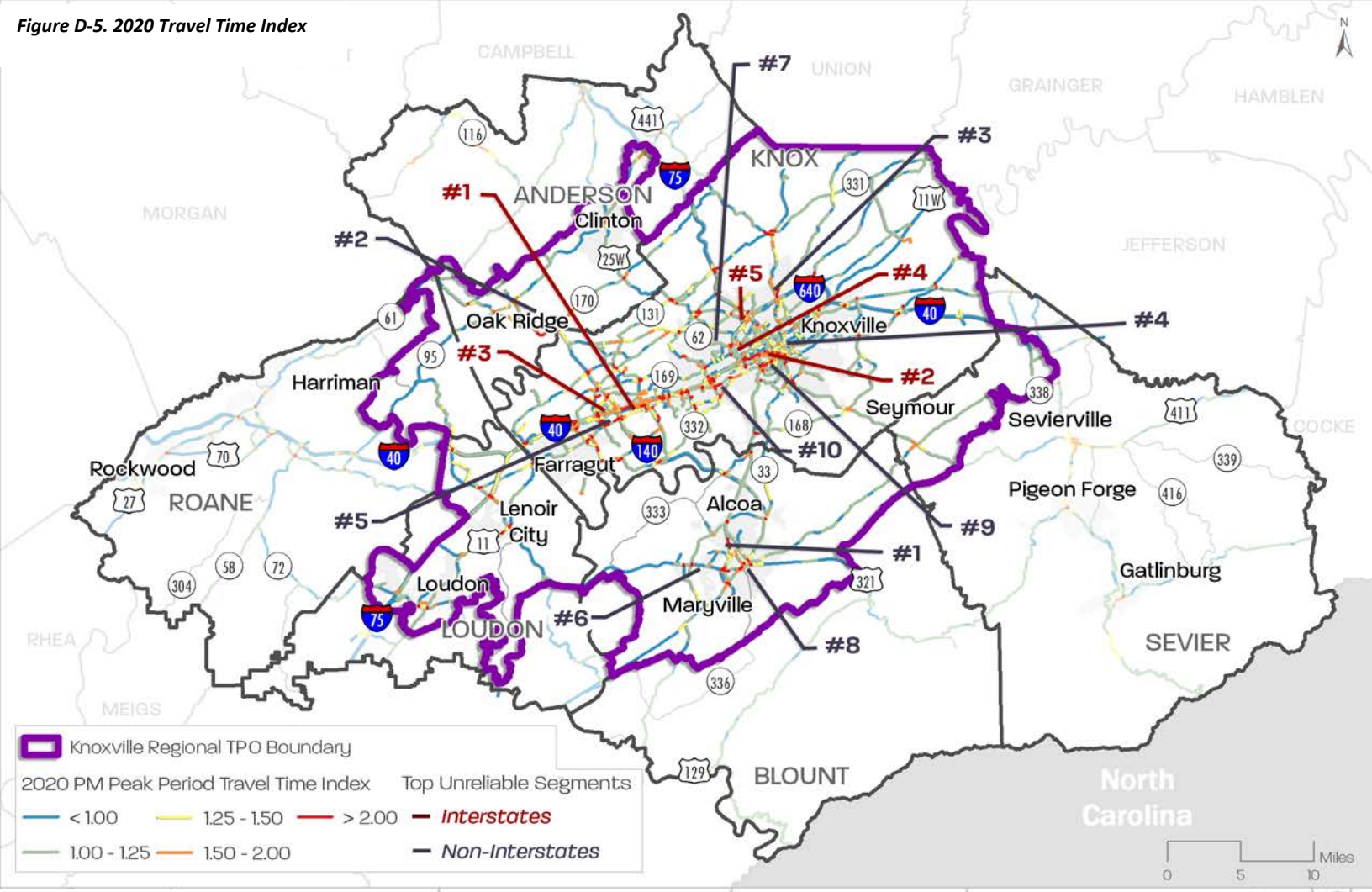


Figure D-6. 2018 Bottleneck Density

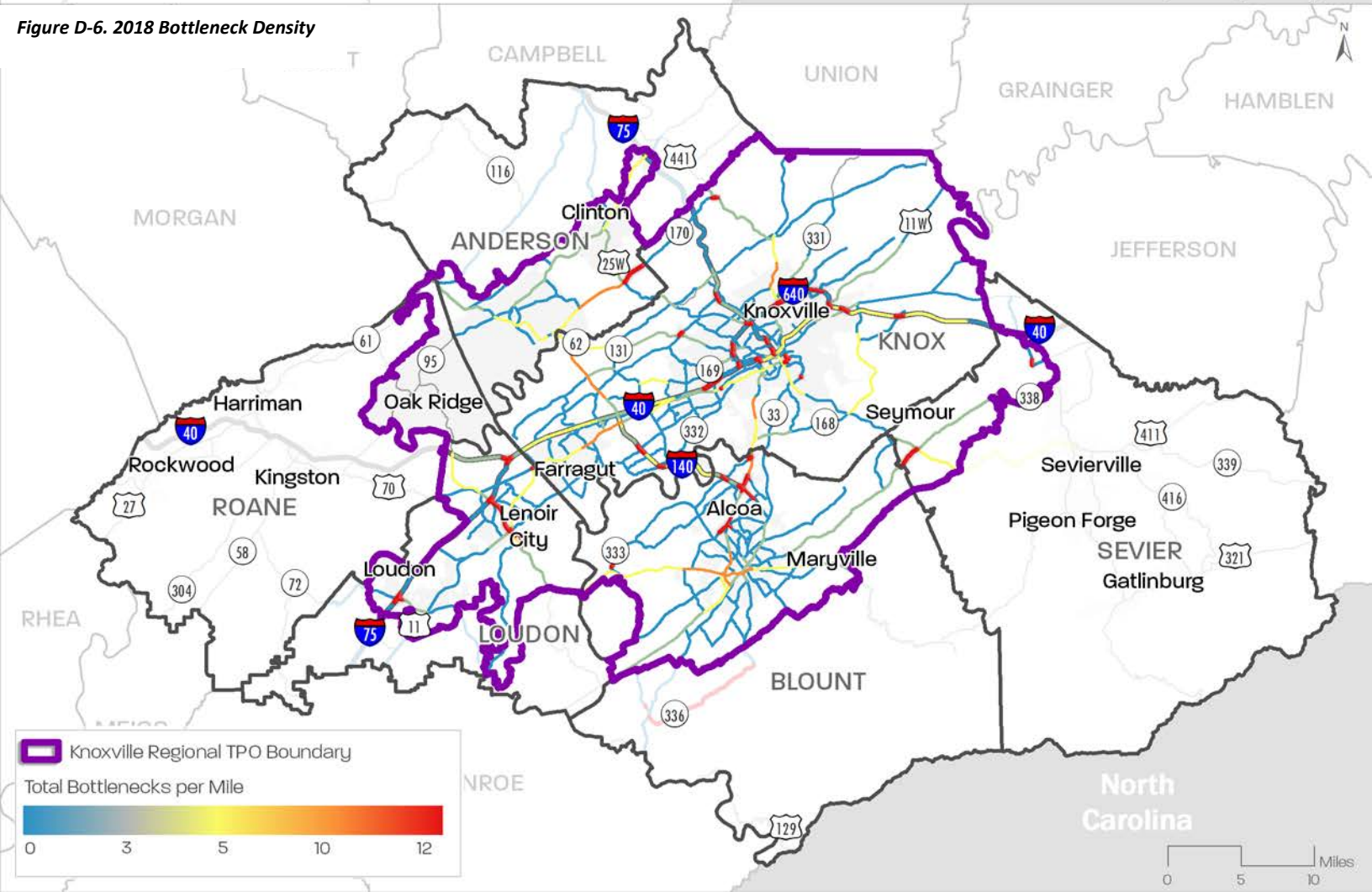


Figure D-7. Multimodal Facilities

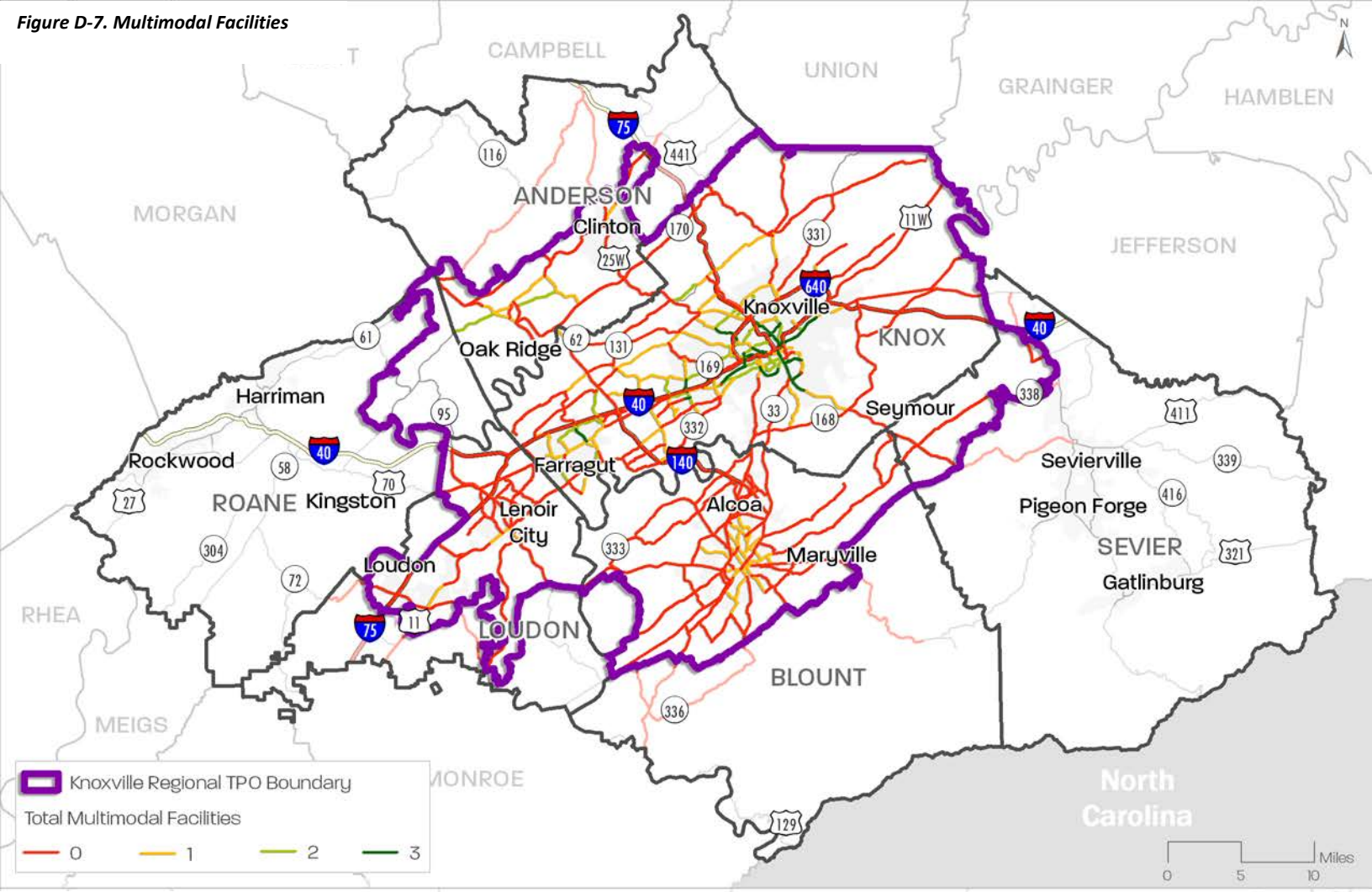
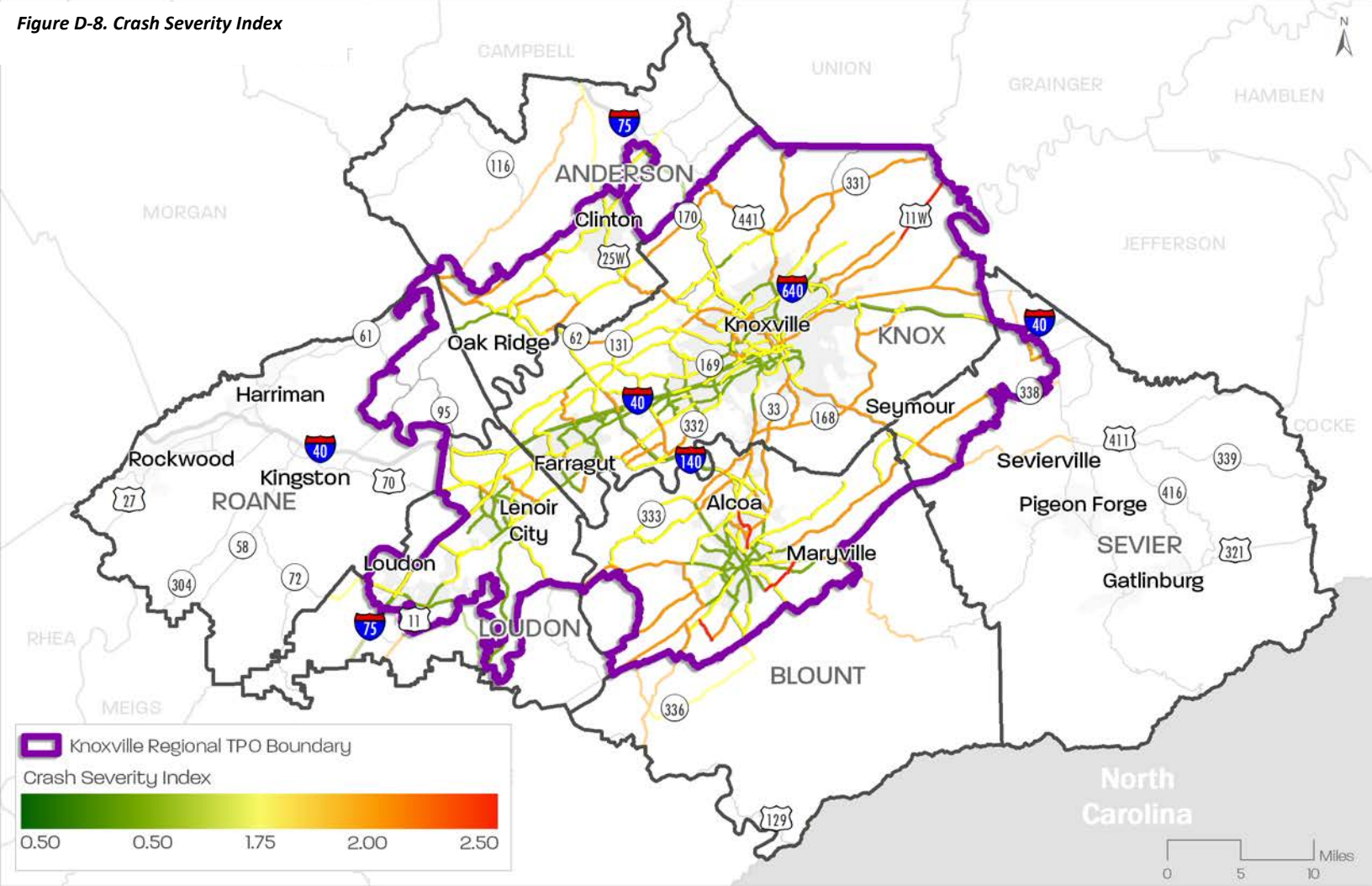


Figure D-8. Crash Severity Index



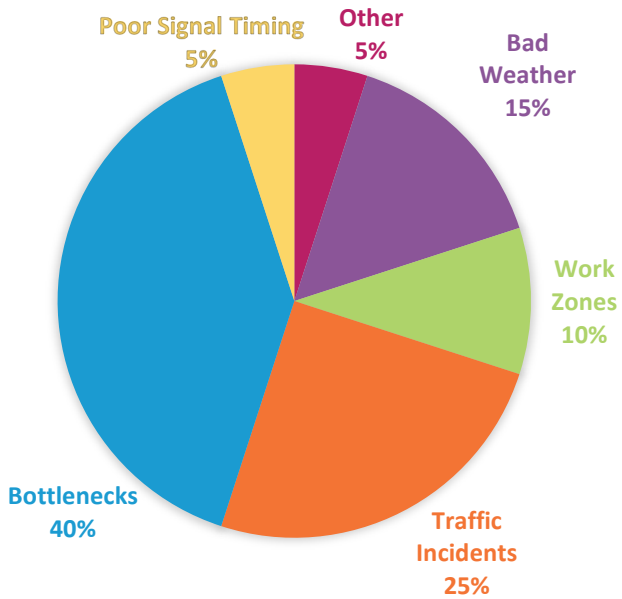
STEP 5: ANALYZE CONGESTION PROBLEMS AND NEEDS

In order to determine appropriate strategies for addressing congestion, it is critical to understand why congestion occurs. There are two primary types of congestion: recurring and non-recurring. Recurring congestion happens almost every day, usually because there are more vehicles on a roadway than it can accommodate. This leads to delays for drivers, which are generally experienced during peak hours of the day. In addition to situations in which demand exceeds capacity, there are geometric or operational issues that can cause recurring congestion at specific locations. One of the most common examples is a bottleneck location where the geometry of a roadway segment causes traffic to slow down. On interstates, these situations are commonly seen at ramps, weaving sections, and lane drops. On non-interstate corridors, recurring congestion can occur at specific intersections or along a corridor where traffic signal timing is not optimized for current traffic patterns. By contrast, non-recurring congestion is unanticipated and does not happen at predictable times. Examples of non-recurring congestion include weather events, construction work zones, special events, and other incidents such as roadway crashes. In all of these cases, the relative demand for roadway capacity increases abruptly and oftentime unexpectedly. According to FHWA, non-recurring congestion accounts for approximately half of roadway congestion experienced by drivers.

The interviews with CMP stakeholders allowed for the identification of congestion issues in the region, discussion of their causes, and how they are currently being mitigated or could be mitigated. The causes of congestion can be generally grouped into the following categories:

- **Over-Capacity Facilities** – One of the overarching themes throughout stakeholder interviews was that many of the region's arterials and collectors are 2-lane roadways that carry more traffic than was ever intended with

Figure D-9. FHWA Causes of Congestion



their original design. This issue was identified in multiple locations across the region and includes corridors such as Tazewell Pike, Cedar Lane, Vanosdale Road, Boyds Creek Highway, Oak Ridge Highway, and many others. In many instances, stakeholders identified the need for additional turn lanes along these corridors. This type of improvement would prevent left-turning vehicles from stopping the flow of through traffic, ultimately helping the corridors operate more efficiently.

- **School Traffic** – Particulary in Knox County where population density is the highest, school-related traffic causes congestion issues on some of the County's major roadways. In many instances, schools are located on roadways that also serve as major commuting routes. Additionally, there are a number of school campuses with multiple schools, which intensifies school traffic to those sites. Stakeholders thought that enabling more students to bike and walk to school could be an effective approach to reducing vehicular traffic in and around schools. Specific locations of school-related congestion mentioned in stakeholder interviews include, but are not limited to roadways near the Hardin Valley Elementary/Middle/Academy campus, Rocky Hill Elementary, West Hills Elementary, and the Farragut Middle/High School campus.
- **Lack of Bicycle and Pedestrian Infrastructure** – As documented in the Mobility Plan and in Figure D-7, there is an ongoing need to provide more bicycle and pedestrian infrastructure in the TPO area. To address regional congestion issues, key infrastructure gaps and intersection accommodations along major corridors need to be addressed to make biking and walking safe options for commute trips for workers as well as school trips for students. Stakeholders mentioned multiple congested corridors where bicycle and pedstrian improvements could potentially reduce vehicular trips including, but not limited to, Chapman Highway, Middlebrook Pike, and Broadway in Knoxville.
- **Lack of Regional Transit Service** – Many people commute across county lines for employment in the region. There is currently no regional transit service that could facilitate these trips, though there have been discussions in the past regarding the need and desire for this commuting option. More specifically, stakeholders identified the need for regional transit service between Farragut and downtown Knoxville as well as between other employment and residential centers. The primary barrier to providing this congestion-management strategy is availability of local funding.

- **Freight Traffic** – With many ridegelines in the region, truck traffic can be a significant cause of congestion as the large vehicles struggle to maintain speed when climbing steep slopes. This is particularly an issue of concern on the many 2-lane roadways throughout the region. CMP stakeholders identified a number of locations where truck climbing lanes could be constructed or extended to provide passing opportunities for passenger traffic. Such locations include SR 2 (Lee Highway) in Loudon County and I-40/I-75 between Watt Road to Campbell Station Road.

These issues summarize CMP stakeholder input collected through the process, which is documented at the conclusion of this appendix. Specific locations mentioned during the interviews were cross-referenced with the performance measure data presented in Step 7. The public was also engaged as part of the larger Mobility Plan effort and asked to pinpoint congestion issues in the region. Through those efforts, there were 24 congestion issues identified, with 22 of those located on the CMP network.

STEP 6: IDENTIFY AND ASSESS STRATEGIES

The purpose of the CMP is to first assess congestion issues in the region and then identify mitigation strategies with an emphasis on multimodal, operational, and demand management improvements. The Knoxville Regional TPO has identified a number of strategies that provide a toolbox for mitigating roadway congestion without widening, as detailed below. However, population growth and development patterns can, in some cases, necessitate the widening of roadways. In those instances, complementary strategies must be employed to preserve capacity for SOVs as required by regulations governing nonattainment areas for ozone.

- **Travel Demand Management (TDM)** – TDM strategies are employed in urban areas as a means of redistributing demand on the transportation system either in space or time. To reduce demand on the system, typically during peak commuting hours, TDM strategies shift the way people make trips and when those trips are made, and reduce the number of trips, effectively preserving the capacity of the system. Common TDM strategies include the promotion of commute alternatives programs, telecommuting options, innovative parking management, flexible work hours, vanpool and carpool programs, multimodal trip-making, employer incentive programs, land use strategies, congestion pricing, and even ridesharing and micromobility. Some strategies are applied regionally while others can be targeted to more specific geographies, facilities, or even specific sites. Many of the TPO's TDM strategies focus on trip reduction strategies across the region.

  Regional CMP Goals
  - Safety and Security
  - More Options
  - Congestion Reduction

  Anticipated Benefits
  - Reduced SOV Trips
  - Reduced Peak Travel Times
  - Improved Reliability
  - Reduced Crashes

  Implementation Cost
  - Low

- **Intelligent Transportation Systems (ITS)** – ITS improves transportation safety and mobility using advanced communications technologies across transportation infrastructure and within vehicles. These systems are becoming increasingly useful for congestion avoidance and mitigation as travel information and congestion data become more readily available and accessible to drivers and agencies. Common examples of ITS technologies include in-vehicle navigation systems,

  Regional CMP Goals
  - Safety and Security
  - Congestion Reduction

  Anticipated Benefits
  - Reduced Peak Travel Times
  - Improved Reliability
  - Reduced Crashes

  Implementation Cost
  - Moderate

variable message signs, CCTV cameras, road and weather information systems, and more dynamic management applications.

- **Transportation System Management and Operations (TSM&O)** – TSM&O is a larger umbrella of active traffic management strategies under which TDM and ITS efforts often fall. These strategies are designed to optimize the operations of existing transportation systems by reducing congestion, improving travel time reliability, and improving safety. Typically TSM&O refers to the process of collecting data on vehicular travel and congested conditions, detecting and mitigating traffic issues with technology and changes to traffic operations, and then synthesizing and relaying that information to the motoring public when needed. TSM&O programs and solutions can be focused at varying geographic scales, from regions, to corridors, and even single intersections. Examples of system-wide TSM&O strategies could include regional bike share programs or congestion pricing, for instance, while facility-specific TSM&O strategies could include corridor transit service improvements or coordination of signalized intersections.

  Regional CMP Goals
  - Safety and Security
  - Congestion Reduction

  Anticipated Benefits
  - Reduced SOV Trips
  - Reduced Peak Travel Times
  - Improved Reliability
  - Reduced Crashes

  Implementation Cost
  - Moderate

- **Public Transit Service Improvements** – Improving the operation of and accessibility to transit service across the region can be an effective way to increase the capacity of the roadway system. Transit must be accessible, convenient, and attractive in order for it to compete with the personal vehicle as a mode choice. Reducing the barriers to taking transit could include improvements such as expanded service areas/routes, increased frequencies on high-demand routes, transit signal priority, improved pedestrian networks, better amenities along routes like shelters and benches, and compatible fare payment methods across services.

  Regional CMP Goals
  - More Options
  - Congestion Reduction

  Anticipated Benefits
  - Reduced SOV Trips
  - Increased Transit Ridership
  - Improved Transit Reliability

  Implementation Cost
  - Moderate/High

- **Walkway and Bikeway Improvements** – While the effective impact on congestion may be relatively small, improving pedestrian and bicycle infrastructure can encourage short-distance trips via active modes, increase accessibility to and from transit service, and remove vehicles from the road. To capitalize on the potential for

  Regional CMP Goals
  - More Options
  - Congestion Reduction

  Anticipated Benefits
  - Reduced SOV Trips
  - Increased Transit Ridership

  Implementation Cost
  - Low/Moderate

reducing SOV trips, improvements to walkways and bikeways should focus on filling gaps on local networks, connecting major trip origins and destinations (e.g., residential areas, employment centers, tourist attractions, etc.), improving the quality and safety of existing facilities, and increasing access to fixed route transit stops.

- **Additional Roadway Capacity** – As mentioned previously, adding capacity on the roadway system is not a preferred alternative for addressing congestion but is sometimes necessary. In order to minimize the impact of increased SOV trips on the region's roadway system, additional capacity is preferably added through projects such as arterial intersection improvements, signal timing and coordination along a corridor, turn lanes at key intersections, center turn lanes along corridors, interstate managed lanes such as High-Occupancy Vehicle (HOV) lanes, and new roadway connections. The "last resort" for addressing congestion would be providing additional, unmanaged through lanes along a corridor.

Regional CMP Goals
- Congestion Reduction

Anticipated Benefits
- Reduced Peak Travel Times
- Improved Reliability

Implementation Cost
- Moderate/High

While the effectiveness of these strategies will vary by corridor, national research and best practices underscore their ability to mitigate congestion. For example, US DOT reports that road and weather information systems can return a benefit-cost ratio on the order of 10:1, adaptive signal control can improve travel times up to 11%, and traffic incident management can reduce incident duration between 30% and 40%.

There are several tools available to the TPO for assessing the need for and efficacy of these strategies within the Knoxville region. The most readily available tool is the regional travel demand model, which can assess system- and link-level changes to vehicular delay, which directly relates back to the CMP performance measure of v/c ratio and indirectly relates to the CMP performance measures related to bottleneck density and travel time reliability. However, the sensitivity of the current model for the Knoxville region limits the ability to test congestion mitigation strategies beyond additional roadway capacity, such as policy and operational improvements. The current travel demand model does provide the TPO with the capability to assess the impact of system-level trip reductions. While currently used to evaluate both short- and long-term impacts of the COVID-19 pandemic on travel behavior, these tools also serve as a surrogate for evaluating system operation with reduced trip-making from some of the CMP

strategies mentioned above such as a telecommuting TDM strategy or larger share of alternative mode users for example.

The new capabilities of the regional travel demand model were used to assess the short-term and long-term implications of changing travel trends on the region's most unreliable, high-volume corridors. Pulling from the analysis presented in Table D-2, the top five interstate and non-interstate segments based on LOTTR and traffic volumes were specifically coded into the model to compare metrics like Vehicle Miles Traveled (VMT), Vehicle Hours Traveled (VHT), and v/c ratios across different scenarios. More detail on the scenario parameters is presented in the model documentation, but the system-level adjustments capture the effects of remote work capabilities and adoption, how school-age children travel to/from school, decreased enrollment and remote learning for university students, increases in e-commerce and delivery services, change in tourism travel, and tradeoffs between long-haul and local freight deliveries. These adjustments were evaluated in a 2026 model run to evaluate relatively short-term impacts as well as a 2045 model run to evaluate long-term impacts.

As shown in Table D-3, the VMT and VHT decreases are similar on both interstate and non-interstate corridors. VMT on these currently unreliable corridors would decrease by approximately 4% and 8% in the short-term and long-term, respectively. Correspondingly, VHT would decrease by almost 7% in the short-term and approximately 14% in the long-term. The model outputs also provide the ability to look at the resulting v/c ratios for these corridors. With changes in travel behavior potentially reducing the number of vehicles on the roadway, the v/c ratios of these unreliable corridors would likely drop in both scenarios. The eastbound interstate corridor along I-75/640 just west of the I-275 Interchange and the non-interstate corridor of Broadway through the I-640 interchange area are expected to see the largest improvement in v/c ratios resulting in v/c ratios of 0.7 and 0.6, respectively, through 2045. While primarily an exploratory exercise, these results help to assess the effectiveness of trip-reducing CMP strategies and ultimately inform the prioritization of projects that can address reliability issues on key interstate and non-interstate corridors in the region.

Table D-3. Model Outputs from Travel Trend Scenarios

	UNRELIABLE CORRIDOR	2026 E+C	2026 COVID	2045 E+C	2045 COVID	2026 CHANGE	2045 CHANGE
VMT	Top 5 Interstate Corridors	734,638	706,902	789,694	726,734	-3.8%	-8.0%
	Top 5 Non-Interstate Corridors	284,178	273,770	307,729	283,439	-3.7%	-7.9%
VHT	Top 5 Interstate Corridors	13,059	12,238	14,764	12,726	-6.3%	-13.8%
	Top 5 Non-Interstate Corridors	10,884	10,142	12,609	10,714	-6.8%	-15.0%
V/C RATIO	*Interstate #1* - I-40/75 EB from I-140 to Bridgewater Rd	0.99	0.94	1.05	0.95	-5.1%	-9.5%
	Interstate #2 - I-40 WB from 17th St to I-75/640	0.96	0.91	1.01	0.91	-5.2%	-9.9%
	Interstate #3 - I-40/75 WB from I-140 to west of Lovell Rd	0.82	0.80	0.89	0.83	-2.4%	-6.7%
	Interstate #4 - I-75/640 SB from Western Ave to I-40	0.65	0.61	0.68	0.62	-6.2%	-8.8%
	Interstate #5- I-75/640 EB west of I-275 Interchange	0.75	0.70	0.82	0.70	-6.7%	-14.6%
	Non-Interstate #1 - US 129 Bypass from Hall Rd to Bessemer St	0.74	0.70	0.80	0.73	-5.4%	-8.8%
	Non-Interstate #2 - S. Illinois Ave from Lafayette Dr to Edgemoor Rd	0.57	0.54	0.59	0.54	-5.3%	-8.5%
	Non-Interstate #3 - Broadway through the I-640 Interchange area	0.63	0.59	0.67	0.60	-6.3%	-10.4%
	Non-Interstate #4 - Henley St from Summit Hill Dr to Blount Ave	0.84	0.82	0.87	0.82	-2.4%	-5.7%
	Non-Interstate #5 - Kingston Pk from Lovell Rd to Pellissippi Pkwy	0.71	0.69	0.75	0.70	-2.8%	-6.7%

On a project level, corridor and intersection modeling tools can provide more detailed estimates of expected delay reductions gained through improvements such as turn lanes, optimized signal timing, and traffic signal coordination. Furthermore, before and after studies could be explored as ways to evaluate the congestion reduction potential of CMP strategies implemented locally. Data collection for these efforts could include traditional travel time runs, trip generation counts at development driveways, transit ridership and on-board surveys, and analysis of passive data such as the NPMRDS.

STEP 7: PROGRAM AND IMPLEMENT STRATEGIES

The implementation of CMP strategies is a critical element of the metropolitan transportation planning process. It directly folds into the TPO's more comprehensive Mobility Plan and subsequent Transportation Improvement Programs (TIPs). Through these efforts, the CMP provides a foundation for assessing regional congestion issues, identifying potential mitigation strategies, and tracking the improvement in congestion with each plan update, all of which is based in data and stakeholder engagement. In a similar fashion, the CMP is founded on the regional goals and objectives outlined in the Mobility Plan and integrated into the broader stakeholder and public outreach efforts. In this way, the CMP does not supersede other elements of the planning process but rather complements them.

The Mobility Plan and the TIP are the primary methods for funding CMP strategies. The most direct link between all of these is through the project selection process described in the Mobility Plan. In assessing which projects should be prioritized for funding, projects that include CMP strategies are ranked higher than projects that do not. Further, all the performance metrics used in the CMP are direct inputs for the project selection process, prioritizing strategies that address congestion issues and causes through operational and multimodal improvements. As mentioned previously, the CMP was also coordinated with the development of the TPO's Regional ITS Architecture and Deployment Plan. The metrics and data analysis from the CMP were used to prioritize the implementation of ITS strategies across the region where appropriate. These strong linkages ensure that the CMP development is a process that moves the needle for mitigating congestion issues in the TPO area.

To summarize the data-driven CMP, Table D-4 highlights the priority corridors in the TPO area based on the performance data described in Step 4. More specifically, this table identifies the region's top congested corridors based on the 2018 and 2045 v/c ratios, the AM and PM peak period TTI, and the density of bottlenecks along the corridor. As shown, the majority of these priority corridors are located in Knox and Blount Counties and are located on the arterial roadway network. Similar to the least reliable corridors described in Table D-2 and as part of the process described in Step 8, the TPO can continue to monitor the performance of these priority corridors to ensure projects implemented in these areas have congestion-mitigation elements.

Table D-4.Priority CMP Corridors

METRIC	CORRIDOR	COUNTY	VALUE
2018 V/C	Tazewell Pk from Jacksboro Pk to Old Broadway	Knox	1.64
	Sutherland Ave from Hollywood Rd to Liberty St	Knox	1.38
	Broadway Ave from US 129 to Lamar Alexander Pkwy	Blount	1.37
	Papermill Dr from Kingston Pk to Weisgarber Rd	Knox	1.30
	Broadway from Cedar Ln to I-640 W Ramps	Knox	1.26
2045 V/C	Tazewell Pk from Jacksboro Pk to Old Broadway	Knox	1.82
	Broadway Ave from US 129 to Lamar Alexander Pkwy	Blount	1.49
	John Sevier Hwy from Martin Mill Pk to Alcoa Hwy	Knox	1.47
	US 129 Bypass from Louisville Rd to Hunt Rd	Blount	1.46
	Washington Pk from I-640 WB Ramps to Murphy Rd	Knox	1.44
AM TTI	Vanosdale Rd from Kingston Pk to Middlebrook Pk	Knox	1.99
	Everett High Rd from Sevierville Rd to Lincoln Rd	Blount	1.89
	Emory Rd from Maynardville Pk to Norris Fwy	Knox	1.84
	US 321 from I-75 NB Ramps to I-75 SB Ramps	Loudon	1.77
	Edgemoor Rd from Melton Lake Rd to Clinton Hwy	Anderson	1.66
PM TTI	Vanosdale Rd from Kingston Pk to Middlebrook Pk	Knox	2.13
	US 321 from I-75 NB Ramps to I-75 SB Ramps	Loudon	2.12
	Emory Rd from Maynardville Pk to Norris Fwy	Knox	1.96
	Millertown Pk from I-640 W Ramps to Kinzel Way	Knox	1.93
	Emory Rd from Dry Gap Pk to I-75N Ramps	Knox	1.93
BOTTLENECK DENSITY	Cumberland Ave from Alcoa Hwy Ramps to Volunteer Blvd	Knox	15.77
	Lamar Alexander Pkwy from Broadway Ave to Washington St	Blount	12.32
	US 321 from US 11 to I-75 NB Ramps	Loudon	12.21
	Cumberland Ave from Volunteer Blvd to 17th St	Knox	12.10
	Foothills Mall Dr from US 321 to US 129	Blount	9.79

Table D-5 documents congestion issues and potential causes for the entire CMP network. Corridors that reach a v/c ratio of 0.85 by 2045 are identified and highlighted in red text in this table. Figure D-10 displays these congested corridors based on the horizon in which the corridor crosses the 0.85 threshold and corresponds with the corridor IDs in Table D-5. The prefixes to the corridor IDs correspond to the county in which the corridor is located. In addition, corridors with peak hour travel time indices over 1.5 as well as corridors with more than two bottlenecks per mile are also denoted with red text in Table D-5 as they could indicate spot congestion along the corridors. Travel time indices denoted with an asterisk are sourced using data from Mobility Plan 2040 as current data was not available.

Finally, Table D-5 documents all identified solutions described in Step 6 that are part of the fiscally constrained Mobility Plan 2045. As shown, there are 87 projects that are anticipated to help mitigate

congestion on CMP corridors and selected for inclusion within the fiscally constrained Mobility Plan. Of these projects, only 24 include major roadway capacity additions along a corridor. These roadway capacity additions are listed in Table D-6, which includes the justification for the improvements and enumerates the additional measures taken to preserve the roadway capacity long term.

Figure D-10. Congested Corridors

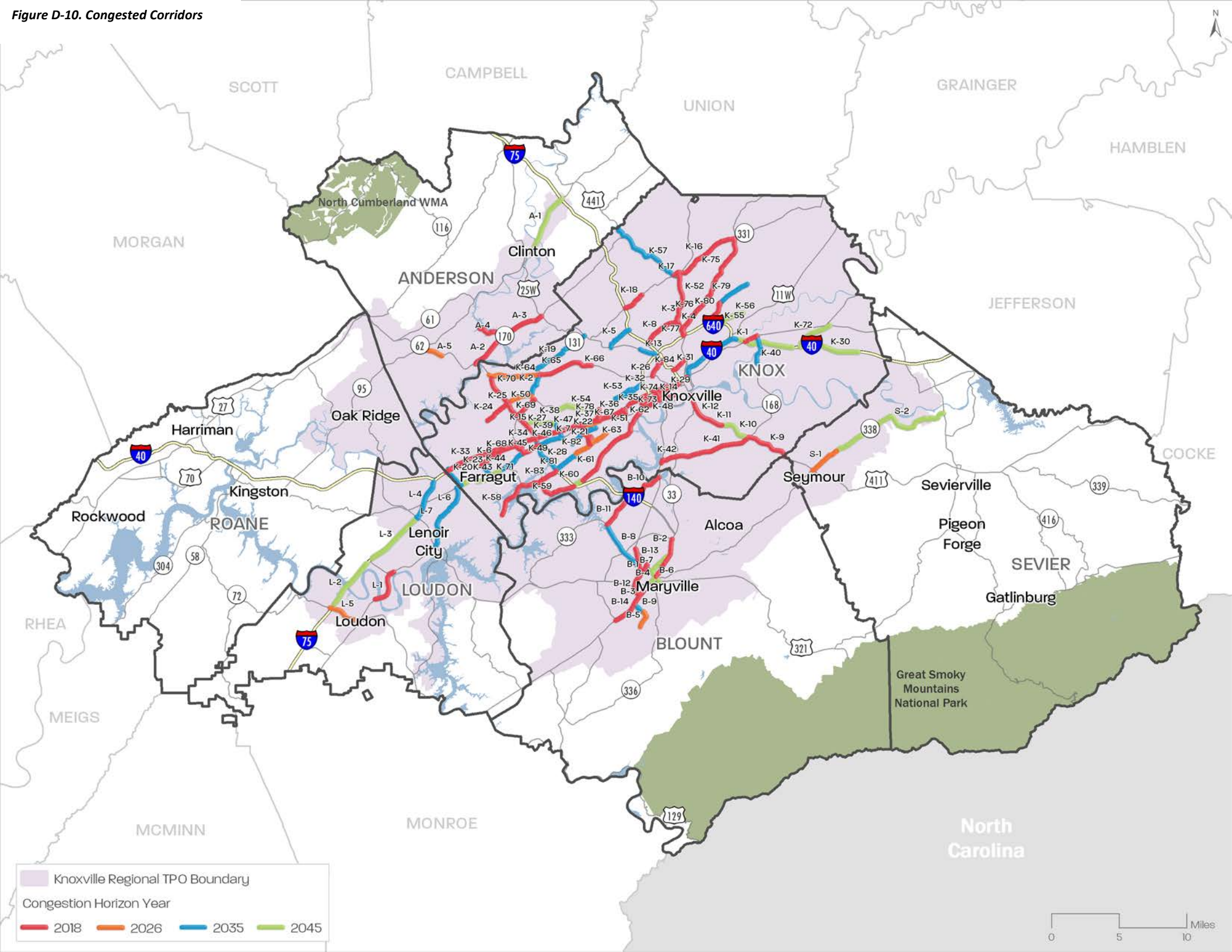


Table D-5. CMP Network Performance

ROUTE	CORRIDOR LIMITS	CAPACITY	2018 V/C	2026 V/C	2035 V/C	2045 V/C	CONGESTED CORRIDOR ID	2020 TRAVEL TIME INDEX (AM/PM)	BOTTLENECKS PER MILE	CRASH SEVERITY INDEX	NUMBER OF MULTIMODAL FACILITY TYPES	PROPOSED CMP STRATEGIES	MOBILITY PLAN PROJECT ID
ANDERSON COUNTY													
CHARLES G. SEIVERS BLVD	JD Yarnell Ln - I-75	34,500	0.76	0.77	0.79	0.85	A-1	1.15 / 1.16	0.7	1.83	0	ITS/Operational	19-101
	SR 9 - JD Yarnell Ln	34,500	0.67	0.67	0.68	0.72		1.14 / 1.27	1.1	1.72	1		
CLINCH AVE	Edgemoor Rd - SR 61	35,700	0.51	0.52	0.53	0.55		1.13 / 1.13	0.7	1.95	0		
DUTCH VALLEY RD/FROST BOTTOM RD	US 25 - SR 62	13,520	0.13	0.13	0.13	0.14		1.02 / 1.02	0.0	2.34	0		
EDGEMOOR RD	SR 62 - Melton Lake Rd	16,900	0.89	0.95	1.01	1.08	A-2	1.17 / 1.48	1.6	2.11	0	Bike/Ped Roadway Capacity	09-101a
	Melton Lake Rd - Clinton Hwy	16,900	0.90	0.92	0.94	0.99	A-3	1.66 / 1.57	2.2	1.92	0	Bike/Ped Roadway Capacity	09-101b
EMORY VALLEY RD	Lafayette Ave - Melton Lake Rd	15,600	0.62	0.64	0.66	0.68		1.25 / 1.25*	0.0	2.01	2	ITS/Operational	19-100; 13-101; 17-101
I-75	SR 61 - Knox County Line	76,500	0.51	0.53	0.55	0.60		0.92 / 0.95	0.1	1.65	0	ITS/Operational	19-101
LAFAYETTE AVE	Oak Ridge Turnpike - Illinois Ave	32,900	0.57	0.58	0.59	0.61		1.36 / 1.48	0.0	1.82	0	ITS/Operational Bike/Ped	17-101; 21-100; 19-100
MAIN ST	I-75 - SR 61	13,520	0.71	0.71	0.72	0.78		1.07 / 1.09	0.1	1.82	0		
MELTON LAKE RD	Emory Valley Rd - Edgemoor Rd	12,480	0.93	0.96	0.99	1.02	A-4	1.14 / 1.41*	0.0	1.86	1	ITS/Operational	13-101
	Oak Ridge Turnpike - Emory Valley Rd	12,480	0.61	0.61	0.63	0.64		1.13 / 1.82*	0.0	1.82	1	ITS/Operational	13-101
N. ILLINOIS AVE	Oak Ridge Turnpike - W. Outer Dr	35,700	0.52	0.53	0.55	0.57		1.33 / 1.26	0.9	1.86	1	ITS/Operational	19-100
NORRIS FWY	I-75 - Norris Fwy	35,700	0.58	0.60	0.62	0.67		1.09 / 1.16	0.0	1.90	0	ITS/Operational	19-101
OAK RIDGE TURNPIKE	Roane County Line - Illinois Ave	35,700	0.56	0.59	0.61	0.66		1.06 / 1.03	0.3	1.75	2		
	Illinois Ave - New York Ave	34,500	0.63	0.64	0.66	0.68		1.27 / 1.30	0.0	1.79	1	ITS/Operational	13-802
	New York Ave - Melton Lake Rd	34,500	0.70	0.70	0.71	0.73		1.11 / 1.24	0.7	1.90	1		
RACCOON VALLEY RD	Clinton Hwy - Knox County Line	13,520	0.33	0.35	0.38	0.43		1.04 / 1.00	0.0	2.11	0		
RUTGERS AVE	Oak Ridge Turnpike - Illinois Ave	32,900	0.31	0.33	0.34	0.36		--	1.0	1.80	0		
S. ILLINOIS AVE	Knox County Line - Bethel Valley Rd	61,800	0.57	0.59	0.61	0.63		0.96 / 1.43	0.0	2.04	0	ITS/Operational	19-100
	Bethel Valley Rd - Lafayette Ave	53,500	0.64	0.67	0.69	0.72		0.94 / 1.31	1.8	1.91	0		
	Lafayette Ave - Oak Ridge Turnpike	34,500	0.84	0.86	0.89	0.92	A-5	1.06 / 1.37	2.5	1.72	1	ITS/Operational	19-100

ROUTE	CORRIDOR LIMITS	CAPACITY	2018 V/C	2026 V/C	2035 V/C	2045 V/C	CONGESTED CORRIDOR ID	2020 TRAVEL TIME INDEX (AM/PM)	BOTTLENECKS PER MILE	CRASH SEVERITY INDEX	NUMBER OF MULTIMODAL FACILITY TYPES	PROPOSED CMP STRATEGIES	MOBILITY PLAN PROJECT ID
SCARBORO RD	Illinois Ave - Bethel Valley Rd	15,600	0.71	0.71	0.72	0.73		1.23 / 1.46	0.0	1.99	0		
SR 61	Melton Lake Rd - SR 9	33,915	0.55	0.55	0.55	0.57		1.01 / 1.06	0.5	1.85	0		
	SR 62 - Oak Ridge Turnpike	13,520	0.37	0.37	0.37	0.38		1.01 / 1.00	0.1	2.39	0		
TRI-COUNTY BLVD	W. Outer Dr - Roane County Line	35,700	0.54	0.56	0.58	0.61		1.03 / 1.03	0.5	2.04	0		
US 25 W	Knox County Line - Edgemoor Rd	26,775	0.61	0.62	0.64	0.68		1.02 / 1.01	0.0	2.34	0		
BLOUNT COUNTY													
ALCOA HWY	Hunt Rd - I-140	61,800	0.25	0.25	0.25	0.25		1.01 / 1.10	1.2	1.92	0	ITS/Operational	13-210
	Singleton Station Rd – County Line	92,700	0.53	0.55	0.58	0.61		1.03 / 1.01	2.3	2.18	0	ITS/Operational Roadway Capacity	09-216; 18-200a
	Pellissippi Pkwy - Singleton Station Rd	61,800	0.11	0.11	0.12	0.12		1.02 / 1.04	0.0	2.55	0	ITS/Operational Roadway Capacity	09-216; 18-200a
BESSEMER ST	US 129 - Hall Rd	15,600	0.88	0.95	1.06	1.16	B-1	1.17 / 1.31	0.0	1.74	0		
	Hall Rd - Springbook Rd	12,480	0.44	0.46	0.51	0.57		0.87 / 0.84	0.0	1.86	1		
BLOCKHOUSE RD	Montvale Rd - Wilkinson Pk	12,480	0.07	0.07	0.08	0.08		--	0.0	2.28	0		
BRICK MILL RD	US 129 - US 411	12,480	0.13	0.13	0.14	0.16		1.34 / 1.24*	0.0	2.24	0		
BROADWAY AVE	Hunt Rd - Washington St	13,520	0.94	0.97	1.02	1.07	B-2	1.02 / 1.11	0.6	1.68	0	ITS/Operational	09-212
	US 129 - Lamar Alexander Pkwy	13,520	1.37	1.40	1.43	1.49	B-3	1.24 / 1.26	1.4	1.37	1	ITS/Operational Bike/Ped Roadway Capacity	09-242; 21-203
	Lamar Alexander Pkwy - Washington St	13,520	0.77	0.80	0.83	0.87	B-4	1.32 / 1.64	2.5	1.33	0		
BROWN SCH RD	Sevierville Rd - Old Knoxville Hwy	12,480	0.34	0.38	0.41	0.45		--	0.0	1.87	0		
BURNETT STA RD	Chapman Hwy - Sevierville Rd	12,480	0.35	0.37	0.40	0.43		--	0.0	1.87	0		
CALDERWOOD HWY	Monroe County Line - US 411 S	13,520	0.31	0.36	0.40	0.45		1.07 / 1.03	0.1	2.42	0	ITS/Operational	09-213
CALDERWOOD ST/CUSICK ST	US Hwy 411 - Alcoa Hwy	24,675	0.65	0.70	0.74	0.79		0.96 / 1.33	0.0	1.65	1		
CARPENTER GRD RD	Mint Rd - Raulston Rd	12,480	0.28	0.30	0.32	0.37		--	0.0	2.07	0		
	Raulston Rd - Sandy Springs Rd	12,480	0.84	0.93	1.03	1.16	B-5	--	0.0	1.59	1	ITS/Operational Bike/Ped	09-223

ROUTE	CORRIDOR LIMITS	CAPACITY	2018 V/C	2026 V/C	2035 V/C	2045 V/C	CONGESTED CORRIDOR ID	2020 TRAVEL TIME INDEX (AM/PM)	BOTTLENECKS PER MILE	CRASH SEVERITY INDEX	NUMBER OF MULTIMODAL FACILITY TYPES	PROPOSED CMP STRATEGIES	MOBILITY PLAN PROJECT ID
CHAPMAN HWY	Boyds Creek Hwy - Knox County Line	35,700	0.65	0.69	0.74	0.80		1.05 / 1.16	0.8	1.81	0		
COURT ST	Memorial Dr - US 321	12,480	0.48	0.51	0.53	0.56		--	0.4	1.46	1		
CUSICK RD	Singleton Sta. Rd - US 129	12,480	0.36	0.40	0.44	0.50		1.53 / 1.52*	0.0	1.77	0		
DOGWOOD DR	Sevierville Rd - Lamar Alexander Pkwy	12,480	0.08	0.08	0.09	0.09		--	0.0	1.59	1		
EVERETT HIGH RD	Sevierville Rd - Lincoln Rd	12,480	0.32	0.35	0.37	0.40		1.89 / 1.22*	0.0	1.61	1		
FARADAY ST/MILL ST/SPRINGBROOK RD	Hunt Rd - Wright Rd	12,480	0.15	0.16	0.18	0.20		--	0.0	2.43	1		
FOCH ST/HOMEAVE	US 321 - US 129	12,480	0.33	0.36	0.38	0.41		--	1.5	1.53	0		
FOOTHILLS MALL DR	Lamar Alexander Pkwy - US 411	32,900	0.44	0.49	0.53	0.59		0.98 / 1.18	3.6	1.44	0		
	US 321 - US 129	32,900	0.48	0.53	0.59	0.66		1.51 / 1.67	9.8	1.51	0		
HALL RD	Alcoa Hwy - Lincoln St	32,900	0.67	0.71	0.76	0.82		1.17 / 1.22	0.0	1.86	1		
	Lincoln St - US 321	32,900	0.77	0.80	0.84	0.89	B-6	1.15 / 1.46	3.0	1.41	1	Bike/Ped	21-204
HIGH ST	Brown School Rd - High St	16,380	0.65	0.68	0.73	0.78		1.32 / 1.19	0.0	1.42	1	Bike/Ped Roadway Capacity	09-214
HUNT RD	Louisville Rd - Alcoa Hwy	15,600	0.59	0.65	0.71	0.79		1.12 / 1.12	0.0	1.82	0		
	Alcoa Hwy - SR 33	15,600	0.48	0.52	0.59	0.67		0.94 / 0.96	0.0	1.98	0		
HUNT RD/OLD GLORY RD	US 321 - Topside Rd	12,480	0.54	0.58	0.63	0.69		1.35 / 1.27	0.4	1.85	0		
I-140	County Line - US 129	76,500	0.59	0.62	0.67	0.73		0.95 / 0.95	0.9	1.97	0	ITS/Operational	18-201
LAMAR ALEXANDER PKWY	Tuckaleechee Pk - Washington St	35,700	0.66	0.69	0.74	0.80		1.00 / 1.03	1.1	1.89	0		
	William Blount Dr - Alcoa Hwy	35,700	0.65	0.69	0.74	0.80		1.16 / 1.29	4.1	1.64	0		
	Alcoa Hwy - Broadway Ave	34,500	0.67	0.71	0.75	0.79		1.12 / 1.35	8.3	1.39	1		
	Broadway Ave - Washington St	34,500	0.67	0.71	0.74	0.77		1.20 / 1.51	12.3	1.39	1		
	Loudon County Line - William Blount Dr	35,700	0.35	0.37	0.39	0.43		0.97 / 0.96	0.7	2.17	0		
	Tuckaleechee Pk - SR 337	35,700	0.30	0.31	0.33	0.35		1.00 / 0.98	0.3	2.49	0		
LINCOLN RD	Hall Rd - Old Knoxville Hwy	12,480	0.61	0.65	0.73	0.87	B-7	1.53 / 1.54*	0.0	1.81	1		

ROUTE	CORRIDOR LIMITS	CAPACITY	2018 V/C	2026 V/C	2035 V/C	2045 V/C	CONGESTED CORRIDOR ID	2020 TRAVEL TIME INDEX (AM/PM)	BOTTLENECKS PER MILE	CRASH SEVERITY INDEX	NUMBER OF MULTIMODAL FACILITY TYPES	PROPOSED CMP STRATEGIES	MOBILITY PLAN PROJECT ID
LOUISVILLE RD	Alcoa Hwy - Topside Rd	13,520	0.71	0.80	0.88	0.96	B-8	1.23 / 1.33	0.0	1.69	0		
	US 321 - Topside Rd	13,520	0.26	0.28	0.31	0.35		1.15 / 1.14*	0.0	1.96	0	ITS/Operational	13-214
MCARTHUR RD	Springbrook Rd - Old Knoxville Hwy	12,480	0.24	0.26	0.30	0.35		1.36 / 1.34*	0.0	2.24	0		
MEMORIAL DR/ PLEASANT HILL RD	Court St - Lamar Alexander Pkwy	12,480	0.05	0.05	0.06	0.06		--	0.0	3.50	0		
MENTOR RD	Wright Ferry Rd - Louisville Rd	12,480	0.19	0.23	0.27	0.34		--	0.0	2.44	0	ITS/Operational	09-227
MIDDLESETTLEMENT	US 129 - Old Glory Rd	35,700	0.49	0.54	0.63	0.72		1.04 / 1.14	0.0	1.71	1		
MINT RD	Carpenters Grade Rd - Old Niles Ferry Rd	12,480	0.24	0.25	0.27	0.28		--	0.0	2.63	0		
MISER STA RD	Quarry Rd - Louisville Rd	12,480	0.11	0.12	0.14	0.15		--	0.0	1.88	0		
MONTVALE RD	Southview Dr - Boardman Ave	13,520	0.33	0.34	0.36	0.38		1.20 / 1.17*	0.0	1.72	0	Bike/Ped Roadway Capacity	09-239
	Boardman Ave - Lamar Alexander Pkwy	16,380	0.69	0.71	0.74	0.77		1.51 / 1.45*	5.1	1.42	1		
	Six Mile Rd - Southview Dr	13,520	0.28	0.29	0.31	0.32		1.27 / 1.15*	0.0	1.99	0		
MONTVALE STA RD	Carpenter Grade Rd - Montvale Rd	12,480	0.54	0.57	0.61	0.67		1.37 / 1.30*	0.0	1.39	1		
MORGANTON RD	Foothills Mall Rd - William Blount Dr	16,380	0.63	0.69	0.74	0.78		1.22 / 1.21*	0.0	1.85	0	ITS/Operational	09-211
	William Blount Dr - Henry Ln	12,480	0.43	0.45	0.48	0.51		--	0.0	2.12	0		
OLD KNOXVILLE HY	Williams Mill Rd - Hunt Rd	32,900	0.55	0.58	0.64	0.71		1.20 / 1.26	1.1	1.80	0		
	Sam Houston Rd - Knox County Line	13,520	0.59	0.62	0.67	0.76		1.00 / 1.01	0.2	2.35	0		
OLD NILES FERRY	Calderwood Hwy - Broadway Ave	12,480	0.44	0.50	0.56	0.66		--	0.0	1.99	0	ITS/Operational Bike/Ped	09-213; 21-202
RAULSTON RD	Montvale Rd - Carpenter Grade Rd	12,480	0.39	0.43	0.49	0.56		--	0.0	1.76	0		
RUSSELL RD	US 129 - Old Knoxville Hwy	12,480	0.44	0.47	0.52	0.60		1.35 / 1.31*	0.0	1.79	0		
SANDY SPRS RD	Montvale Station Rd - US 411	12,480	0.79	0.84	0.91	1.00	B-9	--	0.0	1.62	1		
SEVIERVILLE RD	Brown School Rd - Davis Ford Rd	13,520	0.61	0.65	0.71	0.78		1.04 / 1.04	0.0	1.68	0	Bike/Ped ITS/Operational	09-245

ROUTE	CORRIDOR LIMITS	CAPACITY	2018 V/C	2026 V/C	2035 V/C	2045 V/C	CONGESTED CORRIDOR ID	2020 TRAVEL TIME INDEX (AM/PM)	BOTTLENECKS PER MILE	CRASH SEVERITY INDEX	NUMBER OF MULTIMODAL FACILITY TYPES	PROPOSED CMP STRATEGIES	MOBILITY PLAN PROJECT ID
	Davis Ford Rd - Sevier County Line	13,520	0.47	0.49	0.52	0.56		1.02 / 1.01	0.2	2.24	0	ITS/Operational	09-250
SR 162	Old Knoxville Hwy - US 129	76,500	0.16	0.17	0.19	0.21		1.02 / 1.03	0.0	2.45	0		
TOPSIDE RD	Alcoa Hwy - I-140	13,520	1.02	1.09	1.18	1.29	B-10	1.30 / 1.39	0.4	2.08	0	ITS/Operational Roadway Capacity	09-248
	I-140 - Louisville Rd	13,520	0.88	0.98	1.08	1.19	B-11	1.20 / 1.21*	0.0	2.20	0		
TUCKALEECHEE PK	US 321 W - US 321 E	12,480	0.31	0.33	0.34	0.35		--	0.2	1.62	0	ITS/Operational Bike/Ped	09-241
US 129 BYPASS	Hall Rd – Hunt Rd	92,700	0.64	0.67	0.71	0.76		1.00 / 1.00	0.6	1.68	O		
	US 411 - Louisville Rd	34,500	1.15	1.22	1.29	1.36	B-12	0.95 / 1.10	3.2	1.53	0	Roadway Capacity	17-202
	Louisville Rd – Hunt Rd	35,700	1.23	1.31	1.38	1.46	B-13	1.01 / 1.31	1.2	1.59	0	Roadway Capacity	17-202
US 411	William Blount Dr - US 129	35,700	0.98	1.04	1.10	1.16	B-14	1.08 / 1.24	2.1	1.65	0		
	Loudon County Line - William Blount Dr	35,700	0.62	0.67	0.72	0.79		0.96 / 0.97	0.3	2.06	0		
WILDWOOD RD	Old Knoxville Hwy - Nails Creek Rd	12,480	0.27	0.30	0.35	0.42		-	0.0	1.86	0		
WILKINSON PK	Blockhouse Rd - Court St	12,480	0.39	0.40	0.42	0.44		--	0.0	1.85	0	ITS/Operational Bike/Ped	09-243
WILLIAM BLT DR	US 321 - US 411 South	12,480	0.63	0.67	0.72	0.79		1.08 / 1.09	0.3	2.02	0		
WRIGHT RD	US 129 - Hunt Rd	12,480	0.51	0.54	0.57	0.62		1.44 / 1.55*	0.0	2.27	0		
	Hunt Rd - Lincoln Rd	12,480	0.27	0.29	0.33	0.38		1.27 / 1.23*	0.0	2.59	1		
WRIGHTS FERRY RD	US 129 - Topside Rd	12,480	0.20	0.23	0.26	0.31		--	0.0	1.91	0		
KNOX COUNTY													
17TH ST	Melrose Av - Western Ave	23940	0.50	0.50	0.51	0.52		1.30 / 1.37	0.0	1.58	2	ITS/Operational	19-603
5TH AVE	Cherry St - Broadway	34,500	0.36	0.40	0.46	0.54		1.11 / 1.09	0.5	2.14	3	Public Transit Bike/Ped	17-608a; 17-608b; 17-608c
ALCOA HWY	County Line - Maloney Rd	92700	0.54	0.56	0.58	0.62		1.14 / 1.01	1.3	2.02	0	ITS/Operational	18-200b
	Maloney Rd - Woodson Dr	105400	0.47	0.49	0.51	0.54		1.06 / 1.06	3.8	1.70	0	ITS/Operational	18-200b
	Woodson Dr - Cherokee Trail	92700	0.54	0.56	0.59	0.62		0.95 / 0.99	0.5	1.76	0	ITS/Operational Roadway Capacity	18-200b; 09-653
	Cherokee Tr - Kingston Pk	105400	0.45	0.47	0.50	0.53		1.06 / 0.99	0.9	1.68	1		
	Kingston Pk - I-40	105400	0.73	0.75	0.79	0.83		0.95 / 0.98	0.0	1.40	1		
AMHERST RD	Middlebrook Pk - Ball Camp Pk	12480	0.27	0.29	0.31	0.34		1.09 / 1.07	0.0	1.83	0		

ROUTE	CORRIDOR LIMITS	CAPACITY	2018 V/C	2026 V/C	2035 V/C	2045 V/C	CONGESTED CORRIDOR ID	2020 TRAVEL TIME INDEX (AM/PM)	BOTTLENECKS PER MILE	CRASH SEVERITY INDEX	NUMBER OF MULTIMODAL FACILITY TYPES	PROPOSED CMP STRATEGIES	MOBILITY PLAN PROJECT ID
ANDREW JOHNSON HY	County Line - Asheville Hwy	35700	0.51	0.54	0.58	0.67		1.01 / 1.01	0.3	2.37	0		
ASHEVILLE HWY	AJ Hwy - Sevier County Line	13520	0.32	0.35	0.39	0.47		1.03 / 1.01	0.0	2.28	0		
	John Sevier Hwy - I-40 E Ramps	35700	1.00	1.09	1.21	1.38	K-1	0.99 / 1.26	3.0	1.87	0		
	Asheville Hwy - Brakebill Rd	35700	0.65	0.68	0.72	0.83		0.97 / 0.98	0.0	2.29	0		
	Brakebill Rd - John Sevier Hwy	35700	0.60	0.65	0.70	0.81		0.95 / 1.00	0.4	2.07	0		
	I-40 E Ramps - Prosser Rd	35700	0.21	0.23	0.24	0.27		1.07 / 1.22	0.9	2.16	1	ITS/Operational Bike/Ped	21-600
ATLANTIC AVE	Bruhin Rd - Broadway	12480	0.30	0.30	0.30	0.31		--	0.0	1.67	1	Bike/Ped	13-880
BALL CAMP PK	Middlebrook Pk - Oak Ridge Hwy	31100	0.14	0.16	0.17	0.19		1.12 / 1.07	0.2	1.92	1		
BEAUMONT AVE/ KEITH AVE	Liberty St - I-275	12480	0.27	0.28	0.29	0.30		1.28 / 1.07	0.0	1.79	2		
BEAVER RIDGE RD	Emory Rd - Oak Ridge Hwy	12480	0.47	0.50	0.53	0.58		1.25 / 1.22	0.0	1.67	0	ITS/Operational	09-638
	Oak Ridge Hwy - Hardin Valley Rd	12480	0.79	0.83	0.89	0.96	K-2	1.11 / 1.08	0.5	1.96	0		
BLOUNT AVE	Henley St - James White Pkwy	16380	0.20	0.24	0.26	0.28		1.36 / 1.32	0.7	1.62	3		
BLUEGRASS RD	Northshore Dr - Ebenezer Rd	12480	0.22	0.24	0.28	0.31		--	0.0	2.35	0		
BOYD STATION RD	Loudon County Line - Virtue Rd	12480	0.26	0.29	0.33	0.39		--	0.0	1.31	0		
BROADWAY	I-640 W Ramps - Grainger Ave	31160	0.75	0.76	0.78	0.80		0.97 / 1.16	1.1	1.73	2	ITS/Operational Public Transit	13-602; 17-1006
	Grainger Ave - Central St	24600	0.38	0.39	0.40	0.42		0.85 / 0.92	0.0	1.89	2	ITS/Operational Public Transit	13-602; 17-1006
	Brown Gap Rd - Cedar Ln	35700	0.95	0.97	1.00	1.05	K-3	1.30 / 1.30	4.6	2.03	0	ITS/Operational	13-602
	Cedar Ln - I-640 W Ramps	32800	1.26	1.29	1.32	1.36	K-4	1.06 / 1.50	3.6	1.62	1	ITS/Operational Public Transit	13-602; 17-1006
	Central St - Summit Hill Dr	16300	0.57	0.60	0.63	0.68		1.03 / 1.10	3.9	1.98	3	ITS/Operational Public Transit	13-602; 17-1006
BRUHIN RD/CENTRAL ST	Bruhin Rd - Woodland Ave	16380	0.66	0.68	0.70	0.73		1.05 / 1.05	0.0	1.69	3		
CALLAHAN DR	Central Ave Pk - Pleasant Ridge Rd	32900	0.74	0.80	0.87	0.95	K-5	1.18 / 1.41	0.0	1.99	1		

ROUTE	CORRIDOR LIMITS	CAPACITY	2018 V/C	2026 V/C	2035 V/C	2045 V/C	CONGESTED CORRIDOR ID	2020 TRAVEL TIME INDEX (AM/PM)	BOTTLENECKS PER MILE	CRASH SEVERITY INDEX	NUMBER OF MULTIMODAL FACILITY TYPES	PROPOSED CMP STRATEGIES	MOBILITY PLAN PROJECT ID
CAMPBELL STATION RD	Kingston Pk - Concord Rd	31100	0.38	0.42	0.46	0.51		1.22 / 1.50	1.3	1.68	1	ITS/Operational	13-813
	I-40 W Ramps - Hardin Valley Rd	12480	0.51	0.66	0.74	0.82		1.47 / 1.67	0.0	2.16	0	ITS/Operational	10-700; 09-629
	Kingston Pk - Parkside Dr	34500	0.66	0.71	0.76	0.81		1.28 / 1.07	0.9	1.55	3	ITS/Operational	13-813
	Parkside Dr - I-40	32,900	1.08	1.15	1.21	1.24	K-6	1.40 / 1.68	0.0	1.64	2	ITS/Operational	13-813
CEDAR BLUFF RD	Middlebrook Pk - Dutchtown Rd	32,900	0.64	0.67	0.70	0.74		1.41 / 1.41	0.0	1.97	1		
	Dutchtown Rd - Kingston Pk	32,900	0.80	0.83	0.86	0.89	K-7	1.14 / 1.05	1.7	1.47	2		
	Peters Rd – Kingston Pk	32,900	0.64	0.69	0.73	0.78		1.11 / 1.26	0.0	1.50	2		
CEDAR LN	Central Ave Pk - Broadway	12,480	1.13	1.15	1.18	1.22	K-8	0.97 / 1.11	0.4	1.51	1		
CENTRAL AVE PK	Emory Rd - Bruhin Rd	12,480	0.62	0.68	0.74	0.81		1.12 / 1.25	0.0	1.87	0		
CENTRAL ST	Woodland Ave - Fifth Ave	24,675	0.28	0.31	0.33	0.35		0.99 / 0.99	0.9	1.77	3		
	Fifth Ave - Summit Hill Dr	15,600	0.25	0.29	0.31	0.33		0.99 / 1.06	0.0	1.79	1		
CHAPMAN HWY	County Line to John Sevier Hwy	26,775	1.12	1.20	1.26	1.32	K-9	1.07 / 1.16	0.3	2.17	0	ITS/Operational	09-626; 09-626d
	John Sevier Hwy - Lindy Dr	35,700	0.74	0.78	0.81	0.85	K-10	0.98 / 1.12	0.0	2.20	1	ITS/Operational	09-626; 13-003
	Lindy Dr - Stone Rd	26,775	1.05	1.10	1.13	1.17	K-11	1.03 / 1.09	0.0	2.08	1	ITS/Operational	09-626; 13-003
	Stone Rd - Blount Ave	32,800	0.88	0.90	0.92	0.94	K-12	1.05 / 1.30	3.0	1.90	3	ITS/Operational	09-626; 13-003
CHERRY ST	Cecil Ave - I-40 W Ramps	26,775	0.36	0.36	0.36	0.37		1.08 / 0.98	0.0	1.95	1		
	I-40 W Ramps - Magnolia Ave	32,800	0.48	0.48	0.47	0.48		1.09 / 1.23	0.0	2.10	2		
CHOTO RD	Boyd Station Rd - Northshore Dr	12,480	0.38	0.41	0.46	0.54		--	0.0	1.48	0		
CLINTON HWY	County Line - Emory Rd	35,700	0.64	0.66	0.68	0.72		1.21 / 1.34	1.3	2.24	0		
	Emory Rd - Callahan Dr	35,700	0.73	0.76	0.79	0.82		1.11 / 1.40	0.5	1.94	0		
	Callahan Dr - Merchant Dr	35,700	0.64	0.66	0.68	0.70		0.92 / 1.10	0.0	2.01	1		
	Merchant Dr - I-275/I-640	34,500	0.81	0.84	0.87	0.90	K-13	1.06 / 1.17	1.6	1.92	1		
CONCORD RD	Turkey Creek Rd - Northshore Dr	31,100	0.32	0.35	0.39	0.42		1.32 / 1.57	1.3	1.71	O		

ROUTE	CORRIDOR LIMITS	CAPACITY	2018 V/C	2026 V/C	2035 V/C	2045 V/C	CONGESTED CORRIDOR ID	2020 TRAVEL TIME INDEX (AM/PM)	BOTTLENECKS PER MILE	CRASH SEVERITY INDEX	NUMBER OF MULTIMODAL FACILITY TYPES	PROPOSED CMP STRATEGIES	MOBILITY PLAN PROJECT ID
	Concord Rd - Turkey Creek Rd	31,100	0.35	0.37	0.41	0.44		1.22 / 1.61	1.0	1.49	1	ITS/Operational	13-813
CONCORD ST	Sutherland Ave - Kingston Pk	24,675	0.30	0.30	0.31	0.33		0.99 / 1.06	2.0	1.25	1		
CUMBERLAND AVE	Alcoa Hwy Ramps - Volunteer Blvd	31,160	1.19	1.21	1.23	1.24	K-14	1.55 / 1.76	15.8	1.42	2	ITS/Operational	19-603; 13-602
	Volunteer Blvd - 17th St	24,600	0.65	0.65	0.66	0.66		0.97 / 1.82	12.1	1.39	2	ITS/Operational	19-603; 13-602
	17th St - 11th St	31,160	0.35	0.36	0.36	0.37		1.05 / 1.25	4.1	1.60	2	ITS/Operational	19-603; 13-602
	11th St - Henley St	31,160	0.22	0.23	0.24	0.24		1.03 / 1.36	0.0	1.61	2	ITS/Operational	19-603
DUTCHTOWN RD	Pellissippi Pkwy - Cedar Bluff Rd	16,380	0.68	0.72	0.77	0.85	K-15	1.18 / 1.22	0.0	1.95	1		
EBENEZER RD	Northshore Dr - S. Peters Rd	32,900	0.39	0.41	0.44	0.46		1.27 / 1.16	0.0	2.11	1		
ED SHOUSE DR	Western Ave - Middlebrook Pk	32,900	0.68	0.69	0.72	0.76		1.55 / 1.58	1.5	1.59	1		
EMORY RD	Tazewell Pk - Grainger County Line	13,520	0.25	0.25	0.28	0.32		0.99 / 0.99	0.0	2.25	0		
	Tazewell Pk - Maynardville Pk	13,520	0.89	0.94	1.00	1.10	K-16	1.26 / 1.25	0.0	2.05	0	Bike/Ped Roadway Capacity	09-643
	Maynardville Pk - Norris Fwy	13,520	1.05	1.12	1.23	1.37	K-17	1.84 / 1.96	1.7	1.77	0		
	Norris Fwy - Dry Gap Pk	35,700	0.54	0.58	0.63	0.70		0.97 / 0.96	0.3	1.80	1		
	Dry Gap Pk - I-75N Ramps	34,500	0.85	0.90	0.97	1.05	K-18	1.31 / 1.93	0.0	1.73	1	ITS/Operational	09-652
	Beaver Ridge Rd - Clinton Hwy	13,520	0.75	0.80	0.87	0.95	K-19	1.20 / 1.26	0.0	1.99	0	ITS/Operational	21-602
	Clinton Hwy - Gill Rd	35,700	0.24	0.25	0.26	0.28		1.22 / 1.16	0.5	1.98	2		
	Gill Rd - I-75 N Ramps	34,500	0.63	0.67	0.72	0.77		0.98 / 1.14	1.3	1.81	1	ITS/Operational	09-669
EVERETT RD	Everett Rd - Kingston Pk	16,380	0.68	0.79	0.90	1.02	K-20	1.22 / 1.46	0.6	1.74	0	ITS/Operational	09-651
	Yarnell Rd - Kingston Pk	12,480	0.24	0.29	0.35	0.45		--	0.0	1.91	1	Bike/Ped Roadway Capacity	09-669
FRANCIS RD	Middlebrook Pk - Amherst Rd	12,480	0.37	0.38	0.40	0.42		1.29 / 1.26	0.0	1.77	1		
GALLAHER VIEW RD	Gleason Dr - Kingston Pk	12,480	0.92	0.98	1.04	1.08	K-21	1.31 / 1.52	0.0	1.67	1		
	I-40 E Ramps - Middlebrook Pk	32,900	0.69	0.70	0.73	0.76		1.16 / 1.34	0.0	1.71	2		
GLEASON DR	Morrell Rd - Montvue Rd	32,900	0.36	0.38	0.40	0.42		1.00 / 1.05	0.0	1.84	3		
	Montvue Rd - Ebenezer Rd	12,480	0.82	0.84	0.88	0.91	K-22	--	0.0	1.47	0		

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GRIGSBY CHAPEL RD	Smith Rd - Campbell Station Rd	16,380	1.02	1.13	1.25	1.43	K-23	1.18 / 1.12	0.0	1.54	2		
HARDIN VALLEY RD	Campbell Station Rd - Hickory Creek Rd	16,380	0.42	0.54	0.67	0.80		1.26 / 1.10	0.5	1.83	0		
	Campbell Station Rd - Pellissippi SB Ramps	16,380	1.11	1.22	1.32	1.44	K-24	1.24 / 1.13	0.5	1.65	1		
	Pellissippi SB Ramps - Middlebrook Pk	32,900	0.80	0.91	1.02	1.14	K-25	1.20 / 1.31	1.0	1.82	0		
HEISKELL AVE/TEXAS AVE	Western Ave - Bruhin Rd	12,480	0.88	0.88	0.90	0.91	K-26	1.35 / 1.48	0.0	1.56	2		
HENLEY ST	Summit Hill Dr - Blount Ave	49,300	0.71	0.74	0.76	0.78		1.23 / 1.28	7.0	1.60	3	ITS/Operational	19-603
HICKORY CREEK RD	Buttermilk Rd - Hickory Creek Rd	12,480	0.14	0.18	0.22	0.25		1.04 / 0.98	0.0	2.00	0		
I-140	Dutchtown Rd - I-40	76,500	1.02	1.10	1.18	1.27	K-27	1.14 / 1.14	1.0	2.01	0		
	County Line - Westland Dr	76,500	0.63	0.67	0.72	0.79		1.06 / 1.01	0.4	1.71	0	ITS/Operational	18-201
	Westland Dr - I-40	76,500	0.79	0.84	0.90	0.98	K-28	1.17 / 1.09	0.8	1.69	0		
I-275	I-640 - I-40	115,300	0.56	0.58	0.60	0.62		1.02 / 0.96	0.2	2.09	0		
I-40	Alcoa Hwy - James White Pkwy	135,300	1.05	1.09	1.13	1.18	K-29	1.08 / 1.19	1.7	1.80	0	ITS/Operational	21-601
	Midway Rd - Sevier County Line	120,200	0.64	0.68	0.72	0.79		0.90 / 0.96	0.1	1.82	0		
	Midway Rd - I-640	120,200	0.69	0.73	0.77	0.85	K-30	0.90 / 0.90	0.2	1.73	0		
	I-640 - James White Pkwy	115,300	0.77	0.81	0.85	0.91	K-31	1.00 / 0.94	0.5	1.85	0		
	I-640 - Alcoa Hwy	156,000	0.96	0.99	1.02	1.05	K-32	1.08 / 1.70	0.0	1.58	0	ITS/Operational	21-601
I-40/I-75	Loudon County Line - Lovell Rd	120,200	0.96	1.00	1.04	1.09	K-33	0.9 / 1.07	0.4	1.73	0	ITS/Operational Roadway Capacity	09-651; 13-603; 09-691; 09-629
	Lovell Rd - I-140	156,000	0.89	0.93	0.96	1.01	K-34	0.94 / 1.33	0.7	1.70	0		
	I-640 Ramps	120,200	0.56	0.57	0.59	0.60		1.13 / 1.45	0.7	1.78	0		
	I-640 - Papermill Dr	176,000	1.21	1.24	1.27	1.30	K-35	1.02 / 1.08	0.4	1.72	0		
	Papermill Dr - West Hills	176,000	1.18	1.21	1.24	1.28	K-36	1.00 / 1.12	1.0	1.72	0		
	West Hills - Gallaher View Rd	176,000	1.15	1.18	1.22	1.27	K-37	1.01 / 1.07	0.5	1.76	0		
	Gallaher View Rd - Cedar Bluff Rd	176,000	1.10	1.15	1.18	1.23	K-38	1.06 / 1.27	1.2	1.67	0		
	Cedar Bluff Rd - Pellissippi Pkwy	176,000	1.04	1.08	1.12	1.17	K-39	1.01 / 1.41	0.8	1.62	0		
	I-40W - I-275	120,200	0.50	0.51	0.52	0.54		1.21 / 1.07	0.7	1.70	0		
I-640	I-275 - I-40E	120,200	0.69	0.71	0.74	0.80		0.93 / 0.94	0.2	1.78	0	ITS/Operational	09-654

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	I-40W - I-275	120,200	0.51	0.54	0.57	0.62		0.91 / 0.91	0.2	1.79	0		
I-640/I-75	I-40W - I-275	120,200	0.68	0.70	0.72	0.77		1.06 / 0.95	0.3	2.02	0		
I-75	Emory Rd - I-640	120,200	0.63	0.66	0.70	0.75		1.04 / 1.00	0.2	1.77	0	ITS/Operational	09-652
	SR 61 - Knox County Line	76,500	0.51	0.53	0.55	0.60		0.92 / 0.95	0.1	1.65	0		
	Anderson County Line - Emory Rd	76,500	0.59	0.61	0.64	0.70		0.92 / 0.92	0.1	1.83	0	Roadway Capacity	09-692
INSKIP RD	Clinton Hwy - Cedar Ln	12,480	0.48	0.51	0.54	0.58		1.01 / 1.07	0.0	1.89	2		
JAMES WHITE PKWY	I-40 - Hill Ave	70,200	0.55	0.58	0.61	0.64		0.99 / 0.97	0.0	1.51	0		
	Hill Ave - Sevierville Pk	70,200	0.29	0.32	0.35	0.39		0.96 / 0.96	0.0	1.52	1	Bike/Ped	21-606
JOHN SEVIER HWY	Asheville Hwy - National Dr	17,745	0.72	0.78	0.85	0.94	K-40	1.03 / 1.00	0.0	1.96	0		
	National Dr - Chapman Hwy	17,745	0.66	0.69	0.73	0.80		1.11 / 1.13	0.7	2.20	0		
	Chapman Hwy - Martin Mill Pk	17,745	0.93	0.98	1.05	1.11	K-41	1.04 / 1.04	0.2	2.15	0	Roadway Capacity	09-644
	Martin Mill Pk - Alcoa Hwy	17,745	1.21	1.27	1.38	1.47	K-42	1.25 / 1.42	0.7	2.02	0	Roadway Capacity	09-644
KINGSTON PK	Loudon County Line - Jamestowne Blvd	35,700	0.66	0.75	0.84	0.95	K-43	1.29 / 1.38	1.1	1.94	1	ITS/Operational Bike/Ped Roadway Capacity	13-813; 09-668
	Jamestowne Blvd - Lovell Rd	34,500	0.74	0.80	0.86	0.92	K-44	1.26 / 1.42	4.1	1.68	1		13-813
	Lovell Rd - Mabry Hood Rd	34,500	0.94	0.99	1.03	1.06	K-45	1.32 / 1.64	5.2	1.58	0	ITS/Operational	13-602
	Mabry Hood Rd - Cedar Bluff Rd	32,800	0.78	0.84	0.87	0.90	K-46	1.08 / 1.32	1.0	1.60	0	ITS/Operational	13-602
	Cedar Bluff Rd - Gallaher View Rd	32,800	0.74	0.77	0.79	0.82		1.19 / 1.40	3.4	1.60	0	ITS/Operational	13-602
	Gallaher View Rd - Morrell Rd	32,800	0.83	0.85	0.87	0.88	K-47	1.22 / 1.45	1.5	1.50	2	ITS/Operational	13-602
	Morrell Rd - Papermill Rd	32,800	0.71	0.73	0.73	0.75		0.92 / 1.15	1.8	1.68	1	ITS/Operational	13-602
	Papermill Rd - Northshore Dr	34,500	0.47	0.47	0.47	0.48		1.00 / 1.18	2.3	1.68	1	ITS/Operational	13-602; 09-658
	Northshore Dr - Lyons View Pk	32,800	0.55	0.55	0.55	0.56		1.27 / 1.58	2.6	1.52	2	ITS/Operational	13-602; 09-658
	Lyons View Pk - Alcoa Hwy N Ramps	24,600	1.03	1.05	1.07	1.10	K-48	1.44 / 1.52	3.2	1.43	2	ITS/Operational	13-602

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LIBERTY ST	Sutherland Ave - Keith Ave	24,675	0.33	0.34	0.34	0.35		1.29 / 1.38	0.0	1.73	3	Bike/Ped	13-1004
LOVELL RD	Kingston Pk - I-40 E Ramps	34,500	0.90	0.96	1.01	1.06	K-49	1.22 / 1.44	3.6	1.44	1		
	I-40 E Ramps - Gilbert Dr	34,500	0.66	0.71	0.74	0.77		1.43 / 1.28	2.5	1.62	1		
	Gilbert Dr - Pellissippi Pkwy	35,700	0.54	0.60	0.65	0.70		1.14 / 1.16	0.5	1.93	2		
	Pellissippi Pkwy - Middlebrook Pk	13,520	1.04	1.14	1.20	1.27	K-50	1.03 / 1.08	0.0	1.94	0	Bike/Ped Roadway Capacity	09-637
LYONS VIEW PK	Northshore Dr - Kingston Pk	12,480	0.95	0.98	1.03	1.08	K-51	1.03 / 1.28	0.0	1.44	1		
MAGNOLIA AVE	Prosser Rd - Cherry St	34,500	0.37	0.42	0.47	0.56		0.97 / 1.06	0.0	2.25	3		
MARTIN MILL PK	John Sevier Hwy - Ogle Ave	12,480	0.22	0.23	0.25	0.27		1.05 / 1.13	0.0	2.02	1		
MARYVILLE PK	Blount County Line - Chapman Hwy	13,520	0.43	0.46	0.50	0.56		1.04 / 1.04	0.0	2.07	0		
MAYNARDVILLE HWY	County Line - Emory Rd	35,700	0.43	0.44	0.47	0.52		1.02 / 1.03	0.0	2.18	0		
	Emory Rd - Brown Gap Rd	34,500	0.98	1.02	1.07	1.14	K-52	1.10 / 1.39	2.3	1.91	1	ITS/Operational	19-604
MCFEE RD	Kingston Pk - Boyd Station Rd	16,380	0.33	0.39	0.45	0.53		1.03 / 1.36	0.0	1.61	2		
MERCHANT DR	Pleasant Ridge Rd - Clinton Hwy	16,380	0.57	0.61	0.65	0.69		0.99 / 0.99	0.0	2.00	2		
	Clinton Hwy - Central Ave Pk	32,900	0.71	0.74	0.76	0.80		1.03 / 1.37	0.0	1.76	2		
MIDDLEBROOK PK	Vanosdale Rd - Weisgarber Rd	35,700	0.59	0.61	0.62	0.65		0.93 / 1.04	0.7	1.91	2	ITS/Operational	18-603
	Weisgarber Rd - Ed Shouse Rd	34,500	0.81	0.83	0.86	0.89	K-53	1.06 / 1.10	0.9	1.71	2	ITS/Operational	18-603
	Ed Shouse Rd - Liberty St	35,700	0.40	0.41	0.43	0.45		1.04 / 1.24	0.0	2.01	2	ITS/Operational	18-603
	Liberty St - Western Ave	35,700	0.44	0.46	0.48	0.49		1.1 / 1.23	0.6	1.94	3	ITS/Operational	18-603
	Hardin Valley Rd - Cedar Bluff Rd	35,700	0.47	0.51	0.55	0.58		1.06 / 1.25	0.0	1.85	1		
	Cedar Bluff Rd - Gallaher View Rd	35,700	0.71	0.75	0.80	0.85	K-54	1.13 / 1.18	2.0	1.87	1	ITS/Operational	18-603
	Gallaher View Rd - Vanosdale Rd	34,500	0.59	0.62	0.64	0.68		1.09 / 1.22	0.7	1.87	1	ITS/Operational	18-603
MILLERTOWN PK	Mill Rd - Roberts Rd	12,480	0.25	0.27	0.29	0.33		1.07 / 0.98	0.0	2.43	0		

ROUTE	CORRIDOR LIMITS	CAPACITY	2018 V/C	2026 V/C	2035 V/C	2045 V/C	CONGESTED CORRIDOR ID	2020 TRAVEL TIME INDEX (AM/PM)	BOTTLENECKS PER MILE	CRASH SEVERITY INDEX	NUMBER OF MULTIMODAL FACILITY TYPES	PROPOSED CMP STRATEGIES	MOBILITY PLAN PROJECT ID
	Washington Pk - I-640 W Ramps	12,480	0.60	0.62	0.64	0.68		1.12 / 1.78	0.0	1.75	1		
	I-640 W Ramps - Loves Creek Rd	32,900	0.67	0.71	0.78	0.85	K-55	1.24 / 1.93	0.0	1.53	1		
	Loves Creek Rd - Harris Rd	12,480	0.64	0.70	0.79	0.91	K-56	0.96 / 1.00	0.0	2.11	0		
MOODY AVE	Chapman Hwy - James White Pkwy	32,900	0.28	0.32	0.35	0.38		1.21 / 1.23	1.2	1.78	3	Bike/Ped	21-605
MORRELL RD	Northshore Dr - Westland Dr	12,480	0.69	0.71	0.74	0.78		1.40 / 1.48	0.0	1.58	1		
	Westland Dr - Kingston Pk	32,900	0.75	0.77	0.79	0.82		1.07 / 1.47	1.0	1.58	2		
NEYLAND DR	Kingston Pk - Center Dr	35,700	0.45	0.46	0.48	0.52		1.52 / 1.61	4.2	1.58	3		
	Center Dr - Lake Loudoun Blvd	35,700	0.50	0.53	0.54	0.58		0.88 / 0.92	0.8	1.93	3		
	Lake Loudoun Blvd - Walnut St	35,700	0.45	0.47	0.49	0.51		1.00 / 1.08	0.8	1.80	2	ITS/Operational	19-603
NORRIS FWY	Maynardville Hwy - Union County Line	13,520	0.77	0.83	0.94	1.08	K-57	1.05 / 1.10	0.3	2.15	0		
NORTHSHORE DR	Choto Rd - Concord Rd	12,480	1.09	1.15	1.24	1.33	K-58	1.18 / 1.13	0.4	2.10	1		
	Concord Rd - I-140 E Ramps	13,520	0.93	1.00	1.10	1.23	K-59	1.19 / 1.26	0.2	1.91	0	ITS/Operational Bike/Ped	09-646
	I-140 E Ramps - Ebenezer Rd	34,500	0.70	0.73	0.79	0.85	K-60	1.32 / 1.59	0.0	1.82	1		
	Ebenezer Rd - Morrell Rd	13,520	1.11	1.13	1.19	1.27	K-61	1.09 / 1.11	0.0	2.03	0	ITS/Operational Bike/Ped	09-645
	Westland Dr - Kingston Pk	35,700	0.60	0.61	0.64	0.67		1.24 / 1.76	1.3	1.60	1	ITS/Operational	09-658
	Kingston Pk - Papermill Dr	32,800	0.89	0.90	0.92	0.93	K-62	1.01 / 1.30	2.0	1.42	1		
	Morrell Rd - Westland Dr	13,520	1.21	1.23	1.28	1.35	K-63	1.29 / 1.51	0.0	1.76	0		
OAK RIDGE HWY	Pellissippi Pkwy - Byington-Beaver Ridge	13,520	0.81	0.87	0.94	1.03	K-64	1.06 / 1.11	0.9	2.06	0	ITS/Operational Roadway Capacity	09-649; 09-673
	Byington-Beaver Ridge - Harrell Rd	16,900	1.05	1.10	1.16	1.24	K-65	1.32 / 1.2	1.3	1.89	0	Roadway Capacity	09-638
	Harrell Rd - Schaad Rd	13,520	1.14	1.20	1.29	1.39	K-66	1.25 / 1.25	1.6	1.93	0	Roadway Capacity	09-638
	County Line - Guinn Rd	61,800	0.66	0.68	0.71	0.74		1.00 / 1.13	3.2	1.76	1		
PAPERMILL DR	Kingston Pk - Weisgarber Rd	12,480	1.30	1.31	1.31	1.31	K-67	0.96 / 1.23	0.0	1.47	0	ITS/Operational Bike/Ped	09-689

ROUTE	CORRIDOR LIMITS	CAPACITY	2018 V/C	2026 V/C	2035 V/C	2045 V/C	CONGESTED CORRIDOR ID	2020 TRAVEL TIME INDEX (AM/PM)	BOTTLENECKS PER MILE	CRASH SEVERITY INDEX	NUMBER OF MULTIMODAL FACILITY TYPES	PROPOSED CMP STRATEGIES	MOBILITY PLAN PROJECT ID
	Northshore Dr - I-40 W Ramps	34,500	0.50	0.50	0.51	0.52		1.24 / 1.37	0.0	1.39	2		
	I-40 W Ramps - Liberty St	12,480	0.73	0.74	0.76	0.78		1.03 / 0.99	0.0	1.50	0		
PARKSIDE DR	Campbell Station Rd - Lovell Rd	32,900	0.85	0.89	0.91	0.94	K-68	1.05 / 1.33	0.0	1.49	2	ITS/Operational	13-813
	Lovell Rd - Mabry Hood Rd	32,900	0.45	0.48	0.50	0.52		1.37 / 1.05	0.0	1.61	0		
PELLISSIPPI PKWY	Dutchtown Rd - Hardin Valley Rd	61,800	1.14	1.21	1.27	1.33	K-69	1.00 / 1.00	2.5	1.93	0	ITS/Operational Bike/Ped Roadway Capacity	09-647
	Hardin Valley Rd - Oak Ridge Hwy	61,800	0.89	0.94	0.98	1.02	K-70	0.97 / 0.97	2.1	1.92	0	ITS/Operational Bike/Ped Roadway Capacity	09-647; 09-649
PETERS RD	Seven Oaks Dr - Cedar Bluff Rd	32,900	0.70	0.72	0.74	0.75		1.11 / 1.47	0.0	1.57	1		
	Cedar Bluff Rd - Kingston Pk	32,900	0.55	0.58	0.59	0.61		1.01 / 1.25	0.0	1.55	0		
	Kingston Pk - Ebenezer Rd	32,900	0.50	0.53	0.56	0.60		1.12 / 1.16	0.0	1.92	1		
	Perimeter Park Dr - Seven Oaks Dr	32,900	0.68	0.71	0.74	0.77		0.92 / 1.01	0.0	1.77	0		
PLEASANT RDG RD	Callhan Dr - Merchant Dr	16,380	0.63	0.65	0.66	0.69		1.08 / 1.11	0.6	2.21	1	ITS/Operational Bike/Ped	09-616
	Merchant Dr - Sanderson Rd	16,380	0.55	0.56	0.57	0.59		1.09 / 1.00	0.0	1.96	3		
	Sanderson Rd - Western Ave	16,380	0.62	0.63	0.64	0.66		1.37 / 1.36	0.0	2.15	1		
RACCOON VALLEY DR	Norris Fwy - Anderson County Line	13,520	0.34	0.36	0.37	0.40		0.95 / 0.95	0.0	2.35	0		
RUTLEDGE PK	Roberts Rd - Grainger County Line	35,700	0.30	0.32	0.34	0.37		1.03 / 0.96	0.0	2.82	0		
	Roberts Rd - Loves Creek Rd	35,700	0.42	0.46	0.49	0.54		0.96 / 0.95	0.5	2.49	0		
	Loves Creek Rd - I-40 W Ramps	35,700	0.59	0.63	0.67	0.73		1.02 / 1.06	2.0	1.91	0		
	I-40 W Ramps - Asheville Hwy	35,700	0.29	0.30	0.33	0.36		1.16 / 1.14	0.0	1.82	2	ITS/Operational Bike/Ped	21-600
SCHAAD RD	Pleasant Ridge Rd - Oak Ridge Hwy	31,100	0.62	0.66	0.71	0.77		1.24 / 1.46	0.0	2.17	0	Bike/Ped Roadway Capacity	09-625
SMITH RD	Kingston Pk - Grigsby Chapel Rd	12,480	0.63	0.76	0.93	1.10	K-71	1.17 / 1.19	1.0	1.68	1		

ROUTE	CORRIDOR LIMITS	CAPACITY	2018 V/C	2026 V/C	2035 V/C	2045 V/C	CONGESTED CORRIDOR ID	2020 TRAVEL TIME INDEX (AM/PM)	BOTTLENECKS PER MILE	CRASH SEVERITY INDEX	NUMBER OF MULTIMODAL FACILITY TYPES	PROPOSED CMP STRATEGIES	MOBILITY PLAN PROJECT ID
STRAWBERRY PLAINS PK	John Sevier Hwy - Cracker Barrel Ln	12,480	0.64	0.68	0.74	0.83		0.99 / 0.98	0.0	2.20	0		
	Cracker Barrel Ln - Huckleberry Springs Rd	32,900	0.58	0.64	0.72	0.80		1.09 / 1.36	0.0	1.83	0		
	Huckleberry Springs Rd - Asheville Hwy	12,480	0.56	0.64	0.73	0.85	K-72	0.95 / 0.92	0.0	2.54	0		
SUMMIT HILL DR	Broadway - Central St	31,700	0.36	0.38	0.40	0.43		1.00 / 1.07	2.0	1.77	1		
	Central St - MLK Ave	31,700	0.33	0.36	0.37	0.39		1.21 / 1.16	0.0	1.84	1		
SUTHERLAND AVE	Westwood Rd - Hollywood Rd	16,380	0.40	0.41	0.40	0.41		0.98 / 1.09	0.0	1.92	3		
	Hollywood Rd - Liberty St	12,480	1.38	1.38	1.36	1.37	K-73	1.14 / 1.20	0.0	1.88	3		
	Liberty St - Middlebrook Pk	12,480	0.94	0.95	0.96	0.98	K-74	1.04 / 1.12	0.0	1.59	2		
TAZEWELL PK	Emory Rd - Murphy Rd	13,520	1.11	1.14	1.22	1.31	K-75	1.05 / 1.06	0.0	2.24	0		
	Murphy Rd - Jacksboro Pk	13,520	1.11	1.14	1.23	1.34	K-76	1.21 / 1.09	0.6	1.88	0		
	Jacksboro Pk - Old Broadway	13,520	1.64	1.66	1.72	1.82	K-77	1.15 / 1.75	1.5	1.63	1	Bike/Ped	17-910
TURKEY CREEK RD	Loudon County Line - Concord Rd	12,480	0.37	0.42	0.48	0.55		--	0.0	1.73	2		
VANOSDALE RD	Kingston Pk - Middlebrook Pk	12,480	1.01	1.03	1.05	1.07	K-78	1.99 / 2.13	1.0	1.61	3		
VIRTUE RD	Kingston Pk - Turkey Creek Rd	12,480	0.39	0.41	0.46	0.54		--	0.0	2.21	0	ITS/Operational Bike/Ped	09-630
VOLUNTEER BLVD	Cumberland Ave - Lake Loudoun Blvd	32,900	0.38	0.39	0.40	0.40		0.94 / 0.98	1.0	1.46	2	ITS/Operational	19-603
	Lake Loudoun Blvd - Cumberland Ave	32,900	0.29	0.30	0.31	0.31		1.32 / 1.23	0.0	1.46	2	ITS/Operational	19-603
WASHINGTON PK	Murphy Rd - Maloneyville Rd	12,480	0.72	0.77	0.87	0.98	K-79	1.15 / 0.99	0.0	1.78	0		
	Millertown Pk - I-640 WB Ramps	15,600	0.64	0.65	0.68	0.71		1.03 / 1.38	0.0	2.00	1		
	I-640 WB Ramps - Murphy Rd	15,600	1.11	1.19	1.30	1.44	K-80	1.30 / 1.93	0.0	1.74	1	ITS/Operational Bike/Ped Roadway Capacity	09-615
WEISGARBER RD	Kingston Pk - Middlebrook Pk	34,500	0.61	0.63	0.65	0.67		1.49 / 1.47	0.0	1.67	3		
WESTERN AVE	Schaad Rd - Palmetto Rd	35,700	0.49	0.54	0.58	0.64		0.92 / 0.95	1.0	1.94	1		

ROUTE	CORRIDOR LIMITS	CAPACITY	2018 V/C	2026 V/C	2035 V/C	2045 V/C	CONGESTED CORRIDOR ID	2020 TRAVEL TIME INDEX (AM/PM)	BOTTLENECKS PER MILE	CRASH SEVERITY INDEX	NUMBER OF MULTIMODAL FACILITY TYPES	PROPOSED CMP STRATEGIES	MOBILITY PLAN PROJECT ID
	Palmetto Rd - Third Creek Rd	35,700	0.63	0.67	0.71	0.76		0.99 / 1.10	0.0	1.84	1		
	Third Creek Rd - Ed Shouse Dr	35,700	0.62	0.65	0.68	0.73		1.58 / 1.70	2.6	1.73	2		
	Ed Shouse Dr - Texas Ave	51,800	0.59	0.61	0.63	0.65		1.1 / 1.17	1.8	1.64	2		
	Texas Ave - Keith Ave	35,700	0.51	0.52	0.54	0.57		0.89 / 0.94	0.0	1.91	1		
	Keith Ave - University Ave	35,700	0.58	0.60	0.63	0.66		0.90 / 0.90	1.1	1.97	3		
	University Ave - Broadway	35,700	0.51	0.54	0.57	0.60		1.24 / 1.48	2.2	1.82	1	ITS/Operational	19-603
WESTLAND DR	I-140 W Ramps - Ebenezer Rd	16,380	0.76	0.81	0.87	0.93	K-81	1.59 / 1.48	0.0	1.94	1		
	Ebenezer Rd - Morrell Rd	12,480	0.80	0.86	0.90	0.93	K-82	1.24 / 1.12	0.0	1.83	0		
	Morrell Rd - Northshore Dr	12,480	0.69	0.72	0.76	0.81		1.08 / 1.13	0.0	1.55	0		
	Northshore Dr - I-140 W Ramps	12,480	0.85	0.90	0.98	1.03	K-83	1.04 / 1.11	0.0	2.03	0		
WOODLAND AVE	Branner St - St. Marys St	12,480	1.02	1.03	1.02	1.03	K-84	1.03 / 1.05	0.0	2.01	3	Bike/Ped	19-606
	St. Marys St - Broadway	26,775	0.40	0.40	0.40	0.41		1.13 / 1.06	0.0	1.87	3	Bike/Ped	19-606
YARNELL RD	Everett Rd - Lovell Rd	12,480	0.23	0.32	0.41	0.52		1.13 / 1.11	0.0	1.77	0		
LOUDON COUNTY													
BROADWAY ST	Browder School Rd - US 321	32,800	0.37	0.38	0.39	0.43		1.21 / 1.36	1.7	1.58	1	ITS/Operational	17-407
E. LEE HWY	Grove St - Sugar Limb Rd	13,520	0.92	0.96	1.01	1.09	L-1	0.97 / 1.00	0.0	1.94	0		
	Sugar Limb Rd - Browder School Rd	13,520	0.66	0.69	0.73	0.83		0.96 / 0.96	0.0	1.89	0		
FORD RD/MUDDY CREEK RD	US 11 - US 70	12,480	0.16	0.17	0.19	0.22		--	0.0	2.05	0		
HARRISON RD	Browder Hollow Rd - Old SR 95	12,480	0.42	0.46	0.50	0.58		--	0.0	1.19	0		
I-40	SR 95 - I-75	76,500	0.59	0.62	0.65	0.71		0.92 / 1.03	0.3	1.78	0		
I-75	Monroe County Line - SR 72	76,500	0.60	0.63	0.66	0.76		0.92 / 0.91	0.1	1.74	0	Roadway Capacity	21-400
	SR 72 - Sugar Limb Rd	76,500	0.71	0.75	0.79	0.88	L-2	0.93 / 0.95	0.0	1.96	0	Roadway Capacity	21-400
	Sugar Limb Rd - US 321	76,500	0.74	0.78	0.81	0.89	L-3	0.92 / 0.98	0.1	1.84	0	Roadway Capacity	21-400
	US 321 - I-40	76,500	0.79	0.83	0.86	0.91	L-4	0.95 / 1.17	0.2	1.76	0	Roadway Capacity	21-400
KINGSTON ST/ OLD SR 95	US 321 - US 11	12,480	0.50	0.53	0.60	0.69		1.33 / 1.35*	0.0	1.52	0		

ROUTE	CORRIDOR LIMITS	CAPACITY	2018 V/C	2026 V/C	2035 V/C	2045 V/C	CONGESTED CORRIDOR ID	2020 TRAVEL TIME INDEX (AM/PM)	BOTTLENECKS PER MILE	CRASH SEVERITY INDEX	NUMBER OF MULTIMODAL FACILITY TYPES	PROPOSED CMP STRATEGIES	MOBILITY PLAN PROJECT ID
LEE HWY/ MULBERRY ST	Monroe County Line - SR 72	13,520	0.36	0.37	0.39	0.43		1.03 / 1.02	0.0	2.06	0		
MARTEL RD	Knox County Line - US 11	12,480	0.27	0.28	0.30	0.34		--	0.0	1.94	0		
MULBERRY ST	SR 72 - Grove St	13,520	0.56	0.60	0.66	0.75		1.09 / 1.12	0.5	1.62	1		
SHAW FERRY RD	Town Creek Rd - US 11	12,480	0.29	0.30	0.32	0.36		-	0.0	1.49	0		
SR 72	Roane County Line - I-75 SB Ramps	16,380	0.19	0.20	0.21	0.23		1.00 / 0.96	0.2	1.86	0		
	I-75 SB Ramps - US 11	16,380	0.79	0.85	0.94	1.05	L-5	1.10 / 1.21	0.9	1.69	0		
	US 11 - Tellico Pkwy	13,520	0.52	0.58	0.66	0.77		1.07 / 1.08	0.0	1.71	0		
SUGAR LIMB RD	I-75 - US 11	12,480	0.54	0.55	0.57	0.59		1.04 / 1.05	0.0	1.94	0		
TELLICO PKWY	SR 72 - US 321	16,900	0.41	0.45	0.51	0.57		1.10 / 1.11*	0.0	1.75	0		
TOWN CREEK RD	Old SR 95 - Ford Rd	12,480	0.15	0.15	0.16	0.17		1.46 / 1.47*	0.0	1.70	0		
US 11	US 321 - Kingston Pk	13,520	0.74	0.81	0.87	0.98	L-6	1.07 / 1.09	0.8	1.94	0	ITS/Operational	19-400
US 321	US 11 - I-75 NB Ramps	49,200	0.55	0.57	0.60	0.63		1.09 / 1.26	12.2	1.70	0	ITS/Operational	19-400
	I-75 NB Ramps - I-75 SB Ramps	34,500	0.79	0.84	0.88	0.92	L-7	1.77 / 2.12	0.0	1.63	0	ITS/Operational	19-400
	I-75 SB Ramps - US 70	35,700	0.45	0.49	0.52	0.56		1.19 / 1.15	2.4	2.24	0	ITS/Operational	19-400
	Blount County Line - Tellico Pkwy	35,700	0.37	0.39	0.41	0.46		0.95 / 0.94	0.5	1.82	0	ITS/Operational	19-400
	Tellico Pkwy - US 11	35,700	0.55	0.58	0.62	0.68		1.34 / 1.32	3.1	1.53	1	ITS/Operational	19-400
	US 70 - I-40	35,700	0.30	0.33	0.36	0.39		1.21 / 1.39	1.3	2.00	0	ITS/Operational	19-400
US 70 E	Roane County Line - US 11	13,520	0.33	0.36	0.41	0.47		1.55 / 1.51	0.1	1.94	0		
SEVIER COUNTY													
BOYDS CREEK HWY	Chapman Hwy - Porterfield Gap Rd	13,520	0.83	0.88	0.97	1.07	S-1	1.20 / 1.11	0.4	1.96	0	ITS/Operational	18-500
	Porterfield Gap Rd - SR-66	13,520	0.65	0.69	0.76	0.85	S-2	1.03 / 1.03	0.1	2.37	0		
CHAPMAN HWY	Boyds Creek Hwy - Knox County Line	35,700	0.56	0.60	0.65	0.71		1.05 / 1.16	0.8	1.81	0	ITS/Operational	09-626
CHAPMAN HWY/N. MAIN ST	Dolly Parton Pkwy - Boyds Creek Hwy	35,700	0.47	0.50	0.54	0.60		1.04 / 1.04	0.5	2.10	0		
DOUGLAS DAM RD	US 25W - SR 66	13,520	0.22	0.23	0.28	0.36		1.04 / 1.02	0.2	2.00	0		
I-40	Midway Rd - Sevier County Line	120,200	0.33	0.35	0.37	0.41		0.90 / 0.96	0.1	1.82	0		

Table D-6. Roadway Capacity Projects

PROJECT ID	ROUTE	TERMINI	JURISDICTION	LENGTH (MILES)	TYPE OF IMPROVEMENT	CAPACITY ADDITION JUSTIFICATION	ADDITIONAL MEASURES TO PRESERVE ROADWAY CAPACITY
ANDERSON COUNTY PROJECTS							
09-101A	Edgemoor Rd (SR 170)	Oak Ridge Hwy (SR 62) to Melton Lake Dr	Oak Ridge/ Anderson County	2.6	Widen 2-lane to 5-lane	High V/C ratio, operations & public transit not applicable	Project will include median/continuous center turn lane and accommodations for bikes/peds
09-101B	Edgemoor Rd (SR 170)	Melton Lake Dr to Clinton Hwy (SR 9/US 25W)	Oak Ridge/ Anderson County	3.6	Widen 2-lane to 5-lane	High V/C ratio, operations & public transit not applicable	Project will include median/continuous center turn lane and accommodations for bikes/peds
BLOUNT COUNTY PROJECTS							
09-214	Sevierville Rd (SR 35/US 411)	Washington St (SR-35) to Walnut St	Maryville	0.5	Widen 2-lane to 3-lane	Existing safety issue with geometric deficiencies	Project will include median/continuous center turn lane and accommodations for bikes/peds
09-216	Alcoa Hwy (SR 115/US 129)	Pellissippi Pkwy (SR 162) to Knox/Blount County Line	Blount County/ Alcoa	3.2	Widen 4-lane to 6-lane with 2 auxiliary lanes between Singleton Station Rd and Topside Rd (SR 333)	High V/C ratio, operations & public transit not applicable	Alcoa Hwy projects will include a concrete median barrier to provide partial to full access control. Project also includes a separated multi-use path for pedestrians and bicyclists that will connect Knox and Blount Counties
09-239	Montvale Rd (SR 336)	Montvale Station Rd to Southview Drive	Maryville	2.0	Widen 2-lane to 3-lane	Existing safety issue with geometric deficiencies	Project will include median/continuous center turn lane and accommodations for bikes/peds
09-242	W Broadway Ave (SR 33/US 411)	S Cedar St to Lamar Alexander Pkwy (US 321/SR 73)	Maryville/Alcoa	0.5	Widen 3-lane to 4-lane	High V/C ratio, operations & public transit not applicable	Project will include accommodations for bikes/peds
09-248	Topside Road (SR 333)	Wrights Ferry Rd to Alcoa Hwy (US 129/SR 115)	Alcoa	2.3	Widen 2-lane to 3-lane	High V/C ratio, operations & public transit not applicable	Project will include median/continuous center turn lane and accommodations for bikes/peds
10-260	Foothills Mall Dr Extension	Foch St to existing McCammon Ave	Maryville	0.7	Construct new 2-lane road	Provides additional network connectivity. Project will alleviate congestion from US 129 Bypass as parallel facility	Project will include accommodations for bikes/peds
17-202	US 129 Widening	Hall Rd (SR 35) to US 321	Alcoa/ Maryville	2.6	Widen 4-lane to 6-lane	High V/C ratio, public transit options not applicable	Project will maintain limited access at major roadway intersections only (no direct driveway access)
KNOX COUNTY PROJECTS							
09-615	Washington Pike	I-640 to Murphy Rd	Knoxville	1.8	Widen 2-lane to 4-lane	High V/C ratio	Project will include median/continuous center turn lane and accommodations for bikes/peds
09-625	Schaad Rd	Oak Ridge Hwy (SR 62) to Pleasant Ridge Rd	Knoxville/ Knox County	1.5	Widen 2-lane to 4-lane	High V/C ratio, Project part of plan to complete 4-lane corridor in northwest Knox County between I-75 north and I-40 west to alleviate congestion on sub-standard roadways	Project will include median/continuous center turn lane and accommodations for bikes/peds
09-637	Lovell Rd (SR 131)	Cedardale Ln to Middlebrook Pike (SR 169)	Knox County	1.7	Widen 2-lane to 4-lane	High V/C ratio, public transit options not applicable	Project will include median/continuous center turn lane and accommodations for bikes/peds

PROJECT ID	ROUTE	TERMINI	JURISDICTION	LENGTH (MILES)	TYPE OF IMPROVEMENT	CAPACITY ADDITION JUSTIFICATION	ADDITIONAL MEASURES TO PRESERVE ROADWAY CAPACITY
09-638	Oak Ridge Hwy (SR 62)	Schaad Rd to Byington-Beaver Ridge Rd (SR 131)	Knox County	4.2	Widen 2-lane to 4-lane	High V/C ratio, public transit options not applicable	Project will include median/continuous center turn lane and accommodations for bikes/peds
09-643	Emory Rd (SR 131)	Maynardville Hwy (SR 33) to Tazewell Pike (SR 331)	Knox County	4.9	Widen 2-lane to 4-lane	High V/C ratio, public transit options not applicable	Project will include median/continuous center turn lane and accommodations for bikes/peds
09-644	Gov John Sevier Hwy (SR 168)	Alcoa Hwy (SR 115/US 129) to Chapman Hwy (SR 71/US 441)	Knox County	6.5	Widen 2-lane to 4-lane	High V/C ratio, public transit options not applicable	Project will include median/continuous center turn lane and accommodations for bikes/peds
09-647	Pellissippi Pkwy (SR 162)/Oak Ridge Hwy (SR 62)	Edgemoor Rd (SR 170) to Dutchtown Rd	Knox County	6.0	Corridor safety and capacity improvements to include access control, interchange reconstruction, frontage roads, auxiliary lanes and provision for a shared use path	High V/C ratio, public transit options not applicable	Project would convert from limited to full access control facility
09-653	Alcoa Hwy (SR 115/US 129)	Woodson Dr to Cherokee Trail	Knoxville	1.6	Widen 4-lane to 6-lane	High V/C ratio, public transit options not applicable	Alcoa Hwy projects will include a concrete median barrier to provide partial to full access control. Project also includes a separated multi-use path for pedestrians and bicyclists that will connect Knox and Blount Counties
09-668	Kingston Pk (SR 1)	Smith Rd to Campbell Station Rd	Farragut	1.4	Widen 4-lane to 6-lane	High V/C ratio, public transit options not applicable	Project will include median/continuous center turn lane and accommodations for bikes/peds
09-669	Everitt Road	Watt Rd to Split Rail Ln	Farragut/Knox County	2.5	Reconstruct existing 2-lane road to 3-lane	Geometric deficiencies	Project will include median/continuous center turn lane and accommodations for bikes/peds
09-673	Oak Ridge Hwy (SR 62)	Byington Beaver Ridge Rd (SR-131) to Pellissippi Pkwy (SR-162)	Knox County	4.2	Widen 2-lane to 4-lane	High V/C ratio	Project will include accommodations for bikes/peds
09-691	I-40/75	I-40/I-75 Interchange to Lovell Rd (SR 131) Interchange	Knoxville/ Farragut/ Knox County	6.7	Widen 6-lane to 8-lane	High V/C ratio	Full access control facility, ITS strategies
09-692	I-75	Emory Rd (SR 131) to Raccoon Valley Rd (SR 170) Interchange	Knoxville/ Knox County	4.8	Widen 4-lane to 6-lane	TDOT's I-75 Corridor Study projects high v/c ratio	Full access control facility, ITS strategies
13-603	I-40/75	Lovell Rd (SR 131) Interchange to Campbell Station Rd Interchange	Knoxville/ Knox County	1.8	Construct eastbound and westbound auxiliary lanes between interchanges	High V/C ratio, eliminates bottleneck section	Full access control facility, ITS strategies
LOUDON COUNTY PROJECTS							
21-400	I-75	Pond Creek Road (SR 323) to I-40/I-75 Junction	Loudon County	16.0	Widen 4-lane to 6-lane	High V/C ratio	Full access control facility

STEP 8: EVALUATE STRATEGY EFFECTIVENESS

The evaluation of congestion issues and mitigation strategies in the Knoxville region is an ongoing process. Though the CMP is a formalized mechanism for guiding and documenting this process, the TPO is actively promoting many CMP strategies with each project implementation. There are a number of planning activities and studies that seek to evaluate and address multimodal mobility issues, including roadway congestion. In addition, there are programs administered by the TPO that strive to reduce SOV trip-making in the region (e.g., bicycle and pedestrian programs, trip reduction programs like Smart Trips, etc.). All of these can occur between Mobility Plan updates and, therefore, may not be reflected in the CMP.

Each Mobility Plan and corresponding CMP update create an opportunity for the TPO to reasses the progress made in addressing regional congestion. In addition, the TPO can evaluate the regional CMP network more frequently to actively monitor its performance and communicate the impacts to stakeholders and the public. With the structure established in this CMP, the TPO will look to do the following:

- **Implement a Data Dashboard** – As travel data becomes more readily available, the TPO can work internally to process and visualize congestion-related data on its website. Doing so would make the data more accessible to the public and stakeholders as well as support the TPO's efforts for transparent decision-making.
- **Distribute and Publicize Congestion Data** – As part of this effort, future Mobility Plan updates, and interim data monitoring, the TPO will organize and distribute the CMP performance data to its member jurisdictions. This will provide a valuable resource for municipalities to assess congestion issues and locally prioritize projects on the network. Sharing this information will result in a continued linkage between the CMP and implementation of regional projects through the TPO's Mobility Plan and TIP. In addition, the TPO can explore opportunities to report this data to the public through the use of annual reports, presentations at TPO meetings, and other engagement activities.
- **Track Project Performance** – With the availability of both current and historic travel time and speed data, the TPO now has the ability to begin tracking the performance of corridors over time. This can be especially useful for assessing the benefits of projects along congested corridors.

Beginning with the priority corridors identified in this CMP, the TPO can track travel times, speeds, and reliability on a recurring basis. This analysis and assessment of traffic operations can help inform the prioritization of projects in the region. As projects move through the TIP and are ultimately implemented, the TPO can also conduct before and after studies to determine corridor-level benefits of roadway projects. Finally, travel demand model updates provide a similar opportunity to assess comprehensive, systemwide impacts of projects. Over time and as more and more projects are implemented, these data and tools can be used to gauge local effectiveness of CMP strategies, ultimately informing future prioritization of congestion mitigation projects.

CMP STAKEHOLDER MEETINGS KEY FINDINGS

In total, there were nine stakeholder meetings conducted as part of the Mobility Plan 2045 CMP organized by the following geographies and topical areas:

- Anderson County
- Blount County
- Knox County
- City of Knoxville
- Loudon County
- Sevier County
- TDOT
- Bicycle and Pedestrian Stakeholders
- Transit Agencies

In each meeting, the TPO first described the purpose of the CMP and how it folds into each Mobility Plan update. In addition, these meetings focused on the coordination of the CMP and the Regional ITS Architecture efforts to ensure integration of ITS, TSM&O, and other operational solutions into the planning process. The TPO presented data related to existing congestion levels on the CMP network and facilitated discussion about the causes of congestion in each area as well as potential solutions for mitigating the issues. At the conclusion of the meetings, the TPO discussed future opportunities for the stakeholders and representatives from its member jurisdictions to consider operational and multimodal solutions to addressing congestion in the project application and selection process. This appendix documents the attendees at each of the nine meetings as well as key themes and findings from this outreach that informed CMP development.

ANDERSON COUNTY ITS/CMP STAKEHOLDER MEETING

JULY 31, 2020 10:00-11:00 AM

Attendees

Knoxville Regional TPO	Mike	Conger
KCI	Kayla	Ferguson
KCI	Beth	Ostrowski
KCI	Tyler	Fosnes
Oak Ridge	Wayne	Blasius
Oak Ridge	John	Van Eek
Anderson County	Kathryn	Baldwin

Discussion of Congestion Issues and Solutions

Edgemoor Road (SR 170)

- Edgemoor Road has capacity issues along the entire length.
- The bridge is a major bottleneck and there has been discussions of widening for over 25 years. Traffic coming from the east and Clinton Highway backs up in the morning all the way back to Shell Station. The intersection at Melton Lake is a huge bottleneck and constrained by the bridge/river. One of the major issues is that they can't put detection/loops on the bridge so if people are traveling slow the signal will gap out. There's also an issue with the loop in the sweeping right turn; when vehicles are turning right, they often miss the loops and don't trigger the sensor.
- Need to potentially look at putting radar or camera detection with advanced sensors.
- School buses from side roads on east side of river are an issue, too.
- TDOT included widening with IMPROVE Act funds. The functional layout converted the facility to 5-lane section with a center turn lane. There were requested fundamental changes to TDOT concept, mainly to take out the center turn lane. TDOT revised based on comments and is converting to a non-traversable median instead. Will also include an on-street multiuse path parallel to the road.
- Worth mentioning is that the UPF project in Y-12 will increase traffic in the coming years.

Pellissippi Parkway (SR 162)

- With existing TDOT projects in the works on Pellissippi Parkway, the conversation primarily revolved around the intersection near Solway Road, which is unsafe and very congested near the river bridge. Initial desire was for a fly over from Oak Ridge Highway to SB Pellissippi Parkway with a fix to the Solway intersection problem as well. Wrecks on the bridge and at Solway are big issue, particularly in bad weather. Backed up traffic on the bridge is also an EMA issue. U-turns to go southbound on Pellissippi are prohibited but people still do it. Access

control is the ultimate solution. Newest interchange design with Oak Ridge Highway is a SPUI that closes access to commercial access on the north side of the Oak Ridge Highway/Pellissippi interchange.

- Is making ingress/egress with Oak Ridge more efficient detrimental to keeping population in Oak Ridge? City residents want access to amenities in downtown and west Knox County/Farragut. Obviously, the City doesn't want to lose the tax dollars generated by resident growth, but they don't want to maintain an unsafe situation either.

Illinois Ave (SR 62)

- Congestion shown really only occurs during peak hours. Even though the corridor has high traffic volumes, it has higher capacity south of Lafayette so this probably isn't really an issue that needs to be addressed most likely

Other Comments

- A regional motorsports park is proposed west of Oak Ridge with the industrial development board and proposal currently in discussions on land acquisition.

BLOUNT COUNTY ITS/CMP STAKEHOLDER MEETING

JULY 27, 2020 10:30-11:30 AM

Attendees

Knoxville Regional TPO	Mike	Conger
KCI	Kayla	Ferguson
KCI	Beth	Ostrowski
KCI	Tyler	Fosnes
City of Alcoa Engineering	Megan	Brooks
City of Alcoa Public Works	Shane	Snoderly
City of Maryville Public Works	Brian	Boone
City of Maryville Traffic Engineering	Kevin	Stoltenberg
City of Maryville Public Works	Jason	Chai

Discussion of Congestion Issues and Solutions

Intersection of US 321 and US 129

- Stakeholders were surprised that this location showed up as bottleneck hot spot, which brought up the discussion of when the data was pulled. There was a TDOT HSIP project constructed here from November 2018 to November 2019 so if we were to pull 2020 data it would show improvement based on new dual left turn lanes, some widening, video detection, and others. New TDOT tools provide a way to look at before/after conditions of projects like this.

Topside Road (SR 333)

- Most of the issues on SR 333 (Topside Drive) between I-140 and SR 129 are at either end of the segment, not corridor based.
- East of I-140, it backs up with people trying to get on the interstate to go into Knoxville during peak hour. West of I-140, the eastbound on ramps back up a little as well. The ramps probably need to be signalized but the adjacent signal at the McDonalds makes this complicated so it has never moved forward even though it has been analyzed multiple times.
- The intersection of SR 333 and SR 129 is a dangerous T-intersection with an existing but unconstructed safety project.

Broadway Avenue (SR 411)

- Current ATMS project along Broadway Avenue, but it's not adding any capacity, mostly just technology improvements. There have also been recent realignments on Broadway at Old

Knoxville Highway and at Brown School Road and Lincoln to address safety more so than capacity.

- Improvement is still needed southwest of US 129 Bypass. The corridor LOS shows the congestion that occurs from William Blount Dr, Sandy Springs Rd, and the US 129 Bypass.
- The Pellissippi Parkway Extension is much needed and will help relieve pressure on Broadway Avenue on the northeast side of Maryville as well as at Washington/Hall intersection.

Other Comments

- Stakeholders would have expected to see bottlenecks show up at the additional following intersections:
    - SR 129 and Louisville Road
    - Hall Road and Sevierville Road
    - US 321 and Washington Street

KNOX COUNTY ITS/CMP STAKEHOLDER MEETING

JULY 28, 2020 3:00-4:00 PM

Attendees

Knoxville Regional TPO	Mike Conger
KCI	Kayla Ferguson
KCI	Beth Ostrowski
KCI	Tyler Fosnes
KCI	Ryan Wenger
Knox County	John Sexton

Discussion of Congestion Issues and Solutions

Chapman Highway (US 441)

- Lack of center turn lane is the main issue for the 2-lane road, but TDOT IMPROVE Act project extends all the way out to Seymour and will probably include turn lane as a major scope element.
- Multiple ongoing projects on Chapman Highway, but the ATMS stops at City boundaries.

John Sevier Highway (SR 168)

- Intersection at Maryville Pike is geometrically challenging and probably needs traffic signal.
- Intersection at Martin Mill is signalized and has left turns on mainline, but here and at other isolated intersections throughout the county, they need communication and video capabilities.
- Interchange with US 129 had odd and unsafe design due to dangerous left side merge. southbound from John Sevier Highway to Alcoa Highway. WB approach backs up significantly (over a mile) during peak hour. TDOT does have improvements at this interchange with slated Alcoa Highway improvements.

Northshore Drive (SR 332)

- Knox County has Morell to I-140 and I-140 to Choto; City owns the portion near I-140 interchanges.
- Commuter traffic is really the issue and lack of turn lanes. West of Concord Road, main issue is that accessibility is limited because of the river, but growth is still coming.
- There has been discussion of making Tooles Bend Road a roundabout with private development.

Westland Drive

- The main issue is that this is an over capacity rural road carrying more traffic than originally intended.

- New left turn lanes coming in with development just west of the I-140 interchange, but not along the corridor, which is really needed.
- Recent TDOT interchange ramp queue project was completed.

Hardin Valley Road

- TDOT interchange project has been let which will help with congestion and operations near Pellissippi Parkway. Other than that there's been no additional projects since the Hardin Valley Mobility Study was completed.
- The County would like to have communication and video at intersections along east side.

Lovell Road (SR 131)

- Needed improvements to Lovell Road between Kingston Pike and Murdock Drive are a great opportunity for coordination between City and County. County owns signals at Murdock, Outlet, Lexington, and Kingston Pike while the City owns the interchange ramps and Parkside Drive. There will be another new signal put in north of Parkside Drive as part of a new hotel development. There is a need and desire to get City/County signals on same system and make corridor operations improvements.
- Parkside Drive/Lovell Road continues to be the biggest intersection issue on the corridor. TDOT is adding another right turn lane on the southbound approach.

Oak Ridge Highway (SR 62)

- Again, only 2-lanes currently with no turn lanes and a lot of traffic, but TDOT will be widening it just west of Schaad Road with IMPROVE Act project.

Byington Beaver Ridge (SR 131)

- Safety and operational issues at one lane underpass with Ball Camp Byington Road and railroad. TDOT looked at overpass previously but decided it was too expensive.
- Karns Valley Drive connection has been constructed instead to create alternative to get to Hardin Valley, which is the desired movement along Byington Beaver Ridge Road.

Emory Drive (SR 131)

- Knox County is going to widen small part where state route ends from Beaver Ridge Road to Henderson mainly just to improve safety.
- On the eastern portion, it's just two lanes without turn lanes, but the volume is primarily peak hour volumes. There is potential to work with TDOT to add turn lanes and a signal at Clinton Highway.

Maynardville Highway (SR 61)

- Ongoing ATMS project will help with communication and hardware. However, the ATMS projects only include a single camera and would like more if possible.

Norris Freeway (US 441)

- Even though LOS shows peak hour congestion, the County doesn't really get a lot of calls about it and would consider it a low priority.

Tazewell Pike (SR 331)

- Issue is that it's just a 2-lane rural facility without turn lanes though the volumes are primarily a peak period problem.

Cedar Bluff Road

- This is part of an ongoing ATMS project. However, it's surprising that the model showed no congestion.

CITY OF KNOXVILLE ITS/CMP STAKEHOLDER MEETING

JULY 28, 2020 12:00-2:00 PM

Attendees

Knoxville Regional TPO	Mike	Conger
KCI	Kayla	Ferguson
KCI	Beth	Ostrowski
KCI	Tyler	Fosnes
KCI	Ryan	Wenger
City of Knoxville	Ernie	Pierce
City of Knoxville	Evan	Hoffman
City of Knoxville	Zach	Roberts
City of Knoxville	Shawn	Garner

Discussion of Issues and Solutions

Asheville Highway (US 11E)

- I-40 ramps are super congested in peak hours because of through volumes on Asheville Highway. Ramp queuing project was recently completed by TDOT with advanced detection; it connected to signals to prevent backing up onto the interstate, more of a flushing mechanism than anything else.
- John Sevier Highway backs up significantly, particularly in AM peak for NB left turn movements with people trying to get to the interstate.
- The solution in this area is probably just coordination and retiming signals

Chapman Highway (US 441)

- Multiple projects along this corridor including the ATMS projects under development, which are not reflected in the model outputs shown. City will be looking to retime the corridor after ATMS deployment.
- TDOT is looking to do more center turn lanes eventually.
- No shoulder in certain areas makes vehicles slow down naturally, causing some spot congestion.

Sutherland Avenue

- Not a lot of capacity on this facility for the volume it carries although mostly manageable congestion, primarily during peak hours.
- Issues do arise with morning school traffic and traffic signals during lunch/mid-day peak. This corridor probably needs a center turn lane (since there are currently no left turn lanes) and access management.

- Intersection at Hollywood Road can be an issue, particularly the southbound left turns. It's probably not the capacity of the intersection so much as the lack of access management that creates backups along Southerland.
- At the other end, the Hollywood Road/Papermill Drive intersection has multiple issues – needs left turn lanes, potentially a roundabout (but requires more ROW), lots of through traffic on Papermill Drive (which also serves as a bypass when Interstate backs up), and lots of truck traffic from the industrial areas to the east.

Cumberland Avenue / Kingston Pike (US 11)

- Movements are heavy in both directions throughout the day and a center turn lane is needed.
- A lot of volume on this corridor with limited opportunity to improve. Real estate through this area (Sequoyah Hills) is very expensive even though it probably needs to be widened.
- An ATMS deployment is coming to this area as well.

Lyons View Pike

- This corridor mainly serves as a cut through to Northshore Drive so left turns at Lyons View/Northshore back up, but really only in peak periods.

Northshore Drive (SR 332)

- There aren't many signals in this area, but the Rocky Hill area has some congestion, specifically at the intersection with Morrell Road (high volumes coming from I-40, school traffic).
- It was noted that there will be a separate study for the Northshore Drive corridor as congestion and multimodal connectivity are bad. Not much to be done without widening though the river makes it difficult.

Vanosdale Road

- This corridor serves as a cut through across the interstate from Middlebrook Pike to Northshore Drive. However, while most north-south connectors are four or five lanes and this one is only two lanes. Essentially, it's a low speed neighborhood street that functions as an arterial.
- School traffic near Sheffield Drive dictates how bad congestion is because vehicles queue up during student drop off/pick up.
- The curve just north of the interstate is also an issue. Currently have constructed but unused bridge piers for alternative, more direct connection.

Papermill Drive

- This corridor serves as a cut through to Kingston Pike to avoid Northshore Drive off interstate.
- Access management is an issue with it being a two-lane road. For instance, McKay's generates a lot of traffic on this segment, but there aren't left turn lanes at that particular location (though there are some in other spots) so it backs up.
- City is potentially starting a study.

Middlebrook Pike (SR 169)

- This corridor serves as a cut through when interstate issues come up. While it can back up pretty far at times, the ATMS project will make operational improvements.

- There are significant truck volumes because of the postal facility and fuel tank storage locations. Trucks use Ed Shouss Drive to get to I-75 and then use Weisgarber Road to get to I-40.
- Westbound left turn queues at Weisgarber/Middlebrook back up. Issue with trucks taking up the storage capacity. Particularly a problem during peaks (cited left turn volumes ~800-900).

Woodland Avenue

- This corridor will probably see big drop in traffic with hospital closure nearby.
- The intersection at Central Street can get bad at times, but not a significant issue.

Cedar Ln

- This corridor serves as a 2-lane cut through to carry traffic from Broadway to I-75. Really just needs to be widened to carry the volumes it sees.

Broadway

- This corridor just has a lot of traffic and it's probably hard to squeeze in any more traditional capacity.
- This corridor is part of an ATMS deployment with a complementary transit project with transit signal priority.

Tazewell Pike (SR 331)

- Again, this corridor carries a lot of traffic with only two lanes. The City has had previous opportunities to widen but neighborhood associations always oppose citing that widening would bring more traffic.
- The City gets a lot of requests for left turn lanes at intersection with Jacksboro Pike/Sanders Drive. ROW is an issue as is skew with approaches. Southbound left turn lane is the most requested because there are so many right turn movements on same approach.

Washington Pike

- The intersection at Mill Road can be problematic, but not a huge issue.
- There was a previous discussion of a potential extension of Murphy Road south to Millertown Pike but it becomes a jurisdictional issue as to who would construct/maintain.
- There has been an active project here ongoing for 10+years; new direction from City may include revisiting priority for all previous projects, including this one.

LOUDON COUNTY ITS/CMP STAKEHOLDER MEETING

JULY 28, 2020 9:00 – 10:00 AM

Attendees

Knoxville Regional TPO	Mike	Conger
KCI	Kayla	Ferguson
KCI	Beth	Ostrowski
KCI	Tyler	Fosnes
Loudon County	Jack	Qualls
Lenoir City	Amber	Scott

Discussion of Issues and Solutions

US 321

- Model and bottleneck data show congestion issues but this is likely due to construction of recent improvement projects. From 2013 – 2016/2017 the dam/bridge project was underway and from December 2017 – July 2020 the widening construction was going on. With these improvements, the intersection of SR 11/SR 321 now operates great and traffic flows smoothly.

Lee Highway (US 11/SR 2)

- This corridor currently operates at LOS D.
- There is a major issue related to commercial truck traffic stemming from industrial parks off Blair Bend and Natalie Boulevard. Natalie has an issue with industrial park employees leaving in afternoon peak (approximately 2,000 employees leaving between 4:30-5:00 PM each day). Sight distance here is also a safety issue because of geometrics and speed. They have an SIA project to install a signal at Lee Highway at this location though. In addition, trucks leaving Blair Bend to turn left on US 11 hit downtown traffic near Loudon courthouse, continuing on to take a left turn at Grove Street to get to SR 72 to the south (and ultimately to I-75). Also need to extend the truck climbing lane towards Lenoir City. It currently tapers back around Rock Quarry Road, but there's potential to expand within TDOT ROW near Engel Road.
- Another issue at Sugarlimb Road (SR 324). A traffic signal was recently installed but trucks occupy a large portion of the storage so it could be extended. In addition, the jail located in northern quadrant hosts court every Wednesday; they don't have enough parking, so vehicles queue up on SR 2 to turn into parking lot. Potentially consider a more direct connection for Sugarlimb Road to Lee Highway with future development.

SR 72

- Currently operating at LOS D, but the issues are at the terminating intersections. Probably don't need 4-lane cross-section, maybe just a 3-lane as development comes into that area.

I-75

- It's surprising that I-75 isn't operating worse south of the merge.
- TDOT's IMPROVE Act project from I-75/I-40 junction that extends south 16 miles needs to be broken into more manageable segments (from a fiscal standpoint). Could potentially focus more on signalizing interchanges and making ramp improvements.
- I-40/I-75 needs to have truck climbing lane from Watt Road to Campbell Station Road.
- There are lots of crashes at I-40/I-75 junction as it needs better lighting.

US 11

- From SR 321 north, high volume is due to school and church traffic in addition to the many residential areas it serves.

Muddy Creek/Beals Chapel Road

- The skewed railroad underpass near the propane distributor is a safety issue. Not sure what can be done but it may become an issue if West Knox County continues to be a hot spot for development.

SEVIER COUNTY ITS/CMP STAKEHOLDER MEETING

JULY 31, 2020 2:00-3:00 PM

Attendees

Knoxville Regional TPO	Mike	Conger
KCI	Kayla	Ferguson
KCI	Beth	Ostrowski
KCI	Tyler	Fosnes
Sevierville	Joseph	Dodgen
Sevier County	Jeff	Ownby
Sevierville	Dustin	Smith

Discussion of Issues and Solutions

Boyds Creek Highway (SR 338)

- High growth area near the corridor mainly because of utilities and location of schools with direct access. However, the schools are already at capacity and most students are picked up/dropped off with personal vehicle, not buses.
- Workers going to Sevierville and south Knox County all have to use Boyds Creek Highway.
- In addition, Sevierville generally needs better access to the airport via Maryville Highway/Sevierville Road.
- Between Chapman Highway (SR 71) and Winfield Dunn (SR 66), there's a fairly high traffic count for a 2-lane road, similar to other rural arterials. Sevier County has requested TPO to look at whole corridor to look at traffic flow improvements.
- Turn lane along the entire corridor is probably not needed, but potentially more traffic signals could help. Currently, there are only three signals along the corridor – one on Chapman Highway, one at SR 66, one at Old Sevierville Pike. Smaller collector roads would probably need left turn lanes; there are currently left turn lanes only near the schools but they help.
- Traffic signal at Old Knoxville Highway is being designed currently and is in the TIP. This project will also have geometric improvements with potential realignment to tie into McCroskey Island Road based on sight distance issues to the west. This improvement resulted from a TDOT spot safety study.

TDOT ITS/CMP STAKEHOLDER MEETING

JULY 30, 2020 9:00-11:00 AM

Attendees

Knoxville Regional TPO	Mike	Conger
KCI	Kayla	Ferguson
KCI	Beth	Ostrowski
KCI	Tyler	Fosnes
KCI	Ryan	Wenger
TDOT Region 1	Mark	Best
TDOT Region 1	Andy	Padgett
TDOT Region 1	Bryan	Bartnik
TDOT HQ	Lee	Smith
TDOT HQ	Veda	Nguyen

Discussion on Issues and Solutions

Alcoa Highway (US 129)

- On US 129 Bypass near the mall, TDOT recently put in dual left turn lanes at signal on Mall Road in 2018, but probably doesn't show benefits in the model.
- TDOT has a large interchange project at US 129 and Broadway Avenue (US 411) that will improve the intersection of Montgomery Lane/Foothills Mall. The scope includes adding another lane to the SB exit from US 129 (so creating 2 exiting lanes) and only allowing SB US 411 traffic to turn left on Cooper (to remove the weaving between US 129/US 411 movements).

Topside Drive (SR 333)

- TDOT had a ramp queue project at I-140 which showed that the east side ramps meet signal warrants so they are trying to get safety funds for that project.
- There's a current project to convert Topside Drive to a 3-lane cross-section, but it was put on hold since the segment didn't meet crash rate thresholds to get safety funds.
- The intersection of Topside Road/Alcoa Highway is going to become a full interchange.

John Sevier Highway SR 168

- TDOT is making improvements to the Alcoa Highway interchange using loop ramps to make SB movements free flow.
- At the intersection at Maryville Pike, TDOT would like to reconfigure but there is no official project yet.
- There is a planning report for eastern section of the corridor being carried out by the TPO.
- Because the James White Parkway project is dead, TDOT has previously looked at improving John Sevier Highway all the way to Asheville Highway.

Tazewell Pike (SR 331)

- Lots of spot safety improvements, but no holistic widening. The portion closer to I-640 improved was with Broadway project, but other than that there are no real plans to widen.
- TDOT looked at putting a signal and turn lanes at intersection with Beverly Road. Volumes meet the peak and 4-hour warrants, but not 8-hour, which is what TDOT requires. In addition, historic properties nearby make purchasing ROW difficult.

Northshore Drive (SR 332)

- Widening is difficult with such a narrow ROW footprint and cost of properties along the corridor. TDOT had conversations with City about widening shoulders to 8-10' but that's about the best that could be done.

I-40

- From I-75 to I-640, the area near I-640/Papermill Drive has highest traffic count in the state so TDOT has lots of conversations about how to get traffic flowing through there including looking at lane use and lane balancing.

Pellissippi Parkway (SR 162)

- TDOT has ongoing project at Hardin Valley Road and Oak Ridge Highway interchanges.
- At Lovell Road, TDOT is going to put signal on the south side ramp with right and left turn lanes. In concert with that improvement, Centrepoint Drive will become a cul-de-sac.

BICYCLE/PEDESTRIAN CMP STAKEHOLDER MEETING

AUGUST 7, 2020 2:00-3:00 PM

Attendees

Knoxville Regional TPO	Mike	Conger
Knoxville Regional TPO	Ellen	Zavisca
Knoxville Regional TPO – Smart Trips	Savannah	Robertson
KCI	Kayla	Ferguson
KCI	John	Houghton
KCI	Liesel	Goethert
Knox Education Foundation/SRTS Partnership	Adam	Fritts
Knox Education Foundation/SRTS Partnership	Susan	Martin
TDOT HQ	Rochelle	Carpenter
TDOT Region 1	Michelle	Christian
Knoxville Council on Disability Issues	Kendrise	Colebrooke
City of Knoxville	Jon	Livengood
Bike Walk Knoxville/Bike Walk TN	Caroline	Cooley

Discussion on Issues and Solutions

The conversation with the region's bicycle and pedestrian stakeholders was focused on opportunities where non-motorized infrastructure could help mitigate congestion in the following three areas:

- Opportunities where Safe Routes to Schools (SRTS) projects and programs could relieve school-related congestion impacts
- Accessibility to transit services
- Regional greenway/bikeway/pedestrian connections that link growing residential areas and employment centers

School-Related Congestion

- Rocky Hill Elementary is an opportunity for improving school-related congestion, particularly for dismissal periods.
- The challenge with school traffic is that it's so isolated in time and space, making infrastructure investments often difficult to justify.
- Stakeholders also pointed out the implications of virtual learning and how that will impact school traffic long-term.
- Issues with student drivers was also discussed, specifically for Central High School.
- The Farragut school campuses are a problem near Campbell Station Road/Kingston Pike. More specifically, crossing major intersections is a problem even when sidewalks are present.

Accessibility to Transit

- As it relates to transit accessibility, Route 90 is an issue for bike/ped access.
- ADA accessibility is also a challenge in some areas.
- The previous express route between Farragut/Downtown was heavily used but no longer around. Funding was temporary and came explicitly from the City of Knoxville.

Regional Bicycle and Pedestrian Connectivity

- Knox County Greenway Plan has multiuse path along Northshore Drive, but City feels it's better to encourage people to use parallel routes because that corridor is unsafe for non-drivers. Examples like Morrell Road and Lyons View Pike were cited as alternative routes that should be encouraged
- Improvements to Chapman Highway are most likely to impact bike/ped connectivity for commute trips, but these are obviously constrained by cost.
- Chapman Highway and Middlebrook Pike both have a lot of sidewalk gaps and crossings are spaced far apart.
- Broadway, specifically north of I-640, has a lot of sidewalk gaps that could be filled to create a continuous network.
- There are a couple of TIP projects that will help fill gaps such as the Middlebrook Pike complete streets project, which adds protected and buffered bike lanes to connect Western Avenue to the greenway.

TRANSIT AGENCIES ITS/CMP STAKEHOLDER MEETING

JULY 31, 2020 10:00-11:00 AM

Attendees

Knoxville Regional TPO	Mike	Conger
KCI	Kayla	Ferguson
KCI	Beth	Ostrowski
KCI	Tyler	Fosnes
ETHRA	Mike	Patterson
TPO	Doug	Burton
KAT	Si	McMurray
KAT	Jacob	Wright
KAT	Melissa	Roberson
CAC	Karen	Estes

Discussion of Issues and Solutions

- The TPO's Executive Board has been discussing the regional aspects of transit connectivity between services.
- The projects along Broadway include improved AVL systems, TSP, and queue jumping at intersections. Once this project is in place, it will be a good indication of transit benefits along a congested corridor.
- There have been discussions of intermittent exclusive bus lanes by the City, but nothing has progressed forward at this point.
- Regional transit would definitely be useful given that the region has major employers in different geographies. However, the barrier is local funding. The City of Knoxville has previously funded similar types of services but cannot sustain that support long term without contributions from surrounding municipalities.
- Stakeholders acknowledged that in the short-term, choice riders would be much harder to capture after the COVID-19 pandemic.

MOBILITY PLAN 2045

Appendix E
Financial Assumptions

E. FINANCIAL ASSUMPTIONS

INTRODUCTION

This document outlines the methodology and assumptions used in developing revenue projections as part of the Knoxville Regional TPO's Metropolitan Transportation Plan (MTP), referred to as Mobility Plan 2045. In 23 CFR Part 450 Subpart A - Transportation Planning and Programming Definitions and Subpart C - Metropolitan Transportation Planning and Programming, the level and intent of financial plan requirements as part of the TPO's MTP are laid out. The following highlight several key provisions of these requirements:

§ 450.104 Definitions

Financially constrained or fiscal constraint means that the metropolitan transportation plan, TIP, and STIP includes sufficient financial information for demonstrating that projects in these documents can be implemented using committed, available, or reasonably available revenue sources, with reasonable assurance that the federally supported transportation system is being adequately operated and maintained.

§ 450.324 Development and Content of the Metropolitan Transportation Plan

(11) A financial plan that demonstrates how the adopted transportation plan can be implemented.

(i) For purposes of transportation system operations and maintenance, the financial plan shall contain system-level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain the Federal-aid highways (as defined by 23 U.S.C. 101(a)(5)) and public transportation (as defined by title 49 U.S.C. Chapter 53).

(ii) For the purpose of developing the metropolitan transportation plan, the MPO, public transportation operator(s), and State shall cooperatively develop estimates of funds that will be available to support metropolitan transportation plan implementation, as required under § 450.314(a). All necessary financial resources from public and private sources that

are reasonably expected to be made available to carry out the transportation plan shall be identified.

(iv) In developing the financial plan, the MPO shall take into account all projects and strategies proposed for funding under title 23 U.S.C., title 49 U.S.C. Chapter 53 or with other Federal funds; State assistance; local sources; and private participation. Revenue and cost estimates that support the metropolitan transportation plan must use an inflation rate(s) to reflect ''year of expenditure dollars,'' based on reasonable financial principles and information, developed cooperatively by the MPO, State(s), and public transportation operator(s).

The intent of these provisions is that Mobility Plan 2045 be fiscally constrained, only programming dollars it expects to receive. This document is organized in two sections, highways and transit. Each documents the sources reviewed and assumptions for determining available revenues for highway and transit expenditures. Revenue projections are categorized by highway capital funding, highway operations and maintenance funding, transit capital, and transit operating funding.

HIGHWAYS

Operating, maintaining, and improving the highway system in the Knoxville TPO planning area relies on federal, state, and local funding. While the funding amounts vary among the different sources, each plays a critical role in supporting the region's multimodal transportation system.

Federal Funding

Federal funding represents the largest transportation funding source for the TPO, with motor fuel taxes generating revenue for the national Highway Trust Fund. However, motor fuel taxes have failed to keep pace with transportation demand and spending, requiring general revenue transfers to augment the trust fund. The sections below describe each of the main federal funding programs. Of note is that most federal funding programs are established and carried forward with each reauthorization bill. The current federal surface transportation authorization bill, the Fixing America's Surface Transportation Act (FAST Act), expired in September 2020, but was extended for another fiscal year to September 2021. As such, the availability of funds in the following programs is largely contingent on the passage or extension of a new reauthorization bill.

National Highway Performance Program (NHPP)

NHPP funding provides support for the condition and performance of the National Highway System (NHS), for the construction of new facilities on the NHS, and to ensure that investments of Federal-aid funds in highway construction are directed to support progress toward the achievement of performance targets established in a State's asset management plan for the NHS. Roadways eligible for this funding include rural and urban roads serving major population centers, other rural and urban principal arterials, the Interstate system, international border crossings, intermodal transportation facilities, and major travel destinations. Other areas of eligible funding are publicly owned bus terminals, infrastructure-based intelligent transportation system capital improvements, and natural habitat mitigation. This program is managed by the Tennessee Department of Transportation (TDOT) with projects selected by TDOT in cooperation with the TPO.

National Highway Freight Program (NHFP)

The FAST Act established a new program to improve the efficient movement of freight on the National Highway Freight Network (NHFN), which includes many key corridors in the Knoxville region. This program is intended to support several goals, including improving the safety, security, efficiency, and resiliency of freight transportation and investing in infrastructure and operational improvements that strengthen the nation’s economic competitiveness and increase productivity. This program is managed and projects are selected by TDOT.

Highway Safety Improvement Program (HSIP)

The purpose of this program is to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned public roads and roads on tribal land. The HSIP requires a data-driven, strategic approach to improving highway safety on all public roads that focuses on performance. This program is managed and projects are selected by TDOT.

Surface Transportation Block Grant Program (STBG)

Projects eligible for funding under this program include construction, reconstruction, and rehabilitation (major resurfacing) of any Federal-aid Highway, including the NHS, bridge projects on any public road, transit capital projects, enhancement projects, public bus terminals and facilities, carpool projects, fringe/corridor parking facilities, bicycle and pedestrian infrastructure, and safety infrastructure. In

general, STBG projects may not be on roads that are functionally classified as local. Both TDOT and the TPO receive an annual allocation of STBG funds.

Congestion Mitigation and Air Quality (CMAQ)

The CMAQ program was designed to assist nonattainment and maintenance areas in meeting the National Ambient Air Quality Standards (NAAQS) for ozone, carbon monoxide (CO), and particulate matter by funding transportation projects and programs that will improve air quality by reducing transportation-related emissions. This program is managed and projects are selected by TDOT with input from the TPO.

Transportation Alternatives (TA)

The FAST Act created a set-aside of STBG funding for transportation alternatives (TA). These set-aside funds encompass a variety of smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, and safe routes to school projects. Both TDOT and the TPO receive an annual allocation of TA funds.

High Priority Projects (HPP)

A previous transportation bill ended the tradition of providing designated funding for specific projects identified by Congress. There are two projects where HPP funding is still committed in the TPO area.

State Funding

Like the federal government, the State of Tennessee funds surface transportation projects primarily with motor fuel taxes. Tennessee is a “pay as you go” state and does not incur debt to finance the construction or maintenance of the state’s surface transportation system. TDOT uses fuel taxes to support transportation improvements throughout the state. In 2017, Tennessee passed the IMPROVE Act, which increased gasoline and diesel taxes to provide funds for transportation projects across the state.

The TPO area has received funds from three other discretionary funding programs administered by TDOT. The State Industrial Access (SIA) Program provides needed connections to developing industrial sites. The Local Interstate Connector (LIC) Program provides funding for new roadways that connect critical local facilities and the interstate system. Finally, the Multimodal Access Grant (MMAG) Program provides funding for pedestrian and bicycle facilities along state routes.

The State of Tennessee also distributes State Street Aid funding to cities and counties for use in eligible activities. Directly generated by gas tax revenues, the State Street Aid funding can be used for a variety of street improvements, including roadway construction or reconstruction, maintenance, right-of-way acquisition, roadway widening, purchasing of related construction or maintenance equipment, street lighting, signage, traffic control equipment, and other administrative costs of making such improvements.

Local Funding

Towns, cities, and counties use their own general funds for transportation improvements, operations, and maintenance. Some counties have instituted a local wheel tax in addition to the State motor vehicle registration fee to support their general funds. Local jurisdictions also provide funding to match federal or state funds for local transportation projects. Money for capital investments in streets and highways may also come from the sale of bonds. Locally, jurisdictions in the TPO area have additional funding sources available to them through state enabling legislation to finance transportation projects. These sources of funding can include rail authorities, local gasoline tax, local motor vehicle taxes, and road improvement districts. These sources can help generate a steady flow of funding for transportation improvements. The following describes these options as well as other local funding tools available.

Property Taxes

Property taxes are the chief source of local revenue and are dependent on local economic conditions. Typically, though, they remain a steady and reliable source of revenue. The funds are distributed to a general fund and then appropriated for transportation purposes.

Sales Taxes

This is one of the most commonly used and a major source of general revenue for state and local jurisdictions. This tax is placed on the sale of consumer goods and services, and purchases by business firms of items for business use. The tax is a function of the tax rate, use of funds and of redistribution formulas. A sales tax is generally more acceptable to citizens than other taxes since the tax is collected in small amounts that are not highly visible to consumers.

Wheel Taxes

Counties are authorized under Section 5-8-102 of the Tennessee Code Annotated to impose a local motor vehicle tax to provide revenue for county purposes. Imposition of the tax requires a majority vote in public referendum, or a two-thirds vote from the county legislators at two consecutive meetings.

Special Assessment Districts

Special Assessment Districts are designated areas within which commercial and residential property is assessed a charge sufficient to defray the costs of capital improvements that benefit the property within the district. Transportation Development Districts (TDDs) are one example of these districts used to finance transportation improvements.

Impact and Utility Fees

This one-time fee is imposed by local governments on new developments to help pay for the capital facilities that serve it. A fee is typically assessed on the square footage of the planned development and in some cases, the granting of a building permit is made contingent on payment of the fee.

Bond Financing

Bond financing helps local government pay for projects by establishing a type of payment plan that allows capital costs to be spread out over a number of years.

Revenue Projections

In developing the highway element of the Mobility Plan 2045 financial plan, the Knoxville Regional TPO Transportation Improvement Program (TIP) and the FAST Act were reviewed. Summary financial data was used to determine historic funding levels for various federal, state, and local funding sources and programs as shown in Table E-1. Funds sub-allocated to the TPO (L-STBG and L-STBG-TA) reflect annual allocations, while TDOT managed federal funds reflect annual obligations in the TPO planning area.

Table E-1. Historic Highway Capital Revenues

FUNDING SOURCE	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
CMAQ	$1,381,372	$993,236	$426,066	$1,712,951	$10,532,793
HSIP	$13,123,931	$6,805,621	$9,016,950	$10,417,160	$19,955,462
NHPP	$23,418,622	$100,208,165	$75,266,231	$60,016,540	$133,599,863
S-STBG	$7,703,776	$5,569,684	$8,231,039	$7,669,905	$7,481,385
L-STBG	$9,556,129	$9,954,081	$10,334,493	$10,779,523	$11,235,865
L-STBG-TA	$736,374	$751,265	$751,265	$766,059	$766,059
S-STBG-TA	$0	$0	$0	$986,503	$2,561,403
OTHER STATE (SIA, LIC, MMAG)	$1,256,936	$435,984	$538,651	$1,176,750	$1,767,579
STATE/LOCAL MATCH	$12,157,283	$30,125,288	$24,754,157	$21,393,707	$43,121,265
TOTAL	**$69,334,423**	**$154,843,324**	**$129,318,850**	**$115,165,723**	**$231,662,024**

Using this data and in consultation with TDOT and the Federal Highway Administration (FHWA), an average annual growth rate was developed. This rate was used to project highway revenue sources over the life of the Mobility Plan 2045. Projected highway revenues increase at a rate of 2.2% annually, matching the annual growth rate of FAST Act apportionments to Tennessee. In consultation with TDOT, revenues legislated for specific projects in the TPO area through the IMPROVE Act are included in the applicable horizon year. This results in the new revenues shown in Table E-2 by program for each plan horizon, which equates to approximately $6.6 billion available over the life of the plan.

Table E-2. Projected Highway Capital Revenues

FUNDING SOURCE	2021-2026	2027-2035	2036-2045	TOTAL
CMAQ	$16,768,291	$29,637,887	$40,508,946	$86,915,124
HSIP	$76,869,490	$135,866,511	$185,701,806	$398,437,807
L-STBG	$75,593,583	$133,611,351	$182,619,462	$391,824,396
NHPP	$508,638,641	$899,016,729	$1,228,772,480	$2,636,427,850
S-STBG	$47,500,900	$83,957,647	$114,752,977	$246,211,524
L-STBG-TA, S-STBG-TA	$12,600,290	$22,270,962	$30,439,861	$65,311,113
IMPROVE ACT	$453,921,736	$927,597,338	$463,014,724	$1,844,533,798
OTHER STATE (SIA, LIC, MMAG)	$6,707,260	$11,855,054	$16,203,441	$34,765,754
STATE/LOCAL MATCH	$173,816,481	$307,219,923	$419,906,965	$900,943,369
TOTAL	$1,372,416,672	$2,551,033,401	$2,681,920,661	$6,605,370,735

To develop the capital costs for projects in the Mobility Plan 2045, an annual inflation rate of 3.3% was used. The inflation rate, approved at the March 2020 TPO Executive Board meeting, is based on annual

increases in FHWA's National Highway Construction Cost Index and the Engineering News Record Construction Cost Index, which are 3.6% and 3.0%, respectively, across a 5-year period. It was assumed that these indices are more reflective of the construction costs of capital transportation projects than other commonly used measures, such as the Bureau of Labor Statistics' Consumer Price Index.

To develop the highway operations and maintenance (O&M) anticipated expenditures for the TPO jurisdictions, operating budgets for each jurisdiction were reviewed for Fiscal Years (FY) 2015 and 2019 to determine the historic and current funding levels attributed to activities such as sidewalk, greenway, street, and traffic signal maintenance, roadway restriping, street lighting, and others.

Table E-3 shows the comparison of these two data points used to evaluate how these needs have grown over a 4-year span.

Table E-3. Historic Highway O&M Expenditures

	FY 2015		FY 2019		ANNUAL % CHANGE	
JURISDICTION	**O&M Costs**	**Lane Miles**	**O&M Costs**	**Lane Miles**	**Cost/Mile**	**Average**
Anderson County	$1,728,420	49.3	$2,285,800	49.2	8.1%	**3.3%**
City of Clinton	$420,000	20.9	$560,000	21.0	8.2%	
City of Oak Ridge	$874,000	105.8	$2,216,000	109.2	36.4%	
Blount County	$4,429,844	229.2	$3,117,000	225.8	-7.1%	
City of Alcoa	$232,392	76.0	$331,000	76.7	10.3%	
City of Maryville	$458,423	67.7	$488,000	70.8	0.4%	
Knox County	$3,825,000	500.4	$5,500,000	501.5	10.9%	
Town of Farragut	$607,954	50.7	$670,000	51.4	2.2%	
City of Knoxville	$11,300,000	434.0	$8,600,000	448.6	-6.6%	
Loudon County	$795,302	106.3	$696,000	106.9	-3.2%	
Lenoir City	$267,125	43.7	$300,250	43.9	3.0%	
City of Loudon	$166,934	23.8	$180,500	23.8	2.0%	
Sevier County	$7,867,084	38.6	$3,076,600	39.5	-15.4%	
TDOT	$6,500,000	1,833.0	$6,500,000	2,027.7	-2.4%	

Anticipated expenditures associated with operating and maintaining the transportation system were derived by calculating a cost per lane mile and applying this cost to the number of lane miles eligible for federal aid in each jurisdiction. Across all the jurisdictions, the average percent increase in these costs was approximately 3.3% annually between 2015 and 2019. Applying this growth rate, Table E-4 shows the

anticipated expenditures required for maintenance activities in each jurisdiction within the TPO area, equating to approximately $1.4 billion over the life of the plan.

Table E-4. Projected Highway O&M Needs

JURISDICTION	2021 – 2026	2027-2035	2036-2045	TOTAL
Anderson County	$15,917,974	$30,587,935	$46,433,035	$92,938,945
City of Clinton	$3,899,758	$7,493,763	$11,375,667	$22,769,188
City of Oak Ridge	$15,431,898	$29,653,891	$45,015,139	$90,100,928
Blount County	$21,706,329	$41,710,821	$63,317,775	$126,734,925
City of Alcoa	$2,305,035	$4,429,349	$6,723,832	$13,458,216
City of Maryville	$3,398,360	$6,530,279	$9,913,081	$19,841,721
Knox County	$38,301,190	$73,599,459	$111,725,301	$223,625,950
Town of Farragut	$4,665,781	$8,965,752	$13,610,173	$27,241,707
City of Knoxville	$59,889,133	$115,082,791	$174,697,744	$349,669,668
Loudon County	$4,846,841	$9,313,677	$14,138,329	$28,298,848
Lenoir City	$2,090,897	$4,017,861	$6,099,186	$12,207,944
City of Loudon	$1,256,975	$2,415,400	$3,666,621	$7,338,997
Sevier County	$21,424,989	$41,170,199	$62,497,102	$125,092,291
TDOT	$45,265,042	$86,981,179	$132,038,992	$264,285,214
TOTAL	**$240,400,203**	**$461,952,356**	**$701,251,977**	**$1,403,604,542**

TRANSIT

As with highways, funding for transit comes from multiple federal, state, and local sources as described below.

Federal

Federal grant programs are the largest source of funding for transit investments. They are included with each reauthorization of the federal surface transportation authorization bill, with the most recent bill, the FAST Act, extended for one fiscal year and scheduled to expire in FY 2021. Projecting federal transit funding will be challenging until a new transportation bill is enacted. In the Knoxville area, Federal Transit Administration (FTA) Section 5307, 5310, and 5339 funds are used to support transit and are described below.

5307 Urbanized Area

FTA provides funding to urbanized areas across the country through its 5307 – Urbanized Area Formula Grant program. Any incorporated area with more than 50,000 in population is eligible to receive these funds. For areas over 200,000 in population, such as Knoxville, a local authority is the designated recipient of these funds, which are distributed from the federal level based on a combination of factors including revenue vehicle miles, passenger miles, population, and population density. The City of Knoxville/Knoxville Area Transit (KAT) is the designated direct recipient of 5307 funds, portions of which are sub allocated to Knox County Community Action Committee (CAC) Transit and the East Tennessee Human Resource Agency (ETHRA). These funds can be used for transit capital expenses and planning activities. Because Knoxville is a TMA with over 200,000 in population, 5307 funds generally cannot be used for transit operations assistance. However, Knox County CAC Transit and ETHRA use some 5307 funding for operations under the special rule established by the FAST Act. For capital projects funded with 5307 dollars, the federal share is typically 80%, though in certain cases where capital expenses are related to modifying vehicles for Americans with Disabilities Act and Clean Air Act compliance, up to 90% of the capital cost can be borne by federal sources.

5310 Enhanced Mobility

FTA also administers the 5310 – Enhanced Mobility of Seniors and Individuals with Disabilities formula funding program. The goal of this program is to provide funds for improving the mobility of seniors and disabled people where existing transportation services may be insufficient, unavailable, or incapable of meeting their specific needs. Similar to the other FTA programs, for areas with more than 200,000 in population, there is a local direct recipient for these funds and allocations are based on a State's share of the senior and disabled population. The Knoxville Regional TPO is the designated recipient of the 5310 funds and is responsible for receiving and administering the funds to appropriate agencies, including private nonprofit organizations, state and local government authorities, and public transportation operators. Funds from the 5310 program can be used for capital and operating assistance with the federal share typically representing 80% and 50%, respectively.

5339 Bus and Bus Facilities

The 5339 – Bus and Bus Facilities program is a combination of two formula allocations and a single competitive grant program that can be used to improve an agency's fleet of transit vehicles through rehabilitation, retrofitting, or replacement and to improve bus related transit facilities. The competitive portion of the program allocates funds based on the age and conditions of vehicles in a fleet as well as the plan for integrating low- or no-emissions vehicles. In Knoxville, the designated recipient for these funds is the City of Knoxville/KAT, which can allocate to subrecipients such as public transit operators, public agencies, and non-profit organizations that provide fixed-route bus transportation. Currently, only KAT provides fixed-route transit services. For most capital projects, the federal share of costs is 80% though in certain cases where capital expenses are related to modifying vehicles for Americans with Disabilities Act and Clean Air Act compliance, the federal share can be more than 80%.

State

The State provides transit funding through TDOT, which covers a portion of the required match for transit projects using FTA funding programs such as those described above. Historically, this amount has equated to half of the non-federal share. State funding for transit programs is contingent on the approval of TDOT's budget each year.

In addition, the 2017 IMPROVE Act created additional state funding for transit through the increase in motor fuel taxes and fees. The additional revenue generated from these sources can be allocated to

improve regional transit services across the state to mitigate congestion on the State's highways as well as assist rural transit providers in improving the efficiency of demand-response services. The IMPROVE Act also created a local option for voters in large urban areas to approve dedicated transit funding via referendum.

TDOT also provides the Urban Operating Program (UROP) and the Critical Trip funding to the Knoxville urban area. UROP goes to fixed-route providers and can be used for matching capital funds as well as transit operations. KAT, as the only fixed-route service in the Knoxville TPO area, is the only recipient of the UROP funds. Critical Trip funding is designated for transit services outside the fixed-route provider's service area. Knox County CAC Transit, ETHRA, and the City of Oak Ridge receive Critical Trip funding from TDOT, which can be used for both matching funds and transit operations.

Local

Both the City of Knoxville and Knox County contribute local funding to match state and federal funding sources. The City of Knoxville contributes funding to transit services and improvements, essentially underwriting the KAT budget and making up any unforeseen short-term deficits. Conversely, any revenue surpluses are returned to the City's general fund. Therefore, as KAT's other revenue sources grow, the City's contributions are adjusted accordingly. Knox County also provides funding for transit matches and in-kind services that contribute to the day-to-day operations of the Knox County CAC Transit, such as property for storing fleet vehicles, fueling services and purchasing assistance.

Other Funding Sources

Additional transit funding sources include farebox revenues collected from riders. Regular KAT fares range from $1.50 per ride to $50 for a 30-day pass. ETHRA fares start at $3 for adults and increase with travel distance and the number of stops requested. The Knox County CAC Transit fare is $2. In 2018, the farebox recovery ratio for KAT was approximately 11%, and 2% for Knox County CAC Transit, and 4% for ETHRA.

Discretionary grants are another source of revenue for the region's transit agencies. These grants are relatively unreliable sources of revenue as they are often competitive in nature. However, the Knoxville region's transit providers have been successful over the past decade in securing such funding through programs such as the state's Congestion Mitigation and Air Quality (CMAQ) program. Knox County CAC

Transit and ETHRA both utilize human service contracts, such as TennCare, that help provide additional transit revenues.

In addition, a separate property tax for transit operations and capital can be administered by voter approval.

Revenue Projection

In developing the transit element of the Mobility Plan 2045 financial plan, summary financial data was used to determine historic funding levels for various federal, state, and local funding sources and programs. This data, shown in Table E-5, in addition to consultation with representatives from KAT, Knox County CAC Transit, and ETHRA, was used to establish expected funding levels anticipated over the life of the plan. The average annual growth rates presented in this table remove the outlier year (either high or low value) to minimize the impact of one-time funding increases or decreases on the long-term funding outlook for transit operations. Also, the funds used for capital expenditures have varied significantly from year to year, resulting in a relatively high average annual growth rate of 45%. One or two large grant awards can radically change the calculation of annual percent growth. This level of funding increase is unrealistic over the life of the plan. In consultation with the transit providers it was determined a 2.5% growth rate in capital revenue was more realistic over the life of the plan. In addition, it should be noted that the urban area received $18,423,476 in FY2020 Coronavirus Aid, Relief, and Economic Security (CARES) Act stimulus funding. This funding was divided between KAT ($13.3 million), Knox County CAC Transit ($3.6 million), and ETHRA ($1.6 million). Though it is too early to assess the financial impact of COVID-19 on transit's future revenues and expenses, the CARES Act funding will help offset any short-term losses and may even have a positive carryover impact for the next few fiscal years. However, due to its one-time nature, this funding was not included in the revenue tables.

Annual growth rates shown in Table E-6 were used to forecast revenues. A 10% adjustment to these percentages was made in years 2022, 2032, and 2042 to account for anticipated increases in funding based on growth in the urbanized area following each decennial Census, which occurred following both the 2000 and the 2010 Censuses. This process results in the projected revenues for transit operations shown in Table E-6 which equate to over $1.2 billion over the life of the plan.

Table E-5. Historic Transit Revenues

	SOURCE	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	AVERAGE ANNUAL GROWTH*
OPERATING	Federal	$5,422,185	$5,364,492	$4,858,241	$5,652,104	$5,184,311	2.3%
	State	$3,575,565	$4,004,782	$4,357,819	$4,692,560	$4,817,300	6.4%
	Local	$9,339,803	$10,000,625	$10,422,652	$10,953,893	$13,978,474	5.5%
	Fares	$2,483,853	$2,087,818	$1,951,841	$2,419,478	$2,106,094	0.5%
	Other	$2,501,545	$1,919,321	$1,824,792	$2,486,021	$2,977,298	2.7%
	Total Operating	**$23,322,951**	**$23,377,038**	**$23,415,345**	**$26,204,056**	**$29,063,477**	**3.8%**
CAPITAL	FTA	$618,464	$1,898,846	$4,618,138	$3,398,491	$4,007,753	45%
	TDOT	$77,308	$237,356	$577,267	$424,811	$500,969	
	Local	$77,308	$237,356	$577,267	$424,811	$500,969	
	Total Capital	**$773,080**	**$2,373,558**	**$5,772,672**	**$4,248,113**	**$5,009,691**	**45%**

**Note: The average annual growth rates shown are adjusted to remove the outlier year (high or low).*

Table E-6. Projected Transit Revenues

	SOURCE	GROWTH RATE	2021 – 2026	2027-2035	2036-2045	TOTAL
OPERATING	Federal	2%	$36,045,286	$66,660,149	$97,967,362	$200,672,797
	State	3%	$35,852,657	$71,450,167	$115,259,693	$222,562,517
	Local	3%	$94,170,438	$176,602,116	$260,020,167	$530,792,721
	Fares	1%	$12,867,786	$20,801,085	$25,405,665	$59,074,536
	Other	1%	$18,927,937	$30,597,466	$37,370,597	$86,896,000
	Total Operating		**$197,864,104**	**$366,110,983**	**$536,023,484**	**$1,099,998,571**
CAPITAL	FTA	2.5%	$19,042,143	$34,413,771	$48,369,981	$101,825,895
	TDOT	2.5%	$2,380,268	$ 4,301,721	$6,046,248	$12,728,237
	Local	2.5%	$2,380,268	$4,301,721	$6,046,248	$12,728,237
	Total Capital		**$23,802,679**	**$43,017,213**	**$60,462,477**	**$127,282,369**
		Total	**$221,666,783**	**$409,128,196**	**$596,485,961**	**$1,227,280,940**

For the purposes of establishing expenses for transit operations, National Transit Database (NTD) data provided by the three transit agencies was reviewed for 2009 – 2019. Specifically, the sources of operating funds expended, and the summary of operating expenses, were used to determine the average annual growth rates of operating expenses.

Table E-7 shows a 5-year snapshot of operating expenses by agency, which have increased an average of 3.4% annually. However, consultation with the region's transit agencies resulted in an assumed 3% growth rate annually for what was expected to be a more realistic estimation of transit operating expenses.

Table E-7. Historic Transit Operating Expenses

AGENCY	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	AVERAGE ANNUAL GROWTH
KAT	$18,365,496	$19,515,414	$19,547,192	$21,217,233	$22,333,863	3.9%
CAC	$3,394,518	$2,984,764	$2,966,217	$3,071,354	$3,093,432	1.2%
ETHRA	$851,034	$868,340	$993,417	$1,902,509	$2,429,127	14.7%
TOTAL	**$22,611,048**	**$23,368,518**	**$23,506,826**	**$26,191,096**	**$27,856,422**	**3.4%**

To estimate transit capital expenses, each agency's Transit Asset Management (TAM) Plan was reviewed to determine existing vehicle ages and replacement schedules based on their useful life expectancies. Additionally, the cost of retrofitting existing vehicles is also taken into account for KAT trolleys and buses. Average unit costs by vehicle type were provided by the respective transit agencies and were increased by 2.5% annually to determine a Year of Expenditure (YOE) cost for vehicle replacements. The resulting vehicle needs, shown in Table E-8, equate to approximately $205 million in YOE dollars over the life of the plan.

Table E-8. Projected Vehicle Replacement Needs and Capital Costs

AGENCY / VEHICLE TYPE	2021 – 2026		2027-2035		2036-2045	
	Vehicles	Capital Cost	Vehicles	Capital Cost	Vehicles	Capital Cost
KAT						
TROLLEYS	4	$3,680,000	6	$6,000,000	10	$13,750,000
TROLLEY RETROFITS	0	--	3	$562,349	3	$567,972
BUSES	28	$23,233,874	61	$61,144,500	41	$52,246,000
BUS RETROFITS	0	--	39	$6,515,564	32	$5,816,730
MINI-BUS CUTAWAYS	4	$305,238	46	$3,997,455	1	$106,498
KNOX COUNTY CAC TRANSIT						
MINI-BUS CUTAWAYS	35	$2,665,245	64	$5,750,683	70	$7,975,946
VAN/FUSION	7	$243,821	9	$377,486	16	$885,207
PRIUS	4	$117,830	11	$378,743	11	$484,823
ETHRA						
MINI-BUS CUTAWAYS	15	$1,179,239	28	$2,524,566	38	$4,242,843
TOTAL	**97**	**$31,425,247**	**267**	**$87,251,346**	**222**	**$86,076,019**

CONCLUSION

This document outlines the assumptions underlying the financial plan for the Mobility Plan 2045. Specifically, revenues for both highways and transit are summarized with historical data and associated growth rates for future projections. In addition, anticipated growth rates for estimating YOE highway and transit needs are presented and are based on historic data as well as consultation with FHWA, TDOT, and the region's transit agencies. The financial plan for Mobility Plan 2045 applies these assumptions to future project needs and demonstrates fiscal constraint of the planned spending.

MOBILITY PLAN 2045

Appendix F

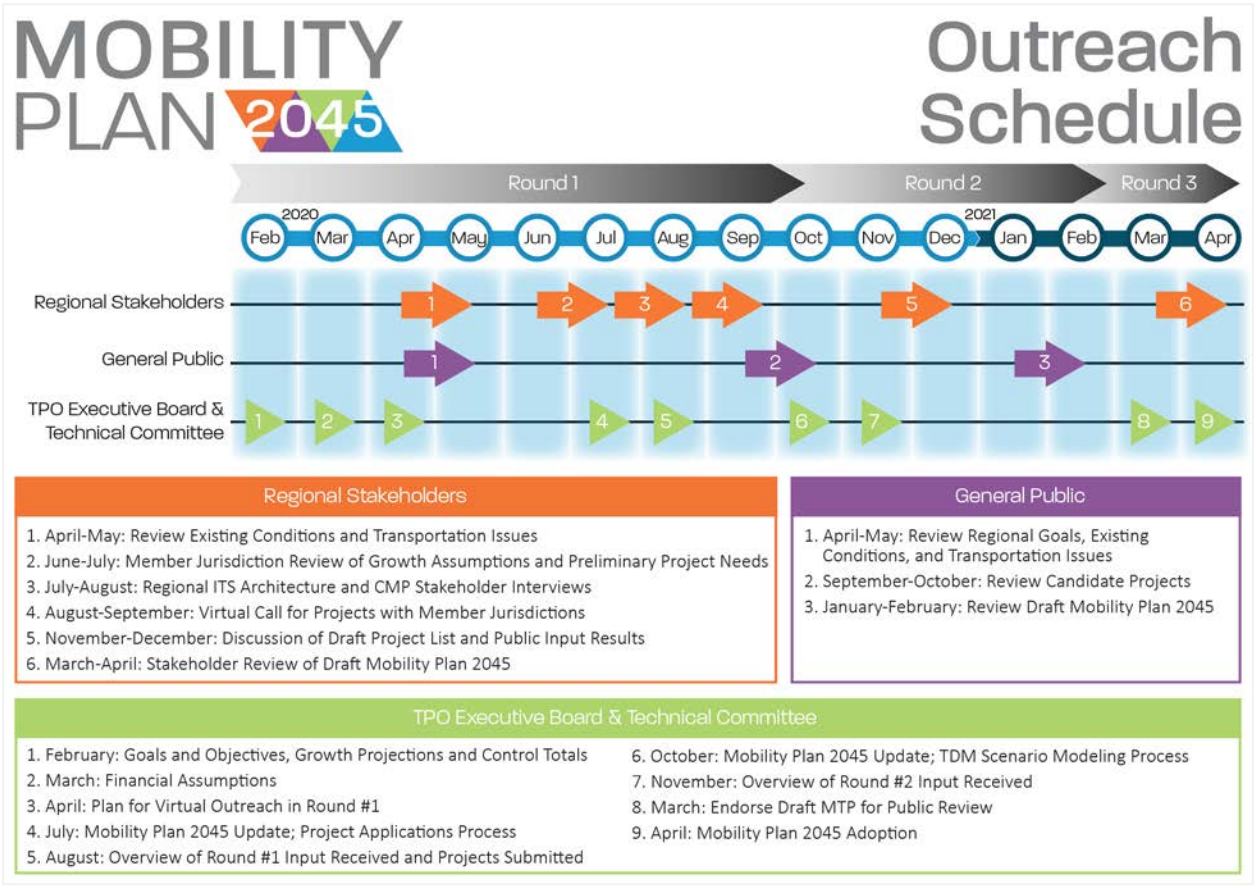
Engagement and Outreach

F. ENGAGEMENT AND OUTREACH

Outreach for the development of Mobility Plan 2045 targeted three key groups: regional stakeholders, the public, and the TPO Technical Committee and Executive Board. Regional stakeholders include local government entities and community representatives. Outreach to the general public targeted communities across the region and included specific efforts to engage traditionally underserved communities. The TPO's Technical Committee and Executive Board were updated throughout the process to ensure the 2045 MTP reflected the needs and priorities of the region. In addition, the TPO's federal and state planning partners provided guidance throughout plan development and at key milestones.

Engagement for the plan was split into three rounds. Due to the COVID-19 pandemic, in-person meetings and events were replaced with virtual community engagement at the beginning of March 2020 to promote safety and social distancing in the region. This appendix provides a summary of each engagement period and detailed snapshots of tools used and input received.

Figure F-1. Outreach Schedule



Throughout the development of Mobility Plan 2045, TPO staff utilized different strategies to reach communities that are traditionally underserved to ensure equitable access to input opportunities. TPO staff used demographic characteristics gathered via online surveys to pinpoint underrepresentation and subsequently plan targeted engagement efforts for future rounds. Local advocacy organizations that represent these communities, such as Justice Knox and Alliance House Community Coalition, were identified for coordination throughout the planning process and collaborated with to ensure equitable access to the document during its final round of review. Final documents were also translated to Spanish to accommodate local communities.

ROUND 1 ENGAGEMENT

Strategy Overview

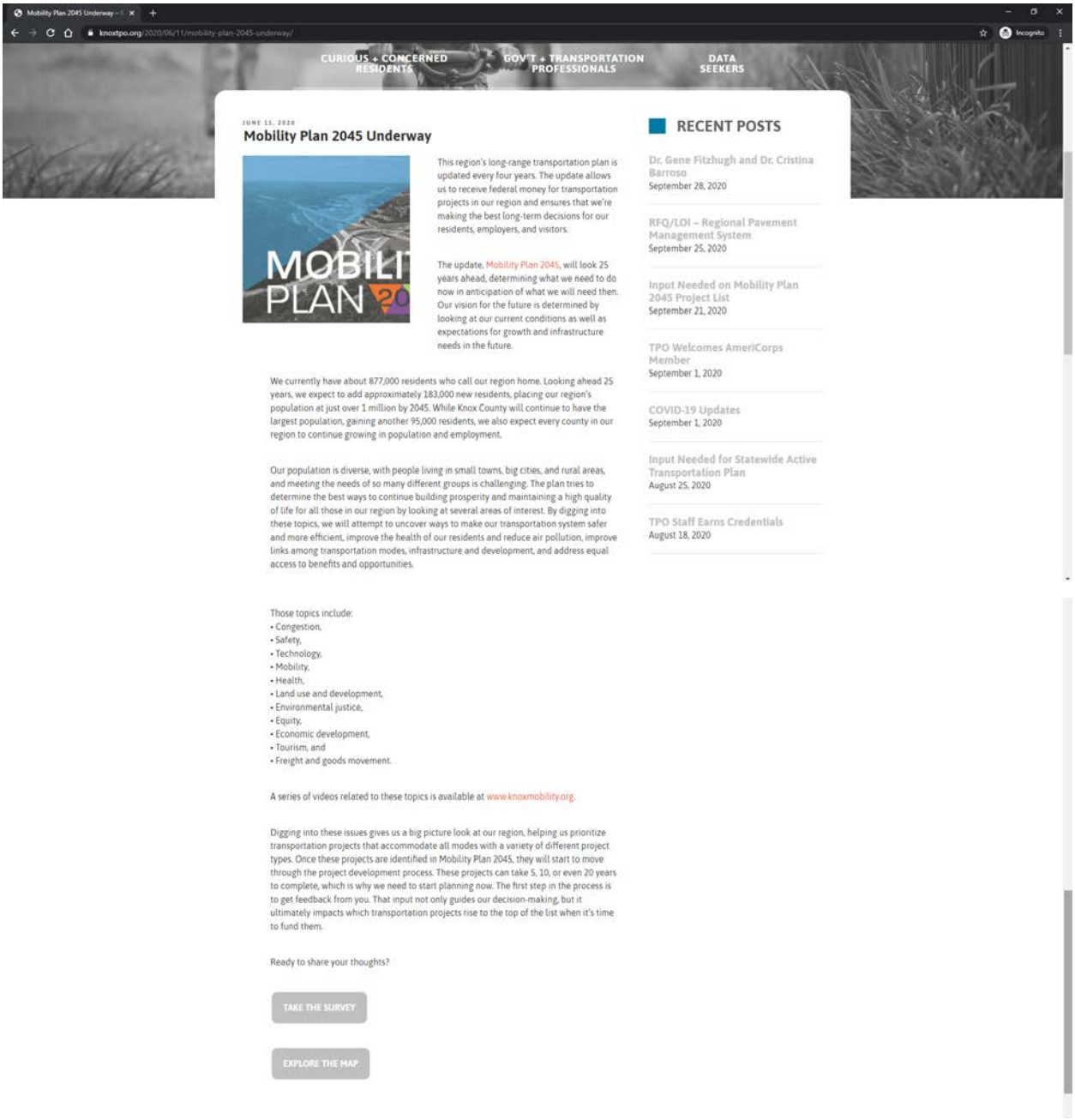
The first round of public outreach, in April and May of 2020, focused on providing information on the existing state of the transportation system and growth in the Knoxville Regional TPO planning area. Data presented to the public and regional stakeholders included regional demographics, roadway system conditions, active transportation facilities, and transit system information. Additionally, this round introduced the TPO-approved plan goals and objectives to be discussed and prioritized by residents and stakeholders. Engagement materials are summarized in the following table. Engagement materials and videos were available in multiple languages to assist with equitable participation across the region. A project website, **www.knoxmobilityplan.org**, was used to make access to all project information easier and more direct. Information was also shared on the TPO website throughout the duration of the project.

Table F-1. Round 1 Engagement Strategies

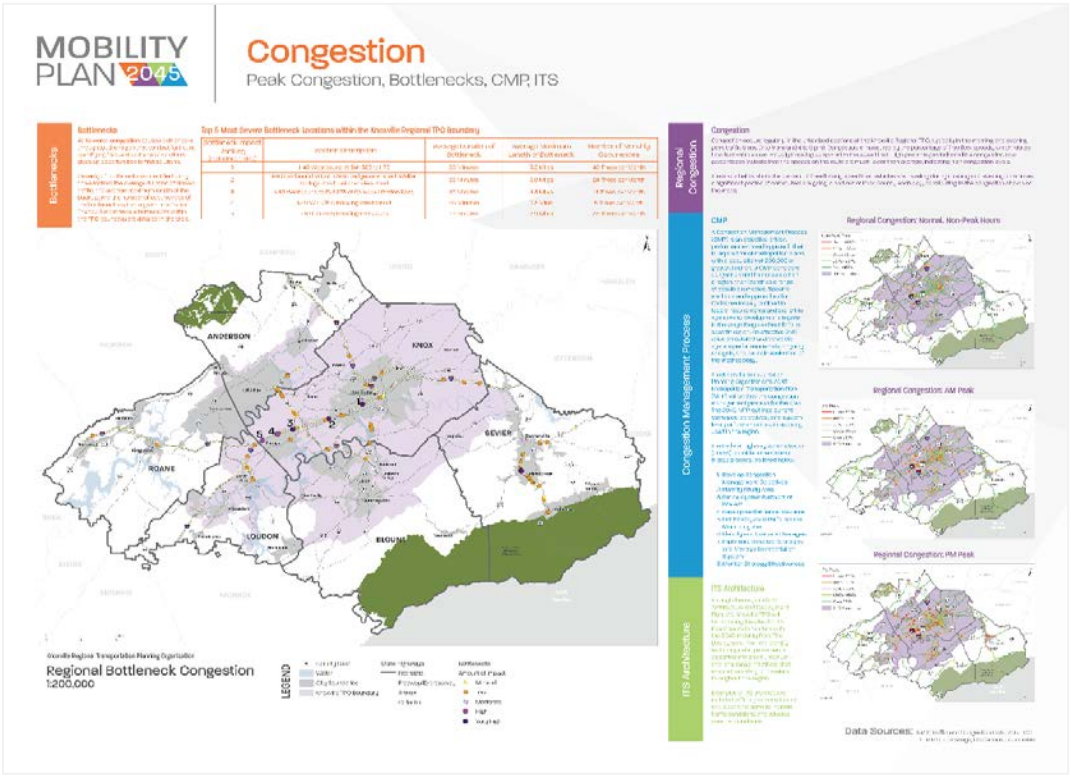
	PURPOSE AND RESULTS
TARGETED OUTREACH EFFORTS	▶ **News Article**: Posted on TPO website about start of project, website, public input, survey ▶ **Informational Boards**: Existing conditions information of the TPO ▶ **Press Release**: Info on videos, survey, map shared with local news outlets ▶ **Newsletters**: Links to article and survey; shared by TPO, Planning, and City of Knoxville Office of Neighborhoods email newsletters ▶ **Emails**: Multiple emails sent to 200+ stakeholders ▶ **Virtual Presentations:** Knoxville Chamber and TPO municipalities ▶ **Member Jurisdictions:** Meetings with each jurisdiction on future growth allocations and preliminary project needs ▶ **Social Media:** Facebook, Twitter; used to share article, videos, images from boards, surveys; used paid ad to target specific zip codes ▶ **Bright Signs**: Info shown on electronic sign at front desk in Planning office
TOPICAL PRESENTATION VIDEOS	In lieu of in-person public meetings, the online videos included a narrated presentation of the existing conditions in the TPO area for the general public and local stakeholders. Presentations were divided into six topical areas: ▶ MTP Process Overview ▶ Congestion, Safety and ITS ▶ Mobility and Health ▶ Land Use and Development ▶ Environmental Justice and Equity ▶ Economic Development, Tourism, Freight and Goods Movement
ROUND 1 SURVEY	An online survey allowed residents and stakeholders to affect the project scoring mechanism by ranking the TPO-approved goals and objectives
ROUND 1 WIKIMAPS	The online Wikimaps provided an opportunity for residents to identify geographic locations of project applications to be considered for the plan
TPO BOARD MEETINGS	Documents and updates presented to the TPO Technical Committee and Executive Board for the review and endorsement of goals and objectives, population projections, and financial assumptions

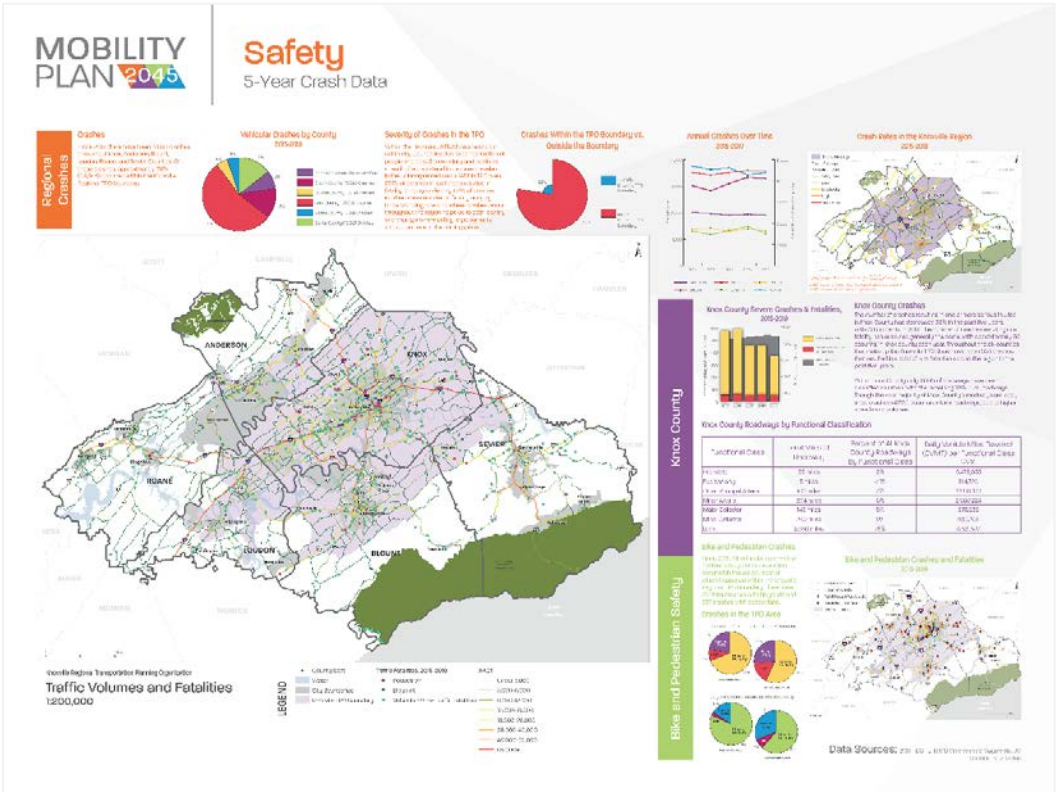
Targeted Outreach Efforts

News Article



Informational Boards

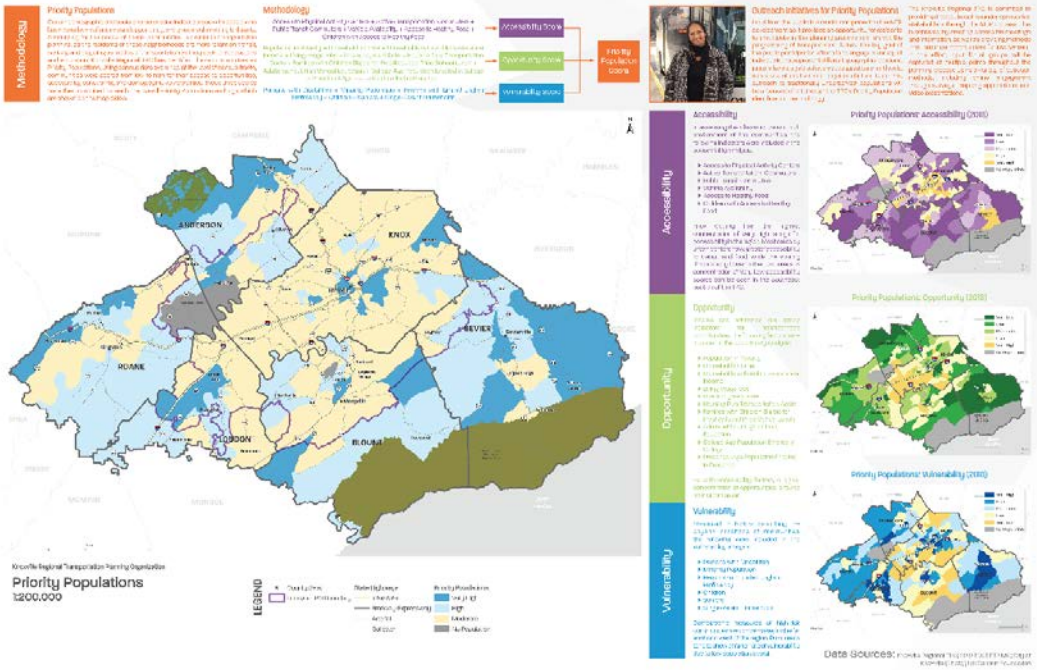




MOBILITY PLAN 2045

Priority Populations

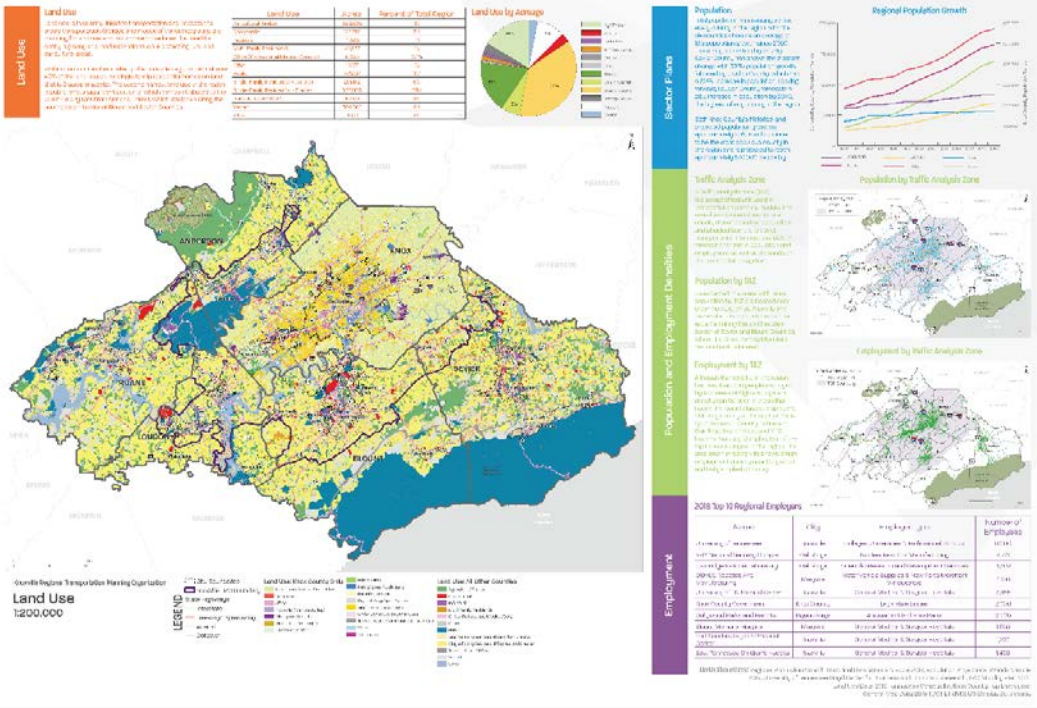
Accessibility, Opportunity, Vulnerability

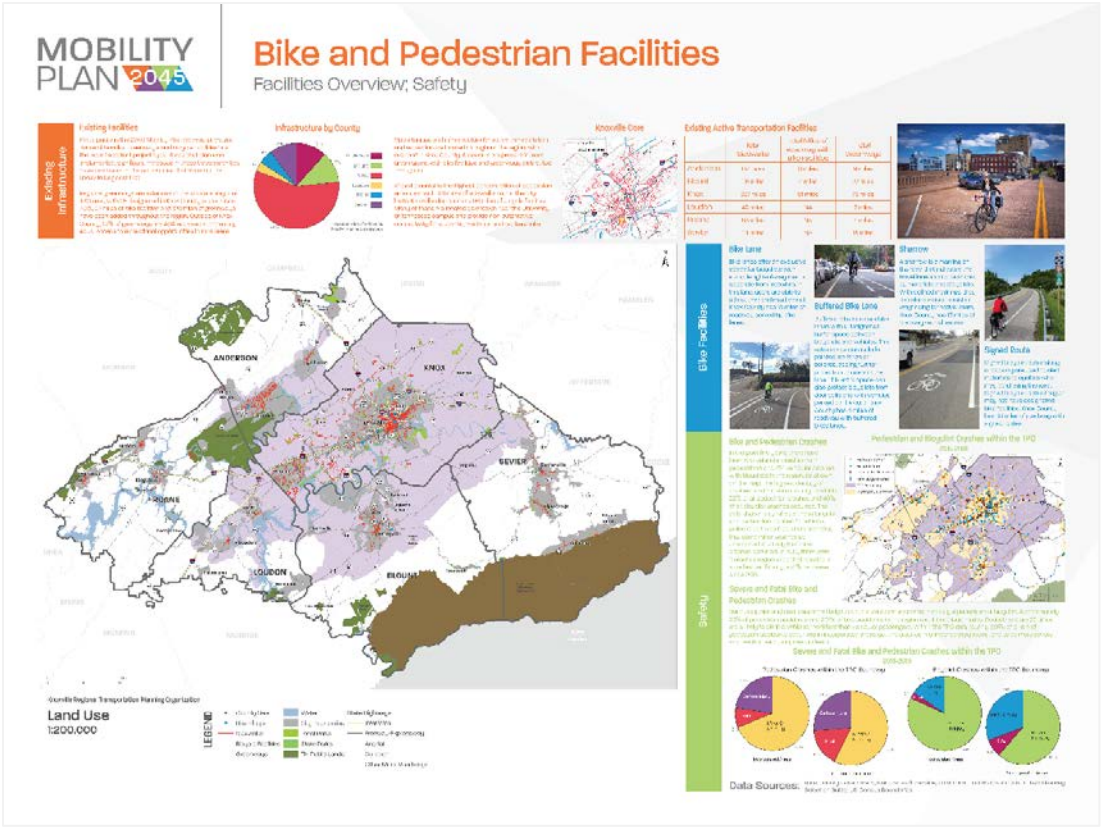


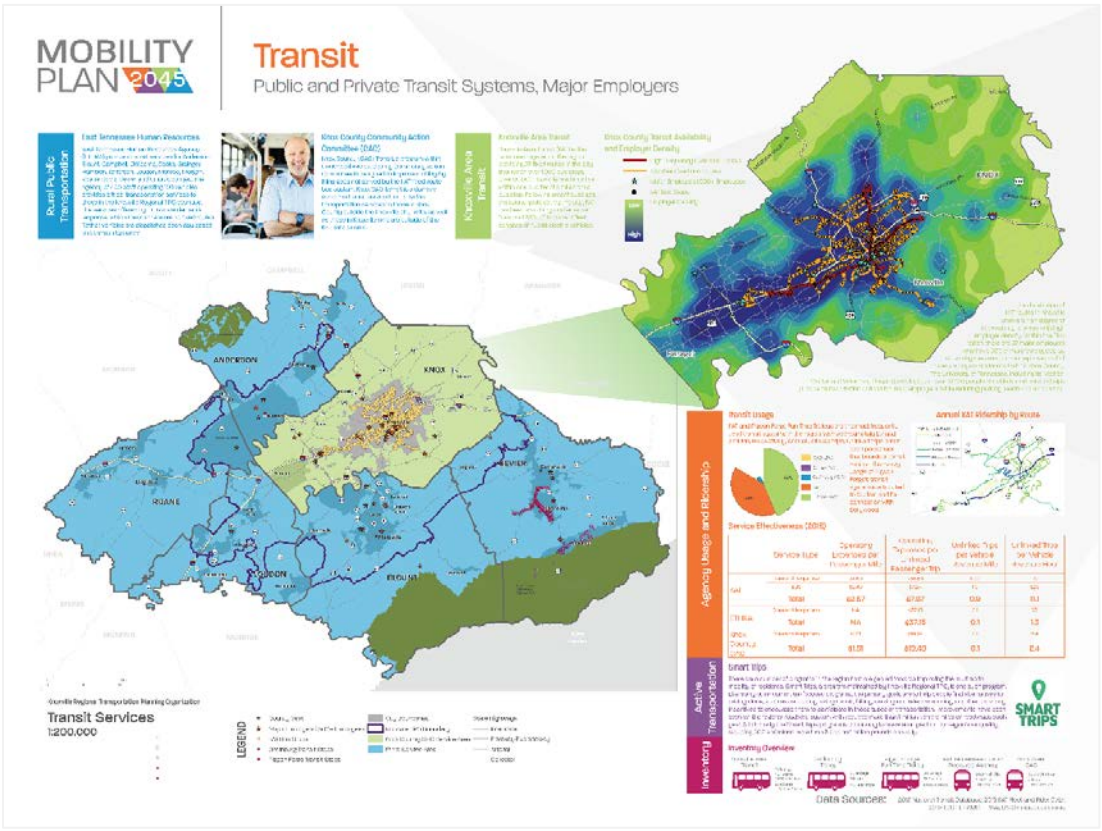
MOBILITY PLAN 2045

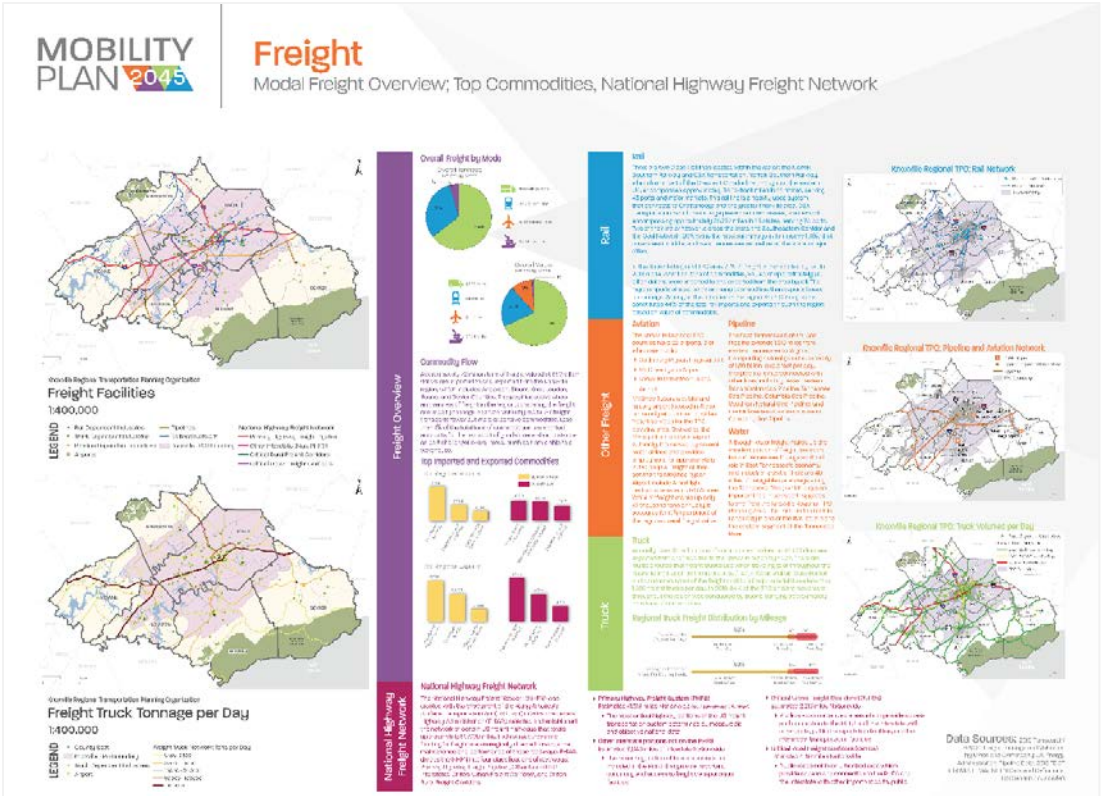
Land Use

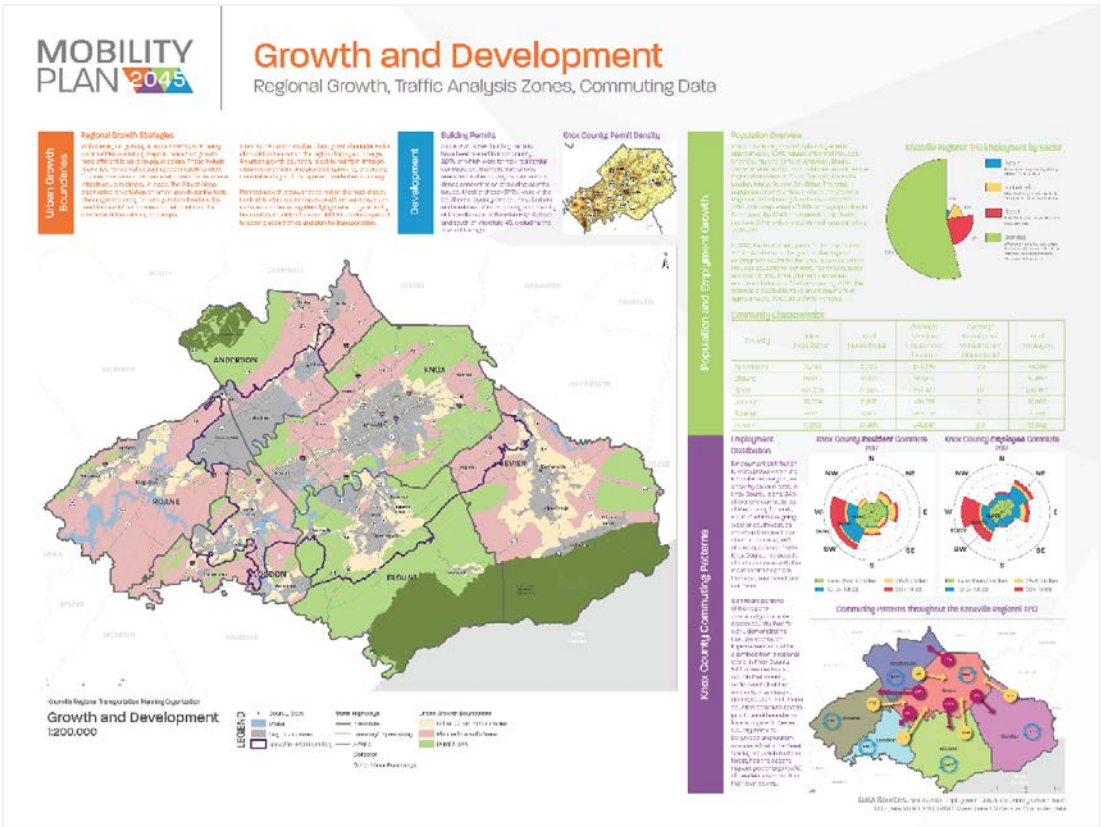
Existing Land Uses, Population Employment




MOBILITY PLAN 2045
Bike and Pedestrian Facilities
Facilities Overview; Safety
Existing Infrastructure
Bike Facilities
Safety
Land Use
1:200,000
Data Sources:


MOBILITY PLAN 2045
Transit
Public and Private Transit Systems, Major Employers
Rural Public Transportation
Knoxville Area Transit
Agency Usage and Ridership
Active Transportation
Inventory
SMART TRIPS
Transit Services
1:200,000
Data Sources:


MOBILITY PLAN 2045
Freight
Modal Freight Overview; Top Commodities, National Highway Freight Network
Freight Facilities
1:400,000
Freight Truck Tonnage per Day
1:400,000
Freight Overview
National Highway Freight Network
Rail
Other Freight
Truck
Overall Freight by Mode
Commodity Flow
Top Imported and Exported Commodities
National Highway Freight Network
Knoxville Regional TPO: Rail Network
Knoxville Regional TPO: Pipeline and Aviation Network
Knoxville Regional TPO: Truck Volumes per Day
Regional Truck Freight Distribution by Mileage
Data Sources


MOBILITY PLAN 2045
Growth and Development
Regional Growth, Traffic Analysis Zones, Commuting Data
Urban Growth Boundaries
Development
Population and Employment Growth
Knox County Commuting Patterns
Regional Growth Strategies
Building Permits
Knox County Permit Density
Population Overview
Knoxville Regional TPO Employment by Sector
Community Characteristics
Employment Distribution
Knox County Resident Commute
Knox County Employee Commute
Commuting Patterns throughout the Knoxville Regional TPO
ANDERSON
KNOX
BLOUNT
ROANE
LOUDON
Growth and Development
1:200,000
Data Sources

Stakeholder Outreach List

Congestion, Safety, and ITS

- Anderson, Blount, Knox, Loudon, Roane, and Sevier County Governments (Highway Maintenance, Traffic Engineering, Sheriff's Offices)
- Cities of Alcoa, Clinton, Farragut, Knoxville, Lenoir City, Loudon, Maryville, Sevierville, Pigeon Forge and Oak Ridge (Public Works, Traffic Engineering, Traffic Operations Centers, Maintenance, Public Safety/Police/Fire, Emergency Management)
- Rural Metro Fire
- FHWA
- Knoxville Area Transit – CAC – ETHRA
- Knoxville Regional TPO Technical Committee
- TDOT Region 1: Long Range Planning, Traffic Operations, Project Development, Incident Management
- TDOT HQ: Traffic Operations
- Tennessee Highway Patrol

Goods Movement

- TN Trucking Association

Economic Development, Tourism, & Freight

- Anderson County Economic Development Association
- Blount County Economic Development Council
- East Tennessee Hispanic Chamber of Commerce
- Greater Knoxville Hospitality Association
- Knoxville Area Chamber Partnership
- Blount Partnership
- Knoxville Community Development Corporation
- Knox County Schools
- Loudon County Economic Development Agency
- Metropolitan Knoxville Airport Authority
- Oak Ridge National Laboratory
- Pellissippi State Community College
- Sevier County Economic Development Council
- Tennessee Valley Authority
- University of Tennessee
- TennSMART
- Lakeway Area MTPO
- Visit Knoxville
- Loudon County Tourism
- Farragut West Knox Chamber of Commerce

Environmental Justice/Equity

- Urban League
- NAACP
- Centro Hispano
- City of Knoxville Council on Disability Issues
- Knox County Disability Advisory Group
- Knox Justice
- Bridge Refugee Services

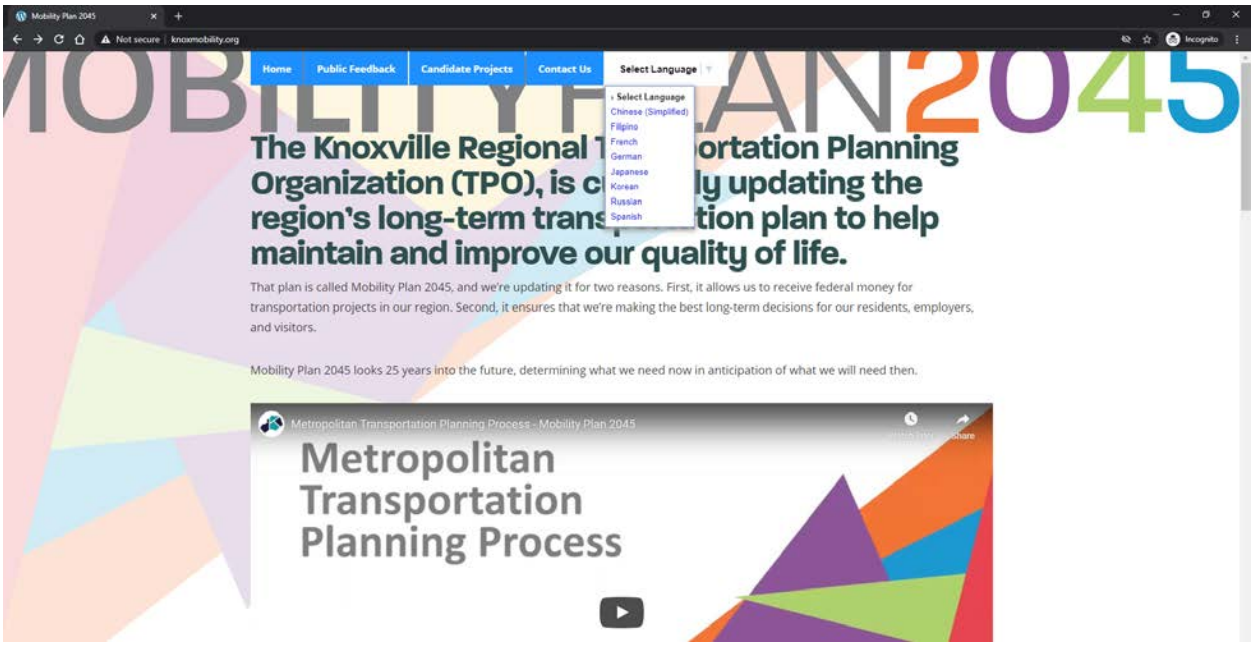
Land Use

- Cities of Alcoa, Clinton, Farragut, Knoxville, Lenoir City, Loudon, Maryville and Oak Ridge as well as Anderson, Blount, Knox, Loudon, Roane, and Sevier Counties (Planning, Parks and Recreation)
- East Tennessee Development District
- Knox County Housing Authority
- Utility Districts
- Barge interests
- Pipeline interests
- CXS Railroad
- Norfolk Southern Railroad
- Knoxville and Holston River Railroad
- Development Corporation of Knox County
- TDOT Freight and Logistics Division
- CSX Transportation

Mobility and Health

- AARP
- Knox County Safe Routes to School Partnership (part of Health Department)
- Active Knox
- Bike Walk Knoxville
- Cities of Alcoa, Clinton, Farragut, Knoxville, Lenoir City, Loudon, Maryville and Oak Ridge as well as Anderson, Blount, Knox, Loudon, Roane, and Sevier Counties (Planning, Parks and Recreation)
- East Tennessee Community Design Center
- East Tennessee Development District
- East TN Human Resource Agency
- Federal Transit Administration Region 4
- Great Smoky Mountains Regional Greenway Council
- Greyhound
- Knox County Community Health Council
- Knox County Health Department
- Knoxville Community Action Committee
- Knoxville Commuter Pool
- Knoxville Greenway Commission
- Smart Trips
- Tennessee Department of Health
- Veterans Affairs Supportive Housing
- East TN Wellness Roundtable
- East TN Clean Fuels Coalition
- Legacy Parks Foundation

Topical Presentation Videos



Congestion, Safety and ITS

There are nearly 9,000 miles of roadways in the TPO planning area. This section looks at which roads in the region currently cause drivers to experience delay, how to make crashes preventable, and technology that makes the existing transportation system more efficient.

VIDEO MAPS + MORE

Mobility and Health

Though most people in our region travel by car, we know that our residents need and want more transportation options. The three primary alternatives to personal vehicles in the Knoxville region are walking, biking, and public transit. This section looks at how these modes can help improve our health, cut air pollution, and reduce the cost of transportation in a sustainable way.

VIDEO MAPS + MORE

Land Use and Development

The way our communities are designed and built impacts how we travel to, from and within them. This presentation looks at how our transportation system is linked to the way our region is developed.

VIDEO MAPS + MORE

Environmental Justice and Equity

One goal of the Mobility Plan 2045 is to ensure that everyone in our region has access to benefits like quality jobs, adequate healthcare, education services, and daily needs like healthy food and affordable housing. This section looks at how we aim to provide equal access to opportunities within our region using transportation.

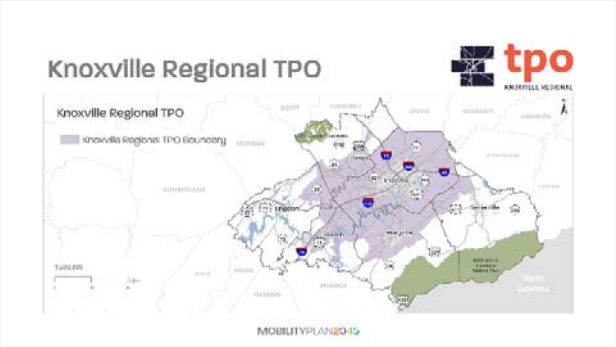
VIDEO MAPS + MORE

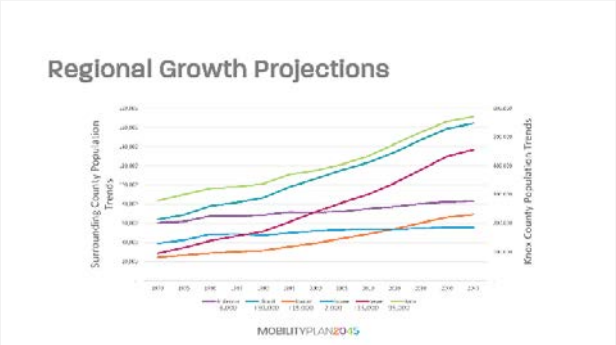
Economic Development, Tourism, Freight and Goods Movement

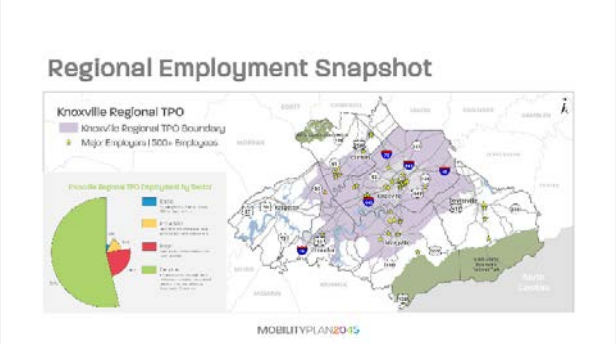
This section looks at our region's economy, including industry, tourism, and the infrastructure needed to support freight systems. In the future, we want to ensure that the improvements we make encourage cohesive development of our communities and infrastructure.

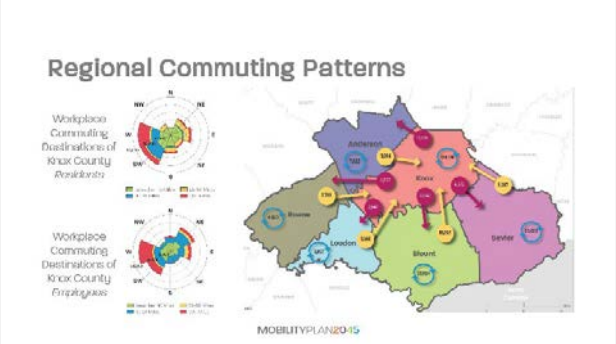
VIDEO MAPS + MORE

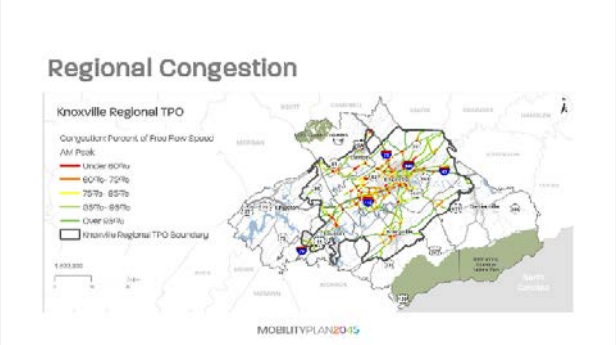
Public Presentation

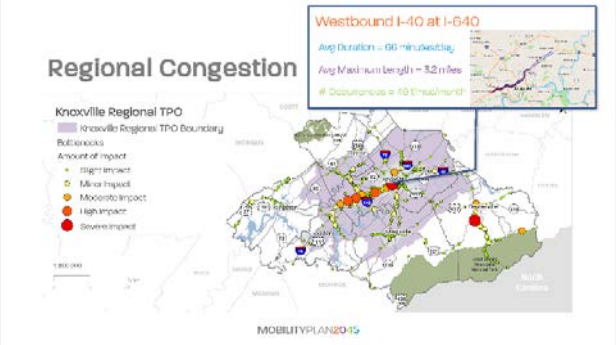




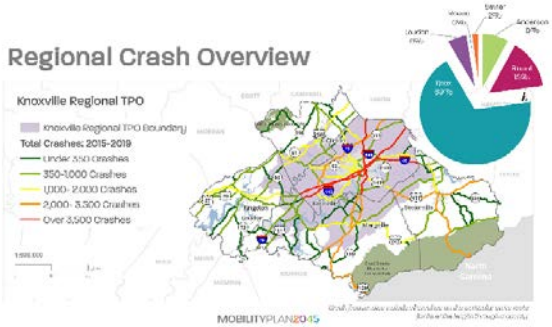






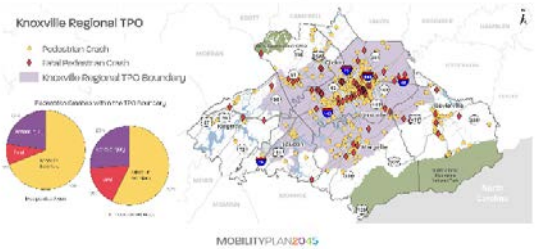


Regional Crash Overview



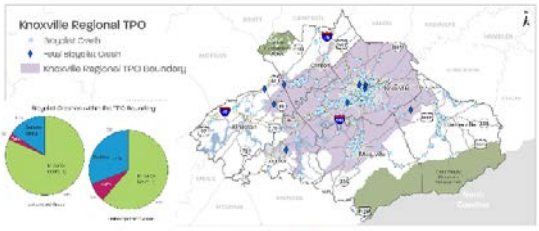
MOBILITYPLAN2045

Traffic Crashes Involving a Pedestrian



MOBILITYPLAN2045

Traffic Crashes Involving a Bicyclist



MOBILITYPLAN2045

Regional Overview of Active Transportation

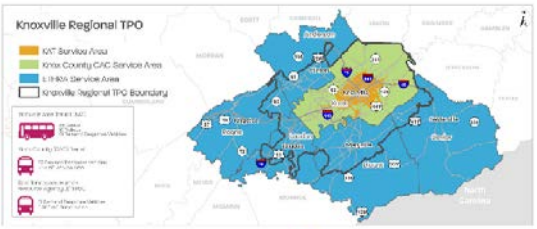
County	Miles of Sidewalks	Percent of Streets with Sidewalks	Percent of Region's Sidewalks
Anderson	137	16%	13%
Blount	116	8%	11%
Knox	597	19%	56%
Loudon	43	9%	4%
Roane	63	6%	6%
Sevier	114	8%	10%
Total Region	1,070	12%	--

MOBILITYPLAN2045

Regional Overview of Active Transportation

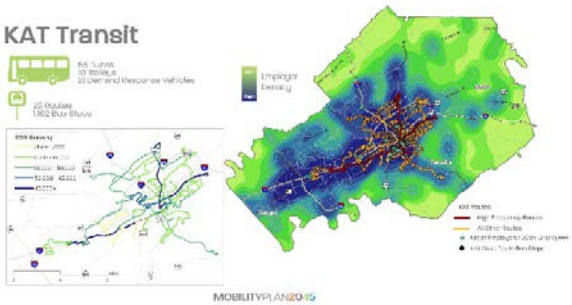
MOBILITYPLAN2045

Regional Transit Services



MOBILITYPLAN2045

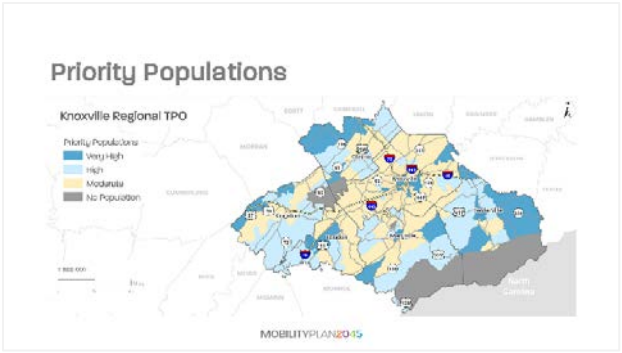
KAT Transit

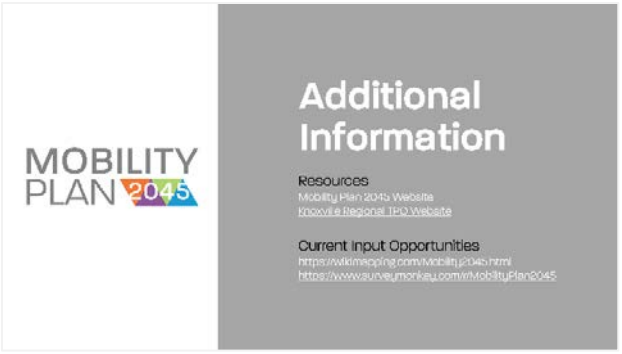


MOBILITYPLAN2045

Benefits of Transportation

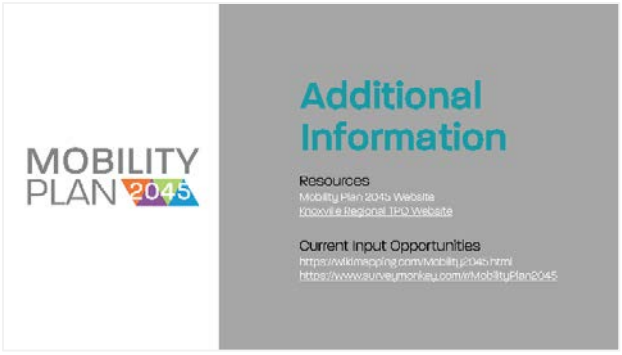
MOBILITYPLAN2045





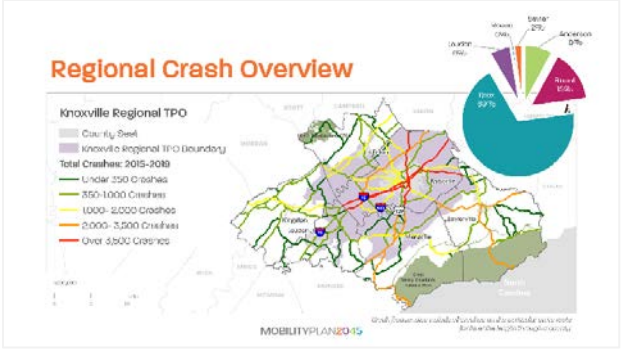
Stakeholder Presentation

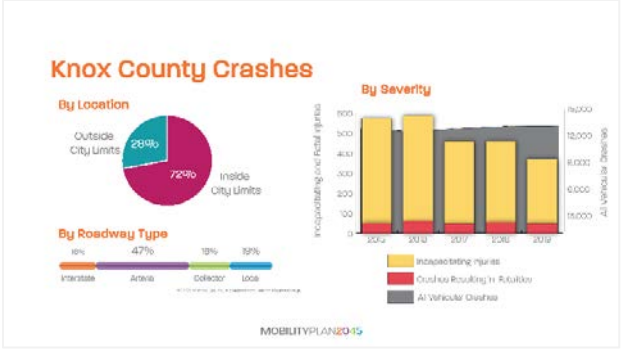

Mobility Plan 2045: Impact
Ideas from You!
Included in 2045 MTP
Find Local & Federal Funding
Environmental Studies
Engineering Design
Right-of-Way Acquisition
Begin Construction
MOBILITYPLAN2045

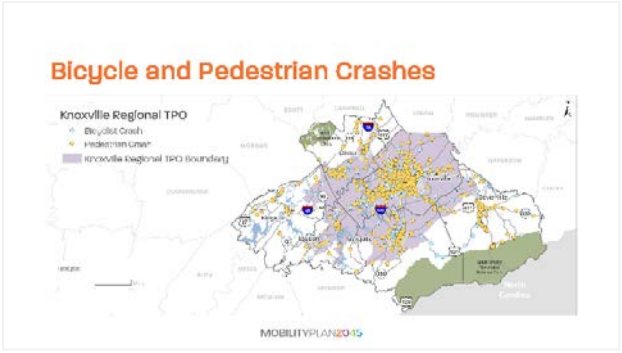

MOBILITY PLAN 2045
Additional Information
Resources
Mobility Plan 2045 Website
Knoxville Regional TPO Website
Current Input Opportunities
https://wikimapping.com/MobilityPlan2045.html
https://www.surveymonkey.com/r/MobilityPlan2045


Congestion, Safety, & ITS
MOBILITY PLAN 2045


Regional Roadway Overview
Knoxville Regional TPO
Knoxville Regional TPO Boundary
Roadway Segments
State Highways
Interstate
Expressway/Freeway
Arterial
Collector
MOBILITYPLAN2045

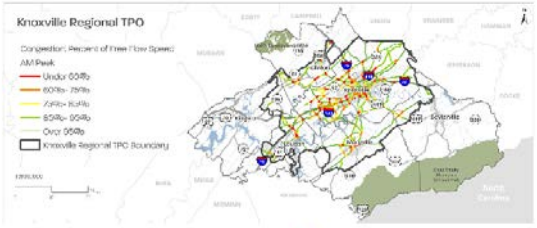

Regional Crash Overview
Knoxville Regional TPO
Total Crashes: 2015-2019
Under 350 Crashes
350-1,000 Crashes
1,000- 2,000 Crashes
2,000- 3,500 Crashes
Over 3,500 Crashes
MOBILITYPLAN2045


Knox County Crashes
By Location
Outside City Limits
28%
72%
Inside City Limits
By Roadway Type
47%
Interstate
Arterial
Collector
Local
By Severity
Incapacitating Injuries
Crashes Resulting in Fatalities
All Vehicular Crashes
MOBILITYPLAN2045


Bicycle and Pedestrian Crashes
Knoxville Regional TPO
Bicyclist Crash
Pedestrian Crash
Knoxville Regional TPO Boundary
MOBILITYPLAN2045


Bicycle and Pedestrian Safety
It is 11x more likely for a pedestrian or bicyclist to be killed in a traffic crash compared to a motorist
4 out of 1,000
result in death
47 out of 1,000
result in death
MOBILITYPLAN2045

Regional Congestion



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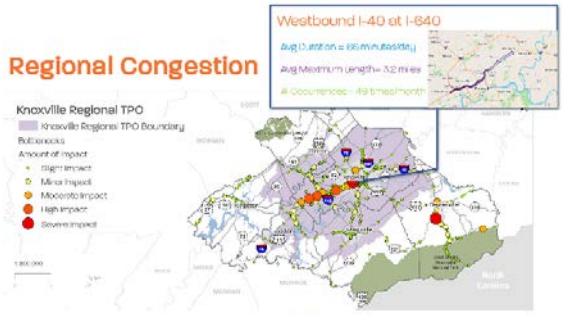
Regional Congestion



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Congestion Strategies

- Travel Demand Management
  - Strategic Trip Timing
  - Carpooling
  - Transit
  - Telecommuting

Carpooling is one example of a behavioral change that could reduce roadway congestion.

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System Efficiency

- Intelligent Transportation Systems
  - Roadway Sensors
  - Dynamic Overhead Signage
    - Traffic Updates
    - Adverse Weather Conditions

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ITS Architecture & Deployment Plan

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MOBILITY PLAN 2045

Additional Information

Resources

Mobility Plan 2045 Website

Knoxville Regional TPO Website

Current Input Opportunities

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Mobility & Health

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Regional Commuters

Between 80 and 90% of the region's population commutes to work alone in their vehicles.

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We Need Other Options

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Walking

9% of All Trips are Walking Trips

1 mile in length

County	Miles of Sidewalks	Percent of Streets with Sidewalks	Percent of Region's Sidewalks
Anderson	137 miles	16%	13%
Blount	116 miles	8%	11%
Knox	597 miles	19%	56%
Loudon	43 miles	9%	4%
Roane	63 miles	6%	6%
Sevier	114 miles	8%	10%
Total Region	**1,070 miles**	**12%**	

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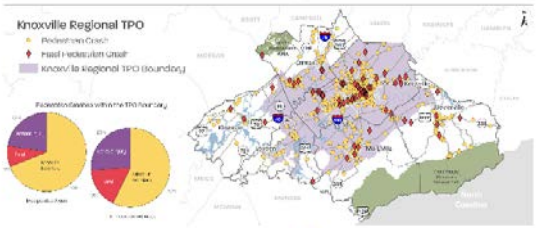
Traffic Crashes Involving a Pedestrian



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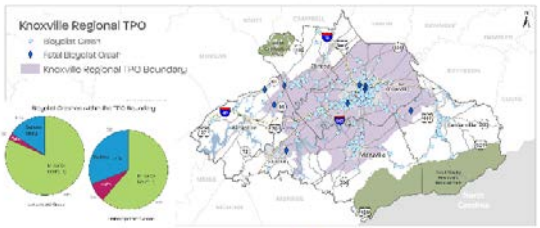
Traffic Crashes Involving a Bicyclist



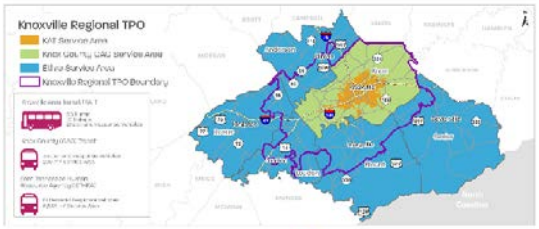
MOBILITYPLAN2045

Regional Investment in Active Transportation

TPO has allocated approximately $86 million to fund improvements to alternative transportation infrastructure across the region over the next 4 years.

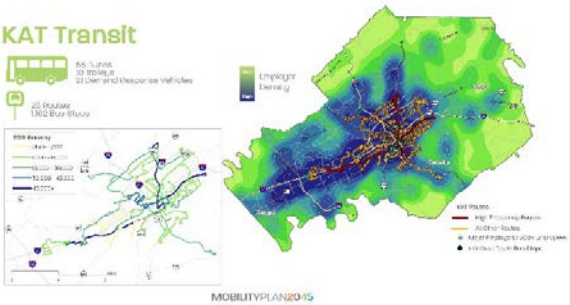
MOBILITYPLAN2045

Transit



MOBILITYPLAN2045

KAT Transit



MOBILITYPLAN2045

Knox County CAC

Nearly 158,000 trips provided to Knox County residents in 2018 by Knox County CAC, primarily for medical services and community engagement.

MOBILITYPLAN2045

ETHRA

- Door to door rural public transportation service by demand response
- Open to the general public on a first-call, first-served basis
- Priority given for medical trips
- Drivers travel 3 million miles annually throughout the 16-county region

MOBILITYPLAN2045

Other Active Transportation Programs

SMART TRIPS

Smart Trips promotes alternatives to driving alone to help ease traffic congestion, improve the region's air quality, and quality of life. Participants in the program have

- Reduced more than 1 million vehicle miles on roadways each year
- Saved more than 3 ½ million pounds of CO2 emissions
- Saved more than $600,000 in fuel costs

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Benefits of Active Transportation

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MOBILITY PLAN 2045

Additional Information

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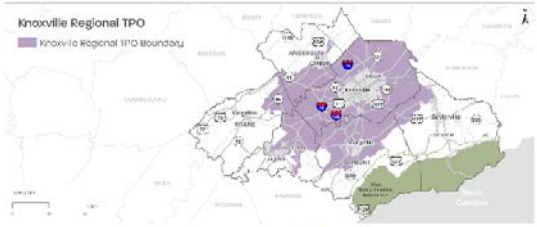
Land Use & Development

MOBILITY PLAN 2045

Knoxville Regional TPO



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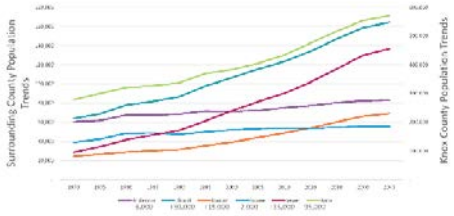
Regional Growth Projections



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Regional Commuting Patterns

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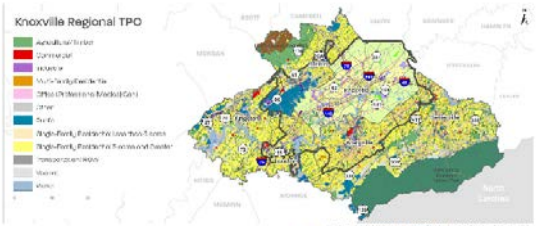
Transportation and Land Use

MOBILITYPLAN2045

Transportation and Land Use

MOBILITYPLAN2045

Regional Land Uses



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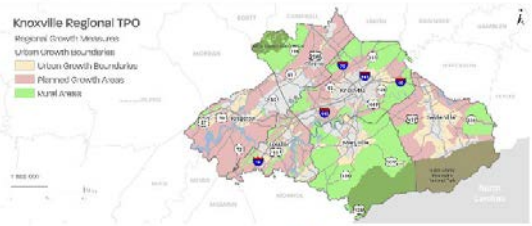
Regional Growth Measures



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MOBILITY PLAN 2045

Additional Information

Resources

Mobility Plan 2045 Website

Knoxville Regional TPO Website

Current Input Opportunities

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Environmental Justice & Equity

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Benefits of Transportation

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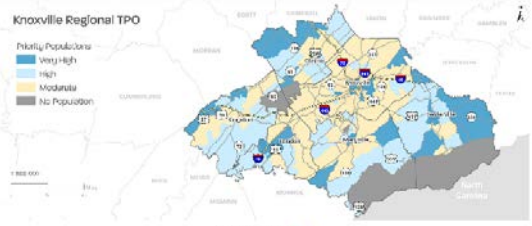
Priority Populations



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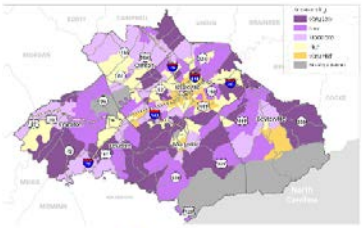
Accessibility

Access to Healthy Foods

Access to Jobs by Walking & Biking

Access to Parks & Greenways



MOBILITYPLAN2045

Opportunity

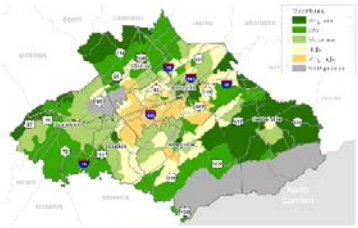
Household Income

Job Opportunities

Unemployment Rates

Social Assistance

Education Enrollment



MOBILITYPLAN2045

Vulnerability

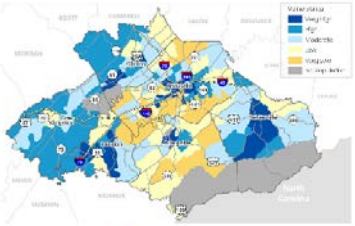
Disabled Individuals

Minority Populations

Limited English Proficiency Groups

Children & Seniors

Single-Parent Households



MOBILITYPLAN2045

Prioritizing Accessible Transportation

MOBILITYPLAN2045

MOBILITY PLAN 2045

Additional Information

Resources

Mobility Plan 2045 Website

Knoxville Regional TPO Website

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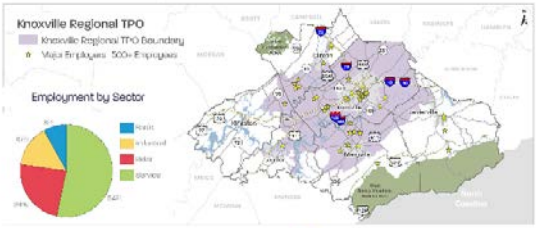
https://www.surveymonkey.com/r/MobilityPlan2045

Economic Development, Tourism, Freight & Goods Movement

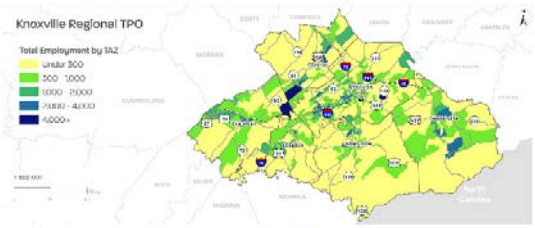
MOBILITY PLAN 2045

Knoxville Regional TPO



MOBILITYPLAN2045

Employment by Traffic Analysis Zone



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Major Employers

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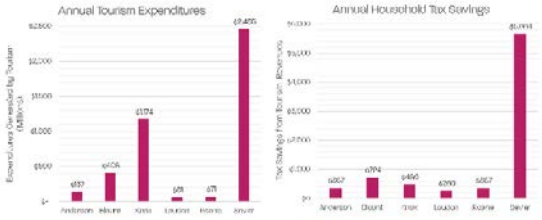
Tourism Factors



MOBILITYPLAN2045

Tourism in the Region

On an Average Day in 2018, Tourist Spending in the region:

- Generated **$11.8 million** in daily expenditures
- Produced **$2.8 million** in daily payroll
- Created **$330,000** in daily local tax revenues
- Created **$852,000** in daily state tax revenues

MOBILITYPLAN2045

Freight Overview

MOBILITYPLAN2045

Freight Truck Volumes

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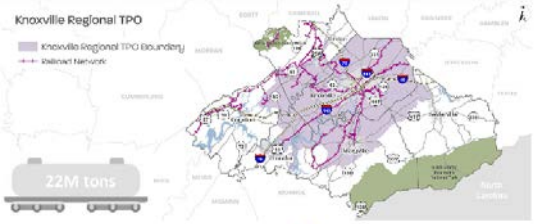
Rail Network



MOBILITYPLAN2045

Regional Airports

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Navigable Waterways

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Top Commodities

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Looking Forward

MOBILITYPLAN2045

MOBILITY PLAN 2045

Additional Information

Resources

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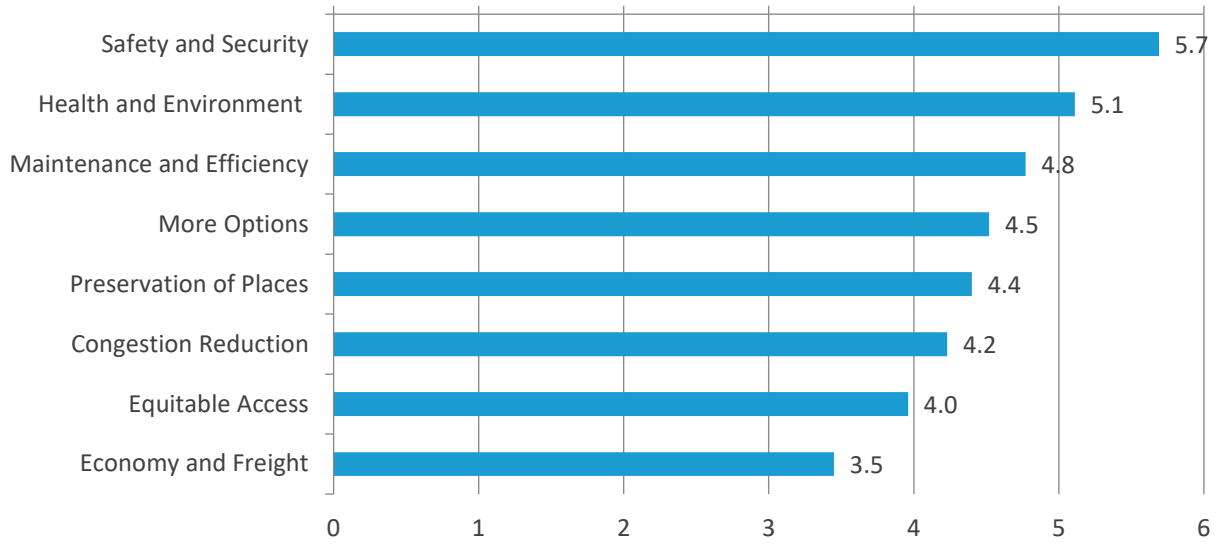
https://www.surveymonkey.com/r/MobilityPlan2045

Round 1 Online Survey and Results

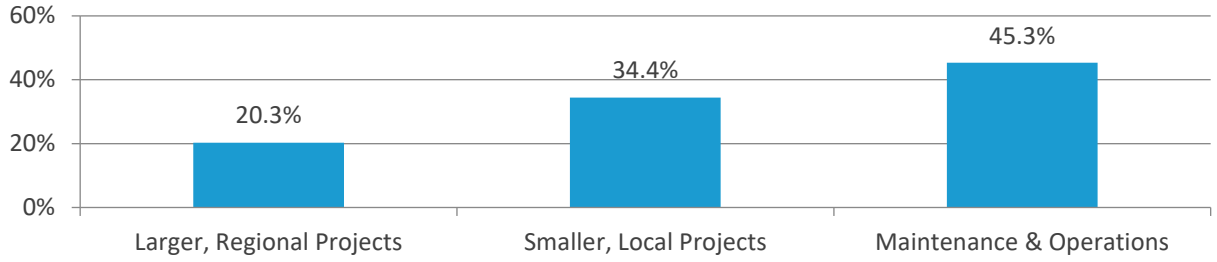
Question 1: The 2045 Mobility Plan is guided by eight primary goals, listed below. Please tell us how important each of these goals is to you by placing them in rank order, with the top priority at the top of the page. You can drag and drop to place the goals in order, or choose the rank using the drop-down menu.

Answered: 232 Skipped: 15



Question 2: In your opinion, which of the following types of projects is most important for the Knoxville region?

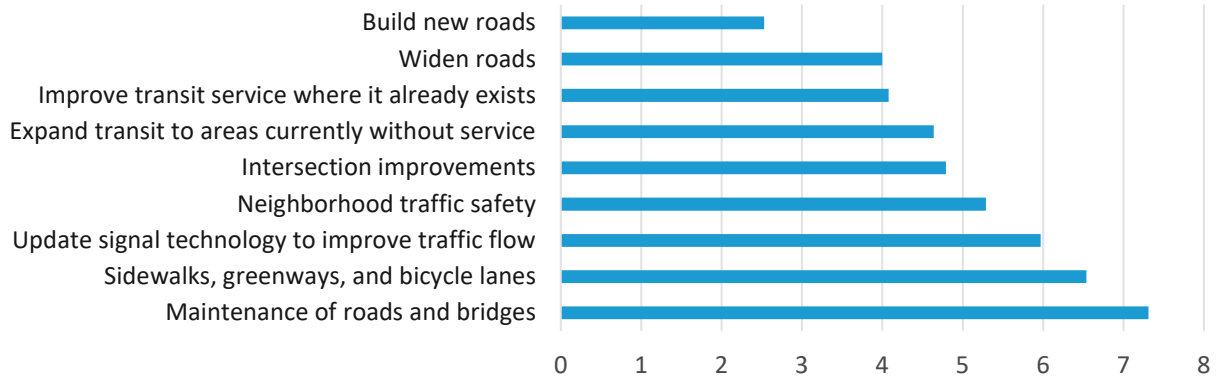
Answered: 193 Skipped: 54



ANSWER CHOICES	RESPONSES	
LARGER, REGIONAL PROJECTS	20.2%	39
SMALLER, LOCAL PROJECTS	34.7%	67
MAINTENANCE & OPERATIONS	45.1%	87

Question 3: Please rank these types of projects, with 1 being the most important to you and 9 being the least important.

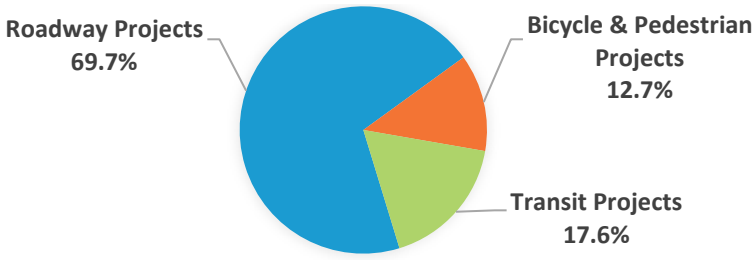
Answered: 235 Skipped: 12



	1	2	3	4	5	6	7	8	9	SCORE
SIDEWALKS, GREENWAYS, AND BICYCLE LANES	66	46	19	31	20	18	16	6	11	6.54
MAINTENANCE OF ROADS AND BRIDGES	84	42	46	23	19	10	5	4	1	7.31
UPDATE SIGNAL TECHNOLOGY TO IMPROVE TRAFFIC FLOW	19	33	49	43	31	33	18	6	1	5.97
NEIGHBORHOOD TRAFFIC SAFETY	4	31	31	48	41	29	25	16	6	5.29
EXPAND TRANSIT TO AREAS CURRENTLY WITHOUT SERVICE	19	17	25	21	34	28	33	36	20	4.64
IMPROVE TRANSIT SERVICE WHERE IT ALREADY EXISTS	5	14	10	24	29	54	43	29	23	4.08
WIDEN ROADS	17	19	16	17	13	16	35	76	23	4.00
BUILD NEW ROADS	11	7	9	3	13	13	9	41	127	2.53
INTERSECTION IMPROVEMENTS	10	24	30	24	32	32	47	17	17	4.79

Question 4: The Knoxville Regional TPO programs millions of Federal dollars each year to address transportation issues across the region. Based on your personal knowledge, what percentage of those dollars are currently spent on the following project types? Please enter whole numbers, for example 10, 25, 50, etc.

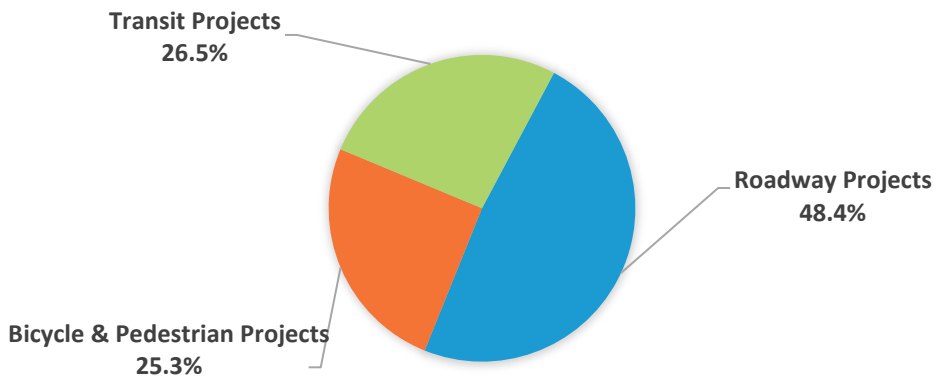
Answered: 178 Skipped: 69



ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES	
ROADWAY PROJECTS	69.7	12343	69.7%	178
BICYCLE & PEDESTRIAN PROJECTS	12.7	2252	12.7%	178
TRANSIT PROJECTS	17.6	3105	17.6%	178

Question 5: How do you want those dollars to be spent in the future on the following project types? Please enter whole numbers, for example, 10, 25, 50, etc.

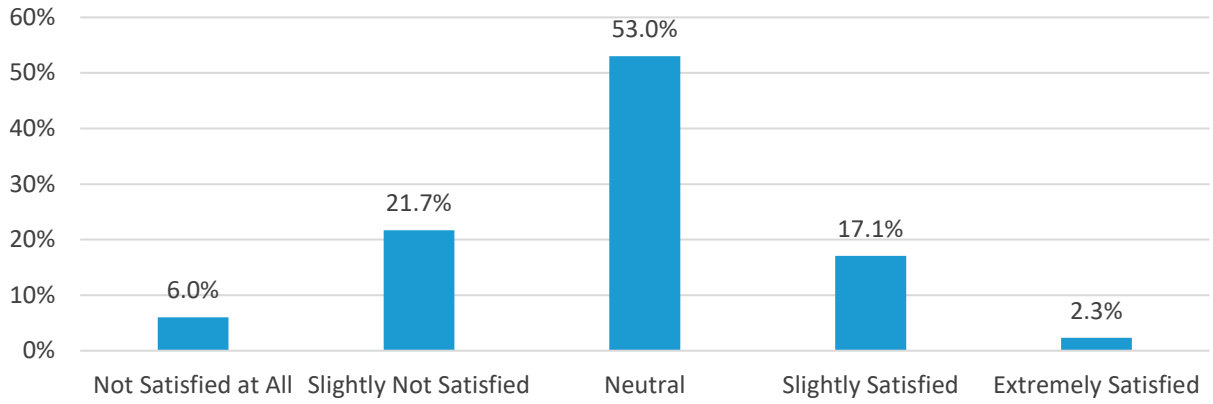
Answered: 193 Skipped: 54



ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES	
ROADWAY PROJECTS	48.4	9302	48.4%	193
BICYCLE & PEDESTRIAN PROJECTS	25.3	4825	25.3%	192
TRANSIT PROJECTS	26.5	5073	26.5%	192

Question 6: How satisfied are you with the overall transportation system in the region?

Answered: 217 Skipped: 29



RATING	PERCENTAGE	RESPONSES
NOT SATISFIED AT ALL (★)	6.0%	13
SLIGHTLY NOT SATISFIED (★★)	21.7%	47
NEUTRAL (★★★)	53.0%	115
SLIGHTLY SATISFIED (★★★★)	17.1%	37
EXTREMELY SATISFIED (★★★★★)	2.3%	5

Question 7: If you have specific issues you would like us to know about, please tell us here. In addition, you may visit our online mapping application to pinpoint specific issues on a map.

Answered: 116 Skipped: 131

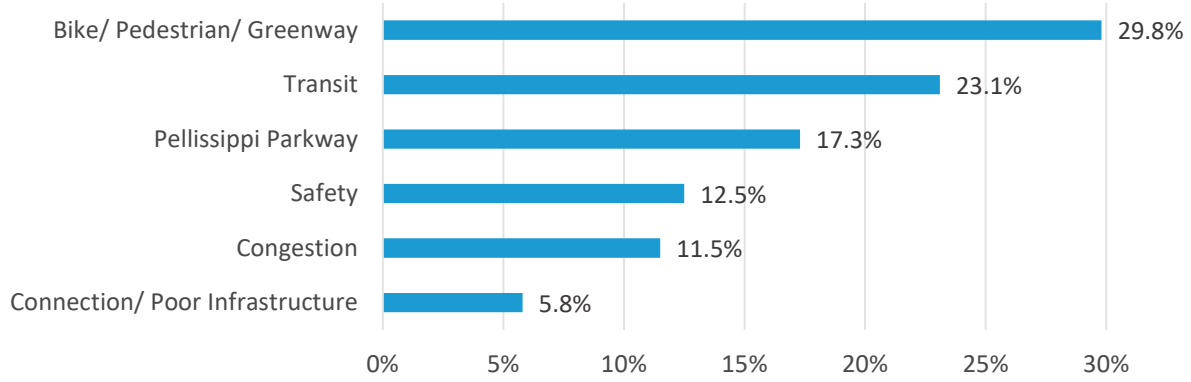


Table F-2. Online Survey 1: Open-Ended Responses

OPEN-ENDED RESPONSES
We need additional bike/pedestrian lanes with more connectivity to neighborhoods and businesses
Road maintenance and public transportation are not a priority
Major mass transit development. Improved availability and safety of bicycle and pedestrian options.
It's all designed for cars. We have to move away from that where possible.
Lots of potholes in area roads. Spend more on repairs.
The sidewalk system needs to grow. We need passenger light rail, too!
Roads that already are built should be maintained before embarking on larger new roads. Green space and working agricultural lands should be preserved. Would like to see much more work on sidewalks, pedestrian and bicycle friendly paths especially along Montvale Road in Maryville. That is a case for a road widening project in my view. I often see pedestrians struggling to walk on that road, and it is not safe. There is a population in Blount County who do not appear to have vehicles, many are school children, and walk often walk on the drop off shoulder of Montvale Road to and from work. Speaking on miles 1-5. It would be very helpful to these people to have a sidewalk. Also a bicycle lane would be very helpful along this road. Thank you for reading this.

OPEN-ENDED RESPONSES

In certain areas, I'd rather see money allocated to improving existing roads rather than building new and probably unnecessary roads. A specific example is the Pellissippi Parkway Extension. A 4 lane devided highway from Maryville/Alcoa to Townsend is not a good use of funding. We'd be much better off improving routes 33, 411, 321 and the connecting roads between those routes.
I am against the Pellissippi Parkway Extension. I think we should expand public transit options, as well as bike paths and greenways.
the whole Alcoa highway project is a fiasco tdot had it mapped out even before it went for public comment-there is no need for an additional roadway next to the pellisippe parkway-there was no need to close hunt rd just to build a road 10 feet away from the original- gigantic waste of taxpayers dollars- the whole design team should be fired and the Pellissippi parkway should not be extended- that would be a complete and utter disaster for the area- fire t-dot!
County road improvements should be a top priority, particularly in Blount Co. Millions can be spent on I-140 that will do little to reduce congestion but nothing is spent on the local roads that need paving and widening. The county highway department does not have the funding to improve roads. Extending the Pellissippi Parkway, which has been a TPO priority, is a huge waste of money. We need that money for county roads.
We need more public transit in the area. It needs to be reliable and affordable. Most places prioritize car travel over all else but there are many people who cannot afford a car or choose not to own one. They deserve to have reliable transportation too.
More needs to be done in planning construction to avoid impacts to streams and aquatic life, especially resources as biodiverse and valuable as the Little River.
Major intersections in high congestion areas needs to be higher priority
No Pellissippi Parkway extension!
I'd love to see more bus service coverage further out in the east Knox area and later hours for all routes. Then it would actually be useful fir someone like me. Things are improving in other respects so I'm thankful for that. Onward and Upward.
We need more dedicated bike lanes to travel across the county.
Alcoa Highway, Bicycle and pedestrian trails from Knoxville to Townsend, Greenway trail from Royal Oaks to Alcoa -Maryville Greenway.
lack of connectivity, need sidewalks to bus stops
I would love to use my bicycle for transportation, but many roads do not even have a shoulder to ride on and curves in many roads make it impossible for a driver to see a cyclist.
regional biking connections for Sevier County.
Improving existing routes of travel is more important than building more and more roads. Walking and bicycle trails/greenways improve quality of attract educated people to the area.
Continue to work on making the transportation system conducive to all forms of people movement.
Hardin Valley area is growing too fast. The infrastructure is terrible. The roads need widening. The main intersections need updating.
Hardin Valley is approving new builds much faster than it is making necessary road improvements to handle the additional traffic, making a bad situation much worse.
Hardin Valley congestion with 3 schools in one place plus a College. Pellissippi exits and on ramps at Hardin Valley Road.

OPEN-ENDED RESPONSES

Hardin Valley/ Pellississi area is need of updates/changes to relieve the excess amounts of traffic
A large portion of our roads in the area that I reside in are very substandard. There are only a few that are always getting updated but the majority are in less than adequate.
It is important to protect our natural resources including air quality. We have old roads that need updating. With the current economy, including the cost of COVID-19 I feel we need to maintain what we have and not spend new money on anything new. If money is spent on new items the old will be neglected and fall further into disrepair
This area has clearly already experienced more growth than it can handle, as evidenced by the backlog of road projects related to new developments that the TPO currently has. The topography of the region isn't very conducive to mass transit in many areas unless a drastic change (to neighborhood hubs that feed superstops) and the transfer system is difficult for riders to fully utilize. County Commission (and City Council, too) needs to focus on serving the needs of the people who are already here (we have more than enough shopping & office space and overpriced homes & apts., but a terrible lack of affordable housing) rather than attracting new businesses that won't bring enough jobs & tax revenue to be worth neglecting what's already here.
Traffic lights aren't timed right
Hardin Valley Road area. Way too many people moving in without the adequate road access to get anywhere
Potholes are everywhere especially on 640 causing vehicle damage
Hwy 168
Solway, especially at Pellissippi. The "exit" turn onto coward mill that will be needed for entry to new school
Do not need to build the Pellissippi Parkway Extension! Focus on existing roads.
There are far too few places in East Tennessee where one can live without a car. We need to think about multiple options for everyone.
Sidewalks in residential areas
Repair, upgrade existing roads and bridges. Consider future needs for transit systems and sidewalks and bicycle lanes. Large new projects should be the last objective.
The region seems to only consider roads as transit. We have been needing a light rail system to connect the outlying county areas through Knoxville and into the other counties for years. It is way overdue. Being near the GSMNP and with our increasing population, it is imperative to reduce our greenhouse gas emissions from vehicles. A light rail system will help do this and keep people moving. We have plenty of population to support this and we have the medians of the highways to run it. Add solar cells into the mix with electric trains and it will work. Also, need more safe bicycle paths that connect economic locations (work, grocery, shops, communities) to use as alternative transit.
Please make Alcoa Highway and Chapman Highway safer. Please do not build the Pellissippi Parkway Extension. Not needed. Please do more research & planning for regional public transit.
It is imperative that this area maintain undeveloped areas used for agriculture and leisure. New roads should not be built through them, including interstate systems.
In Blount county, we need more options for public transportation and upgrading of existing roads. In the county near Friendsville the roads have huge potholes and the roads are literally crumbling at the edges.

OPEN-ENDED RESPONSES

Schadd Rd. extension needs to be completed toward Lovell Rd. and also ensure that it not be used as a through route for truckers from 40 to 75. Also, Solway area improvements where Oak Ridge Hwy joins Pellissippi.
ETHRA is a help as is the SMILES program to people who are in rural areas outside of Knoxville, or even in suburban areas such as Maryville, however, it'd be great if there could be more services that were not just for dr's appts. such as a bus that runs regularly so that a person could go to the store or other location when they choose-not just for appts.
The Pellissippi expansion project is a complete waste of our taxpayers dollars. There are so many roads in our county that need improved way before you need to build a duplicate road that takes you to Townsend!
I am strongly opposed to the Pellissippi Parkway extension project
The mass transportation availability in our area is very inadequate. We are too dependent on our road vehicles.
Inter regional mass transit
Very disappointed in the lack of public transportation options available in some of the more rural areas
Repair/improve existing roads: deny developers' pipe dreams of new roads that hurt the environment and people simply to line the pockets of developers & the politicians the developers have bought. We have spent too much money on the PPE.
I know that Amtrak is courting the TN General Assembly, and there is NO reason that rail travel shouldn't have already been expanded into the region. Additionally, with the TYS airport being City of Knoxville, the KAT bus should work to get some special permitting to run a route from the airport to downtown Knoxville; a once-an-hour or every 90 minute transfer.
Not enough transit and greenway access in the counties
Centennial Church rd. needs work, trees trimmed, bridge needs repair, and widened!!!!!!
Knoxville is hilly and buses don't come where they need to.
We need to expand bike lanes and greenways to provide safe alternative transportation options. This will also help alleviate traffic congestion. There should also be more accessible public transportation for the region; for example, a light rail connecting Knoxville with cities like Oak Ridge, Gatlinburg, and Maryville.
We should be spending money on improvements to existing roads instead of on new roads. We may need some new roads in the future, but not at the expense of maintaining our existing roads
Don't build the PPE! It isn't needed, it ruins the beauty especially of the environment, and it wastes tons of money much better used elsewhere.
Be smart, be efficient, remember that our tax-dollars are funding your work. It's more cost-effective to maintain and fix existing systems, rather than starting from scratch building inefficient roads to go nowhere useful.
Revisit diverting interstate transport traffic around further points to avoid turning into Nashville and reacting too late

OPEN-ENDED RESPONSES

TDOT and Knox County do a pretty good job of maintaining hundreds of miles of roadway. The area gets 4 stars due to extensive Greenway systems that could rival other cities. There is still so much opportunity to continuously grow multi-modal transit. Additionally, the TPO and respective planning departments of each county need to collaborate more to ensure mixed use communities exist to match mixed use transit. Otherwise, some sidewalks will simply get too little traffic to make them worth it with single family residential neighborhoods.
Shopping and business corridors in older neighborhoods need more landscaping and pedestrian facilities. Restrictive and unsafe RR tunnels in older neighborhoods need upgrading. Greenway network needs to be connected throughout the city
Would love to be able to transfer bus lines other places than having to go all the way to the station to change lines. Quite a long process to get anywhere via Kat
There is too little focus on repairing and improving existing roads. We do not need more roads, we need to maintain what we already have, and add smart fixes like traffic circles to improve flow. Also, we need more options for pedestrians.
Interstate congestion is real concern for the future.
Look at turn lanes on highways which do not have a designated median.
The Pellissippi Parkway Extension is a waste of funds, land and a loss of business to those businesses already established along Hall Rd., Washington Ave. and hwy 321 east.
Congestion on interstate 40 to Nashville and 75 to Chattanooga. Finish Pellissippi Parkway to US321.
If you don't have a car you're screwed. If you do have a car you're sitting in traffic. Why isn't there a light rail link between Maryville, Oakridge, and Knoxville?
Improve multi-modal and transit options to broader region.
Keep the Interstates in good condition by fixing potholes and paving.
Alcoa Highway, Chapman Highway - Maintenance instead of building new roads, preventing sprawl
Must start taking climate change seriously and vastly increase transit to get people out of cars.
Too much focus on enabling high speed driving and not enough emphasis on health, well being and community culture.
More charging stations at no cost!
Two lane rural roads are unsafe, too narrow, and dangerous. This is true all over Blount County. Same for US 411 North from Maryville to Seymour.
Certain regions are very suitable for increased bike/ped use. When that happens a car is removed alleviating congestion. Some of those immediate areas could be focused on.
It is my hope that TDOT has considered alternatives for the I-40/I-640 interchange (especially in the WB I-40 direction), and closing direct connections to Pellissppi Parkway.
Expand funding for public transportation
Our current transit system around downtown is incredibly useful and affordable for those who do not have other transit options. However, it's not set up to encourage wider use by those who do have a car. I live within a 5 minute car ride to my office downtown but I would like to bike and take the bus instead of driving to work and not have to pay for parking. I calculated my bus ride and on a quick day with minimal waiting it would take me 45 minutes to get to work by bus. It's so hard to justify spending 1.5 hrs of my time trying to utilize public transit when it could be 15 minutes or less...

OPEN-ENDED RESPONSES
I'd like sidewalks off of major roads (Kingston pike in Knoxville, Lamar Alexander parkway, Broadway and Sevierville road in Maryville) at least in the cities proper. I'm also in favor of extending pellissippi parkway to 321. There is a lot of traffic flowing thru Old Knoxville Pike/Broadway that struggles to get further south.
it would be nice if there were a better greenway system where you did not have to fear for your life and could commute to downtown from out west.
Would love to see a connection between Veteran's Blvd and Winnfield Dunn Parkway to help with congestion in Sevierville.
Lack of funding to improve "bottleneck" conditions, such as interstate ramps to high-growth communities.
Road widening and improvements to keep up with Hardin Valley growth. Congestion on I40.
Too many new residential developments are being allowed to start/finish without adequate drainage, schools and roads also planned.
Hardin Valley is one of the fastest growing areas in Knox County and is severely neglected. Improvements are desperately needed on Hardin Valley Road and Pellissippi parkway before more bad car crashes occur.
Hardin Valley Road needs to be addressed quickly. It is not ready for the amount of people moving into the area.
Too many roads that are 2 lanes that are just full such as Oak Ridge Highway, Ball Camp Pike, Hardin Valley, and Lovell.
Utilize new and innovative ideas for routing traffic around schools & other areas of congestion that won't lead to over expanded pavement with less problem solving capabilities.
Traffic flow through intersections need to be synced. Hardin Valley road needs to be widened, the Pellissippi/Hardin Valley Rd. Interchange needs to be improved. Thompson Rd towards Lovell needs to be widened so schools buses can safely travel down the road. Hardin Valley and Thompson Rd need a traffic light, one that changes just when a car is waiting.
There has to be additional build out and maintenance of the roads in West Knox County, essentially from Pellissippi Pkwy/I-40 west to the Knox County Line. The County is allowing unmitigated growth in this area and the available infrastructure is beginning to physically wear out as traffic increases.
Not many options or areas with public transportation
Hardin Valley is experiencing massive home development and increased traffic congestion without apparent concern for infrastructure. HV Road west of Route 162 is a two lane road, with a few turn lanes. Hundreds of homes and a new school have been built, thousands of cars transit it daily (would be good to know the five-year increase), yet there are no plans to widen this artery.
The interstates through Knoxville have become parking lots for large amounts of time during the day. We desperately need a bypass system to keep through traffic away from the middle of the city.
The two lane portion of Lovell Rd is too narrow and is extremely busy. There are numerous accidents on this road because of cars going too fast. This road needs to be widened or at least have a turning lane added. When cars are turning onto another road in a curve, it's dangerous to be stopped because of cars coming up behind you too fast.
Need sidewalks and crosswalks at Harbison Crossroads. Need traffic relief in Hardin Valley area. Need sidewalks from neighborhoods to schools, stores. Need infrastructure in place before development comes, not after.
Lack of connectivity, limited transportation options, priority given to private cars. Neighborhood design and transportation need to be related.

OPEN-ENDED RESPONSES
More areas served for ETHRA and CAC. I am Knox County, but CAC will not pick me up where I live.
My concerns are for convenient, affordable options for non-driving seniors who are unable to walk to bus stops or climb into buses.
People without access to an automobile need an affordable way to get to work. We need more sidewalks and greenways so people can walk and ride bikes.
interstates need repaving, local main roads need repaving, need extended turn lanes at various intersections that back up into other traffic lanes ie: north broadway at Adair drive turn lane in north knoxville
I love my bus service & its frequency (15 min during peak times -- BC - before corona). But, it's difficult to get thru town. Also, I absolutely love my sidewalks and the fact that I can, and DO, walk to local services - library (BC), drugstore. I wish that there were more and better maintained sidewalks nearby
No good transit options for seniors wanting to age in place in the County. (Calling for a ride is not convenient enough and is very limited -- requires calling too far in advance, is slow, sometimes doesn't show.) Also, many many new family homes being built, but roads are not being widened to accommodate them and no sidewalks are being built.
A high speed rapid transit connecting downtown/university area, West Town Mall area, and the airport would be a very efficient use of limited mass transit resources.
equitable and environmentally sustainable transportation option for all. Especially cognizant of the growing needs for the aging and impaired.
Need better and more active transportation options which means more funding
Too many big roads going through the middle of Knoxville.
I-40 E/W has increasingly gotten more congested. As downtown expands, bike/pedestrian/transit friendly options are crucial.
So many potholes on the I40, it’s dangerous. We also need HOV lanes. If Knoxville want to continue expanding, it simply does not have the freeway capacity. We must promote carpooling.
Connections are lacking.
Regional projects does NOT equal widening and building. It includes carpools, HOV lanes, regional bus service, etc.
With major tourism jobs in Sevier County, regular BRT should be available for workers. Part of Closed East Towne Mail could become a Trans Hub.
There should be a major emphasis on carbon reduction and safety. Vastly improved transit will accomplish that. Please do not continue to spend money building new roads or improving existing roads. That just encourages more driving, resulting in more emissions and more fatalities.
Lots of congestion, lots of crashes. Poor connectivity or alternate routes in a lot of areas.

Question 8: If you'd like to stay up to date on the 2045 Mobility Plan throughout the process, please provide your email address and we will add you to our mailing list.

Answered: 126 Skipped: 120

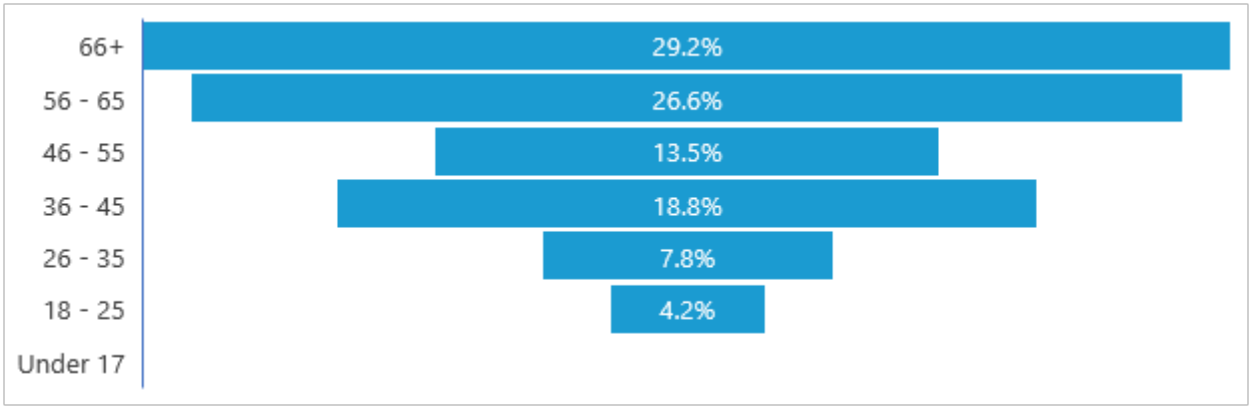
Question 9: The following questions are optional. If you respond to them, it helps us to make sure the transportation plan meets the needs of everyone in our region.

Answered: 188 Skipped: 58

ANSWER CHOICES	RESPONSES	
HOME ZIP CODE	97.9%	184
HOME COUNTY	95.8%	180

Question 10: In what age range do you fall?

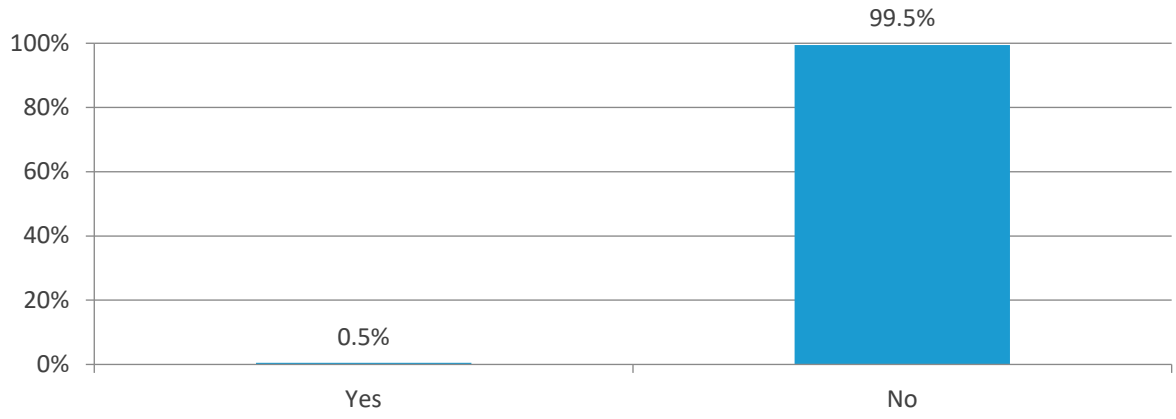
Answered: 193 Skipped: 54



ANSWER CHOICES	RESPONSES	
UNDER 17	0.0%	0
18-25	4.2%	8
26-35	7.8%	16
36-45	18.8%	36
46-55	13.5%	26
56-65	26.6%	51
66+	29.2%	56

Question 11: Are you of Hispanic, Latino/a, or Spanish origin?

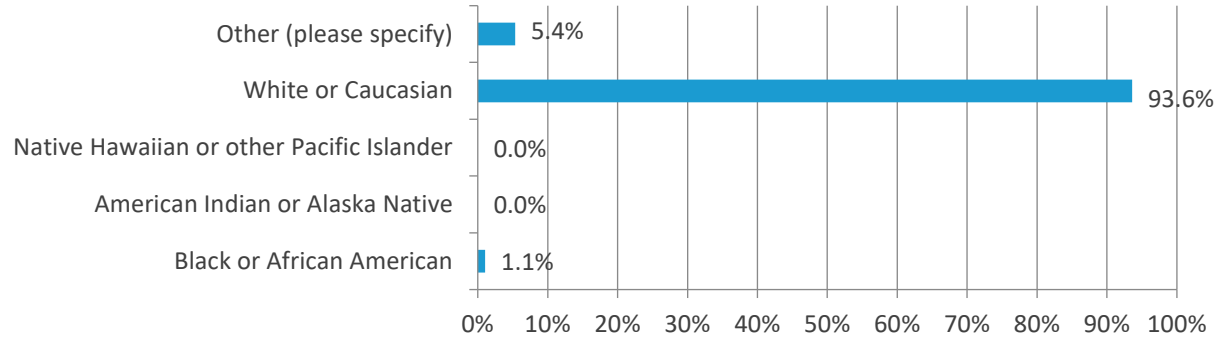
Answered: 191 Skipped: 56



ANSWER CHOICES	RESPONSES	
YES	1.0%	2
NO	99.0%	189

Question 12: How would you describe yourself?

Answered: 187 Skipped: 59

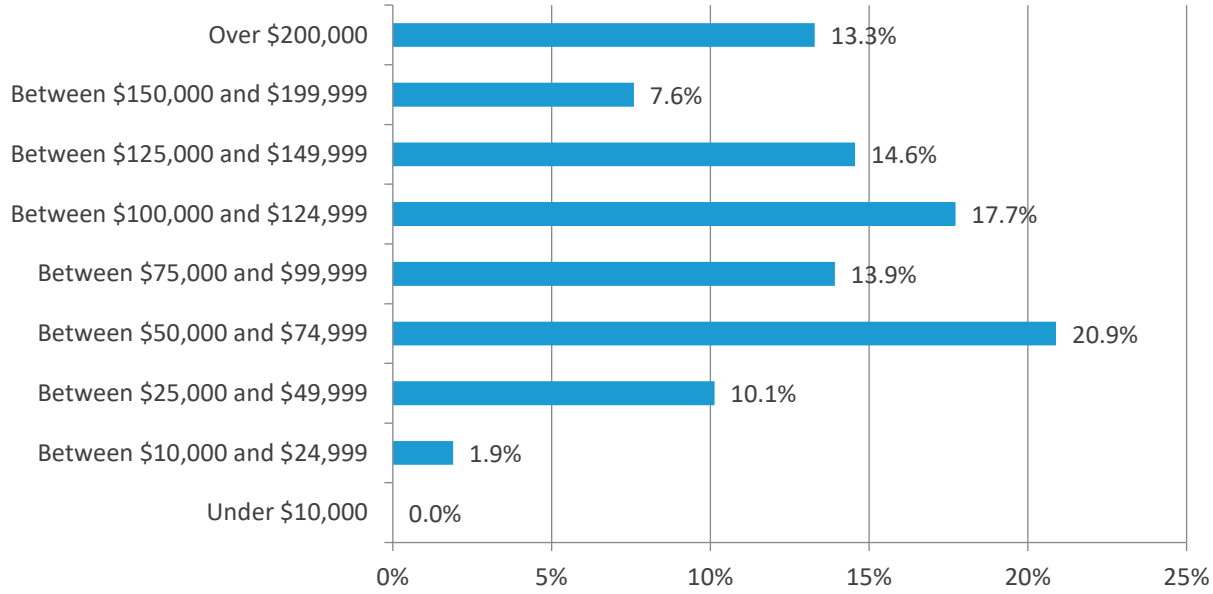


ANSWER CHOICES	RESPONSES	
BLACK OR AFRICAN AMERICAN	1.1%	2
AMERICAN INDIAN OR ALASKA NATIVE	0.0%	0
NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER	0.0%	0
WHITE OR CAUCASIAN	93.6%	175
OTHER (PLEASE SPECIFY)	5.4%	10

QUESTION 12 "OTHER"	RESPONSES
HOW WOULD YOU DESCRIBE YOURSELF	American White
	American
	MIXED
	European American
	human
	human
	NA
	Same as others
	Mixed
	Asian/White

Question 13: What is your total household income?

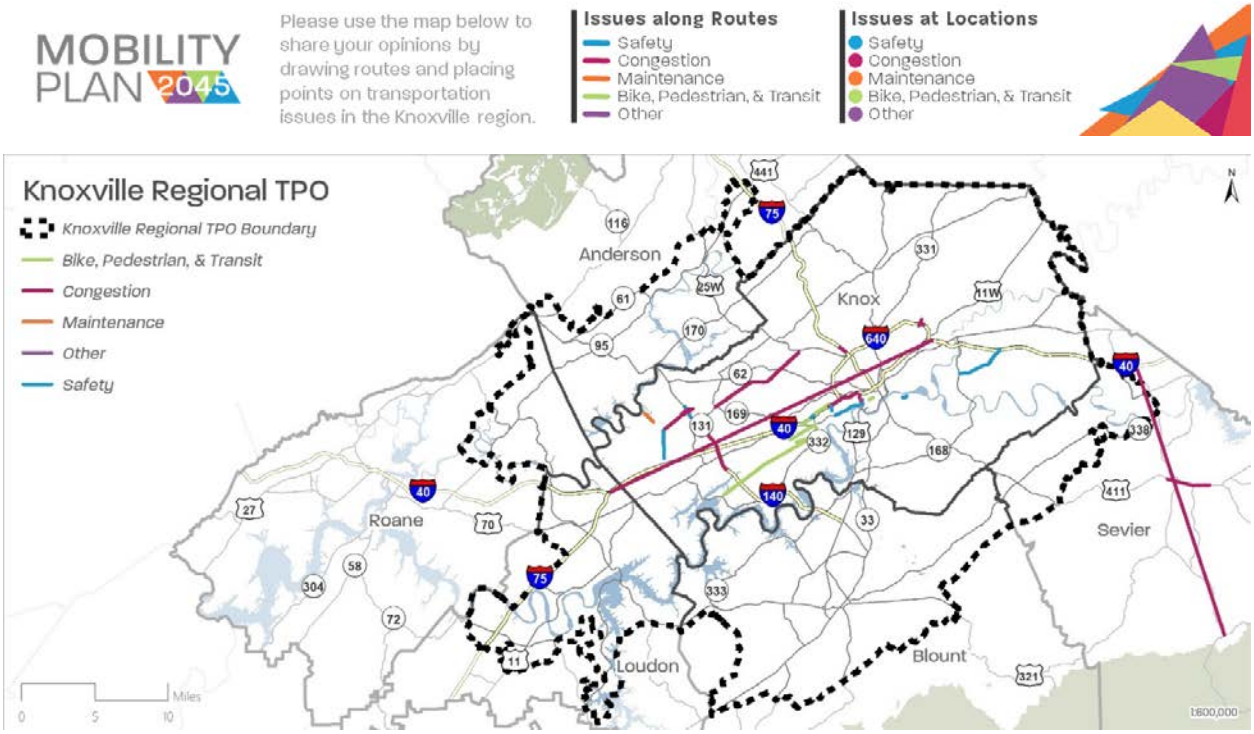
Answered: 159 Skipped: 88

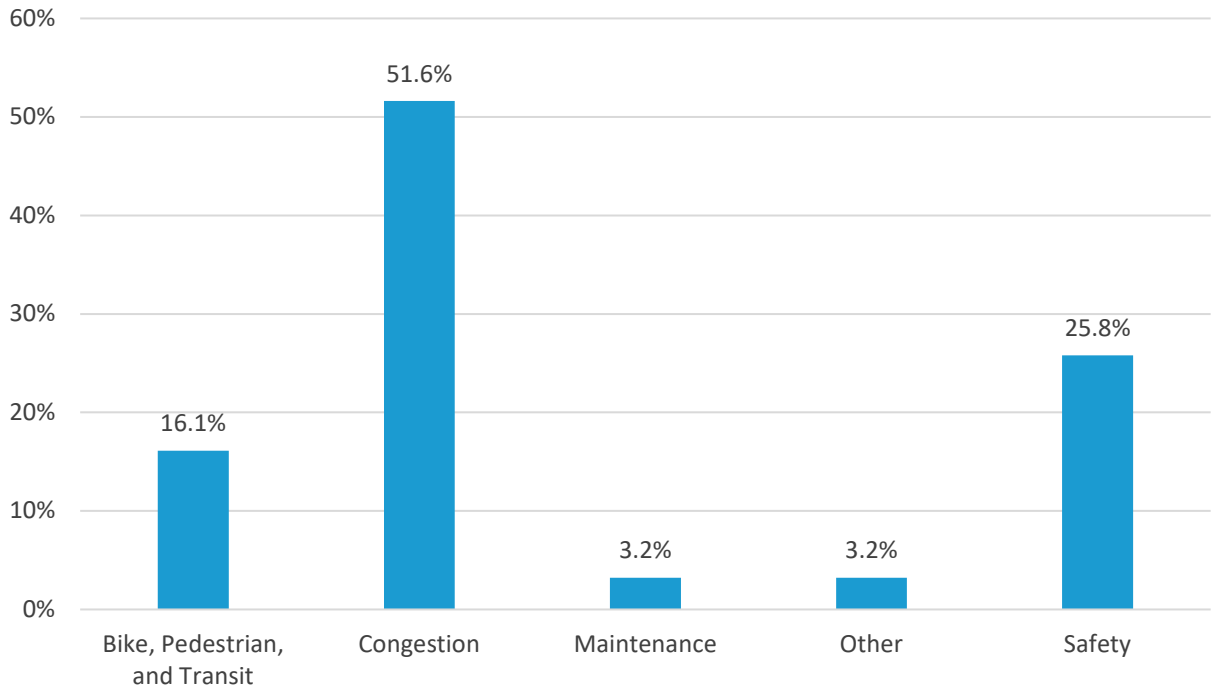


ANSWER CHOICES	RESPONSES	
UNDER $10,000	0.0%	0
BETWEEN $10,000 AND $24,999	1.9%	3
BETWEEN $25,000 AND $49,999	10.1%	16
BETWEEN $50,000 AND $74,999	20.9%	34
BETWEEN $75,000 AND $99,999	13.9%	22
BETWEEN $100,000 AND $124,999	17.7%	28
BETWEEN $125,000 AND $149,999	14.6%	23
BETWEEN $150,000 AND $199,999	7.6%	12
OVER $200,000	13.3%	21

Round 1 Wikimap and Results

Map 1: Issues Along Routes





Open-Ended Responses

Table F-3. Round 1 Wikimaps: Issues Along Routes

ISSUE	DESCRIPTION
BIKE, PEDESTRIAN, & TRANSIT	There is no bike infrastructure on Northshore from the interstate to Westland and points west and along Paper Mill to Kingston Pike from the intersection with Northshore/ I40-75
BIKE, PEDESTRIAN, & TRANSIT	Papermill needs bike and ped facilities - many people would bike and walk to McKay's, REI, and Whole Foods if there was a safe way to get there. Also it would connect to the greenway on Middlebrook
BIKE, PEDESTRIAN, & TRANSIT	Already commented that Papermill needs bike and ped facilities that connect to schools, retail, etc.
BIKE, PEDESTRIAN, & TRANSIT	See prior comments re: Papermill
BIKE, PEDESTRIAN, & TRANSIT	sidewalks are in horrible condition
CONGESTION	Severe congestion on westbound I-40 in the evenings
CONGESTION	Severe congestion on westbound I-40 in the evenings
CONGESTION	Severe congestion on westbound I-40 in the evenings
CONGESTION	Congestion on Vanosdale all mornings and evenings, exacerbated during the school year. Consider replacing the four-way stops with traffic circles.
CONGESTION	Intersection with Morrell Road/Buckingham and W. Town Way/I-40 ramps need three separate lanes eastbound on West Town Way dedicated for left turns, thru traffic, and right turns.
CONGESTION	Substantial congestion in this area as I-640E/W/75N traffic merges into I-75N and I-275 traffic has to cross to exit on Merchant Dr
CONGESTION	AM Peak congestion
CONGESTION	Severe congestion on Millertown Pike through the East Town Mall area. Traffic signals are not synchronized. One lane of through traffic with many turning movements inadequate. The worst is traffic going Millertown Pike down to Loves Creek.
CONGESTION	Difficult to switch lanes here during peak hour. I use this as an alternate route sometimes when there are backups on 40 to get to my apartment off Kingston Pike near West Town Mall. I need to be able to exit the interstate and get over to take a right o
CONGESTION	I-40 between 75/40 Split and I-640/40 Split
CONGESTION	US-321/TN 66 between I-40 and Gatlinburg

ISSUE	DESCRIPTION
CONGESTION	congestion slowing traffic flow
CONGESTION	
CONGESTION	
CONGESTION	The completion of the Ball Camp Pike, Ball Road, and Shaad Road project needs to be completed. From where Lovell Road becomes Ball Camp Pike crosses two railroad crossings which hold up traffic. The crossings need to overpass.
CONGESTION	Dolly Parton Parkway Congestion
MAINTENANCE	Couch Mill Rd is in need of widening
OTHER	Access to Tyson Park from Fort via pedestrian walkway/trail has been blocked by railroad fence. A simple cut-out in the fence would provide opportunity for pedestrian access from Fort to Park which is underutilized die to that fact.
SAFETY	Road carries a lot truck traffic and could use improvements such as wider shoulder.
SAFETY	Major safety concern with traffic backing up and queuing on shoulder of road during morning peak to exit onto Hardin Valley Road.
SAFETY	I know ROW is really tight through this section of Kingston Pike, but a center turn lane would be so helpful through here, or even just left turn lanes at the signals
SAFETY	Not enough room for people to get in the correct lanes here. When I am exiting 40 to Papermill I need to take the right ramp, but others headed to 40 need the left. This is a really short span of time to weave to where you need to go.
SAFETY	Lanes are narrow with a sharp drop to the ditch line on either side. Congested route. Drivers cross the center line to avoid dropping into ditches.
SAFETY	Mailboxes in buckets impede sidewalk resulting in ADA violations in places. This could be avoided by using USPS recommended centralized points.
SAFETY	congestion causing dangerous driving conditions
SAFETY	--

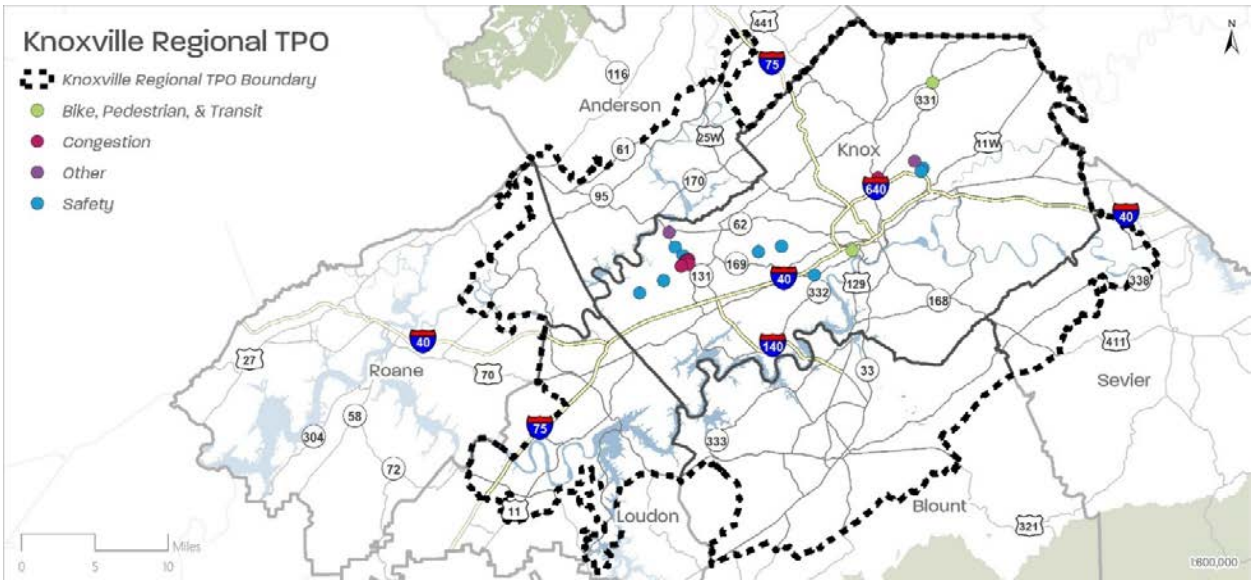
Map 2: Issues at Locations

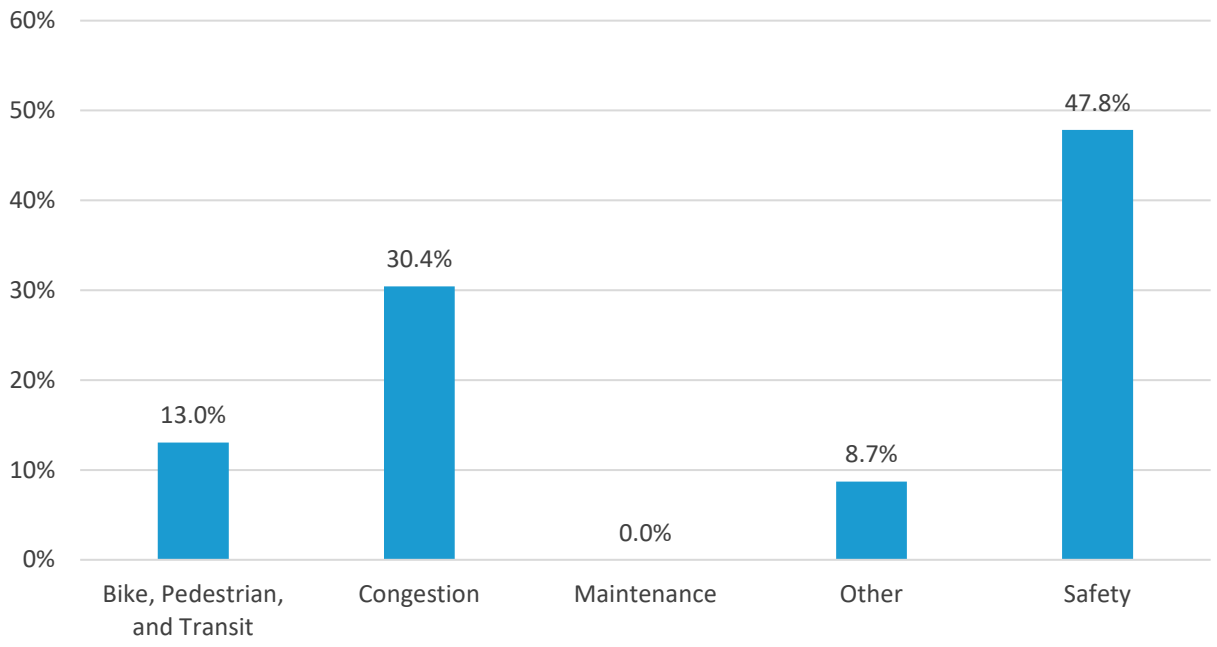
MOBILITY PLAN 2045

Please use the map below to share your opinions by drawing routes and placing points on transportation issues in the Knoxville region.

Issues along Routes
- Safety
- Congestion
- Maintenance
- Bike, Pedestrian, & Transit
- Other

Issues at Locations
- Safety
- Congestion
- Maintenance
- Bike, Pedestrian, & Transit
- Other





Open-Ended Responses

Table F-4. Round 1 Wikimaps: Issues at Specific Locations

ISSUE	DESCRIPTION
BIKE, PEDESTRIAN, & TRANSIT	Lack of pedestrian crossings at this intersection
BIKE, PEDESTRIAN, & TRANSIT	Need pedestrian crossings at Emory Rd / Tazewell Pike intersection.
BIKE, PEDESTRIAN, & TRANSIT	Small connector needs to be placed here (even if it's just a break in fence). Will allow access to neighborhood routes for bikes/scoters/pedestrians without having to access Main road (Sutherland).
CONGESTION	Congestion is impeding economic growth and risks devaluing significant investments made state and local government within this area. A comprehensive strategy and plan is needed to deal with peak congestion.
CONGESTION	Severe congestion at this intersection.
CONGESTION	--
CONGESTION	--
CONGESTION	--
CONGESTION	--
CONGESTION	--
CONGESTION	--
OTHER	The inability to make a southbound turn onto Hwy 162 from westbound Hwy 62 is a problem, and it is a contributing factor to congestion at Hardin Valley Road and Pellissippi Parkway
OTHER	Should convert this to a roundabout
SAFETY	Intersection is a safety hazard at Bakertown and Joe Hinton
SAFETY	Intersection of Piney Grove and Hembolt/Amherst is unsafe
SAFETY	Heavily congested intersection with pedestrian traffic is unsafe. Cross walks are needed in every direction along with dedicate right turn lanes.
SAFETY	At grade intersection
SAFETY	At grade intersection
SAFETY	Traffic signal control box blocks visibility for Mill Rd vehicles turning right - they cannot see the westbound Millertown Pike traffic because the traffic control box blocks the view.

ISSUE	DESCRIPTION
SAFETY	Vehicles should not be allowed to turn left from the Zaxby's / car wash (Miller Place Way) onto Millertown Pike. It should be right turn only. They should have to go to the mall and turn left on the traffic light.
SAFETY	--
SAFETY	--
SAFETY	--
SAFETY	--

TPO Board Meetings

Knoxville Regional TPO Board Meeting: February 26, 2020

- TPO staff presented regional population and employment projections for each county in the TPO planning area. These were approved by the Executive Board for use in the Mobility Plan update.
- Goals and strategies developed with the previous Mobility Plan 2040 were discussed for additional comments or modifications for Mobility Plan 2045.
- TPO staff presented proposed inflation rates and initiated consultation with state and federal planning partners for concurrence in updating 2045 Mobility Plan financial assumptions. Inflation rates were presented to the Technical Committee for discussion prior to endorsement by the Executive Board.

Knoxville Regional TPO Board Meeting: March 25, 2020

- Following the discussion at the February 2020 Technical Committee meeting, TPO staff recommended an annual rate of 2.2% for revenue growth and a 3.3% annual construction inflation rate. The proposed rates were used to calculate future revenue estimates and year of expenditure costs for the Mobility Plan. The transit financial assumptions were presented at a later date.
- TPO staff sought additional input on stakeholder groups and participants in the development of Mobility Plan 2045.

Knoxville Regional TPO Board Meeting: April 22, 2020

- An overview of the Phase 1 Outreach Plan for Mobility Plan 2045, to be completed virtually as a result of COVID-19, was presented by TPO staff.

Knoxville Regional TPO Board Meeting: July 22, 2020

- TPO staff provided a brief update on the major planning tasks associated with the Mobility Plan 2045 and related elements.

Knoxville Regional TPO Board Meeting: August 26, 2020

- A summary of Round 1 public input received via the online tools for Mobility Plan 2045 was presented by TPO staff.
- Mobility Plan 2045's "Call for Projects" was opened through Friday, September 4th. TPO staff provided an overview of how to use the online form and answered any initial questions about the project application process.

Round 1 Summary

Round 1 included social media outreach, online presentations, surveys, and map-based input opportunities for residents of the Knoxville region, which produced a large amount of feedback that was utilized by the TPO for Mobility Plan 2045. Information collected as part of this first round of outreach helped accomplish the following purposes:

- Presenting supporting information and gaining consensus for plan assumptions with the Technical Committee and Executive Board
- Engaging public and stakeholders in alternative outreach strategies for virtual engagement
- Informing the public and stakeholders as to the state of the transportation system and projected growth in the Knoxville region
- Soliciting feedback on transportation issues, which was all provided to the TPO's member jurisdictions to inform the project application process

The first round of outreach in particular aimed to reach a diverse demographic of residents to ensure equitable representation during the engagement process. Typically, the TPO strategizes with the Knoxville Office of Neighborhood Empowerment to further participation efforts for Mobility Plan updates. However, early in 2020 the City of Knoxville experienced a ransomware attack, which affected the outreach for this round. However, results from this first round of engagement helped to formulate the additional efforts made in Round 2 to reach groups with traditionally underrepresented backgrounds.

Following completion of Round 1 outreach, the TPO summarized all input collected and made it available to its member jurisdictions as well as on the project website for public viewing.

ROUND 2 ENGAGEMENT

Strategy Overview

Beginning in mid-2020, the second round of public engagement efforts included creation of a project list with input from member jurisdictions, continued presentations of information related to existing and future conditions within the region, assumptions related to fiscal revenue and project cost projections, and a scoring/prioritization mechanism for projects. Following review from the TPO Technical Committee and Executive Board, a list of candidate projects was presented to the public and stakeholders for input.

Table F-5. Round 2 Engagement Strategies

	PURPOSE
TARGETED OUTREACH EFFORTS	▶ **News article:** Posted on TPO website about draft project list, public input, survey ▶ **Press release**: Info on draft project list and input opportunities shared with local news outlets ▶ **Newsletters:** Links to article and survey; shared by TPO, Planning, and City of Knoxville Office of Neighborhoods email newsletters ▶ **Social media (Facebook, Twitter, Reddit, Instagram):** Used to share article, draft project list, and input opportunity; Used paid ad to target specific zip codes; created a video and ran an "Ask Me Anything" on Active Knox Instagram for one week ▶ **Podcast advertising:** Ran an ad for Mobility Plan on *Black in Appalachia* podcast ▶ **Virtual Presentation:** Knoxville Chamber of Commerce ▶ **Public meetings:** Info and updates presented at September TPO Technical Committee; Meeting video available online ▶ **Bright Signs**: Information shown on electronic sign at front desk in Planning office ▶ **Emails to stakeholder groups:** Sent to 200+ individuals asking for comments on draft list of projects (on interactive map), help reaching constituents and underrepresented groups in their jurisdictions ▶ **Community partners**: Asked for help reaching additional interested parties and underrepresented groups
CALL FOR PROJECTS	Considerable coordination with member jurisdictions and stakeholders to develop a candidate project list for prioritization and review by the public. Online application instructions and forms for proposed Mobility Plan 2045 projects were created.
ROUND 2 WIKIMAPS	Wikimaps with proposed projects were made available to the public for input. Participants could comment on the map or via an additional comment box. There were 542 total open-ended comments.
ROUND 2 DEMOGRAPHIC SURVEY	A survey was available online for feedback regarding the proposed list of projects that will be included in Mobility Plan 2045.
TPO BOARD MEETINGS	Documents and updates presented to the TPO Technical Committee and Executive Board regarding call for projects and public input received in Round #2.

Targeted Outreach Efforts

Call for Projects Solicitation

From: Mike Conger <mike.conger@knoxtpo.org>
Sent: Friday, August 7, 2020 9:46 AM
To: Amy Brooks; Beth Collins; Blake Sartin; Brian Boone; Chico Messer; Darryl Smith; DeAnna Flinchum; gholiway@ethra.org; hcannon@knoxvilletn.gov; qualls; Jacob Wright; jownby@seviercountytn.org; Jim Snowden; Karen Estes; Kathryn Baldwin; LARRY GANN; Megan Brooks; Michelle A Christian; Rich D; Terry Bobrowski; Wayne Blasius; Don Brown; Mike Patterson; dwalker@blounttn.org; Steve King; Troy J. Ebbert; sbullen@blounttn.org; Sheila Kohl
Cc: TPO Staff; Kayla Ferguson; Sean Santalla (FHWA)
Subject: TPO Mobility Plan 2045 - Call for Projects
Attachments: We found suspicious links; KCI Email Attachment; KCI Email Attachment

TPO Technical Committee Members,

The TPO staff is excited to announce the initiation of the formal "Call for Projects" for the 2045 Mobility Plan! The deadline for submitting a project application for consideration is 4 weeks from today on **Friday, September 4, 2020**. We will be providing an overview of the application process and instructions for completing the forms during next Tuesday's Technical Committee meeting.

New for this Plan will be an entirely online project application process using a Google Form as well as a Google Sheet for updating existing 2040 Mobility Plan projects. A project application is required for both new and existing projects, with less information needed for the existing, or "rollover" projects. Note that projects that are already under construction or have been completed since the 2040 Mobility Plan will not require an application to be submitted.

Attached are detailed instructions for both cases of either re-applying for an Existing Project or to apply for a New Project including all of the links needed to access the online forms. Also attached is a print-version of the entire Google Form for your reference before you start the online version as well as the latest "TDOT Cost Estimate Tool" which should be used to prepare new and updated cost estimates for most projects unless better information is available.

IMPORTANT - if an agency would like to have multiple staff collaborate on a single project application then the online form must be first initiated and filled out to the point where you can click the "Submit" button. Once the project is submitted an email will be sent to you with a web link to that specific project form. This link can then be shared with any other staff in your agency and will allow them to add/edit information in the form. Once everything has been completed please notify us that the project application is ready for TPO staff review at: mobility@knoxplanning.org.

Please note that this Call for Projects notice is only being sent to the core Technical Committee voting member list so please forward as needed to other staff in your agency.

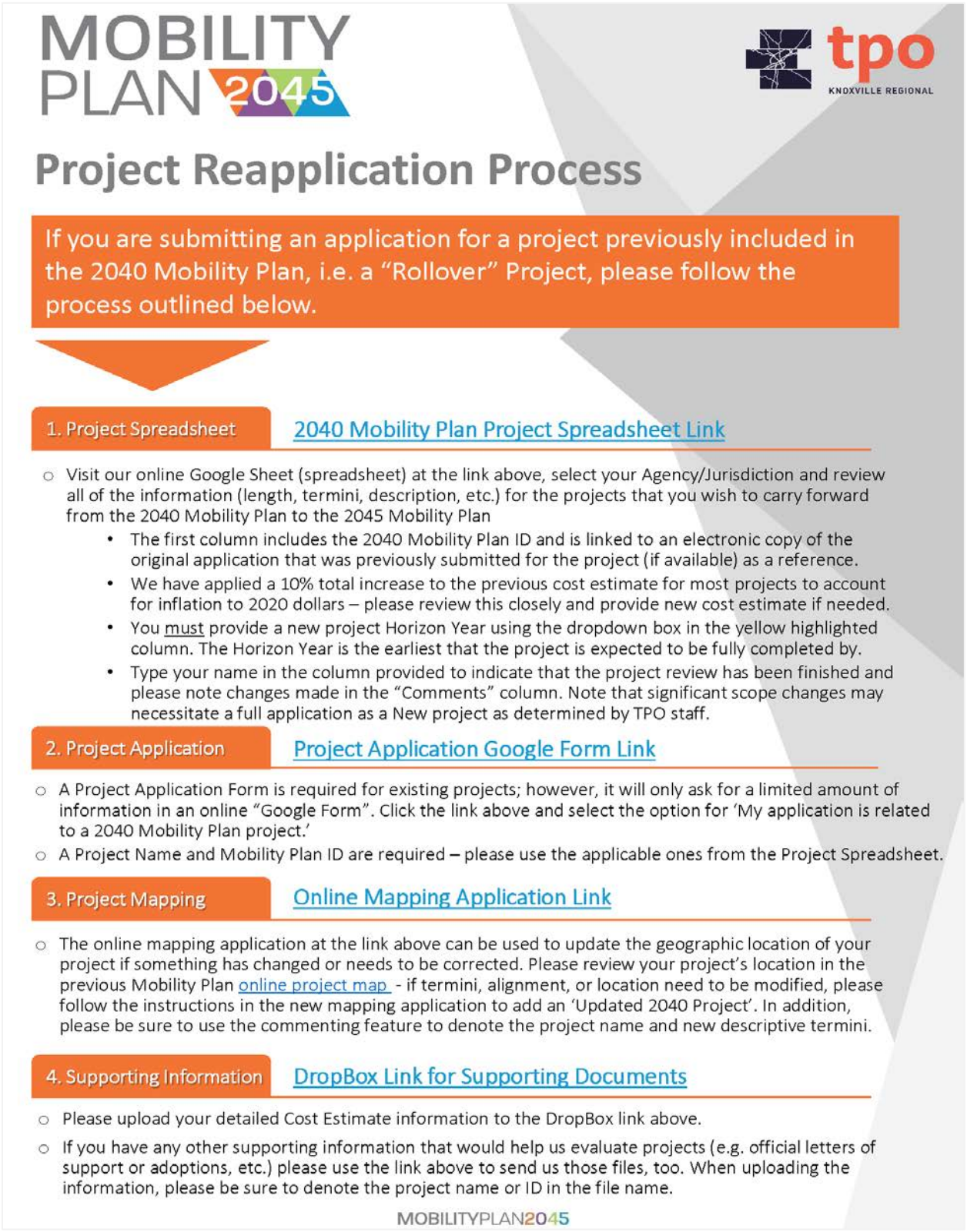
If you encounter any questions or issues as you work through the online application process please let me or other TPO staff know and we would be happy to assist!

Regards,

Mike
--
Mike Conger, P.E.
Senior Transportation Engineer
865.215.3813

1

Project Application Instructions



MOBILITY PLAN 2045

tpo KNOXVILLE REGIONAL

New Project Application Process

If you are submitting an application for a NEW project, please follow the process outlined below.

1. Project Application

Project Application Google Form Link

- Visit the google forms link above to complete our project application form. Note that in the last question on the first page, you will need to select 'My application is for a new project.'
- Continue to work your way through the survey to answer questions about the project's purpose and need, scope elements, how your project relates to both federal and regional performance measures as well as contact information about you (the applicant).

2. Project Mapping

Online Mapping Application Link

- Visit our online mapping application at the link above to geographically locate your project. This map shows the previous 2040 Mobility Plan projects in the background for reference. Please use the instructions in this application to add a 'New 2045 Roadway or Bicycle/Pedestrian Project' by drawing a line or inserting a point. In addition, please be sure to use the commenting feature to denote a project name and descriptive termini.

3. Supporting Information

DropBox Link for Supporting Documents

- Please upload your detailed Cost Estimate information to the DropBox link above.
- If you have any other supporting information that would help us evaluate projects (e.g. official letters of support or adoptions, etc.) please use the link above to send us those files. When uploading the information, please be sure to denote the project name or ID in the file name.

2045 Online Project Application Form

Project Application Form

As part of the Knoxville Regional TPO's Mobility Plan 2045 update, a formal call for projects is being issued to the TPO's member jurisdictions. To aid in our project scoring process, we are asking applicants to complete this form for each project to be considered in the Mobility Plan 2045. The deadline for submitting projects is September 4, 2020.

Prior to filling out this application, we would encourage you to visit our website at www.knoxmobility.org to learn about the condition of our existing infrastructure and review the instructions for completing this application, which you should received via email. If you have any questions, please contact the TPO at mobility@knoxplanning.org.

* Required

1. Email address *

Similar to the last Mobility Plan, we are aligning the project application and scoring process with regional goals and priorities. The process includes specifying whether a project addresses needs within a community or from a community to the larger region. The table below highlights the weight given to each regional goal based on the project's context. The questions asked in this application form will help everyone understand how proposed projects support the regional goals and priorities.

Regional Mobility Plan Goals	Project Evaluation Weights	
	Community to Region	Within Community
Maintenance & System Preservation Maintain and enhance our existing infrastructure	19	19
More Transportation Options Improve access to services and employment with bicycle, pedestrian facilities, and transit projects.	17	18
Congestion Reduction Reduce congestion through increased efficiency, increased transportation options, and lastly, increased capacity	12	8
Safety & Security Reduce rates of crashes with serious injuries and fatalities; and/or reduce the region's vulnerability to incidents and threats., including extreme weather events	13	16
Health & Environment Minimize negative impacts on the environment and people's health and increase access to active transportation/physical activity for all ages.	10	13
Economy & Freight Improve intermodal connections to help move freight, reduce delay on major freight corridors; and/or support business attraction and retention.	9	4
Equitable Access Connect communities to services throughout the region, particularly priority populations.	9	13
Preservation Of Places Preserve the natural and cultural areas that make our region unique.	11	9

2. Is this application for a new project or one previously submitted as part of the 2040 Mobility Plan? *

Mark only one oval.

- ◯ My application is for a new project. *Skip to question 3*
- ◯ My application is related to a 2040 Mobility Plan project. *Skip to section 11 (Update Project Information)*

New Project Information

3. Project Name *

4. Lead Agency *

5. If there any partner agencies involved in this project, please list them here.

6. Please provide a brief description of the project. *

7. Within which category should this project be evaluated? *

Mark only one oval.

- ◯ Within Community (e.g., intersection improvements; streetscaping projects; short sections of corridor; sidewalks; short greenways)
- ◯ Community to Region (e.g. major roadway projects; long corridor projects; regional greenways; regional transit)

8. Which phases of the project are complete? Please select all that apply. *

Check all that apply.

- [ ] Design
- [ ] NEPA Documents Approved
- [ ] ROW - Partially Acquired
- [ ] ROW - Fully Acquired
- [ ] Portion of Construction
- [ ] None of the Above / New Project

Other: [ ] _____

Project Purpose & Need, Consistency

Please use this section to address the purpose and need of the proposed project as described below.

Purpose

- The Purpose is analogous to the problem. It is the "what" of the proposal.
- The Purpose should be stated as the positive outcome that is expected.
- It should avoid stating a solution as a purpose—as in—the purpose of the project is to build a bypass. Rather, it should indicate what transportation problem(s) are being addressed.
- Where appropriate, it should be stated broadly enough so that more than one mode can be considered and multi-modal solutions are not dismissed prematurely. This should tie back to the "MPO strategy" in terms of modal options.

Need

- Should establish the evidence that the problem exists, or will exist if projected population and planned land use growth are realized.
- Should be factually and numerically based, i.e. performance measures, latest planning assumptions, crash data, VMT, etc.
- Should support the assertion made in the purpose statement. For example, if the purpose statement is based on safety improvements, the need statement should support the assertion that there is or will be a safety problem to be corrected which would be supported by crash data/analysis.

9. Project Purpose *

10. Project Need *

11. Is this project consistent with local, state, or regional plans? *

Mark only one oval.

- Yes
- No

12. Please elaborate on this project's consistency with other plans in the space provided.

Project Type

13. What type of project is this? *

Mark only one oval.

- ◯ Roadway - Projects for which the primary purpose is to improve the travel way for vehicles *Skip to question 14*
- ◯ Bicycle/Pedestrian - Projects for which the primary purpose is to improve accommodations for non-motorized users *Skip to question 21*
- ◯ Transit - Projects for which the primary purpose is to improve transit service, fleets, or amenities *Skip to question 25*

Roadway Scope of Work - Roadway Elements

The questions on this page are specifically related to the roadway elements of the project. In addition to answering the questions below, we would ask that you visit our online map application to input the alignment or spot location of the project as well as the project spreadsheet to update project details. Links to both of these are provided in the project application instructions, which you should have received via email.

14. Facility Name *

_____

15. From Termini (please insert N/A if not applicable) *

_____

16. To Termini (please insert N/A if not applicable) *

_____

17. Please select the primary purpose of your project. *

Mark only one oval.

- ◯ Roadway Widening
- ◯ Roadway Reconstruction
- ◯ Road Diet
- ◯ Spot Improvements
- ◯ Operational Improvements
- ◯ New Roadway/Extension
- ◯ Other: _____

18. Please select any accompanying roadway elements within your project.

Check all that apply.

- ☐ Roadway Widening (Additional Through Lanes)
- ☐ Roadway Widening (No Additional Through Lanes)
- ☐ Geometric Improvements
- ☐ Safety Improvements
- ☐ Access Improvements
- ☐ ITS and/or Operational Improvements
- ☐ Intersection Improvements
- ☐ New Roadway / Roadway Extension

Other: ☐ _____

Roadway Scope of Work - Bicycle and Pedestrian Elements

These questions relate to the accommodation of bicyclists and pedestrians within the scope of a larger roadway project.

19. Please select all of the applicable bicycle and pedestrian elements within your project. *

Check all that apply.

- [ ] Sidewalk
- [ ] On-Street Bicycle Facility
- [ ] Shared-Use Trail/Greenway
- [ ] Pedestrian Refuges
- [ ] Pedestrian and/or Bicycle Signals or Beacons
- [ ] Safety/ADA Improvements
- [ ] None of the Above

Other: [ ] _____

Roadway Scope of Work - Transit Elements

These questions relate to the accommodation of transit users within the scope of a larger roadway project.

20. Please select all of the applicable transit elements within your project. *

Check all that apply.

- [ ] Transit Landings or Bulb-Outs
- [ ] Passenger Amenities (bus shelters, bike parking, etc.)
- [ ] Operational/Technology Improvements (e.g., Transit Signal Priority, queue jumps)
- [ ] None of the Above

Other: [ ] _____

Skip to question 27

Bicycle and Pedestrian Scope of Work

The questions on this page relate specifically to projects where the main purpose is improving accommodations of non-motorized roadway users. In addition to answering the questions below, we would ask that you visit our online map application (link provided in the project application instructions pdf) to input the alignment or spot location of the project.

21. Facility Name *

_____

22. From Termini (if applicable) *

23. To Termini (if applicable) *

24. Please select all of the applicable bicycle and pedestrian elements within your project. *

Check all that apply.

- [ ] New On-Street Bike Facility
- [ ] Extension of/Connection to Existing On-Street Bike Facility
- [ ] New Sidewalk
- [ ] Extension of/Connection to Existing Sidewalk
- [ ] New Existing Shared-Use Trail/Greenway
- [ ] Extension of/Connection to Existing Shared-Use Trail/Greenway
- [ ] Pedestrian Refuges
- [ ] Pedestrian and/or Bicycle Signals or Beacons
- [ ] Marked Crosswalks
- [ ] Safety/ADA Improvements

Other: [ ] _____

Skip to question 27

Transit Scope of Work

The questions on this page relate specifically to projects where the primary purpose is to improve transit service, fleets, or amenities.

25. Please select all of the applicable transit elements within your project. *

Check all that apply.

- [ ] Transit Vehicle Purchase
- [ ] Transit Facility Improvements (e.g., transit center, maintenance facility)
- [ ] Transit Landings or Bulb-Outs
- [ ] Passenger Amenities (bus shelters, bike parking, etc.)
- [ ] Operational/Technology Improvements (e.g., Transit Signal Priority, queue jumps, etc.)
- [ ] Rolling Stock Maintenance (e.g., mid-life engine rebuilds)
- [ ] None of the Above

Other: ☐ _____

26. For transit vehicle purchases, please tell us how this vehicle will be used.

Check all that apply.

- [ ] Replacement
- [ ] Vanpool
- [ ] Expanding Vehicle Fleet
- [ ] ADA Vehicle Fleet
- [ ] None of the Above

Other: ☐ _____

Project Costs, Funding, and Timing

Please complete the questions below regarding the request for funding in the Mobility Plan 2045. Note that at the end of this survey, you will be asked to provide documentation of cost estimations.

27. What is the estimated cost of this project is 2020 dollars? *

_____

28. What is the source of this cost estimate? *

Check all that apply.

- [ ] Planning Report
- [ ] Preliminary Engineering
- [ ] TDOT Cost Estimation Tool
- [ ] Other: _____

29. In general, a 20% local match is required for federal funds. Are matching funds available for this project? *

Mark only one oval.

- ◯ Yes
- ◯ No
- ◯ Other: _____

30. When should this project be completed by?

Check all that apply.

- [ ] By 2026
- [ ] By 2030
- [ ] By 2035
- [ ] By 2040
- [ ] By 2045

Skip to question 31

Update Project Information

If you are submitting an application for a project previously included in the Mobility Plan 2040, be sure to provide updated project information in the project spreadsheet, update the project location or termini in our online map application if needed, and proceed to the following pages. Links to these applications are provided in the project application instructions, which you should have received via email.

Federal Performance Measures

Federal transportation legislation requires a planning approach that ties transportation investments to system performance. At the federal level, transportation system performance is measured with seven national performance goals and three sets of performance measures. In the following questions, please indicate if the proposed project helps meet federal performance measures.

31. Please check to indicate adopted Performance Measures (PMs) for which the project will provide a benefit.

Check all that apply.

- [ ] PM1 – Safety (reducing vehicular and non-motorized crashes, fatalities, and serious injuries)
- [ ] PM2 – Pavement and Infrastructure Condition (improving condition of roads and bridges on major facilities)
- [ ] PM3 – System Performance (improving travel time reliability for passenger and freight vehicles, reducing emissions)
- [ ] None of the Above
- Other: [ ] _____

32. Please check to indicate adopted Transit Asset Management (TAM) measures for which the project will provide a benefit.

Check all that apply.

- [ ] Transit Rolling Stock
- [ ] Transit Equipment - Non-Revenue Vehicles
- [ ] Transit Equipment - Over $50,000/Owned
- [ ] Transit Facilities - All Buildings or Structures
- Other: [ ] _____

33. Please use the text box below to elaborate on how the project addresses the performance measures above.

_____

_____

_____

_____

_____

Regional Performance Measures

In addition to the federally mandated performance measures, the TPO has identified a set of metrics used to track the region's progress in achieving goals related to improving health and the environment, preserving our cultural and natural resources, ensuring equitable access to the region's opportunities, supporting the economy and freight, and providing more transportation options.

34. As it relates to the regional goal of IMPROVING HEALTH AND THE ENVIRONMENT, does this project include any of the following strategies or elements to reduce Vehicle Miles Traveled (VMT)? Please check all that apply.

Check all that apply.

- [ ] Accommodations for Alternative Modes (e.g., walking, biking, and transit)
- [ ] Travel Demand Management (TDM) Programs (e.g., carpool, vanpool, telecommute)
- [ ] Other: _____

35. As it relates to the regional goal of IMPROVING HEALTH AND THE ENVIRONMENT, does this project include any of the following stormwater mitigation elements? Please check all that apply.

Check all that apply.

- [ ] Permeable Pavement
- [ ] Bioretention Landscaping
- [ ] Other: _____

36. As it relates to the regional goal of PRESERVATION OF PLACE, does this project impact any of the following natural or cultural resources? Please check all that apply.

Check all that apply.

- [ ] Parks or Recreation Facilities
- [ ] Historic Areas
- [ ] Floodplains
- [ ] Steep Slopes
- [ ] Other: _____

37. Please use the text box provided to elaborate on how those impacts will be mitigated.

_____

_____

_____

_____

_____

38. As it relates to the regional goal of EQUITABLE ACCESS, does this project provide a direct connection to any of the following? Please check all that apply.

Check all that apply.

- [ ] Parks or Recreation Facilities
- [ ] Healthcare Facilities
- [ ] Schools or Educational Opportunities
- [ ] Grocery Stores
- [ ] Major Retail Centers (e.g., West Town Mall)
- [ ] Other: _____

39. As it relates to the regional goal of SUPPORTING THE ECONOMY AND FREIGHT, Does this project provide a direct connection to any of the following? Please check all that apply.

Check all that apply.

- [ ] Tourism Destinations (e.g., East TN History Center, Zoo Knoxville, etc.)
- [ ] Major Freight Facilities (e.g., airport, industrial parks, etc.)
- [ ] Other: _____

40. Please use the text box below to elaborate on how the project will improve access to any tourism destinations, freight facilities, or other economic generators.

_____

_____

_____

_____

_____

Skip to question 41

Project Applicant

41. Name *

_____

42. Title *

_____

43. Agency/Organization *

_____

44. Department *

45. Email *

46. Phone

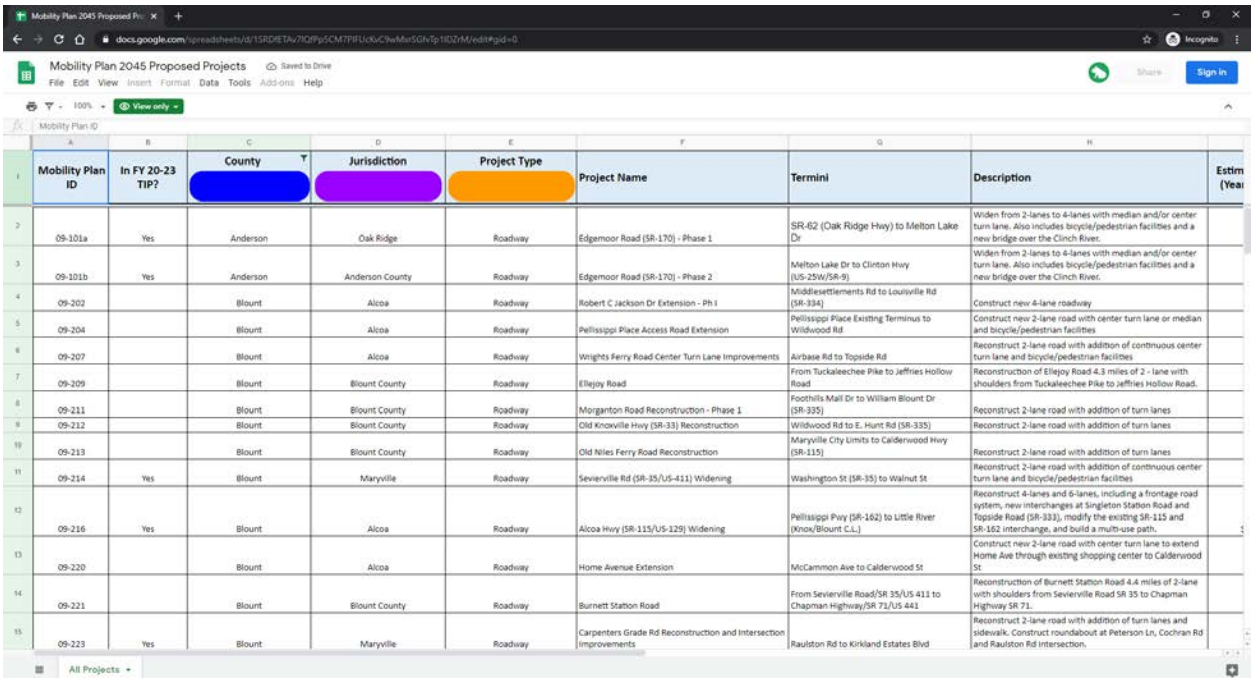
Supporting Information

Thank you for submitting a project for consideration in the Mobility Plan 2045 update. Please review the checklist below and be sure to send the following items, as applicable, to the TPO by uploading to our DropBox using the link provided in the project application instructions:

- ✓ Cost estimate methodology
- ✓ Budget spreadsheets
- ✓ NEPA approval letter
- ✓ Project map (if needed)
- ✓ Any other documentation to assist the TPO with scoring the project

In addition, if you are submitting a roadway, bicycle, or pedestrian project please be sure to visit our online mapping application (link provided in the project application instructions) to input the alignment or spot location of the project.

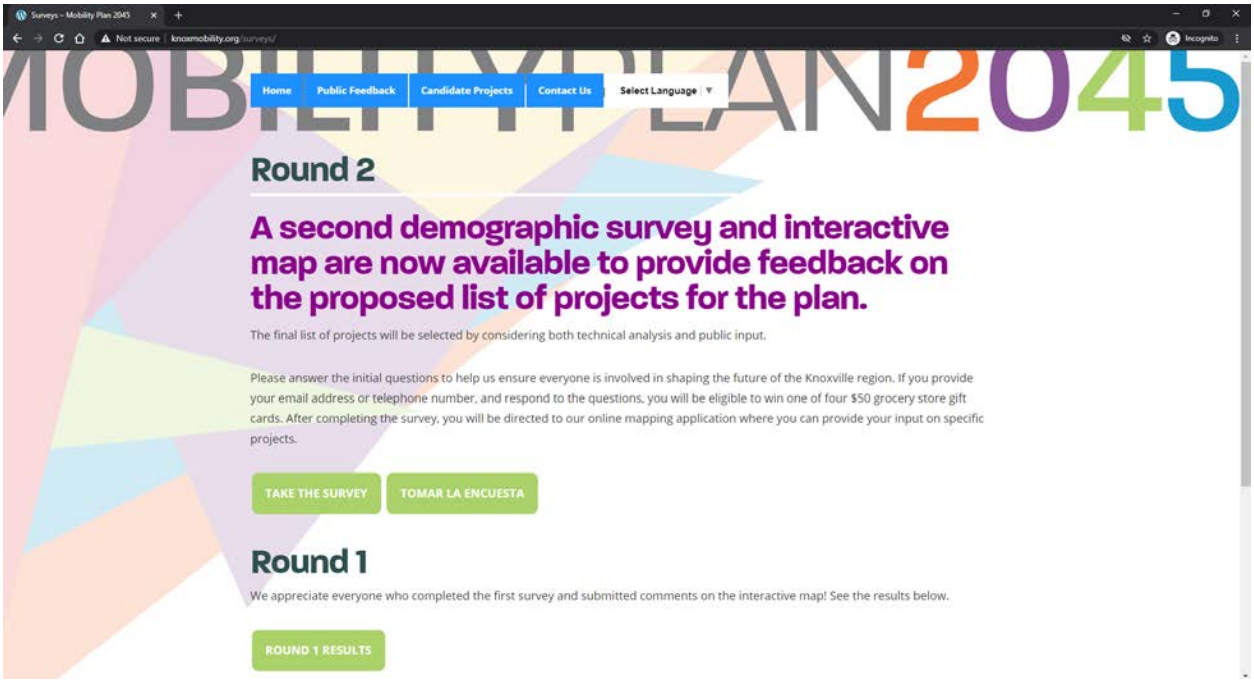
Draft List of Proposed Projects



Mobility Plan 2045 Proposed Projects

Mobility Plan ID	In FY 20-23 TIP?	County	Jurisdiction	Project Type	Project Name	Termini	Description	Estim (Yea
09-101a	Yes	Anderson	Oak Ridge	Roadway	Edgemoor Road (SR-170) - Phase 1	SR-62 (Oak Ridge Hwy) to Melton Lake Dr	Widen from 2-lanes to 4-lanes with median and/or center turn lane. Also includes bicycle/pedestrian facilities and a new bridge over the Clinch River.	
09-101b	Yes	Anderson	Anderson County	Roadway	Edgemoor Road (SR-170) - Phase 2	Melton Lake Dr to Clinton Hwy (US-25W/SR-9)	Widen from 2-lanes to 4-lanes with median and/or center turn lane. Also includes bicycle/pedestrian facilities and a new bridge over the Clinch River.	
09-202		Blount	Alcoa	Roadway	Robert C Jackson Dr Extension - Ph I	Middlesettlements Rd to Louisville Rd (SR-334)	Construct new 4-lane roadway	
09-204		Blount	Alcoa	Roadway	Pellissippi Place Access Road Extension	Pellissippi Place Existing Terminus to Wildwood Rd	Construct new 2-lane road with center turn lane or median and bicycle/pedestrian facilities	
09-207		Blount	Alcoa	Roadway	Wrights Ferry Road Center Turn Lane Improvements	Airbase Rd to Topside Rd	Reconstruct 2-lane road with addition of continuous center turn lane and bicycle/pedestrian facilities	
09-209		Blount	Blount County	Roadway	Ellejoy Road	From Tuckaleechee Pike to Jeffries Hollow Road	Reconstruction of Ellejoy Road 4.3 miles of 2 - lane with shoulders from Tuckaleechee Pike to Jeffries Hollow Road.	
09-211		Blount	Blount County	Roadway	Morganton Road Reconstruction - Phase 1	Foothills Mall Dr to William Blount Dr (SR-335)	Reconstruct 2-lane road with addition of turn lanes	
09-212		Blount	Blount County	Roadway	Old Knoxville Hwy (SR-33) Reconstruction	Wildwood Rd to E. Hunt Rd (SR-335)	Reconstruct 2-lane road with addition of turn lanes	
09-213		Blount	Blount County	Roadway	Old Niles Ferry Road Reconstruction	Maryville City Limits to Calderwood Hwy (SR-115)	Reconstruct 2-lane road with addition of turn lanes	
09-214	Yes	Blount	Maryville	Roadway	Sevierville Rd (SR-35/US-411) Widening	Washington St (SR-35) to Walnut St	Reconstruct 2-lane road with addition of continuous center turn lane and bicycle/pedestrian facilities	
09-216	Yes	Blount	Alcoa	Roadway	Alcoa Hwy (SR-115/US-129) Widening	Pellissippi Pwy (SR-162) to Little River (Knox/Blount C.L.)	Reconstruct 4-lanes and 6-lanes, including a frontage road system, new interchanges at Singleton Station Road and Topside Road (SR-333), modify the existing SR-115 and SR-162 interchange, and build a multi-use path.	
09-220		Blount	Alcoa	Roadway	Home Avenue Extension	McCammon Ave to Calderwood St	Construct new 2-lane road with center turn lane to extend Home Ave through existing shopping center to Calderwood St	
09-221		Blount	Blount County	Roadway	Burnett Station Road	From Sevierville Road/SR 35/US 411 to Chapman Highway/SR 71/US 441	Reconstruction of Burnett Station Road 4.4 miles of 2-lane with shoulders from Sevierville Road SR 35 to Chapman Highway SR 71.	
09-223	Yes	Blount	Maryville	Roadway	Carpenters Grade Rd Reconstruction and Intersection Improvements	Raulston Rd to Kirkland Estates Blvd	Reconstruct 2-lane road with addition of turn lanes and sidewalk. Construct roundabout at Peterson Ln, Cochran Rd and Raulston Rd intersection.	

Round 2 Online Demographic Survey and Results



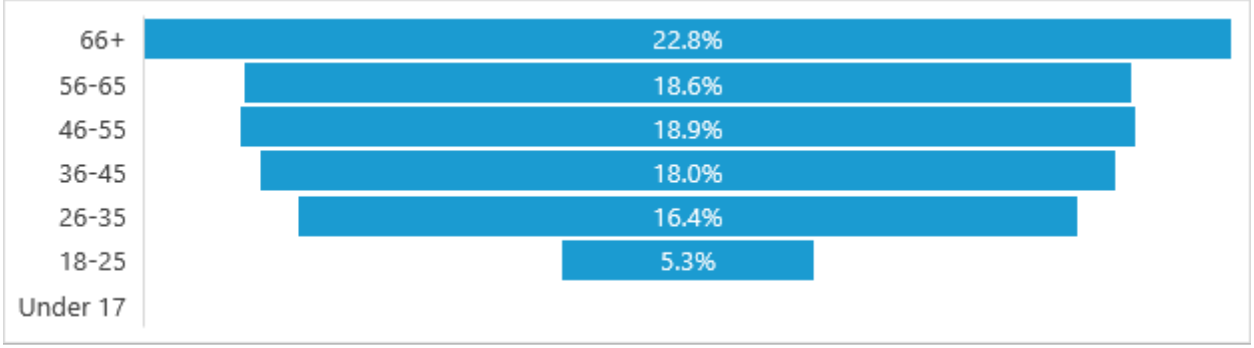
Question 1: The following questions are optional. If you respond to them, it helps us to make sure the transportation plan meets the needs of everyone in our region. If you provide your email address or your telephone number, and respond to the questions below, you will be eligible to win a grocery store gift card.

Answered: 433 Skipped: 31

ANSWER CHOICE	RESPONSES	
EMAIL ADDRESS	89.2%	386
PHONE NUMBER	77.6%	336
HOME ZIP CODE	98.6%	427
HOME COUNTY	97.2%	421

Question 2: In what age range do you fall?

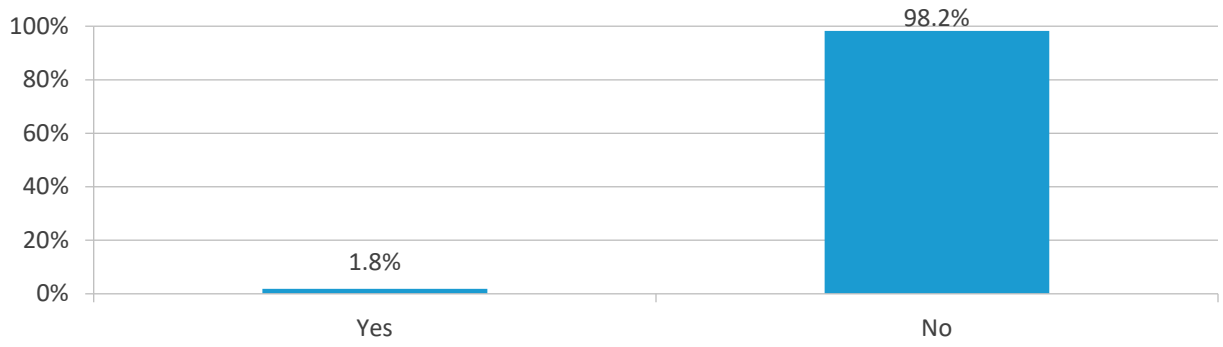
Answered: 451 Skipped: 13



ANSWER CHOICES	RESPONSES	
UNDER 17	0.0%	0
18-25	5.3%	24
26-35	16.4%	74
36-45	18.0%	81
46-55	18.9%	85
56-65	18.6%	84
66+	22.8%	103

Question 3: Are you of Hispanic, Latino/a, or Spanish origin?

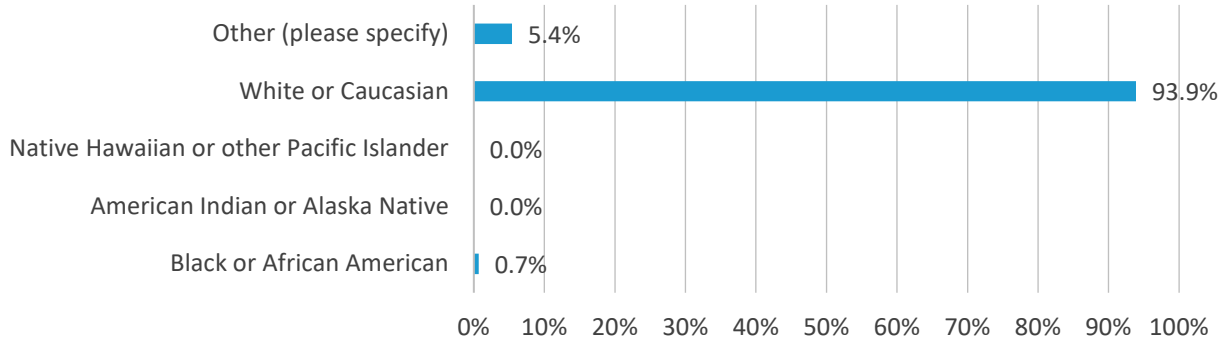
Answered: 442 Skipped: 22



ANSWER CHOICES	RESPONSES	
YES	1.8%	8
NO	98.2%	434

Question 4: How would you describe yourself?

Answered: 442 Skipped: 22

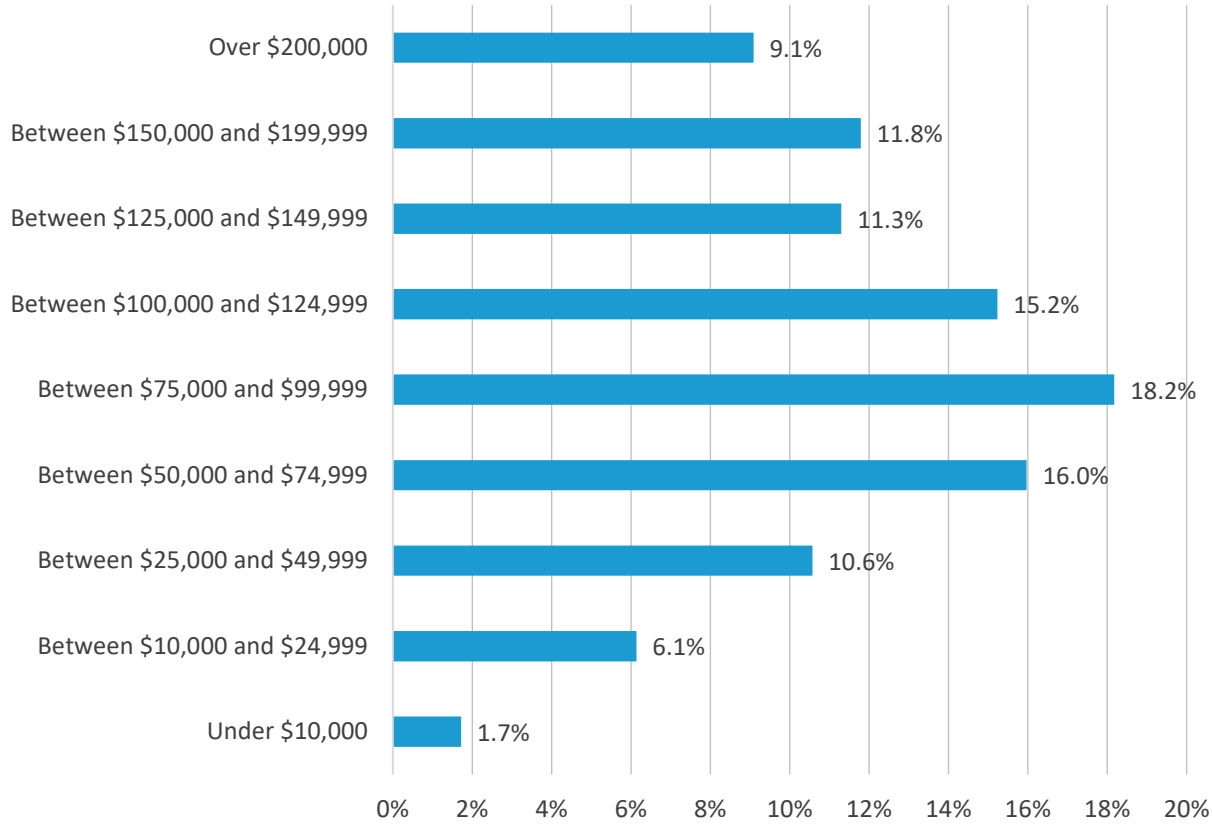


ANSWER CHOICES	RESPONSES	
BLACK OR AFRICAN AMERICAN	0.7%	3
AMERICAN INDIAN OR ALASKA NATIVE	0.0%	0
NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER	0.0%	0
WHITE OR CAUCASIAN	93.9%	415
OTHER (PLEASE SPECIFY)	5.4%	24

QUESTION 12 "OTHER"	RESPONSES
HOW WOULD YOU DESCRIBE YOURSELF	South Asian
	human
	human
	human
	human
	other
	human
	Asian/White
	Hispanic
	Not relevant
	American
	J
	american
	American / Tennessean
	Doesnt matter
	American
	Asian
	Caucasian and Native American
	Doesnt matter, my voice is equal regardless of ethnicity and carries one and community influence.
	American
	Asian/White
	Appalachian American
	Asian
	Biracial - white and asian

Question 5: What is your total household income?

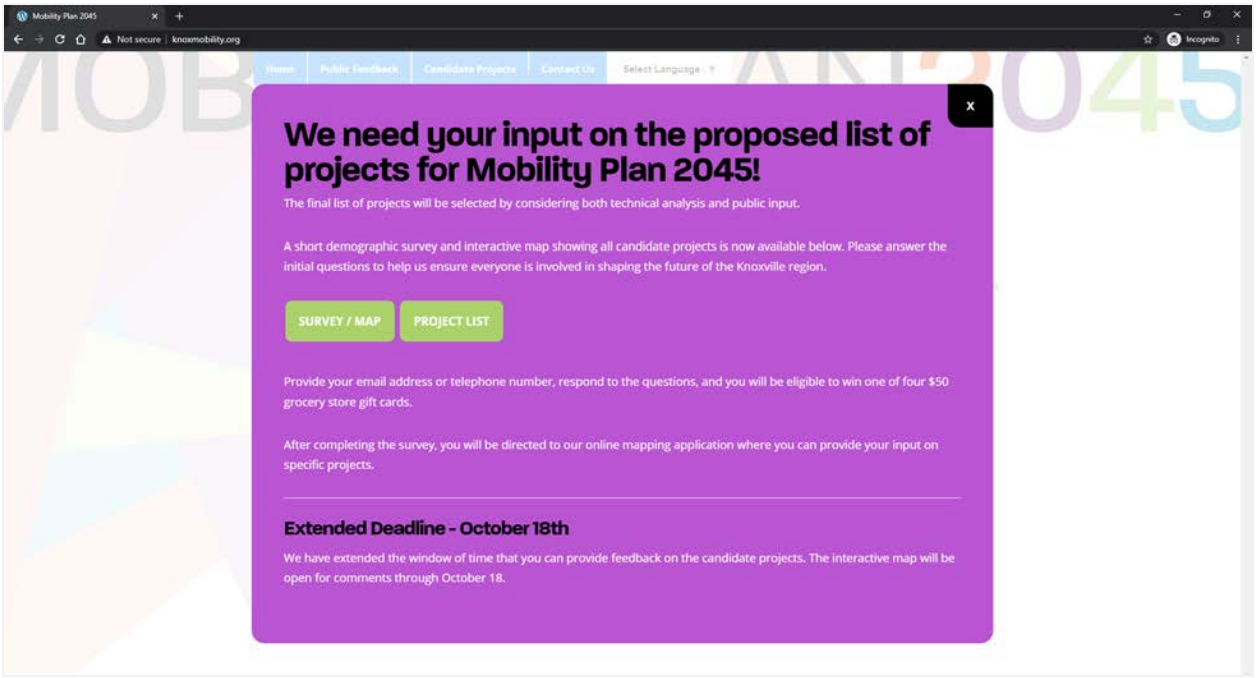
Answered: 407 Skipped: 57



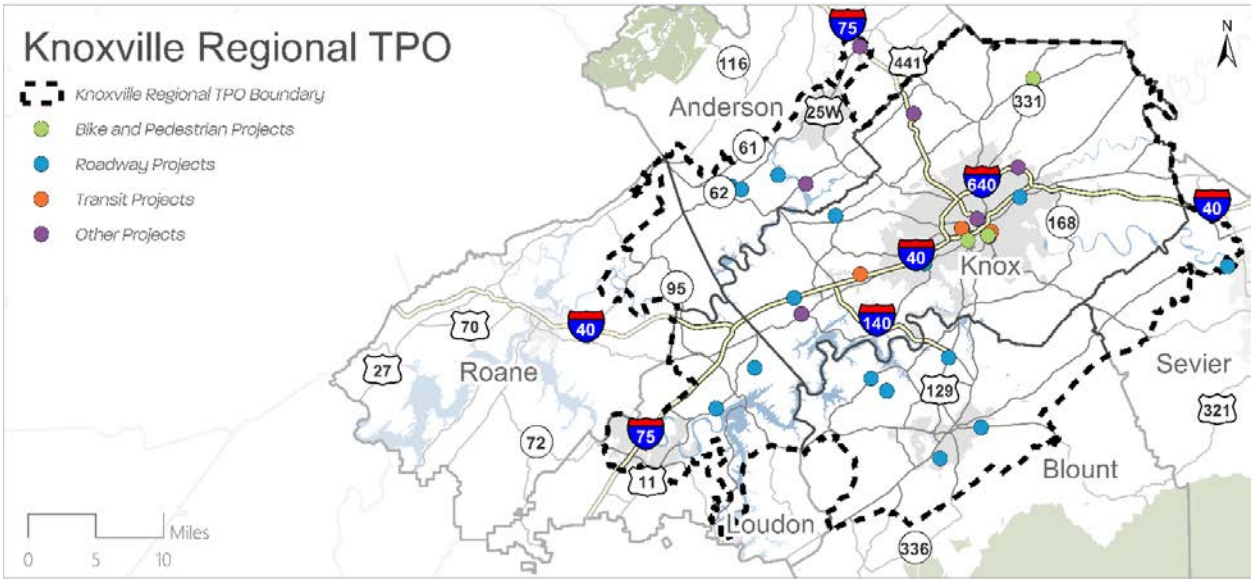
ANSWER CHOICES	RESPONSES	
UNDER $10,000	1.7%	7
BETWEEN $10,000 AND $24,999	6.1%	25
BETWEEN $25,000 AND $49,999	10.6%	43
BETWEEN $50,000 AND $74,999	16.0%	65
BETWEEN $75,000 AND $99,999	18.2%	74
BETWEEN $100,000 AND $124,999	15.2%	62
BETWEEN $125,000 AND $149,999	11.3%	46
BETWEEN $150,000 AND $199,999	11.8%	48
OVER $200,000	9.1%	37

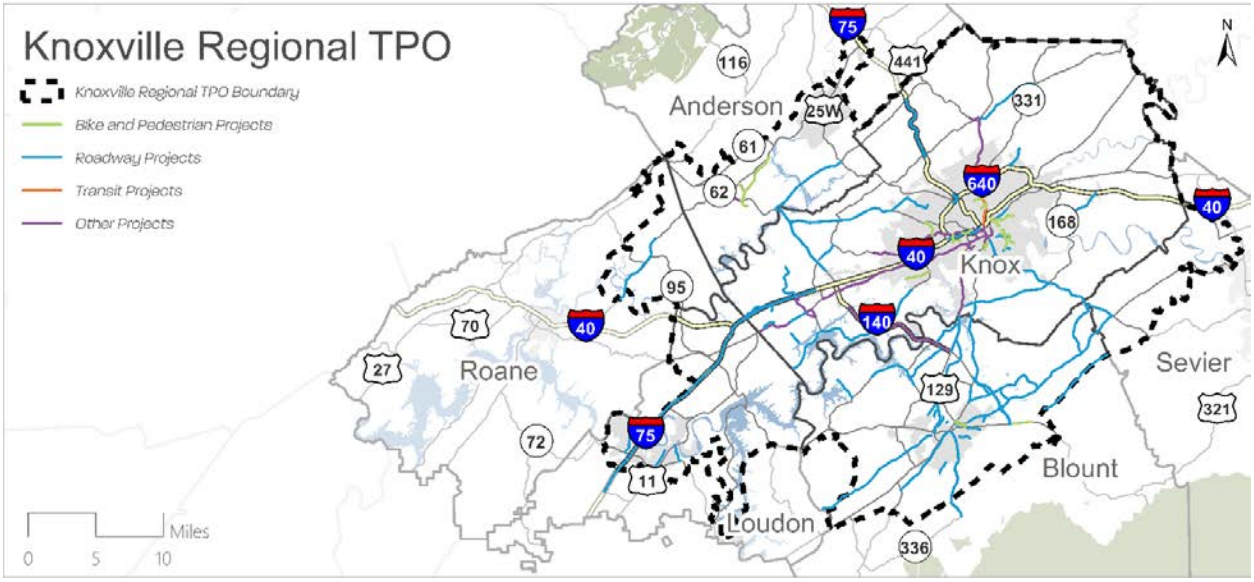
Round 2 Wikimap and Results

Online Advertisement



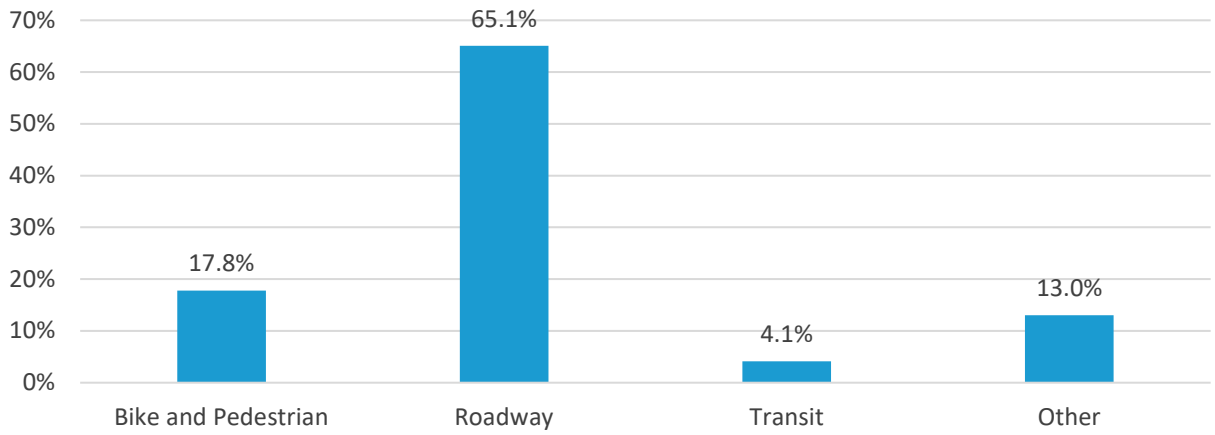
Online Maps





The second round of Wikimaps outreach allowed respondents to see all proposed projects for Mobility Plan 2045, rate their approval ("like", "neutral", "dislike"), and leave an open-ended comment on each project. There were a total of 1,065 respondents and 544 open-ended comments received by the TPO. The majority (631) of respondent comments were related to roadway projects, of which 81% of respondents "liked" the proposed project. While the bike and pedestrian projects received only 277 comments, this category had the highest percentage (93%) of "likes" for proposed projects. Following the documentation of this outreach effort, all results were provided to the TPO's member jurisdictions to ensure public opinions on local and regional projects were conveyed to lead agencies.

Percentage of Project Input by Type



PROJECT TYPE	VIEWS	RESPONSES	% OF RESPONSES
BIKE AND PEDESTRIAN	Like	257	92.8%
	Neutral	7	2.5%
	Dislike	10	3.6%
	No Answer	3	1.1%
	Total	277	
ROADWAY	Like	510	80.8%
	Neutral	36	5.7%
	Dislike	73	11.6%
	No Answer	12	1.9%
	Total	631	
TRANSIT	Like	24	77.4%
	Neutral	5	16.1%
	Dislike	2	6.5%
	No Answer	0	0.0%
	Total	31	
OTHER	Like	125	82.8%
	Neutral	22	14.6%
	Dislike	4	2.6%
	No Answer	0	0.0%
	Total	151	

General Project Opinions

PROJECT NUMBER AND NAME	PROJECT TYPE	NUMBER OF LIKES	NUMBER OF NEUTRALS	NUMBER OF DISLIKES	TOTAL	NET APPROVAL
09-101A: EDGEMOOR RD WIDENING	Roadway	3	0	0	3	3
09-101B: EDGEMOOR RD WIDENING	Roadway	3	1	0	4	3
09-202: ROBERT C JACKSON DR EXTENSION	Roadway	5	0	0	5	5
09-204: PELLISSIPPI PLACE ACCESS ROAD EXTENSION	Roadway	0	0	1	1	-1
09-207: WRIGHTS FERRY RD CENTER TURN LANE IMPROVEMENT	Roadways	1	0	0	1	1
09-209: ELLEJOY RD RECONSTRUCTION	Roadway	3	0	0	3	3
09-211: MORGANTON RD RECONSTRUCTION	Roadway	7	0	0	7	7
09-212: OLD KNOXVILLE HWY RECONSTRUCTION	Roadway	4	1	0	5	4
09-213: OLD NILES FERRY RD RECONSTRUCTION	Roadway	4	1	1	6	3
09-214: SEVIERVILLE RD RECONSTRUCTION	Roadway	5	0	0	5	5
09-216: ALCOA HWY WIDENING	Roadway	5	0	0	5	5
09-220: HOME AVE EXTENSION	Roadway	4	0	0	4	4
09-221: BURNETT STATION RD RECONSTRUCTION	Roadway	3	0	0	3	3
09-223: CARPENTERS GRADE RD RECONSTRUCTION AND INTERSECTION IMPROVEMENTS	Roadway	2	0	0	2	2
09-227: MENTOR RD RECONSTRUCTION	Roadway	1	2	0	3	1
09-229: MORGANTON RD RECONSTRUCTION	Roadway	4	0	1	5	3
09-231: OLD KNOXVILLE HWY RECONSTRUCTION	Roadway	4	1	1	6	3

PROJECT NUMBER AND NAME	PROJECT TYPE	NUMBER OF LIKES	NUMBER OF NEUTRALS	NUMBER OF DISLIKES	TOTAL	NET APPROVAL
09-232: PELLISSIPPI PKWY EXTENSION	Roadway	2	1	37	40	-35
09-234: WILDWOOD RD RECONSTRUCTION	Roadway	8	0	1	9	7
09-239: MONTVALE RD WIDENING	Roadway	6	0	1	7	5
09-240: SANDY SPRINGS RD AT MONTGOMERY LN INTERSECTION IMPROVEMENTS	Roadway	6	0	0	6	6
09-241: TUCKALEECHEE PK	Roadway	6	0	0	6	6
09-242: W BROADWAY AVE IMPROVEMENTS	Roadway	1	0	0	1	1
09-243: WILKINSON PK WIDENING	Roadway	3	0	0	3	3
09-244: PEPPERMINT RD RECONSTRUCTION	Roadway	6	0	0	6	6
09-245: SEVIERVILLE RD WIDENING	Roadway	5	0	0	5	5
09-248: TOPSIDE RD IMPROVEMENTS	Roadway	1	0	1	2	0
09-249: MONTVALE RD RECONSTRUCTION	Roadway	4	0	1	5	3
09-250: SEVIERVILLE RD RECONSTRUCTION	Roadway	11	0	0	11	11
09-257: RELOCATED ALCOA HWY	Roadway	6	0	0	6	6
09-258: RELOCATED ALCOA HWY	Roadway	3	0	1	4	2
09-262: MONTVALE RD WIDENING	Roadway	5	0	0	5	5
09-615: WASHINGTON PK WIDENING	Roadway	5	0	0	5	5
09-616: PLEASANT RIDGE RD RECONSTRUCTION	Roadway	4	0	0	4	4

PROJECT NUMBER AND NAME	PROJECT TYPE	NUMBER OF LIKES	NUMBER OF NEUTRALS	NUMBER OF DISLIKES	TOTAL	NET APPROVAL
09-617: SOUTH KNOXVILLE WATERFRONT ROADWAY IMPROVEMENTS	Roadway	4	0	0	4	4
09-625: SCHAAD RD WIDENING	Roadway	3	0	0	3	3
09-626: CHAPMAN HWY OPERATIONAL AND SAFETY IMPROVEMENTS	Roadway	19	0	0	19	19
09-626D: CHAPMAN HWY CENTER TURN LANE	Roadway	1	0	0	1	1
09-629: I-40/I-75/CAMPBELL STATION RD INTERCHANGE RECONFIGURATION	Roadway	18	0	0	18	18
09-630: VIRTUE RD RECONSTRUCTION	Roadway	3	0	0	3	3
09-637: LOVELL RD WIDENING	Roadway	4	0	0	4	4
09-638: OAK RIDGE HWY WIDENING	Roadway	6	0	1	7	5
09-643: EMORY RD WIDENING	Roadway	5	0	1	6	4
09-644: GOV JOHN SEVIER HWY WIDENING	Roadway	9	0	3	12	6
09-645: NORTHSHORE DR RECONSTRUCTION	Roadway	15	1	0	16	15
09-646: NORTHSHORE DR RECONSTRUCTION	Roadway	13	0	0	13	13
09-647: PELLISSIPPI PKWY IMPROVEMENTS	Roadway	16	0	0	16	16
09-651: I-40/I-75 AT WATT RD INTERCHANGE RECONFIGURATION	Roadway	4	0	0	4	4
09-652: I-75 AT EMORY RD INTERCHANGE RECONFIGURATION	Roadway	1	0	0	1	1
09-653: ALCOA HWY WIDENING	Roadway	6	0	0	6	6
09-654: I-75/I-640/I-275 INTERCHANGE IMPROVEMENTS	Roadway	3	0	0	3	3

PROJECT NUMBER AND NAME	PROJECT TYPE	NUMBER OF LIKES	NUMBER OF NEUTRALS	NUMBER OF DISLIKES	TOTAL	NET APPROVAL
09-658: NORTHSHORE DR AT KINGSTON PK INTERSECTION IMPROVEMENTS	Roadway	18	2	0	20	18
09-668: KINGSTON PK WIDENING	Roadway	2	0	1	3	1
09-669: EVERETT RD IMPROVEMENTS	Roadway	3	0	1	4	2
09-673: OAK RIDGE HWY WIDENING	Roadway	6	0	0	6	6
09-675: MARYVILLE PK RECONSTRUCTION	Roadway	1	0	0	1	1
09-680: NORTHSHORE DR IMPROVEMENTS	Roadway	5	1	1	7	4
09-689: PAPERMILL DR CORRIDOR IMPROVEMENTS	Roadway	10	0	0	10	10
09-691: I-40/75 WIDENING	Roadway	10	0	0	10	10
09-692: I-75 WIDENING	Roadway	5	0	0	5	5
10-700: CAMPBELL STATION RD IMPROVEMENTS	Roadway	6	1	1	8	5
13-1003: CHAPMAN HWY ATMS	Other	5	1	0	6	5
13-1004: LIBERTY ST MULTIMODAL PROJECT	Bike / Ped	28	0	0	28	28
13-101: EMORY VALLEY RD AT MELTON LAKE DR ROUNDABOUT	Roadway	8	2	1	11	7
13-102: TULANE AVE AT PENNSYLVANIA AVE ROUNDABOUT	Roadway	5	1	1	7	4
13-203: ROBERT C JACKSON DR EXTENSION	Roadway	2	0	0	2	2
13-208: HARVEST LN EXTENSION	Roadway	4	0	0	4	4
13-210: NORTH PARK BLVD & AIRBASE RD SAFETY IMPROVEMENTS	Roadway	7	2	0	9	7

PROJECT NUMBER AND NAME	PROJECT TYPE	NUMBER OF LIKES	NUMBER OF NEUTRALS	NUMBER OF DISLIKES	TOTAL	NET APPROVAL
13-214: OLD LOWES FERRY RD AT LOUISVILLE RD INTERSECTION IMPROVEMENTS	Roadway	0	1	0	1	0
13-215: LOUISVILLE RD RECONSTRUCTION	Roadway	2	0	1	3	1
13-216: LOUISVILLE RD RECONSTRUCTION	Roadway	2	0	0	2	2
13-218: MIDDLESETTLEMENTS RD AT MISER STATION RD INTERSECTION IMPROVEMENTS	Roadway	3	1	0	4	3
13-601: UNION RD/N HOBBS RD RECONSTRUCTION	Roadway	2	1	0	3	2
13-602: KNOXVILLE ATMS	Other	15	0	0	15	15
13-603: I-40/75 AUXILIARY LANES	Roadway	4	0	0	4	4
13-802: OAK RIDGE SIGNAL TIMING OPTIMIZATION PROGRAM	Other	6	1	0	7	6
13-813: FARRAGUT ATMS	Other	13	0	0	13	13
13-830: OAK RIDGE RAILS TO TRAILS	Bike / Ped	8	0	0	8	8
13-833: MARYVILLE TO TOWNSEND GREENWAY	Bike / Ped	7	0	0	7	7
13-838: FIRST CREEK GREENWAY - BROADWAY STREETSCAPE	Bike / Ped	2	0	0	2	2
13-844: FIRST CREEK GREENWAY - DOWNTOWN EAST	Bike / Ped	8	0	0	8	8
13-852: KNOXVILLE SOUTH WATERFRONT PEDESTRIAN/BICYCLE BRIDGE	Bike / Ped	9	1	2	12	7
13-854: BAKER CREEK GREENWAY	Bike / Ped	11	1	1	13	10
13-855: FIRST CREEK GREENWAY - NORTH KNOX	Bike / Ped	8	0	0	8	8
13-858: KNOXVILLE NORTHWEST GREENWAY CONNECTOR	Bike / Ped	11	0	0	11	11

PROJECT NUMBER AND NAME	PROJECT TYPE	NUMBER OF LIKES	NUMBER OF NEUTRALS	NUMBER OF DISLIKES	TOTAL	NET APPROVAL
13-880: ATLANTIC AVENUE SIDEWALK	Bike / Ped	5	0	0	5	5
13-884: CHAPMAN HWY MULTIUSE PATH	Bike / Ped	2	0	0	2	2
17-1006: KNOXVILLE AREA TRANSIT (KAT) EXPRESS TRANSIT SERVICE ENHANCEMENT	Transit	7	0	1	8	6
17-101: EMORY VALLEY RD AT LAFAYETTE DR INTERSECTION IMPROVEMENTS	Roadway	5	1	1	7	4
17-201: AMERINE ROAD IMPROVEMENTS	Roadway	3	1	0	4	3
17-202: US-129 WIDENING	Roadway	5	0	2	7	3
17-407: US-11 AT INDUSTRIAL PARK DR INTERSECTION IMPROVEMENT	Roadway	2	1	0	3	2
17-416: MUDDY CREEK RD INTERSECTION REALIGNMENT	Roadway	4	1	0	5	4
17-605: KNOXVILLE CENTER MALL AREA CIRCULATION STUDY	Other	14	1	2	17	12
17-608A: MAGNOLIA AVE STREETSCAPE	Roadway	1	0	0	1	1
17-608B: MAGNOLIA AVE STREETSCAPE	Roadway	3	0	0	3	3
17-608C: MAGNOLIA AVE STREETSCAPE	Roadway	3	1	0	4	3
17-801: KNOXVILLE ATMS	Other	7	0	0	7	7
17-850: SOUTH WATERFRONT GREENWAY - EAST OF SUTTREE	Bike / Ped	9	0	0	9	9
17-859: SOUTH WATERFRONT GREENWAY - WEST OF CITYVIEW	Bike / Ped	11	0	0	11	11
17-901: EAST KNOX GREENWAY	Bike / Ped	14	0	0	14	14
17-910: TAZEWELL PK SIDEWALK	Bike / Ped	4	1	0	5	4

PROJECT NUMBER AND NAME	PROJECT TYPE	NUMBER OF LIKES	NUMBER OF NEUTRALS	NUMBER OF DISLIKES	TOTAL	NET APPROVAL
17-911: TYSON PARK/FORT SANDERS BIKE CONNECTION	Bike / Ped	21	2	1	24	20
17-913: WESTLAND DR COMPLETE STREET	Bike / Ped	19	0	1	20	18
18-200B: ALCOA HWY ITS EXPANSION	Other	3	0	0	3	3
18-201: I-140 ITS EXPANSION	Other	7	5	0	12	7
18-202: BLOUNT COUNTY GREENWAY TRAIL	Bike / Ped	7	0	0	7	7
18-500: BOYDS CREEK HWY AT OLD KNOXVILLE HIGHWAY INTERSECTION IMPROVEMENTS	Roadway	17	2	2	21	15
18-600: I-75 ITS EXPANSION	Other	4	3	0	7	4
18-603: MIDDLEBROOK PK ATMS EXPANSION	Other	3	1	0	4	3
19-100: OAK RIDGE SIGNAL TIMING OPTIMIZATION PROGRAM	Other	2	0	0	2	2
19-101: I-75 ITS INSTRUMENTATION AT SR-61 INTERCHANGE	Other	6	3	0	9	6
19-603: TRAFFIC SIGNAL IMPROVEMENTS FOR THE UT AREA	Other	7	1	0	8	7
19-604: KNOX COUNTY ATMS	Other	1	0	1	2	0
19-605: MIDDLEBROOK PK COMPLETE STREET	Bike / Ped	6	0	0	6	6
19-606: WOODLAND AVE COMPLETE STREET	Bike / Ped	9	0	0	9	9
19-702: TPO PAVEMENT MGMT	Other	5	1	0	6	5
19-703: JAMESTOWNE BLVD STUDY	Other	13	1	0	14	13
19-707: COUNTY-WIDE TRANSPORTATION STUDY (KNOX)	Other	5	1	0	6	5
19-708: TVA BULL RUN SITE STUDY	Other	5	3	1	9	4

PROJECT NUMBER AND NAME	PROJECT TYPE	NUMBER OF LIKES	NUMBER OF NEUTRALS	NUMBER OF DISLIKES	TOTAL	NET APPROVAL
21-100: LAFAYETTE DR BICYCLE AND PEDESTRIAN SAFETY IMPROVEMENTS	Bike / Ped	2	0	0	2	2
21-1000: KNOXVILLE-KNOX COUNTY CAC TRANSIT CAPITAL PROJECT	Transit	1	1	0	2	1
21-1001: KNOXVILLE-KNOX COUNTY CAC TRANSIT VOLUNTEER ASSISTED TRANSPORTATION	Transit	1	0	0	1	1
21-1002: ETHRA TRANSIT VEHICLE REPLACEMENT PROJECT	Transit	8	1	1	10	7
21-1003: PURCHASE KNOXVILLE AREA TRANSIT (KAT) VEHICLES - FIXED ROUTE BUSES	Transit	5	1	0	6	5
21-1004: KNOXVILLE AREA TRANSIT (KAT) BUS ENGINE OVERHAULS	Transit	2	2	0	4	2
21-101: WEST END CORRIDOR INTERSECTION IMPROVEMENTS	Roadway	0	0	0	0	0
21-200: JEFFRIES HOLLOW RD RECONSTRUCTION	Roadway	2	1	0	3	2
21-201: LAMAR ALEXANDER PKWY INTERSECTION IMPROVEMENTS	Roadway	6	0	0	6	6
21-202: OLD NILES FERRY RD WIDENING	Roadway	2	0	0	2	2
21-203: W. BROADWAY AVE IMPROVEMENTS	Roadway	2	0	0	2	2
21-204: WASHINGTON ST IMPROVEMENTS	Roadway	6	0	0	6	6
21-205: MORGANTON RD RECONSTRUCTION	Roadway	3	0	1	4	2
21-206: MORGANTON RD RECONSTRUCTION	Roadway	1	0	1	2	0
21-207: RALPH PHELPS RD RECONSTRUCTION	Roadway	1	0	0	1	1
21-400: I-75 WIDENING IN LOUDON COUNTY	Roadway	6	0	0	6	6

PROJECT NUMBER AND NAME	PROJECT TYPE	NUMBER OF LIKES	NUMBER OF NEUTRALS	NUMBER OF DISLIKES	TOTAL	NET APPROVAL
21-600: MAGNOLIA AVE/RUTLEDGE PIKE/ASHEVILLE HWY INTERCHANGE IMPROVEMENTS	Roadway	15	1	2	18	13
21-601: I-40 WESTBOUND INTERCHANGE AT I-275 IMPROVEMENTS	Roadway	11	0	1	12	10
21-602: INTERSECTION IMPROVEMENT AT BEAVER RIDGE RD AND WEST EMORY RD	Roadway	7	2	0	9	7
21-603: STRAWBERRY PLAINS PK WIDENING	Roadway	6	1	1	8	5
21-604: TAZEWELL PK AND FAIRVIEW RD INTERSECTION REALIGNMENT	Roadway	10	3	1	14	9
21-605: JAMES WHITE PKWY CORRIDOR IMPROVEMENTS	Roadway	15	1	3	19	12
21-606: JAMES WHITE PKWY ROADWAY IMPROVEMENTS	Bike / Ped	16	0	4	20	12
21-700: SMART TRIPS PROGRAM	Other	4	0	0	4	4
21-701: BIKE PARKING PROGRAM	Bike / Ped	16	0	0	16	16
21-800: SOUTH KNOXVILLE BRIDGE GREENWAY	Bike / Ped	9	0	1	10	8
21-801: GIBBS SCHOOLS PEDESTRIAN BRIDGE	Bike / Ped	11	1	0	12	11
21-802: ADAIR TO OLD BROADWAY CONNECTION	Bike / Ped	4	1	0	5	4
TOTAL		899	70	82	1,051	--

Open Comments for Proposed Projects

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-101: EDGEMOOR RD WIDENING	Currently too much traffic and not enough road	Wikimaps 37932
09-101	So important for bicyclists	Wikimaps 37921
09-101	I encourage the addition of bike lanes, widened shoulders, adjacent greenways and/ or sidewalks where possible. I also support wider bridges that allow for pedestrian, bike, and vehicular use. I believe that increasing interconnectivity of greenways/sidewalks and wide (bikeable) roadways/ bridges will greatly benefit our community in both the short and long term. Keeping old bridges (the Pellisippi bridge at Solway, Edgemoor Rd bridge near bull run), if practical, for pedestrian/ bike use should be considered. If this is not possible, I believe it is very important that the new bridges are useable by vehicle as well as pedestrians and bikers. Thank you for reading this and considering my input.	Wikimaps 37931
09-202: ROBERT C JACKSON DR EXTENSION	Please add greenway to connect to existing	Wikimaps 37801
09-202	This is the part of the county where growth is requiring infrastructure improvements. Completing the entire Robert C. Jackson route will help a great deal.	Wikimaps 37804
09-202	This would be a Critical corridor for DENSO and several other major businesses as well as residents in the area and along the route of Robert C Jackson.	Wikimaps 37801
09-204: PELLISSIPPI PLACE ACCESS ROAD EXTENSION	People can use Sam Houston Schoolhouse Road to get from Old Knoxville Highway to Wildwood Road. The Pellissippi Place needs access that it already has.	Wikimaps 37804
09-209: ELLEJOY RD RECONSTRUCTION	Much needed improvements will assist with the younger drivers from the high school and improve traffic flow during morning and afternoon school traffic.	Wikimaps 37886
09-209	Another narrow heavily travelled rural road that is dangerous.	Wikimaps 37804

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-209	Ellejoy Road has suffered a dramatic increase in traffic in the past decade or so, and is in need of improvement.	Wikimaps 37804
09-211: MORGANTON RD RECONSTRUCTION	Overcrowded and dangerous road in the area of current growth.	Wikimaps 37804
09-211	Add sidewalks for bikes and pedestrians to mall	Wikimaps 37801
09-211	Morganton Road has been and will continue to be one of the least safe highways in Blount County. With additional home construction along Morganton Road, the traffic has decreased the safety to almost critical points. Any improvement, like adding turn lanes, will help alleviate some of the serious safety issues.	Wikimaps 37804
09-211	This road needs more safety improvements beyond just shoulders and turn lanes. I used to live on this road and it was so dangerous to leave our neighborhood.	Wikimaps 37801
09-211	I live in Blount County and am in favor of the following projects for improving safety and growth in my area of TN, as well as increased use of Greenways:	Email 37804
09-211	Mobility Plan Numbers: 09-231, 13-214, 13-215, 13-216, 13-218, 09-216, 09-644, 09-653, 17-202, 17-201, 18-202, 19-201, 21-100, 21-1002, 21-201, 21-204, 09-211, 09-214.	
09-212: OLD KNOXVILLE HWY RECONSTRUCTION	Could use widening and improvements.	Wikimaps 37886
09-212	Not sure this is needed...	Wikimaps 37804
09-212	Yes, yes. Turn lanes needed on this busy commercial street.	Wikimaps 37853
09-212	This will be a needed improvement.	Wikimaps 37804
09-212	Turn lanes needed to improve traffic flow and safety	Wikimaps 37853

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-213: OLD NILES FERRY RD RECONSTRUCTION	This project is necessary for the safety of Blount county residents and workers because of recent development that is increasing and will continue to increase traffic. We should address existing needs before using our limited road funds for new roads.	Wikimaps 37803
09-213	Old Niles Ferry Road is one of the most dangerous roads in the county. It has a high traffic volume which will only increase as more and more subdivisions are added between Maryville and highway 129. The added traffic spilling over from highway 411S and the school traffic from Fairview Elementary makes this improvement a high priority.	Wikimaps 37804
09-213	Another narrow and dangerous road with lots of traffic in a growth area.	Wikimaps 37804
09-214: SEVIERVILLE RD RECONSTRUCTION	Traffic increases make this important	Wikimaps 37803
09-214	Heavily used and too narrow.	Wikimaps 37804
09-214	Yes, good idea.	Wikimaps 37853
09-214	I live in Blount County and am in favor of the following projects for improving safety and growth in my area of TN, as well as increased use of Greenways:	Email 37804
09-214	Mobility Plan Numbers: 09-231, 13-214, 13-215, 13-216, 13-218, 09-216, 09-644, 09-653, 17-202, 17-201, 18-202, 19-201, 21-100, 21-1002, 21-201, 21-204, 09-211, 09-214.	
09-216: ALCOA HWY WIDENING	This effort will provide a large portion of the greenway for Knox./Blount counties.	Wikimaps 37777
09-216	We must finish the improvements to Alcoa Highway as soon as possible. This road is unsafe. Period. Anything that can be done to improve it is imperative. I believe the revisions to the intersection at Topside and Alcoa Highway are a good example of safety-enhancing changes. All improvements to this section, 09-216, are overdue. All drivers who use the road appreciate the need for this.	Wikimaps 37777
09-216	All Alcoa Highway projects should take priority. It has been a death trap for decades.	Wikimaps 37804

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-216	Yes, yes. This needs to be widened and improved for facility of movement, access to airport, and especially to increase safety!	Wikimaps 37804
09-216	We are delighted that work to make Alcoa Highway safer is finally underway. Do it all—and do it smart, to make that route safe and pleasant well into the future. Given the traffic load in that corridor, maybe we should be thinking of a public transportation option between Knoxville and its airport.	Email 37804
09-216	I live in Blount County and am in favor of the following projects for improving safety and growth in my area of TN, as well as increased use of Greenways:	Email 37804
09-216	Mobility Plan Numbers: 09-231, 13-214, 13-215, 13-216, 13-218, 09-216, 09-644, 09-653, 17-202, 17-201, 18-202, 19-201, 21-100, 21-1002, 21-201, 21-204, 09-211, 09-214.	
09-216	I support this project.	Email 37804
09-216	As we all know, this is a dangerous stretch of road with a terrible reputation, and deservedly so! It has been a hazard for decades and I am glad to see residents' safety finally being taken seriously.	
09-216	I support these projects. Alcoa Highway deserves its unfortunate nickname--"I'll Kill Ya" Highway. It is one of the most dangerous roads in East Tennessee and has claimed many lives over the years. My own husband had a very serious accident on Highway 129 in 2019. Any improvements to this road are welcome, whether it be widening, upgrades to interchanges, or improving visibility. The improvements at the junction of Topside Road and Alcoa Highway have been a big help. Please continue the work on improvements and widening of Alcoa Highway until the entire length is finished.	Email 37777
09-220: HOME AVE EXTENSION	This was proposed many years ago by Hunter Interests and would really expedite travel through Maryville, east to west,	Wikimaps 37804
09-220	This would make this a whole lot safer and reliable for making connections.	Wikimaps 37804
09-220	YES ! excellent idea.	Wikimaps 37853
09-221: BURNETT STATION RD RECONSTRUCTION	No need for turn lanes, but widening the road with a little extra room on each shoulder would be a huge help. Plus, posting additional speed limit signs would be helpful.	Wikimaps 37886

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-221	I use Burnett Station Road to get to and from Knoxville. It is narrow and dangerous and runs to and from a school. It should be reconstructed as soon as possible.	Wikimaps 37804
09-221	Improves connectivity, and shoulders are needed to improve safety.	Wikimaps 37853
09-223: CARPENTERS GRADE RD RECONSTRUCTION AND INTERSECTION IMPROVEMENTS	This project is necessary for the safety of Blount county residents and workers because of recent development that is increasing and will continue to increase traffic. We should address existing needs before using our limited road funds for new roads.	Wikimaps 37803
09-223	More growth induced congestion makes this needed.	Wikimaps 37804
09-227: MENTOR RD RECONSTRUCTION	In general, I encourage the addition of bike lanes, widened shoulders, adjacent greenways and/ or sidewalks where possible. I believe that increasing interconnectivity of greenways/sidewalks and wide (bikeable) roadways/ bridges will greatly benefit our community in both the short and long term.	Wikimaps 37931
09-227	Thank you for reading this and considering my input.	
09-229: MORGANTON RD RECONSTRUCTION	Extreme increase in housing starts is making this a dangerous highway.	Wikimaps 37803
09-229	Please add sidewalks or bike trails	Wikimaps 37801
09-229	This is a needed improvement to a heavily used road	Wikimaps 37803
09-231: OLD KNOXVILLE HWY RECONSTRUCTION	Like other roads between Knox County and Maryville, SR 33 requires much needed safety upgrades. Providing turn lanes and improving the road bed will help move traffic between Maryville-Alcoa and Knoxville much more safely. Many of the older "feeder roads" into Maryville were built before increased traffic volumes have made most of them considerably less safe. Turn lanes are important, but severe drop offs on either side of SR-33 are very concerning as well.	Wikimaps 37804

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-231	This road is not as narrow as some of the others but needs turn lanes at intersections.	Wikimaps 37804
09-231	I live in Blount County and am in favor of the following projects for improving safety and growth in my area of TN, as well as increased use of Greenways:	Email 37804
09-231	Mobility Plan Numbers: 09-231, 13-214, 13-215, 13-216, 13-218, 09-216, 09-644, 09-653, 17-202, 17-201, 18-202, 19-201, 21-100, 21-1002, 21-201, 21-204, 09-211, 09-214.	
09-232: PELLISSIPPI PKWY EXTENSION	This is a project that is a total waste of Tennessee taxpayer dollars. The State of Tennessee already has a backlog of urgent road, waterway, bridge and maintenance projects that are critical to our infrastructure. There is currently not enough funding for these projects let alone wasting as much as nearly $200 million on this one (for a 4.4 mile stretch of highway).	
09-232	We should spend our limited transportation taxpayer dollars to maintain the system we already have in place. TDOT's own analysis of this project shows that this project will not ease traffic congestion in Blount County (see the 2010 DEIS, 3-4; also 2-9, Table 2-3). Blount County is currently seeing major growth in the west side of the county, which this project will not address.	Wikimaps 37804
09-232	I would also like to point out that the Knoxville Regional Transportation Planning organization's TIP for FY2020-2023 shows proposed projects in Blount County totaling $220 million, almost $600 million for Knox County and nearly $140 in other projects in Knox-Blount counties. That totals $960 million for only two counties in the State. Surely there has to be other needs within the State that could use these funds more effectively.	
09-232	Get it done ASAP	Wikimaps 37878
09-232	Project #09-232: PPExtension, is totally useless. Almost 20 years in the making, it does not serve any helpful practical purpose. There are MANY other projects that are in dire need of improvement, and that will actually be useful ! For example, projects such as: 09-211, 09-216, 09-221, 09-229, 09-239, 09-241, 09-245, 09-262, just to mention a few, are meant to improve their current status, safety, and efficiency. On the other hand, project 09-232 PPE, is VERY costly, requires ROWay over vast areas of private properties that have significant agricultural/farmland/dairy value, while its benefits to the overall community are minimal, and of no real practical value. In summary, PLEASE DO NOT WASTE OUR taxes on a project #09-232, and instead invest in many of the other projects that are much needed, and of greater benefits.	Wikimaps 37777

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-232	Thank you, [NAME EXTRACTED]	
09-232	This propose interstate highway (it is in no way a "parkway"), is, in my mind, very low on the list of important road projects in Blount County. We have too many substandard two-lane roads that need repair and upgrading. In fact the county is full of such dangerous roads, roads our children are playing on and riding on in school buses.	Wikimaps 37803
09-232	We should be spending our tax dollars on these secondary roads for the foreseeable future.	
09-232	I believe that building this section of the Parkway is a waste of tax payers money and will only add to the current growth problems of Blount County. The money targeted for this road could be better spent improving the existing roads in this county, such as hwy 411 (Sevierville road) which is to narrow and dangerous.	Wikimaps 37804-6104
09-232	This project should not be built. It will not solve any of our actual road needs. We have urgent safety issues on roads in our county and region. It is irresponsible to spend our limited road funds on an unnecessary new highway.	Wikimaps 37803
09-232	This project should not be built. It will not solve any of our actual road needs. We have urgent safety issues on roads in our county and region. It is irresponsible to spend our limited road funds on an unnecessary new highway.	Wikimaps 37803
09-232	This project should not be built. It will not solve any of our actual road needs. We have urgent safety issues on roads in our county and region. It is irresponsible to spend our limited road funds on an unnecessary new highway.	Wikimaps 37803
09-232	This is a project that TDOT studies have shown will not meet any need or serve any purpose. It will not reduce transit times more than fractionally, and it will not improve safety. It is going to dump more traffic onto substandard Blount County roads and increase traffic there are introduce more safety problems. We do not need this road. Furthermore, it will be hugely expensive, much more than the outdated and questionable figures provided to the public. If you actually read the EIS you find there is little to recommend this project. Meanwhile the cost financially and environmentally will be very high. And Blount County will be left with the problem and expense of upgrading infrastructure in the aftermath. Put money into other projects where it is needed.	Wikimaps 37777
09-232	There is absolutely no need to expand this roadway. The damage to personal property and farms completely out weigh the 2 minute route (129/321) that already exist.	Wikimaps 37886
09-232	Complete waste of taxpayer dollars when so many other roads that currently need repair and improvements.	Wikimaps 37886

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-232	This project is the least needed of almost all Blount County proposals. The environmental study done for and by TDOT makes it clear that the PPE will not substantially address any of the issues proponents claim for it. TDOT's cost estimates in this proposal are WAY below its own earlier projections (including one for $197 million).	
09-232	Blount County's actual traffic and safety needs will not be addressed by building a new highway that might make it 10 minutes faster to get from Townsend to Oak Ridge. The idea for this predates the last 30 years of Blount County's growth, most of which has been and continues to be in the western side of Maryville. There are real and immediate needs that are addressed by many of the projects proposed for this Mobility Plan, and those projects should have priority. There are also many narrow, two lane rural roads, also proposed for this Plan, that desperately need to be upgraded for safety and mobility. This has been clear for decades and the PPE will do nothing except in some cases make them worse.	Wikimaps 37804
09-232	Spending hundreds of millions of dollars to serve the desires of a few businesses and residents in Walland and Townsend will be a tragic waste and deprive the rest of us of safe and more efficient ways to get around. There is no barrier to quick, four lane access to the Walland/Townsend/ area or to the national park. This was not the case when this project was initially proposed, but the needs now do not include this expensive and destructive project.	
09-232	It is just not good enough to argue that this is a long-planned road. It might have been a good idea 30 years ago but it is not now.. Tennessee does not have the resources to construct Legacy Projects that have no current utility.	
09-232	This project should NOT be built. As it stands it is a colossal waste of taxpayer money. It will not solve a single road need. We have much more urgent safety issues on roads in Blount County and the region. It is very irresponsible to spend limited highway construction funds on this unnecessary new highway construction. It will be an interstate in search of a purpose and not solve any problem.	Wikimaps 37804
09-232	A new highway to 321 is not needed. There are currently several other routes to get to/from Knoxville/Townsend. Such a road may have been needed decades ago when it was first envisioned, but since the 1970s major improvements have been made to enable better traffic flow -- e.g., making 321 from Maryville to Townsend four lanes, 129 ByPass in Maryville. Also, most of the residential/commercial/industrial growth in Blount Co is at the other end of the county -- Alcoa and west Maryville. Faster access to/from Townsend not needed, waste of tax dollars.	Wikimaps 37853
09-232	So many other roads need improvement as soon as possible.	

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-232	I haven't seen any problems that the building of this road solves. This project shouldn't be built. We have more necessary safety issues on roads in our county and region, and it is irresponsible to spend our limited road funds on an unnecessary new highway.	Wikimaps 37804
09-232	Same as comment for other section of the Pellissippi Parkway Ext. - this doesn't solve traffic problems in the area and it will encourage commercial growth along the corridor and not in Maryville/Alcoa where it is needed. This should be the last priority for regional transportation funding.	Wikimaps 37804
09-232	Blount County needs many substandard roads improved instead of building new roads funds for this project could be used for this and many citizens are against this project and it would destroy many scenic views and much farmland and take away from the water quality of Little River and would create congestion on highway 321 which flows well now.	Wikimaps 37886-2448
09-232	The Pellissippi Parkway extension will not benefit the residents of Blount County. It will actually destroy some of our beautiful environment. I believe an extension of the parkway will also fracture our county, as a 4-lane highway will divide the land.	Wikimaps 37803
09-232	There are so many other road projects that need the money {that Tennessee government does not have, and that the US government has not allocated}. The PPE will cause more problems than it solves, and create more traffic on feeder roads that are themselves in need of upgrade {us411 for example}. The people's government money would be put to better use on the Alcoa highway, us411, Montvale road, et cetera. A 1970 thru 2016 Blount Countian Thanks-you.	Wikimaps 37917
09-232	This project should NOT be built. It will not serve any of our actual transportation needs. We have urgent safety issues on many roads in our county and region, and this project will not address them, but may even decrease safety by adding extra traffic to Sevierville Road.	Wikimaps 37804
09-232	The EIS for this project showed that the PPE will not significantly decrease the level of congestion now present, nor will it improve safety on the area road network.	
09-232	It is irresponsible to spend our limited transportation funds to build a costly and unnecessary new highway.	
09-232	Please do NOT build this project. It will not serve any of our actual needs. We have urgent safety issues in roads in our region, and it would be irresponsible to spend our limited transportation funds on an unnecessary new highway.	Wikimaps 37804
09-232	Do NOT build this project. It will not serve any of our actual transportation needs. It will not increase safety or decrease congestion on our road network; it may in fact do the opposite. Please fix our safety problems on the existing roads, and do not spend outrageous amounts of our tax dollars building an unnecessary new highway.	Wikimaps 37804

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-232	Do NOT build this road project. A new highway in this place will not serve any of our actual transportation needs, and will cost an exorbitant amount of money. This project will not improve safety or reduce congestion on area roads (as shown in the EIS!). Please use my tax dollars to improve and make safer the road system we already have instead of building a new highway we do not need.	Wikimaps 37804
09-232	This project should NOT be built. It will not serve any of our actual transportation needs. We have urgent safety issues on many roads in our area. Please repair, maintain, and improve the roads we already have, and do not waste our limited transportation tax dollars on an unnecessary new highway.	Wikimaps 37804
09-232	Do NOT build this project. It will not serve any of our actual transportation needs. We have urgent safety issues on many roads in our region that need to be addressed. This proposed highway may do more harm than good if constructed, by adding more traffic to Sevierville Road. It would be irresponsible to spend our limited transportation funds on an unnecessary new highway that brings us no significant benefit.	Wikimaps 37804
09-232	Do not build the PPE. We do not need it.	Wikimaps 37804
09-232	Do NOT build the PPE. We do not need this highway, as it will not serve any actual needs.	Wikimaps 37804
09-232	We have urgent safety issues on our existing road system. Fix those, and do not waste our transportation dollars on an unnecessary new highway.	
09-232	Do NOT build the PPE. It serves no actual need. Please fix the safety and congestion issues on our existing roads and do not waste our tax money on an unnecessary new highway.	Wikimaps 37804
09-232	The PPE should NOT be built. It will not serve any of our actual transportation needs. Please address our safety and congestion issues on the road system we have now, and do not waste tax dollars on an unnecessary new highway.	Wikimaps 37804
09-232	Do not build the PPE. Fix the problems on our existing roads instead.	Wikimaps 37804
09-232	Do NOT build the PPE. We do not need a new highway. Fix the urgent safety and congestion problems on our existing roadways instead.	Wikimaps 37804
09-232	We don't seem to have the funds to take care of the roads we already have so we need to prioritize projects. Many roads are dangerously narrow, ok for one car, but as the county population grows they become major hazards. The access points for the PPE will cause heavier traffic on roads that were designed for rural traffic.	Wikimaps 37701

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-232	When are we ever going to move forward on finishing this road that was proposed by Governor Alexander 40 years ago!	Wikimaps 37920
09-232	I view this as poor utilization of our transportation dollars. This is an unnecessary road when we have pressing needs to maintain current roadways and to look to roadway improvements that address safety issues.	Wikimaps 37853
09-232	Way too much money and not enough benefit to the community. Spend the money on repairing and improving safety on current roadways	Wikimaps 37853
09-232	too expensive. Funds would be better spent improving and maintaining current roadways	Wikimaps 37853
09-232	This will not solve any problems but will direct traffic away from Maryville and destroy valuable green space and farmland	Wikimaps 37803
09-232	We need to repair the roads we already have and not build a new highway that directs traffic away from city centers and destroys green space and farmland	Wikimaps 37803
09-232	I oppose this project. TDOT's own data, compiled for the EIS, showed little or no improvement in safety, travel times, traffic congestion, and other criteria used to demonstrate purpose and need. It would be a huge waste of limited funding. The $84 million price tag is not accurate: far more of our limited tax dollars would be required. Why would we build this new road when so many of our existing roads need improvements just to ensure basic safety? I ask that this project be taken out of consideration permanently.	Email 37777
09-232	PELLISSIPPI PKWAY EXTENSION from current terminus at Hwy33 in Blount Co to Hwy 321.	Email 37853
09-232	This road is no longer needed. It was proposed in the 1970s (50 years ago!). Since then major residential and commercial growth in Blount Co has been south and west of Maryville -- the opposite direction of the proposed PPE.	
09-232	Alcoa has also grown and the new Springbrook Farm is being developed.	
09-232	This road is no longer needed because Hwy 321 has been 4-laned and travel to Great Smoky Mtn National Park and the town of Townsend are easily accessed by this improved road.	
09-232	This incredibly expensive 4-lane highway will carve through healthy farmlands and take them out of production.	
09-232	Monies allocated for this highway would be better spent on improving existing roads.	

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-232	We think it is irresponsible to spend our limited transportation funds on the construction of a new highway that does not address our pressing need to improve safety and mobility, and decrease congestion, on existing area roads. The Pellissippi Parkway Extension is expensive and entirely unnecessary. Building it will result in greater congestion and less safety on Sevierville Road. If the PPE is ever constructed over public opposition, we will lobby forcefully for it to be an actual Parkway, running uninterrupted from SR33 to US321, with NO interchange at Sevierville Road.	Email 37804
09-232	I am very much against any extension of Pellissippi Parkway.	Email
09-232	I am not in favor of Mobility Plan number 09-232 as I feel that this is a waste of tax payer dollars, will not improve traffic flow, will direct traffic away from businesses within Maryville, and will disrupt local heritage farms.	Email 37804
09-232	09-232 Pellissippi Parkway Extension: I oppose this project. Why would we build this new road instead of properly maintaining existing roads that may also need improvements?	Email 37804
09-232		Email

09-232

Thank you for the opportunity to comment on state road building and improvements for the Blount County area, where I live and work. I think it is fair to say that Tennessee has limitations as to how many road improvements and new roads that the state budget can accommodate. Thus, it seems that decisions on whether to build new roads or to make improvements must be judicious. With this premise in mind, it seems prudent to me that new construction should be delayed or denied when existing roads need to be maintained and upgraded to meet current and projected usage needs and to better address safety concerns. For these reasons new major constructions should be delayed or permanently suspended in favor of protecting the travelers on existing roads. To build new roads when current roads need to be upgraded and made safer is not only poorly thought out, but unethical. Only after current roads are properly maintained should we as a state take on new road construction, which will in time require maintenance. Take care of what we have before creating more roads that we may not be able to take care of. There is also the need to deal honestly with the effects major new roads will have on the community. There is a move within our country to preserve our natural beauty and open land for emotional health reasons and also food production. I own and operate a fruit and vegetable farm where my sales are at the farm only. This year there has been demonstrated a growing interest for the public to know more about where their food comes from and how it is grown. We were literally overrun by new and existing customers this season. This phenomenon is not unique to me, but has been experienced all over the southeastern U.S. I am a retired federal agent who traveled and worked over much of the U.S. for 40 years, as well as a fruit and vegetable grower. One of the things that I observed is that when new roads and thoroughfares are constructed on open, farm land, in a matter of a few years the farms begin to fall to "development" needs, and this land is lost forever. Such has also been true with the Pellissippi Parkway from Knox County into Blount County. For these and other reasons I am adamantly opposed to the Pellissippi Parkway Extension. To build this thoroughfare will continue to lead to demolition of family farms and increased building pressures. The natural beauty will be scared by this type of construction. Many people still enjoy riding around to get away from their daily stresses and to take in the natural beauty of an open field and unobstructed view of the mountains that make Blount County so desirable. If I could wave a magical wand, I would remove the Pellisiippi Parkway Extension from the list of proposed new roadway construction for the state of Tennessee. Let us maintain the roads that we have and preserve the beauty of the open land and unobstructed vistas of the mountains for our mental health. Let us preserve the land for food production for our local people, so that we are not as dependent upon less than fresh food being shipped in from somewhere else. Let us leave our posterity a place that they call home that is not covered with concrete, asphalt, and roofs. Furthermore, I am convinced that this Extension will only add to the congestion and fatigue, as it will incite more building and more destruction of our natural beauty. I encourage Governor Lee and the TDOT to delay, and preferably to put aside, this construction, as it only adds to the losses that can never be recovered. May our heritage be passed on to our children and our grandchildren, and not more congestion.

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-234: WILDWOOD RD RECONSTRUCTION	Definite need for widening this road!!	Wikimaps 37886
09-234	I use this road regularly and know it to be too narrow for safety.	Wikimaps 37804
09-234	Wildwood Road, like many other older roads in Maryville and Blount County, was constructed before the increased traffic caused by Maryville becoming a bedroom community for Knoxville and Knox County. This improvement will help some of the safety concerns with this section of the road.	Wikimaps 37804
09-234	Heavily traveled road, needs improvement !	Wikimaps 37853
09-234	Turn lanes would be helpful at several intersections.	Wikimaps 37804
09-234	I travel this road almost every day and over the past 30!years traffic has increased because of development. With the lanes being narrow with no shoulders; bland hills and impatient drivers; this road has become increasingly dangerous. Pullouts and road shoulders would greatly help. A traffic light at Sam Houston might be useful in the future	Wikimaps 37701
09-234	Shoulders are needed on this well-traveled road.	Wikimaps 37853
09-239: MONTVALE RD WIDENING	This project is necessary for the safety of Blount county residents and workers because of recent development that is increasing and will continue to increase traffic. We should address existing needs before using our limited road funds for new roads.	Wikimaps 37803
09-239	Montvale Road in another very narrow highway with lots of traffic. The drop-offs on the edges of the road are very severe in many sections and make it one of the most dangerous roads in the county. This road has become an artery for bike traffic to the foothills parkway, but riding a bike on this road and others (Sevierville Road, Mint Road, e.g.) is taking one's life in one's hands. Any improvement plan to widen any of these older roads should also consider adding bike lanes to make it much safer. More and more residents and visitors like to ride bikes in the county and the state should make an effort to make that activity as safe as possible. Not all bike riders want to use the Greenways in the cities.	Wikimaps 37804

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-239	Montvale Road in another very narrow highway with lots of traffic. The drop-offs on the edges of the road are very severe in many sections and make it one of the most dangerous roads in the county. This road has become an artery for bike traffic to the foothills parkway, but riding a bike on this road and others (Sevierville Road, Mint Road, e.g.) is taking one's life in one's hands. Any improvement plan to widen any of these older roads should also consider adding bike lanes to make it much safer. More and more residents and visitors like to ride bikes in the county and the state should make an effort to make that activity as safe as possible. Not all bike riders want to use the Greenways in the cities.	Wikimaps 37804
09-239	This is another narrow rural road that is unsafe and needs improvement.	Wikimaps 37804
09-239	This is a worthwhile project, in a area of growth.	Wikimaps 37804
09-241: TUCKALEECHEE PK	Turn lanes should improve access to some of the commercial properties on Tuckaleechee near 321.	Wikimaps 37804
09-241	This project is necessary for the safety of Blount county residents and workers because of recent development that is increasing and will continue to increase traffic. We should address existing needs before using our limited road funds for new roads.	Wikimaps 37803
09-241	Definitely needs longer turn lane and wider lanes.	Wikimaps 37886
09-241	Heavily travelled and too narrow.	Wikimaps 37804
09-242: W BROADWAY AVE IMPROVEMENTS	Fix this problem intersection.	Wikimaps 37804
09-243: WILKINSON PK WIDENING	This project is necessary for the safety of Blount county residents and workers because of recent development that is increasing and will continue to increase traffic. We should address existing needs before using our limited road funds for new roads.	Wikimaps 37803
09-243	Another narrow and dangerous road.	Wikimaps 37804

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-244: PEPPERMINT RD RECONSTRUCTION	Definite need for widening this road.	Wikimaps 37886
09-244	This narrow and crooked road is dangerous.	Wikimaps 37804
09-244	A busy road, needs turn lanes	Wikimaps 37853
09-244	Turn lanes would be helpful. The intersection of Peppermint with Sevierville Road is particularly problematic. Someday soon a traffic light will be needed.	Wikimaps 37804
09-244	Improves connectivity between key roadways.	Wikimaps 37853
09-245: SEVIERVILLE RD WIDENING	This project is necessary for the safety of Blount county residents and workers because of recent development that is increasing and will continue to increase traffic. We should address existing needs before using our limited road funds for new roads.	Wikimaps 37803
09-245	I live on Sevierville Road, east of this section, and drive it daily. It has been dangerous for decades and needs turn lanes at intersections and shoulders.	Wikimaps 37804
09-245	This is a project that should have been done years ago. With children walking, biking and/or being dropped off at school this is a very dangerous area. Providing bike and foot paths might actually reduce early morning traffic.	Wikimaps 37701
09-245	Sevierville Road is dangerous. It could be much improved by adding shoulders, and widening to three lanes where possible. Perhaps some of its traffic could be removed by providing a better east-west alternative route between Sevier County and Maryville… such as improving Ellejoy/Jeffries Hollow/ Wye Roads. This corridor has a rapidly increasing traffic load, but it may still be sufficiently rural to accommodate widening. One problem with this route is the "Wye" intersection with Chapman Highway—a needed improvement not on your project list. We find it frighteningly dangerous.	Email 37804
09-245	HWY 411, Sevierville Rd -- a very busy route between Maryville and Seymour/Sevierville/Pigeon Forge/Gatlinburg.	Email 37853
09-245	Please create some shoulders. This is a dangerous road.	
09-248: TOPSIDE RD IMPROVEMENTS	Would this make it safer at high traffic times? Then do it.	Wikimaps 37804

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-249: MONTVALE RD RECONSTRUCTION	This road between Blockhouse and 6 Mile Road is extremely dangerous and is in dire need of improvement. Guard rails are needed NOW. There are places where there is an almost sheer drop off at the edge of pavement of 10' or more.	Wikimaps 37878
09-249	This project is necessary for the safety of Blount county residents and workers because of recent development that is increasing and will continue to increase traffic. We should address existing needs before using our limited road funds for new roads.	Wikimaps 37803
09-249	This narrow rural road is dangerous.	Wikimaps 37804
09-249	This is a heavily used road too narrow for current traffic	Wikimaps 37803
09-249		
09-250: SEVIERVILLE RD RECONSTRUCTION	This is a project that should go forward immediately. The current state of the highway is very dangerous.	Wikimaps 37804-6104
09-250	This survey allows me to write on top of other people's comments.	Wikimaps 37801
09-250	What's with that?	
09-250	I live on Sevierville Road halfway between Maryville and Chapman Highway. It is a narrow and dangerous and heavily travelled two lane federal highway. This reconstruction should be done as soon as possible.	Wikimaps 37804
09-250	I live just off of this road and it really needs to be widened and turn lanes added in several areas. I would say the section in the City of Maryville starting at Washington St to Peppermint Rd outside city limits should be 4 lanes wide with a center lane and sidewalks or at the minimum it should be a two lane road with a center turn lane, sidewalks, and bike lanes.	Wikimaps 37801
09-250		
09-250	I know this would be eating up some yards and would require a massive overhaul but I have seen too many car accidents on this road including members of my own family.	
09-250	This project is very much needed !	Wikimaps 37853
09-250	Dangerous road, no shoulders, no turn lanes.	

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-250	Sevierville Road is carrying too much traffic for its size and configuration, especially since there are no shoulders at all. It needs several safety improvements, including shoulders and additional lanes where practical. There are several troublesome intersections.	Wikimaps 37804
09-250	A great idea to put turn lanes. The road could also use shoulders for additional safety.	Wikimaps 37701
09-250	Key roadway where turn lanes are needed to improve safety.	Wikimaps 37853
09-250	Sevierville Road is dangerous. It could be much improved by adding shoulders, and widening to three lanes where possible. Perhaps some of its traffic could be removed by providing a better east-west alternative route between Sevier County and Maryville… such as improving Ellejoy/Jeffries Hollow/ Wye Roads. This corridor has a rapidly increasing traffic load, but it may still be sufficiently rural to accommodate widening. One problem with this route is the "Wye" intersection with Chapman Highway—a needed improvement not on your project list. We find it frighteningly dangerous.	Email 37804
09-250	HWY 411, Sevierville Rd -- a very busy route between Maryville and Seymour/Sevierville/Pigeon Forge/Gatlinburg.	Email 37853
09-250	Please create some shoulders. This is a dangerous road.	
09-257: RELOCATED ALCOA HWY	All these Alcoa Highway projects should happen	Wikimaps 37804
09-257	Please add connection to greenways	Wikimaps 37801
09-257	Whatever is needed to improve safety and ease of movement on Alcoa Highway is needed. I am not so sure that the project as planned is the simplest & best solution; it seems to me to have too many interchanges, but I am not a traffic engineer. Maybe it is good.	Wikimaps 37804
09-257	We are delighted that work to make Alcoa Highway safer is finally underway. Do it all—and do it smart, to make that route safe and pleasant well into the future. Given the traffic load in that corridor, maybe we should be thinking of a public transportation option between Knoxville and its airport.	Email 37804
09-257	Current 129 route is unsafe.	Wikimaps 37853

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-258: RELOCATED ALCOA HWY	Looks like a good idea.	Wikimaps 37853
09-258	Current 129 route is unsafe.	Wikimaps 37853
09-262: MONTVALE RD WIDENING	This project has been in the works too long and needs to be completed	Wikimaps 37803
09-262	This project is necessary for the safety of Blount county residents and workers because of recent development that is increasing and will continue to increase traffic. We should address existing needs before using our limited road funds for new roads.	Wikimaps 37803
09-262	This will be a much-needed upgrade. There is school-bound traffic twice a day, and safety is a concern as well as traffic problems. Also, many pedestrians, bicyclists, and walkers want to be able to use this road safely as it is near neighborhoods and schools. We should be upgrading our roads to reflect interest in people getting outside and using the greenway, whether for recreation, exercise, or going to and from the schools. I lived in this neighborhood for many years and always wished Montvale would get upgrades. The sidewalks will be a great improvement, as will the turn lane.	Wikimaps 37777
09-262	Montvale Road is in desperate need of more sidewalks and pedestrian facilities. These have been promised to us for years but the city has never followed through. As someone who walked to school along Montvale Road for most of my life (walked to Sam Houston, Maryville Junior High, and Maryville High School), I know how dangerous the road is for pedestrians, especially during the after school rush. This project would improve safety and accessibility for an important road in Maryville.	Wikimaps 37803
09-262	yes, needed.	Wikimaps 37804
09-262	I support this project. This road is so busy that a left turn anywhere near this neighborhood is almost impossible at many times throughout the day. I maneuver this neighborhood very often and I go out of my way, around the block or around several blocks just to make right turns or go all the way down to a light. It feels very unsafe when on foot or bicycle as well. More time, attention, and fiscal resources need to continue to improve this danger zone.	Email 37804

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-262	I support this project. Having lived in this neighborhood at one time, we know that a way to cross Montvale Road safely, and for walkers and bikers to have safe access the greenway and schools, has been needed for years. Moreover, traffic on this road gets very backed up at school opening and closing hours. A center turn lane would be a huge help. These improvements are long overdue, and I know how much difference it will make for residents whether they are on foot or in the car.	Email 37777
09-615: WASHINGTON PK WIDENING	I drive this road multiple times a week. There are always issues with people pulling out of Babelay (headed toward Greenway) into the turning lane while others are trying to get into the turning lane to turn left onto Mill Road. Also, the congestion from Greenway to Mill Road during evening rush hour is awful.	Wikimaps 37721
09-615	Much needed	Wikimaps 37918
09-616: PLEASANT RIDGE RD RECONSTRUCTION	I encourage the addition of bike lanes, widened shoulders, adjacent greenways and/ or sidewalks where possible. I believe that increasing interconnectivity of greenways/sidewalks and wide (bikeable) roadways/ bridges will greatly benefit our community in both the short and long term.	Wikimaps 37931
09-616	Thank you for reading this and considering my input.	
09-617: SOUTH KNOXVILLE WATERFRONT ROADWAY IMPROVEMENTS	I think this project is very necessary. However, I think the roundabout is the wrong solution for this area. That intersection is very dangerous currently as it is a blind curve when cars are parked along Sevier, you can't see on-coming traffic when coming from Island Home Ave and the cars coming off James White Parkway only slow down when they hit the railroad tracks. I understand the idea is to keep traffic moving but this is going to be an increasingly pedestrian area and a 4 way stop or a 4 way traffic light stop would be much safer for pedestrians. In the U.S., roundabouts are a much more suburban solution. We do not have good urban driving practices or tight,dense urban spaces where they work well like they do in England. I oppose a roundabout (especially if it requires demolishing a potentially historic home which was in the initial plan I believe) but I think the other infrastructure elements are good.	Wikimaps 37920
09-617	Would rather see the dollars for roundabout spent on Hillwood first.	Wikimaps 37920

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-625: SCHAAD RD WIDENING	There needs to be median control along this corridor. It is a safety feature for all users of this road. Also, there needs to be a more robust plan for a greenway connector (w/ trees) along this route to connect to any improvements on Pleasant Ridge Rd & Oak Ridge Hwy. All these road projects that have happened lately seem to forget to include trees and the great canopy they provide for pedestrians.	Wikimaps 37931
09-625	This expansion is greatly needed	
09-625	I encourage the addition of bike lanes, widened shoulders, adjacent greenways and/ or sidewalks where possible. I believe that increasing interconnectivity of greenways/sidewalks and wide (bikeable) roadways/ bridges will greatly benefit our community in both the short and long term.	Wikimaps 37931
09-625	Thank you for reading this and considering my input.	
09-626: CHAPMAN HWY OPERATIONAL AND SAFETY IMPROVEMENTS	Supportive of the operational improvements to Chapman Highway. Not supportive of adding bike and pedestrians facilities without a complete rebuild of the street; there are too many conflicts.	Wikimaps 37920
09-626	Anything that can help Chapman.	Wikimaps 37920
09-626	Every little bit helps Chapman.	Wikimaps 37920
09-626	In general, I encourage the addition of bike lanes, widened shoulders, adjacent greenways and/ or sidewalks where possible. I believe that increasing interconnectivity of greenways/sidewalks and wide (bikeable) roadways/ bridges will greatly benefit our community in both the short and long term.	Wikimaps 37931
09-626	Thank you for reading this and considering my input.	
09-626	This is so needed for safety!	Wikimaps 37921
09-626	Speeding is a concern on this stretch of highway and there is a lack of bike lanes in both directions.	Wikimaps 37920
09-626	Make Chapman Highway safe for all users which it is not presently especially for people walking	Wikimaps 37919

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-626	Yes, please. All the improvements on Chapman Highway that can be made would be beneficial. One of the largest is to limit the number of access points on Chapman Highway. Try to funnel traffic to specific points to get access to Chapman as opposed to the way it is now where there are multiple, multiple entryways to the road.	Wikimaps 37920
09-626	Chapman Highway projects should all be done as soon as possible. This project is way overdue.	Wikimaps 37804
09-626	Anything to make Chapman safer!	Wikimaps 37804
09-626	The projects to improve safety on Chapman Highway have been needed for a long time.	Wikimaps 37804
09-626	Chapman Highway is in need of improvements for sure, especially in this area.	Wikimaps 37804
09-626	Please make Chapman Highway safer.	Wikimaps 37804
09-626	Chapman Highway. Improvements to mobility and especially traffic safety are greatly needed, all the way from Knoxville to Seymour.	Email 37804
09-626	HWY 441, Chapman Hwy -- a fast and busy route between Knoxville and Seymour/Sevierville/Pigeon Forge/Gatlinburg.	Email 37853
09-626	Needs many improvements	
09-629: I-40/I-75/CAMPBELL STATION RD INTERCHANGE RECONFIGURATION	This interstate exit is long overdue for both traffic and pedestrian improvements. It typically backs up to Parkside / Grigsby Chappell and stacks up on the exit ramp. With the increased building and backups in Hardin Valley Exit 373 has become the shortcut across the ridge to get to the west end of Hardin Valley. With the increased building in the Choto/Northshore area you are seeing traffic using Campbell Station to Northshore as the new route of choice.	Wikimaps 37934
09-629	With the growth in this area and additional housing that is going in at breakneck speed, getting this interchange reworked should be a high priority.	Wikimaps 37932
09-629	Way overdue project	Wikimaps 37934

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-629	Although much has changed in the 50+ years since the construction of the I-40 Campbell Station Rd interchange, the basic roadway width beneath the interstate has not. Given the growth of Farragut to the south, the growth of Hardin Valley to the north, the development of Turkey Creek Shopping district, the addition of numerous hotels in the immediate area, and with the plan to add Top Golf nearby, the time to widen the road under the interstate is way long overdue. In addition to the traffic congestion at this underpass, given the topography, the existing drainage system has proven to be inadequate during times of high rainfall and has resulted in underpass flooding and road closure. The improvement of this underpass is THE most important need in this area of Knox County both for the convenience of local residents, the need of local businesses, and the safety of local and non-local traffic. I have become aware that one suggestion for widening the underpass road width would be to remove the 45 degree embankments on both sides of road, replace them with support walls, and then widen the road to add additional lanes. As an engineer, this seems to me to be an effective and cost conscious approach to resolving this bottleneck. In any case, I urge you to proceed with this I-40/Campbell Station Rd. improvement project without delay.	Wikimaps 37934
09-629	Excellent project. Current area is potential death trap now	Wikimaps 37932
09-629	Past due for this project. Yes!	Wikimaps 37772
09-629	Serious bottleneck and must be fixed	Wikimaps 37932
09-629	this project is desperately needed as Hardin Valley, Farragut and southwest Knox County continue to build out. The congestion in this area is negatively impacting the businesses in the area.	Wikimaps 37934
09-629	This is much needed. Traffic from this interchange often backs up as far as the entrance to Turkey Creek.	Wikimaps 37932
09-630: VIRTUE RD RECONSTRUCTION	This stretch of road is the most dangerous narrow road in the Town of Farragut with its blind off camber curves and hills. 4,000 + cars every morning and afternoon in and out of Choto and Loudon County have figured out that this is a shortcut to Kingston Pike. Impossible to walk or bike this pastoral area of Farragut.	Wikimaps 37934
09-630	Roadway is narrow with considerable pavement drop-off. The roadway is a highly used road for SW Knox and Loudon County residents.	Wikimaps 37772

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-637: LOVELL RD WIDENING	I support this. It is part of the larger Schaad Road project which will allow for healthy growth in the area.	Wikimaps 37923
09-637	This is needed for this area.	
09-637	In general, I encourage the addition of bike lanes, widened shoulders, adjacent greenways and/ or sidewalks where possible. I believe that increasing interconnectivity of greenways/sidewalks and wide (bikeable) roadways/ bridges will greatly benefit our community in both the short and long term.	Wikimaps 37931
09-637	Thank you for reading this and considering my input.	
09-638: OAK RIDGE HWY WIDENING	I encourage the addition of bike lanes, widened shoulders, adjacent greenways and/ or sidewalks where possible. I believe that increasing interconnectivity of greenways/sidewalks and wide (bikeable) roadways/ bridges will greatly benefit our community in both the short and long term.	Wikimaps 37931
09-638	Thank you for reading this and considering my input.	
09-643: EMORY RD WIDENING	Yes, yes, and yes. This is desperately needed. I live in Gibbs and my entire extended family lives in Halls, so road is traveled every day.	Wikimaps 37721
09-643	Please do no make it a 5 lane section like the existing is through Powell. People drive way to fast and it is unsafe. Look at a possible 3 lane section, roundabouts and signals.	Wikimaps 37918
09-643	I hope this project is still on track to be implemented in 2030. Halls is socked in now. With only Emory Road and Broadway as major corridors to downtown or west Knoxville, a morning commute to downtown can now be 50 minutes or more. Widening Emory Road is imperative, as new subdivisions and apartments are being built all the time.	Wikimaps 37938
09-643	Absolutely necessary. Should be top line project	Wikimaps 37849
09-644: GOV JOHN SEVIER HWY WIDENING	Increased capacity on this roadway should help alleviate traffic backups during rush hour.	Wikimaps 37804

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-644	I drive on John Sevier Highway multiple times a week to and from work at the Forks of the River Industrial Park and to shopping errands and lunch running for my co-workers. I think it would be a mistake to turn any section of this road into a 4 lane for cars, if each direction had 2 lanes dedicated for vehicular traffic. My hope would be that a 4th lane's equivalent could be a half a lane added to each direction for bike traffic. My initial reaction to reading the goal of "4 lane" was that it would become a speedway with people passing each other at high speed, a la Chapman Highway. We really don't need that on scenic John Sevier Highway. The current pace of 45-50-ish miles per hour fits the feeling of the width of the road and the proximity to the roadside trees. Thanks for listening.	Wikimaps 37917
09-644	Long overdue due to growth in the area. I would think 4 lanes with a center turn lane would be an even better choice since this area is becoming less and less rural and more city-like.	Wikimaps 37920
09-644	Example of a useful and needed project !	Wikimaps 37777
09-644	There is seemingly a lot of larger trucks that use this road to get from Alcoa Highway to the industrial park around Strawberry Plains. Regularly, traffic is 15+ cars deep because of a tractor-trailer rig that is going 10 under the speed limit (35 to 40 mph). The issue is the necessary traffic signals and topography of the area as well. Having an extra lane would make this nightmare much easier to navigate.	Wikimaps 37920
09-644	Heavily travelled	Wikimaps 37804
09-644	This is well overdue for this major road.	Wikimaps 37804
09-644	No. Not a priority	Wikimaps 37853
09-644	Good idea. There is a lot of truck traffic on this roadway, and I would expect that to increase.	Wikimaps 37804
09-644	I live in Blount County and am in favor of the following projects for improving safety and growth in my area of TN, as well as increased use of Greenways:	Email 37804
09-644	Mobility Plan Numbers: 09-231, 13-214, 13-215, 13-216, 13-218, 09-216, 09-644, 09-653, 17-202, 17-201, 18-202, 19-201, 21-100, 21-1002, 21-201, 21-204, 09-211, 09-214.	

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-644	I support this project. This busy road needs improvements for efficiency and safety.	Email 37804
09-644	I support this project. A road this heavily traveled needs to be four-laned for both efficiency and safety.	Email 37777
09-645: NORTHSHORE DR RECONSTRUCTION	The gradual grade of northshore dr makes it a perfect bike thoroughfare from rocky hill to Pellissippi. I see no downside to making this stretch more accessible	Wikimaps 37919
09-645	My only concern with adding bicycle lanes is that drivers are frequently exceeding the posted limit on this stretch of Northshore.	Wikimaps 37923
09-645	Need pedestrian facilities on Northshore	Wikimaps 37919
09-645	Yes. Thank you for considering widening Northshore Drive. With all the building occurring off Northshore Drive, this road between Morrell and Ebenezer has become very challenging. Shared turning lanes are definitely needed to help keep traffic moving. When someone has to turn across traffic on Northshore Drive, it stops all traffic in that lane. We live off Wallace and Northshore Drive in Richmond Hills. We are forced to take Wallace to Nubbin Ridge to Morrell because there is no way we can turn east onto Northshore Drive in the morning.	Wikimaps 37922
09-645	This road as is was fine when there were few subdivisions, but now it is not able to accommodate all the traffic. The intersection at Tools Bend and Northshore Drive has many accidents. There is also a lot of traffic near Popes Nursery. A centered shared turning lane would be extremely helpful for those wanting to turn in across traffic.	
09-645	This project is solely needed to help with traffic flow in this area of Knoxville.	
09-645	Thank you for letting me share my opinion.	
09-645	At minimum, the addition of a shared center turn lane on this portion of Northshore Drive is long overdue! For a state roadway carrying the current level of vehicular traffic, it is more than necessary. In fact, with all the additional housing projects in the West Knoxville area between Morrell and the Pellissippi, it could be widened to 2 full lanes in each direction to help accommodate all the extra cars, school busses, and trucks in the area.	Wikimaps 37922

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-645	I commute through Northshore and the single lane each way many times is not adequate, especially when a slow car is ahead. The lack of shoulder/curb for most of Northshore makes it dangerous for any recreational activities. Lastly, adding turn lanes will help the flow of traffic, as Northshore is a busy road and left turning cars block the single lane for extended periods of time.	Wikimaps 37922
09-645	Let's get on with it, especially in the Rocky Hill area. Lengthening the existing turn lane would make a major difference, especially during morning and afternoon rush hours.	Wikimaps 37922
09-645	need is for separated bike and ped paths on both sides of road. I would as the powers that be, to go ride their or someone bike on northshore dr now. No bike lane is safe, or pleasant to almost everyone when traffic is moving at 45 to 60 mph.	Wikimaps 37919
09-645	Yes! This is needed. Much recent traffic increase on this roadway lined with residential neighborhoods. Especially like making this more bicycle & pedestrian-friendly.	Wikimaps 37804
09-646: NORTHSHORE DR RECONSTRUCTION	I greatly support the addition this and other access for bikers and pedestrians.	
09-646	In general, I encourage the addition of bike lanes, widened shoulders, adjacent greenways and/ or sidewalks where possible. I believe that increasing interconnectivity of greenways/sidewalks and wide (bikeable) roadways/ bridges will greatly benefit our community in both the short and long term.	Wikimaps 37931
09-646	Thank you for reading this and considering my input.	
09-646	Very narrow with considerable roadway drop off.	Wikimaps 37772
09-646	Need pedestrian facilities on nearshore	Wikimaps 37919
09-646	The additional lane will help the traffic flow, as one often finds itself behind slow moving vehicles with nowhere to go. Northshore is a busy road, and left turning cares block the single lane more often than expected. Lastly, the lack of curb and shoulder makes it dangerous for recreational activities.	Wikimaps 37922
09-646	This stretch of highway mostly without shoulders is dangerous for pedestrians and drivers alike. Implementing bike/pedestrian accommodation will be great!	Wikimaps 37922

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-647: PELLISSIPPI PKWY IMPROVEMENTS	long over due, The are is not safe now	Wikimaps 37932
09-647	This is a great plan for a highly traversed road. Also expanding to allow for multi use is great since I have heard there is potential for greenway applications from the Kingston Pike area to Oak Ridge.	Wikimaps 37912
09-647	This area must be addressed to support the regions goals for growth and support the exploding population.	Wikimaps 37932
09-647	Much needed due to added traffic with the booming area of Hardin valley and Karns.	Wikimaps 37931
09-647	There's a bottleneck after crossing the I-40 overpass heading towards Oak Ridge. Let the 2 lanes continue on Pellissippi instead of requiring cars to merge into the left lane. My sons were rear-ended on the bridge when traffic came to a stand still on the overpass.	Wikimaps 37771
09-651: I-40/I-75 AT WATT RD INTERCHANGE RECONFIGURATION	There is often an accident just past Watt Rd on I-40E.	Wikimaps 37771
09-652: I-75 AT EMORY RD INTERCHANGE RECONFIGURATION	Yes Please!!	Wikimaps 37918
09-653: ALCOA HWY WIDENING	Don't think the road needs to be widened, just need the bike and pedestrian facilities	Wikimaps 37919
09-653	Very important that Marine Park is connected to the Alcoa Highway greenway being constructed now starting at Montlake drive going south, connecting these two greenway systems. Curious why this shows the roadway improvement only going to Woodson? Thank you for the opportunity to comment!	Wikimaps 37920
09-653	Alcoa Highway has been a death trap for decades and this is important!	Wikimaps 37804
09-653	All Alcoa Highway projects need to be done as soon as possible. These projects will save lives as well as expedite travel.	Wikimaps 37804

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-653	We need more bike lanes and the Maryville Alcoa to Knoxville corridor is one place that will be heavily used	Wikimaps 37803
09-653	We are delighted that work to make Alcoa Highway safer is finally underway. Do it all—and do it smart, to make that route safe and pleasant well into the future. Given the traffic load in that corridor, maybe we should be thinking of a public transportation option between Knoxville and its airport.	Email 37804
09-653	I live in Blount County and am in favor of the following projects for improving safety and growth in my area of TN, as well as increased use of Greenways:	Email 37804
09-653	Mobility Plan Numbers: 09-231, 13-214, 13-215, 13-216, 13-218, 09-216, 09-644, 09-653, 17-202, 17-201, 18-202, 19-201, 21-100, 21-1002, 21-201, 21-204, 09-211, 09-214.	
09-653	I support this project.	Email 37804
09-653	As we all know, this is a dangerous stretch of road with a terrible reputation, and deservedly so! It has been a hazard for decades and I am glad to see residents' safety finally being taken seriously.	
09-653	I support these projects. Alcoa Highway deserves its unfortunate nickname--"I'll Kill Ya" Highway. It is one of the most dangerous roads in East Tennessee and has claimed many lives over the years. My own husband had a very serious accident on Highway 129 in 2019. Any improvements to this road are welcome, whether it be widening, upgrades to interchanges, or improving visibility. The improvements at the junction of Topside Road and Alcoa Highway have been a big help. Please continue the work on improvements and widening of Alcoa Highway until the entire length is finished.	Email 37777
09-654: I-75/I-640/I-275 INTERCHANGE IMPROVEMENTS		Wikimaps 37924
09-654	but truly a real bypass would fix this issue	Wikimaps 37917
09-658: NORTHSHORE DR AT KINGSTON PK INTERSECTION IMPROVEMENTS	One of the most crowded intersection in Knox Co. with its slowdowns reaching east past Buddy's BBQ, west up Bearden Hill, Northshore past Baum Dr., and Northshore north toward I-40. Avoiding this intersection at all costs, most times of the day will be doing yourself a favor.	Wikimaps 37871

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-658	Any improvements to this area should be of utmost importance.	
09-658	Anything can only help here.	Wikimaps 37934
09-658	I travel through this intersection at least twice a day, and I regularly see large trucks tracking over the sidewalk as they make right turns from different directions.	Wikimaps 37923
09-658	This intersection is awful and in need of an upgrade.	Wikimaps 37923
09-658	I work near this area and that intersection is always a mess. At times, it takes up to 3 cycles of the traffic light to make it across the intersection.	Wikimaps 37922
09-658	heavy traffic all day/every day. expand turn lanes.	Wikimaps 37919
09-658	This intersection slows down everyone traveling on both roads. A wider and faster intersection is much needed	Wikimaps 37932
09-668: KINGSTON PK WIDENING	Kingston Pike is severely burdened with traffic through this area and widening would help alleviate the traffic burden.	Wikimaps 37934
09-668	While I would like to see bicycle and pedestrian infrastructure in this area, I do not like the idea of widening this stretch of roadway. Traffic light synchronization and alternative routes would be a better solution than creating a 70'+/- crossing for pedestrians.	Wikimaps 37923
09-669: EVERETT RD IMPROVEMENTS	The north & west end of this road needs to be upgraded like the south end that is in Farragut,	Wikimaps 37934
09-669	It is easy to walk & bike on the Farragut end but way too dangerous on the Knox County end.	
09-673: OAK RIDGE HWY WIDENING	I encourage the addition of bike lanes, widened shoulders, adjacent greenways and/ or sidewalks where possible. I believe that increasing interconnectivity of greenways/sidewalks and wide (bikeable) roadways/ bridges will greatly benefit our community in both the short and long term.	Wikimaps 37931
09-673	Thank you for reading this and considering my input.	

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
09-673	Much needed fix due to the increase of houses in the area. Also need to look at the other 2 lane roads in the area and improve traffic flow to them as well	Wikimaps 37931
09-680: NORTHSHORE DR IMPROVEMENTS	We need pedestrian and bike lanes in this area,	Wikimaps 37934
09-680	Add a sidewalk but don’t expand the road into residential areas	Wikimaps 37922
09-680	It's hard to have an opinion on this project when the description only lists "provide better connectivity". Please list the proposed improvements in more detail.	Wikimaps 37923
09-680	This section of roadway is narrow and with considerable pavement drop-off (no shoulder). Traffic levels have increased over the years.	Wikimaps 37772
09-689: PAPERMILL DR CORRIDOR IMPROVEMENTS	How many lines of traffic have you waited in for people turning left into McKay's bookstore?	Wikimaps 37923
09-689		
09-689	This should have been constructed ten years ago - high priority!	
09-689	Adding a turn lane would be incredibly beneficial to serve the businesses along this corridor.	Wikimaps 37923
09-691: I-40/75 WIDENING	Having two major interstates merge into one creates a lot of traffic, and the addition of lanes will help with traffic flow.	Wikimaps 37922
09-691	I've traveled inter-city here several times, and the amount of people attempting to merge on the smaller roads is a bottleneck. Widening it is a good call.	Wikimaps 37843
09-692: I-75 WIDENING	would a new knoxville bypass not help reduce congestion in this area?	Wikimaps 37917

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
10-700: CAMPBELL STATION RD IMPROVEMENTS	There are no specific details to comment on for this proposed project. While the rapid development of subdivisions in the western portion of Hardin Valley undoubtedly increases the need for residents to safely access this route, care should be taken to avoid turning Pellissippi -> Hardin Valley Rd -> Campbell Station Rd -> I-40 W into a makeshift mini-'Orange Route' bypass. Campbell Station Rd should be maintained as a local, residential access road, and not be turned into a multi-lane highway.	Wikimaps 37932
10-700	Need a safer means between Farragut to Hardin Valley.	Wikimaps 37772
13-1003: CHAPMAN HWY ATMS	Anything to help Chapman.	Wikimaps 37920
13-1003	Something needs to be done about the speeding in this section. Additional left turn lanes are needed, as well as bike lanes in both directions.	Wikimaps 37920
13-1003	Yes! This is a good project.	Wikimaps 37804
13-1003	Can you make the traffic lights turn green together so you don't have to stop at everyone of them. You sit at one light as it turns green you can see the next light turn red right in front of you. Lights all over the City do this. No wonder traffic doesn't move on Chapman Highway or anywhere else in the City. Traffic light at Young High Pike backs up traffic to Moody everyday.	Wikimaps 37920
13-1003	Chapman Highway. Improvements to mobility and especially traffic safety are greatly needed, all the way from Knoxville to Seymour.	Email 37804
13-1003	HWY 441, Chapman Hwy -- a fast and busy route between Knoxville and Seymour/Sevierville/Pigeon Forge/Gatlinburg.	Email 37853
13-1003	Needs many improvements	
13-1004: LIBERTY ST MULTIMODAL PROJECT	They certainly need some help.	Wikimaps 37920
13-1004	The more we can make connections to existing greenway systems the better all of it becomes.	Wikimaps 37849

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
13-1004	I am confused why the existing greenway and bikes lanes are marked, but it would be lovely to have Division street made more accessible. Currently it is really only safe and pleasant to ride downhill, away from Liberty. And I always see at least one pedestrian each trip.	Wikimaps 37909
13-1004	I greatly support the addition this and other access for bikers and pedestrians. In general, I encourage the addition of bike lanes, widened shoulders, adjacent greenways and/ or sidewalks where possible. I believe that increasing interconnectivity of greenways/sidewalks and wide (bikeable) roadways/ bridges will greatly benefit our community in both the short and long term. Thank you for reading this and considering my input.	Wikimaps 37931
13-1004	I greatly support the addition this and other access for bikers and pedestrians.	
13-1004	In general, I encourage the addition of bike lanes, widened shoulders, adjacent greenways and/ or sidewalks where possible. I believe that increasing interconnectivity of greenways/sidewalks and wide (bikeable) roadways/ bridges will greatly benefit our community in both the short and long term.	Wikimaps 37931
13-1004	Thank you for reading this and considering my input.	
13-1004	Would help with connecting to third creek greenway	Wikimaps 37919
13-1004	Important for bike safety!	Wikimaps 37921
13-101: EMORY VALLEY RD AT MELTON LAKE DR ROUNDABOUT	Would be an improvement vs the light	Wikimaps 37932
13-101	Major bottleneck	Wikimaps 37932
13-101	roundabouts are very useful and aesthetically pleasing.	Wikimaps 37919
13-101	High traffic pedestrian area could benefit significantly from the calming effect of a traffic circle.	Wikimaps 37830

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
13-102: TULANE AVE AT PENNSYLVANIA AVE ROUNDABOUT	I like roundabouts, they are more efficient.	Wikimaps 37931
13-102	A needed safety and neighborhood improvement project.	Wikimaps 37830
13-102	This intersection has been a perennial problem in Oak Ridge. And as it is close to the High School, it also poses a hazard to school-age pedestrians.	Wikimaps 37830
13-102	A roundabout for this intersection would help greatly	Wikimaps 37932
13-203: ROBERT C JACKSON DR EXTENSION	Add greenway to connect to existing.	Wikimaps 37801
13-208: HARVEST LN EXTENSION	This project is necessary for the safety of Blount county residents and workers because of recent development that is increasing and will continue to increase traffic. We should address existing needs before using our limited road funds for new roads.	Wikimaps 37803
13-208	This would elevate traffic on U.S. 129 and create a safer connector for employees that work on and near Robert C. Jackson.	Wikimaps 37801
13-214: OLD LOWES FERRY RD AT LOUISVILLE RD INTERSECTION IMPROVEMENTS	I live in Blount County and am in favor of the following projects for improving safety and growth in my area of TN, as well as increased use of Greenways: Mobility Plan Numbers: 09-231, 13-214, 13-215, 13-216, 13-218, 09-216, 09-644, 09-653, 17-202, 17-201, 18-202, 19-201, 21-100, 21-1002, 21-201, 21-204, 09-211, 09-214.	Email 37804
13-215: LOUISVILLE RD RECONSTRUCTION	I live in Blount County and am in favor of the following projects for improving safety and growth in my area of TN, as well as increased use of Greenways:	Email 37804
13-215	Mobility Plan Numbers: 09-231, 13-214, 13-215, 13-216, 13-218, 09-216, 09-644, 09-653, 17-202, 17-201, 18-202, 19-201, 21-100, 21-1002, 21-201, 21-204, 09-211, 09-214.	

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
13-216: LOUISVILLE RD RECONSTRUCTION	I live in Blount County and am in favor of the following projects for improving safety and growth in my area of TN, as well as increased use of Greenways: Mobility Plan Numbers: 09-231, 13-214, 13-215, 13-216, 13-218, 09-216, 09-644, 09-653, 17-202, 17-201, 18-202, 19-201, 21-100, 21-1002, 21-201, 21-204, 09-211, 09-214.	Email 37804
13-218: MIDDLESETTLEMENTS RD AT MISER STATION RD INTERSECTION IMPROVEMENTS	This improvement is needed!	Wikimaps 37804
13-218	I live in Blount County and am in favor of the following projects for improving safety and growth in my area of TN, as well as increased use of Greenways: Mobility Plan Numbers: 09-231, 13-214, 13-215, 13-216, 13-218, 09-216, 09-644, 09-653, 17-202, 17-201, 18-202, 19-201, 21-100, 21-1002, 21-201, 21-204, 09-211, 09-214.	Email 37804
13-601: UNION RD/N HOBBS RD RECONSTRUCTION	Very narrow un-engineered road with no drainage that causes a huge stormwater issue. No safe walking or bicycling on this road. New subdivision will be the third large subdivision on a very substandard road.	Wikimaps 37934
13-602: KNOXVILLE ATMS	Need to slow traffic so more diverts to emory road. Should have done this before the 640 interchange construction	Wikimaps 37918
13-602	this should make broadway safer	Wikimaps 37917
13-602	I drive this stretch of Broadway every day. Signal timing is a major problem, especially around Hotel (Gresham Middle traffic).	Wikimaps 37721
13-602	This stretch of Kingston Pike can be especially grueling if one is getting all red traffic lights. If these lights were synchronized I believe it would help with congestion quite a bit.	Wikimaps 37923
13-802: OAK RIDGE SIGNAL TIMING OPTIMIZATION PROGRAM	This would be a great improvement to the traffic flow.	Wikimaps 37932
13-813: FARRAGUT ATMS	Traffic lights in Farragut need to be updated along with the ADA buttons at crosswalks. A centrally control system would allow engineers to see real time issues.	Wikimaps 37934

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
13-813	More area that needs a centrally controlled system to manage daily traffic and ADA controls for intersections.	Wikimaps 37934
13-813	I believe this project will help traffic flow tremendously in Farragut.	Wikimaps 37934
13-813	This stretch of Kingston Pike can be especially grueling if one is getting all red traffic lights. If these lights were synchronized I believe it would help with congestion quite a bit.	Wikimaps 37923
13-813	I think a centralized signalization system will help tremendously with congestion.	Wikimaps 37923
13-830: OAK RIDGE RAILS TO TRAILS	I greatly support the addition this and other access for bikers and pedestrians. I am glad this route is being considered. Please also consider collaborating with UTK/ the arboretum to extend this proposed route all the way to Haw Ridge Park.	Wikimaps 37931
13-830	In general, I encourage the addition of bike lanes, widened shoulders, adjacent greenways and/ or sidewalks where possible. I believe that increasing interconnectivity of greenways/sidewalks and wide (bikeable) roadways/ bridges will greatly benefit our community in both the short and long term.	
13-830	Thank you for reading this and considering my input.	
13-830	Excellent augmentation of existing trail / greenway infrastructure.	Wikimaps 37830
13-833: MARYVILLE TO TOWNSEND GREENWAY	This will be a wonderful addition to the City of Maryville's existing Greenway Trail system and will be a nice connection for residents on the east side of town.	Wikimaps 37803
13-833	This will enhance the active travel areas of Maryville and Alcoa will improve access.	Wikimaps 37777
13-833	Love to bike and walk Blount County - please complete!	Wikimaps 37804

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
13-838: FIRST CREEK GREENWAY - BROADWAY STREETSCAPE	this will make it safer for pedestrians, esp. students from the high school	Wikimaps 37917
13-844: FIRST CREEK GREENWAY - DOWNTOWN EAST	Very cool.	Wikimaps 37920
13-844	Love any paths that connect greenways. Would make it really nice to get out to the botanical gardens.	Wikimaps 37917
13-844	must invest to connect our greenways.	Wikimaps 37919
13-852: KNOXVILLE SOUTH WATERFRONT PEDESTRIAN/BICYCLE BRIDGE	In theory, I like this project; however, I think for it to be worth the investment UT would need to build more buildings & parking structures on the south side of the river. That location wouldn't be serving much game day traffic and right now, not that many students live close enough to utilize the bridge (even with the large complexes on the river and farther south). Most students would still drive to campus. I do like connectivity to Fort Dickerson. If you could somehow tie into or piggyback off the train trestle coming from World's Fair Park you could serve that side of downtown plus campus and potentially spend less on infrastructure.	Wikimaps 37920
13-852	Very cool!	Wikimaps 37920
13-852	This project would allow easy access to apartments and other facilities along the riverfront on the South side. This would not only improve access for foot and bike traffic but it would also increase the easy of access for students who live on that side of the river.	Wikimaps 37912
13-852	this would be lovely; one really cannot get over there without mixing it up in traffic for at least a few blocks. Being able to bike with kids without the worry of traffic would be fabulous.	Wikimaps 37909
13-852	Why?	Wikimaps 37917
13-852	This would be fantastic for us South Knoxville residents to get to UTK on our bikes or walking.	Wikimaps 37920

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
13-852	This would be amazing!!	Wikimaps 37920
13-852	huge cost no where to ride in south knoxville	Wikimaps 37919
13-854: BAKER CREEK GREENWAY	As a frequent user of this area, I would love this.	Wikimaps 37920
13-854	I greatly support the addition this and other access for bikers and pedestrians. I am glad this route is being considered. In general, I encourage the addition of bike lanes, widened shoulders, adjacent greenways and/ or sidewalks where possible. I believe that increasing interconnectivity of greenways/sidewalks and wide (bikeable) roadways/ bridges will greatly benefit our community in both the short and long term.	Wikimaps 37931
13-854	Thank you for reading this and considering my input.	
13-854	The more bike/pedestrian paths, the better.	Wikimaps 37920
13-854	This is the first I've heard about this project and I think it is perfect for the growing urban wilderness areas. They should all be connected, where possible and feasible. This would also help with parking problems at some local trailheads, etc.	Wikimaps 37920
13-855: FIRST CREEK GREENWAY - NORTH KNOX	Need to figure out broadway / 640 for ped/bike	Wikimaps 37918
13-855	yes, this will be a great improvement	Wikimaps 37917
13-858: KNOXVILLE NORTHWEST GREENWAY CONNECTOR	Need to further connect Greenway systems with Jean Teague by West Hills	Wikimaps 37923

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
13-858	A dedicated bike lane here would be amazing to allow connection from Victor Ashe to Middlebrook where there is also a proposed bike lane. I have actually ridden this section of road before and while being low traffic it is still slightly dangerous for cyclist. I have had a few bad encounters this drivers on this section. This would also allow access to the West Hills Park Greenway which connects to Cedar Bluff.	Wikimaps 37912
13-858	I love biking 3rd Creek on the weekends to connect over to Victor Ashe Park. It would be great to be able to use the route when traffic is heavier. But honestly- this is a USELESS project unless Middlebrook Pike is addressed. The shared sidewalk/greenway improvements stopped at 4312 Middlebrook, leaving the lack of curb cut at the post office driveway, so no accessible access to crosswalk! Even if one could get to crosswalk, there is no continuous sidewalk nor shoulder to reach 3rd creek on the other side. So getting to the 3rd Creek improvement could still only be safely done during low traffic times, making the improvement unnecessary. One of the biggest issues our current systems has is piecemeal projects that lack any sort of linkage or connection to one another, such as the Liberty bike lanes that were put in with no thought as to how a cyclist would transition to the greenway and access the signal button at Middlebrook.	Wikimaps 37909
13-858	This would be awesome, I greatly support the addition on more and all greenways! In general, I encourage the addition of bike lanes, widened shoulders, adjacent greenways and/ or sidewalks where possible. I believe that increasing interconnectivity of greenways/sidewalks and wide (bikeable) roadways/ bridges will greatly benefit our community in both the short and long term. Thank you for reading this and considering my input.	Wikimaps 37931
13-858	Chapman Highway. Improvements to mobility and especially traffic safety are greatly needed, all the way from Knoxville to Seymour.	Email 37804
13-858	HWY 441, Chapman Hwy -- a fast and busy route between Knoxville and Seymour/Sevierville/Pigeon Forge/Gatlinburg. Needs many improvements	Email 37853
13-880: ATLANTIC AVENUE SIDEWALK	Love sidewalks	Wikimaps 37920
13-880	Definitely need more sidewalks in OLP	Wikimaps 37917

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
13-884: CHAPMAN HWY MULTIUSE PATH	Yes! People already walk and ride bikes here. Let's make it safe and encourage more people to do so. Chapman hwy is a thoroughfare right now but it is going to become more urban and neighborhood oriented as Knoxville grows so we should plan for people more than cars. Alcoa Hwy is so built up already it makes sense to make that and John Sevier the way to get places quickly and let Chapman become more centrally focused.	Wikimaps 37920
13-884	overdue!	Wikimaps 37920
17-1006: KNOXVILLE AREA TRANSIT (KAT) EXPRESS TRANSIT SERVICE ENHANCEMENT	Great	Wikimaps 37918
17-1006	I agree that smart transit options should begin to be implemented. Broadway can be quite congested, especially with the numerous traffic lights.	Wikimaps 37721
17-201: AMERINE ROAD IMPROVEMENTS	This was supposed to serve a WalMart that is not going to be built...	Wikimaps 37804
17-201	I live in Blount County and am in favor of the following projects for improving safety and growth in my area of TN, as well as increased use of Greenways:	Email 37804
17-201	Mobility Plan Numbers: 09-231, 13-214, 13-215, 13-216, 13-218, 09-216, 09-644, 09-653, 17-202, 17-201, 18-202, 19-201, 21-100, 21-1002, 21-201, 21-204, 09-211, 09-214.	
17-202: US-129 WIDENING	Would help with the lone lines at these intersections.	Wikimaps 37886
17-202	This is the area of the county where the growth is happening	Wikimaps 37804
17-202	Alcoa Highway already has higher traffic volumes than many interstate, limited-access highways. Any improvements to make the volume of cars and trucks move more safely and efficiently should be considered.	Wikimaps 37804
17-202	This would make this route a lot better as well as eventually making the intersection at Louisville Rd an interchange to allow more controlled access and continuous flow of U.S. 129 traffic.	Wikimaps 37804

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
17-202	From my travels through that area during busy and non-busy times, this shouldn't be a priority for funding. I can't remember when I couldn't get through the intersection in one change of the light no matter what direction I'm going.	Wikimaps 37804
17-202	If it needs to be this wide for safety, do it.	Wikimaps 37804
17-202	I live in Blount County and am in favor of the following projects for improving safety and growth in my area of TN, as well as increased use of Greenways:	Email 37804
17-202	Mobility Plan Numbers: 09-231, 13-214, 13-215, 13-216, 13-218, 09-216, 09-644, 09-653, 17-202, 17-201, 18-202, 19-201, 21-100, 21-1002, 21-201, 21-204, 09-211, 09-214.	
17-202	I support this project.	Email 37804
17-202	As we all know, this is a dangerous stretch of road with a terrible reputation, and deservedly so! It has been a hazard for decades and I am glad to see residents' safety finally being taken seriously.	
17-202	I support these projects. Alcoa Highway deserves its unfortunate nickname--"I'll Kill Ya" Highway. It is one of the most dangerous roads in East Tennessee and has claimed many lives over the years. My own husband had a very serious accident on Highway 129 in 2019. Any improvements to this road are welcome, whether it be widening, upgrades to interchanges, or improving visibility. The improvements at the junction of Topside Road and Alcoa Highway have been a big help. Please continue the work on improvements and widening of Alcoa Highway until the entire length is finished.	Email 37777
17-605: KNOXVILLE CENTER MALL AREA CIRCULATION STUDY	This absolutely has to happen because of the likely redevelopment of the mall. Traffic is already at a standstill from the interstate down Washington Pike and Millertown headed to points north and east from about 7-9 am and from 4-6 pm. Also, traffic to and from the Detention Facility puts an extra load on Washington Pike and some people use Millertown to avoid Washington Pike congestion near the Target shopping center and cut through Harris Road over to Washington Pike.	Wikimaps 37924
17-605	This is a very poor example of ingress and egress for a mall with many homes and apartments around it. With the mall now closed, it will be most difficult bringing in businesses to revitalize the structure unless major improvements to the roadway system takes place.	Wikimaps 37871
17-605	Might help commerce, too.	Wikimaps 37934

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
17-605	If this area is going to be a viable option for business prospects, there needs to be some improvements made.	Wikimaps 37721
17-605	Especially because a developer is looking at the East Towne Mall site as a distribution center, please add this to the top of your project list. Millertown Pike needs to be widened, but I don't know how that can happen when there's a small and narrow ancient bridge over Love's Creek between the Krystal and Taco Bell restaurants. I feel like that bridge is the main hindrance to progress and better flow over there.	Wikimaps 37917
17-605	Please help this area	Wikimaps 37918
17-605	Having a warehouse distribution center at the old East town mall is not the best use of the property. This side of town is in desperate need of retail and restaurant comparable to the west side of town.	Wikimaps 37721
17-605	Tearing down the mall and building an open air shopping center would be a better use of the site.	
17-605	I believe exit/entry ramps need to be installed directly to the former mall area to avoid additional truck traffic on already congested roadways.	Wikimaps 37918
17-608A: MAGNOLIA AVE STREETSCAPE	first 2 phases are great, would like to see this entire corridor finished	Wikimaps 37922
17-608B: MAGNOLIA AVE STREETSCAPE	first 2 phases are great, would like to see this entire corridor finished	Wikimaps 37922
17-608B	This area has been neglected for decades and should greatly benefit from these improvements	Wikimaps 37917
17-608C: MAGNOLIA AVE STREETSCAPE	I really like what's been done on the previous phases. Keep up the good work!	Wikimaps 37914
17-608C	first 2 phases are great, would like to see this entire corridor finished	Wikimaps 37922
17-608C	this area will not see much economic benefit from this project.	Wikimaps 37919
17-801: KNOXVILLE ATMS	This area will benefit greatly from better traffic management through signal timing.	Wikimaps 37918

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
17-801	yes for smarter traffic systems	Wikimaps 37920
17-850: SOUTH WATERFRONT GREENWAY - EAST OF SUTTREE	This greenway project should be prioritized over James White Parkway (even to the exclusion of the proposed James White Parkway project) as this connects existing assets (Island Home Park and Suttree Landing Park) and fulfills the vision of the South Waterfront that has been in process for more than a dozen years.	Wikimaps 37920
17-850	This sounds incredible to me!	Wikimaps 37920
17-850	Riding on the road as an adult is not too bad, but this would really make it safer for family trips.	Wikimaps 37909
17-859: SOUTH WATERFRONT GREENWAY - WEST OF CITYVIEW	I like this but a streetscape and infrastructure improvement project along Scottish Pike and Blount Ave might be better money spent right now to get ahead of what is likely going to be an area of significant development in the next 10 years.	Wikimaps 37920
17-859	If the bridge were to be installed this would be a necessity, to connect safely to existing infrastructure.	Wikimaps 37912
17-859	Scottish Pike Park is underutilized and this would help bring more people to that small park. Excellent idea that I'd like to see built sooner rather than later.	Wikimaps 37920
17-859	Another critical connection that should be built or make the Blount Ave./ Henley Street intersection slower and safer for people walking and biking. BTW, the Henley street bridge traffic speeds are ridiculously fast due to the design of the roadway- redesign it to turn it into a boulevard to "slow the cars" and that people can walk and bike on comfortably	Wikimaps 37919
17-901: EAST KNOX GREENWAY	East Knox is sorely lacking in safe bike routes. The neighborhood streets provide a good alternative, but with more established protected routes, bike routes connecting to other parts of the city could improve transportation options in an equitable way.	Wikimaps 37915
17-901	would love to see this constructed. more greenways are always a good thing and should be a priority	Wikimaps 37922

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
17-901	It would be great to be able to safely bike there.	Wikimaps 37920
17-901	Bicycle infrastructure is always a good thing!	Wikimaps 37849
17-901	I live nearby (on Selma Ave) and use part of this route to commute to work daily. During the after-school hours I often see kids walking home even though there's no sidewalk. I think a bike lane and sidewalk would be great here, especially because this is a historically underserved part of the town.	Wikimaps 37914
17-901	Can it be continued across Boyd's Bridge, though Marbledale/Asbury, to arrive at the new park being created by the Legacy Parks Foundation across the river from the Veterans Cemetary? It's such a scenic bike ride! Just not an extremely safe one :(Plus it takes you right by Cruze Farm for an ice cream cone and/or the Ramsey House!	Wikimaps 37914
17-901	this community needs a greenway	Wikimaps 37919
17-910: TAZEWELL PK SIDEWALK	This includes some dangerous merges on the south side. will it include crosswalks to get northbound.	Wikimaps 37918
17-910	Agree that there is quite a bit of pedestrian traffic in that area.	Wikimaps 37721
17-910	Please consider extending sidewalks on west side of Jacksboro pike between Tazewell and Garden drive	Wikimaps 37918
17-910		
17-911: TYSON PARK/FORT SANDERS BIKE CONNECTION	this is a great project that would help people get to Tyson park without having to go on cumberland/kingston pk	Wikimaps 37917
17-911	This would provide access to Tyson park from fort without having to trek down to Cumberland and then back up. Would enable safe walking area that’s not along busy corridor to allow more commute options. Simple trail or even just a hole in the fence at this spot would be very convenient.	Wikimaps 37919

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
17-911	Cumberland Avenue is not a safe place for people biking. The designated bike route from the 3rd Creek Greenway directs westbound(vice-versa for eastbound) cyclists onto the north sidewalk of Cumberland Ave where they encounter many pedestrians and unsafe intersections. Riding a bike in the roadway on Cumberland is not comfortable for most cyclists which is why you do not see cyclists on Cumberland. Cumberland Ave. does not serve the Fort Sanders neighborhood pedestrians either, many of whom are UTK students who can only get to destinations west (and reverse for eastbound) by exiting the neighborhood south to Cumberland, navigating the congestion on the street and narrow sidewalks to get to campus, into Tyson Park or cross into the University Commons which is a dangerous intersection as is the Cumberland/ Volunteer Blvd. intersection. This situation has only worsened with the building of multi-story university residences on Cumberland. The usable sidewalk space is still only 5 feet wide and building frontages are less than ten feet so there is minimal public space for people walking and biking on the sidewalk. A bike/ pedestrian bridge connecting Tyson Park to the Fort Sanders neighborhood will provide a critical connection for east/west biking and walking traffic. This bridge is more than a recreational amenity- it will serve as a route for biking/walking commuters, increase opportunities for Fort Sanders residents to safely get to Tyson Park and University Commons and improve safety of Cumberland Ave for everyone	Wikimaps 37919
17-911	Sounds like a great idea to me!	Wikimaps 37920
17-911	This is very much needed as there is not a safe way to access the quite roads of the fort without riding the wrong way on the sidewalk on Cumberland.	Wikimaps 37919
17-911	Very good for safety!	Wikimaps 37921
17-911	This missing link would give greater access to central downtown Knoxville and the University of TN.	Wikimaps 37777
17-911	This is and has been a major need for bikeway continuity.	Wikimaps 37920
17-913: WESTLAND DR COMPLETE STREET	Westland could be a great connector from the lyons view area to Morrell/Rocky Hill. I ride it anyway, but better pedestrian and cycle access would make it so much safer.	Wikimaps 37919
17-913	Very much needed.	Wikimaps 37920

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
17-913	please make certain that connections at the end of the bike lanes & sidewalks are addressed. An obvious goal would be to access Lakeshore Park. Currently the sidewalk on the cemetery side has no curb cuts, and fencing at Lakeshore forces one to go up Lyons or down Northshore (very narrow shoulder) to get into the park.	Wikimaps 37909
17-913	YES!!	Wikimaps 37919
17-913	High priority. Essential to provide walkability/bikeability to several densely populated neighborhoods otherwise entirely car-dependent. Connectivity to lakeshore and the third creek corridor greenway system would be ideal.	Wikimaps 37919
17-913	this facility is very much needed and will get a lot of use by the neighborhood as well as bike commuters	Wikimaps 37919
18-200B: ALCOA HWY ITS EXPANSION	Long overdue project. The Entrance to I.C.King Park is very dangerous and needs to be completely changed or upgraded. I've almost killed myself several times getting in and out of the park from Alcoa Highway.	Wikimaps 37920
18-200B	We are delighted that work to make Alcoa Highway safer is finally underway. Do it all—and do it smart, to make that route safe and pleasant well into the future. Given the traffic load in that corridor, maybe we should be thinking of a public transportation option between Knoxville and its airport.	Email 37804
18-201: I-140 ITS EXPANSION	Pellissippi needs a non motorized access lane to provide transportation for all!	Wikimaps 37777
18-202: BLOUNT COUNTY GREENWAY TRAIL	This important link will provide active transportation opportunities to residential areas and the Heritage middle and high schools.	Wikimaps 37777
18-202	Greenway extension needed	Wikimaps 37801
18-202	Maryville and Alcoa have created a tremendous network of walking and biking trails over the last few years. Extending this network towards Townsend will only help to make it better. The natural beauty of the region and the proximity to the Great Smoky Mountains National Park will help allow the citizens and visitors to continue to enjoy this great resource.	Wikimaps 37804
18-202	please add!!	Wikimaps 37804

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18-202	I live in Blount County and am in favor of the following projects for improving safety and growth in my area of TN, as well as increased use of Greenways: Mobility Plan Numbers: 09-231, 13-214, 13-215, 13-216, 13-218, 09-216, 09-644, 09-653, 17-202, 17-201, 18-202, 19-201, 21-100, 21-1002, 21-201, 21-204, 09-211, 09-214.	Email 37804
18-202		
18-500: BOYDS CREEK HWY AT OLD KNOXVILLE HIGHWAY INTERSECTION IMPROVEMENTS	Very needed project...very important to travelers in Sevier County!	Wikimaps 37862
18-500	I live just off of the corner of this intersection, in front of Oak Haven Resort and have been here for 26 years. Needless to say, I have heard numerous accidents and close calls. The guard rail on Old Knoxville Highway has been replaced at least 3 times in the last 5 years. Prior to a guardrail being placed at that location, there was a minimum of 6 cars leaving the roadway and ending up in the neighbor's yard! Rain on the road is a big factor causing slippery conditions for those coming right off of Boyds Creek onto Old Knoxville Highway. Also, I am often afraid of being rear-ended waiting to make the left turn off of Boyds Creek onto Old Knoxville Highway as it is a downhill curve. To stop for someone turning comes up quick if you are not paying attention! During heavy traffic times, the traffic gets very backed up as thru traffic on Boyds Creek does not allow for turning off of Old Knoxville Highway nor Big River Overlook which also has a blocked view of Boyds Creek on their right. I would approve of and appreciate the roadways being aligned into a proper 4 square intersection with turn lanes and traffic light. There are many times those improvements would be a huge benefit for all who use this intersection. And with continued building of housing out in the Boyd's Creek community, the traffic will continue to have more volume. There are so many that use this intersection as a "short cut" to get into Sevierville to bypass Highway 66 that these improvements would really help!	Wikimaps 37876
18-500	Be nice if they talk to us we live here an don’t wont rd in our yard why we bought here to get off rd not going for changes that take our land an put rd closer to our house	Wikimaps 37876
18-500	This is a dangerous intersection where many accidents have been reported.	Wikimaps 37931

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
18-500	That is, indeed, a dangerous intersection. Especially for traffic coming north on Old Knoxville Hwy, wanting to turn right or left on Boyds Creek Hwy. Hard to see fast-moving vehicles coming from either direction. Also, traffic heading west on Boyds Creek Hwy that want to turn left onto Old Knoxville Hwy have to stop all traffic behind them, while they wait for east-heading, fast-moving vehicles to get past the intersection. And then it's a very sharp left turn. Those of us who go through that intersection almost daily will certainly appreciate whatever can be done to make that intersection safer for all.	Wikimaps 37876
18-500	Thank you so much for addressing this intersection. Boyds Creek is an extremely busy road and seems as if improvements are never made in that area. Traffic light is needed there and also a the intersection of Boyds Creek and Hodges Bend Road. Thank you!!	Wikimaps 37876
18-500	This intersection desperately needs a traffic signal. There have been a great number of car crashes at this intersection over the last decade, some likely fatal. People on Boyd's Creek Highway travel at high speeds and it is very difficult to navigate this intersection safely at times due to vehicles entering and exiting from Old Knoxville Hwy, Boyd's Creek, Big River Overlook subdivision, and McCroskey Island Road. Please seriously consider installing a traffic signal and turn lanes.	Wikimaps 37876
18-500	I live near here and weekly accidents happen here . A light is needed very badly. To much traffic due to resort in this road along with people using Old Knox Hwy as a by pass from 66. For this reason a light is needed and has been needed for a long time !	Wikimaps 37876
18-500	I definitely think this project should be done. When getting onto Boyds Creek Hwy from Old Knoxville Hwy, I often have to accelerate quickly to take advantage of an opening in traffic.	Wikimaps 37876
18-500	This can be particularly tricky if the road is the least bit wet. I consider myself fortunate that this hasn't caused me to be in an accident.	
18-500	A new exit must be discussed for access to the county as an alternative to 407 especially with the new development by the cherokee nation. A suggestion would be closer to mile marker 410	Wikimaps 37862
18-500	I live within 1/2 mile of this intersection. My neighbors and I feel turn lanes would be the answer, but a traffic light is not needed and might cause more accidents and frustration. I have lived on Boyds Creek Highway for over 50 years and have seen it go from a rarely-traveled dirt road to a heavily-traveled highway.	Wikimaps 37876

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
18-500	We could really use turn lanes on all or most of Boyds Creek Highway. At this intersection, I recommend reconfiguring it on both Boyds Creek Hwy. and Old Knoxville Hwy. by adding space and lanes, and that will improve safety. Thank you for allowing our input!	
18-500	A traffic light here is sorely needed!	Wikimaps 37876
18-500	A traffic light is badly needed here. There are many accidents here due to cars going too fast and other cars failing to yield to oncoming traffic. Additionally there is a resort called Oak Haven right next to this intersection so not only is the intersection dangerous but there are thousands of tourists who are unfamiliar with it.	
18-500	This means they don't practice proper care when navigating this intersection because they aren't aware of the risks.	Wikimaps 37875
18-500	Also, with an increase of construction projects in the Boyd's creek and old Knoxville hwy like Soaky Mountain and numerous new homes, this intersection gets very congested at times with locals going to and from work. Please enhance this intersection's safety by completing this project	
18-603: MIDDLEBROOK PK ATMS EXPANSION	Support! There are several traffic lights along this route that appear "primitive", as in they are not using live traffic data for more efficient timing. Upgrading this will result in less emissions, faster commutes, and less frustration for commuters.	Wikimaps 37923
18-603	I encourage the addition of bike lanes, widened shoulders, adjacent greenways and/ or sidewalks where possible. I believe that increasing interconnectivity of greenways/sidewalks and wide (bikeable) roadways/ bridges will greatly benefit our community in both the short and long term. Thank you for reading this and considering my input.	Wikimaps 37931
19-101: I-75 ITS INSTRUMENTATION AT SR-61 INTERCHANGE	Safety	Wikimaps 37934
19-201: INTERSECTION IMPROVEMENTS ON U.S. 321	I live in Blount County and am in favor of the following projects for improving safety and growth in my area of TN, as well as increased use of Greenways: Mobility Plan Numbers: 09-231, 13-214, 13-215, 13-216, 13-218, 09-216, 09-644, 09-653, 17-202, 17-201, 18-202, 19-201, 21-100, 21-1002, 21-201, 21-204, 09-211, 09-214.	Email 37804
19-603: TRAFFIC SIGNAL IMPROVEMENTS FOR THE UT AREA	I love smarter traffic systems.	Wikimaps 37920

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
19-603	Project would assist with traffic flow in UT area-	Wikimaps 37996
19-604: KNOX COUNTY ATMS	Halls is continuing to grow and needs new infrastructure to allow for traffic.	Wikimaps 37721
19-605: MIDDLEBROOK PK COMPLETE STREET	We have very few protected bike lanes, this is a step in the right direction.	Wikimaps 37920
19-605	Yes!	Wikimaps 37920
19-605	PLEASE PLEASE PLEASE. I've gotten almost hit on this stretch of road very often and it makes biking out west unpleasant and unlikely for me.	Wikimaps 37917
19-606: WOODLAND AVE COMPLETE STREET	this will make it safer for pedestrians, esp. students from the high school	Wikimaps 37917
19-606	Several cars on park or put their trash cans on the bike lane. Do not feel safe cycling on this road(s).	Wikimaps 37917
19-606	This would be great.	Wikimaps 37920
19-606	Very necessary for safety	Wikimaps 37917
19-702: TPO PAVEMENT MGMT	Some resurfacing projects appear to be neglected for too long and this affects people's vehicles over the duration of daily travel. A program that provides uniform priority for projects could lead to better organized Q's for resurfacing projects.	Wikimaps 37871
19-703: JAMESTOWNE BLVD STUDY	The current intersection at Kingston Pike/Campbell Station Road is at capacity, with no additional space between the Campbell Station Inn (historic) and commercial development for additional lanes.	Wikimaps 37934
19-703	This helps connect the busiest portions of the system safely.	Wikimaps 37934
19-703	The Kingston Pike / Campbell Station intersection is a traffic battle with constant stacking, a bypass would be a big relief for this area. It is also tough to walk or bike across this intersection due to the constant turning of cars.	Wikimaps 37934

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
19-703	definitely needed	Wikimaps 37934
19-703	With the recent and forthcoming attractions at Kingston Pike and Campbell Station Rd, I imagine that intersection will become even more congested. Alternative routes would be great to alleviate some of this traffic.	Wikimaps 37923
19-703	May relieve congestion at the K-P and CS intersection perhaps resulting in a more comfortable pedestrian experience. Lots to walk to now down there.	Wikimaps 37772
19-703	Such improvements (i. e. volume boosting) are inevitable. Hopefully it can be done while preserving the pastoral character of Jamestowne.	Wikimaps 37922
19-703	connectivity is important in every area of our community. This project would provide for a more connected center of Farragut, as they work toward creating a pedestrian oriented town center.	Wikimaps 37934
19-707: COUNTY-WIDE TRANSPORTATION STUDY (KNOX)	I support more bike lanes or sharrows on roadways. Knox has done a great job on investing in mtb, but accessing the parks safely is also important. Also, emphasizing that bikes can be on the road and supporting a road cycling and commuting infrastructure would be amazing.	Wikimaps 37917
19-707	I would also love to see a traffic ad campaign about the importance of not passing cyclists across the double yellow line on blind curves or hills. This happens to me multiple times every time I ride. [NAME REMOVED]	
19-708: TVA BULL RUN SITE STUDY	The area need to be redeveloped	Wikimaps 37932
19-708	I would like to see this area used as a public park space. Hopefully public walking areas, mountain bike trails, disc golf park, and/or habitat for wildlife and wildlife viewing.	Wikimaps 37931
21-1002: ETHRA TRANSIT VEHICLE REPLACEMENT PROJECT	The Karns community is in need of infrastructure improvements throughout due to a sharp increase in population from the addition of several subdivisions built in the area.	Wikimaps 37931
21-1002	Contract this service out	Wikimaps 37932
21-1002	Increased use of transit is essential to reduce carbon emissions and provide better access to jobs and support seri.	Wikimaps 37920

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
21-1002	I live in Blount County and am in favor of the following projects for improving safety and growth in my area of TN, as well as increased use of Greenways:	Email 37804
21-1002	Mobility Plan Numbers: 09-231, 13-214, 13-215, 13-216, 13-218, 09-216, 09-644, 09-653, 17-202, 17-201, 18-202, 19-201, 21-100, 21-1002, 21-201, 21-204, 09-211, 09-214.	
21-1003: PURCHASE KNOXVILLE AREA TRANSIT (KAT) VEHICLES - FIXED ROUTE BUSES	The question here is - how many buses can be successfully overhauled vs. what a new one costs, and take into account fuel costs, accessibility, etc.	Wikimaps 37918
21-1003	buy electric buses. overhaul some buses to expand their life but replace with electric.	Wikimaps 37919
21-1004: KNOXVILLE AREA TRANSIT (KAT) BUS ENGINE OVERHAULS	Engine overhauls should only be done on newer buses that are more fuel efficient to begin with.	Wikimaps 37918
21-100: LAFAYETTE DRIVE BICYCLE AND PEDESTRIAN SAFETY IMPROVEMENTS	I live in Blount County and am in favor of the following projects for improving safety and growth in my area of TN, as well as increased use of Greenways:	Email 37804
21-100	Mobility Plan Numbers: 09-231, 13-214, 13-215, 13-216, 13-218, 09-216, 09-644, 09-653, 17-202, 17-201, 18-202, 19-201, 21-100, 21-1002, 21-201, 21-204, 09-211, 09-214.	
21-101: WEST END CORRIDOR INTERSECTION IMPROVEMENTS	I live in Blount County and am in favor of the following projects for improving safety and growth in my area of TN, as well as increased use of Greenways:	Email 37804
21-101	Mobility Plan Numbers: 09-231, 13-214, 13-215, 13-216, 13-218, 09-216, 09-644, 09-653, 17-202, 17-201, 18-202, 19-201, 21-100, 21-1002, 21-201, 21-204, 09-211, 09-214.	

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
21-200: JEFFRIES HOLLOW RD RECONSTRUCTION	Another narrow two lane road that carries a lot of traffic to and from Sevier County.	Wikimaps 37804
21-200	Not sure what kind of reconstruction is needed on this section, but I know traffic is increasing along it. The part of Jeffries Hollow that worries me in the intersection with Chapman Highway, in Sevier County. That is a dangerous place! Could an interchange be built there?	Wikimaps 37804
21-201: LAMAR ALEXANDER PKWY INTERSECTION IMPROVEMENTS	These are awkward intersections. Please fix.	Wikimaps 37804
21-202: OLD NILES FERRY RD WIDENING	Bikes and pedestrians sharing road together with motor traffic with no ability to maintain a safe space.	Wikimaps 37803
21-202	This is a project that should go forward. There has been explosive growth on or near this road. Traffic on this road has grown exponentially.	Wikimaps 37804-6104
21-203: W. BROADWAY AVE IMPROVEMENTS	Hwy 33, East Broadway Maryville/Alcoa -- needs a center turn lane.	Email 27853
21-203	This project is necessary for the safety of Blount county residents and workers because of recent development that is increasing and will continue to increase traffic. We should address existing needs before using our limited road funds for new roads.	Wikimaps 37803
21-204: WASHINGTON ST IMPROVEMENTS	These improvements are long overdue. The roadway needs to be improved for both vehicle and pedestrian traffic.	Wikimaps 37803
21-204	This is much needed for the area. Tight lanes on this stretch.	Wikimaps 37923
21-204	This has become congested and this can help.	Wikimaps 37804
21-204	I live in Blount County and am in favor of the following projects for improving safety and growth in my area of TN, as well as increased use of Greenways:	Email 37804

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
21-204	Mobility Plan Numbers: 09-231, 13-214, 13-215, 13-216, 13-218, 09-216, 09-644, 09-653, 17-202, 17-201, 18-202, 19-201, 21-100, 21-1002, 21-201, 21-204, 09-211, 09-214.	
21-205: MORGANTON RD RECONSTRUCTION	This project is necessary for the safety of Blount county residents and workers because of recent development that is increasing and will continue to increase traffic. We should address existing needs before using our limited road funds for new roads.	Wikimaps 37803
21-205	Residential and commercial growth in the west of Maryville makes this necessary.	Wikimaps 37804
21-206: MORGANTON RD RECONSTRUCTION	This project is necessary for the safety of Blount county residents and workers because of recent development that is increasing and will continue to increase traffic. We should address existing needs before using our limited road funds for new roads.	Wikimaps 37803
21-600: MAGNOLIA AVE/RUTLEDGE PIKE/ASHEVILLE HWY INTERCHANGE IMPROVEMENTS	Improvements to this area have been very lacking for many years. More and more traffic is causing slowdowns and backups at traffic lights, causing the roadways to become crowded and slow.	Wikimaps 37871
21-600	Always a mess there.	Wikimaps 37934
21-600	Bike lanes are definitely needed heading west in this area.	Wikimaps 37914
21-600	In my driving through that area, I haven't seen a lot of pedestrian traffic, or bicycles, for that matter.	Wikimaps 37918
21-600	travel this area daily. rutledge pk to asheville hwy has to connection one way. must be changed. also interstate between cherry st and 1-640 needs additional lanes	Wikimaps 37917
21-600	Any improvement in this area to make the Chilhowee Park area feel more connected to the Burlington area would be excellent. To make it feel more walkable and less like a high-speed highway, especially where Rutledge Pike branches off, would be helpful to everyone.	Wikimaps 37917

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
21-600	Bike lanes are necessary for safety.	Wikimaps 37921
21-600	Yes to bike lanes and sidewalks! Is a traffic circle possible?	Wikimaps 37914
21-600	More sidewalks everywhere!	Wikimaps 37902
21-600	This busy road needs physical separation of bike lanes from vehicular traffic not just paint	Wikimaps 37919
21-600	completing this project will be an economic benefit to businesses along Magnolia and in Burlington.	Wikimaps 37919
21-601: I-40 WESTBOUND INTERCHANGE AT I-275 IMPROVEMENTS	This interchange needs much improvement	Wikimaps 37921
21-601	The on ramp from service drive onto I-40 west is WAY too short and very dangerous. Something needs to be done to either extend it or move westbound traffic to the left to allow vehicles to merge onto I-40 westbound in a safe manner.	Wikimaps 37920
21-601	Always congestion here from 4PM - 6PM Mon-Fri.	Wikimaps 37771
21-601	Entrance ramp from the Henley Street Tunnel to I-40 West is way too SHORT!	Wikimaps 37920
21-602: INTERSECTION IMPROVEMENT AT BEAVER RIDGE RD AND WEST EMORY RD	Please consider a roundabout design at this intersection. It would help keep a steady flow of traffic and prevent severe backups.	Wikimaps 37931
21-602	That entire strip of road can get a little dangerous, so I think it could be a great improvement!	Wikimaps 37921

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
21-602	Due to the large number of current and in construction neighborhoods near this intersection and it's very close proximity to the elementary school, it would be hugely helpful to include sidewalks in this intersection expansion.	Wikimaps 37931
21-602	Much needed improvement. I take this road nearly every day and see the increase of traffic and the safety concerns. Honestly do not know why at least a roundabout hasn't been installed. And now many large trucks are using this road and it makes it even more dangerous.	Wikimaps 37931
21-602		
21-603: STRAWBERRY PLAINS PK WIDENING	Don't travel this area much so I don't know much other than there is now trucking/distribution expansion there and so I suspect additional road infrastructure is needed.	Wikimaps 37924
21-603	Are sidewalks and bike lanes going to be included in this widening project? Every time a road is altered, sidewalks should be added to promote more active lifestyles within the community. I live in this area and would love to be able to walk/bike to places in my community rather than drive because I don't feel as though it is safe.	Wikimaps 37914
21-603		
21-603	Also, Pine Grove Road/Hammer Road seems to be serving as a cut through to John Sevier from Strawberry Plains and visa versa. How will this road widening affect traffic on surrounding roads like Pine Grove?	
21-604: TAZEWELL PK AND FAIRVIEW RD INTERSECTION REALIGNMENT	This should help somewhat but these are still two-lane roads that carry a tremendous amount of traffic and the source of a lot of accidents.	Wikimaps 37924
21-604	Tazewell Pk definitely benefits from turn lanes at busy intersections!	Wikimaps 37918
21-604	This is very important. The traffic through this road is highly dangerous without these improvements.	Wikimaps 37716
21-604	I live half a mile from this intersection. It's incredibly dangerous.	Wikimaps 37721
21-604	This was a good improvement but will not address the additional traffic to be added to Thompson School Lane as the Community grows with additional developments. The roads needs to be widened to accommodate the extra traffic, not just at the light.	Wikimaps 37721
21-604		

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
21-604	When there is an accident on any of these roads, traffic is locked down, sometimes for hours. Having 4 lanes would alleviate that and would decrease the number of accidents on the two lane roads.	
21-604	There are wrecks here all the time! It is extremely dangerous.	Wikimaps 37918
21-604	Fairview should also be widened or otherwise improved from Tazewell Pike to E Emory to support additional traffic already using the road after the Thompson School realignment.	Wikimaps 37918
21-604	Intersection design should prioritize safety of pedestrian crossings	Wikimaps 37919
21-605: JAMES WHITE PKWY CORRIDOR IMPROVEMENTS	Please add sidewalks and sharrows to all of Sevier Ave from Anita to Lancaster! The sidewalks start and stop along that entire stretch so simply infilling along the way where possible would be a great start.	Wikimaps 37920
21-605	This is decent as-is, but there are gaps in cyclist and pedestrian protection right at the busiest intersection with the on/off ramps for James White.	Wikimaps 37915
21-605	Please retain bike-friendly attributes. Opportunity to eliminate railroad tracks?	Wikimaps 37920
21-605	This section of roadway should be improved for vehicles. As it is now, it is often unsafe to use in a vehicle and should not encourage bike or pedestrians given the safety considerations.	Wikimaps 37920
21-605	Leave James White Parkway alone.	Wikimaps 37920
21-605	Love it.	Wikimaps 37920
21-605	I greatly support the addition this and other access for bikers and pedestrians. I am glad this route is being considered. In general, I encourage the addition of bike lanes, widened shoulders, adjacent greenways and/ or sidewalks where possible. I believe that increasing interconnectivity of greenways/sidewalks and wide (bikeable) roadways/ bridges will greatly benefit our community in both the short and long term.	Wikimaps 37931
21-605	Thank you for reading this and considering my input.	

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
21-605	This is a "must-do" project in addition to the new park being built. This will help accommodate the additional pedestrians and cyclist coming from north of the river to visit the urban wilderness areas of South Knoxville.	Wikimaps 37920
21-605	I agree this needs to be completed in a timely manner to expand on the urban wilderness areas and access to and from them.	Wikimaps 37920
21-605	Hillwood is a safety concern for all involved and should be addressed.	Wikimaps 37920
21-605	Safety Hazard for all that needs addressed	Wikimaps 37920
21-605	Already ruined Moody. There are never any bikes on this road anyway.	Wikimaps 37920
21-606: JAMES WHITE PKWY ROADWAY IMPROVEMENTS	I love this plan. Taking the overbuilt, underutilized infrastructure and turning into multi-modal transportation for both recreation and non-vehicular commuting is great. This is going to be an amazing asset to South Knoxville and Knoxville in general.	Wikimaps 37920
21-606	why does state spend money on building roads, just so knoxville can reduce the size of them????	Wikimaps 37917
21-606	Great idea to expand bike capability on these corridors. Wonderful complement to the Gateway	Wikimaps 37920
21-606	This limits capacity for a bridge that is one of three that provides access to and from South Knoxville into Downtown and to points beyond. Given the impacts of bridge work as facilities age, it seems short sided to eliminate capacity of this bridge.	Wikimaps 37920
21-606	I travel this road every day, and there is plenty or room for a safe (and hopefully protected) bike/pedestrian lane	Wikimaps 37920
21-606	With the construction of the new park at the end of James White this is the perfect opportunity to cut down on unused lanes for this road and turn them into green space and public use tracks for walking and riding.	Wikimaps 37912

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
21-606	I greatly support the addition this and other access for bikers and pedestrians. I am glad this route is being considered. In general, I encourage the addition of bike lanes, widened shoulders, adjacent greenways and/ or sidewalks where possible. I believe that increasing interconnectivity of greenways/sidewalks and wide (bikeable) roadways/ bridges will greatly benefit our community in both the short and long term.	Wikimaps 37931
21-606	Thank you for reading this and considering my input.	
21-606	YES	Wikimaps 37919
21-606	Please construct this critical bike/ped connection ASAP- it is a missing link for the bike network	Wikimaps 37919
21-606	Leave the Parkway alone. Use Cottrell for Bikes!	Wikimaps 37920
21-701: BIKE PARKING PROGRAM	I work downtown during non covid times. I would really appreciate bike parking downtown.	Wikimaps 37914
21-701	Anything to encourage more bike riding and less cars.	Wikimaps 37920
21-701	I'm a big fan of increased bike parking! This is very helpful for me to be an active consumer in Downtown.	Wikimaps 37917
21-701	Provides needed safety infrastructure.	Wikimaps 37777
21-800: SOUTH KNOXVILLE BRIDGE GREENWAY	This is pretty sorely needed. I and other cyclists I see on this road have a pretty wide path due to the pull-over lane, but again, no striping or further protection from cars, which go ~50mph on this stretch. It's an unavoidable connector with no nearby, safe alternative paths.	Wikimaps 37915
21-800	Another great idea linking the north areas to the urban wilderness in South Knoxville. This is also a "Must-Do" project.	Wikimaps 37920
21-800	I marked like, but the devil is in the details. Needs to be, as it is for cars, on both sides of the bridge.	Wikimaps 37919

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
21-800	If it takes away any current lanes, then dislike as only a few ways over the river and when bridges need repair or growth occurs, you have lost the needed lane. There is plenty of room to work without losing any lanes. Also currently safe division of facing traffic.	Wikimaps 37920
21-801: GIBBS SCHOOLS PEDESTRIAN BRIDGE	This is sorely needed, but we also need sidewalks and crosswalks in and around the Harbison Crossroads area. There are many subdivisions located inside the parental responsibility zone near the schools, but little or no connectivity or sidewalks so that students could walk to school.	Wikimaps 37924
21-801	I have personally seen video of children trying to cross the street to get to the other school, and it is scary and concerning. Pedestrian bridge is needed.	Wikimaps 37721
21-801	There should be bike routes throughout the Gibs community.	Wikimaps 37721
21-801	This would be wonderful for students!	Wikimaps 37918
21-801	This is NEEDED, especially for kids who walk to school. Even better would be sidewalks between all 3 schools.	Wikimaps 37721
21-801	Also need additional sidewalks to connect neighborhoods in the PRZ for each school to the school campuses.	Wikimaps 37918
21-801	Improved access to schools for students, staff, and community members.	Wikimaps 37777
21-801	A safe pedestrian crossing is needed to connect these schools that are located on a busy, fast road	Wikimaps 37919
21-802: ADAIR TO OLD BROADWAY CONNECTION	Great idea. convince Food City and Biglot and panera to continue along the creek.	Wikimaps 37918
GENERAL COMMENTS AND/OR NEW PROJECT IDEA	Please look at the Intersection of Boyds Creek and Old Knoxville Hwy and ESPECIALLY Boyds Creek and Hodges Bend. Thank you!	Email -

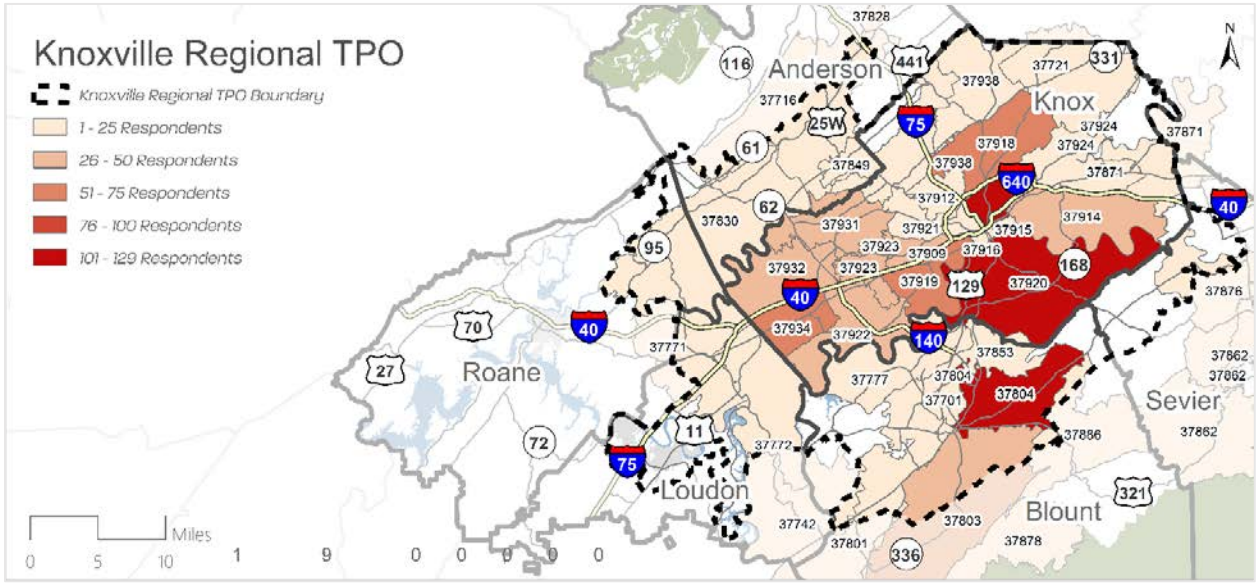
PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
GENERAL COMMENTS AND/OR NEW PROJECT IDEA		Zip NA
GENERAL COMMENTS AND/OR NEW PROJECT IDEA	Once again, I am dismayed that there is little to no regional transportation planning; no rail, no bus, no park-and-rides or any other alternative to the one-person-in-one-vehicle mode.	Email -
GENERAL COMMENTS AND/OR NEW PROJECT IDEA		Zip NA
GENERAL COMMENTS AND/OR NEW PROJECT IDEA	Whatever you called the modernization of traffic signaling and increasing the flow of traffic is very needed along our major thoroughfares.	Email -
GENERAL COMMENTS AND/OR NEW PROJECT IDEA		Zip NA
GENERAL COMMENTS AND/OR NEW PROJECT IDEA	As far as Knoxville traffic, I-40/I-75 is a challenge. Hopefully there are plans for that.	Email 37853
GENERAL COMMENTS AND/OR NEW PROJECT IDEA	Many other improvements are needed—on Montvale Road, Morganton Road, and awkward or unsafe intersections all over the map.	Email 37084
GENERAL COMMENTS AND/OR NEW PROJECT IDEA	In summary, please repair, improve, and maintain the roads we already have, before you consider laying down new asphalt along a route where a highway is not needed.	Email 37084
GENERAL COMMENTS AND/OR NEW PROJECT IDEA	On behalf of the University of Tennessee (UT), we would like to submit for consideration a project to improve the intersection of Melrose Place and Lake Avenue (see attached map). We understand this project would involve a partnership between the city of Knoxville and UT since this area involves both parties. Improving this intersection would greatly enhance both vehicular and pedestrian safety and flow so we hope this will be seriously considered.	Email 37996

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
GENERAL COMMENTS AND/OR NEW PROJECT IDEA	There should be transit projects bringing transit to the Rocky Hill neighborhood, where there has been none since the 90 was discontinued. Kat says 80 % of Knoxville residents live within half a mile from a Kat stop, but I am well outside that range.	Email -
GENERAL COMMENTS AND/OR NEW PROJECT IDEA		Zip NA
GENERAL COMMENTS AND/OR NEW PROJECT IDEA	More generally the lion's share of the projects are road projects. When are you going to start taking climate change seriously by investing resources in modes that do not involve cars? They are a major source of green house emissions that must be dealt with.	Email -
GENERAL COMMENTS AND/OR NEW PROJECT IDEA		Zip NA
GENERAL COMMENTS AND/OR NEW PROJECT IDEA	The intersection of Hickory Creek Road & Palestine Lane & Watt Road needs to be realigned and signaled due to increased semi-truck traffic based on new trucking terminals being approved and built. GPS apps are routing people through Hickory Creek Road when I 40/75 backs up. Please consider adding this project.	Email -
GENERAL COMMENTS AND/OR NEW PROJECT IDEA		Zip NA
GENERAL COMMENTS AND/OR NEW PROJECT IDEA	I am interested in the Anita Avenue/Hillwood Drive project at the south end of the South Knoxville bridge. The road is heavily traveled and extremely narrow with ditches on both sides. The city has had plans to straighten it and connect with Island Home Avenue at South Haven for more than a decade. The road is dangerous and funds should be spent to fix the problem (either straighten it or widen it).	Email -
GENERAL COMMENTS AND/OR NEW PROJECT IDEA		Zip NA
GENERAL COMMENTS AND/OR NEW PROJECT IDEA	LIKE PROJECTS	Email

PROJECT NUMBER AND NAME	COMMENT	SOURCE & ZIP CODE
GENERAL COMMENTS AND/OR NEW PROJECT IDEA	Selection of these like projects is based on 1) their location in the most needed sectors of the area, 2) the need for safety improvements, and 3) capacity / route enhancement without inducing traffic growth.	37742
GENERAL COMMENTS AND/OR NEW PROJECT IDEA	By far, improvements are most needed on the local level (not regional), within the cities where past origination/destination studies have shown that the vast majority of trips are short neighborhood to store/errand trips. Maryville traffic is always incredibly congested, especially the western sector (Alcoa by-pass terminus/321/411). Just widening roads (129 Bypass Hall Rd to 321 17-202) does not fix the problems. That just gets people faster to a bottleneck. The short inner city connectors such as Home Ave (09-220), Robert C Jackson (13-203,09-202) and Harvest Ln (13-208) extensions are helpful.	
GENERAL COMMENTS AND/OR NEW PROJECT IDEA	DISAPPROVED PROJECTS	Email
GENERAL COMMENTS AND/OR NEW PROJECT IDEA	09-644 Pellissippi Parkway Extension- We do not need any further growth- and sprawl-inducing, forty-year-old concept, 4-lane interstate design monuments (Pellissippi Parkway Extension 09-644). Blount countians do not want it and it's a waste of $100 million that could go a long way in funding other (FhwA, state) needed improvements.	37742
GENERAL COMMENTS AND/OR NEW PROJECT IDEA	09-213 Old Niles Ferry Maryville limits to Calderwood – This is one of the few remaining rural character areas of the county. I don't think residents of the area want another widened road through the landscape. It can be kept low impact just like two-lane West Broadway.	
GENERAL COMMENTS AND/OR NEW PROJECT IDEA	09-239, 09-249 Montvale Rd projects past Maryville city limits – Widening is not necessary and residents do not want it. This and Old Niles Ferry would fit under growth inducing projects.	
GENERAL COMMENTS AND/OR NEW PROJECT IDEA	09-229, 21-205, 206 Morganton Rd widening, shoulders from William Blount Dr. to Loudon County line – This road does not need improvements so people can drive even faster. It needs better traffic enforcement.	
GENERAL COMMENTS AND/OR NEW PROJECT IDEA	Funding for increased traffic enforcement should be a priority.	

Respondents by Zip Code

ZIP CODE	COUNT	ZIP CODE	COUNT	ZIP CODE	COUNT	ZIP CODE	COUNT
37920	129	37909	31	37772	12	37915	4
37917	123	37931	29	37876	9	37849	3
37804	121	37886	27	37663	7	37067	2
37934	66	37853	23	37902	7	37828	2
37918	64	37716	21	37912	6	37878	2
37919	62	37777	18	37843	5	37996	2
37923	45	37801	17	37916	5	37209	1
37932	40	37721	16	37924	5	37742	1
37803	35	37921	16	37701	4	37875	1
37922	35	37830	14	37771	4	37894	1
37914	32	37862	13	37871	4	37938	1



TPO Board Meetings

Knoxville Regional TPO Board Meeting: October 28, 2020

- TPO staff provided an update on Mobility 2045, including an overview of the upcoming major milestones to ensure plan completion. As a follow up to the call for projects, TPO Staff provided an initial assessment of the financial impact of all the projects submitted by TPO partners, highlighting the lack of local STBG (L-STBG) revenues available to fund all requested projects.

Knoxville Regional TPO Board Meeting: November 25, 2020

- TPO staff provided a Title VI Report, containing collection of information, maps, tables, forms, and exhibits to be submitted to FTA to demonstrate the TPO is compliant with the requirements outlined in FTA Circular 4702.1B. The Title VI Report also describes outreach efforts the TPO undertook in trying to engage transportation disadvantaged communities in the Mobility Plan 2045 planning process.
- Round 2 of public input to the Mobility Plan closed on October 18, 2020 and TPO staff provided a brief overview of the results of this round of community input.

Round 2 Summary

Round 2 of the Mobility Plan outreach strategy focused on the development of the project list with applications from the TPO's member jurisdictions and follow up engagement of the public and other stakeholders on the candidate projects. This round of outreach accomplished the following:

- Revising the project application process so that the TPO's partners could 'roll over' projects previously submitted as part of Mobility Plan 2040
- Providing a map and list of project details for over 150 candidate projects for public comment
- Summarizing the open-ended feedback collected on candidate projects and presenting to the TPO Board
- Providing detailed project comments to the TPO's member jurisdictions for future consideration

After identifying a lack of diverse representation in the previous round, outreach conducted in Round 2 included substantial targeted outreach efforts towards traditionally underrepresented populations in

the region. Coordinating with the Knoxville Office of Neighborhood Empowerment, TPO staff utilized several social media sites to advertise input opportunities and incentivized participants with gift card drawings.

ROUND 3 ENGAGEMENT

Strategy Overview

The third round of public engagement for Mobility Plan 2045 focused on the review of the draft plan document, including the fiscally constrained project list. Beginning on March 8, 2021, this third set of input opportunities allowed for public input on the document, which was available online for 30 days for public review and comment per the TPO's Public Outreach Plan. Concurrent with this review was the review by federal and state planning partners. Table F-6 summarizes all outreach efforts in Round 3.

Table F-6. Round 3 Engagement

	PURPOSE
TARGETED OUTREACH EFFORTS	▶ **Video:** Created to use as promotion – used for Facebook ads, shared on YouTube channel, used on website and in email newsletters ▶ **News article**: TPO and Planning websites ▶ **Press release**: draft plan and map available, virtual events scheduled ▶ **Newsletters**: TPO, Planning, Smart Trips, Active Knox, I Bike Knox newsletters; shared with (and included in) City's Office of Neighborhood Empowerment weekly newsletter ▶ **Social media**: Used to share a video advertisement about the plan; shared plan development updates; utilized Facebook events to promote meetings and input opportunities; ran paid advertisements on Facebook to reach > 1100 individuals in targeted zip code communities ▶ **Emails to stakeholder groups**: Used to request comments on draft list of projects on interactive map; requested that recipients share with underrepresented groups and other constituents in their jurisdictions ▶ **County Commissioner newsletter**: Elected officials distributed plan and engagement information to constituents
SPANISH DOCUMENTS	▶ The executive summary of Mobility 2045 and a short synapsis of each chapter were translated into Spanish and available upon request.
LIVE MEETINGS	▶ **Transportation Tuesdays (3):** sessions focused on topical sections of the plan, were held on March 9th, 16th, and 23rd**:** meetings garnered 188 registered participants ▶ **Virtual Town Hall (2):** sessions covered projects by county and were held in the afternoon and evening of March 25th ▶ **Technical Committee and Executive Board meetings:** presentation on the plan and opportunity for public comment included as part of the March TC and EB meetings ▶ **Additional Meetings:** TPO staff presented information to the Blount County Chamber Partnership Board of Directors on April 12th and to the Oak Ridge Planning Commission on April 22nd

AGENCY REVIEW

- A copy of the draft Mobility 2045 was sent to partner state and federal agencies for review.

Targeted Outreach Efforts

Online News Article

Planning
KNOXVILLE | KNOX COUNTY

Input Opportunities for Mobility Plan 2045

March 5, 2021 | More News

Mobility Plan 2045 is the region's long-range transportation plan that will guide investments and shape the future of our region for the next 25 years.

The plan is updated every four years to account for changes in community and regional priorities, technology, project costs, and available funding. It allows federal money to be used for transportation projects and ensures that we're making the best long-term decisions for our residents, employers, and visitors.

The plan tries to determine the best ways to continue building prosperity and maintaining a high quality of life for all those in our region. To do this, we must find ways to make our transportation system safer and more efficient, improve the health of our residents and reduce air pollution, improve links among transportation, infrastructure and development, and provide equal access to benefits and opportunities. Digging into these issues allows us to prioritize transportation projects that accommodate all modes with a variety of different project types.

Last fall, local jurisdictions submitted applications for all potential transportation projects to be included in Mobility Plan 2045. Projects were selected and prioritized after consideration of both technical analysis and public input.

The TPO has released a draft of Mobility Plan 2045 and an accompanying project list for a final round of community input. Comments will be accepted through April 7.

The draft plan is available at knoxmobility.org and the interactive map can be found at maps.knoxmpc.org/app/mobility. The map allows users to zoom in to any county within the TPO planning area and filter projects by mode to see those directly affecting them. It also allows users to submit comments on projects straight from the map.

To provide more information about the draft plan, and to give community members an opportunity to speak to staff about specific topics and projects, a series of virtual meetings has been scheduled throughout the month of March. Transportation Tuesdays will be hosted during lunch for three Tuesdays in the month, and each will focus on a different theme relating to the plan. There will also be two Virtual Town Hall events held at the end of the month. These will allow participants to move into breakout rooms organized by county to find out more about specific projects that are important to them. Finally, the regularly scheduled TPO Technical Committee and Executive Board Meetings will be open to the public.

Transportation Tuesdays:
Tuesday, March 9, 12:00 p.m. – Mobility Plan 2045 Overview
Tuesday, March 16, 12:00 p.m. – Bicycle, Pedestrian, and Transit
Tuesday, March 23, 12:00 p.m. – Streets and Highways

Virtual Town Halls:
Thursday, March 25, 12:00 p.m. – County specific project overview
Thursday, March 25, 5:00 p.m. – County specific project overview

Regularly Scheduled Meetings:
Tuesday, March 9, 9:00 a.m. – TPO Technical Committee Meeting
Wednesday, March 24, 9:00 a.m. – TPO Executive Board Meeting

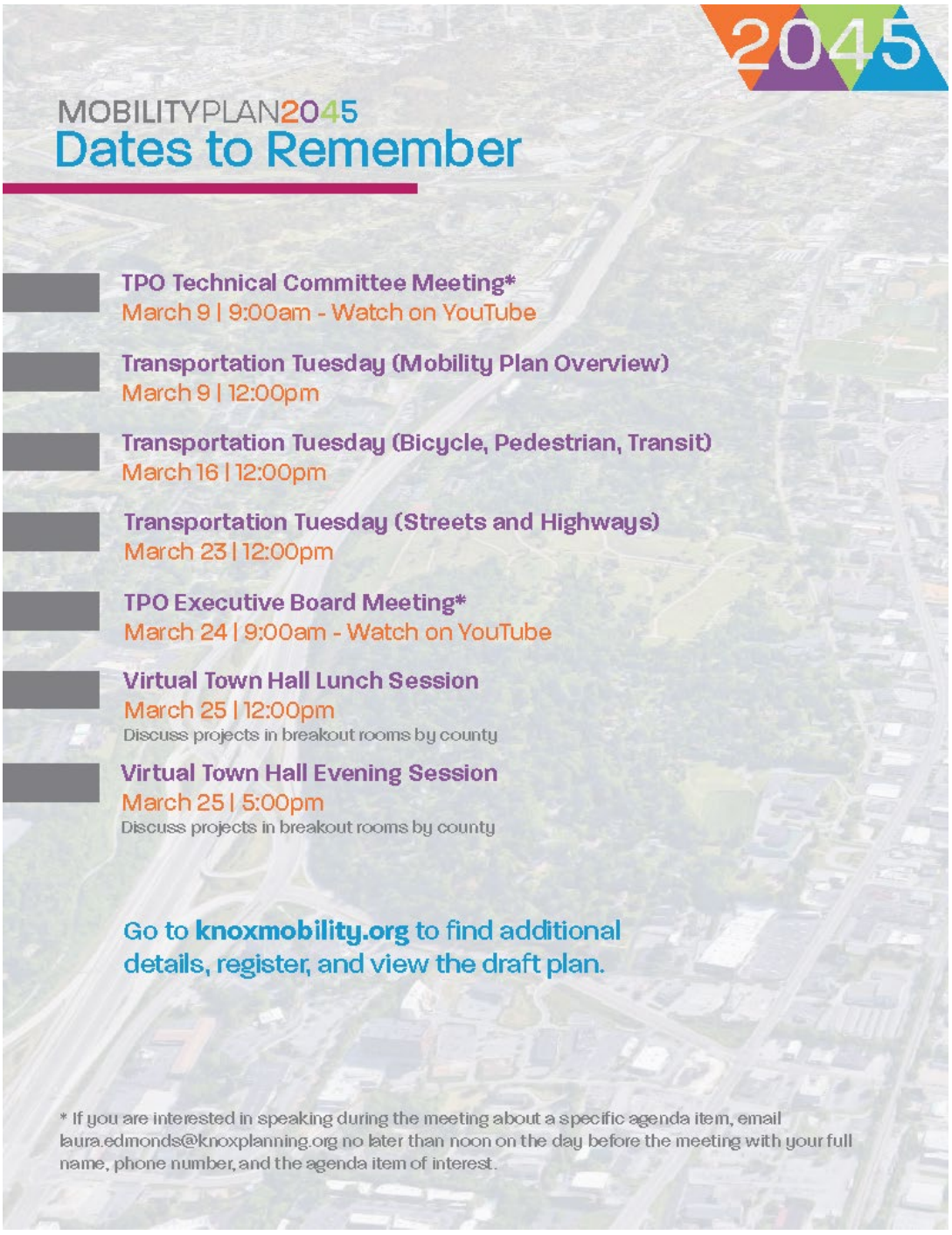
Registration links are available at knoxmobility.org.

Community input helped TPO staff determine the final project list, and staff wants to ensure residents are aware of the final steps of adopting the plan. Once the plan is adopted by the Executive Board, many of these projects will start to move through the development process, but that does not mean that residents have missed their opportunity to make a difference. It is important that community members stay engaged throughout the life a project because their continued input can have a big impact in shaping details of how a project unfolds.

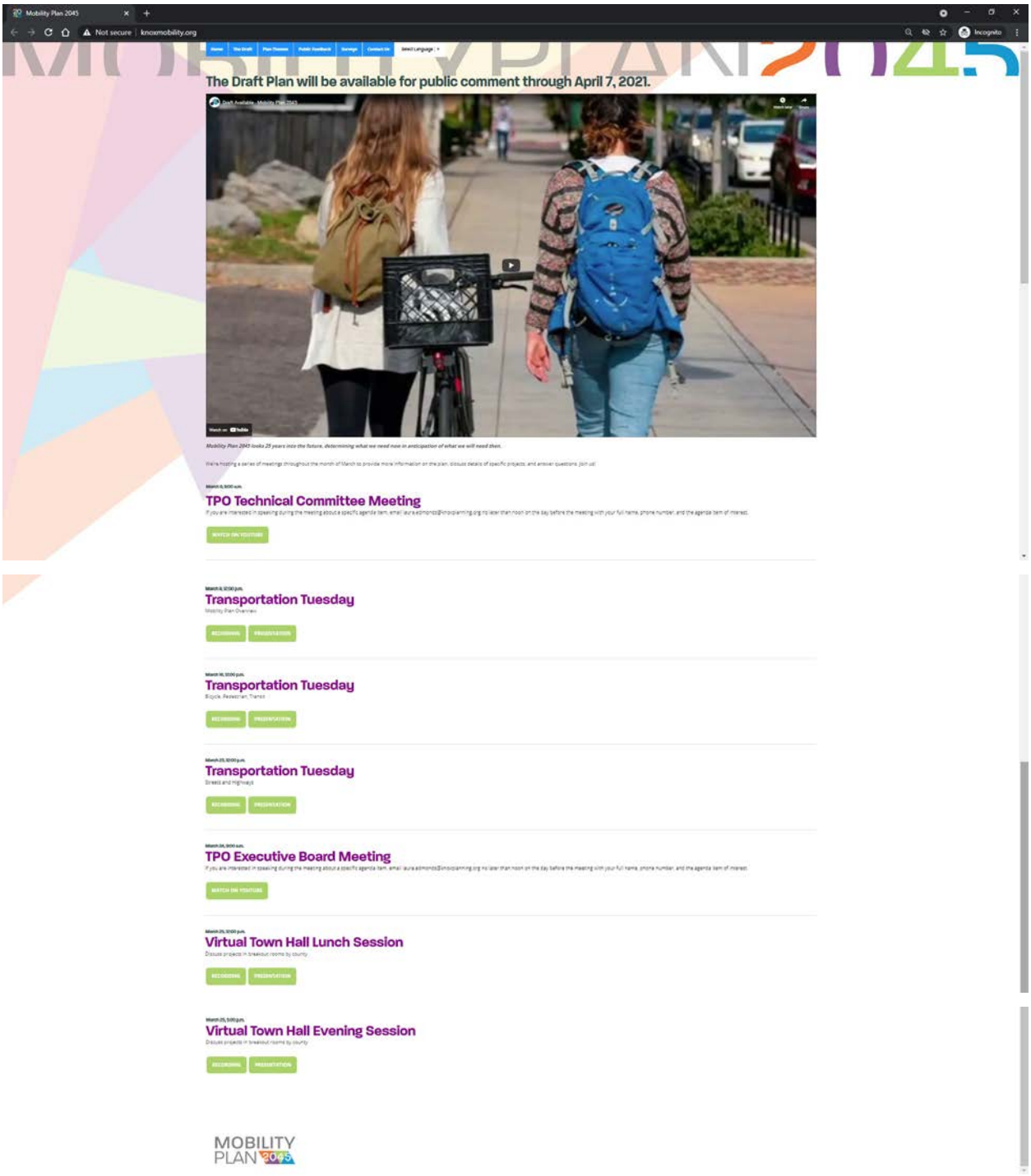
Newsletter

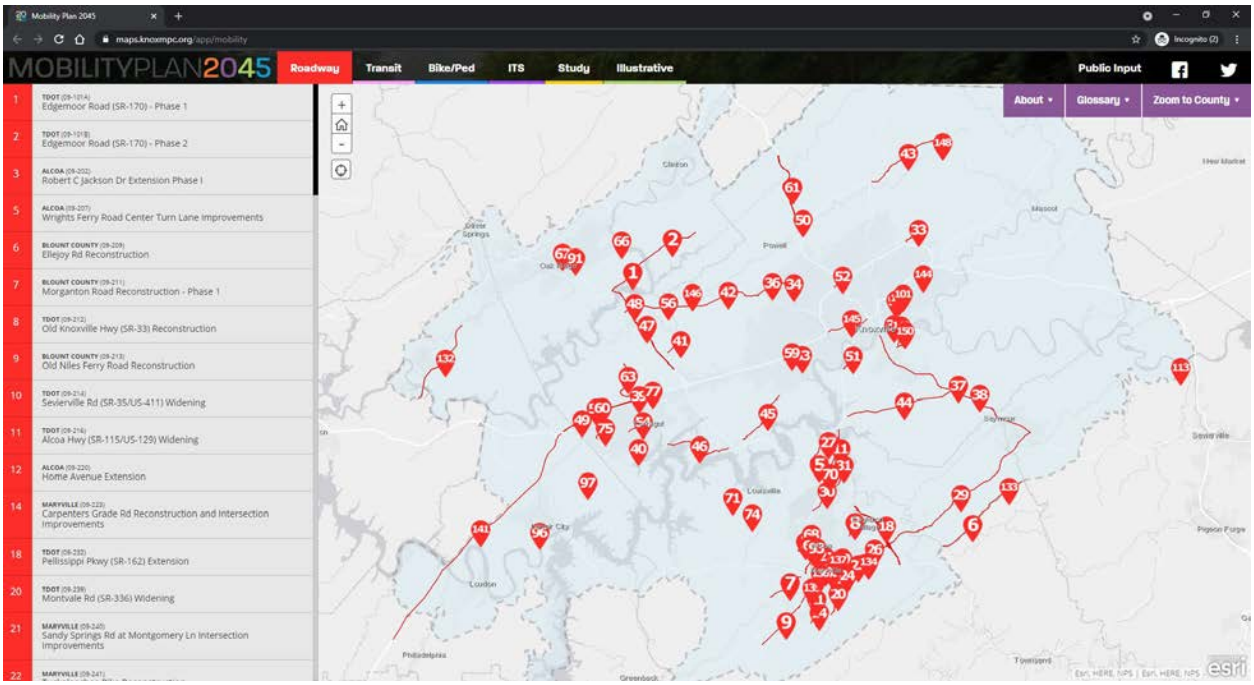
Knoxville-Knox County Planning
City-County Building | Suite 403 | 400 Main Street | Knoxville, Tennessee 37902

Meeting Flyer



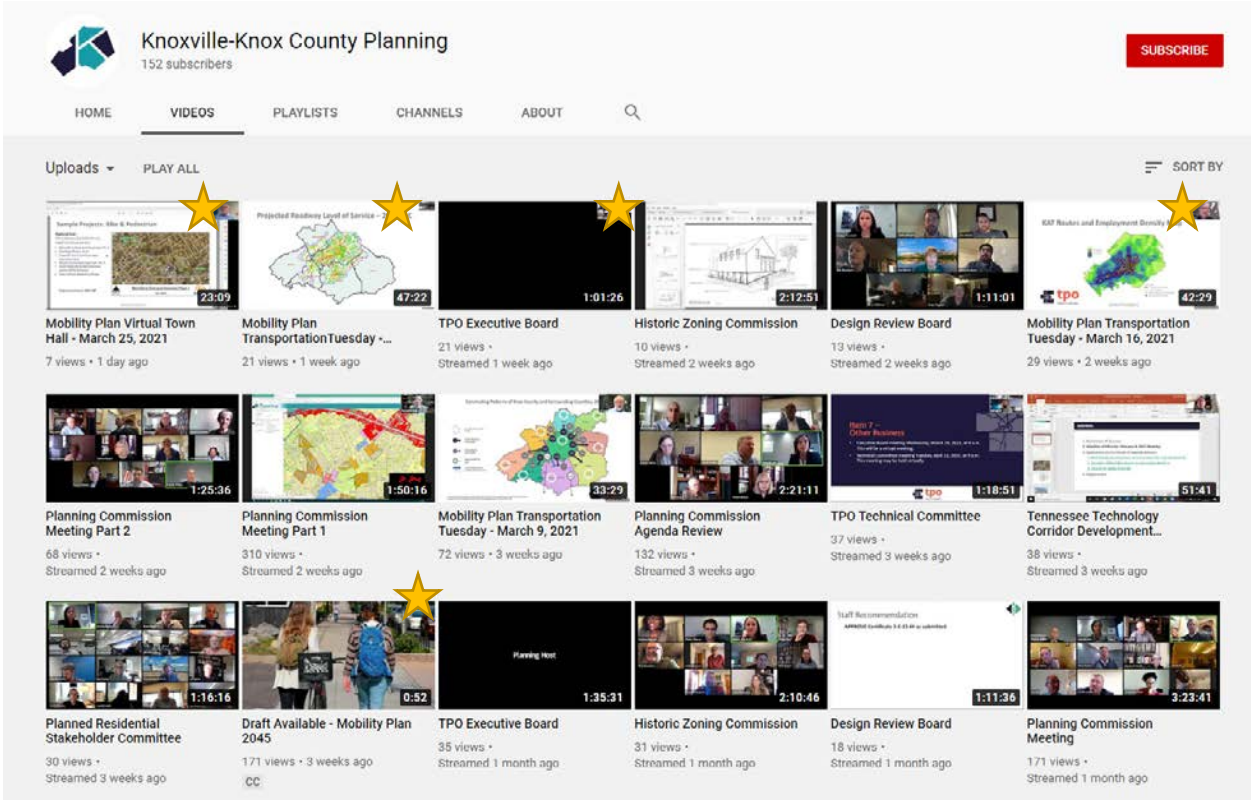
Website Video and Comment





Social Media Postings

YouTube



Facebook

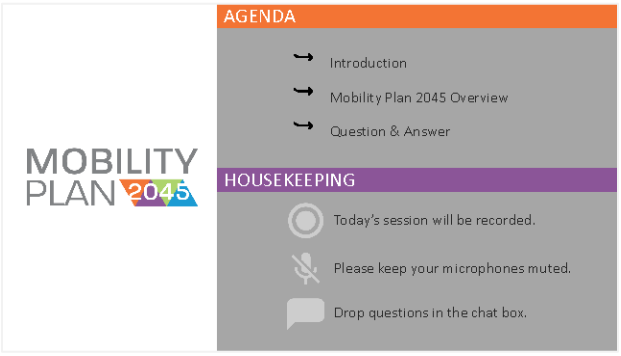
Community Partner Outreach List

- Centro Hispano
- Urban League
- Beck Cultural Exchange Center
- Socially Equal Energy Efficient Development
- University of Tennessee
- YWCA
- Blount County CAA
- Justice Knox
- Black Girls Do Bike
- NAACP
- Sunrise
- Big Brothers Big Sisters
- YMCA
- Appalachian Mountain Bike Club
- Mid-East Community Action Agency
- Alliance House Community Coalition

Meeting Presentations

Transportation Tuesdays

March 9: Plan Overview



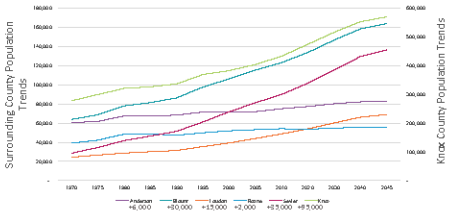
Chapter 1: Regional Overview

Chapter 1 includes an overview of the existing and future conditions of the region. Data is presented on population and employment, land use and development, and the existing multimodal transportation system.

Growth | Development | Transportation

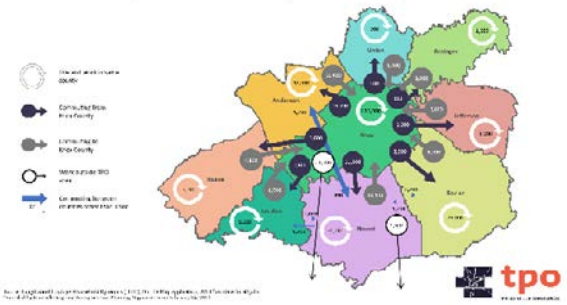
MOBILITYPLAN2045

Regional Growth Projections



MOBILITYPLAN2045

Commuting Patterns of Knox County and Surrounding Counties, 2018



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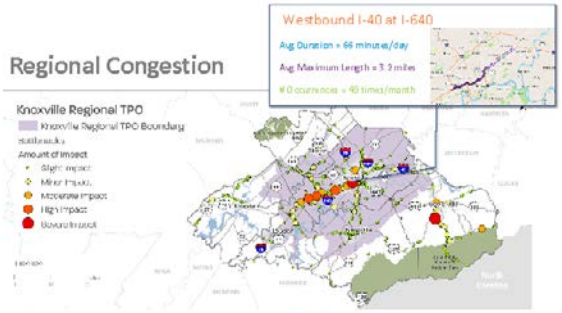
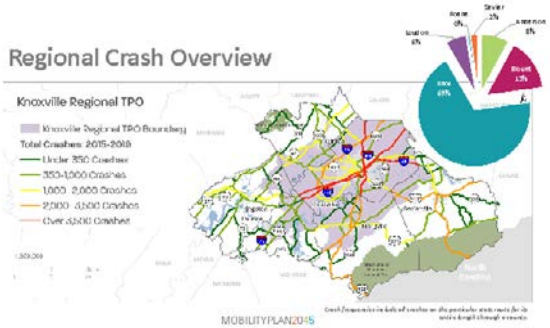
Regional Congestion



MOBILITYPLAN2045

Regional Crash Overview



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Regional Overview of Active Transportation

County	Miles of Sidewalks	Percent of Streets with Sidewalks	Percent of Region's Sidewalks
Anderson	137	16%	13%
Blount	116	8%	11%
Knox	597	19%	56%
Loudon	43	9%	4%
Roane	63	6%	6%
Sevier	114	8%	10%
Total Region	1,070	12%	--

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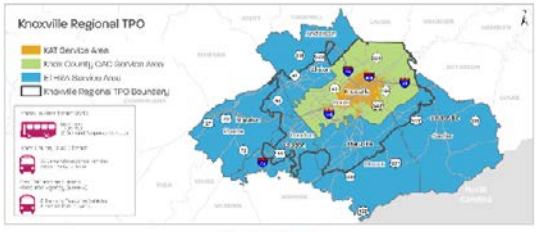
Regional Overview of Active Transportation

MOBILITYPLAN2045

Regional Transit Services



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Chapter 2: Transportation Goals, Strategies, & Performance Measures

Chapter 2 documents the regional goals, objectives, and performance measures. Data on performance measures is grouped by regional goal and presented for both federally required measures as well as other metrics that the TPO can track.

Goals | Targets | Trends

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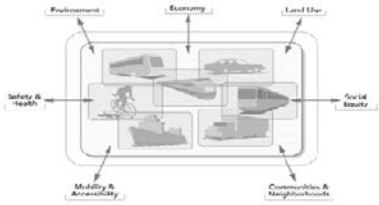
Transportation Planning is about more than Transportation



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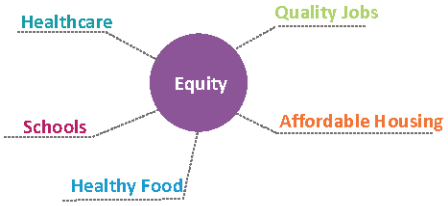
Benefits of Transportation



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Performance Measures

- Condition of Roadway and Bridges
- Age of Transit Vehicles
- Annual Number of Vehicle Crashes and Fatalities
- Interstate Travel Time Reliability
- Transit Ridership
- Vehicle Miles Traveled

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Chapter 3: Summary of Planned Investments

Chapter 3 documents the investment plan for the region's transportation system. Data on revenue sources, project scoring, and resulting fiscal constraint is summarized with maps of the fiscally constrained projects displayed by county.

Revenues | Scoring | Projects

MOBILITYPLAN2045

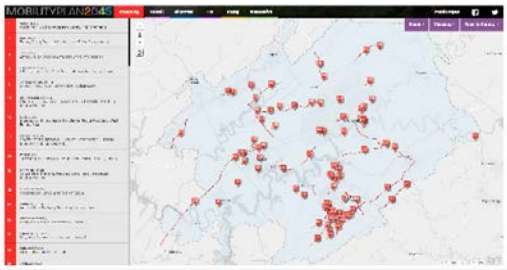
Financial Summary

- Over 133 transportation projects including roadway, bicycle and pedestrian facilities for with an investment of $3.2 Billion
- Investment of $1.2 Billion in transit operating and capital projects
- Total investment of $4.4 Billion over 25 years

MOBILITYPLAN2045

Mobility Plan Interactive Project Map

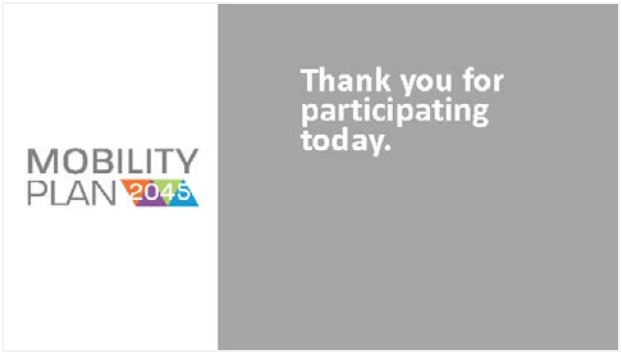
https://maps.knoxmpc.org/app/mobility



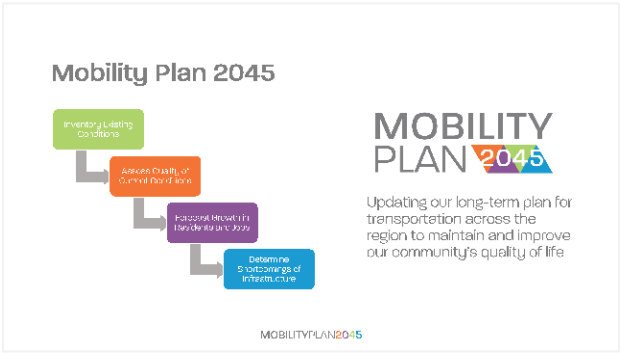
Appendices

MOBILITYPLAN2045

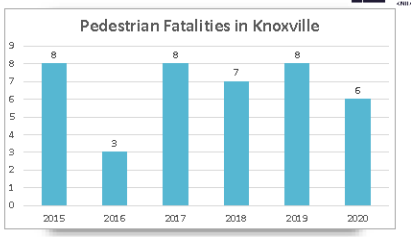

Questions?
Opportunities for Input
TRANSPORTATION TUESDAYS
MARCH 9 (12:00 PM)
MOBILITY PLAN 2045 GENERAL OVERVIEW
MARCH 16 (12:00 PM)
BICYCLE, PEDESTRIAN, TRANSIT
MARCH 23 (12:00 PM)
STREETS AND HIGHWAYS
VIRTUAL TOWN HALLS
MARCH 25 (12:00 PM)
BREAKOUT ROOMS BY COUNTY
MARCH 25 (5:00 PM)
BREAKOUT ROOMS BY COUNTY
STANDING MEETINGS
MARCH 9 (9:00 AM)
TPO TECHNICAL COMMITTEE MEETING
MARCH 24 (9:00 AM)
TPO EXECUTIVE BOARD MEETING
MOBILITY PLAN 2045
knoxmobility.org | mobility@knoxplanning.org | 865-215-3928


MOBILITY PLAN 2045
Thank you for participating today.

March 16: Bicycle, Pedestrian, and Transit



Walking & Bicycling Safety



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Building Active Transportation Projects

Most sidewalks, greenways & bikeways are built through local funding and local policies.

Local Taxes

Complete Streets Policies

Projects

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Regional Transit Service

MOBILITYPLAN2045

Types of Public Transit Services in the Knoxville Urban Area

Fixed Route

Demand Response

Volunteer Transit Services

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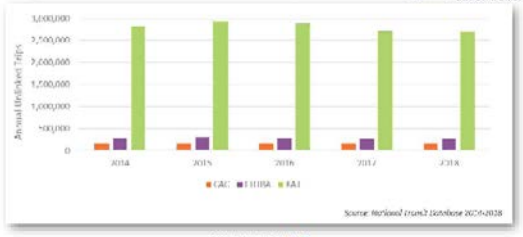
Region's Transit Ridership



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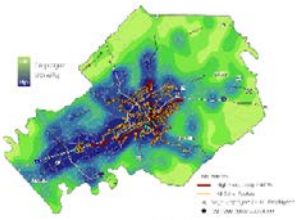
KAT Routes and Employment Density Map



MOBILITYPLAN2045

Transit Mobility Plan Operating Financial Implications

- For operating funding, over the life of the Plan, the region can provide the same level of public transit services provided today.
- Operating funding projected over the life of the Plan – $1.2 billion.
- **Sources: Federal (18.2%), State (20.2%), Local (48.3%), Fares/Other (13.3%)**
- If we want to expand transit services will need to find new funding sources – induding increased funding from the region's local governments.

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Transit Mobility Plan Capital Financial Implications

- For capital funding the region can stay in a state of good repair by replacing transit vehicles:
  - 130 large buses,
  - 20 trolleys,
  - 301 mini-buses (cutaways),
  - 58 vans/sedans, and
  - 77 bus retrofits.


- Includes moving to a more diverse, alternative-powered fleet.



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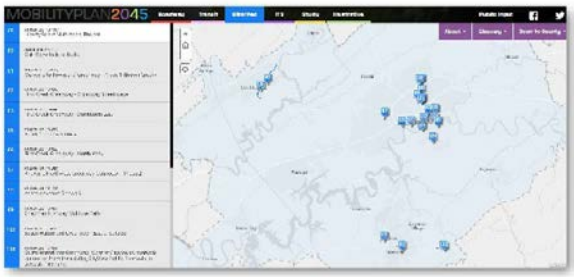
The TPO Promotes & Advocates for Other Transit Related Services

- Carpooling & Vanpooling – Smart Trips – knoxsmarttrips.org
- Tennessee Vans
- Volunteer Assisted Transportation Programs
- University of Tennessee – The T
- Human Service Agencies, Senior Centers
- Non-profits
- Private Services – Medical, Taxis, Uber & Lyft

MOBILITYPLAN2045

Mobility Plan Interactive Project Map

https://maps.knoxmpc.org/app/mobility



Questions?

Additional Opportunities for Input

TRANSPORTATION TUESDAYS	VIRTUAL TOWN HALLS	STANDING MEETINGS
MARCH 23 (NOON)	MARCH 25 (NOON)	MARCH 9 (9 AM)
STREETS AND HIGHWAYS	BREAKOUT ROOMS BY COUNTY	TPO TECHNICAL COMMITTEE MEETING
	MARCH 25 (5 PM)	MARCH 24 (9 AM)
	BREAKOUT ROOMS BY COUNTY	TPO EXECUTIVE BOARD MEETING

MOBILITY PLAN 2045

knoxmobility.org | mobility@knoxplanning.org | 865 215 3928

MOBILITY PLAN 2045

Thank you for participating today.

March 23: Streets and Highways

MOBILITY PLAN 2045

MOBILITY PLAN 2045

AGENDA

- Introduction
- Overview of Roadway Analysis and Mobility Plan Projects
- Question & Answer

HOUSEKEEPING

- Today's session will be recorded.
- Please keep your microphones muted.
- Drop questions in the chat box.

Knoxville Regional TPO

tpo

MOBILITYPLAN2045

TPO Membership

- Counties:
  - Anderson, Blount, Knox, Loudon, and Sevier
- Cities:
  - Alcoa, Clinton, Farragut, Knoxville, Lenoir City, Loudon, Maryville, and Oak Ridge
- Partner Agencies:

KTPO TDOT TENNESSEE COUNTY HIGHWAY OFFICIALS ASSOCIATION

- Non-voting members:

U.S. Department of Transportation Federal Highway Administration

MOBILITYPLAN2045

Mobility Plan 2045 Plan Contents

1. Regional Overview
2. Transportation Goals, Strategies, and Performance Measures
3. Summary of Planned Investments

A. Appendices

MOBILITY PLAN 2045

Updating our long-term plan for transportation across the region to maintain and improve our community's quality of life

MOBILITYPLAN2045

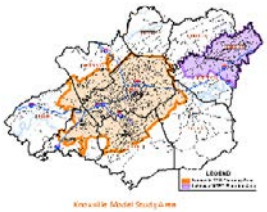
Overview of Today's Presentation

- Evaluating Transportation System Performance (Highway Side)
  - Regional Travel Demand Model
  - Archived Travel Time Data
  - Congestion Management Process (CMP)
- Project Selection Process
  - Call for Projects
  - Project Evaluation and Scoring
  - Financial Constraint – Final Project List
- Project Overview and Development Process
- Air Quality Conformity
- Performance Measures

MOBILITYPLAN2045

TPO Regional Travel Demand Model

- Based on the "The 4-Step Model"
  - Trip Generation
  - Trip Distribution
  - Mode Choice
  - Traffic Assignment
- Can predict future-year travel demand under alternative scenarios such as land development patterns and transportation system investments.
- Built off of present-day travel behavior characteristics and assumed to stay the same in future.
- COVID Scenario Testing Documented in Mobility Plan



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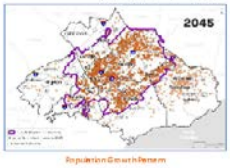
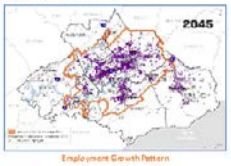
Travel Demand Model Key Inputs – Population and Employment Growth

	2018	2045	Change
Population	693,500	856,800	+163,300
Employment	400,000	550,000	+150,000

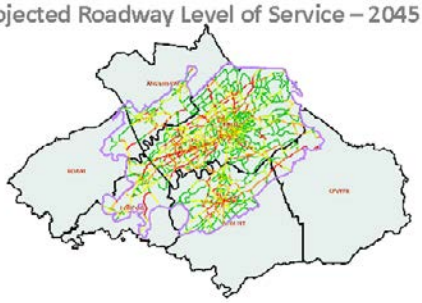




MOBILITYPLAN2045

Projected Roadway Level of Service – 2018 E+C

Projected Roadway Level of Service – 2045 E+C

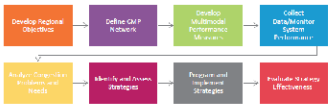


Archived Travel Time Data Analytics

Data from the "National Performance Measure Research Data Set" (NPMRDS), Provided by INRIX under contract to FHWA

Finding the Most Unreliable Roadways

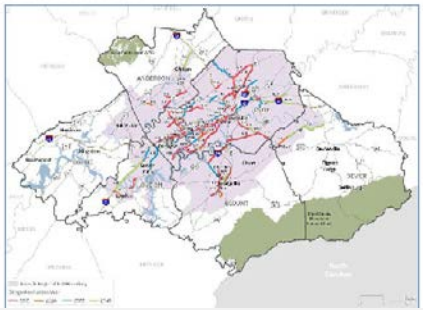
Congestion Management Process (CMP)



Congestion Mitigation Strategies:

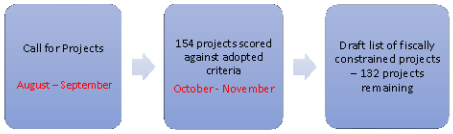
- Travel Demand Management
- Intelligent Transportation Systems (ITS)
- Transportation System Management & Operations (TSM&O)
- Public Transit Service Improvements
- Walkway and Bikeway Improvements
- Additional System Capacity

Congested Corridors



Regional Crash Overview

PROJECT SELECTION PROCESS SUMMARY



Project Selection and Scoring

- Following a project solicitation to project partners (cities, counties, eligible public transportation agencies and TDOT), candidate projects were scored against the TPO's regional mobility goals.

MOBILITYPLAN2045

Project Evaluation Framework

Projects fall into one of these categories:

- Within Community – sidewalks, traffic calming, intersection improvements

- Connect communities to region – regional transit connections, major corridor improvements, new by-pass

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Sample Projects: Major Capacity

Regional Goal:
Congestion Reduction, Economy and Freight

- Alcoa Highway (SR 115/US-129) Improvements
  - Widen one widening of existing alignment
  - Two segments on new alignment

Total Investment: $286.4M

MOBILITYPLAN2045

Sample Projects: Intelligent Transportation Systems (ITS)

Regional Goal:
Congestion Reduction

- Chapman Highway Advanced Traffic Management System (ATMS)
- Knoxville ATMS - Ph. 1
- Knoxville ATMS - Ph. 2
- Alcoa Highway ITS - Ph. 1
- Alcoa Highway ITS - Ph. 2
- I-140 ITS Expansion
- Middlebrook Pike ATMS Expansion
- U.T. Area Traffic Signal Improvements

Total Investment: $58.7M

MOBILITYPLAN2045

Sample Projects: Bike & Pedestrian

Regional Goal:
More Options, Equitable Access, Health and Environment

- Maryville to Townsend Greenway- Ph. 1
- Oak Ridge Rails to Trails
- Knoxville First Creek Greenway - Downtown East
- Blount County Greenway Trail - Ph. 1
- South Knoxville Bridge Greenway (James White Parkway)
- Gibbs Schools Pedestrian Bridge

Total Investment: $83.5M

MOBILITYPLAN2045

Sample Projects: Streetscape

Regional Goal:
More Options, Health and Environment, Equitable Access

- Magnolia Avenue Streetscape - Ph. 3
- Magnolia Avenue Streetscape - Ph. 4
- Magnolia Avenue Streetscape - Ph. 5
- Sevier Avenue – South Waterfront Roadway Improvements

Total Investment: $33.8M

MOBILITYPLAN2045

Sample Projects: Transit

Regional Goal:
More Options, Equitable Access, Congestion Reduction

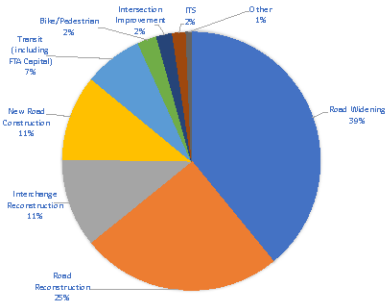
- KAT Express Transit Service - Broadway Transit Signal Enhancement
- KAT - Fixed Route Buses
- Knoxville Knox County CAC - Transit Vehicles
- Knoxville Knox County CAC - Demand Response Vehicles
- ETHRA - Transit Vehicles
- KAT - Bus Engine Overhauls

Total Investment: $47.0M

MOBILITYPLAN2045

Funding by Project Type

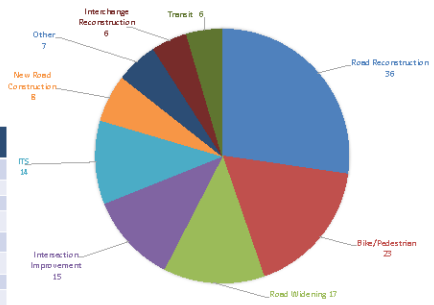
Project Type	Total Cost (YOE)
Road Widening	$1,349,019,559
Road Reconstruction	$866,959,029
Interchange Reconstruction	$380,314,453
New Road Construction	$369,607,751
Transit (including FTA Capital)	$251,796,595
Bike/Pedestrian	$83,498,356
Intersection Improvement	$68,450,496
ITS	$58,657,119
Other	$22,856,902
Grand Total	$3,451,160,260



MOBILITYPLAN2045

Project Count by Project Type

Project Type	# of Projects	Average Cost
Road Reconstruction	36	$24.0M
Bike/Pedestrian	23	$3.6M
Road Widening	17	$79.3M
Intersection Improvement	15	$4.6M
ITS	14	$4.2M
New Road Construction	8	$46.2M
Other	7	$3.0M
Interchange Reconstruction	6	$63.4M
Transit	6	$7.8M
Total Projects	132	

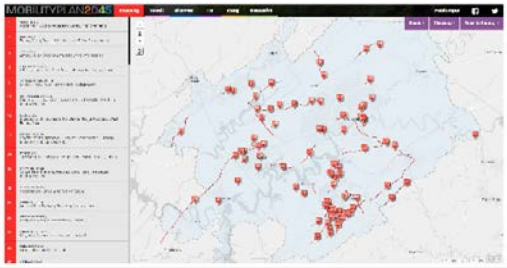


Financial Summary

- 132 transportation projects including roadway, bicycle and pedestrian facilities for with an investment of $3.2 Billion
- Investment of $1.2 Billion in transit operating and capital projects
- Total investment of $4.4 Billion over 25 years

Mobility Plan Interactive Project Map

https://maps.knoxmpc.org/app/mobility



So what happens from here?

STEPS IN MAJOR CAPITAL CONSTRUCTION PROJECTS

PLANNING | **PROJECT IMPLEMENTATION**

Public Input — *Mobility Plan* — *Transportation Improvement Program* — *Environmental Studies* — *Engineering and Design* — *Right-of-Way Acquisition* — *Construction*

Air Quality Conformity - Background

- 1970 – Clean Air Act and EPA Established
- Clean Air Act Regulates 6 "Criteria" Pollutants:
  - **Ground Level Ozone**
  - **Particulate Matter**
  - Carbon Monoxide
  - Nitrogen Oxides
  - Sulfur Dioxide
  - Lead
- Transportation Conformity is the link between Air Quality and Transportation Planning – ensures that federal funds will not be spent on projects that cause or contribute to violations of the National Ambient Air Quality Standards

Performance Measures

- Condition of Roadway and Bridges
- Age of Transit Vehicles
- Annual Number of Vehicle Crashes and Fatalities
- Interstate Travel Time Reliability
- Transit Ridership
- Vehicle Miles Traveled

System Performance Dashboard Example – Virginia Department of Transportation (VDOT)

Questions?

Opportunities for Input

VIRTUAL TOWN HALLS
MARCH 25 (12:00 PM)
BREAKOUT ROOMS BY COUNTY
MARCH 25 (5:00 PM)
BREAKOUT ROOMS BY COUNTY

STANDING MEETINGS
MARCH 24 (9:00 AM)
TPO EXECUTIVE BOARD MEETING
APRIL 13 (9:00 AM)
TPO TECHNICAL COMMITTEE MEETING
APRIL 28 (9:00 AM)
TPO EXECUTIVE BOARD MEETING

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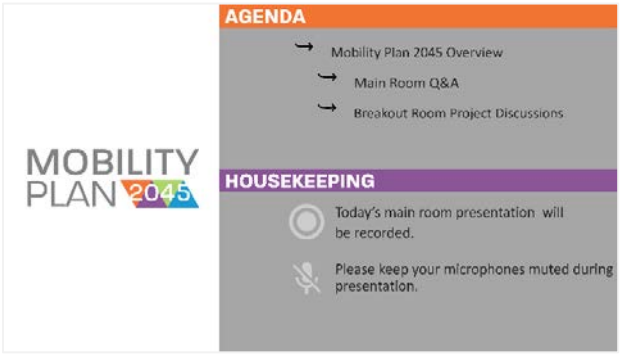
knoxmobility.org | mobility@knoxplanning.org | 865-215-3928

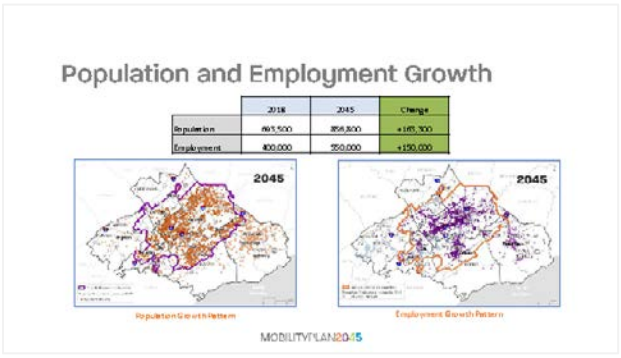
MOBILITY PLAN 2045

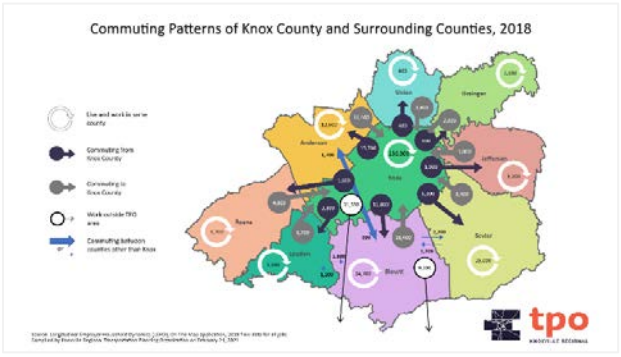
Thank you for participating today.

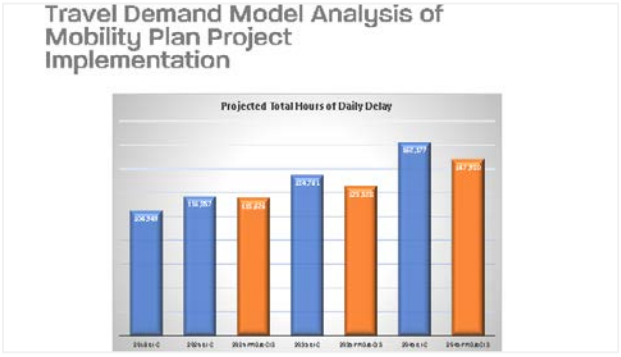
Virtual Town Hall

March 25









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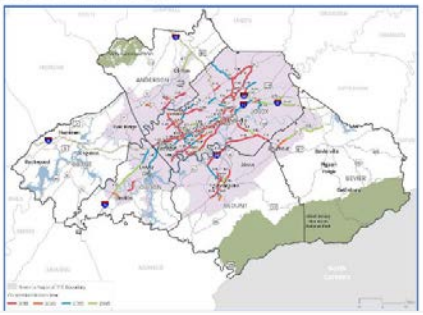

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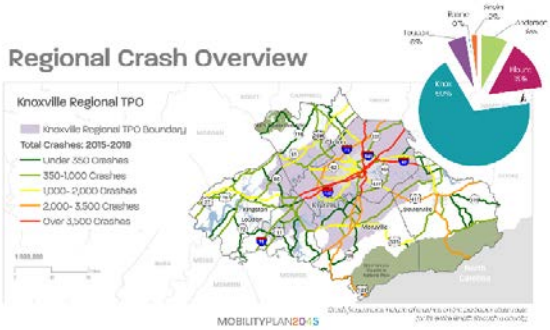

MOBILITYPLAN2045

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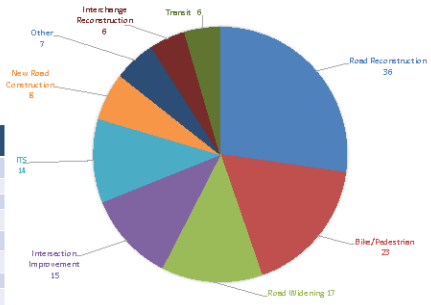

MOBILITYPLAN2045

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- Interstate Travel Time Reliability
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- Vehicle Miles Traveled

System Performance Dashboard Example – Virginia Department of Transportation (VDOT)

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Scenario Planning: COVID -19 and Travel

- Travel was Down in 2020
- What if This Trend Continued

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Statewide Freeway Traffic Impacts due to COVID-19

Tracked Daily by TDOT

Google COVID-19 Community Mobility Report

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TPO Travel Demand Model COVID-19 Scenario for Mobility Plan 2045

Major Travel Behavior Trends Associated with the Pandemic:

- Remote Work
- Distance Learning
- Freight
- Tourism
- Peak Hour Shifts

Model Parameter Adjustments (Short and Long-Term Scenarios)

Assessment	Short Term Scenario (2020)	Long Term Scenario (2045)
WORK TRIPS	↓ 15-20%	↓ 15-20%
SCHOOL TRIPS	↓ 0-5%	No Change
UNIVERSITY TRIPS	↓ 0-5%	↓ 5-10%
OTHER NHB TRIPS	↓ 5-10%	↓ 15-20%
VISITOR TRIPS	↓ 0-5%	No Change
AUTO XX TRIPS	↓ 5-10%	No Change
TRUCK XX TRIPS	↓ 5-10%	↓ 5-10%
TRUCK XXX TRIPS	↓ 10-20%	↓ 10-20%

Model Output Summary

	Vehicle Miles of Travel (VMT)	Vehicle Hours of Travel (VHT)	Congested VMT
Short-Term (2026)	-4%	-6%	-23.4%
Long-Term (2045)	-7%	-11%	-14.3%

MOBILITYPLAN2045

Public Involvement in a virtual year

tpo KNOXVILLE REGIONAL

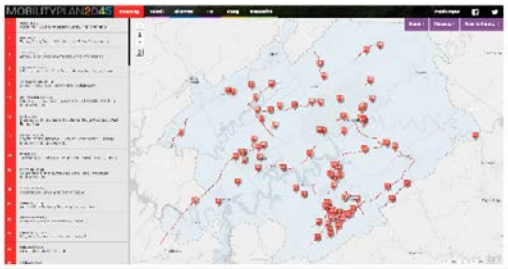
- COVID-19 presented a unique challenge to the outreach and engagement that is central to the planning process.
- In response, the following engagement strategies were used.

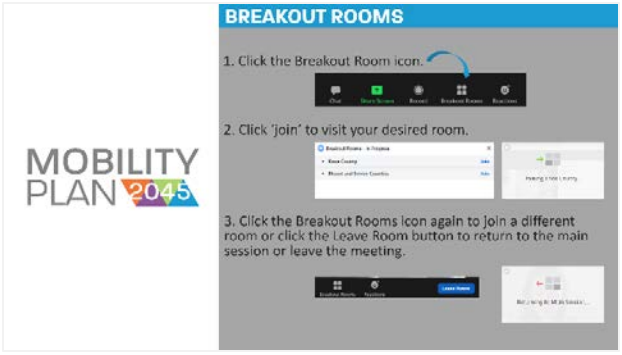
Targeted outreach	• To member jurisdictions, stakeholders & the public
Online video presentations introducing the Plan update	• Over 850 views
Online public surveys	• 2 Rounds (over 700 responses)
Interactive project map	• Over 550 project comments
Virtual TPO Board Meetings	• Updates as the Plan was developed
Draft Plan virtual public review events	• Transportation Tuesday presentations and Virtual Town Hall sessions

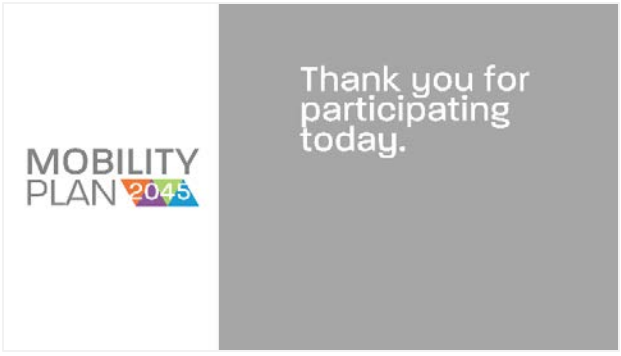
MOBILITYPLAN2045

Mobility Plan Interactive Project Map

https://maps.knoxmpc.org/app/mobility







TPO Board Meetings

Knoxville Regional TPO Board Meeting: March 24, 2021

- TPO Staff presented an overview of the Mobility Plan 2045 to the Executive Board, including the major transportation projects, financial constraint, air quality conformity, an overview of federal and state comments, and the Round 3 engagement process.

Knoxville Regional TPO Board Meeting: April 28, 2021

- The TPO Staff presented a brief overview of the Mobility Plan 2045 as well as the public comments received as part of the third round of outreach, resulting in the plan's formal adoption by the Board.

Agency Review

A draft copy of the plan was sent to the 11 federal and state agencies listed below. A copy of the outreach email is on the following page.

- Great Smoky Mountains National Park
- U.S. Housing and Urban Development Office
- U.S. Environmental Protection Agency Region 4
- Tennessee Historical Commission
- Tennessee Department of Health
- Tennessee Department of Environment and Conservation
- Tennessee State Parks, Bureau of Parks and Conservation
- Tennessee Wildlife Resources Agency
- Tennessee Valley Authority
- U.S. Army Corps of Engineers
- U.S.D.A. Forest Service Southern Research Station

KNOXVILLE REGIONAL

March 10, 2021

To Whom It May Concern:

The Knoxville Regional Transportation Planning Organization (TPO), coordinates a multimodal transportation planning process for the Knoxville Urban Area. Member jurisdictions include Knox County and the urbanized areas of Anderson, Blount, Loudon and Sevier Counties and includes the following cities: Alcoa, Clinton, Knoxville, Lenoir City, Loudon, Maryville and Oak Ridge, the Town of Farragut, Tennessee Department of Transportation and East Tennessee Development District. We have recently completed the final draft of Mobility Plan 2045. The Mobility Plan prioritizes the investment of federal dollars in our transportation system over the next 20 years identifying all projects that we anticipate our region will undertake during that timeframe.

The TPO is seeking input from various federal, state, and local agencies having an interest in growth and development, transportation, safety, mobility options, economic development, and environmental conservation. This input is a valuable component of our process and we hope that your agency or organization will take time to review and provide comments.

As part of the planning process a website (www.knoxmobility.org) has been created to allow your organization and anyone from the community to review and comment on the draft plan and appendices. The Draft Plan and map are now available on knoxmobility.org, and we hope you'll help us share the information and ask community members to submit comments. Once you're on the map, you can submit a project-specific comment by clicking on a project and choosing "Comment on this project" from the dropdown menu. To see all comments, click on the Public Input link in the upper right-hand corner of the page. You can also submit comments via email, phone, or through our online comment form.

You are welcome to use the form on this site or to email (jeff.welch@knoxtpo.org) directly with your comments.

The TPO is requesting your organization's written comments on the draft plan by close of business Monday, April 12, 2021. Comments will be reviewed by staff and considered by TPO Executive Board prior to Plan approval on April 28, 2021.

Thank you in advance for your time and your input into this important document. Please feel free to call me with any questions, (865) 215-3790.

Sincerely,

Jeff Welch, AICP
TPO Director

KNOXVILLE REGIONAL TRANSPORTATION PLANNING ORGANIZATION
KnoxTPO.org | 400 Main Street, Suite 403 | Knoxville, TN 37902 | 865.215.2500

Round 3 Comments

Open Comments for Proposed Projects

PROJECT NUMBER AND NAME	COMMENT	SOURCE
09-202: ROBERT C JACKSON DR EXTENSION	This project must include a bike path or be designated a share road. By adding this the access for all roadway users can be improved. It would give residents and workers a good, healthy alternative for travel.	Online Project Map
09-202	This project must include a bike path or be designated a share road. By adding this the access for all roadway users can be improved. It would give residents and workers a good, healthy alternative for travel.	Online Project Map
09-216: ALCOA HWY WIDENING	Any improvements along Alcoa Highway and intersecting major roads need to include buffered bicycle and pedestrian paths.	Online Project Map
09-216	Any improvements along Alcoa Highway and intersecting major roads need to include buffered bicycle and pedestrian paths.	Online Project Map
09-220: HOME AVE EXTENSION	Home Avenue Extension in Alcoa is a much needed project that is long overdue. It will certainly improve the traffic flow through that area. Thanks for including it, please do it.	Online Project Map
09-220	Home Avenue Extension in Alcoa is a much needed project that is long overdue. It will certainly improve the traffic flow through that area. Thanks for including it, please do it.	Online Project Map
09-229: MORGANTON RD RECONSTRUCTION	Any improvements on this major feeder road needs to include buffered bicycle and pedestrian pathways.	Online Project Map
09-231: MORGANTON RD RECONSTRUCTION	Much needed improvements, however, any improvements on this and other major roads needs to include buffered bicycle and pedestrian pathways to provide for these additional modes of transportation. Also, improve existing underpasses to become wildlife crossings for a number of species. Do it right! Thanks!	Online Project Map
09-232: PELLISSIPPI PKWY EXTENSION	I oppose this project. We should use taxpayer dollars to repair and improve existing roads. It has not been shown convincingly that the PPE will improve travel times or relieve congestion. The areas where growth is already occurring are in West Maryville, not going cross-country from 33 to 321.	Online Project Map

PROJECT NUMBER AND NAME	COMMENT	SOURCE
09-232	STOP this project. Studies have shown this is not going to fix traffic flow in Blount County. What would would be extending Pellissippi to William Blount Drive then on to HWY 411. Its the rich of Walland that push for easy access to their property and Sevier County tourism. By-passing the towns of Alcoa and Maryville will impact by taking the visitors to the Smokey 's away from businesses that need the revenue.	Online Project Map
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09-232	STOP THE PROJECT ! It is a waste of taxpayer money, and will add to the environmental degradation that is ongoing in the community. Valuable habitat and greenspace will be destroyed. There is absolutely no need for this extension.	Online Project Map
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09-232	If this project is built, it would be bad for the water supply and ecosystem of the Little River, which is a benchmark river in the state of Tennessee. When you build roads, it increases sedimentation in streams, and this road would also pave the way for more development -- gas stations and big box stores and more impermeable surfaces. If this area is known for its beauty and attracts tourists for that reason, then we need to protect it, not develop it. We already have a rampant development mindset in other parts of the county, and it 's unfair to impose that on those who make a living from the land, like the Kellers who run a working farm that would be bisected by the PPE. It 's absurd that a working farm is not considered a business by TDOT. Others have chosen to live rurally to get away from over-development. With roads comes more noise pollution and light pollution, as well. The GSMNP is already having trouble protecting the soundscape and lightscape resources because of increased development that bring more city lights and noise. The PPE would not help the businesses on Lamar Alexander Parkway in Maryville that benefit from tourist traffic. Additionally, in light of climate change, we need to be seriously thinking about how we can protect the natural resources that this area has, not adding to the problem of gobbling up land for roads and adding to pollution just to give a few people an added convenience.	Online Project Map

PROJECT NUMBER AND NAME	COMMENT	SOURCE
09-232	I am in favor of this SR162 extension project. As someone that benefited for decades using the original Pellissippi Parkway, the benefits of this extension would be tremendous for the local businesses, decrease congested traffic in Maryville and Alcoa - as well as pollution reduction from stop light traffic with vehicles traveling from interstates/Knoxville to Walland, Townsend, and Great Smoky Mountains, and improved access to jobs for the residents living in the more remote areas of this Appalachian district. As a Maryville native, I drove from Maryville to my job in Oak Ridge where I worked for over 20 years. The Pellissippi Parkway (I-140, SR162) was very helpful in cutting down my drive time, increasing safety, and decreasing my stress levels - avoiding US129 and I-40/75. I have previous experience with TDEC and their strict concerns, rules, and regulations regarding Environmental impacts of road construction. Anyone familiar with the development and implementation of an SWPPP will understand the rules and oversight that Tennessee will implement with the construction / subcontractors associated with this extension. I, and many others I know, are looking forward to the completion of this extension - and have been for years.Much appreciated,Thanks for the opportunity to comment.	Online Project Map
09-232	I am opposed to finishing the so-called "missing link" of the Pellissippi Parkway Extension. The road is already finished so far as I am concerned. Paving over a rural landscape in order to displace traffic impact and shorten commuter times strikes me as being a short-term solution to longer-term problems, including automobile-dependent neighborhoods and a ballooning population. Blount Countians love their rural landscape, and paving over it would mean loving it to death. Saving undeveloped, open farmland should be of utmost importance, and capping the human footprint should be a priority. Finishing the Extension would do neither. It would waste money, degrade the environment (even with precautions put in place), displace residents, permanently alter the landscape, threaten the environmental integrity of Little River, and more. Let the highway in its current form instead stand as a testament to human restraint and self-imposed limitation, both of them hallmarks of wisdom.	Online Project Map
09-232	This proposed road has never made sense to me in any arena. It purposely bypasses Maryville businesses, something they do not need. It destroys existing quality farms, farmland, and open space in Blount County, something that once paved cannot be restored. It adds nothing to our quality of life and has limited benefit for the traveler. It is an expensive project for a short stretch of lots of pavement. It has little to no support from those living in Blount County. Please listen and do NOT move forward with this project.	Online Project Map

PROJECT NUMBER AND NAME	COMMENT	SOURCE
09-232	Thank you for requesting public input. Please do not build the proposed Pellissippi Parkway Extension. It will cost taxpayers a fortune, and it fails to address our local needs for safety and mobility. If constructed as planned with an interchange at US411 , it will create unsafe extra congestion on Sevierville Road, which is already inadequate for the traffic is carries. I urge you to prioritize making improvements to roads & highways that already exist but are becoming crowded and unsafe. Add shoulders to Sevierville Road, and widen it where possible. Continue improvements to Alcoa Highway and Chapman Highway that will make those corridors safer for all. Think outside the same old box; consider public transportation options and greener solutions to our mobility needs.Maintain and repair the roads we have now before laying down new pavement, especially pavement that is not needed!	Online Project Map
09-232	I am opposed to extending the Pellissippi Parkway. I have lived in Blount County since 1972. This will further despoil the viewscape, pollute the air and water, destroy productive farmland, and increase traffic congestion (studies show this!). Rather, expend our monies on improving maintaining and repairing local roads and connections. I am not saying no new roads or lanes, just no more interstates stretching out into the country then stopping.	Online Project Map
09-232	I do not support this project. It will not relieve congestion in Blount County. In fact it will increase it. It will further degrade the Little River watershed, one of the most biodiverse rivers in the state.	Online Project Map
09-232	I am opposed to the expansion of the Pellissippi Parkway. This extension is unnecessary and does not address traffic issues in the region. A parkway extension would increase big-box corporate commercial development, which will run small, local, family-owned businesses out of business. Use the money to improve existing infrastructure to make it more walkable, bikeable, AND driveable, which will support healthy communities. It is absurd that the Keller Farm is not considered a business. The rural character of Blount County sets it apart from the sprawl of Knox County. Natural features like the Little River are gems that should be protected, not developed. Blount County should prioritize supporting family-owned businesses, including working farms, by consolidating development to town and maintaining the rural character of the county.	Online Project Map
09-232	I am AGAINST this extension for so many reasons. According to reports this highway extension will do little to alleviate traffic as proponents hope - but will certainly create another large unsightly road cut through previously rural farmland. You can only have so many major highways in a county before it starts to become less of the beautiful place people orginally moved here for! BiodiversityThis road building will definitely have a negative impact on the incredibly diverse Little River in some key locations - crossing Peppermint Branch and other tributaries of the Little River. Please put this project to rest permanently. Thanks for your time	Online Project Map
09-232	Doesn't appear that the LOS will be impacted whether or not it's built. It isn't worth spending millions of dollars to shave a short amount of time off a trip from West Knoxville to the Smokies.	Virtual Town Hall

PROJECT NUMBER AND NAME	COMMENT	SOURCE
09-232	The area's tourism dollars are directly tied to a healthy environment and this project's impact on waterways and the overall environment are very concerning	Virtual Town Hall
09-232	This project shouldn't be completed - it is prime farmland and there's already a four-lane road that goes to the Smokies.	Virtual Town Hall
09-232	TDOT is ignoring public comments on this plan.	Virtual Town Hall
09-232	Current road into the park is never overloaded and there is no obvious answer for another road. Our culture is in trouble if we lose our land and animals.	Virtual Town Hall
09-239: MONTVALE RD WIDENING	Much needed improvements that I wholeheartedly support. But why stop the buffered bicycle and pedestrian pathways at the city limits. These need to be extended all the way out to Six Mile Rd per the additional project to provide for these modes of transportation. Montvale Rd is part of the state wide bicycle trails, so please improve it for cyclists. Also, include the improvement of existing underpasses to become wildlife crossings for a number of species. We are on the edge of the GSMNP, Foothills Parkway, and in a hot spot of biodiversity. I 'm not seeing anything in this plan to address and help protect wildlife. Do it right! Thanks!	Online Project Map
09-241: TUCKALEECHEE PK	This project needs to be extended the length of this narrow heavily traveled road. Side walk or Wide shoulders should be added or the project would be a waste of money. One mile is not enough!	Online Project Map
09-245: SEVIERVILLE RD WIDENING	Its good to see the much needed improvements being suggested and especially the bicycle and pedestrian facilities.	Online Project Map
09-249: MONTVALE RD RECONSTRUCTION	As a longtime resident of Six Mile, this particular project is much needed to handle the ever increasing traffic on Montvale Road from development, businesses, motorcyclists, and bicyclists. PLEASE add buffered bicycle/pedestrian path into this project. This is part of the statewide bicycle trail and its extremely dangerous for cyclist at this time. Also, its impossible to walk safely on this road, even if it 's just a short walk. Do it right, make it safe for all modes of transportation.	Online Project Map
09-250: SEVIERVILLE RD RECONSTRUCTION	Interested as to how you are going to manage the traffic especially during morning and afternoon rush hours?	Online Project Map
09-257: RELOCATED ALCOA HWY	Constructing yet another road in this area instead of widening and finding solid solutions to the existing Alcoa Highway seems like a long term problem and not solving what we have now. Light rail between Maryville, Alcoa, Louisville, Rockford, and Knoxville, and then Knoxville into other counties is long overdue and should be put in place. Any highway work needs to include buffered bicycle and pedestrian paths. Years back people would bicycle to work, and yes, even on Alcoa Highway. Improvements for safety and travel flow must be made with a holistic approach, but building yet another 4 lane highway will likely not solve these problems.	Online Project Map

PROJECT NUMBER AND NAME	COMMENT	SOURCE
09-258: RELOCATED ALCOA HWY	Constructing yet another road in this area instead of widening and finding solid solutions to the existing Alcoa Highway seems like a long term problem and not solving what we have now. Light rail between Maryville, Alcoa, Louisville, Rockford, and Knoxville, and then Knoxville into other counties is long overdue and should be put in place. Any highway work needs to include buffered bicycle and pedestrian paths. Years back people would bicycle to work, and yes, even on Alcoa Highway. Improvements for safety and travel flow must be made with a holistic approach, but building yet another 4 lane highway will likely not solve these problems.	Online Project Map
09-258	Constructing yet another road in this area instead of widening and finding solid solutions to the existing Alcoa Highway seems like a long term problem and not solving what we have now. Light rail between Maryville, Alcoa, Louisville, Rockford, and Knoxville, and then Knoxville into other counties is long overdue and should be put in place. Any highway work needs to include buffered bicycle and pedestrian paths. Years back people would bicycle to work, and yes, even on Alcoa Highway. Improvements for safety and travel flow must be made with a holistic approach, but building yet another 4 lane highway will likely not solve these problems.	Online Project Map
09-615: WASHINGTON PK WIDENING	We move here in April 2020. This project is long overdue. Washington Pike to Murphy Road is heavily congested and dangerous for traffic and pedestrians alike. Thank you.	Online Project Map
09-617: SOUTH KNOXVILLE WATERFRONT ROADWAY IMPROVEMENTS	Improvements along Chapman Highway (Burnett Creek to Blount Ave.) hopefully include the creation of sidewalks and pedestrian amenities.	Online Project Map
09-617	Improvements along Chapman Highway (Burnett Creek to Blount Ave.) hopefully include the creation of sidewalks and pedestrian amenities.	Online Project Map
09-625: SCHAAD RD WIDENING	good evening my name [REDACTED] thanks for the mobility plan im living in fl ive got property on schaad rd karns 37921 was hoping to find info on the start of widening if you could give any info id apprec,	Email
09-629: I-40/I-75/CAMPBELL STATION RD INTERCHANGE RECONFIGURATION	This project is long overdue. Congestion increasing yearly with long delays going North or turning West on I40. Needs addressing sooner than projected or will be traffic nightmare.	Online Project Map

PROJECT NUMBER AND NAME	COMMENT	SOURCE
09-629	The Campbell Station Road I40/75 interchange is in desperate need of redesign. With continued growth in Farragut, southwest Knox County and Hardin Valley, this interchange sees far more traffic than it can handle. Ideally, the capacity should be increased without destroying the small town feel when entering into the area of the exit.	Online Project Map
09-630: VIRTUE RD RECONSTRUCTION	Virtue Road continues to see an increase in traffic due to growth in the area and in southwest Knox County. It is curvy and dangerous. New development is bringing pedestrian and bicycle access to this area, it would be beneficial to continue with a bike/ped facility along this portion of Virtue Road.	Online Project Map
09-638: OAK RIDGE HWY WIDENING	Traffic on SR-62 is not only a poor level of service (by volume) but frequently has slow moving trucks and equipment between Oak Ridge and Knoxville with few viable passing lane options. By having 4 lanes from Schaad Road to SR-162, more traffic will use this to and from Knoxville to Oak Ridge in lieu of I-40 or I-75.	Online Project Map
09-644: GOV JOHN SEVIER HWY WIDENING	Project needs to include pedestrian amenities	Virtual Town Hall
09-646: NORTHSHORE DR RECONSTRUCTION	This road does not need to be widened to accommadate cyclists and pedestrians. It will take too much land away from propery owners. Not every road needs to be constructed for cyclist. This road is one of them.	Online Project Map
09-646	Northshore lacks left turn lanes and decel lanes for many of the neighborhoods that access it. This can make for a very frustrating commute along this stretch and as a result pushes many drivers to drive through Farragut causing unnecessary congestion there. Improving Northshore ‘s flow of traffic would help the transportation network throughout the area. In addition providing bike/ped facilities would be an incredible addition to this area.	Online Project Map
09-651: I-40/I-75 AT WATT RD INTERCHANGE RECONFIGURATION	Simply improving the efficiency of this interchange would benefit the transportation network in the Farragut, southwest Knox County and eastern Loudon County area. Drivers often get stuck in the truck traffic in this area. Allowing for room for the trucks to get up to speed in a separate lane would help with safety, efficiency and capacity.	Online Project Map
09-653: ALCOA HWY WIDENING	Please add bike lanes and/or sidewalk to connect greenways and urban wilderness.	Online Project Map
09-658: NORTHSHORE DR AT KINGSTON PK INTERSECTION IMPROVEMENTS	Please add a traffic circle at this intersection, improve pedestrian safety (current sidewalks are narrow and sketchy), improve and keep fourth creek clean to decrease or eliminate flooding in the area.	Online Project Map

PROJECT NUMBER AND NAME	COMMENT	SOURCE
09-658	Please add a traffic circle at this intersection, improve pedestrian safety (current sidewalks are narrow and sketchy), improve and keep fourth creek clean to decrease or eliminate flooding in the area.	Online Project Map
09-658	This intersection is very complicated. Much of the traffic from today ‘s congested intersection cuts through our neighborhood to take out the wait times. Westwood. We have had property damage in our area from oversized vehicles in our smaller residential streets that are using mapping apps and the like to take out the intersection in question. I am fully in favor of work on this area but please do be cautious of the surrounding area and the cut-throughs that will only become more utilized. The other thing to add to this is that the school zoning and traffic movement for all of the elementary, middle, and high schools use this area. Totally appreciate your work on this very important subject.	Online Project Map
09-668: KINGSTON PK WIDENING	This portion of Kingston Pike runs down the middle of the Town of Farragut. To widen this road would negatively impact this community, essentially turning the Town from a major arterial running through it to a Town with a highway running through it. There are other alternatives to improve traffic capacity in the surrounding transportation network that would be less detrimental to Farragut ‘s desire to create a sense of place throughout the Town. There is a connected pedestrian facility on the south side of Kingston Pike. It would be nice to have a connected sidewalk on the north side but not at the cost of widening Kingston Pike to 6 lanes.	Online Project Map
09-668	This widening will be destructive to the community atmosphere. There are better options for dealing with traffic congestion.	Virtual Town Hall
09-669: EVERETT RD IMPROVEMENTS	There is continued growth in this area. This is a viable road that could provide for an alternative to get to I40/75. Further, there is a large undeveloped parcel between Everett Road and Hatmaker Road north of the highway. If Everett Road and Hatmaker Road could be connected that would provide for another arterial in the transportation network.	Online Project Map
09-689: PAPERMILL DR CORRIDOR IMPROVEMENTS	Please add a sidewalk along the south side of Papermill Drive and a sidewalk and bike lane along Weisgarber from Kingston Pike to Middlebrook Pike. Additionally, please add a turn lane to access commercial businesses on the south side of Papermill.	Online Project Map
09-689	Please add a sidewalk along the south side of Papermill Drive and a sidewalk and bike lane along Weisgarber from Kingston Pike to Middlebrook Pike. Additionally, please add a turn lane to access commercial businesses on the south side of Papermill.	Online Project Map
09-691: I-40/75 WIDENING	The I40/75 interchange merge can be very confusing, congested areas can happen fast just beyond the merge point traveling east. This may help with that issue.	Online Project Map
10-700: CAMPBELL STATION RD IMPROVEMENTS	Campbell Station Road north of the interstate is a winding and curvy road. I ‘m not clear how it can be widened, although it needs to be made safer. Left turn lanes and decel lanes appropriately located would help.	Online Project Map

PROJECT NUMBER AND NAME	COMMENT	SOURCE
13-216: LOUISVILLE RD RECONSTRUCTION	Much needed improvements, however, any improvements on this and other major roads needs to include buffered bicycle and pedestrian pathways to provide for these additional modes of transportation. Do it right! Thanks!	Online Project Map
13-601: UNION RD/N HOBBS RD RECONSTRUCTION	Much needed project on a very dangerous street. Project needs to move forward as planned.	Online Project Map
13-601	It is my understanding that this project is funded and should remain so. It 's a paved farm road, no design and very dangerous. The plans provide for a 10 foot multiuse multidirectional greenway and a road designed with pedestrians in mind.	Online Project Map
13-603: I-40/75 AUXILIARY LANES	Increasing capacity would solve the congested choke point one tends to experience when traveling west on I40 just past Pellissippi Parkway.	Online Project Map
13-830: OAK RIDGE RAILS TO TRAILS	I support this project. The railroad is long abandoned, but negotiations with CVS are still going on. I would like to see them move more quickly.	Online Project Map
13-833: MARYVILLE TO TOWNSEND GREENWAY	It is wonderful to see more greenway projects proposed and I highly support them. However, greenway projects can be much more useful if they connect communities to business and other locations, whether it be work, school, shopping, restaurants, places of worship, etc. Bicyling and walking are modes of transportation. Please consider increasing and improving this form of transportation. Doing this will improve our health through exercise and reducing vehicle emissions.	Online Project Map
13-852: KNOXVILLE SOUTH WATERFRONT PEDESTRIAN/BICYCLE BRIDGE	That's a lot of money for what the Henley street bridge does fairly well. I assume it isn't high on the priority lust.I agree that separate bridge would be an improvement.	Online Project Map
13-852	That's a lot of money for what the Henley street bridge does fairly well. I assume it isn't high on the priority lust.I agree that separate bridge would be an improvement.	Online Project Map
13-884: CHAPMAN HWY MULTIUSE PATH	Project needs to include improvements to KAT bus stops for accessibility	Virtual Town Hall
17-608C: MAGNOLIA AVE STREETSCAPE	I live near this project and am in support of the project. But a horizon date of 2030 seems far off for 1.2 miles worth of improvements doesn 't it?	Online Project Map

PROJECT NUMBER AND NAME	COMMENT	SOURCE
18-202; BLOUNT COUNTY GREENWAY TRAIL	It is wonderful to see more greenway projects proposed and I highly support them. Greenway projects can be much more useful if they connect communities to business and other locations, whether it be work, school, shopping, restaurants, places of worship, etc. This particular project is a good example if it is connected to communities served by Heritage High School. Bicyling and walking are modes of transportation. Please consider increasing and improving this form of transportation. Doing this will improve our health through exercise and reducing vehicle emissions.	Online Project Map
19-800; DENSO GREENWAY TRAIL EXTENSION	It is wonderful to see more greenway projects proposed and I highly support them. Greenway projects can be much more useful if they connect communities to business and other locations, whether it be work, school, shopping, restaurants, places of worship, etc. Bicyling and walking are modes of transportation. Please consider increasing and improving this form of transportation. Doing this will improve our health through exercise and reducing vehicle emissions.	Online Project Map
21-205; MORGANTON RD RECONSTRUCTION	Much needed improvements, however, any improvements on this road needs to include bicycle and pedestrian pathways to provide for these additional modes of transportation. Do it right! Thanks!	Online Project Map
21-206; MORGANTON RD RECONSTRUCTION	Much needed improvements, however, any improvements on this road needs to include buffered bicycle and pedestrian pathways to provide for these additional modes of transportation. Do it right! Thanks!	Online Project Map
21-400; I-75 WIDENING IN LOUDON COUNTY	Given the high truck volume merging at I-75/I-40 and truck weigh station and Watt Road truck stops, there is an excessively high amount of slow moving trucks. This is further worsened on I-40 Eastboard (east of merger) where trucks have to cross lanes from right lane of I-40 to far right lane of merged I-40/I-75. This causes frequent wrecks, major delays, and sudden stops at the merger alone. From there, the incline east of Watt Road to the weigh station needs additional truck lanes due to the incline grade.	Online Project Map
21-400	Given the high truck volume merging at I-75/I-40 and truck weigh station and Watt Road truck stops, there is an excessively high amount of slow moving trucks. This is further worsened on I-40 Eastboard (east of merger) where trucks have to cross lanes from right lane of I-40 to far right lane of merged I-40/I-75. This causes frequent wrecks, major delays, and sudden stops at the merger alone. From there, the incline east of Watt Road to the weigh station needs additional truck lanes due to the incline grade.	Online Project Map
21-400	Given the high truck volume merging at I-75/I-40 and truck weigh station and Watt Road truck stops, there is an excessively high amount of slow moving trucks. This is further worsened on I-40 Eastboard (east of merger) where trucks have to cross lanes from right lane of I-40 to far right lane of merged I-40/I-75. This causes frequent wrecks, major delays, and sudden stops at the merger alone. From there, the incline east of Watt Road to the weigh station needs additional truck lanes due to the incline grade.	Online Project Map

PROJECT NUMBER AND NAME	COMMENT	SOURCE
21-600; MAGNOLIA AVE/RUTLEDGE PIKE/ASHEVILLE HWY INTERCHANGE IMPROVEMENTS	This is an area that has needed improvement for a long time. I support improving this area.	Online Project Map
21-601; I-40 WESTBOUND INTERCHANGE AT I-275 IMPROVEMENTS	Please add lane so people going north bound on Alcoa Hwy can stay in their lane and merge on to I-640 without having to merge with I-40/75 west bound traffic. There needs to be more signage encouraging merging i-640 westbound traffic to stay in the right two lanes. People are not abiding by the current signage and are cutting over too soon which causes backups to Alcoa Hwy.	Online Project Map
21-602; INTERSECTION IMPROVEMENT AT BEAVER RIDGE RD AND WEST EMORY RD	I live in Karns and have for over 50 years. I have listened to Jim Snowden stand up and tell the Knox County Commission that money has been secured for this project, over and over. That ‘s great but the issue is that our resident builder, Rocky Smith keeps developing the farmland here adding, at a minimum, 50 homes then adds hundreds of cars to an already, horrible, dangerous intersection! There are currently 3 NEW developments that have been approved just within less than 3/4 mile from this intersection. This community has been completely neglected in ANY road improvements..... I have spoken many times, begging & pleading for our two most dangerous intersection to be repaired.... we get nothing. At Carpenter, Harrell and W. Emory, there were 5 wrecks in ONE day, two of them occurring on the same day! I, as a resident of Knox County, am disgusted with the lack of safe roads to travel on in this community. After all, Karns and Hardin Valley are the tax base for this county but Karns can not seem to get any assistance.	Online Project Map
21-602	I live in Karns and have for over 50 years. I have listened to Jim Snowden stand up and tell the Knox County Commission that money has been secured for this project, over and over. That ‘s great but the issue is that our resident builder, Rocky Smith keeps developing the farmland here adding, at a minimum, 50 homes then adds hundreds of cars to an already, horrible, dangerous intersection! There are currently 3 NEW developments that have been approved just within less than 3/4 mile from this intersection. This community has been completely neglected in ANY road improvements..... I have spoken many times, begging & pleading for our two most dangerous intersection to be repaired.... we get nothing. At Carpenter, Harrell and W. Emory, there were 5 wrecks in ONE day, two of them occurring on the same day! I, as a resident of Knox County, am disgusted with the lack of safe roads to travel on in this community. After all, Karns and Hardin Valley are the tax base for this county but Karns can not seem to get any assistance.	Online Project Map
21-603; STRAWBERRY PLAINS PK WIDENING	Good idea if we have 40 mil available	Online Project Map

PROJECT NUMBER AND NAME	COMMENT	SOURCE
21-603	Probably going to be necessary with Amazon center going there.	Online Project Map
GENERAL COMMENTS	The plan in general is fairly thorough, but it lacks conservation corridors and wildlife planning, especially in outer areas that have remained wild. This is important because we are adjacent to the Great Smoky Mountains National Park and Cherokee National Forest, and because we're within one of the largest biodiversity hotspots east of the Mississippi. This information should be included because transportation impacts every environment and every bit of ecology. We need to align existing strategies to bring broad brushstrokes down to local policies.	Email
GENERAL COMMENTS	Hopeful that data about our post-COVID new normal is taken into consideration when making decisions about roadway projects.	Email
GENERAL COMMENTS	Complete Streets Policy: Would like to see multimodal design for all roadway projects in Maryville to provide opportunities for people to walk and bike, not just travel by car	Email
GENERAL COMMENTS	I will never get over you stopping James White Parkway. And now the city is going to cut the roadway in half and make a a parking lot and bike lanes, putting all going and coming traffic on one side of the parkway, It took years to get JWP, and it would have benefitted Chapman Hwy. Now we are stuck with unending traffic, a parking lot, and trails which bring no money to Knoxville and inconveniences the tax payers, There was a way to have both trails and JWP at a much cheaper cost that is being expended to undo what was wanted and was fought to get. Just driving from the bridge to Moody is a short trip, but it is time to calm down and have a short peaceful drive. In a couple of years even that will be gone. Sad.	Email

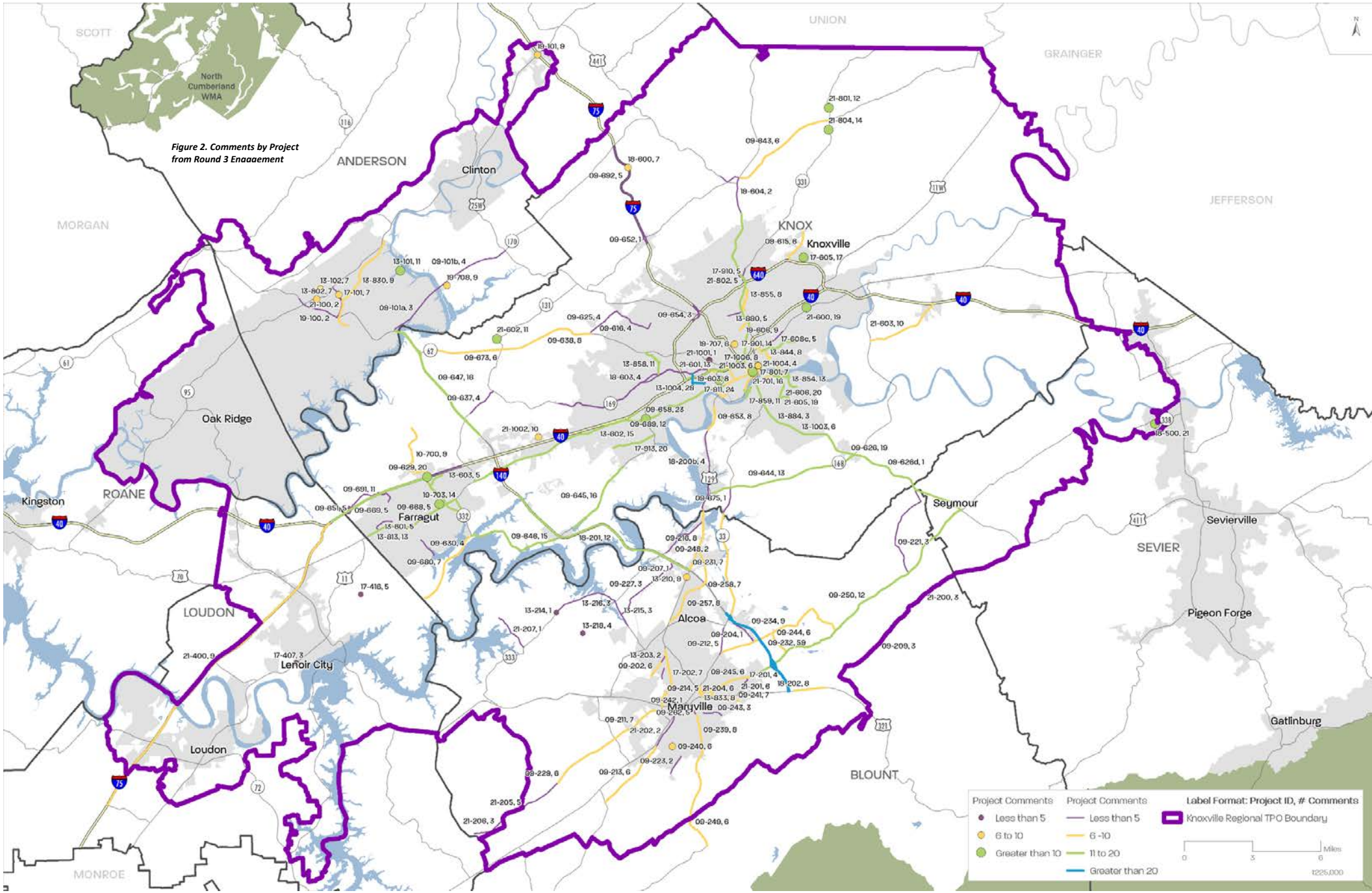


Figure 2. Comments by Project from Round 3 Engagement

Round 3 Summary

Round 3 of the outreach strategy focused on the distribution of the draft Mobility Plan 2045 among regional agencies, stakeholders, and the general public in the TPO's member jurisdictions. Virtual meetings, advertised by the TPO its website, social media, and by partners, were held to ensure input opportunities for each part of the plan. This final round of engagement included:

- Opportunities for virtual engagement through interactive online project maps;
- Provision of public comments on projects to the TPO's member jurisdictions;
- Six virtual meeting opportunities for stakeholders and the public to engage with TPO staff, which garnered over 1,000 views on YouTube; and
- Spanish translations of the plan's executive summary and chapter summaries.

Round 3 concluded engagement efforts for Mobility 2045, sharing the plan's vision and project list with the TPO Executive Board, regional stakeholders, and constituents within Knoxville TPO's member jurisdictions. The TPO's correspondence regarding input opportunities were sent to regional communities that are traditionally underrepresented as well as organizations that work with these communities, many of which participated in the virtual meetings. Following the conclusion of Round 3, the draft Mobility 2045 was finalized and presented to the TPO Executive Board for final adoption.

MOBILITY PLAN 2045

Appendix G

Project Lists and Performance

G. PROJECT LISTS AND PERFORMANCE

Mobility Plan 2045 outlines the long-term investment plan for improving the transportation system in the Knoxville Regional TPO planning area. This includes the identification of multimodal transportation projects that can be implemented with expected revenues, referred to as the fiscally constrained project list, as well as additional projects for which there is no identified funding source, referred to as the illustrative or unfunded project list. This appendix documents the project application and scoring processes, details of both the fiscally constrained and illustrative projects, the resulting performance of the transportation system using the TPO's regional travel demand model, and the alignment of the fiscally constrained projects with federal performance measures.

PROJECT APPLICATION AND SCORING

The list of candidate projects was developed through multiple interactions with the public, stakeholders, and the TPO's member jurisdictions. Based on future growth projections, technical analysis of transportation facility operation, and input from the first round of public input, the TPO initiated conversations with its member jurisdictions about project needs in the region. These discussions were followed by a formal call for projects in which counties, cities, and TDOT were able to submit candidate projects for consideration in the Mobility Plan. This project application process was conducted with multiple processes (with materials documented in Appendix F) to allow entities to more efficiently submit updated information for previous Mobility Plan projects and new information for projects not yet included in a Mobility Plan. In total, there were 154 project applications submitted.

Following the curation of the candidate project list, each project was scored against the TPO's regional mobility goals, shown in Table G-1. This table also shown the alignment of each goal with the data-driven criteria used to score each project as well as the maximum points associated with each. In addition to aligning with Mobility Plan goals, projects were given an additional five points if they were locally supported or endorsed. The distribution of project scores ranged from 23 -79 and was used to inform the selection of fiscally constrained projects in tandem with financial projections and funding program eligibility.

Table G-1. Project Scoring Mechanism

GOAL	TOTAL POINTS (CR)	TOTAL POINTS (WC)	PURPOSE	SCORING CRITERIA	MAX. POINT ALLOCATION (CR)	MAX. POINT ALLOCATION (WC)
MAINTENANCE AND SYSTEM PRESERVATION	19	19	This criteria prioritizes projects that minimize future maintenance needs. The smaller the footprint of the project, the more points it receives.	Maintenance, Intersection, Minor Reconstruction, Transit Vehicle Replacement, Operations/ITS, Multimodal	13	13
				Center Turn Lane Only	11	11
				Additional Through Lanes / Transit Fleet/Service Expansion	6	6
				New Road Extension	3	3
			This criteria prioritizes projects that improve a higher-order facility based on functional classification.	Interstate/Expressway	6	6
				Principal Arterial	5	5
				Minor Arterial	4	4
				Major Collector	3	3
				Minor Collector	2	2
				Local	1	1
MORE OPTIONS	17	18	This criteria prioritizes any project where multimodal facilities are included, with more priority given to accommodations in areas with a higher degree of user potential.	High-quality facility within existing center/high density area (sidewalk >5 feet, buffered sidewalk, buffered or protected on-street bike facility, or an off-street multi-use path or greenway)	12	12
				Low-quality facility within existing center/high density area (sidewalks <=5 feet, standard bike lane, wide shoulders, or shared routes/sharrows)	8	8
				High-quality facility outside existing center/high density area (sidewalk >5 feet, buffered sidewalk, buffered or protected on-street bike facility, or an off-street multi-use path or greenway)	6	6
				Low-quality facility outside existing center/high density area (sidewalks <=5 feet, standard bike lane, wide shoulders, or shared routes/sharrows)	4	4
			This criteria prioritizes projects that do not negatively impact bicyclists and pedestrians.	Project includes widening/increasing crossing distances	5	6
SAFETY AND SECURITY	13	16	This criteria prioritizes projects that improve facilities with known safety issues for drivers, pedestrians, and bicyclists.	Crash Severity Index	6	8
			This criteria prioritizes projects that include multiple elements with known safety benefits.	2 or more safety elements	5	6
				Less than 2 safety elements	2	2
			This criteria prioritizes projects that create redundancy through physical or technological infrastructure.	Project improves parallel route	1	1
				Traffic operations/ITS improvements/Transit Agency Safety Plan projects	1	1

GOAL	TOTAL POINTS (CR)	TOTAL POINTS (WC)	PURPOSE	SCORING CRITERIA	MAX. POINT ALLOCATION (CR)	MAX. POINT ALLOCATION (WC)
HEALTH AND ENVIRONMENT	10	13	This criteria prioritizes projects that improve connectivity of bicycle, pedestrian, or transit facilities, thereby potentially reducing auto-dependency.	Project improves multimodal connectivity by addressing gaps	3	4
			This criteria prioritizes projects that include strategies aimed at reducing VMT.	Travel Demand Management programs	2	2
				Alternative mode accommodations	1	2
				Traffic operations/ITS improvements	2	2
			This criteria prioritizes projects that have identified sustainable ways of mitigating stormwater runoff.	Project specifically calls out permeable pavement, bioretention landscaping elements, etc.	2	3
EQUITABLE ACCESS	9	13	This criteria prioritizes projects that provide access to multiple community resources in high priority areas.	Employment density within existing centers	3	4
				Recreational opportunities	2	3
				Healthcare facilities	2	3
				Schools	2	3
CONGESTION REDUCTION	12	8	This criteria prioritizes projects located on routes with existing and future congestion issues.	Deterioration in v/c ratio between 2018 and 2045 E+C	4	3
				Congestion segment based on 2045 E+C model run (v/c ratio >0.85)	1	1
				Existing Level of Travel Time Reliability	4	3
			This criteria prioritizes projects that improve congestion without widening.	Non-SOV strategy that was identified through CMP	2	0
				Improves transit service / provides bike/ped facilities to provide alternatives	1	1
PRESERVATION OF PLACE	11	9	This criteria prioritizes projects that promote smart and preferred growth concepts.	Project is located in a high-density area/existing center	6	6
			This criteria prioritizes projects that do not impact natural or cultural resources.	Project does not impact parks	2	1
				Project does not impact historic areas	2	1
				Project does not impact floodplains	1	1
ECONOMY AND FREIGHT	9	4	This criteria prioritizes projects that improve access to freight facilities, tourist destinations, and employment centers.	Enhances direct connection to major freight facilities	1	0
				Improves connection to regional tourist destination	1	2
				Employment density within 1 mile of project	4	2
			This criteria prioritizes projects that are located on and/or improve a major freight corridor.	Project reduces delay on PHFN	1	0
				Percent of trucks	2	0
LOCAL SUPPORT	±5	±5	This criteria prioritizes projects that are consistent with local plans and/or locally supported/endorsed.	Project is included in local plan or endorsed locally	5	5

PROJECT LISTS

The following pages organize the fiscally constrained projects by county with a map and then a detailed project table. The illustrative projects for the region are included in a single map and table at the conclusion of this section. In addition, all projects can be viewed in an online map at the following website: **https://maps.knoxmpc.org/app/mobility**. In the tables that follow, project details are provided as follows:

- **KRMP ID** – The Knoxville Regional Mobility Plan ID number is a unique ID to help track projects over the course of Mobility Plan updates and through other TPO processes (e.g., the Transportation Improvement Program). The first two digits represent the year in which the project was first included in a Mobility Plan, and the following three digits indicate the county in which the project is located as follows:
    - 100's – Anderson County/Oak Ridge
    - 200's – Blount County
    - 400's – Loudon County
    - 500's – Sevier County
    - 600's – Knox County
    - 800's and above – indicate an ITS or non-roadway project
- **Project Name** – Lists the primary project facility involved and possibly a short description of the type of work.
- **Agency** – Lists the implementing agency, typically the municipal or county government where the project is located or TDOT.
- **Facility Name** – Lists the facility name on which the project is located.
- **From** – Lists the approximate beginning termini of the project, typically a major roadway facility or intersection.
- **To** – Lists the approximate ending termini of the project, typically a major roadway facility or intersection.
- **Length** – The length of the project in number of miles where applicable. Note that a listing of "N/A" in this column could either mean "not applicable" such as the case of a planning study or "not available" such as the case of a spot intersection or interchange reconstruction project in which the exact roadway segment length affected cannot usually be determined at this stage of project development.

- **Description –** Lists the major scope of work that is being proposed. Further explanation of some of the primary generalized descriptions included in the roadway project list are as follows:
    - Construct New Roadway (any number of lanes) – Entails constructing a roadway on a new location. Roadways that are envisioned to include full access control are denoted as a "freeway." The final design will determine the median configuration in terms of either a continuous center turn lane or non-traversable raised median and the accommodation of bicyclists and pedestrians.
    - Widen Roadway (from x lanes to y lanes) – Entails addition of motor vehicle capacity through construction of additional through travel lanes on an existing roadway. Multilane facilities will generally include either a non-traversable median or a center turn lane. The final design will determine the median configuration and accommodation of bicyclists and pedestrians through sidewalks and/or bike lanes.
    - Reconstruct two-lane road – Entails the improvement of an existing two-lane roadway to bring it up to modern standards in terms of lane and shoulder widths and geometric design chiefly to enhance the safety of the roadway. This may also involve the construction of turn lanes at major intersections necessary for safety to remove stopped vehicles from the travel lanes. The final design will determine the median configuration and accommodation of bicyclists and pedestrians through sidewalks and/or bike lanes.
    - Add Center Turn Lane – Entails addition of a continuous two-way left turn lane on an existing undivided roadway of two or more lanes, also usually involves reconstructing the roadway to modern design standards for lane and shoulder width and geometric design. The final design will determine the median configuration and accommodation of bicyclists and pedestrians through sidewalks and/or bike lanes.
    - Replace Bridge – Entails the replacement of an existing bridge that has been determined to be structurally deficient. The new bridge may include safety enhancements such as wider lanes and shoulders but will not have more through lanes than the previous structure had unless otherwise noted.
    - Intersection Improvements – Entails the modification of a single intersection to improve safety and operations including the possible addition of separate turn lanes, realignment of approaches or traffic signal.

- **Horizon Year** – Lists the anticipated timeframe for project completion between now and the future horizon year of 2045. In the funding analysis, the TPO looks at project implementation in five-year timeframes spanning the entire planning horizon, or 2021 – 2045. When summarizing this information for the Mobility Plan, projects are grouped into three distinct horizons covering 2021 – 2026, 2027 – 2035, and 2036 – 2045. More specifically, projects with a horizon year of 2026 are expected to be completed between January 2021 and December of 2026. Similarly, projects with a horizon year of 2035 are expected to be completed between January 2027 and December of 2035, and projects with a horizon year of 2045 are expected to be completed between January 2036 and December of 2045.
- **Horizon Year Cost** – This is the projected total cost of all phases of the project including both federal (if applicable) and state/local matching funds. This cost has been inflated to the horizon year of implementation. The horizon year cost is derived by taking the current year estimated cost and applying an inflation factor for the number of years until anticipated project implementation.
- **Proposed Funding Source** - In order to determine fiscal constraint of the Mobility Plan, the TPO must assign a proposed funding source to each project to ensure that total costs would be less than or equal to total revenues. TPO staff proposes funding sources based on the project type and the eligibility restrictions of certain funding categories. More details on the different funding categories can be found in Appendix E.
- **Performance Measures (PM) Impact** - As documented in Chapter 2 of the Mobility Plan, federal regulations require that the TPO coordinate with TDOT and the region's transit agencies to develop and maintain performance measures and targets related to safety (PM1), pavement and bridge conditions (PM2), congestion reduction and air quality (PM3), and transit asset conditions (PM4). The TPO's Executive Board has agreed to support the state's performance targets in these areas, meaning that the TPO agrees to plan and program projects that contribute to the accomplishment of those performance targets. This column highlights the Mobility Plan 2045 projects that will improve overall performance of the system in the Knoxville region and help the state achieve its targets in these four performance areas. While some federal measures are applicable to a limited set of roadways – PM2 and PM3 measures are principally focused on the Interstate and NHS systems – the assessment of project PM contributions is applied regardless of roadway type and strict PM applicability. This affirms a system-wide approach to transportation performance management.

- **PM1 –** Safety contributions are expected for projects that bring an existing facility up to modern standards by addressing geometric and design deficiencies. Intersection projects often address safety concerns with the construction of turn lanes, reducing conflict points. Bicycle and pedestrian projects address safety considerations for these vulnerable users of the transportation network.
- **PM2 –** Roadway reconstruction and bridge replacement projects are primary contributors to pavement and bridge condition metrics. Many road widening projects also involve resurfacing of the existing facility, providing system condition benefits.
- **PM3 –** Congestion reduction is expected for new road construction, roadway widening with added lanes, Traffic Management and Intelligent Transportation Systems implementation, and intersection projects to address capacity concerns.
- **PM4 –** Transit capital projects are the major drivers of this metric.

Figure G-1. Fiscally Constrained Projects in Anderson County

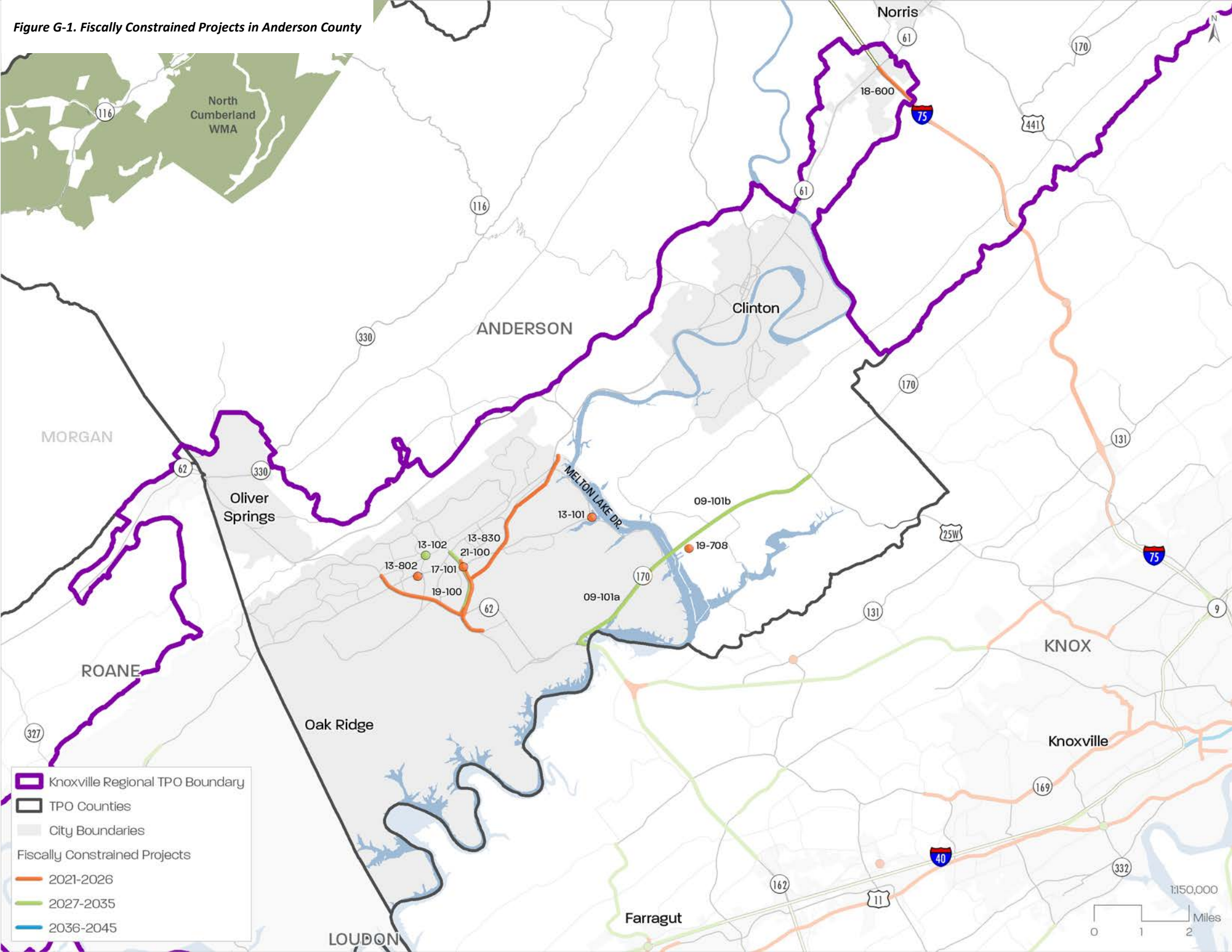


Table G-2. Fiscally Constrained Projects in Anderson County

KRMP ID	PROJECT NAME	AGENCY	FACILITY NAME	FROM	TO	LENGTH (MILES)	DESCRIPTION	HORIZON YEAR	HORIZON YEAR COST	PROPOSED FUNDING SOURCE	PM IMPACT
CITY OF OAK RIDGE											
13-101	Emory Valley Road at Melton Lake Drive Roundabout	Oak Ridge	Emory Valley Road at Melton Lake Dr Intersection	Intersection		-	Construct roundabout	2026	$1,079,155	HSIP	1
13-102	Tulane Avenue at Pennsylvania Avenue Roundabout Construction	Oak Ridge	Tulane Ave at Pennsylvania Ave	Intersection		-	Construct roundabout	2030	$1,269,361	HSIP	1
13-802	Oak Ridge Signal Timing Optimization Program: Ph 2	Oak Ridge		Illinois Ave	Florida Ave	2.85	Continues implementation of Advanced Traffic Management Systems (ATMS) which are a component of Intelligent Transportation Systems (ITS) that integrate various technologies specifically related to the traffic signal system to improve overall operations. This project primarily covers the Oak Ridge Turnpike	2026	$3,147,516	CMAQ	3
13-830	Oak Ridge Rails to Trails	Oak Ridge	Abandoned rail line	Melton Lake Rd/Greenway	Scarboro Rd	4.50	Rails to Trails project on abandoned rails from Elza Gate Park at the Oak Ridge Turnpike to the Y-12 National Security Complex on Scarboro Road, and along Belgrade Road, Warehouse Road, Fairbanks Road, and Lafayette Drive.	2026	$4,073,508	L-STBG	1
17-101	Emory Valley Road at Lafayette Drive Intersection	Oak Ridge	Emory Valley Road at Lafayette Drive Intersection	Intersection		-	Remove dedicated right turn lane from Emory Valley (west) to Lafayette Drive (north) with standard right turn lane.	2026	$485,013	HSIP	1
19-100	Oak Ridge Signal Timing Optimization Program: Ph 3	Oak Ridge	(11) signalized intersections along Illinois Ave (SR 62) and Lafayette Drive	Various		3.44	Continues implementation of City's Advanced Traffic Management Systems (ATMS) which are a component of Intelligent Transportation Systems (ITS) that integrate various technologies specifically related to the traffic signal system to improve overall operations. This project primarily covers Illinois Ave and Lafayette Dr	2026	$3,257,305	CMAQ	3
19-708	TVA Bull Run Site Study	Oak Ridge	TVA Bull Run Site on SR 170			N/A	Study to evaluate the redevelopment opportunities and transportation impacts of the TVA Bull Run Fossil Plant facility following its closure by the end of 2023	2026	$68,894	L-STBG	-
21-100	Lafayette Drive Bicycle and Pedestrian Safety Improvements	Oak Ridge	Lafayette Drive	From S Illinois (SR 62)	Oak Ridge Turnpike (SR 95)	1.50	Widen Lafayette Dr to add bicycle lanes on both sides between S. Illinois (SR 62) and Oak Ridge Turnpike (SR 95), construct 1.5 miles of sidewalk with curb along the entire west side of the street, and add one new crosswalk at the Manchester/Hendrix intersection to provide direct connection to the Rails to Trails greenway	2030	$1,750,396	L-STBG-TA	1

KRMP ID	PROJECT NAME	AGENCY	FACILITY NAME	FROM	TO	LENGTH (MILES)	DESCRIPTION	HORIZON YEAR	HORIZON YEAR COST	PROPOSED FUNDING SOURCE	PM IMPACT
ANDERSON COUNTY											
09-101A	Edgemoor Road (SR 170) – Ph 1	TDOT	Edgemoor Rd (SR 170)	Oak Ridge Hwy (SR 62)	Melton Lake Dr	2.60	Widen from 2-lanes to 4-lanes with median and/or center turn lane. Also includes bicycle/pedestrian facilities and a new bridge over the Clinch River.	2030	$71,442,093	IA	1,2,3
09-101B	Edgemoor Road (SR 170) - Ph 2	TDOT	Edgemoor Rd (SR 170)	Melton Lake Dr	Clinton Hwy (US 25W/SR 9)	3.60	Widen from 2-lanes to 4-lanes with median and/or center turn lane. Also includes bicycle/pedestrian facilities and a new bridge over the Clinch River.	2030	$91,539,234	IA	1,2,3

Figure G-2. Fiscally Constrained Projects in Blount County

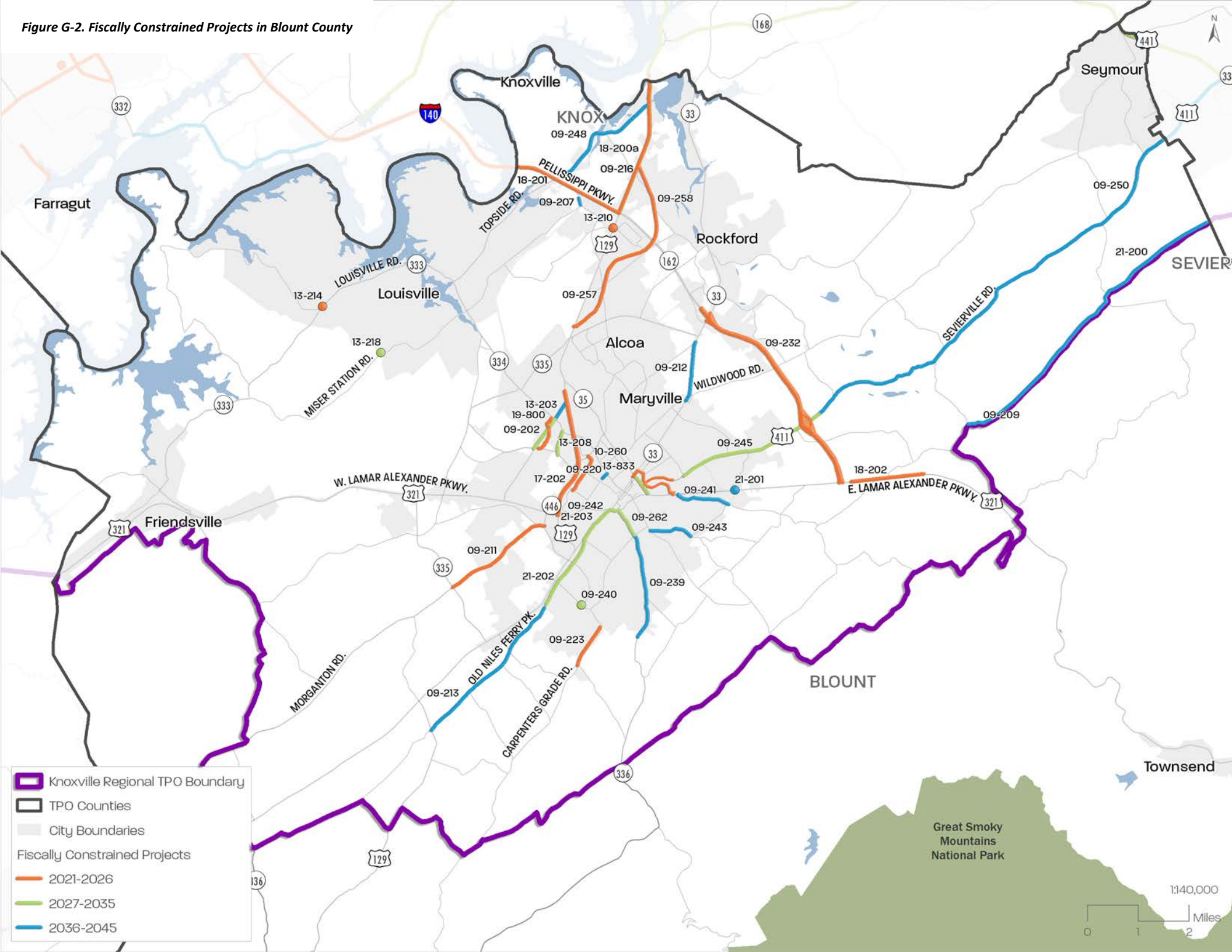


Table G-3. Fiscally Constrained Projects in Blount County

KRMP ID	PROJECT NAME	AGENCY	FACILITY NAME	FROM	TO	LENGTH (MILES)	DESCRIPTION	HORIZON YEAR	HORIZON YEAR COST	PROPOSED FUNDING SOURCE	PM IMPACT
CITY OF ALCOA											
09-202	Robert C Jackson Drive Extension - Ph I	Alcoa	Robert C. Jackson Dr	Middlesettlements Rd	Louisville Rd (SR 334)	0.70	Construct new 4-lane roadway	2030	$17,185,013	L-STBG	3
09-207	Wrights Ferry Road Center Turn Lane Improvements	Alcoa	Wrights Ferry Road	Airbase Rd	Topside Rd	1.40	Reconstruct 2-lane road with addition of continuous center turn lane and bicycle/pedestrian facilities	2045	$24,380,779	L-STBG	1,2
09-220	Home Avenue Extension	Alcoa	Home Ave	McCammon Ave	Calderwood St	0.20	Construct new 2-lane road with center turn lane to extend Home Ave through existing shopping center to Calderwood St	2045	$11,546,153	L-STBG	3
09-248	Topside Road (SR 333) Improvements	Alcoa	Topside Rd (SR 333)	Wrights Ferry Rd	Alcoa Hwy (SR 115/US 129)	1.30	Reconstruct 2-lane road with addition of continuous center turn lane and bicycle/pedestrian facilities	2045	$9,748,760	S-STBG	1,2
13-203	Robert C Jackson Drive Extension - Ph 2	Alcoa	Robert C. Jackson Dr	Louisville Rd (SR 334)	US 129 Bypass (SR 115)	0.50	Construct new 4-lane roadway and grade separated interchange connecting US 129 and Associates Boulevard	2040	$47,910,322	L-STBG	3
13-208	Harvest Lane Extension	Alcoa	Harvest Ln	Existing Harvest Ln terminus	Louisville Rd (SR 334)	0.20	Construct new 2-lane road with sidewalks	2030	$2,393,802	L-STBG	3
13-210	North Park Boulevard & Airbase Road Safety Improvements	Alcoa	Intersection of North Park Blvd/Airbase Rd at Alcoa Hwy (US 129/SR 115)	Intersection		0.30	Realign North Park Boulevard to Airbase Road	2026	$8,401,024	HSIP	1
CITY OF MARYVILLE											
09-214	Sevierville Road (SR 35/US 411) Widening	Maryville	Sevierville Rd (SR 35/US 411)	Washington St (SR 35)	Walnut St	0.58	Reconstruct from two lanes to three lanes, curb and gutter, and sidewalks with intersection improvements.	2026	$14,660,629	L-STBG	1,2
09-216	Alcoa Highway (SR 115/US 129) Widening	TDOT	Alcoa Hwy (SR 115/US 129)	Pellissippi Pkwy (SR 162)	south of Little River	2.71	Reconstruct SR 115 from 4-lanes to 6-lanes, including a frontage road system with two new interchanges at Singleton Station Road and Topside Road (SR 333), modify the existing SR 115 and SR 162 interchange, and construct a multi-use path.	2030	$138,929,588	IA	1,2,3
09-223	Carpenters Grade Road Reconstruction and Intersection Improvements	Maryville	Carpenters Grade Rd	Raulston Rd	Cochran Rd	0.89	Reconstruct 2-lane road with addition of turn lanes and sidewalk. Construct a signalized intersection at Peterson Ln, Cochran Rd and Raulston Rd intersection.	2026	$3,761,000	L-STBG	1,2,3

KRMP ID	PROJECT NAME	AGENCY	FACILITY NAME	FROM	TO	LENGTH (MILES)	DESCRIPTION	HORIZON YEAR	HORIZON YEAR COST	PROPOSED FUNDING SOURCE	PM IMPACT
CITY OF MARYVILLE (CONT.)											
09-232	Pellissippi Parkway (SR 162) Extension	TDOT	Pellissippi Pkwy (SR 162)	Old Knoxville Hwy (SR 33)	Lamar Alexander Pkwy (US 321/SR 73)	4.40	Construct new 4-lane highway	2026	$92,924,138	IA	3
09-239	Montvale Road (SR 336) Widening	Maryville	Montvale Road (SR 336)	Montvale Station Rd	Maryville South City Limits (Southview Dr)	2.40	Reconstruct 2-lane road with addition of continuous center turn lane and bicycle/pedestrian facilities	2040	$16,776,845	S-STBG	1,2
09-240	Sandy Springs Road at Montgomery Lane Intersection Improvements	Maryville	Sandy Springs Rd at Montgomery Ln	Intersection		-	Intersection improvements including turn lanes and new traffic signal	2030	$1,495,108	HSIP	1
09-241	Tuckaleechee Pike Reconstruction	Maryville	Tuckaleechee Pk	US 321	Grandview Dr	1.10	Reconstruct 2-lane road with addition of turn lanes and sidewalk	2045	$11,965,999	L-STBG	1,2
09-242	W Broadway Avenue (SR 33/US 411) Improvements	Maryville	W Broadway Ave (SR 33/US 411)	S Cedar St	US 321	0.50	Construct additional westbound left turn lane at intersection with Lamar Alexander Pkwy and convert continuous center turn lane to additional westbound through lane along W Broadway Avenue. Project includes construction of new shared use path and other bicycle/pedestrian enhancements	2030	$6,754,584	L-STBG	1
09-243	Wilkinson Pike Widening	Maryville	Wilkinson Pike	Court Street	Maryville City Limits (Grandview Dr)	0.90	Reconstruct 2-lane road with addition of turn lanes and sidewalk	2040	$7,101,797	L-STBG	1,2
09-245	Sevierville Road (SR 35/US 411) Widening	Maryville	Sevierville Rd (SR 35/US 411)	Everett High Rd	Maryville City Limits (Nina Delozier Rd)	2.00	Reconstruct 2-lane road with addition of continuous center turn lane and bicycle/pedestrian facilities	2035	$29,398,113	NHPP	1,2
09-257	Relocated Alcoa Highway (SR 115/US 129)	TDOT	Relocated Alcoa Hwy (SR 115/US 129)	Proposed Interchange at Tyson Blvd	Pellissippi Pkwy (SR 162)	2.90	Construct new 4-lane divided highway with auxiliary lanes and new interchanges at McGhee Tyson Airport access, Wright Rd and Pellissippi Pkwy (SR 162)	2026	$129,300,135	IA	1,3
09-258	Relocated Alcoa Highway (SR 115/US 129)	TDOT	Relocated Alcoa Hwy (SR 115/US 129)	Pellissippi Pkwy (SR 162)	South Singleton Station Rd	1.30	Construct new 4-lane divided highway with auxiliary lanes and new interchange at Singleton Station Rd	2026	$59,524,359	IA	1,3

KRMP ID	PROJECT NAME	AGENCY	FACILITY NAME	FROM	TO	LENGTH (MILES)	DESCRIPTION	HORIZON YEAR	HORIZON YEAR COST	PROPOSED FUNDING SOURCE	PM IMPACT
CITY OF MARYVILLE (CONT.)											
09-262	Montvale Road (SR 336) Widening	TDOT	Montvale Road (SR 336)	Montvale Station Rd	US 321	0.60	Widen existing roadway to 2 - 12 foot travel lanes with a 12 foot center turn lane including curb and gutter, sidewalk and a multiuse path. Close SR-73 EB and WB access to Highland Ave. to construct EB right-turn lane near Highland Ave.	2030	$31,896,107	IA	1,2
10-260	Foothills Mall Drive Extension - Ph 2	Maryville	Foothills Mall Drive	Foch Street	McCammon Ave	0.70	Construct new 2-lane road with center turn lane and sidewalks	2026	$4,723,831	L-STBG	1,3
13-833	Maryville to Townsend Greenway - Ph 1 (Brown Creek)	Maryville	Maryville/Alcoa Greenway Trail System	Harper Ave Trailhead	US 321	1.20	Construct a new shared use path between the existing Maryville/Alcoa Greenway at Aluminum Avenue to Lamar Alexander Pkwy along Brown Creek	2026	$1,806,269	L-STBG	1
17-202	US 129 Widening	TDOT	US 129 (SR 115)	Hall Rd (SR 35)	US 321	2.90	Widen from 4 to 6 lanes	2026	$25,022,277	IA	2,3
18-200A	Alcoa Highway (SR 115/US 129) ITS Expansion - Ph 1	TDOT		I-140	Topside Rd	2.20	ITS Smartway Geographic Expansion	2026	$680,672	NHPP	3
21-201	Intersection Improvements on US 321 Realign Amerine Road and Grandview Drive	Maryville				-	(Intersection improvements on Lamar Alexander Pkwy (SR 73/US 321) near Grandview Drive and Amerine Road/Janet Lane to include realignment and signalization)	2040	$10,046,015	L-STBG	1
21-202	Old Niles Ferry Road Widening	Maryville	Old Niles Ferry Road	Savannah Park Drive	W. Broadway Avenue	1.50	Widen existing 2-lane roadway to include curb, gutter, and sidewalk on both sides	2030	$6,476,530	L-STBG	1,2
21-203	W. Broadway Avenue (SR 33) Improvements from Old Niles Ferry Road to S. Cedar Street	Maryville	W. Broadway Avenue (S.R. 33 / U.S. 411)	Old Niles Ferry Road	S. Cedar Street	0.50	Widen existing 2-lane roadway to include concrete curb, gutter, and sidewalk on both sides of the roadway and installation of auxiliary turning lanes where needed. Modification of an existing traffic signal at Magnolia Ave. Realignment and geometric improvements at the intersection of Old Niles Ferry Rd, which will include Best St)	2035	$5,947,970	L-STBG	1,2
21-204	Washington Street Improvements from E. Broadway Avenue to US 321	Maryville	Washington Street (S.R. 447)	E. Broadway Avenue (S.R. 33)	E. Lamar Alexander Parkway (U.S. 321/S.R. 73)	0.40	Reconstruction of the existing 5-lane roadway to contain standard width lanes, curb, gutter, and sidewalk, along with a pedestrian buffer along both sides of the roadway	2035	$14,488,645	L-STBG	1,2

KRMP ID	PROJECT NAME	AGENCY	FACILITY NAME	FROM	TO	LENGTH (MILES)	DESCRIPTION	HORIZON YEAR	HORIZON YEAR COST	PROPOSED FUNDING SOURCE	PM IMPACT
BLOUNT COUNTY											
09-209	Ellejoy Road Reconstruction	Blount County	Ellejoy Road	Tuckaleechee Pike	Jeffries Hollow Road	3.70	Reconstruct 2-lane road with addition of turn lanes	2040	$20,370,866	L-STBG	1,2
09-211	Morganton Road Reconstruction - Ph 1	Blount County	Morganton Rd	William Blount Dr (SR 335)	Foothills Mall Dr	2.30	Reconstruct 2-lane road with addition of continuous center turn lane and bicycle/pedestrian facilities	2026	$8,439,940	L-STBG	1,2
09-212	Old Knoxville Highway (SR 33) Reconstruction	Blount County	Old Knoxville Hwy (SR 33)	Wildwood Rd	E. Hunt Rd (SR 335)	1.30	Reconstruct 2-lane road with addition of turn lanes	2040	$11,241,042	S-STBG	1,2
09-213	Old Niles Ferry Road Reconstruction	Blount County	Old Niles Ferry Rd	Calderwood Hwy (SR 115)	Maryville City Limits	3.30	Reconstruct 2-lane road with addition of turn lanes	2040	$19,519,138	L-STBG	1,2
09-250	Sevierville Road (SR 35/US 411) Reconstruction	Blount County	Old Knoxville Hwy (SR 33)	Swanee Dr (Maryville City Limits)	Chapman Hwy (US 441/SR 71)	11.90	Reconstruct 2-lane road with addition of turn lanes	2045	$78,285,495	S-STBG	1,2
13-214	Old Lowes Ferry Road at Louisville Road (SR 333) Intersection Improvements	Blount County	Intersection of Old Lowes Ferry Rd at Louisville Rd (SR 333)	Intersection		-	Realign intersection and add turn lanes	2026	$696,588	HSIP	1
13-218	Middlesettlements Road at Miser Station Road Intersection Improvements	Blount County	Intersection of Middlesettlements Rd at Miser Station Rd	Intersection		-	Realign intersection and add turn lanes	2035	$899,412	HSIP	1
18-202	Blount County Greenway Trail - Ph 1	Blount County		US 321 at NW corner of Helton Rd	Perry's Mill Parking Area	3.30	Greenway trail contained completely within US Highway 321 right-of-way from Heritage High School to Perry's Mill Parking area. It will also include additional bike access link to Old Walland Highway across Melrose Station Bridge.	2026	$4,310,136	L-STBG-TA	1
19-800	Denso Greenway Trail Extension	Blount County		Atchley Dr.	Louisville Rd.	0.70	Construction of multi-modal greenway - Project includes a pedestrian bridge, ADA upgrades and pedestrian lighting	2026	$1,126,065	S-STBG-TA	1
21-200	Jeffries Hollow Road	Blount County	Jeffries Hollow Road	Ellejoy Road	Sevier County Line	2.80	Reconstruct 2-lane roadway with addition of turn lanes	2045	$25,954,490	L-STBG	2

Figure G-3. Fiscally Constrained Projects in Knox County

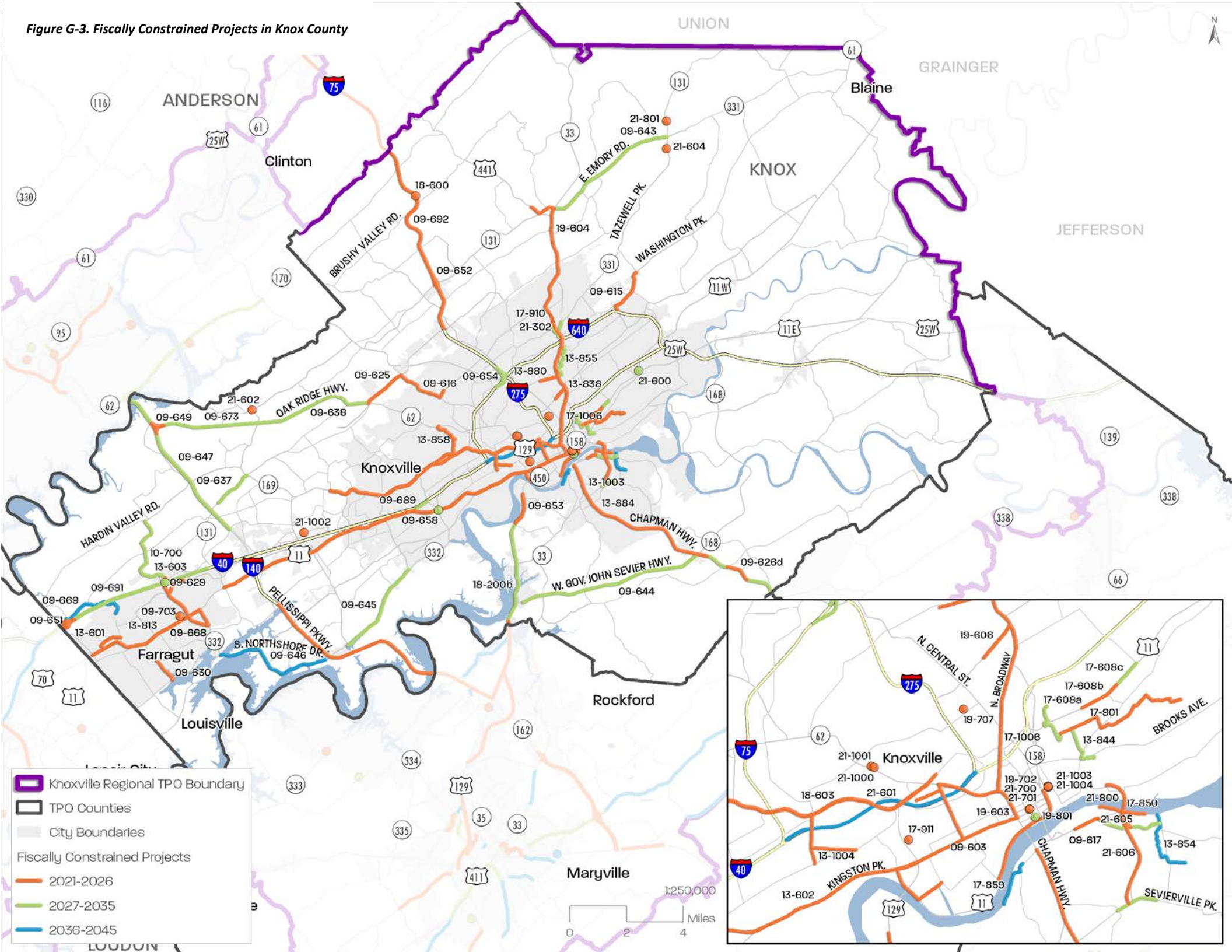


Table G-4. Fiscally Constrained Projects in Knox County

KRMP ID	PROJECT NAME	AGENCY	FACILITY NAME	FROM	TO	LENGTH (MILES)	DESCRIPTION	HORIZON YEAR	HORIZON YEAR COST	PROPOSED FUNDING SOURCE	PM IMPACT
EAST TENNESSEE HUMAN RESOURCE AGENCY (ETHRA)											
21-1002	ETHRA Transit Vehicle Replacement Project	ETHRA	-	-	-	N/A	Purchase of demand response transit vehicles for fleet replacement	2026	$1,348,650	L-STBG	4
TOWN OF FARRAGUT											
09-629	I-40/I-75/Campbell Station Road Interchange	Farragut	Interchange of I-40/75 at Campbell Station Rd			-	Reconfigure existing interchange to improve capacity, safety and operations.	2030	$54,546,881	NHPP	1,3
09-630	Virtue Road Reconstruction	Farragut	Virtue Rd	Boyd Station Rd	2200' S of Broadwood Dr	0.95	Reconstruct 2-lane road with addition of turn lanes and bicycle/pedestrian facilities	2026	$7,716,121	L-STBG	1,2
09-668	Kingston Pike (SR 1) Widening	Farragut	Kingston Pk	Smith Rd	Campbell Station Rd	1.40	Widen from 4 to 6 lanes with addition of bicycle/pedestrian facilities	2040	$28,812,844	NHPP	1,2,3
09-669	Everett Road Improvements	Farragut	Everett Rd	Watt Rd	Split Rail Lane	2.50	Reconstruct 2-lane road with addition of continuous center turn lane and bicycle/pedestrian facilities	2045	$41,173,191	L-STBG	1,2
09-691	I-40/75 Widening	Farragut	I-40/75	I-40/75 Interchange	Campbell Station Rd Interchange	5.30	Widen from 6 to 8 lanes	2035	$54,503,516	NHPP	3
13-601	Union Road /N Hobbs Road Reconstruction	Farragut	Union Rd/N. Hobbs Rd	Everett Rd	Kingston Pike (SR 1)	1.00	Reconstruct 2-lane road with addition of turn lanes and bicycle/pedestrian facilities	2026	$4,546,000	L-STBG	1,2
13-603	I-40/75 Auxiliary Lanes	Farragut	I-40/75	Campbell Station Rd Interchange	Lovell Rd Interchange	1.40	Construct eastbound and westbound auxiliary lanes between interchanges	2030	$12,412,500	NHPP	3
13-813	Farragut Advanced Traffic Management System - Ph 1	Farragut				N/A	Advanced Traffic Management Systems (ATMS) are a component of Intelligent Transportation Systems (ITS) that integrate various technologies specifically related to the traffic signal system to improve overall operations. This project includes the Town's entire signal system.	2026	$7,738,167	CMAQ	3
19-703	Jamestowne Boulevard Study	Farragut	Jamestowne Boulevard	SR 1 (Kingston Pike)	Campbell Station Road	N/A	Feasibility and planning study to determine needed improvements to Jamestowne Boulevard in Farragut to provide additional route for motorists and pedestrians to bypass intersection of Kingston Pike at Campbell Station Road.	2026	$88,184	L-STBG	-

KRMP ID	PROJECT NAME	AGENCY	FACILITY NAME	FROM	TO	LENGTH (MILES)	DESCRIPTION	HORIZON YEAR	HORIZON YEAR COST	PROPOSED FUNDING SOURCE	PM IMPACT
KNOXVILLE AREA TRANSIT (KAT)											
21-1003	Purchase KAT Vehicles - Fixed Route Buses	KAT	-	-	-	N/A	Purchase of fixed-route buses for fleet replacement or minor expansion	2026	$25,480,360	L-STBG/CMAQ	4
21-1004	KAT Bus Engine Overhauls	KAT	-	-	-	N/A	Mid-life engine overhauls on 46 transit buses. An engine "overhaul" is a mid-life action on a major component that enables an asset to achieve its useful life and is an FTA-eligible activity under Circular 5010.1E	2026	$5,248,971	L-STBG	4
KNOX COUNTY											
09-625	Schaad Road Widening	Knox County	Schaad Rd	Oak Ridge Hwy (SR 62)	Pleasant Ridge Rd	1.50	Widen from 2 to 4 lanes with addition of sidewalks	2026	$12,676,484	Local	1,2,3
09-637	Lovell Road Widening (SR 131)	Knox County	Lovell Rd (SR 131)	Cedardale Ln	Middlebrook Pk	1.70	Widen 2-lane to 4-lane, including pedestrian and bicycle facilities.	2030	$25,490,954	L-STBG	1,2,3
09-644	Gov John Sevier Highway (SR 168)	Knox County	Gov John Sevier Hwy (SR 168)	Alcoa Hwy (SR 115/US 129)	Chapman Hwy (US 441/SR 71)	6.50	Widen from 3 to 4-lane divided roadway	2035	$105,690,856	S-STBG	1,2,3
09-645	Northshore Drive (SR 332)	Knox County	Northshore Dr (SR 332)	Morrell Rd	Ebenezer Rd	3.50	Reconstruct 2-lane road with addition of turn lanes and bicycle/pedestrian facilities	2035	$31,875,020	S-STBG	1,2,3
09-646	Northshore Drive (SR 332)	Knox County	Northshore Dr (SR 332)	Pellissippi Pkwy (SR 162)	Concord Rd (SR 332)	4.50	Reconstruct 2-lane road with addition of turn lanes and bicycle/pedestrian facilities	2040	$47,359,784	S-STBG	1,2,3
09-647	Pellissippi Parkway (SR 162)	Knox County	Pellissippi Pkwy (SR 162)	Edgemoor Rd (SR 170)	Dutchtown Rd	6.00	Corridor safety and capacity improvements to include access control, interchange reconstruction, frontage roads, additional/auxiliary lanes and provision for a shared use path	2030	$101,976,781	NHPP	1,2,3
09-651	I-40/I-75/Watt Road Interchange	Knox County	I-40 at Watt Rd Interchange	Interchange at Watt Rd		-	Reconfigure existing interchange to improve capacity, safety and operations.	2026	$24,250,665	NHPP	1,3
09-673	Oak Ridge Highway (SR 62)	Knox County	Oak Ridge Hwy (SR 62)	Byington Beaver Ridge Rd (SR 131)	Pellissippi Pkwy (SR 162)	4.20	Widen from 2 to 4 lanes	2035	$62,743,460	NHPP	2,3
10-700	Campbell Station Road Improvements	Knox County	Campbell Station Road	I-40	Hardin Valley Road	3.30	Widening and realignment of Campbell Station Rd from I-40 to Hardin Valley Rd	2030	$27,487,702	L-STBG	1,2

KRMP ID	PROJECT NAME	AGENCY	FACILITY NAME	FROM	TO	LENGTH (MILES)	DESCRIPTION	HORIZON YEAR	HORIZON YEAR COST	PROPOSED FUNDING SOURCE	PM IMPACT
KNOX COUNTY (CONT.)											
19-604	Knox County Advanced Traffic Management System - Ph 2	Knox County		Various		N/A	Continues implementation of County's Advanced Traffic Management Systems (ATMS) which are a component of Intelligent Transportation Systems (ITS) that integrate various technologies specifically related to the traffic signal system to improve overall operations. This project primarily covers E. Emory Rd, Norris Freeway and Maynardville Pk	2026	$1,705,263	CMAQ	3
19-707	County-wide Transportation Study (Knox)	Knox County				N/A	Prepare a countywide transportation plan in conjunction with the General Plan update in order to determine priorities for transportation improvements that address existing and proposed land use	2026	$688,939	L-STBG	-
21-602	Intersection Improvement at Beaver Ridge Road and West Emory Road	Knox County				-	Installation of turn lanes and signalization at Beaver Ridge Rd and W. Emory Rd in Karns	2026	$1,653,454	HSIP	1
21-604	Tazewell Pike and Fairview Road Intersection Realignment	Knox County				-	Tazewell Pk and Fairview Rd Intersection Realignment (Intersection improvement with turn lanes and traffic signal)	2026	$1,929,030	HSIP	1
21-801	Gibbs Schools Pedestrian Bridge	Knox County				N/A	Pedestrian Bridge over Tazewell Pk to serve Gibbs Elementary, Middle, and High Schools	2026	$2,755,757	MMAG	1
KNOX COUNTY CAC TRANSIT											
21-1000	Knox County CAC Transit Capital Project	Knox County CAC	-	-	-	N/A	Purchase of demand response transit vehicles for fleet replacement	2026	$2,372,188	L-STBG	4
21-1001	Knoxville-Knox County CAC Transit Volunteer Assisted Transportation	Knox County CAC	-	-	-	N/A	Purchase of vehicles for assisted demand response transit services	2026	$468,479	L-STBG	4
CITY OF KNOXVILLE											
09-615	Washington Pike	Knoxville	Washington Pk	I-640	Murphy Rd	1.70	Widen from 2-lanes to 4-lanes including pedestrian and bicycle facilities.	2026	$19,422,578	L-STBG	1,2,3
09-616	Pleasant Ridge Road	Knoxville	Pleasant Ridge Rd	Merchant Dr	Knoxville City Limits (Country Brook Dr)	1.60	Reconstruct 2-lane road with addition of turn lanes and bicycle/pedestrian facilities	2026	$4,450,000	L-STBG	1,2

KRMP ID	PROJECT NAME	AGENCY	FACILITY NAME	FROM	TO	LENGTH (MILES)	DESCRIPTION	HORIZON YEAR	HORIZON YEAR COST	PROPOSED FUNDING SOURCE	PM IMPACT
CITY OF KNOXVILLE (CONT.)											
09-617	Sevier Avenue - South Knoxville Waterfront Roadway Improvements	Knoxville	Sevier Ave	Davenport Rd	Island Home Ave	0.30	Construct roadway streetscape improvements and utility relocations along Sevier Ave and new roundabout at the intersection of Foggy Bottom/Sevier Ave/Island Home Ave.	2026	$8,866,908	L-STBG/S-STBG	1,2
09-626	Chapman Hwy (SR 71/US 441) Operational and Safety Improvements	TDOT	Chapman Hwy	SR 338 (Boyds Creek Hwy	Blount Ave	10.30	Corridor safety and operational improvements, including intersection improvements and/or driveway improvements and/or left turn lanes at various locations throughout the project area	2035	$77,018,589	IA	1
09-626D	Chapman Highway (US 441/SR 71)	TDOT	Chapman Hwy	Hendron Chapel Rd	Simpson Rd	0.90	Add center turn lane	2026	$9,920,726	HSIP	1
09-638	Oak Ridge Highway (SR 62)	TDOT	Oak Ridge Hwy (SR 62)	Schaad Rd	Byington Beaver Ridge Rd	4.20	Widen from 2 to 4 lanes	2035	$78,238,685	IA	2,3
09-643	Emory Road (SR 131)	TDOT	Emory Rd (SR 131)	Maynardville Hwy (SR 33)	Tazewell Pk (SR 331)	4.80	Widen from 2 to 4 lanes with median and/or center turn lane, including bike and pedestrian facilities.	2030	$91,539,234	IA	2,3
09-649	Pellissippi Parkway (SR 162)/Oak Ridge Highway Interchange	TDOT	Pellissippi Pkwy (SR 162)/Oak Ridge Hwy Interchange	Interchange at Oak Ridge Hwy (SR 62)		0.45	Reconstruct interchange to a Single Point Urban Interchange and provide connection to Solway Rd	2026	$36,916,125	IA	1,3
09-652	I-75 at Emory Road (SR 131) Interchange	TDOT	I-75 at Emory Rd (SR 131) Interchange			-	Reconfigure existing interchange to a Diverging Diamond Interchange to improve capacity, safety and operations.	2026	$12,676,484	IA	1,3
09-653	Alcoa Highway (SR 115/US 129) Widening	TDOT	Alcoa Hwy (SR 115/US 129)	Woodson Dr	Cherokee Trail Interchange	1.60	Widen 4-lane to 6-lane including pedestrian and bicycle facilities.	2026	$97,558,219	IA	1,2,3
09-654	I-75/I-640/I-275 Interchange	TDOT	I-75/I-640/I-275 Interchange	Interchange at I-640/I-275 (Sharps Gap).		0.57	Interchange reconstruction along with the addition of auxiliary lanes in each direction on I-75.	2035	$134,210,611	IA	2,3
09-658	Northshore Drive at Kingston Pike Intersection Improvements	TDOT	Northshore Dr at Kingston Pk	Intersection		0.50	Intersection improvements including additional turn lanes and sidewalk extensions. Replace bridge over Fourth Creek on Kingston Pike.	2030	$29,463,705	IA	1,3
09-689	Papermill Drive Complete Street	Knoxville	Papermill Dr	Weisgarber Rd	Kingston Pike (SR 1)	0.60	Reconstruct 2-lane road with addition of turn lanes and bicycle/pedestrian facilities	2030	$13,225,215	L-STBG	1,2
09-692	I-75 Widening	TDOT	I-75	Emory Rd (SR 131)	Raccoon Valley Rd (SR 170)	4.85	Widen from 4 to 6 lanes	2035	$183,319,493	IA	3

KRMP ID	PROJECT NAME	AGENCY	FACILITY NAME	FROM	TO	LENGTH (MILES)	DESCRIPTION	HORIZON YEAR	HORIZON YEAR COST	PROPOSED FUNDING SOURCE	PM IMPACT
CITY OF KNOXVILLE (CONT.)											
13-1003	Chapman Highway Advanced Traffic Management System	Knoxville		Mountain Grove Dr	Blount Ave	6.30	Advanced Traffic Management Systems (ATMS) are a component of Intelligent Transportation Systems (ITS) that integrate various technologies specifically related to the traffic signal system to improve overall operations	2026	$3,504,221	CMAQ	3
13-1004	Liberty Street Multimodal Project	Knoxville		Middlebrook Pk (SR 169)	Sutherland Ave	1.10	Addition of sidewalks and bicycle facilities along Liberty and Division Streets.	2026	$1,555,500	L-STBG	1
13-602	Knoxville Advanced Traffic Management System - Ph 1	Knoxville		Various		19.50	Advanced Traffic Management Systems (ATMS) are a component of Intelligent Transportation Systems (ITS) that integrate various technologies specifically related to the traffic signal system to improve overall operations. This project covers two primary corridors of Broadway and Kingston Pk	2026	$5,350,000	L-STBG	3
13-838	First Creek Greenway - Broadway Streetscape	Knoxville		Woodland Ave	Cecil Ave	0.30	Construct a new shared use path extending First Creek Greenway from near Cecil Ave to near Woodland Ave	2026	$1,804,148	L-STBG	1
13-844	First Creek Greenway - Downtown East	Knoxville		Caswell Park	Morningside Park	1.40	Construct a new shared use path along First Creek connecting Caswell Greenway to Morningside Greenway	2030	$2,567,248	L-STBG-TA	1
13-854	Baker Creek Greenway	Knoxville		Maynard Glenn Park	Island Home Ave	1.00	Construct a new shared use path along Baker Creek, connecting Maynard Glenn Park, Mary James Park, to the proposed South Waterfront Greenway	2040	$2,959,987	L-STBG-TA	1
13-855	First Creek Greenway - North Knox	Knoxville		Edgewood Park	Mineral Springs Ave	1.30	Construct a new shared use path along First Creek connecting Edgewood Park to the proposed First Creek Greenway - Old Broadway segment at Mineral Springs Avenue	2035	$4,194,082	L-STBG-TA	1
13-858	Knoxville Northwest Greenway Connector - Ph 2	Knoxville		Middlebrook Pk. at Third Creek Rd.	SR 62 Western Ave. pedestrian bridge	1.70	New trail connecting from Middlebrook Pk. At Third Creek Rd. to SR 62 Western Ave. pedestrian bridge. ADA upgrades and pedestrian lighting.	2026	$2,569,950	S-STBG-TA	1
13-880	Atlantic Avenue Sidewalk	Knoxville		Pershing St	Broadway	0.60	Construct 3,000 linear feet of sidewalks on Atlantic Ave between Pershing St and Broadway	2026	$1,333,787	L-STBG	1
13-884	Chapman Highway Multiuse Path	Knoxville		Young High Pk	Stone Rd	0.80	Construct a new shared use path along Chapman Highway from Young High Pike to Stone Road	2026	$2,667,573	State	1

KRMP ID	PROJECT NAME	AGENCY	FACILITY NAME	FROM	TO	LENGTH (MILES)	DESCRIPTION	HORIZON YEAR	HORIZON YEAR COST	PROPOSED FUNDING SOURCE	PM IMPACT
CITY OF KNOXVILLE (CONT.)											
17-1006	KAT Express Transit Service Enhancement - Broadway Transit Signal Priority Implementation	Knoxville		Knoxville Station	N. Broadway at Colonial Circle	6.50	The project will consist of six BRT bus stops (one for each direction totaling 12 stations), Passenger Information Systems (PIS) at each station, TSP software integrated into the City's ATMS central software, and a number of queue jump locations, which will be determined during preliminary design efforts.	2026	$12,125,332	CMAQ	3
17-608A	Magnolia Avenue Streetscape - Ph 3	Knoxville	Magnolia Ave	N. Bertrand St	N. Kyle St	0.20	Construct streetscape improvements in the existing right of way that include raised medians replacing center left-turn lane, signal improvements, bike lanes, improved sidewalks, bus pull-offs, and amenities	2026	$5,511,515	L-STBG	1
17-608B	Magnolia Avenue Streetscape - Ph 4	Knoxville	Magnolia Ave	N. Kyle St	Spruce St	0.30	Construct streetscape improvements in the existing right of way that include raised medians replacing center left-turn lane, signal improvements, bike lanes, improved sidewalks, bus pull-offs, and amenities	2026	$7,164,969	L-STBG	1
17-608C	Magnolia Avenue Streetscape - Ph 5	Knoxville	Magnolia Ave	Spruce St	N. Cherry St	0.40	Construct streetscape improvements in the existing right of way that include raised medians replacing center left-turn lane, signal improvements, bike lanes, improved sidewalks, bus pull-offs, and amenities	2030	$12,187,943	L-STBG	1
17-801	Knoxville Advanced Traffic Management System - Ph 2	Knoxville	Various			N/A	Additional upgrades of the City traffic signal system following Phase 1.	2030	$9,983,741	CMAQ	3
17-850	South Waterfront Greenway - East of Suttree	Knoxville		Suttree Landing Park	Island Home Ave Riverwalk	0.60	Construct riverwalk trail connecting the 0.10-mile section of cantilevered riverwalk along Island Home Avenue to Suttree Landing Park riverwalk that is just east of Foggy Bottom Street along the Tennessee River.	2026	$7,617,311	L-STBG	1
17-859	South Waterfront Greenway -West of Cityview	Knoxville		City View Public Greenway	Scottish Pk Park	1.90	A riverwalk connector from the existing CityView Public Riverwalk to Scottish Pike Park	2040	$11,481,160	L-STBG-TA	1
17-901	East Knox Greenway – Ph 1	Knoxville		Willow Ave	Knoxville Botanical Gardens	1.60	Construct a new shared use path connecting First Creek Greenway to Knoxville Botanical Gardens and Arboretum	2026	$1,806,825	L-STBG	1

KRMP ID	PROJECT NAME	AGENCY	FACILITY NAME	FROM	TO	LENGTH (MILES)	DESCRIPTION	HORIZON YEAR	HORIZON YEAR COST	PROPOSED FUNDING SOURCE	PM IMPACT
CITY OF KNOXVILLE (CONT.)											
17-910	Tazewell Pike Sidewalk	Knoxville		Old Broadway	Jacksboro Pk	0.60	Construct sidewalk along Tazewell Pike from Old Broadway to Jacksboro Pike	2035	$1,521,308	L-STBG-TA	1
17-911	Tyson Fort Sanders Bike Connection	Knoxville		Fort Sanders Neighborhood	Tyson Park	0.50	Construct new shared use path between Fort Sanders Neighborhood and Tyson Park	2026	$6,062,666	L-STBG-TA	1
18-200B	Alcoa Highway (SR 115/US 129) ITS Expansion - Ph 2	TDOT		Topside Rd	Cherokee Trail Interchange	5.55	ITS Smartway Geographic Expansion	2030	$2,531,591	NHPP	3
18-201	I-140 ITS Expansion	TDOT		Near MM 2	Near MM 11 (SR 115/US 129/Alcoa Hwy)	9.20	I-140 ITS Expansion to include the installation of a power and communication network and ITS Devices such as CCTV cameras, DMS, and RDS	2026	$5,180,824	NHPP	3
18-600	I-75 ITS Expansion	TDOT		MM 109.6	SR 61 (Exit 122)	13.03	ITS expansion includes the deployment of CCTV cameras at critical interchanges. Install power and communications infrastructure and at Least 2 CCTV Cameras at each Interchange.	2026	$3,968,291	NHPP	3
18-603	Middlebrook Pike (SR 169) ATMS Expansion	Knoxville		College St	Joe Hinton Rd	6.50	Advanced Traffic Management Systems (ATMS) are a component of Intelligent Transportation Systems (ITS) that integrate various technologies specifically related to the traffic signal system to improve overall operations.	2026	$2,678,596	CMAQ	3
19-603	Traffic Signal Improvements for the U.T. Area	Knoxville		Various		N/A	Includes Advanced Traffic Management Systems (ATMS) which are a component of Intelligent Transportation Systems (ITS) that integrate various technologies specifically related to the traffic signal system to improve overall operations. Project covers several roadways in and around UT campus	2026	$3,270,533	CMAQ	3
19-606	Woodland Avenue Complete Street	Knoxville		N. Broadway	Glenwood Ave	0.50	Install bike lanes, sidewalks, and pedestrian crossing improvements. Project connects a greenway to existing bike lanes.	2026	$2,755,757	L-STBG	1
21-600	Magnolia Avenue/Rutledge Pike/Asheville Highway Interchange Improvements	Knoxville				-	Construct interchange improvements to consist of intersection improvements, bike lanes and enhanced sidewalks	2030	$15,818,395	L-STBG	1
21-601	I-40 Westbound Interchange at I-275	TDOT		I-275	Near I-640	2.00	Interchange access improvements and extension of two existing lanes from US129 entrance ramp to WB mainline such that one lane continues through on I-40 mainline	2040	$101,895,293	IA	3

KRMP ID	PROJECT NAME	AGENCY	FACILITY NAME	FROM	TO	LENGTH (MILES)	DESCRIPTION	HORIZON YEAR	HORIZON YEAR COST	PROPOSED FUNDING SOURCE	PM IMPACT
CITY OF KNOXVILLE (CONT.)											
21-605	James White Parkway Corridor Improvements	Knoxville				1.20	Address vehicular, pedestrian, and cyclist needs in local roadway network adjacent to James White Pkwy. Includes: Hillwood Ave from Anita Dr to Island Home Ave, Anita Dr from Sevier Ave to Hillwood Ave and Sevierville Pk from Woodlawn Pk to Sevier Ave	2030	$6,482,949	L-STBG	1
21-606	James White Parkway Roadway Improvements	Knoxville		Sevierville Pk	Bridge over TN River	1.20	This project will relocate the two northbound travel lanes to share the existing pavement for the southbound lanes while maintaining 2 travel lanes in each direction. This will allow the current northbound travel lanes and adjacent excess land to be repurposed to a linear park.	2026	$11,023,029	L-STBG	1
21-800	South Knoxville Bridge Greenway	Knoxville		Anita Dr	Morningside Greenway at Riverside Dr	0.60	Construct multi-modal path along James White Pkwy	2026	$2,645,527	L-STBG-TA	1
21-802	Adair to Old Broadway Connection	Knoxville		Old Broadway	N Broadway	0.20	Construct new multiuse path to connect existing path on Old Broadway to north of Adair Drive	2030	$3,110,368	L-STBG-TA	1

Figure G-4. Fiscally Constrained Projects in Loudon County

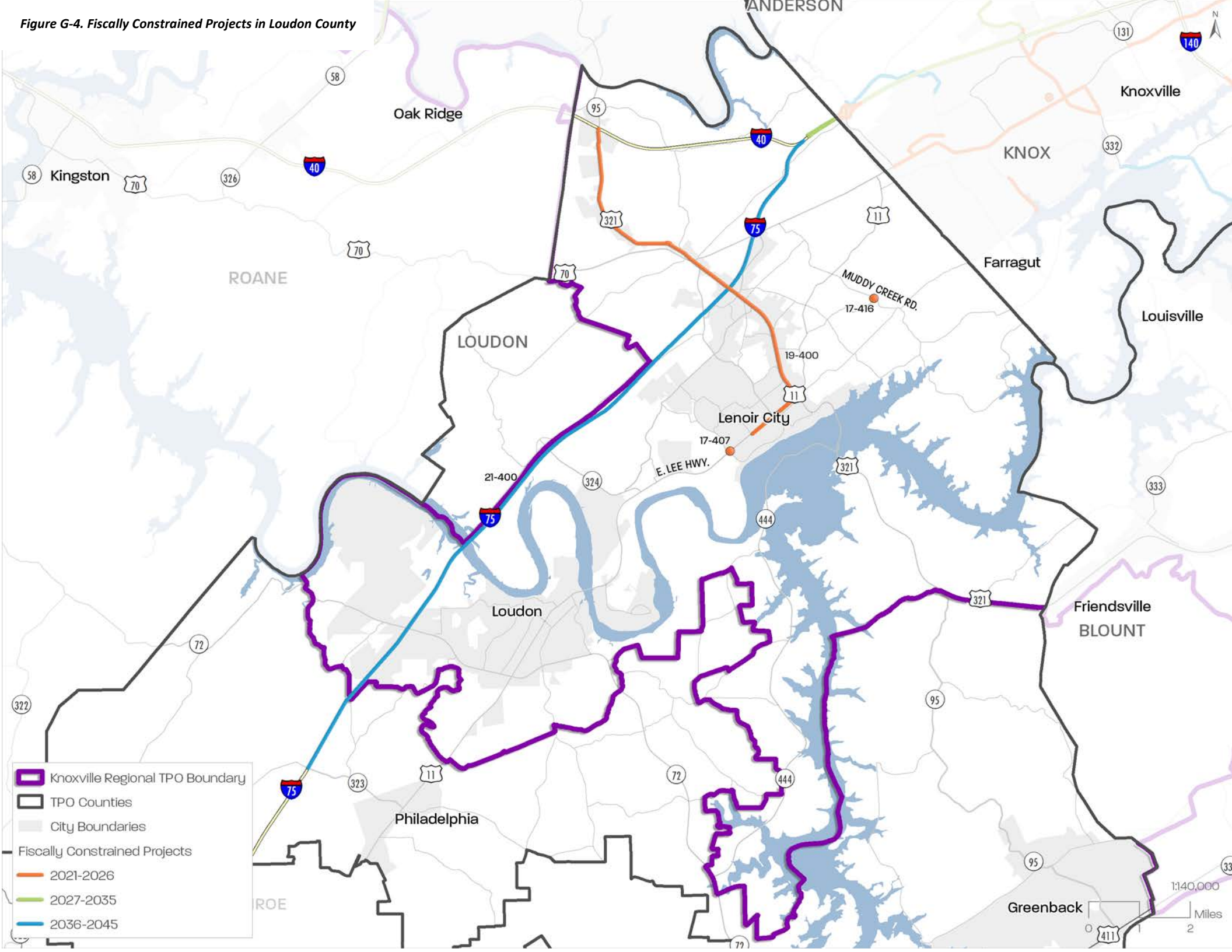


Table G-5. Fiscally Constrained Projects in Loudon County

KRMP ID	PROJECT NAME	AGENCY	FACILITY NAME	FROM	TO	LENGTH (MILES)	DESCRIPTION	HORIZON YEAR	HORIZON YEAR COST	PROPOSED FUNDING SOURCE	PM IMPACT
CITY OF LENOIR CITY											
17-407	US 11 at Industrial Park Drive Intersection Improvement	Lenoir City	US 11 at Industrial Park Dr	Intersection of US 11 at Industrial Park Dr		0.20	Intersection improvements including turn lanes and new traffic signal	2026	$909,400	HSIP	1
19-400	Lenoir City CMAQ ITS Phase 2	Lenoir City		Various		8.6	Continues implementation of Advanced Traffic Management Systems (ATMS) which are a component of Intelligent Transportation Systems (ITS) that integrate various technologies specifically related to the traffic signal system to improve overall operations. This project primarily covers major corridors of US 321 and US 11	2026	$2,546,761	CMAQ	3
LOUDON COUNTY											
17-416	Muddy Creek Road Intersection Realignment	Loudon County	Muddy Creek Rd at Virtue Rd	Intersection		0.10	Realign intersection and add turn lanes	2026	$529,877	HSIP	1
21-400	I-75 Widening	TDOT	I-75	Pond Creek Rd (SR 323)	I-40/I-75 Junction	16.10	Widen from 4 to 6 lanes	2040	$361,119,430	IA	3

Figure G-5. Fiscally Constrained Projects in Roane County

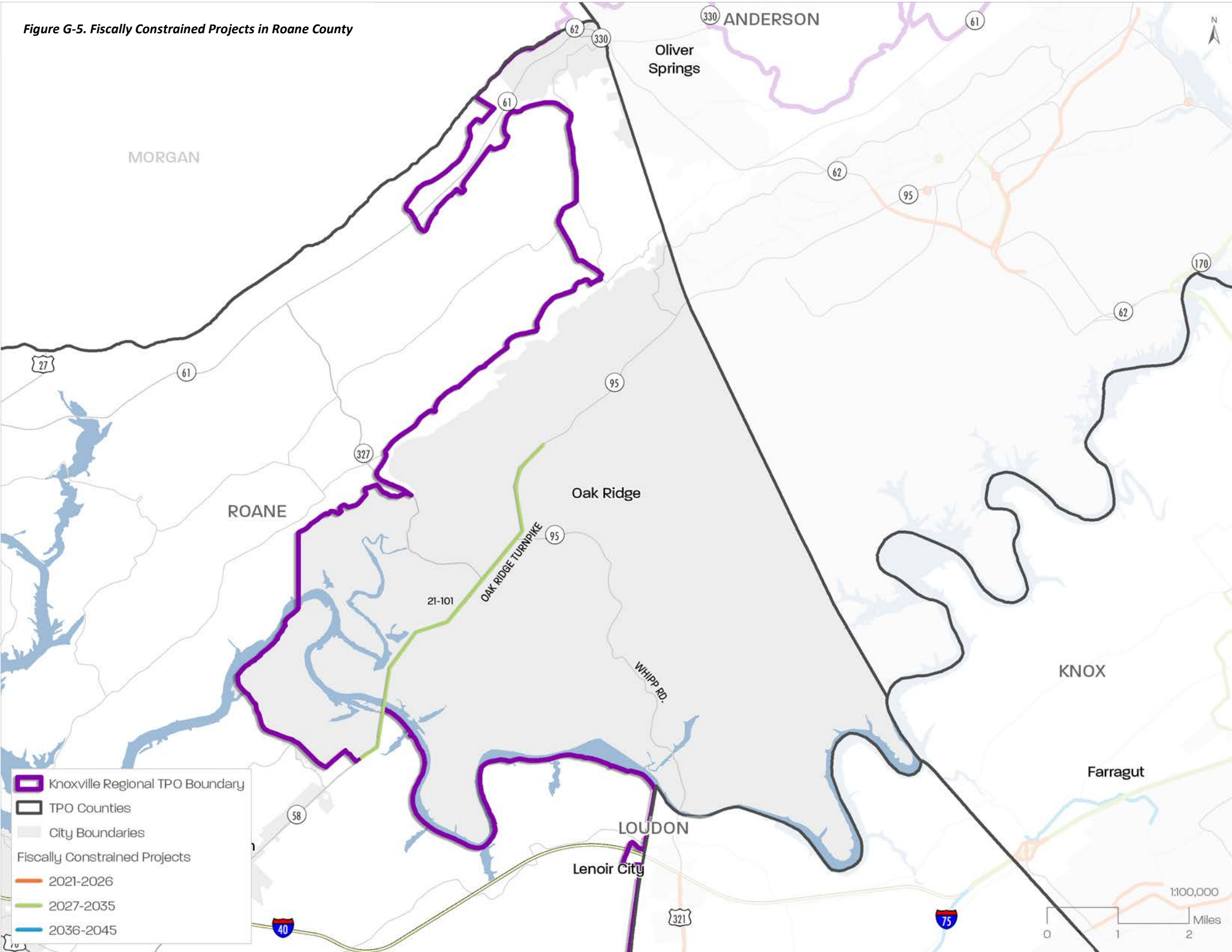


Table G-6. Fiscally Constrained Projects in Roane County

KRMP ID	PROJECT NAME	AGENCY	FACILITY NAME	FROM	TO	LENGTH (MILES)	DESCRIPTION	HORIZON YEAR	HORIZON YEAR COST	PROPOSED FUNDING SOURCE	PM IMPACT
CITY OF OAK RIDGE											
21-101	West End Corridor Intersection Improvements	Oak Ridge	Oak Ridge Turnpike (SR 95)	Renovare Boulevard	Broadberry Avenue at Gallaher Road (SR 58)	N/A	Intersection improvements along Oak Ridge Turnpike (SR 95/SR 58) at Renovare Blvd, Novus Dr, Heritage Center Blvd, and Broadberry Ave at Gallaher Rd)	2030	$2,593,179	L-STBG	1

Figure G-6. Fiscally Constrained Projects in Sevier County

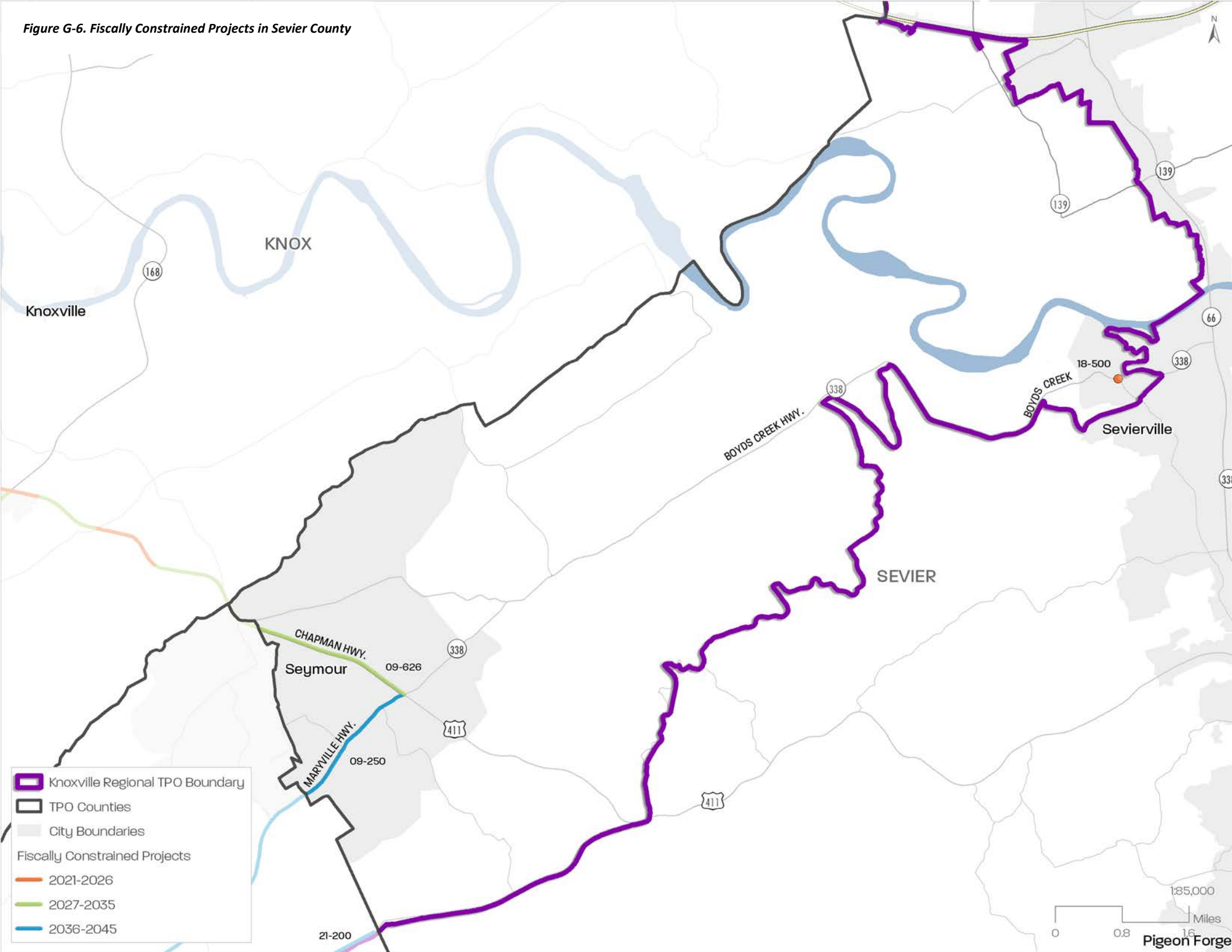


Table G-7. Fiscally Constrained Projects in Sevier County

KRMP ID	PROJECT NAME	AGENCY	FACILITY NAME	FROM	TO	LENGTH (MILES)	DESCRIPTION	HORIZON YEAR	HORIZON YEAR COST	PROPOSED FUNDING SOURCE	PM IMPACT
CITY OF SEVIERVILLE											
18-500	Boyds Creek Highway (SR 338) at Old Knoxville Highway Intersection Improvements	Sevierville	Boyds Creek Highway (SR 338)	at Old Knoxville Highway Intersection		-	Reconfigure existing intersection to improve safety and operations through geometric layout changes, addition of turn lanes, and installation of a new traffic signal.	2026	$1,207,022	L-STBG	1

Table G-8. Fiscally Constrained Programs in TPO Planning Region

KRMP ID	PROJECT NAME	AGENCY	FACILITY NAME	FROM	TO	LENGTH (MILES)	DESCRIPTION	HORIZON YEAR	HORIZON YEAR COST	PROPOSED FUNDING SOURCE	PM RULING
21-700	Smart Trips	TPO	--	--	--	--	Smart Trips Comprehensive and Ridesharing Program	2026	$1,194,070	CMAQ	3
21-701	Bike Parking	TPO	--	--	--	--	Provide convenient and secure bike parking destinations by reducing cost for businesses and agencies to provide bike parking for employees and customers	2026	$22,046	CMAQ	3
21-702	Resurfacing Program	Regional	--	--	--	--	Projects for preservation, rehabilitation, resurfacing and restoration of federal aid roadways	2026	$2,204,606	L-STBG	2
21-702	Resurfacing Program	Regional	--	--	--	--	Projects for preservation, rehabilitation, resurfacing and restoration of federal aid roadways	2035	$3,050,241	L-STBG	2
21-702	Resurfacing Program	Regional	--	--	--	--	Projects for preservation, rehabilitation, resurfacing and restoration of federal aid roadways	2045	$4,220,242	L-STBG	2
21-703	Safety Improvements Program	Regional	--	--	--	--	Projects that correct or improve a hazardous road location or feature or address a highway safety problem.	2026	$2,204,606	L-STBG	1
21-703	Safety Improvements Program	Regional	--	--	--	--	Projects that correct or improve a hazardous road location or feature or address a highway safety problem.	2035	$3,050,241	L-STBG	1
21-703	Safety Improvements Program	Regional	--	--	--	--	Projects that correct or improve a hazardous road location or feature or address a highway safety problem.	2045	$4,220,242	L-STBG	1
21-704	NHS Preservation/Operations	TDOT	--	--	--	--	Projects for preservation, rehabilitation, resurfacing and restoration of federal aid roadways	2026	$155,414,214	NHPP	2
21-704	NHS Preservation/Operations	TDOT	--	--	--	--	Projects for preservation, rehabilitation, resurfacing and restoration of federal aid roadways	2035	$297,983,280	NHPP	2
21-704	NHS Preservation/Operations	TDOT	--	--	--	--	Projects for preservation, rehabilitation, resurfacing and restoration of federal aid roadways	2045	$451,091,132	NHPP	2
21-705	Safety Improvements Program	TDOT	--	--	--	--	Projects that correct or improve a hazardous road location or feature or address a highway safety problem.	2026	$54,775,624	HSIP	1
21-705	Safety Improvements Program	TDOT	--	--	--	--	Projects that correct or improve a hazardous road location or feature or address a highway safety problem.	2035	$120,064,859	HSIP	1
21-705	Safety Improvements Program	TDOT	--	--	--	--	Projects that correct or improve a hazardous road location or feature or address a highway safety problem.	2045	$181,755,813	HSIP	1

Figure G-7. Illustrative Projects in TPO Planning Area

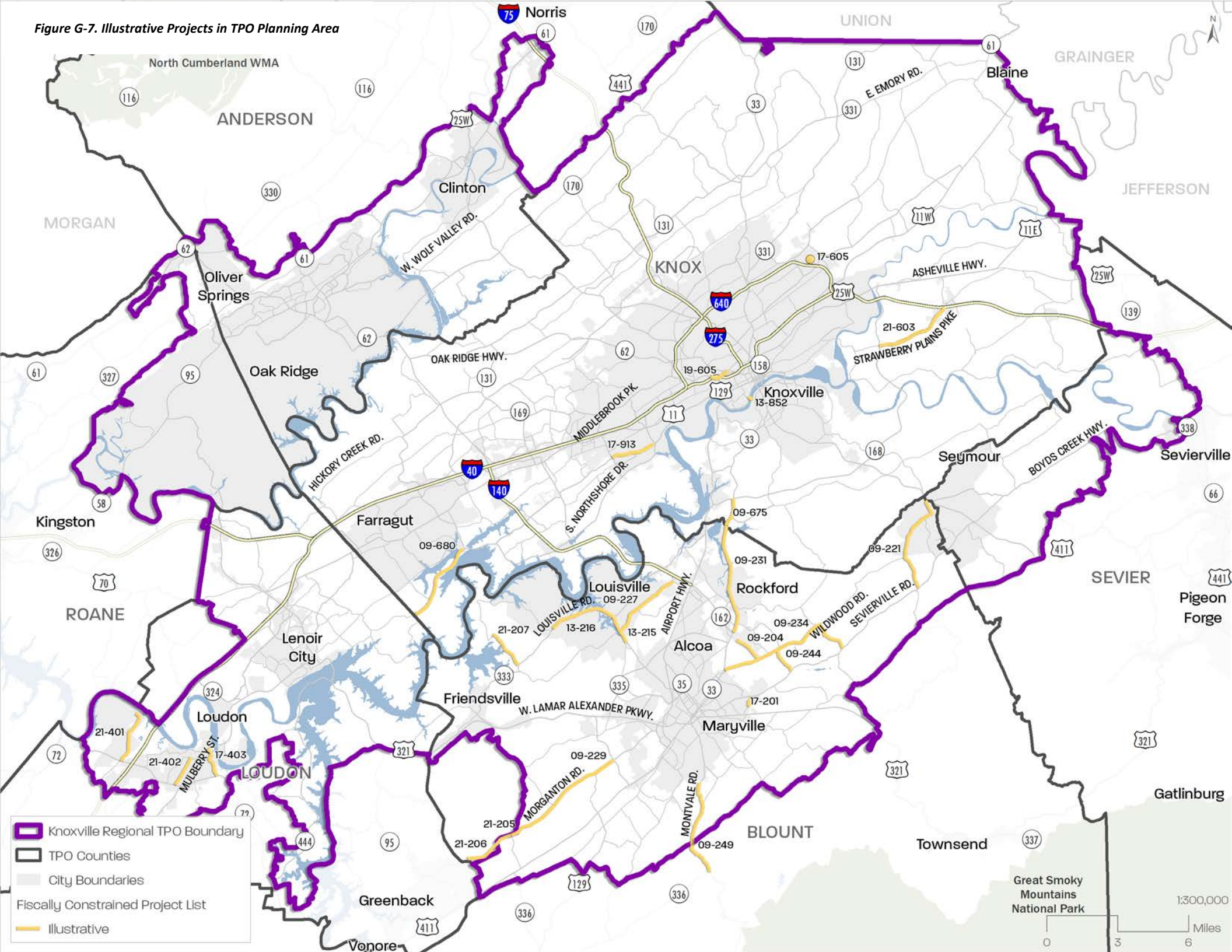


Table G-9. Illustrative Projects in the TPO Planning Area

KRMP ID	PROJECT NAME	AGENCY	FACILITY NAME	FROM	TO	LENGTH (MILES)	DESCRIPTION
09-204	Pellissippi Place Access Road Extension	Alcoa	Pellissippi Place	Wildwood Rd	Pellissippi Place Existing Terminus	1.20	Construct new 2-lane road with center turn lane or median and bicycle/pedestrian facilities
09-221	Burnett Station Road Reconstruction	Blount County	Burnett Station Road	Sevierville Road/SR 35/US 411	Chapman Highway/SR 71/US 441	4.40	Reconstruction of 2-lane road with addition of turn lanes
09-227	Mentor Road Reconstruction	Blount County	Mentor Road	Louisville Road/SR 334	Wrights Ferry Road	3.20	Reconstruct 2-lane roadway with addition of turn lanes
09-229	Morganton Road Reconstruction - Ph 2	Blount County	Morganton Rd	Walker Rd	William Blount Drive (SR 335)	3.30	Reconstruct 2-lane roadway with addition of turn lanes
09-231	Old Knoxville Highway (SR 33) Reconstruction - Rockford	Blount County	Old Knoxville Hwy (SR 33)	Pellissippi Pkwy (SR 162)	Knox County Line	4.60	Reconstruct 2-lane road with addition of turn lanes
09-234	Wildwood Road Reconstruction	Blount County	Wildwood Road	Maryville City Limits	Sevierville Rd	6.10	Reconstruct 2-lane road with addition of turn lanes
09-244	Peppermint Road Reconstruction	Blount County	Peppermint Road	Wildwood Road	Sevierville Road	1.10	Reconstruct 2-lane road with addition of turn lanes
09-249	Montvale Road (SR 336) Reconstruction	Blount County	Montvale Road (SR 336)	Six Mile Rd	Maryville City Limits	4.40	Reconstruct 2-lane road with addition of turn lanes
13-215	Louisville Road (SR 333/SR 334) Reconstruction - Ph 1	Blount County	Louisville Rd (SR 333)	Alcoa City Limts	Lackey Creek Bridge	1.90	Reconstruct 2-lane road with addition of turn lanes
13-216	Louisville Road (SR 333) Reconstruction - Ph 2	Blount County	Louisville Rd (SR 333)	Lackey Creek Bridge	Old Lowes Ferry Rd	2.30	Reconstruct 2-lane road with addition of turn lanes
21-205	Morganton Road Ph 3	Blount County	Morganton Rd	Walker Road	Henry Lane	2.30	Reconstruct 2-lane roadway with addition of turn lanes
21-206	Morganton Road Ph 4	Blount County	Morganton Rd	Henry Lane	Loudon County Line	2.40	Reconstruct 2-lane roadway with addition of turn lanes
21-207	Ralph Phelps Road	Blount County	Ralph Phelps Road	Lowes Ferry	Louisville Road	1.80	Reconstruct 2-lane road with addition of turn lanes
17-201	Amerine Road Improvements	Maryville	Amerine Rd	Fielding Drive	Sevierville Rd	0.50	Reconstruct 2-lane road with addition of turn lanes and sidewalk
09-675	Maryville Pike (SR 33)	Knox County	Maryville Pk (SR 33)	Gov John Sevier Hwy (SR 168)	Blount County Line	1.20	Reconstruct 2-lane road with addition of turn lanes
09-680	Northshore Drive Improvements	Knox County	Northshore Drive	Concord	Harvey Road	3.60	Northshore Dr (SR 332) Improvements (Provide better connectivity from Town of Farragut to the residents)
21-603	Strawberry Plains Pike Improvements	Knox County	Strawberry Plains Pike	I-40	Gov. John Sevier Highway	3.40	Widening of Strawberry Plains Pk from Governor John Sevier Hwy to I-40)
13-852	Knoxville South Waterfront Pedestrian/Bicycle Bridge	Knoxville	South Waterfront Pedestrian Bridge	Clancy Ave	UT	0.30	Construct a new pedestrian/bicycle bridge over the Tennessee River connecting the South Knoxville Waterfront redevelopment area to the University of Tennessee
17-605	Knoxville Center Mall Circulation Study	Knoxville				N/A	Conduct a planning study of the Knoxville Center, I-640 Interchange, frontage roads, and nearby arterial and collectors including a feasibility study to add a new exit from I-640)
17-913	Westland Drive Bike Lane	Knoxville		Morrell Rd	Northshore Dr (SR 332)	1.90	Construct bicycle lanes and sidewalks along both sides of roadway

KRMP ID	PROJECT NAME	AGENCY	FACILITY NAME	FROM	TO	LENGTH (MILES)	DESCRIPTION
19-605	Middlebrook Pike Complete Street	Knoxville		Western Ave	Proctor St	0.85	Install protected bicycle facilities, improve sidewalks and upgrade bike/pedestrian treatments at three intersections. Project connects existing bike/ped facilities on University Avenue to the greenway on Middlebrook Pike at Proctor Street.
17-403	Grove Street Resurfacing	City of Loudon	Grove St	US 11	SR 72	1.30	Resurface roadway and add left turn lane on Hwy 72
21-401	Corporate Park Drive Resurfacing	City of Loudon	Corporate Park Drive	State Route 72	Cul de sac Corporate Park Drive	2.40	Resurfacing project
21-402	Maremont Parkway Resurfacing	City of Loudon	Maremont Parkway	State Route 72	Highland Avenue	1.40	Resurfacing (Roadway milling and installing new pavement for the entire street)

PERFORMANCE

After finalizing the fiscally constrained project list, the TPO's regional travel demand model was used to assess the performance of the transportation system with the projects. Using the anticipated horizon year of completion, the metrics shown in Table G-10 illustrate how the different parts of the roadway system are predicted to perform in 2026, 2035, and 2045 based on Vehicle Miles Traveled (VMT), Vehicle Hours Traveled (VHT), and the volume-to-capacity (v/c) ratios. It is important to note that the travel demand model results do not reflect improvements to the transportation system generated by projects that do not increase roadway capacity (e.g., greenway, sidewalk, transit, or bikeway projects). Therefore, the metrics shown in Table G-10 indicate how efficiently the roadway system within the TPO's planning area operates with the planned project investments.

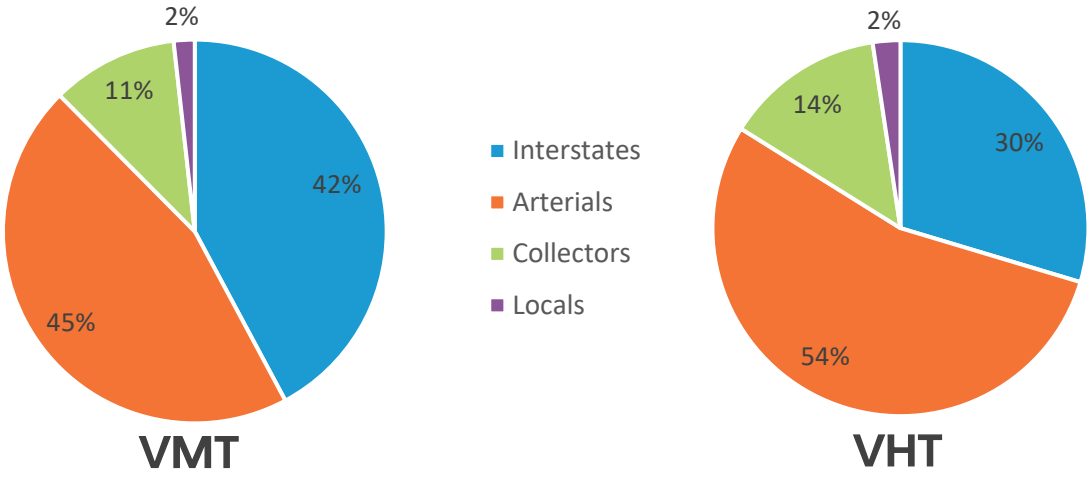
As shown, most metrics show increases in each horizon, which is to be expected given projected regional growth. For this reason, it can be helpful to look at the VMT and VHT metrics on a per capita basis. By 2045, residents in the TPO area are projected to travel approximately 18 vehicle miles and spend nearly half an hour on the roadway system each day on average.

Table G-10. Roadway System Performance by Plan Horizon

		VMT			VHT			V/C RATIO		
		2026	2035	2045	2026	2035	2045	2026	2035	2045
RURAL	Interstates	1,019,437	1,076,992	1,207,234	15,970	16,942	18,957	0.75	0.73	0.67
	Principal Arterials	272,431	289,208	316,852	4,819	5,156	5,722	0.32	0.34	0.36
	Minor Arterials	202,951	212,154	230,894	4,163	4,394	4,841	0.36	0.37	0.40
	Major Collectors	176,847	191,366	217,817	3,878	4,217	4,840	0.27	0.29	0.32
	Minor Collectors	149,406	167,878	201,369	3,662	4,148	5,042	0.20	0.23	0.26
	Local Roads	26,520	29,514	34,215	702	783	909	0.09	0.10	0.11
URBAN	Interstates	6,981,782	7,406,924	7,966,201	121,950	130,691	144,949	0.86	0.87	0.88
	Freeways & Expwys	435,869	493,772	537,796	7,569	8,687	9,583	0.46	0.53	0.58
	Principal Arterials	5,106,150	5,495,691	5,849,624	151,811	160,586	174,416	0.54	0.55	0.58
	Minor Arterials	3,446,137	3,733,301	4,053,517	109,991	119,528	132,485	0.50	0.51	0.53
	Collectors	1,728,262	1,848,755	2,038,449	59,269	63,697	70,605	0.35	0.37	0.39
	Local Roads	318,541	339,333	373,026	11,043	11,805	12,991	0.30	0.30	0.31
	SYSTEM TOTAL	**19,864,333**	**21,284,888**	**23,026,994**	**494,827**	**530,634**	**585,340**	**0.60**	**0.61**	**0.63**
	METRICS PER CAPITA	**17.96**	**18.00**	**18.18**	**0.45**	**0.45**	**0.46**	--	--	--

In taking a closer look at the VMT, we can see that in 25 years residents will spend nearly 80% of their vehicle miles on interstates and arterials with most of those miles occurring on facilities classified as urban. Similarly, travel on interstates and arterials will make up about 85% of the time residents spend driving. By both metrics, residents are expected to spend the majority of their driving time and mileage on arterials in 2045. It is important to note that local roadway facilities are not often included in the travel demand model. This means that these statistics will underestimate the number of miles traveled on local streets and the total vehicle miles traveled each day by residents.

Figure G-8. 2045 VMT and VHT by Facility Type



In addition to examining the outputs by horizon year, it can also be helpful to compare the values shown in Table G-11. This table compares the system performance in 2045 under two different scenarios – one that assumes no additional investment beyond projects for which funding is already committed (known as the Existing + Committed, or E+C, scenario) and a second scenario that incorporates all of the fiscally constrained projects (known as the Build scenario). The comparison highlights the impact of the planned projects, since regional growth remains constant in each scenario. As shown, while overall VMT is expected to increase slightly, the hours spent driving, as measured by VHT, are expected to decrease. When looking at these metrics per capita, it can be seen that the 2045 E+C scenario actually projects a slightly lower VMT per capita than the 2045 Build scenario. One hypothesis for this outcome is related to the concept of induced demand, in which adding more capacity to the roadway system actually causes more driving (as illustrated with increased VMT) as roadway improvements create ”better” driving conditions such as reduced congestion (as illustrated with the decreased VHT). In total, implementation

of the Mobility Plan 2045 fiscally constrained list is projected to have a minor impact on both VMT and VHT on average. Additionally, the project investments are expected to decrease the average v/c ratio across the region by 4.5% with the largest improvements seen on rural interstates. Although some functional classifications show increased v/c ratios in the 2045 Build scenario, the metrics do not indicate that these facilities will be over-capacity on average in the future horizon year. The resulting LOS based on those v/c ratios for the 2026, 2035, and 2045 horizon years incorporating the fiscally constrained projects are shown in Figure G-9, Figure G-10, and Figure G-11, respectively.

Table G-11. 2045 Roadway System Performance Comparison

		2045 E+C			2045 BUILD			PERCENT CHANGE		
		VMT	VHT	V/C	VMT	VHT	V/C	VMT	VHT	V/C
RURAL	Interstates	1,165,592	20,819	0.85	1,207,234	18,957	0.67	3.6%	-8.9%	-21.2%
	Principal Arterials	325,672	5,897	0.37	316,852	5,722	0.36	-2.7%	-3.0%	-2.7%
	Minor Arterials	223,321	4,592	0.38	230,894	4,841	0.40	3.4%	5.4%	5.3%
	Major Collectors	221,986	4,924	0.32	217,817	4,840	0.32	-1.9%	-1.7%	0.0%
	Minor Collectors	208,109	5,223	0.27	201,369	5,042	0.26	-3.2%	-3.5%	-3.7%
	Local Roads	35,214	936	0.11	34,215	909	0.11	-2.8%	-2.9%	0.0%
URBAN	Interstates	7,656,544	142,048	0.92	7,966,201	144,949	0.88	4.0%	2.0%	-4.3%
	Freeways & Expwys	393,865	7,024	0.57	537,796	9,583	0.58	36.5%	36.4%	1.8%
	Principal Arterials	5,744,235	180,618	0.59	5,849,624	174,416	0.58	1.8%	-3.4%	-1.7%
	Minor Arterials	3,994,046	134,356	0.56	4,053,517	132,485	0.53	1.5%	-1.4%	-5.4%
	Collectors	2,107,785	72,888	0.40	2,038,449	70,605	0.39	-3.3%	-3.1%	-2.5%
	Local Roads	391,568	13,532	0.32	373,026	12,991	0.31	-4.7%	-4.0%	-3.1%
	SYSTEM TOTAL	**22,467,937**	**592,857**	**0.66**	**23,026,994**	**585,340**	**0.63**	**2.5%**	**-1.3%**	**-4.5%**
	METRICS PER CAPITA	**17.73**	**0.47**	**--**	**18.18**	**0.46**	**--**	**2.5%**	**-1.3%**	**--**

Figure G-9. 2026 Horizon LOS

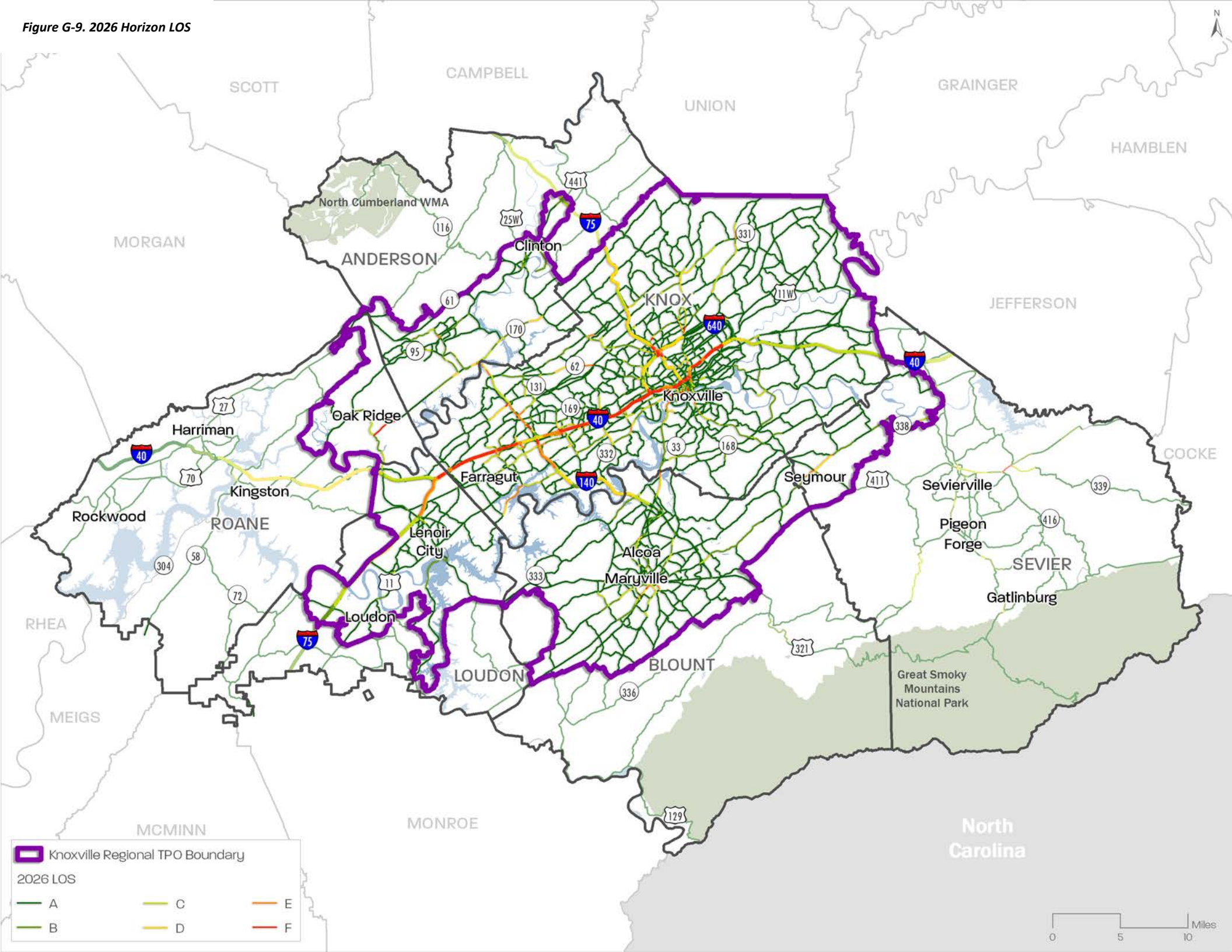


Figure G-10. 2035 Horizon LOS

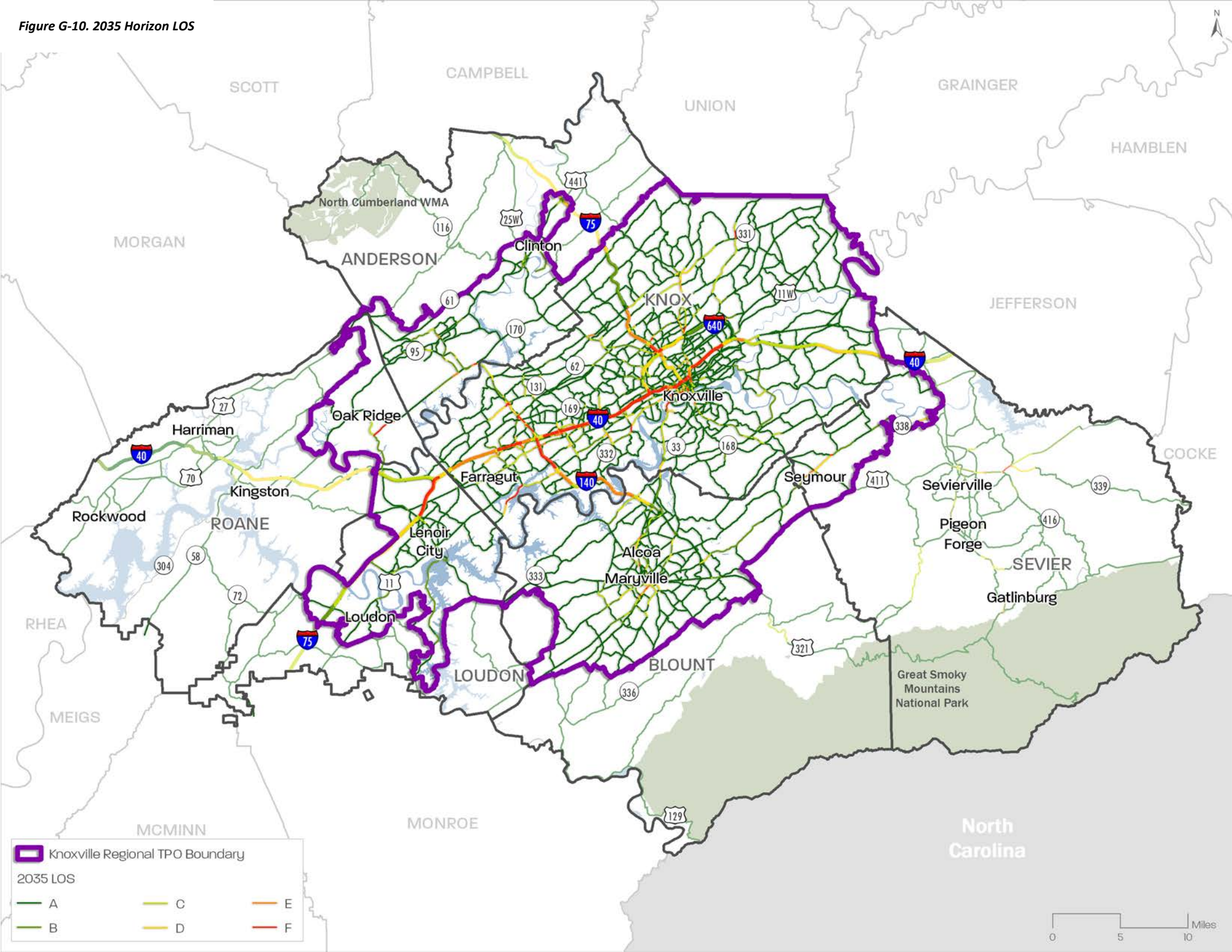
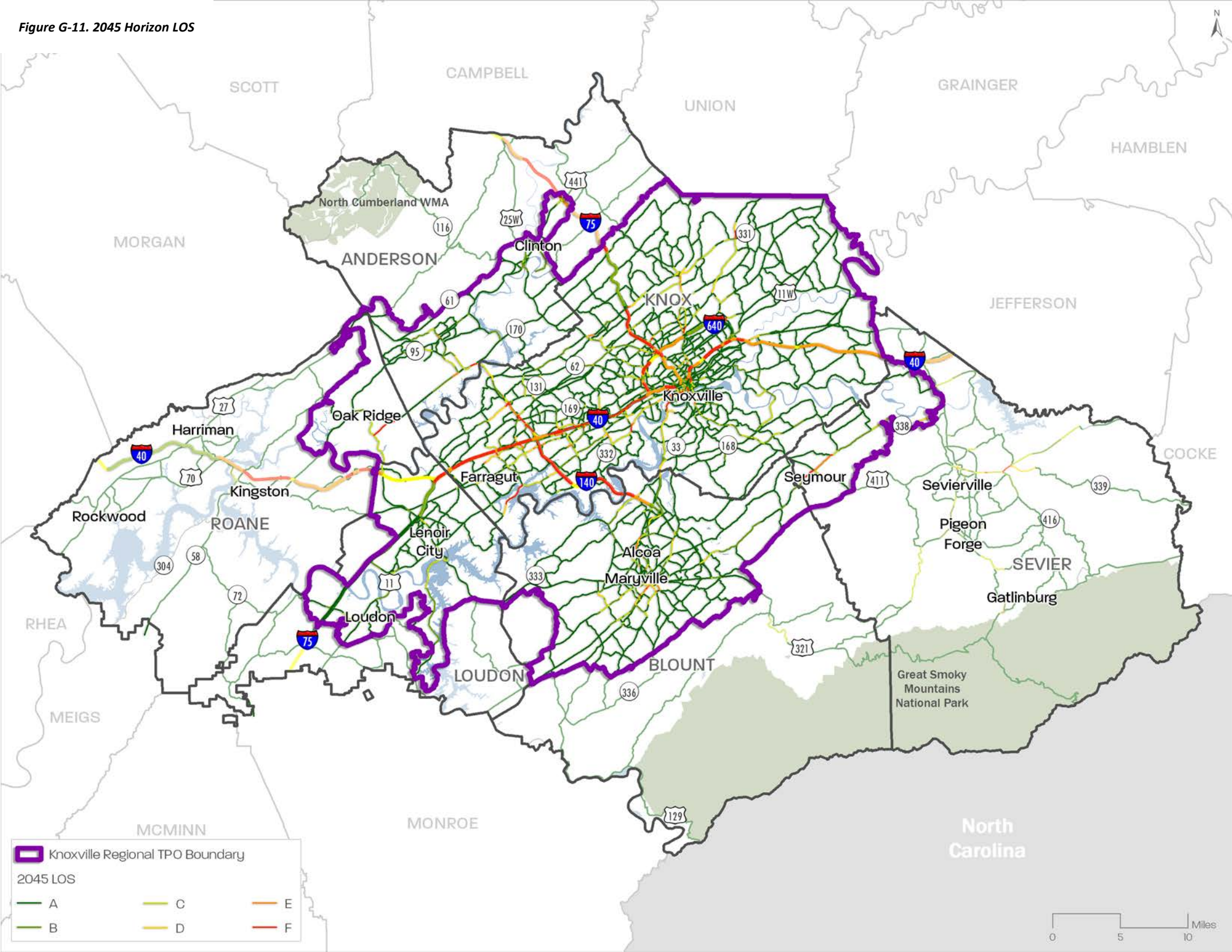


Figure G-11. 2045 Horizon LOS



MOBILITY PLAN 2045

Appendix H

Impact Mitigation

H. IMPACT MITIGATION

FEDERAL EQUITY REQUIREMENTS

Overview of Equity in Transportation

Transportation projects can provide both benefits and burdens to the adjacent community, often within the same project. Potential benefits of transportation projects include:

- Safety improvements;
- Travel time savings;
- Emission reductions;
- Increased travel options;
- Improved access to destinations;
- Economic development; and
- Health benefits.

Transportation projects can also generate negative direct impacts and externalities. Common burdens associated with transportation projects include, but are not limited to:

- Air quality impacts;
- Water quality impacts;
- Noise impacts;
- Visual impacts;
- Property impacts;
- Neighborhood impacts; and
- Health impacts.

Federal requirements require that agencies receiving federal funding must analyze potential impacts from proposed transportation projects to ensure their benefits and burdens are equitably distributed throughout the region and do not disproportionally affect underserved communities. Various social, economic, and geographic issues can result in some communities bearing a disproportionate share of burdens from transportation projects. There are three federal regulations that must be considered in federally funded programs: Title VI of the Civil Rights Act of 1964, Executive Order (EO) 12898, and Executive Order 13166. Title VI prohibits discrimination on the basis of race, color, or national origin and requires the identification of minority populations. EO 12898 requires agencies to develop an environmental justice strategy to identify and address disproportionally high effects of their actions on

low-income and minority populations. Agencies must ensure these communities have access to information and public participation opportunities. EO 13166 requires agencies to analyze their own services and the need for those services by people with Limited English Proficiency (LEP), providing additional resources to meet the needs of this population group.

The Knoxville Regional TPO is responsible for identifying these required populations – minority, low income, and LEP – within their planning area and addressing any disproportionally high effects that transportation projects may impose on them. For the MTP, the TPO is also responsible for ensuring additional outreach and public participation opportunities for low-income and minority populations who may have less access to resources. Approximately, 6.6% of the TPO's population is minority and 7.6% of households are below the poverty line based on Census block group data shown in Figure H-1 and Figure H-2. In 2018, the TPO Executive Board adopted the Public Outreach Plan, which detailed a proactive public outreach approach, including best practices and evaluation techniques to engage these traditionally underserved communities.

Figure H-1. Minority Populations in the TPO

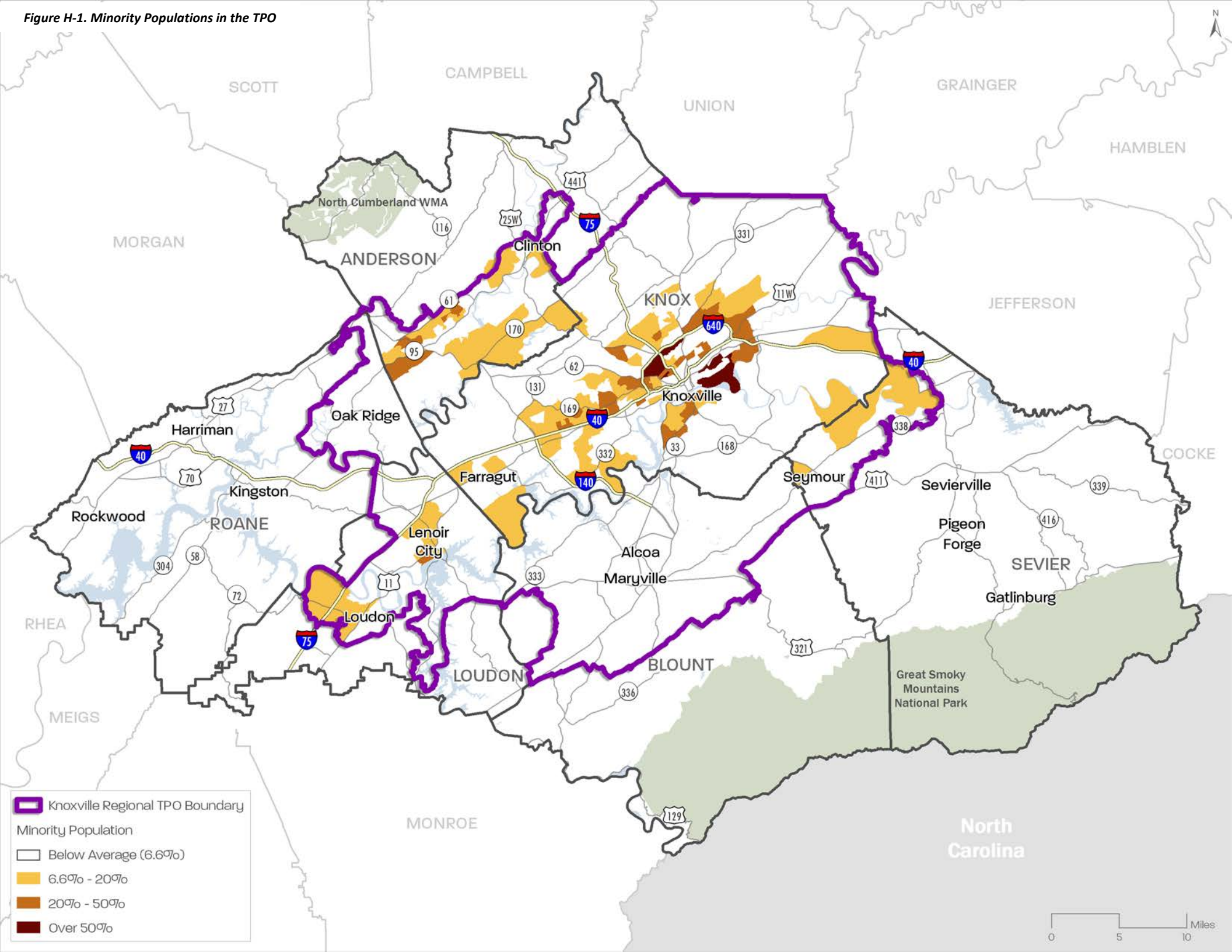
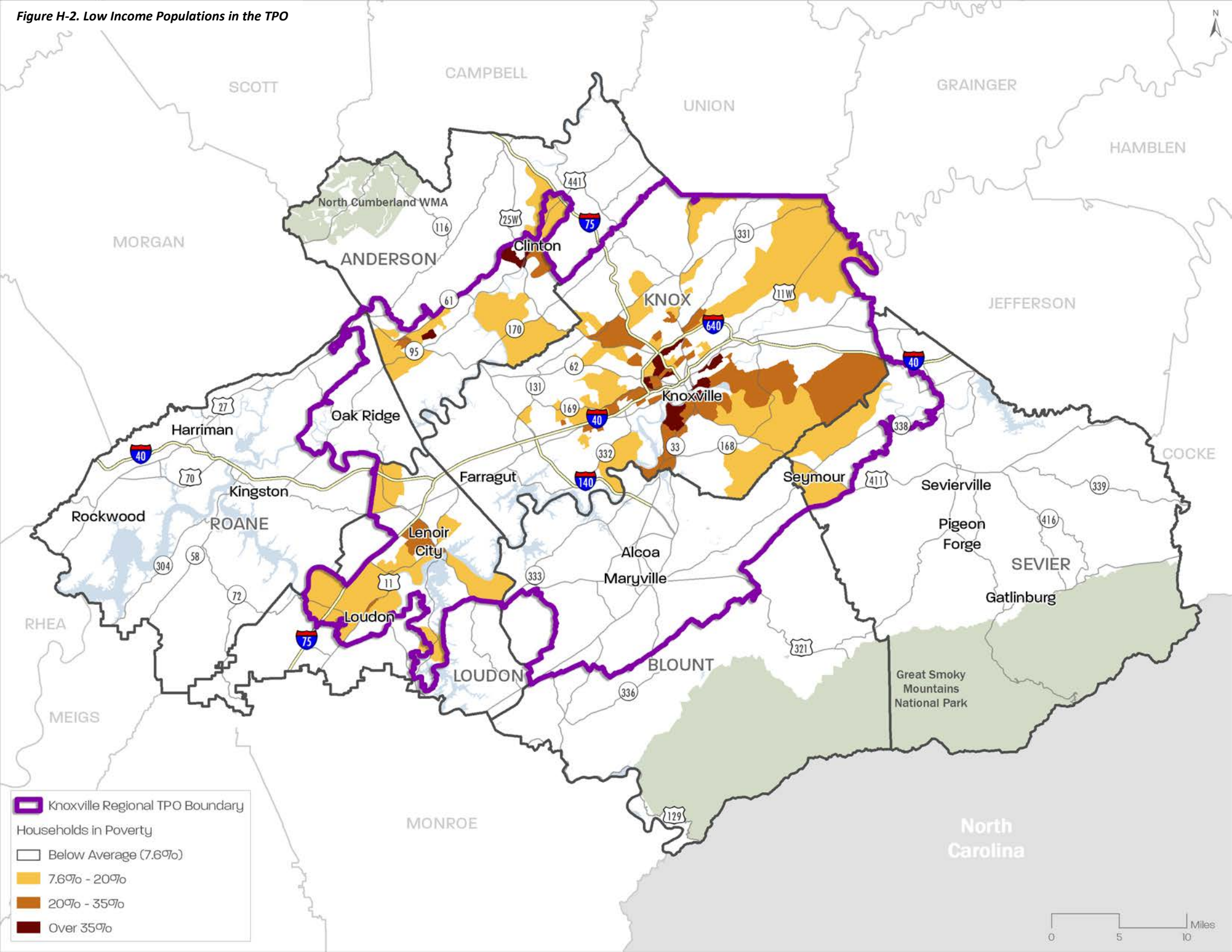


Figure H-2. Low Income Populations in the TPO



Priority Population Analysis

In addition to the federally required Title VI and environmental justice requirements listed above, the TPO has taken steps to identify "Priority Populations," which are areas characterized by above-average socioeconomic stress in Anderson, Blount, Knox, Loudon, Roane, and Sevier Counties. The analysis covered the six-county area using 22 socioeconomic indicators that were divided into three themes: accessibility, opportunity, and vulnerability.

Table H-1 outlines all 22 indicators by theme. Accessibility indicators relate to the built environment and infrastructure while indicators of opportunity consider education and income measures. The vulnerability indicators are social factors that have historically characterized underserved populations. Data was standardized by z-scores to compare the different quantifiable significance of the indicators.

The TPO assesses the potential benefits and burdens associated with each project at multiple points throughout the MTP process. Through the project selection process, all projects that created new active transportation facilities and increased multimodal connections received additional points. Furthermore, projects that provided these facilities in priority population areas were scored higher. For areas with high concentrations of priority populations specifically, points were given for projects that increase connectivity to critical resources such as schools and healthcare facilities. Overall, projects in geographies with high concentrations of priority populations were prioritized if they:

- Add a new bike lane or sidewalk, with additional points for high quality facilities and more safety features;
- Provide access to a new transit stop;
- Increase connectivity by closing a gap in the sidewalk, bikeway, or greenway network; or
- Improve connectivity to employment hubs, healthcare facilities, and schools.

Once projects were prioritized and selected for the fiscally constrained list, the TPO geospatially compared the proposed Mobility Plan 2045 projects with areas having high and very high concentrations of priority populations. Figure H-3, Figure H-4, and Figure H-5 show the projects as they relate to the location of priority populations in regard to accessibility, opportunity, and vulnerability. In total, there are 49 projects located in areas with high or very high concentrations of priority populations. Of these, 39 projects are located in areas with limited accessibility, two are located in areas with limited opportunity, and 48 are located in areas with high vulnerability.

Table H-1. Priority Population Indicators

	INDICATOR	DEFINITION
ACCESSIBILITY	**Access to Physical Activity Centers**	Proximity to parks, recreation centers, greenways, and other facilities.
	Active-Transportation Commuters	Percentage of commuters walking or bicycling to work.
	Public Transit Commuters	Percentage of commuters taking public transit to work.
	Vehicle Availability	Percentage of households with no vehicles available.
	Access to Healthy Food	Limited supermarket access (LSA) score, calculated by Reinvestment Fund. Indicates degree to which neighborhoods are underserved by supermarkets.
	Children with Access to Healthy Food	Weighted LSA score for children's access to healthy food.
OPPORTUNITY	**Population in Poverty**	Percentage of population living below poverty level.
	Household Income	Median household income.
	Households with Public Assistance Income	Percentage of households with cash public assistance or Food Stamps/SNAP benefits.
	Living-Wage Jobs	Number of jobs earning more than $40,000 per year (based on MIT Living Wage Calculator for average family of 2 adults (1 working) and 1 child in the Knoxville metropolitan area).
	Unemployment Rate	Percentage of population 16 years of age and older in the civilian workforce, currently unemployed.
	Housing Plus Transportation Costs	Percentage of household income spent on housing and transportation costs.
	Families with Children Eligible for Free/ Reduced Price School Lunch	Percentage of families with children under 18 years of age with income at or below 185 percent of the federal poverty level.
	Adults Without High School Education	Percentage of population 25 years of age and older without a high school diploma/GED.
	College-Age Population Enrolled in College	Percentage of population 18-24 years of age enrolled in college or graduate school.
	Preschool-Age Population Enrolled in Preschool	Percentage of population 3 and 4 years of age enrolled in preschool.
VULNERABILITY	**Persons with Disabilities**	Percentage of civilian non-institutionalized population with a disability.
	Minority Population	Percentage of population that is non-White and/or Hispanic/Latino.
	Persons with Limited English Proficiency	Percentage of population 5 years of age and over that speak English less than “very well.”
	Children	Percentage of total population under 18 years of age.
	Seniors	Percentage of total population 65 years of age and over.
	Single-Parent Households	Percentage of family households headed by a single-parent with children under 18 years of age.

Figure H-3. Low Accessibility Populations and Mobility Plan 2045 Projects

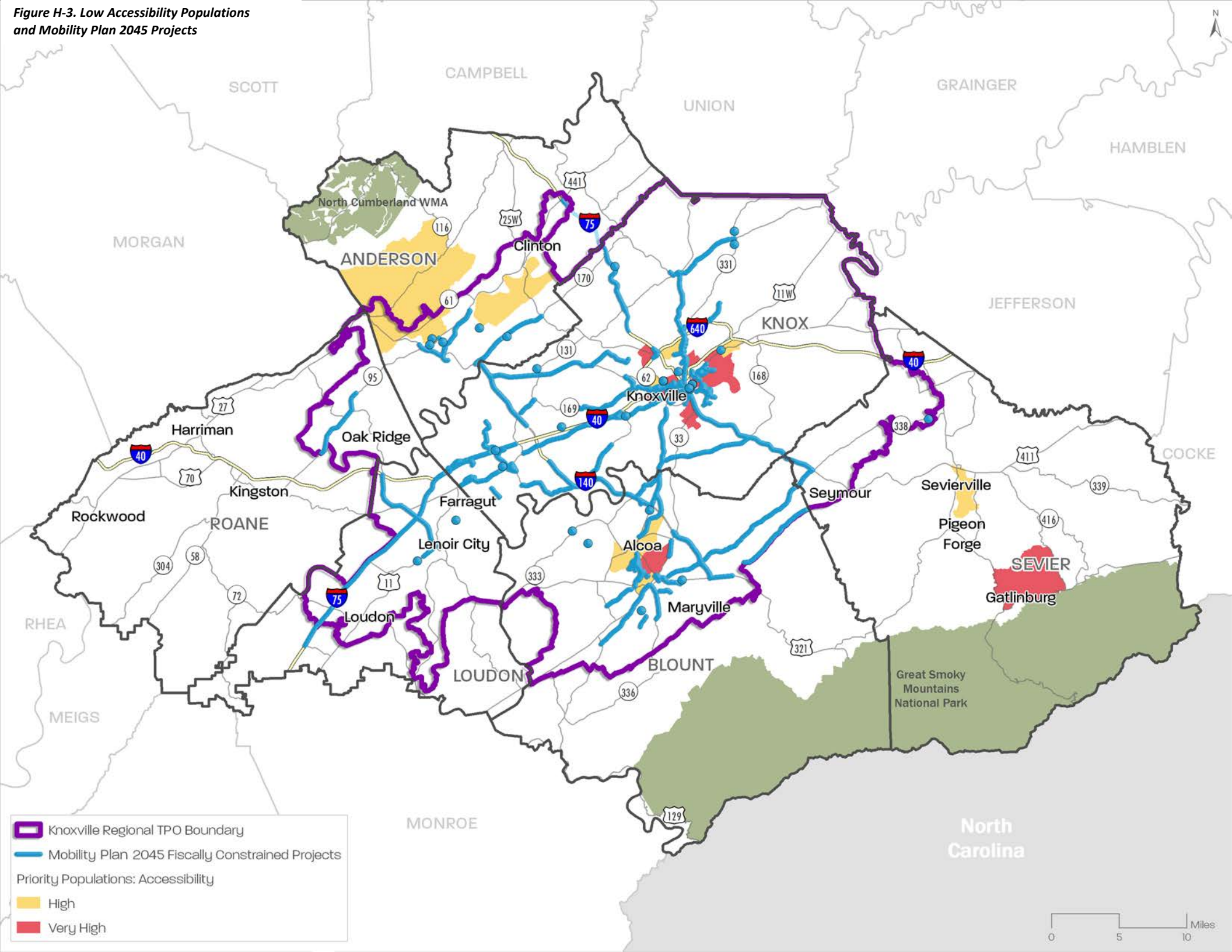


Figure H-4. Low Opportunity Populations and Mobility Plan 2045 Projects

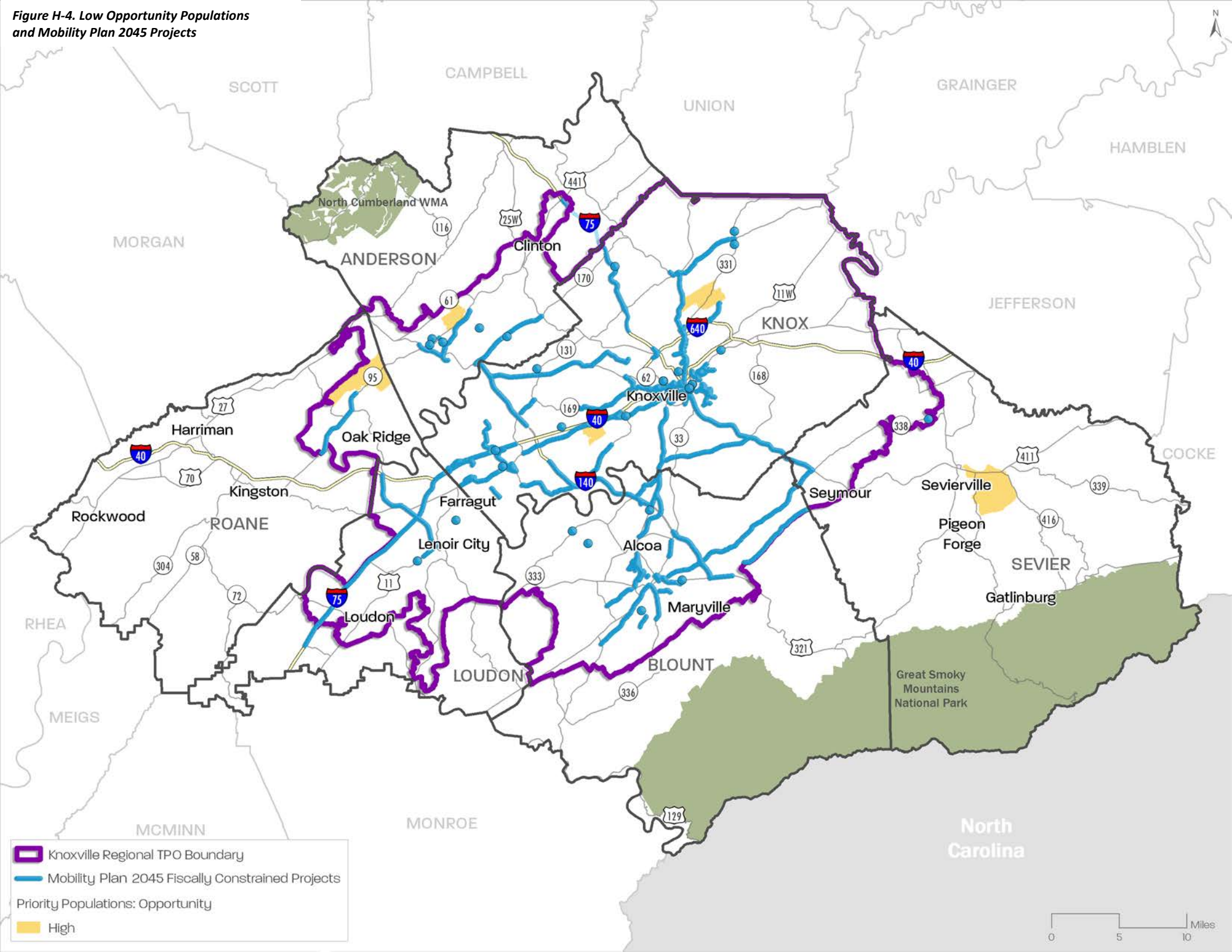


Figure H-5. High Vulnerability Populations and Mobility Plan 2045 Projects

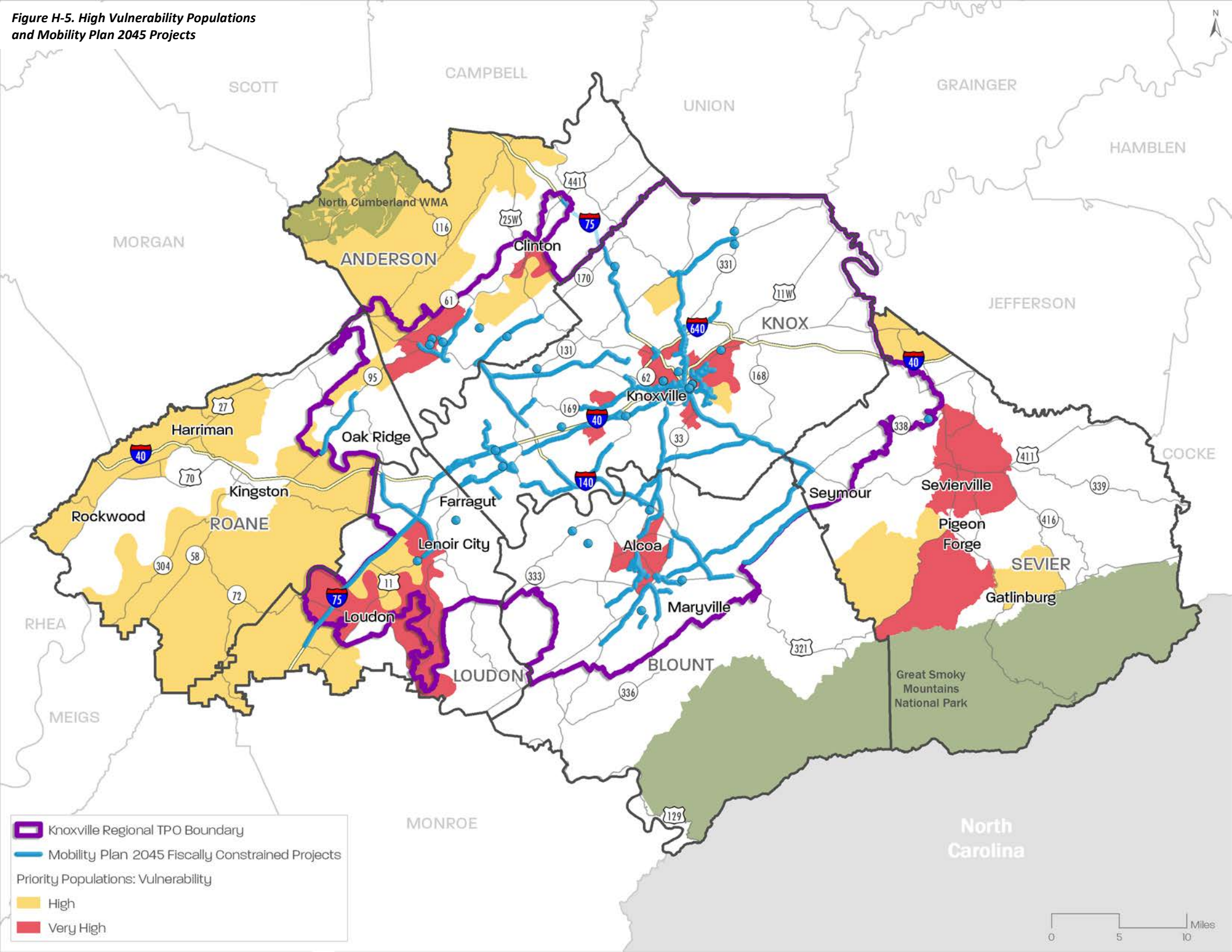


Table H-2 lists all fiscally constrained projects located in these areas. It also includes a high-level assessment of potential benefits (shown in green) and burdens (shown in orange) of each project based on the type of project and its geographic location. The potential benefits of each project were assessed based on the project description detailed in Appendix G and the need for the project based on information submitted by agencies during the project application process. The potential burdens of each project were primarily assessed based on the project's geographic location. More specifically, aerial imagery was used to examine a project's proximity to multifamily and/or low-income housing to assess potential for displacement and proximity to any residential areas to assess the potential for additional traffic and noise as well as potential property acquisitions. There are likely other benefits and burdens beyond what is shown in the table. The analysis, however, does provide a starting point in the overall assessment of impacts to the region's priority populations. Projects included in Mobility Plan 2045 are generally in the planning stages, and design details such as exact alignments and cross sections are not final. While this makes it difficult to document specific impacts at this time, it also means that there is still ample opportunity to analyze potential benefits and burdens during project development. In addition, this analysis helps highlight projects where expanded engagement and outreach many be needed due to socioeconomic disadvantages. Going forward, the TPO and its partners will use this analysis to identify areas potentially impacted by proposed transportation projects. As this occurs, the TPO will continue to evaluate the relative share of the benefits and burdens of transportation projects and programs in priority population areas and will continue to track the relative amount of dollars programmed through the TIP in these disadvantaged areas.

Table H-2. Priority Population Analysis

PROJECT NUMBER AND NAME	LEAD AGENCY	HIGH/VERY HIGH PRIORITY POPULATIONS			POTENTIAL BENEFITS				POTENTIAL BURDENS	
		ACCESSIBILITY	OPPORTUNITY	VULNERABILITY	ACCESSIBILITY/ CONNECTIVITY	SAFETY	OPERATIONAL/ MAINTENANCE	MULTIMODAL	ADDITIONAL TRAFFIC/NOISE	PROPERTY ACQUISITION/ DISPLACEMENT
09-202: ROBERT C JACKSON DR EXTENSION - PHASE 1	Alcoa	✓		✓						
09-212: OLD KNOXVILLE HWY (SR-33) RECONSTRUCTION	Blount County	✓		✓						
09-220: HOME AVE EXTENSION	Alcoa	✓		✓						
09-242: W BROADWAY AVE (SR-33/US-411) IMPROVEMENTS	Maryville	✓		✓						
09-257: RELOCATED ALCOA HWY (SR-115/US-129)	TDOT	✓		✓						
09-615: WASHINGTON PK IMPROVEMENTS	Knoxville		✓							
09-626: CHAPMAN HWY (SR-71/US-441) OPERATIONAL AND SAFETY IMPROVEMENTS	TDOT	✓		✓						
09-654: I-75/I-640/I-275 INTERCHANGE IMPROVEMENTS	TDOT	✓		✓						
10-260: FOOTHILLS MALL DR EXTENSION PHASE 2	Maryville	✓		✓						
13-1003: CHAPMAN HWY (SR-71/US-441) ADVANCED TRAFFIC MANAGEMENT SYSTEM	Knoxville	✓		✓						
13-1004: LIBERTY ST MULTIMODAL PROJECT	Knoxville	✓		✓						

PROJECT NUMBER AND NAME	LEAD AGENCY	HIGH/VERY HIGH PRIORITY POPULATIONS			POTENTIAL BENEFITS				POTENTIAL BURDENS	
		ACCESSIBILITY	OPPORTUNITY	VULNERABILITY	ACCESSIBILITY/ CONNECTIVITY	SAFETY	OPERATIONAL/ MAINTENANCE	MULTIMODAL	ADDITIONAL TRAFFIC/NOISE	PROPERTY ACQUISITION/ DISPLACEMENT
13-102: TULANE AVE AT PENNSYLVANIA AVE ROUNDABOUT	Oak Ridge	✓		✓		✓	✓	✓		✓
13-203: ROBERT C JACKSON DR EXTENSION - PHASE 2	Alcoa	✓		✓	✓					
13-208: HARVEST LN EXTENSION	Alcoa	✓		✓	✓			✓	✓	
13-602: KNOXVILLE ADVANCED TRAFFIC MANAGEMENT SYSTEM - PHASE 1	Knoxville	✓	✓	✓			✓			
13-802: OAK RIDGE SIGNAL TIMING OPTIMIZATION PROGRAM - PHASE 2	Oak Ridge	✓		✓			✓			
13-833: MARYVILLE TO TOWNSEND GREENWAY - PHASE 1 (BROWN CREEK)	Maryville	✓		✓				✓		
13-838: FIRST CREEK GREENWAY - BROADWAY STREETSCAPE	Knoxville	✓		✓				✓		
13-844: FIRST CREEK GREENWAY - DOWNTOWN EAST	Knoxville	✓		✓				✓		
13-854: BAKER CREEK GREENWAY	Knoxville			✓				✓		
13-880: ATLANTIC AVENUE SIDEWALK	Knoxville	✓		✓				✓		✓
13-884: CHAPMAN HWY (SR-71/US-441) MULTIUSE PATH	Knoxville	✓		✓				✓		

PROJECT NUMBER AND NAME	LEAD AGENCY	HIGH/VERY HIGH PRIORITY POPULATIONS			POTENTIAL BENEFITS				POTENTIAL BURDENS	
		ACCESSIBILITY	OPPORTUNITY	VULNERABILITY	ACCESSIBILITY/ CONNECTIVITY	SAFETY	OPERATIONAL/ MAINTENANCE	MULTIMODAL	ADDITIONAL TRAFFIC/NOISE	PROPERTY ACQUISITION/ DISPLACEMENT
17-1006: KNOXVILLE AREA TRANSIT (KAT) EXPRESS TRANSIT SERVICE ENHANCEMENT	Knoxville	✓		✓						
17-202: US-129 WIDENING	TDOT	✓		✓						
17-407: US-11 AT INDUSTRIAL PARK DR INTERSECTION IMPROVEMENT	Lenoir City			✓						
17-608A: MAGNOLIA AVE STREETSCAPE - PHASE 3	Knoxville			✓						
17-608B: MAGNOLIA AVE STREETSCAPE - PHASE 4	Knoxville			✓						
17-608C: MAGNOLIA AVE STREETSCAPE - PHASE 5	Knoxville	✓		✓						
17-859: SOUTH WATERFRONT GREENWAY - WEST OF CITYVIEW	Knoxville	✓		✓						
17-901: EAST KNOX GREENWAY - PHASE 1	Knoxville	✓		✓						
18-603: MIDDLEBROOK PK (SR-169) ATMS EXPANSION	Knoxville	✓		✓						
19-100: OAK RIDGE SIGNAL TIMING OPTIMIZATION PROGRAM - PHASE 3	Oak Ridge			✓						
19-603: TRAFFIC SIGNAL IMPROVEMENTS FOR THE UT AREA	Knoxville	✓		✓						

PROJECT NUMBER AND NAME	LEAD AGENCY	HIGH/VERY HIGH PRIORITY POPULATIONS			POTENTIAL BENEFITS				POTENTIAL BURDENS	
		ACCESSIBILITY	OPPORTUNITY	VULNERABILITY	ACCESSIBILITY/ CONNECTIVITY	SAFETY	OPERATIONAL/ MAINTENANCE	MULTIMODAL	ADDITIONAL TRAFFIC/NOISE	PROPERTY ACQUISITION/ DISPLACEMENT
19-606: WOODLAND AVE COMPLETE STREET	Knoxville	✓		✓						
21-100: LAFAYETTE DR BICYCLE AND PEDESTRIAN SAFETY IMPROVEMENTS	Oak Ridge	✓		✓						
21-1000: KNOXVILLE-KNOX COUNTY CAC TRANSIT CAPITAL PROJECT PURCHASE OF DEMAND RESPONSE TRANSIT VEHICLES	Knox County CAC	✓		✓						
21-1001: KNOX COUNTY CAC TRANSIT VOLUNTEER ASSISTED TRANSPORTATION PURCHASE OF VEHICLES	Knox County CAC	✓		✓						
21-1003: PURCHASE KNOXVILLE AREA TRANSIT (KAT) VEHICLES - FIXED ROUTE BUSES	KAT	✓		✓						
21-1004: KNOXVILLE AREA TRANSIT (KAT) BUS ENGINE OVERHAULS	KAT	✓		✓						
21-101: WEST END CORRIDOR INTERSECTION IMPROVEMENTS	Oak Ridge			✓						
21-202: OLD NILES FERRY RD WIDENING	Maryville	✓		✓						
21-203: W. BROADWAY AVE (SR-33) IMPROVEMENTS	Maryville	✓		✓						
21-204: WASHINGTON ST IMPROVEMENTS	Maryville	✓		✓						
21-400: I-75 WIDENING IN LOUDON COUNTY	TDOT			✓						

PROJECT NUMBER AND NAME	LEAD AGENCY	HIGH/VERY HIGH PRIORITY POPULATIONS			POTENTIAL BENEFITS				POTENTIAL BURDENS	
		ACCESSIBILITY	OPPORTUNITY	VULNERABILITY	ACCESSIBILITY/ CONNECTIVITY	SAFETY	OPERATIONAL/ MAINTENANCE	MULTIMODAL	ADDITIONAL TRAFFIC/NOISE	PROPERTY ACQUISITION/ DISPLACEMENT
21-600: MAGNOLIA AVE/RUTLEDGE PIKE/ASHEVILLE HWY INTERCHANGE IMPROVEMENTS	Knoxville	✓		✓						
21-601: I-40 WESTBOUND INTERCHANGE AT I-275	TDOT	✓		✓						
21-605: JAMES WHITE PKWY CORRIDOR IMPROVEMENTS	Knoxville			✓						
21-606: JAMES WHITE PKWY ROADWAY IMPROVEMENTS	Knoxville			✓						
21-800: SOUTH KNOXVILLE BRIDGE GREENWAY	Knoxville	✓		✓						

ENVIRONMENTAL REVIEW

Federal Environmental Review Requirements

The Knoxville TPO works to identify potential environmental mitigation strategies to preserve both the natural environment and cultural resources. All federal funding is subject to environmental review to determine the impact to the natural and cultural environment. In 2015, the FAST Act included procedural revisions that streamline the review of transportation infrastructure projects under the National Environmental Policy Act (NEPA). Environmental mitigation (40 CFR § 1508.20) includes:

- *Avoiding impact*s altogether by not taking a certain action or parts of an action;
- *Minimizing impacts* by limiting the degree or magnitude of the action and its implementation;
- *Rectifying impacts* by repairing, rehabilitating, or restoring the affected environment;
- *Reducing or eliminating impacts* over time by preservation and maintenance operations during the life of the action; or
- *Compensating for impacts* by replacing or providing substitute resources or environments.

Environmental mitigation efforts for transportation projects vary by project type and extent, as projects have varying levels of impact. Signal reconstruction or lighting additions would result in minor or no impact on the surrounding environment, whereas a new roadway extension would include earth disturbance and major construction. Within the region, environmentally sensitive areas were identified and consisted of areas that had steep slopes, 100-year floodplains, wetlands, historic districts, and historic resources. For projects that are determined to potentially have an impact on these sensitive areas, the TPO helps determine how and to what extent the projects will impact these resources, as well as appropriate mitigation strategies.

Project Environmental Review

The TPO used a geospatial analysis to determine the proximity of Mobility Plan 2045 projects to environmentally sensitive areas, including floodplains, wetlands, steep slopes over 20%, historic districts, and historic sites. Figure H-6, Figure H-7, and Figure H-8 show these projects in the region with respect to these sensitive areas. The TPO utilized this analysis in the prioritization of projects for Mobility Plan 2045. Projects with potential negative impacts on the natural environment or cultural resources received fewer points in their overall score.

Figure H-6. 100-Year Floodplains, Wetlands, and Mobility Plan 2045 Projects

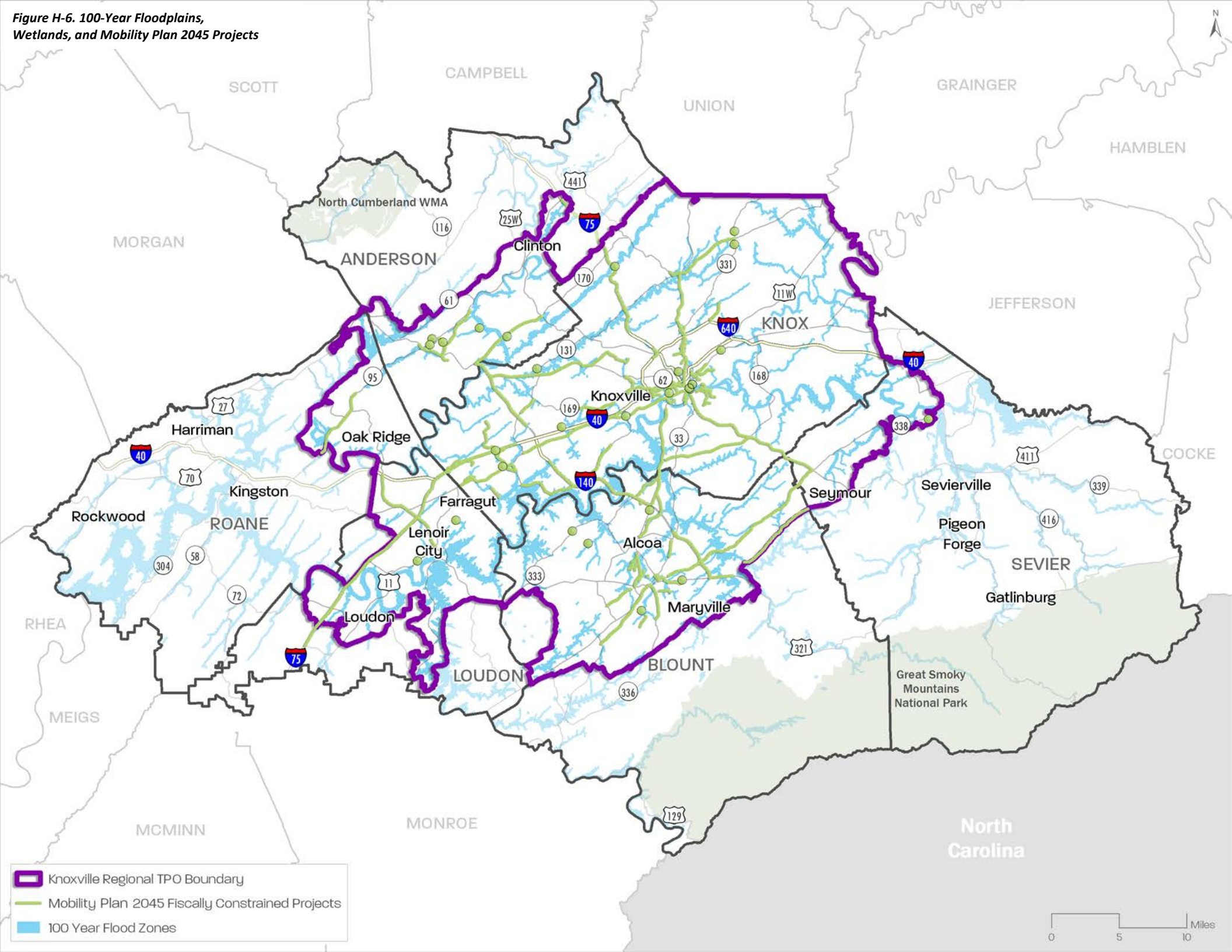


Figure H-7. Steep Slopes and Mobility Plan 2045 Projects

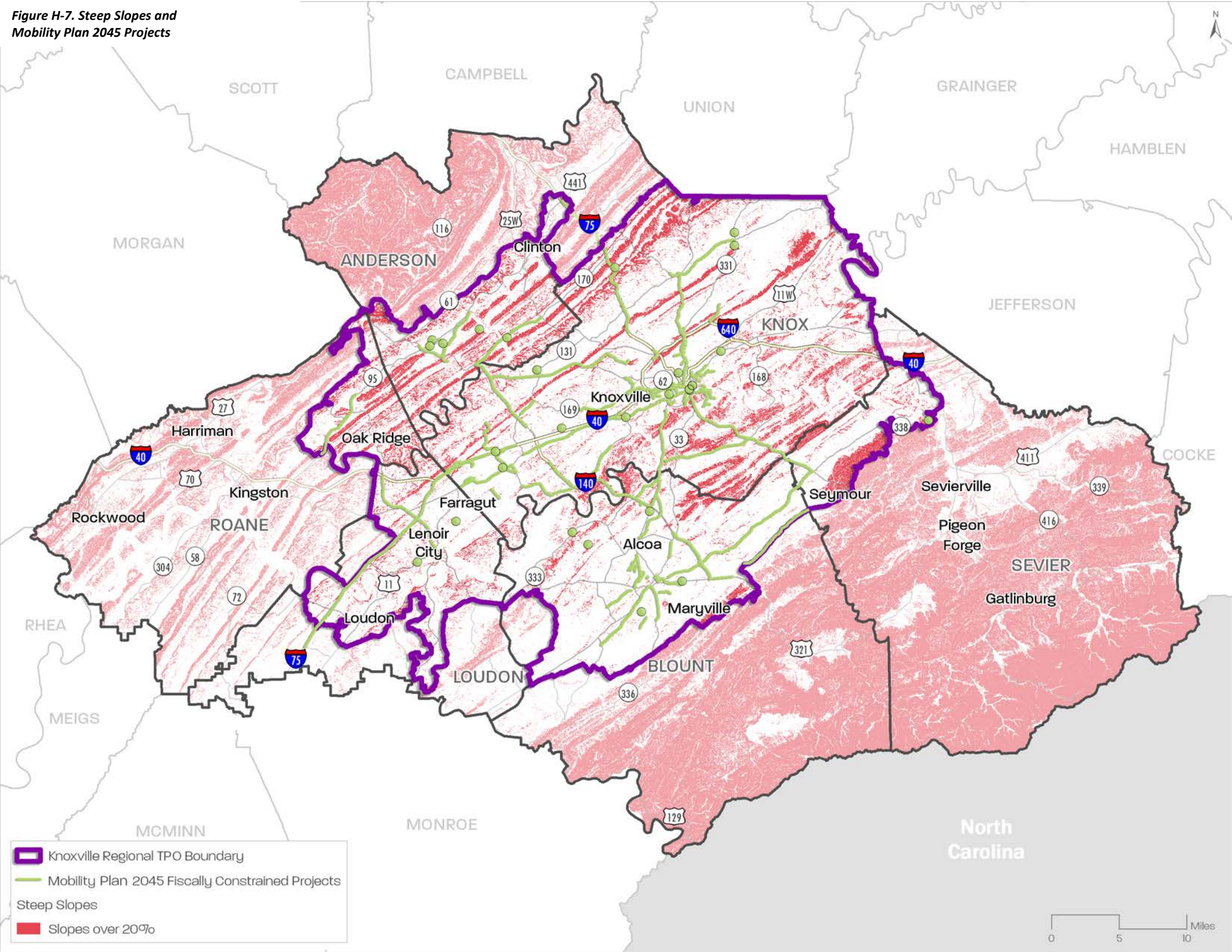
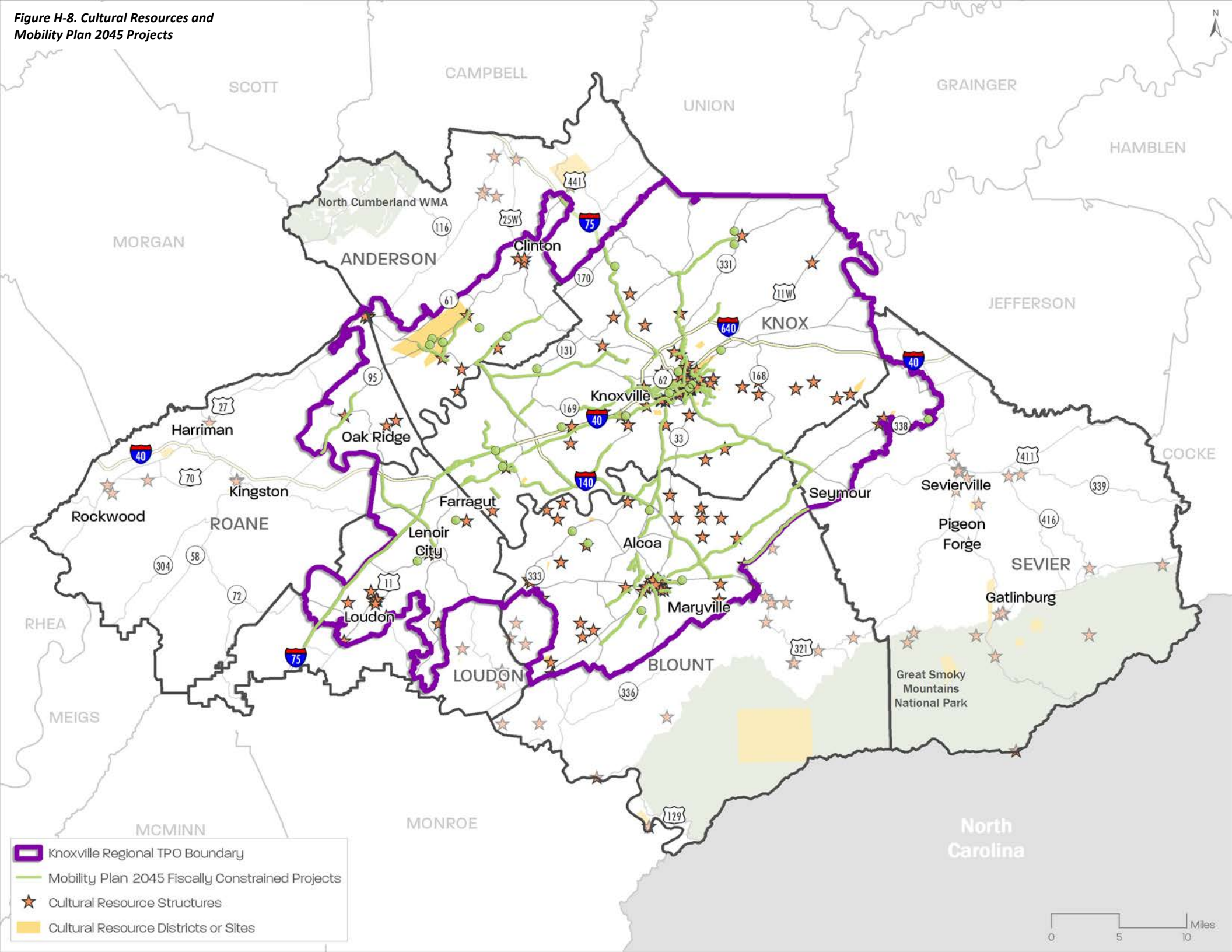


Figure H-8. Cultural Resources and Mobility Plan 2045 Projects



Projects that could potentially impact at least one environmentally or culturally sensitive area are also included in Table H-3. In total, there are 108 projects contained in the fiscally constrained list that could potentially impact one of these important resources. Each of these projects was assigned a numeric score that captured the number of sensitive areas nearby and the general project scope. Projects were grouped into one of the following five categories, listed in order of assumed increasing impact: resurfacing, intersection and ITS projects, bicycle and pedestrian projects, reconstruction of roadways that only add turn lanes, and projects involving roadway widening, extensions, or new connections. Based on this numeric score, projects were categorized as having potentially low, moderate, or high impacts to environmental and cultural resources. Of the 108 projects, 20 are anticipated to have potentially significant impacts based on this process. However, these impacts can potentially be minimized where projects can be completed within existing right-of-way. Projects identified as having potentially high impacts to environmental and cultural resources, indicated with red text in Table H-3, should be carefully considered as project scopes are refined throughout the project development process. The analysis presented in this table does not capture potential project impacts on air quality in the region. However, these impacts are assessed using the regional travel demand model within the air quality conformity process documented in Appendix I.

Table H-3. Environmental Impact Analysis

PROJECT NUMBER AND NAME	LEAD AGENCY	FLOODPLAINS / WETLANDS	STEEP SLOPES (>20%)	CULTURAL RESOURCES	PROJECT TYPE	POTENTIAL ENVIRONMENTAL IMPACTS
09-101A: EDGEMOOR RD (SR 170) - PHASE 1 WIDENING	TDOT	✓	✓		Widening/New Roads/Extensions	High
09-101B: EDGEMOOR RD (SR 170) - PHASE 2 WIDENING	TDOT	✓	✓		Widening/New Roads/Extensions	High
09-202: ROBERT C JACKSON DR EXTENSION - PHASE 1	Alcoa	✓			Widening/New Roads/Extensions	Moderate
09-207: WRIGHTS FERRY RD RECONSTRUCTION	Alcoa		✓		Reconstruction w/ Turn Lanes	Moderate
09-209: ELLEJOY RD RECONSTRUCTION	Blount County	✓	✓		Reconstruction w/ Turn Lanes	Moderate
09-211: MORGANTON RD RECONSTRUCTION - PHASE 1	Blount County	✓	✓		Reconstruction w/ Turn Lanes	Moderate
09-212: OLD KNOXVILLE HWY (SR 33) RECONSTRUCTION	Blount County		✓		Reconstruction w/ Turn Lanes	Moderate
09-213: OLD NILES FERRY RD RECONSTRUCTION	Blount County		✓		Reconstruction w/ Turn Lanes	Moderate
09-214: SEVIERVILLE RD (SR 35/US 411) WIDENING	Maryville	✓	✓		Reconstruction w/ Turn Lanes	Moderate
09-216: ALCOA HWY (SR 115/US 129) WIDENING	TDOT		✓		Widening/New Roads/Extensions	Moderate
09-220: HOME AVE EXTENSION	Alcoa		✓		Widening/New Roads/Extensions	Moderate
09-232: PELLISSIPPI PKWY (SR 162) EXTENSION	TDOT	✓	✓		Widening/New Roads/Extensions	High
09-241: TUCKALEECHEE PK RECONSTRUCTION	Maryville		✓		Reconstruction w/ Turn Lanes	Moderate
09-242: W BROADWAY AVE (SR 33/US 411) IMPROVEMENTS	Maryville		✓	✓	Intersection / ITS	Moderate
09-243: WILKINSON PK RECONSTRUCTION	Maryville	✓			Reconstruction w/ Turn Lanes	Moderate
09-248: TOPSIDE RD (SR 333) IMPROVEMENTS	Alcoa	✓	✓		Reconstruction w/ Turn Lanes	Moderate
09-250: SEVIERVILLE RD (SR 35/US 411) RECONSTRUCTION	Blount County	✓	✓		Reconstruction w/ Turn Lanes	Moderate
09-257: RELOCATED ALCOA HWY (SR 115/US 129)	TDOT	✓	✓		Widening/New Roads/Extensions	High
09-258: RELOCATED ALCOA HWY (SR 115/US 129)	TDOT	✓	✓		Widening/New Roads/Extensions	High

PROJECT NUMBER AND NAME	LEAD AGENCY	FLOODPLAINS / WETLANDS	STEEP SLOPES (>20%)	CULTURAL RESOURCES	PROJECT TYPE	POTENTIAL ENVIRONMENTAL IMPACTS
09-262: MONTVALE RD (SR 336) RECONSTRUCTION	TDOT	✓	✓		Reconstruction w/ Turn Lanes	Moderate
09-615: WASHINGTON PK RECONSTRUCTION	Knoxville		✓		Reconstruction w/ Turn Lanes	Moderate
09-616: PLEASANT RIDGE RD RECONSTRUCTION	Knoxville	✓	✓		Reconstruction w/ Turn Lanes	Moderate
09-625: SCHAAD RD WIDENING	Knox County		✓		Widening/New Roads/Extensions	Moderate
09-626: CHAPMAN HWY (SR 71/US 441) OPERATIONAL AND SAFETY IMPROVEMENTS	TDOT	✓	✓		Reconstruction w/ Turn Lanes	Moderate
09-626D: CHAPMAN HWY (SR 71/US 441) CENTER TURN LANE	TDOT		✓		Reconstruction w/ Turn Lanes	Moderate
09-629: I-40/I-75/CAMPBELL STATION RD INTERCHANGE RECONFIGURATION	Farragut		✓		Reconstruction w/ Turn Lanes	Moderate
09-630: VIRTUE RD RECONSTRUCTION	Farragut	✓	✓		Reconstruction w/ Turn Lanes	Moderate
09-637: LOVELL RD (SR 131) WIDENING	Knox County	✓	✓		Widening/New Roads/Extensions	**High**
09-638: OAK RIDGE HWY (SR 62) WIDENING	TDOT	✓	✓		Widening/New Roads/Extensions	**High**
09-643: EMORY RD (SR 131) WIDENING	TDOT	✓	✓		Widening/New Roads/Extensions	**High**
09-644: GOV JOHN SEVIER HWY (SR 168) WIDENING	Knox County		✓		Widening/New Roads/Extensions	Moderate
09-645: NORTHSHORE DR (SR 332) RECONSTRUCTION	Knox County	✓	✓	✓	Reconstruction w/ Turn Lanes	**High**
09-646: NORTHSHORE DR (SR 332) RECONSTRUCTION	Knox County	✓	✓		Reconstruction w/ Turn Lanes	Moderate
09-647: PELLISSIPPI PKWY (SR 162) CORRIDOR SAFETY AND CAPACITY IMPROVEMENTS	Knox County	✓	✓		Reconstruction w/ Turn Lanes	Moderate
09-649: PELLISSIPPI PKWY (SR 162)/OAK RIDGE HWY INTERCHANGE MODIFICATION	TDOT		✓		Interchange Improvements	Moderate
09-651: I-40/I-75/WATT RD INTERCHANGE RECONFIGURATION	Knox County		✓		Interchange Improvements	Moderate
09-652: I-75 AT EMORY RD (SR 131) INTERCHANGE RECONFIGURATION	TDOT	✓	✓		Interchange Improvements	**High**
09-653: ALCOA HWY (SR 115/US 129) WIDENING	TDOT	✓	✓		Widening/New Roads/Extensions	**High**

PROJECT NUMBER AND NAME	LEAD AGENCY	FLOODPLAINS / WETLANDS	STEEP SLOPES (>20%)	CULTURAL RESOURCES	PROJECT TYPE	POTENTIAL ENVIRONMENTAL IMPACTS
09-654: I-75/I-640/I-275 INTERCHANGE IMPROVEMENTS	TDOT		✓		Widening/New Roads/Extensions	Moderate
09-658: NORTHSHORE DR AT KINGSTON PK (SR 1) INTERSECTION IMPROVEMENTS	TDOT	✓			Intersection / ITS	Low
09-668: KINGSTON PK (SR 1) WIDENING	Farragut	✓	✓	✓	Widening/New Roads/Extensions	High
09-669: EVERETT RD RECONSTRUCTION	Farragut		✓		Reconstruction w/ Turn Lanes	Moderate
09-673: OAK RIDGE HWY (SR 62) WIDENING	Knox County	✓	✓		Widening/New Roads/Extensions	High
09-689: PAPERMILL DR CORRIDOR RECONSTRUCTION	Knoxville	✓	✓		Reconstruction w/ Turn Lanes	Moderate
09-691: I-40/75 WIDENING	Farragut		✓		Widening/New Roads/Extensions	Moderate
09-692: I-75 WIDENING	TDOT		✓		Widening/New Roads/Extensions	Moderate
10-260: FOOTHILLS MALL DR EXTENSION PHASE 2	Maryville	✓	✓		Widening/New Roads/Extensions	High
10-700: CAMPBELL STATION RD RE-ALIGNMENT	Knox County	✓	✓		Widening/New Roads/Extensions	High
13-1003: CHAPMAN HWY (SR 71/US 441) ADVANCED TRAFFIC MANAGEMENT SYSTEM	Knoxville		✓		Intersection / ITS	Low
13-1004: LIBERTY ST MULTIMODAL IMPROVEMENTS	Knoxville		✓		Bike/Ped	Moderate
13-101: EMORY VALLEY RD AT MELTON LAKE DR ROUNDABOUT	Oak Ridge	✓			Intersection / ITS	Low
13-102: TULANE AVE AT PENNSYLVANIA AVE ROUNDABOUT	Oak Ridge			✓	Intersection / ITS	Low
13-203: ROBERT C JACKSON DR EXTENSION - PHASE 2	Alcoa	✓	✓		Widening/New Roads/Extensions	High
13-214: OLD LOWES FERRY RD AT LOUISVILLE RD (SR 333) INTERSECTION IMPROVEMENTS	Blount County		✓		Intersection / ITS	Low
13-218: MIDDLESETTLEMENTS RD AT MISER STATION RD INTERSECTION IMPROVEMENTS	Blount County		✓		Intersection / ITS	Low
13-601: UNION RD/N HOBBS RD RECONSTRUCTION	Farragut	✓	✓		Reconstruction w/ Turn Lanes	Moderate
13-602: KNOXVILLE ADVANCED TRAFFIC MANAGEMENT SYSTEM - PHASE 1	Knoxville		✓	✓	Intersection / ITS	Moderate

PROJECT NUMBER AND NAME	LEAD AGENCY	FLOODPLAINS / WETLANDS	STEEP SLOPES (>20%)	CULTURAL RESOURCES	PROJECT TYPE	POTENTIAL ENVIRONMENTAL IMPACTS
13-603: I-40/75 AUXILIARY LANES	Farragut	✓	✓		Widening/New Roads/Extensions	High
13-802: OAK RIDGE SIGNAL TIMING OPTIMIZATION PROGRAM - PHASE 2	Oak Ridge			✓	Intersection / ITS	Low
13-813: FARRAGUT ADVANCED TRAFFIC MANAGEMENT SYSTEM - PHASE 1	Farragut		✓	✓	Intersection / ITS	Moderate
13-830: OAK RIDGE RAILS TO TRAILS	Oak Ridge		✓	✓	Bike/Ped	Moderate
13-833: MARYVILLE TO TOWNSEND GREENWAY - PHASE 1 (BROWN CREEK)	Maryville	✓	✓	✓	Bike/Ped	Moderate
13-838: FIRST CREEK GREENWAY - BROADWAY STREETSCAPE	Knoxville	✓	✓	✓	Bike/Ped	Moderate
13-844: FIRST CREEK GREENWAY - DOWNTOWN EAST	Knoxville	✓	✓		Bike/Ped	Moderate
13-854: BAKER CREEK GREENWAY	Knoxville	✓	✓		Bike/Ped	Moderate
13-855: FIRST CREEK GREENWAY - NORTH KNOX	Knoxville	✓	✓		Bike/Ped	Moderate
13-858: KNOXVILLE NORTHWEST GREENWAY CONNECTOR PHASE 2	Knoxville	✓	✓		Bike/Ped	Moderate
13-880: ATLANTIC AVENUE SIDEWALK	Knoxville	✓	✓		Bike/Ped	Moderate
13-884: CHAPMAN HWY (SR 71/US 441) MULTIUSE PATH	Knoxville		✓		Bike/Ped	Moderate
17-1006: KNOXVILLE AREA TRANSIT (KAT) EXPRESS TRANSIT SERVICE ENHANCEMENT - BROADWAY TRANSIT SIGNAL PRIORITY IMPLEMENTATION	Knoxville	✓	✓		Intersection / ITS	Moderate
17-101: EMORY VALLEY RD AT LAFAYETTE DR INTERSECTION	Oak Ridge			✓	Intersection / ITS	Low
17-202: US 129 WIDENING	TDOT	✓	✓		Widening/New Roads/Extensions	High
17-407: US 11 AT INDUSTRIAL PARK DR INTERSECTION IMPROVEMENT	Lenoir City		✓		Intersection / ITS	Low
17-416: MUDDY CREEK RD INTERSECTION REALIGNMENT	Loudon County	✓	✓		Intersection / ITS	Moderate
17-608A: MAGNOLIA AVE STREETSCAPE - PHASE 3	Knoxville			✓	Bike/Ped	Moderate
17-608B: MAGNOLIA AVE STREETSCAPE - PHASE 4	Knoxville			✓	Bike/Ped	Moderate

PROJECT NUMBER AND NAME	LEAD AGENCY	FLOODPLAINS / WETLANDS	STEEP SLOPES (>20%)	CULTURAL RESOURCES	PROJECT TYPE	POTENTIAL ENVIRONMENTAL IMPACTS
17-608C: MAGNOLIA AVE STREETSCAPE - PHASE 5	Knoxville			✓	Bike/Ped	Moderate
17-801: KNOXVILLE ADVANCED TRAFFIC MANAGEMENT SYSTEM - PHASE 2	Knoxville		✓		Intersection / ITS	Low
17-850: SOUTH WATERFRONT GREENWAY - EAST OF SUTTREE	Knoxville	✓	✓		Bike/Ped	Moderate
17-859: SOUTH WATERFRONT GREENWAY - WEST OF CITYVIEW	Knoxville	✓	✓		Bike/Ped	Moderate
17-901: EAST KNOX GREENWAY - PHASE 1	Knoxville	✓	✓		Bike/Ped	Moderate
17-910: TAZEWELL PK SIDEWALK	Knoxville	✓	✓		Bike/Ped	Moderate
18-200A: ALCOA HWY (SR 115/US 129) ITS EXPANSION	TDOT	✓	✓		Intersection / ITS	Moderate
18-200B: ALCOA HWY (SR 115/US 129) ITS EXPANSION PHASE 1	TDOT	✓	✓		Intersection / ITS	Moderate
18-201: I-140 ITS EXPANSION	TDOT	✓	✓		Intersection / ITS	Moderate
18-202: BLOUNT COUNTY GREENWAY TRAIL - PHASE 1 & 2	Blount County	✓	✓		Bike/Ped	Moderate
18-500: BOYDS CREEK HWY (SR 338) AT OLD KNOXVILLE HIGHWAY INTERSECTION IMPROVEMENTS	Sevier County		✓		Intersection / ITS	Low
18-600: I-75 ITS EXPANSION	TDOT		✓		Intersection / ITS	Low
18-603: MIDDLEBROOK PK (SR 169) ATMS EXPANSION	Knoxville		✓		Intersection / ITS	Low
19-100: OAK RIDGE SIGNAL TIMING OPTIMIZATION PROGRAM - PHASE 3	Oak Ridge		✓	✓	Intersection / ITS	Moderate
19-603: TRAFFIC SIGNAL IMPROVEMENTS FOR THE UT AREA	Knoxville		✓	✓	Intersection / ITS	Moderate
19-604: KNOX COUNTY ADVANCED TRAFFIC MANAGEMENT SYSTEM - PHASE 2	Knox County		✓		Intersection / ITS	Low
19-606: WOODLAND AVE COMPLETE STREET	Knoxville	✓	✓	✓	Bike/Ped	Moderate
21-100: LAFAYETTE DR BICYCLE AND PEDESTRIAN SAFETY IMPROVEMENTS	Oak Ridge		✓		Bike/Ped	Moderate
21-101: WEST END CORRIDOR INTERSECTION IMPROVEMENTS	Oak Ridge	✓	✓		Intersection / ITS	Moderate

PROJECT NUMBER AND NAME	LEAD AGENCY	FLOODPLAINS / WETLANDS	STEEP SLOPES (>20%)	CULTURAL RESOURCES	PROJECT TYPE	POTENTIAL ENVIRONMENTAL IMPACTS
21-200: JEFFRIES HOLLOW RD RECONSTRUCTION	Blount County	✓	✓		Reconstruction w/ Turn Lanes	Moderate
21-202: OLD NILES FERRY RD WIDENING	Maryville		✓		Bike/Ped	Moderate
21-203: W. BROADWAY AVE (SR 33) IMPROVEMENTS	Maryville		✓	✓	Reconstruction w/ Turn Lanes	Moderate
21-204: WASHINGTON ST IMPROVEMENTS	Maryville		✓		Reconstruction w/ Turn Lanes	Moderate
21-400: I-75 WIDENING SOUTH OF KNOXVILLE	TDOT	✓	✓		Widening/New Roads/Extensions	**High**
21-600: MAGNOLIA AVE/RUTLEDGE PIKE/ASHEVILLE HWY INTERCHANGE IMPROVEMENTS	Knoxville		✓		Intersection / ITS	Low
21-601: I-40 WESTBOUND AT I-275 INTERCHANGE IMPROVEMENTS	TDOT		✓	✓	Interchange Improvements	**High**
21-602: INTERSECTION IMPROVEMENT AT BEAVER RIDGE RD AND WEST EMORY RD	Knox County		✓		Intersection / ITS	Low
21-605: JAMES WHITE PKWY CORRIDOR IMPROVEMENTS	Knoxville		✓		Bike/Ped	Moderate
21-606: JAMES WHITE PKWY ROADWAY IMPROVEMENTS	Knoxville		✓		Bike/Ped	Moderate
21-800: SOUTH KNOXVILLE BRIDGE GREENWAY	Knoxville	✓	✓		Bike/Ped	Moderate
21-801: GIBBS SCHOOLS PEDESTRIAN BRIDGE	Knox County		✓		Bike/Ped	Moderate
21-802: ADAIR TO OLD BROADWAY MULTIUSE PATH CONNECTION	Knoxville	✓			Bike/Ped	Moderate

For projects with an expected impact, the TPO's first strategy is to avoid or minimize the impact altogether. The TPO has identified additional strategies for specific resources, as listed in Table H-4.

Table H-4. Environmental Mitigation Strategies

ANTICIPATED IMPACT	STRATEGIES FOR ENVIRONMENTAL MITIGATION
Agricultural Areas	▶ Avoidance and minimization ▶ Conservation easements ▶ Environmental compliance monitoring
Air Quality	▶ Avoidance and minimization ▶ Set regional targets for per capita GHG Green House Gas (GHG) reductions from passenger vehicles ▶ Minimize passenger and commercial idling through congestion reduction ▶ Promote car and van pooling ▶ Promote active transportation such as transit, bicycles, and walking for trip making
Cultural Resources	▶ Avoidance or minimization ▶ Create design considerations and exceptions, with variances that avoid or minimize impacts to historic properties ▶ Landscaping for historic properties ▶ Preservation in place or excavation for archaeological sites ▶ Memoranda of agreement with the Department of Historic Resources
Forested and Other Natural Areas	▶ Avoidance and minimization ▶ Use selective cutting and clearing ▶ Replace or restore forested areas ▶ Preserve existing vegetation ▶ Avoid development on steep hillside slopes ▶ Avoid karst topographic areas such as sinkholes
Neighborhoods, Communities, Homes, And Businesses	▶ Avoidance and minimization ▶ Promote sustainable growth concepts such as transit-oriented development (TOD) and other Smart Growth concepts ▶ Minimize noise impact with sound barriers ▶ Prevent the spread of hazardous materials with soil testing and treatment ▶ Context sensitive solutions for communities (appropriate functional and/or aesthetic design features)
Parks and Recreational Areas	▶ Avoidance, minimization or mitigation ▶ Replace impacted facilities
Protected and Endangered Species	▶ Avoidance and minimization ▶ Implement Smart Growth concepts, such as habitat banking and wildlife management corridors ▶ Use native trees, shrubs, and warm season grasses for stabilization of disturbed areas ▶ Coordination with the Tennessee Department of Environment and Conservation (TDEC) and/or U.S. Fish and Wildlife Service (USFWS)

ANTICIPATED IMPACT	STRATEGIES FOR ENVIRONMENTAL MITIGATION
Water Quality and Hydrology	▶ Avoidance and minimization ▶ Replace or restore wetlands ▶ Reduce use of riprap and concrete channelization of streams ▶ Improve stormwater management and utilize best management practices ▶ Wetland mitigation banking ▶ Implement green infrastructure

The TPO coordinated with federal, state, and local agencies that are responsible for natural resources, land use management, historic preservation, and environmental protection and conservation. As detailed in the Engagement and Outreach Appendix, the TPO worked with agencies to ensure appropriate resources and mitigation strategies are being considered with project implementation in the context of Mobility Plan 2045. The following agencies were invited to review the draft plan to ensure appropriate mitigation strategies for environmentally and culturally sensitive areas.

- US Army Corps of Engineers
- US EPA Region 4
- USDA Forest Service Southern Research Station
- US Housing and Urban Development Office
- TN Dept. of Environment and Conservation
- TN Department of Health
- TN Historical Commission
- TN State Parks, Bureau of Parks and Conservation
- TN Wildlife Resources Agency
- Tennessee Valley Authority
- Great Smoky Mountains National Park

MOBILITY PLAN 2045

Appendix I

Travel Demand Model Development

I. TRAVEL DEMAND MODEL DEVELOPMENT

KNOXVILLE REGIONAL TRAVEL MODEL 2018 BASE YEAR UPDATE AND SOCIOECONOMIC PROJECTION CONTROL TOTAL DEVELOPMENT DOCUMENTATION

INTRODUCTION

The purpose of this document is to provide details of the development of the latest planning assumptions and travel demand forecasting model that are required to support the overall Metropolitan Transportation Plan (MTP) for the Knoxville Regional TPO planning area, known as Mobility Plan 2045. These elements are integral to meeting federal transportation planning regulations (23 CFR 450.324) that state "In updating the transportation plan, the MPO shall base the update on the latest available estimates and assumptions for population, land use, etc." The regulations further require that MTPs be updated on a 4-year cycle (in air quality nonattainment/maintenance areas) in order "to confirm the transportation plan's validity and consistency with current and forecasted transportation and land use conditions and trends and to extend the forecast period to at least a 20-year planning horizon." The TPO uses the travel demand forecasting model to predict roadway network conditions (mainly congestion) into the future, and it requires its own particular set of specific inputs and assumptions that need to be updated regularly in order to stay current.

The remainder of this report is organized into two main sections: one covering the forecast of population, demographics and employment (collectively known as "socioeconomic characteristics") for the base year (2018) and the future year (2045); and the other section covering the travel demand forecasting model 2018 base year update and its validation against actual traffic counts.

SOCIOECONOMIC CHARACTERISTICS

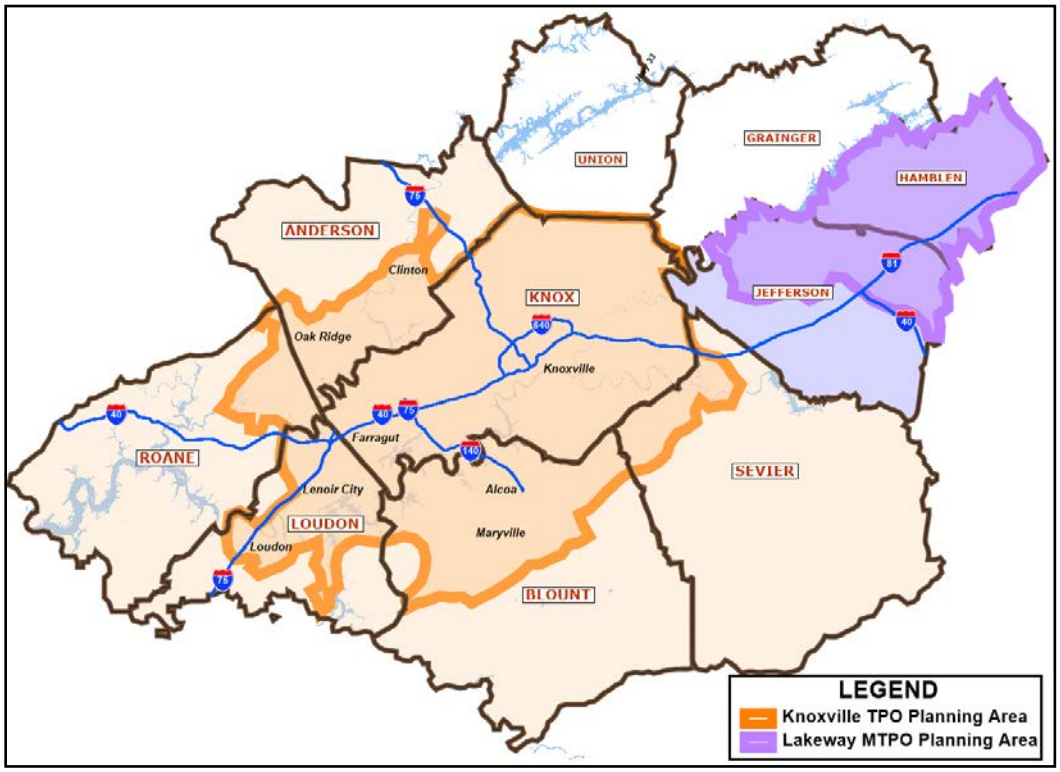
One of the key planning assumptions that goes into the development of the MTP is the forecast of the expected growth in population and employment, which are key drivers of transportation demand. With each update of the MTP, it is important to establish an updated base year in which all necessary data is available and to review previous population forecasts to ensure that they are: (1) still valid and relevant and (2) if they need to be extended further into the future to match the MTP's updated horizon year. In the case of Mobility Plan 2045, it was determined that 2018 should be the base year since that was the most recent year with full data availability when the MTP development started in late 2019, and that the population forecast would need to be extended out to 2045. The year 2045 was chosen in order to cover the minimum required 20-year horizon beyond the adoption date of the new MTP in 2021. In addition to simply extending the population forecast out, it was discovered that a foundational change in the rates of population growth had been occurring over the last decade that needed to be accounted for in the

updated projections. The remainder of this section of the report will cover separately the major socioeconomic characteristic inputs needed for Mobility Plan 2045 and specifically as inputs to the TPO Travel Demand Model, including population, employment, school enrollment and other demographic variables.

Population

The amount of travel activity in the Knoxville Region is directly related to the number of people living here, which is why it is important to establish the base year figures and future year population estimates as a first step in each major update of the MTP. The official planning area boundaries of the Knoxville Regional TPO include portions of six counties: Anderson, Blount, Knox, Loudon, Roane and Sevier. Additionally, the TPO's travel demand model includes four other counties – Grainger, Hamblen, Jefferson and Union – for which population data is required. The travel demand model is also used to support the MTP update for the separate Lakeway Area Metropolitan Transportation Planning Organization (LAMTPO) which includes all of Hamblen County and a portion of Jefferson County. The entire study area along with the planning area boundaries of the Knoxville Regional TPO and LAMTPO are shown in Figure I-1.

Figure I-1. Travel Demand Model Study Area



The population totals for each of the 10 counties were obtained for the base year 2018 from the U.S. Census "Population Estimates Program." These figures are released on an annual basis and represent the estimated county-level population as of July 1 for the reference year. The future year 2045 population forecast for each county were selected through a process of reviewing two primary sources of population projection data: "2018 – 2070 Projections" from the University of Tennessee (UT) Center for Business & Economic Research (CBER) and "2019 Regional Projections" from Woods & Poole, Inc. (W&P). Following the review of the two sources, the TPO staff recommended using the W&P source for the population forecasts as it is similar to CBER's forecast for population changes and it also provides projections for several other needed socioeconomic variables. The TPO Executive Board endorsed the staff recommendation of W&P as the source for future year county-level population forecasts at its February 26, 2020, meeting. Table I-1 below provides the 10-county population totals for the base year 2018 and future years of 2026, 2035 and 2045 to support the Mobility Plan 2045 development and travel demand model.

Table I-1. Population Forecasts

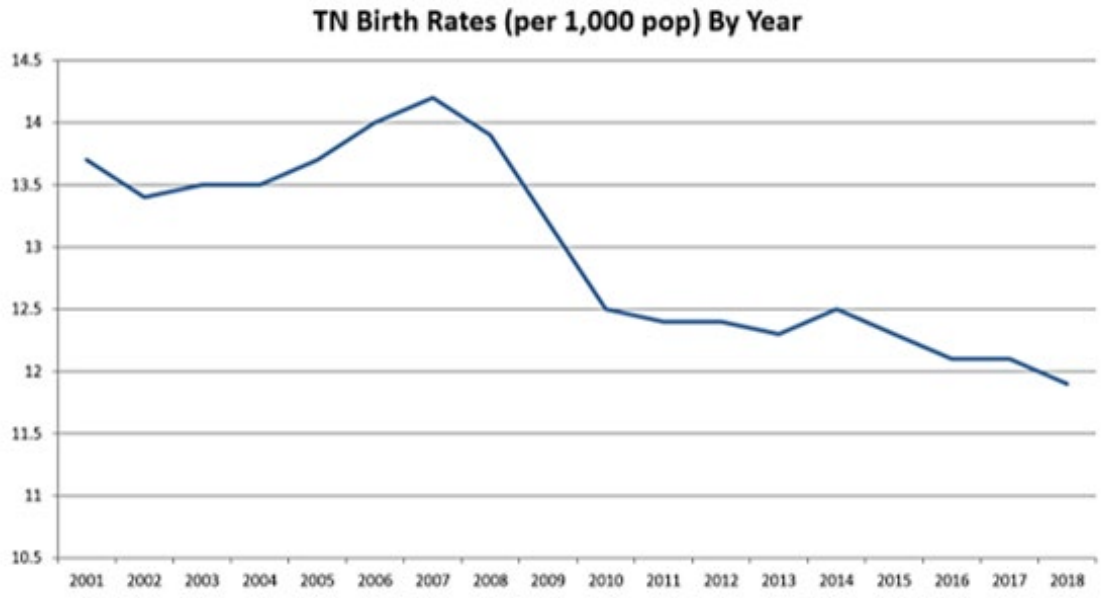
COUNTY	2018[1]	2026[2]	2035[2]	2045[2]
ANDERSON	76,482	79,239	81,472	82,896
BLOUNT	131,349	141,681	152,873	164,108
GRAINGER	23,145	24,095	25,086	26,234
HAMBLEN	64,569	67,598	70,344	72,535
JEFFERSON	54,012	58,627	63,211	67,800
KNOX	465,289	499,998	535,601	570,352
LOUDON	53,054	57,731	63,236	69,028
ROANE	53,140	54,460	55,334	55,563
SEVIER	97,892	110,029	122,690	136,609
UNION	19,688	20,155	20,895	21,749
TOTAL	**1,038,620**	**1,113,613**	**1,190,742**	**1,266,874**

1 - From Census Annual County Population Estimates data series, 2018 vintage (as of July 1, 2018)
2 - From Woods & Poole Economics, 2019 Regional Projections and Database

The population forecasts for Mobility Plan 2045 represent a fairly significant reduction in overall future population growth relative to the previous Mobility Plan 2040 forecasts that were based on projections developed in 2012. The primary reason for the reduction in population growth is related to the continuing decline in overall birth rates that began during the "Great Recession" period of 2007-2009. At first it was assumed that this represented a temporary decline and that birth rates would return to pre-recession

levels. However, as shown in Figure I-2 below for the Tennessee birth rates, they have continued to decline. Therefore, newer projection models account for this lower birth rate as a key component of population change.

Figure I-2. Tennessee Birth Rates



From CBER "Tennessee Population Projections and Underlying Influential Trends" Presentation, October 2019

The result of the lower birth rate assumption is reflected in how population projections have changed in our six-county region. The previous Mobility Plan population projection for those counties was 1,206,665 in 2040, while the new projection is 1,045,449, a decline of 13.4%.

Employment

Employment is another important variable influencing total travel and in particular the specific areas where travel occurs. Employment locations represent trip attractions for both the worker as well as locations where commerce or other necessary daily activities such as grocery shopping or attending medical appointments occur. The TPO travel demand model categorizes employment into four major types of: Basic (farming, construction), Industrial (manufacturing, wholesale trade), Service (professional, educational services) and Retail (shopping, accommodation, food services). Each type exhibits different characteristics in the type of trips generated. For example, retail employment tends to attract trips from workers as well as shoppers, whereas industrial employment will attract primarily worker trips as well as commercial vehicle trips to distribute finished or unfinished goods.

There is no a definitive source of the amount of employment in each county, as there is with population from the decennial Census. Two primary sources of employment data are the Bureau of Economic Analysis (BEA) and the Bureau of Labor Statistics (BLS). In general, the BEA estimate of employment produces a significantly higher number of jobs than the BLS estimate for the same county. The BLS employment estimates are lower in part because agricultural workers, the military, sole proprietors and other miscellaneous workers are excluded. The manner in which proprietorship employment is treated appears to account for the largest difference in terms of the BEA versus BLS estimates for the Knoxville Region since there are no large military bases or significant amount of farm employment. For example, the BEA (and W&P) employment estimates will double-count a person who has a full-time salary job and in their "spare" time (nights/weekends) runs a small business (proprietorship) from their home.

After reviewing the data sources, the TPO staff developed an "in-between" estimate of total county-level employment using the BLS estimate and adding the agricultural employment from BEA as well as "nonemployer" data from Census County Business Patterns (CBP) data. The CBP nonemployer data provided the number of businesses in each county that have no paid employees and annual business receipts of $1,000 or more. According to the Census Bureau, "most nonemployers are self-employed individuals operating very small unincorporated businesses." The county-level totals derived using this combination compared favorably with the summation of individual establishment-level employment data that was obtained through the Tennessee Department of Transportation (TDOT) from the company known as InfoGroup, which is described further in the travel demand model update section of this documentation. Since the base year 2018 employment derived by this method is lower than the W&P employment that is used to provide future-year employment projections, the TPO staff instead applied a growth factor from W&P to each of the future analysis years of 2026, 2035 and 2045 as shown in Table I-2. Additionally, Table I-3 shows the effects of the differing growth rates of employment by the major sectors – Basic, Industrial, Retail and Service – continuing the recent trends towards fewer manufacturing jobs compared with more jobs in the retail and service sectors.

Table I-2. Employment Forecasts

COUNTY, EMPLOYMENT	2018[1]	2026[2]	2035[2]	2045[2]
ANDERSON	44,399	47,425	50,274	52,536
BLOUNT	59,662	67,165	75,568	84,839
GRAINGER	6,432	6,750	7,022	7,275
HAMBLEN	35,495	37,283	38,895	40,059
JEFFERSON	17,371	19,650	22,404	25,773
KNOX	276,450	309,197	345,590	383,318
LOUDON	19,993	22,026	24,219	26,507
ROANE	21,755	23,154	24,497	25,638
SEVIER	55,952	64,365	74,448	86,823
UNION	4,102	4,423	4,750	5,095
TOTAL	**541,611**	**601,438**	**667,667**	**737,863**

1 - Developed from combining BLS employment data with farm employment from BEA and sole proprietorships from Census Nonemployer Statistics (NES)
2 - From Woods & Poole Economics, 2019 Regional Projections and Database - used percent growth to generate projection factor for 2018 base year

Table I-3. Employment Forecast by Sector

EMPLOYMENT SECTOR	2018	2026	2035	2045	GROWTH% (2018-2045)
BASIC	43,646	44,767	44,542	44,155	1%
INDUSTRIAL	90,695	91,990	93,605	94,848	5%
RETAIL	125,198	135,359	145,360	157,123	28%
SERVICE	282,072	329,322	384,160	441,737	53%
TOTAL	**541,611**	**601,438**	**667,667**	**737,863**	**36%**

School Enrollment

Updated school enrollment data for 2018 for both public and private schools throughout the 10-county travel demand model study area was obtained through the Tennessee Department of Education website. The enrollment data was compared against the year 2018 estimated school-age (5-17) population count from W&P, and the numbers were similar. Therefore, the growth rate from the projected W&P data was applied to 2018 base year enrollment in order to develop the future-year projections at the county level as shown in Table I-4:

Table I-4. School (K-12) Enrollment Forecasts

COUNTY, K-12 ENROLLMENT	2018[1]	2026[2]	2035[2]	2045[2]
ANDERSON	12,051	11,534	11,574	11,577
BLOUNT	18,858	18,233	19,556	21,425
GRAINGER	3,388	2,985	3,082	3,229
HAMBLEN	10,801	10,471	10,370	10,822
JEFFERSON	7,316	6,960	7,450	8,312
KNOX	67,664	70,838	77,963	83,952
LOUDON	7,329	7,482	7,636	8,439
ROANE	6,647	6,070	6,122	6,175
SEVIER	14,852	15,263	17,015	19,588
UNION	2,954	2,668	2,676	2,830
TOTAL	**151,860**	**152,502**	**163,444**	**176,349**

1 - Tennessee Department of Education
2 - Growth rates applied from Woods & Poole Economics, 2019 Regional Projections and Database

Demographic Variables

The regional travel demand model uses average socioeconomic and other demographic variables to inform some travel behavior characteristics that differentiate one household type from another. The key variables used in the model that have been found to have statistically significant effects on trip making either directly or indirectly are: Median Household Income, Percent Households with Seniors (age > 65), Workers per Household, Students per Household, and Vehicles per Household. These variables were all updated using the most recent available census information, primarily being the most current 5-year American Community Survey (ACS) data from 2014-2018, which is available at the block group level. (A Census block group is part of a Census tract and is made up of multiple Census blocks.)

The Census block groups are generally comparable with the travel demand model's Traffic Analysis Zones (TAZ). However, they are not at a 1 to 1 scale since there are a total of 1,173 TAZs and 593 Block Groups within the 10-county model region. The most common scenario is that multiple TAZs "nest" within a block group. There are also cases where block groups "nest" within TAZs, as well as cases where boundaries do not align at all. Another Census product known as the Census Transportation Planning Package (CTPP) provides a special tabulation of demographic variables at the "Census TAZ" level based on the 2012-2016 ACS. This was also used to assist in disaggregating this data to model TAZs since the Census TAZs are closer in alignment to our region's TAZs, with a total of 804 in the 10-county region.

These types of demographic variables can be extremely challenging to forecast at the sub-county level, and most are used in terms of percentages and ratios, so they do not represent a specific number. In keeping with past practice, the variables of Median Household Income and Vehicles per Household are left constant for all forecast years since these are relatively stable in terms of geographic distribution and, in the case of income, would be difficult to properly account for inflation effects. The variable of Percent Households with Seniors (age > 65) was also left constant because updated forecast data was not available. The remaining variables of Workers per Household and Students per Household were applied to TAZs at the county-level proportionally based on the particular county's rate of change from the W&P forecast data of the applicable age ranges (i.e., workers are made up of the age cohort from 20 to 64, and students the age cohort of 5 to 17). Table I-5 and Table I-6 show the forecast change in workers and students per household for each horizon year in the model.

Table I-5. Workers per Household Forecast

COUNTY, WORKERS PER HH	2018	2026	2035	2045
ANDERSON	1.15	1.07	1.04	1.04
BLOUNT	1.26	1.19	1.16	1.18
GRAINGER	1.15	1.11	1.07	1.08
HAMBLEN	1.16	1.13	1.13	1.14
JEFFERSON	1.22	1.17	1.15	1.16
KNOX	1.30	1.24	1.24	1.28
LOUDON	1.08	1.00	0.98	0.98
ROANE	1.10	1.02	0.98	0.99
SEVIER	1.33	1.25	1.23	1.26
UNION	1.11	1.02	1.00	1.01

Table I-6. Students per Household Forecast

COUNTY, STUDENTS PER HH	2018	2026	2035	2045
ANDERSON	0.39	0.36	0.36	0.36
BLOUNT	0.40	0.35	0.36	0.38
GRAINGER	0.41	0.35	0.35	0.36
HAMBLEN	0.45	0.41	0.41	0.42
JEFFERSON	0.42	0.36	0.37	0.40
KNOX	0.38	0.37	0.39	0.41
LOUDON	0.37	0.34	0.33	0.34
ROANE	0.37	0.32	0.33	0.33
SEVIER	0.41	0.37	0.38	0.40
UNION	0.44	0.38	0.37	0.38

TRAVEL DEMAND MODEL – 2018 UPDATE

Background

The TPO uses a computer-modeling tool known as a travel demand forecasting model to predict future conditions on our roadways. The Knoxville Regional Travel Demand Model (KRTM) is calibrated to closely replicate existing traffic patterns in the Knoxville Region to forecast future traffic volumes and resulting areas of potential congestion. It is also used to support the air quality conformity analysis that is required for the Knoxville Region, which is an air quality Maintenance Area for both Ozone and PM2.5. The model covers the primary roadway network in a 10-county area that includes Anderson, Blount, Grainger, Hamblen, Jefferson, Knox, Loudon, Roane, Sevier, and Union counties. To develop the model, mathematical relationships between travel activity and household socioeconomic characteristics were derived from extensive travel behavior surveys that were conducted in the years 2000 and 2008. In these surveys, approximately 3,000 households in the Knoxville Region were asked to record their travels in a one-day period including:

- Purpose of the trip
- Origin and destination of each trip
- Mode of transportation used
- Time of day trip was made

The model was developed based on the assumption that households with similar socio-economic characteristics such as household income, number of school-age children, and vehicle ownership would demonstrate similar travel activity. These household characteristics are available primarily from the U.S. Census Bureau as discussed in the prior section of this report and are input into the model based on their distribution across TAZs the Knoxville Region.

The current model has its origins back to 2012 when an update was completed to calibrate and validate the model using 2010 Decennial Census data. Since that time two minor updates have been completed – one for the prior Mobility Plan 2040 and one now for Mobility Plan 2045. In both updates the model has been validated against new base years of available data – 2014 and 2018 respectively. A major model update is being planned for the next Mobility Plan update since new 2020 Decennial Census data will become available in mid-2021 following the due date of this Plan. The remainder of this section provides more information about the current minor model update for three areas:

- Roadway Network and Traffic Analysis Zones
- Model Validation Statistics
- Existing and Committed Roadway Network

ROADWAY NETWORK & TRAFFIC ANALYSIS ZONES

As previously mentioned, the KRTM is a mathematical representation of reality and its key inputs are the roadway network attributes and the socioeconomic characteristics at the Traffic Analysis Zone (TAZ) level.

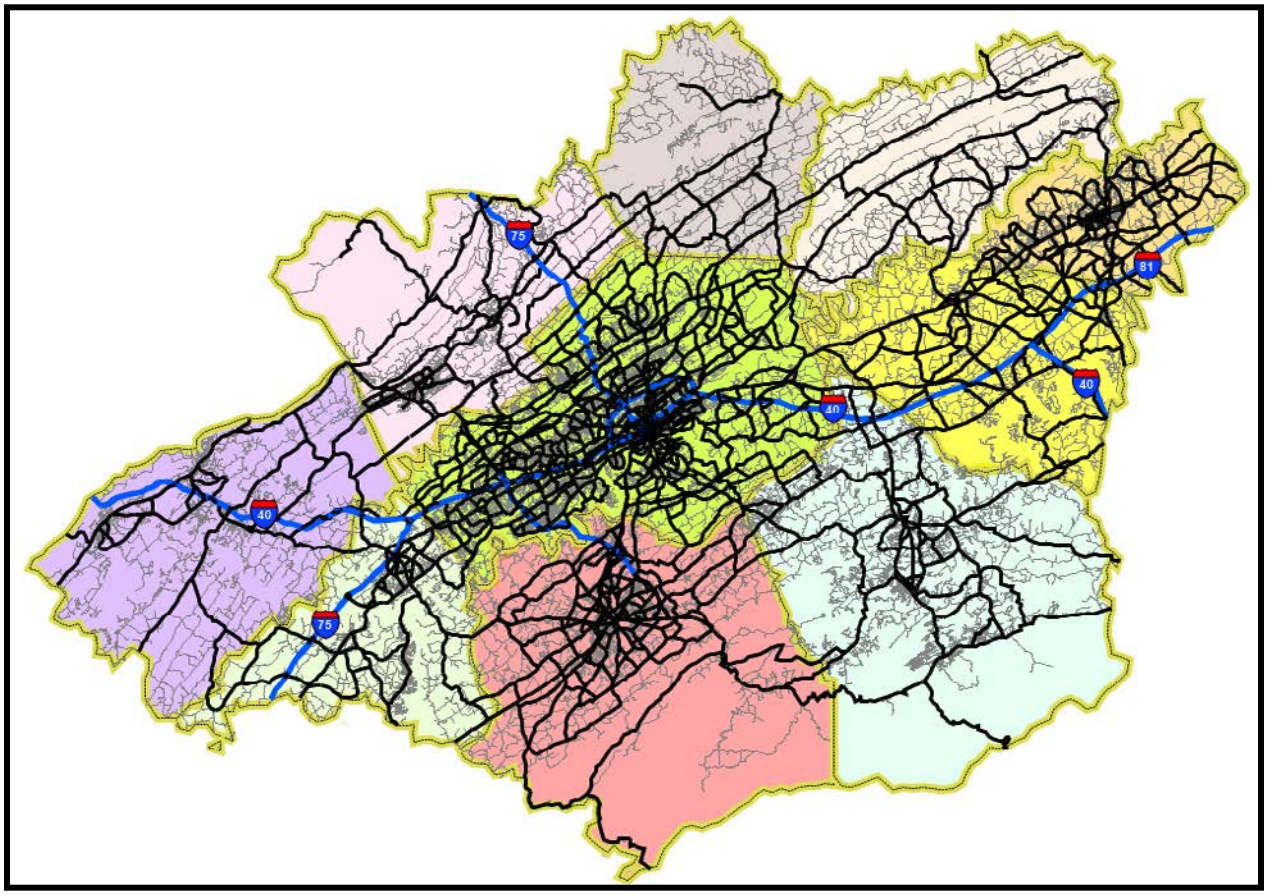
The roadway network is represented in a Geographic Information System (GIS) map as a system of links and nodes. The nodes represent intersections, locations of traffic signals, and places where roadway characteristics change in the middle of a segment (such as where a road narrows). Each link in the model represents a segment of roadway that is described by several attributes, including:

- Functional classification
- Speed limit
- Number of lanes
- Pavement width
- Level of access control
- Whether it is divided by a median

Roadway attributes are used to determine the capacity for motor vehicles and travel time along each link in the model network. The model can therefore be used to test alternative improvement strategies by changing attributes, such as increasing the number of lanes or adding a new link to represent construction of a new roadway.

The model primarily includes major roadways, ones that are functionally classified as collector and higher, since those are the facilities for which performance is of utmost importance. There are just over 3,250 centerline miles of roadways included in the KRTM network for the entire 10-county study area. Figure I-3 illustrates the model network in the dark black lines. The Interstate system is shown in blue. The “non-modeled” network is shown in light gray. In general, there is a denser network of modeled roadways within the core Knoxville TPO and Lakeway MTPO planning regions as compared with the other, more rural areas of the model study area.

Figure I-3. Travel Demand Model Roadway Network



The socioeconomic inputs that form the basis of the KRTM and how they were derived was documented in the first section of this report. That section focused on the county-level basis for the needed variables, which are called the "control totals." The KRTM needs inputs of these variables to be allocated to much smaller levels of geography known as Traffic Analysis Zones (TAZ). In general, the number of TAZs is directly proportional to the level of detail of the roadway network, as roadways generally form the boundaries of a TAZ. In this minor update of the KRTM, the number of TAZs was increased from 1,153 to 1,173 with the addition of greater roadway network detail in the LAMTPO Region of Hamblen and Jefferson counties. Knox County has the greatest number of TAZs at 508. In determining the size of TAZs, there are tradeoffs between the amount of confidence one can have in allocating future growth and the overall level of detail in the model. Smaller TAZs produce a more detailed model but result in less confidence in the estimates of where future population and job growth will occur.

In order to allocate the future growth of population and employment from the county control totals to the smaller TAZs, the TPO staff consulted with planning staffs and stakeholders from each jurisdiction

within the TPO and LAMTPO area. TPO staff obtained information on proposed developments and other likely development areas in the various jurisdictions to inform the allocation. Stakeholders reviewed the outputs to determine the overall reasonableness. This exercise is inherently challenging due to the unforeseen things that can influence development patterns, but provides a "best guess," and can be updated as needed to account for major changes with each subsequent Mobility Plan update. Table I-7 shows the amount of total population and employment increase for each county between 2018 and 2045 that must be allocated to the TAZs:

Table I-7. Increased Population and Employment Allocation by County

COUNTY, 2045 ALLOCATION	POPULATION	EMPLOYMENT
ANDERSON	6,414	8,137
BLOUNT	32,759	25,177
GRAINGER	3,089	843
HAMBLEN	7,966	4,564
JEFFERSON	13,788	8,692
KNOX	105,063	106,868
LOUDON	15,974	6,514
ROANE	2,423	3,883
SEVIER	38,717	30,871
UNION	2,061	993
TOTAL	**228,254**	**196,542**

Travel Demand Model Validation

The model uses the TAZ-level information on socioeconomic characteristics and the number of people and jobs to allocate trips via four steps:

1. Estimate the total trips that are generated each day per TAZ
2. Determine which mode of travel is most likely to be used
3. Identify the likely destination TAZ based on the trip type
4. Select the specific roadways that are traveled on in the case of motor vehicle trips.

Each step of the modeling process is calibrated independently, since errors in one step can propagate throughout the model and lead to problems in later steps. The calibration of each stage of the KRTM has

been previously documented and shown to be within acceptable tolerances based on national guidelines for model development. Since underlying travel behavior or network characteristics are not being adjusted with this update of the model, these calibration metrics will not be revisited in this report. Instead, the focus is to review the final output of the model and compare it with actual traffic count data collected by TDOT and local agencies. This determination of how well the model is replicating real-world traffic volumes is known as "model validation." The Federal Highway Administration (FHWA) has published guidelines on validation criteria that should be met to ensure the acceptability of the model. These guidelines formed the basis of recommended validation checks adopted for use specifically in Tennessee through the Tennessee Model Users Group (TNMUG).

The updated base year 2018 model outputs were compared against year 2018 traffic count data in order to determine how well the model is replicating actual traffic volumes. Validation criteria adopted by the TNMUG and documented in the "Minimum Travel Demand Model Calibration and Validation Guidelines for State of Tennessee" were used to demonstrate the performance of the model. Overall, the model performed very well in terms of meeting the validation criteria and overall % Root Mean Square Error (%RMSE) statistics were very good at 31.3%. The following tables show the TNMUG-required validation criteria and model performance. A separate table shows the vehicle miles traveled (VMT) comparison between model outputs and the 2018 VMT as developed by TDOT for the submittal to the FHWA's Highway Performance Monitoring System (HPMS). The tables demonstrate that the model meets the necessary criteria with the exception of one screenline for the KRTM, which is not missing the target by a wide margin and thus not a cause for concern about the overall performance.

The following tables and figures provide specific results of the KRTM 2018 base year validation tests. Table I-8 presents the seven TNMUG validation tests adopted for use in Tennessee and the KRTM performance for each. Figure I-4 is the scatter plot of modeled versus actual counts to determine the linear regression results and resulting coefficient of determination (R^2). Table I-9 shows the modeled VMT versus actual HPMS VMT and also indicates the comparison of modeled roadway mileage to actual roadway mileage. It is to be expected that model VMT will be much lower than actual VMT for less important roadways such as minor collectors and local roads since fewer of these are represented in the model. Finally, Figure I-5 shows the locations of the screenlines that were used.

Table I-8. Minimum Travel Demand Model Validation Standards for State of Tennessee

#1 - Percent Difference in value for screenlines	Standard	Model Value	Pass/Fail	Average Count	Average Modeled	Num Obs
External model cordon line	+/- 1%	-0.02%	Pass	9,678	9,676	33
Screenlines with greater than 70,000 AADT	+/- 10%					
Rivers	+/- 10%	10.04%	Pass	27,514	30,276	20
Inner Knoxville	+/- 10%	4.11%	Pass	25,777	26,836	19
East Counties	+/- 10%	-3.58%	Pass	7,699	7,424	9
West Counties	+/- 10%	15.12%	Fail	27,282	31,407	10
Northeast Counties	+/- 10%	8.14%	Pass	6,219	6,726	13
Screenlines with less than 35,000 AADT	+/- 20%					
North Counties	+/- 20%	8.12%	Pass	5,151	5,569	8
#2 - Percent Difference in volume by classification	**Standard**	**Model Value**	**Pass/Fail**	**Average Count**	**Average Modeled**	**Num Obs**
Freeway Volume-to-Count	+/- 7%	1.70%	Pass	28,866	29,355	450
Arterial Volume-to-Count	+/- 15%	-3.66%	Pass	14,866	14,322	563
Collector Volume-to-Count	+/- 25%	-8.98%	Pass	3,541	3,223	1051
#3 - Percent Difference in value for link volumes	**Standard**	**Model Value**	**Pass/Fail**	**Average Count**	**Average Modeled**	**Num Obs**
AADT < 1,000	+/- 200%	40.91%	Pass	629	887	177
AADT = 1,000 - 2,500	+/- 100%	8.80%	Pass	1,670	1,817	311
AADT = 2,500 - 5,000	+/- 50%	-3.93%	Pass	3,635	3,492	334
AADT = 5,000 - 10,000	+/- 25%	-1.18%	Pass	7,099	7,016	354
AADT = 10,000 - 25,000	+/- 20%	-1.43%	Pass	15,517	15,295	359
AADT = 25,000 - 50,000	+/- 15%	1.25%	Pass	36,574	37,030	134
AADT > 50,000	+/- 10%	-1.77%	Pass	90,453	88,850	100
#4 - Coefficient of Determination	**Standard**	**Model Value**	**Pass/Fail**	**Average Count**	**Average Modeled**	**Num Obs**
Coefficient of Determination (R^2)	> 0.88	0.94	Pass	13,504	13,408	1,768
#5 - Root mean square for link volumes	**Standard**	**Model Value**	**Pass/Fail**	**Average Count**	**Average Modeled**	**Num Obs**
AADT < 5,000	< 100%	65.68%	Pass	2,245	2,298	822
AADT = 5,000 - 9,999	< 45%	40.15%	Pass	7,099	7,016	354
AADT = 10,000 - 14,999	< 35%	27.09%	Pass	12,218	12,012	198
AADT = 15,000 - 19,999	< 30%	24.44%	Pass	17,329	17,604	103
AADT = 20,000 - 29,999	< 27%	22.48%	Pass	24,110	23,826	163
AADT = 30,000 - 49,999	< 25%	15.23%	Pass	41,157	42,403	103
AADT = 50,000 - 59,999	< 20%	6.83%	Pass	52,700	49,688	8
AADT > 60,000	< 19%	14.20%	Pass	104,788	102,891	72
Areawide	< 45%	31.27%	Pass	13,504	13,408	1768
#7 - (Option) Root mean square by functional class	**Standard**	**Model Value**	**Pass/Fail**	**Average Count**	**Average Modeled**	**Num Obs**
Freeways/Expressways	< 20%	16.69%	Pass	33,545	33,963	168
Principal Arterials	< 35%	19.94%	Pass	20,218	20,293	230
Minor Artrerials	< 50%	31.85%	Pass	10,413	9,607	337
Collectors	< 90%	54.57%	Pass	3,969	3,867	566

Figure I-4. KRTM Linear Regression Analysis, Daily Traffic Count vs Model Volume

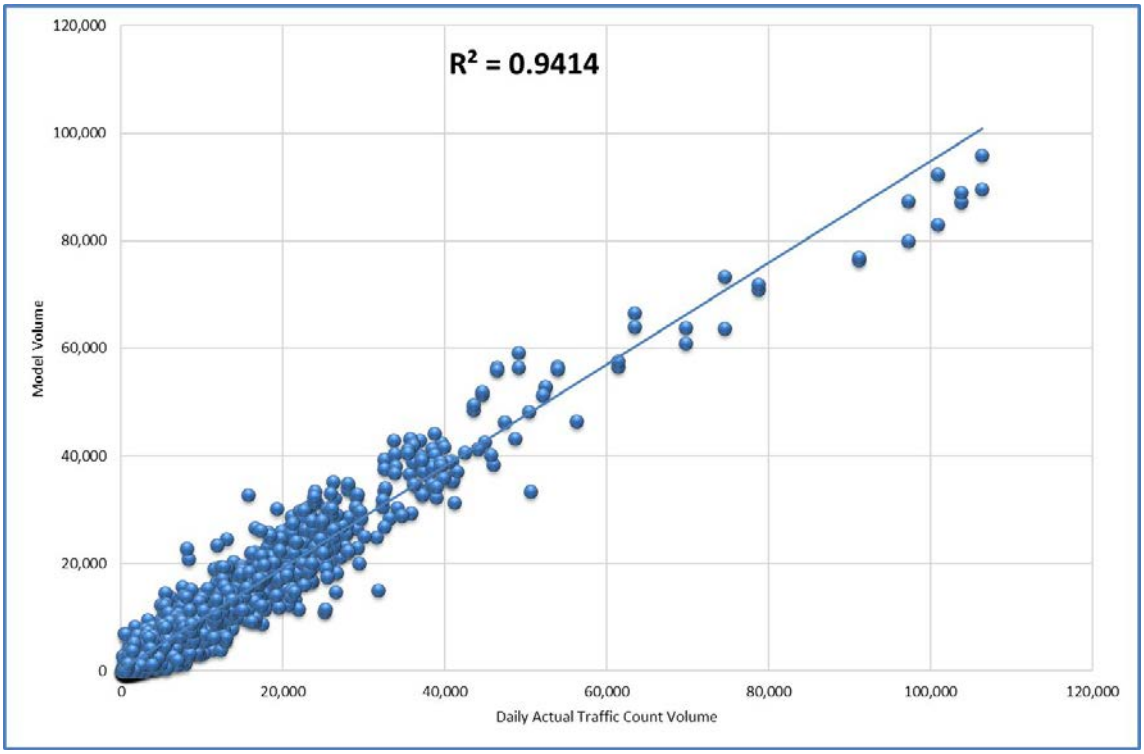
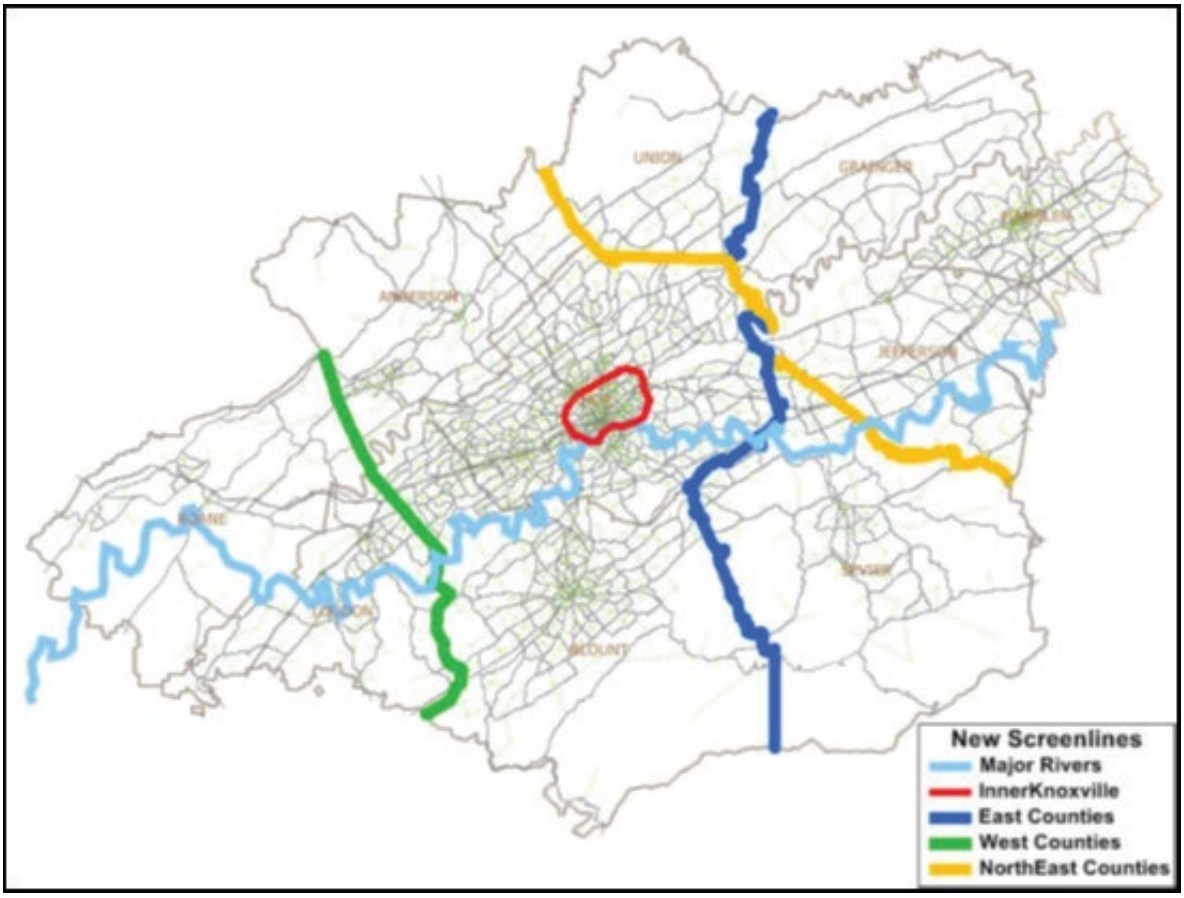


Table I-9. Model VMT versus HPMS VMT for Base Year 2018

	Rural Int	Rural Principal Arterial	Rural Minor Arterial	Rural Major Collector	Rural Minor Collector	Rural Local	Urban Int	Urban Freeway	Urban Principal Arterial	Urban Minor Arterial	Urban Major Collector	Urban Minor Collector	Urban Local	Total
ANDERSON HPMS	404,062	35,517	-	157,761	69,329	60,318	160,077	-	793,072	282,571	114,972	66,932	421,706	**2,566,317**
ANDERSON Model	472,022	31,621	-	141,096	11,269	6,069	154,106	-	737,178	266,665	80,675	34,825	16,636	**1,952,162**
HPMS Factor	0.86	1.12	N/A	1.12	6.15	9.94	1.04	N/A	1.08	1.06	1.43	1.92	25.35	**1.31**
BLOUNT HPMS	-	207,367	92,627	65,968	35,046	102,838	99,224	32,884	1,116,356	499,919	275,449	212,358	697,279	**3,437,315**
BLOUNT Model	-	230,383	95,403	66,948	23,638	15,435	95,025	42,291	1,087,823	460,910	185,302	156,991	20,474	**2,480,622**
HPMS Factor	N/A	0.90	0.97	0.99	1.48	6.66	1.04	0.78	1.03	1.08	1.49	1.35	34.06	**1.39**
HAMBLEN HPMS	301,182	872	-	64,996	39,896	48,855	30,632	-	778,487	251,872	149,726	31,082	259,973	**1,957,573**
HAMBLEN Model	360,364	1,892	-	59,870	16,097	2,776	24,524	-	688,782	201,299	110,449	12,587	14,442	**1,493,083**
HPMS Factor	0.84	0.46	N/A	1.09	2.48	17.60	1.25	N/A	1.13	1.25	1.36	2.47	18.00	**1.31**
JEFFERSON HPMS	1,381,120	-	315,331	221,288	125,190	137,492	25,060	-	168,927	84,606	19,903	6,862	40,525	**2,526,304**
JEFFERSON Model	1,612,519	-	399,160	296,728	90,562	11,285	41,798	-	191,792	89,837	15,074	5,084	2,921	**2,756,761**
HPMS Factor	0.86	N/A	0.79	0.75	1.38	12.18	0.60	N/A	0.88	0.94	1.32	1.35	13.87	**0.92**
KNOX HPMS	577,764	-	97,747	118,604	118,818	116,479	5,901,171	164,720	2,588,433	2,510,477	755,332	720,890	3,405,108	**17,075,543**
KNOX Model	648,903	-	100,701	102,934	98,352	21,290	5,268,112	98,995	2,445,573	2,137,807	656,678	572,720	250,823	**12,402,889**
HPMS Factor	0.89	N/A	0.97	1.15	1.21	5.47	1.12	1.66	1.06	1.17	1.15	1.26	13.58	**1.38**
LOUDON HPMS	433,441	135,412	68,056	44,803	72,874	51,662	757,321	-	318,900	217,896	67,801	62,344	189,571	**2,420,081**
LOUDON Model	476,558	167,067	78,398	60,413	22,005	-	849,612	-	288,078	226,304	37,197	23,603	297	**2,229,531**
HPMS Factor	0.91	0.81	0.87	0.74	3.31	N/A	0.89	N/A	1.11	0.96	1.82	2.64	638.91	**1.09**
ROANE HPMS	291,922	61,305	76,416	62,999	59,011	59,112	679,678	-	373,407	212,137	28,176	52,109	124,445	**2,080,717**
ROANE Model	337,576	66,671	72,343	54,601	10,865	-	691,289	-	411,226	168,469	19,795	25,688	20,532	**1,879,055**
HPMS Factor	0.86	0.92	1.06	1.15	5.43	N/A	0.98	N/A	0.91	1.26	1.42	2.03	6.06	**1.11**
SEVIER HPMS	-	259,823	531,610	175,693	140,021	466,921	354,829	-	1,107,780	365,420	253,920	38,782	631,188	**4,325,987**
SEVIER Model	-	216,335	520,123	177,889	46,703	51,703	367,754	-	999,139	313,835	175,321	26,236	35,535	**2,930,573**
HPMS Factor	N/A	1.20	1.02	0.99	3.00	9.03	0.96	N/A	1.11	1.16	1.45	1.48	17.76	**1.48**

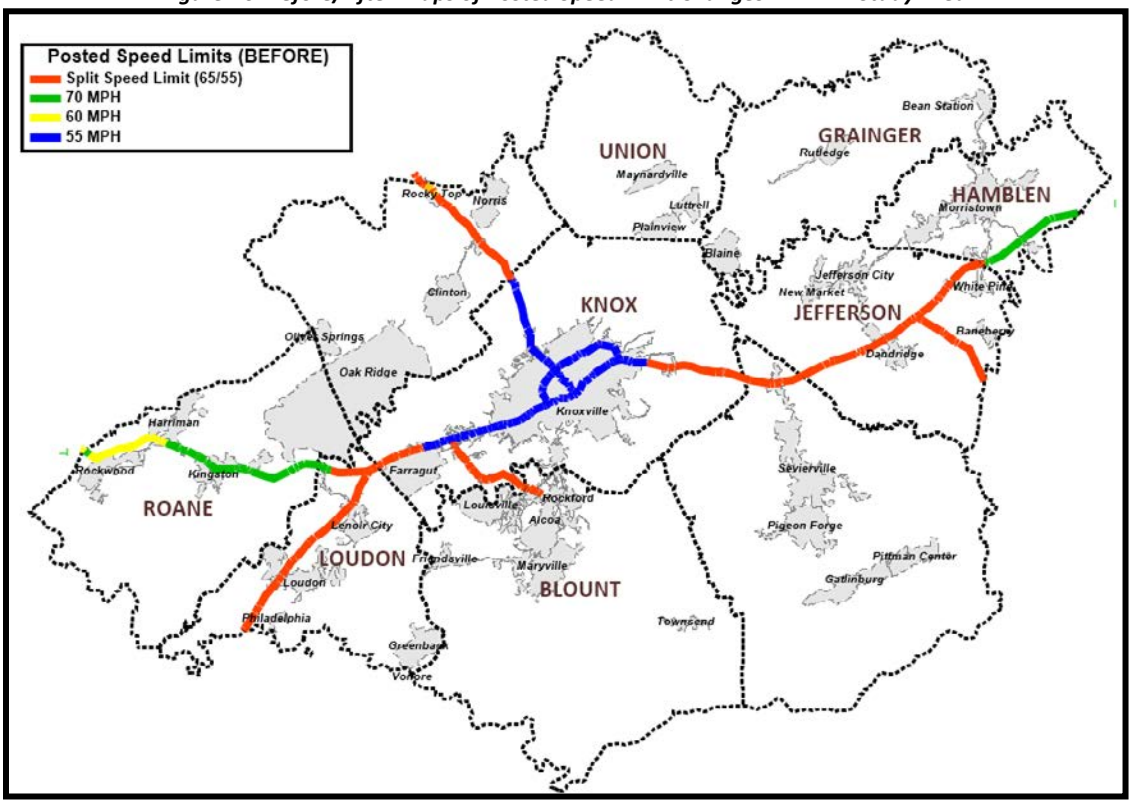
Figure I-5. Model Screenlines



Existing Plus Committed Roadway Network

The primary purpose of the model is to forecast needs and deficiencies for the roadway network, assuming that population and economic activity continue to grow, but no improvement projects are undertaken beyond what is known as the "existing plus committed" or E+C network. The model roadway network was first updated to account for changes that occurred after 2014 (the prior base year) and were completed before 2018 (the new base year for the model). This is known as the "existing" network. In addition to completed road projects, changes since 2014 include increased speed limits on several segments of interstate within the model study area. Figure I-6 shows before/after maps of the segments of Interstate where the speed limits have been increased. Table I-10 is a listing of major capacity-changing projects that were completed between 2014 and 2018.

Figure I-6. Before/After Maps of Posted Speed Limit Changes in KRTM Study Area



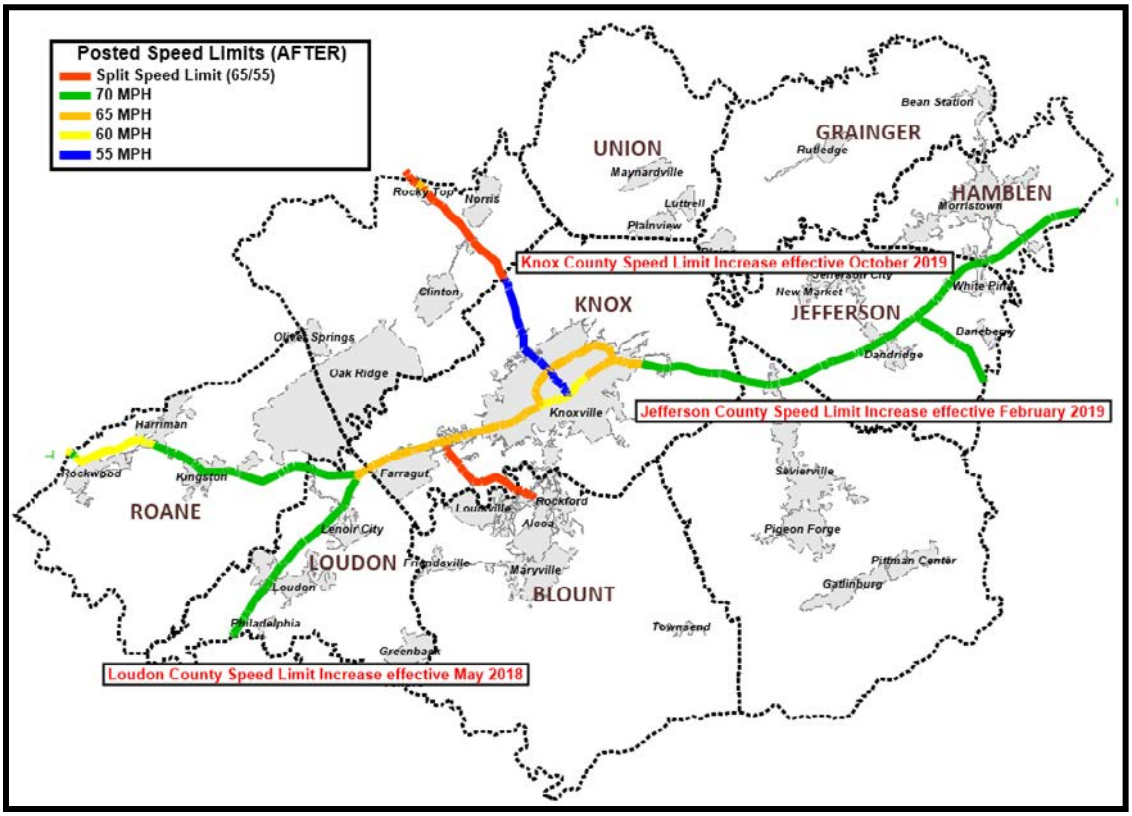


Table I-10. Major Capacity-Changing Projects Completed between 2014 and 2018

PROJECT NAME	KRMP ID	TERMINI	LENGTH (MILES)	PROJECT DESCRIPTION	STATUS
CUMBERLAND AVE ROAD DIET & STREETSCAPING	09-613b	22nd St to 16th St	0.5	Road diet and streetscape, reducing four lanes to two lanes with median and turn lanes	Completed in 2017
DIXIE LEE JUNCTION	09-406	Intersection of US 11 & US 70	0.2	Intersection Realignment & Signalization	Completed in 2018
FOOTHILLS PARKWAY	09-224	From U.S. 321 (SR-73) in Walland to U.S. 321 (SR-73) in Wears Valley	16	Construct a new 2-lane roadway	Completed in 2018
KARNS CONNECTOR	09-635	Oak Ridge Hwy to Westcott Blvd	0.8	Construct new 2-lane road with center turn lane	Completed in 2018
MAYNARDVILLE HWY	09-604	North of SR-71 to Union County Line	6.2	Widen from 2 to 4/5 lanes	Completed in 2017
NORTH CENTRAL STREET ROAD DIET AND STREETSCAPE	10-697	Woodland Ave to Depot St	1.2	Road diet and streetscape along North Central Street, reducing four lanes to two lanes with center turn lane	Completed in 2019
PARKSIDE DRIVE WIDENING	N/A	Mabry Hood Rd to Hayfield Rd		Widen from 2 to 5 lanes	Completed in 2017
WESTERN AVE (SR-62) WIDENING	09-612	Schaad Rd to I-640	3.9	Widen from 2 to 5 lanes	Completed in 2018

In addition to the projects and speed limit changes that were completed by 2018, other projects are labeled as “committed.” The definition of a “committed” project for the purposes of Mobility Plan 2045 is that the project is either under construction or construction funding is programmed in the TPO Fiscal Year 2020-2023 Transportation Improvement Program (TIP). An exception to this rule was made for two

phases of Alcoa Highway (US-129/SR-115) that are not currently programmed for construction, but are assumed to be committed since all other segments of Alcoa Highway are either under construction or programmed for construction by FY 2023. The E+C projects form the baseline network with which subsequent roadway deficiency analyses and the Congestion Management Process analysis is undertaken with; however, it should be noted that this network does not necessarily represent the first air quality conformity horizon year (2026) since some projects such as a few Alcoa Highway segments are not projected to be open to traffic by that year given their large magnitude and length of time it will take for construction to be completed. Table I-11 provides a listing of the Committed projects and their status (either under construction or funded for construction) as of May 2020:

Table I-11. Committed Project List

PROJECT NAME	KRMP ID	TERMINI	LENGTH (MILES)	PROJECT DESCRIPTION	STATUS AS OF MAY 2020
ALCOA HWY (SR-115/US-129)	09-627	Maloney Rd to Woodson Dr	1.4	Widen from 4-lane to 6-lane.	Under construction, completion target of 12/30/2020
ALCOA HWY (SR-115/US-129)	09-218	Hall Rd (SR-35) to proposed interchange at Tyson Blvd.	1.3	Widen from 4-lane divided to a 6-lane divided highway. Extend Tyson Boulevard under SR-115 and reconstruct Hunt Rd overpass.	Under construction, completion target of 11/30/2021
ALCOA HWY (SR-115/US-129) WIDENING	09-216	Pellissippi Pwy (SR-162) to Little River (Knox/Blount C.L.)	3.2	Widen 4-lane to 6-lane with frontage road system and new interchange at Topside Rd (SR-333). Reconfigure existing interchange at Pellissippi Pkwy (SR-162) and signalize ramps.	In ROW, no construction funds yet but entire Alcoa Hwy corridor considered as committed
ALCOA HWY (SR-115/US-129) WIDENING	09-628	North of Little River (Knox/Blount C.L.) to Maloney Rd	2.4	Widen from 4 to 6 lanes including pedestrian and bicycle facilities.	Under construction, completion target of 5/31/2023

PROJECT NAME	KRMP ID	TERMINI	LENGTH (MILES)	PROJECT DESCRIPTION	STATUS AS OF MAY 2020
ALCOA HWY (SR-115/US-129) WIDENING	09-653	Woodson Dr. to Cherokee Trail interchange	1.3	Widen 4-lane to 6-lane including pedestrian and bicycle facilities.	In ROW, construction programmed in FY 2020
RELOCATED ALCOA HWY (SR-115/US-129)	09-257	Proposed interchange at Tyson Blvd. to Pellissippi Pkwy (SR-162)	2.9	Construct new 4-lane divided highway with auxiliary lanes and new interchanges at McGhee Tyson Airport access, Wright Rd and Pellissippi Pkwy (SR-162).	In ROW, construction programmed for FY 2021
RELOCATED ALCOA HWY (SR-115/US-129)	09-258	Pellissippi Pkwy (SR-162) to South Singleton Station Rd	1.3	Construct new 4-lane divided highway with auxiliary lanes and new interchange at Singleton Station Rd.	In ROW, no construction funds yet but entire Alcoa Hwy corridor considered as committed
ASSOCIATES BOULEVARD EXTENSION, KNOWN AS MARCONI BLVD	13-206	Associates Blvd to East Edison St/Springbrook Rd (New Alignment)	0.8	Construct new 2-lane boulevard with bicycle/pedestrian facilities.	Out for construction bids
CHAPMAN HWY (US-441/SR-71)	09-626b	Evans Rd to Burnett Ln	0.9	Add center turn lane.	Under construction, completion target of 9/30/2020
CHAPMAN HWY (US-441/SR-71)	09-626d	Hendron Chapel Rd to Simpson Rd	0.9	Add center turn lane.	In ROW, construction likely by end of 2021
CHAPMAN HWY (US-441/SR-71) WIDENING	09-508	Boyds Creek Hwy (SR-338) to Macon Ln	1.2	Add center turn lane.	Under construction, completion target of 12/31/2020
CONCORD ROAD (SR-332) WIDENING	09-632	Turkey Creek Rd. to Northshore Dr. (SR-332)	0.8	Widen roadway from 2 to 4-lanes w/median and new bicycle/pedestrian facilities.	Under construction, completion target of 8/22/2021
FOOTHILLS MALL DRIVE EXTENSION TO FOCH STREET	13-211	US-129 Bypass (SR-115) to Foch St.	0.5	Construct new 2-lane road with center turn lane and sidewalks.	In ROW, construction programmed in FY 2020

PROJECT NAME	KRMP ID	TERMINI	LENGTH (MILES)	PROJECT DESCRIPTION	STATUS AS OF MAY 2020
I-275 INDUSTRIAL PARK ACCESS IMPROVEMENTS	09-618	Blackstock Ave: from W. Fifth Ave. to Bernard Ave., Marion St: from Bernard Ave. to Baxter Ave., Intersections of University Ave. with W. Fifth Ave. and Bernard Ave. Add greenway between W. Fifth Ave. and Baxter Ave.	0.5	Roadway and intersection improvements to enhance access to I-275 Business Park. Blackstock Ave: extend from Fifth Ave. to Bernard Ave.; Marion St: realign; University Ave: intersections with W Fifth Ave. and Bernard Ave.	Under construction, expected completion in Fall 2021
I-640 AT BROADWAY INTERCHANGE	09-611	I-640 at Broadway		Reconstruct and relocate ramps.	Under construction, Completion by end of 2020
MONTVALE RD (SR-336) WIDENING	09-262	Montvale Station Rd to Lamar Alexander Pkwy (US-321/SR-73)	0.6	Reconstruct 2-lane road with addition of continuous center turn lane and bicycle/pedestrian facilities.	In design, construction programmed in FY 2022
MORGANTON ROAD RECONSTRUCTION - PHASE 1	09-211	Foothills Mall Dr to William Blount Dr (SR-335)	2.2	Reconstruct 2-lane road with addition of turn lanes.	In NEPA, construction programmed for FY 2022
PELLISSIPPI PKWY (SR-162)/OAK RIDGE HWY INTERCHANGE	09-649	Interchange at Oak Ridge Hwy (SR-62)		Reconstruct interchange to provide ramp for westbound to southbound movement.	In design, construction programmed in FY 2023
PELLISSIPPI PKWY (SR-162/I-140) AND DUTCHTOWN RD INTERCHANGE	09-623	I-40 to Dutchtown Rd Interchange	0.4	Widen Pellissippi Pkwy from 1 to 2 lanes westbound and lengthen storage of westbound off-ramp at Dutchtown Road interchange.	Under construction, comp. target of 7/31/2020
PELLISSIPPI PKWY/HARDIN VALLEY INTERCHANGE	09-634	Interchange at Hardin Valley Rd		Reconfigure existing interchange to improve safety and operations. Add new northbound on-ramp in NE quadrant.	Under construction, comp. target of July 2021
ROBERT C. JACKSON DRIVE EXTENSION	09-238	Lamar Alexander Pkwy (US-321/SR-73) to Morganton Rd	1.2	Construct new 2-lane roadway with sidewalks.	Under construction, comp. target of Spring 2020

PROJECT NAME	KRMP ID	TERMINI	LENGTH (MILES)	PROJECT DESCRIPTION	STATUS AS OF MAY 2020
ROBERT C. JACKSON DRIVE SIA	NA	Lamar Alexander Pkwy (US-321/SR-73) to Middlesettlements Rd	1.2	Add center turn lane	Under construction, comp. target of June 2022
SCHAAD RD EXTENSION	09-605	Middlebrook Pk (SR-169) to W of Oak Ridge Hwy (SR-62)	4.6	Construct new 4-lane roadway with sidewalks	Construction beginning by Summer 2020
SCHAAD RD WIDENING	09-625	Oak Ridge Hwy. (SR-62) to Pleasant Ridge Rd.	1.5	Widen from 2 to 4 lanes with addition of sidewalks	In ROW, construction likely by end of 2021
SEVIERVILLE RD (SR-35/US-411) WIDENING	09-214	Washington St (SR-35) to Walnut St	0.4	Reconstruct 2-lane road with addition of continuous center turn lane and bicycle/pedestrian facilities	In NEPA, construction programmed for FY 2023
US 129 WIDENING	17-203	Foothills Mall Dr to Mall Rd	0.3	Intersection improvements at Foothills Mall Dr/Montgomery Ln and addition of turn lanes	In ROW, construction later in 2020
US 129 WIDENING	17-204	Mall Rd to Lamar Alexander Pkwy (US-321/SR-73)	0.7	Intersection improvements at W. Lamar Alexander Pkwy (US-321/SR-73) and addition of turn lanes	Under construction, completion target of 3/20/2020
US-321 (SR-73) WIDENING	09-423	E. Simpson Rd to north of SR-2 (US-11) in Lenoir City	1.4	Widen from 4 to 6 lanes	Under construction, comp. Soon
WESTERN AVE (SR-62) WIDENING	09-610	Texas Ave to Major Ave	0.8	Widen from 2 to 5 lanes	Under construction, comp. target of 6/7/2020

MOBILITY PLAN 2045

Appendix J

Travel Demand Model Scenarios

J. TRAVEL DEMAND MODEL SCENARIOS

INTRODUCTION

Each update of the Knoxville Regional TPO's Mobility Plan includes the use of a travel demand model to predict travel patterns across the region. During the current update, Mobility Plan 2045, the COVID-19 pandemic has caused substantial shifts in travel behavior nationally and regionally. From telecommuting to online shopping, many of these shifts were already under way, but they have increased during the pandemic and could result in long-term travel behavior changes. Given that Mobility Plan 2045 analyzes travel patterns over a 25-year period, the travel demand model can be used to assess the outcomes of different scenarios on the transportation landscape in the Knoxville region. Modeling different scenarios can affect the prioritization of projects within different timeframes, expectations regarding future funding levels locally and statewide, and anticipated air quality improvements. This appendix briefly documents current research on travel trends and how they were incorporated into scenario testing using the regional travel demand model.

TRENDS IN TRAVEL BEHAVIOR

The characteristics of travel are constantly changing, and in recent decades, advances in technology have had significant impacts on travel behavior. While these changes have been occurring over many years, the COVID-19 pandemic accelerated the adoption of many technologies that inform people's travel choices.

Remote Work

The increased use of telecommuting or remote working arrangements has had a significant impact on roadway travel in 2020. In these situations, employees work at least a portion of the workweek outside the office or business location. Research confirms that the opportunity to telecommute is more commonly associated with white collar businesses, larger companies, and full-time employees with higher education and wages. Approximately 17% of U.S. employees were telecommuting full-time prior to the COVID-19 pandemic, a figure that has increased to 44% during the pandemic. While this dramatic increase in telecommuting occurred out of necessity in early 2020, it may have long-lasting impacts. Companies have invested significant resources to ensure continued productivity of a remote workforce, and many see additional benefits from reduced overhead costs, greater employee work-life balance, and expanded

labor markets. As a result, it is expected that commuting trips in the Knoxville region will continue to decrease over time with the continued adoption of telecommuting arrangements across all industries.

Distance Learning

The COVID-19 pandemic caused many elementary, middle, and high schools to incorporate distance learning options into their curriculum and colleges to move more courses to online formats. It is anticipated that in-person education will be reinstated as quickly as possible for most school-age children. Although little impact to travel is expected long-term, concerns about school transportation and cleanliness amid a pandemic will potentially affect short-term school trips. In the Knoxville region, vehicular trips to schools are expected to increase in the short-term (3-5 years) to account for parents who may have previously sent children to school on a bus but now prefer to drive them to school.

While universities across the country have increased the availability of online courses in recent years, this option is not necessarily the preferred alternative for students attending college. However, the increasing cost of a college education combined with economic impacts from COVID-19 could result in decreased enrollment overall and/or increased online enrollment, which can often be more cost-effective. In the Knoxville region, university trips are generally expected to decrease over time to account for these trends.

Freight

The U.S. economy was significantly impacted by the COVID-19 pandemic in 2020. Because of the economic slowdown, freight and logistics companies continue to feel the impacts of closing businesses, stay-at-home mandates, and increased demand for essential medical and food supplies. One of the most notable shifts in freight traffic during this time has been the tradeoff between demand for long-haul versus local truck trips. Long-haul truck trips (greater than 1,000 miles) decreased nationally by about 30% during the pandemic while local trips (less than 100 miles) increased by 130%. According to a report published by the American Transportation Research Institute (ATRI), “the anecdotal evidence is that long-haul movements of international containers decreased at the same time that fleet operations recalibrated to moving essential consumer goods from local and regional warehouses to retail establishments.” In the Knoxville region, it is expected that this pattern will prevail in the short-term as the economy continues to rebound. Long-term, both local and national truck travel are expected to eventually realign with the historic trend of increased truck volumes. This accounts for larger shifts to things like increased online consumer spending, or e-commerce.

Tourism

One of the most immediate impacts of COVID-19 was the decline in tourism spending and discretionary travel. Stay-at-home orders combined with concerns about large groups resulted in canceled car rentals, closed tourism attractions, and significant declines in air travel. While U.S. residents are gradually becoming more comfortable with travel, many tourist destinations are continuing to operate at reduced capacity. According to the U.S. Travel Association, domestic air and hotel bookings are down by 56% and vehicle trips over 50 miles are down 13% in 2020 compared to 2019. This reduced travel has resulted in a 44% decrease in travel spending in the U.S.

Local economies that rely on tourism for revenue generation have felt the impact of this reduced spending. However, the impact on different types of tourism attractions has varied. For example, theme parks have experienced a reduction in visitors, while other outdoor venues have seen dramatic increases in visitors during the pandemic. In the Knoxville region, it is expected that the tourism-related impacts of COVID-19 will be primarily felt in the short-term with reduced travel to attractions like Pigeon Forge or Dollywood, increased travel to the Great Smoky Mountain National Park, and increased auto travel on the interstates generated by concerns about air travel.

Other Trends

Other changes in travel choices may result from the trends documented above. For example, data shows that when employees are working remotely, they are less likely to stop by the grocery store after work, but more likely to pick up a child from school instead of having them ride the bus. While this example results in a net zero change in total daily trips, the timing of trips is changed, which ultimately results in a decrease in peak hour trips.

As mentioned, advances in technology are responsible for many changes in travel trends. One of these key changes is the continued increase in shared mobility and micromobility options available nationally and in the Knoxville region. Use of transportation apps for things like carpool matching and scooter renting can ultimately reduce the number of motor vehicles on the road. In addition, apps that make it easier to have doorstep delivery of groceries or takeout can also reduce the need for making trips. Trip reductions due to these technologies in the Knoxville region, particularly for non-home-based trips, is expected to continue in both the short- and long-term scenarios.

MODEL CONSTRUCT AND PARAMETERS

The Knoxville TPO's regional travel demand model predicts multiple trip types for both daily and peak period travel. The first model step, trip generation, estimates the number of trips by type that will be made from and to each traffic analysis zone (TAZ). Based on the trip types in the Knoxville model as well as the observed travel changes during the COVID-19 pandemic, the trip generation step was used to effectively reduce or increase the following trip types:

- Work Trips
- School Trips
- University Trips
- Other Non-Home-Based Trips
- Visitor Trips
- Auto trips through the region (known as External-External or XX trips)
- Truck trips through the region (External-External or XX trips)
- Truck trips with one end outside the region and one internal to the region (known as Internal-External or IX/XI trips)

These trip types were adjusted for two model scenarios – one short-term scenario and one long-term scenario – that estimate the effects of changing travel trends in the 2026 and 2045 horizon years. Based on a review of pertinent literature and recent research discussed in the previous section, Table J-1 lists the range of adjustments used in the trip generation step of modeling these two scenarios. In general, the short-term trend is expected to increase over time with the exception of school, tourism-related, and long-haul truck trips.

Table J-1. Model Parameter Values

ADJUSTMENT	SHORT-TERM SCENARIO (2026)	LONG-TERM SCENARIO (2045)
WORK TRIPS	⇩ 5-10%	⇩ 15-20%
SCHOOL TRIPS	⇧ 0-5%	No Change
UNIVERSITY TRIPS	⇩ 0-5%	⇩ 5-10%
OTHER NHB TRIPS	⇩ 5-10%	⇩ 15-20%
VISITOR TRIPS	⇩ 0-5%	No Change
AUTO XX TRIPS	⇧ 5-10%	No Change
TRUCK XX TRIPS	⇩ 5-10%	⇧ 5-10%
TRUCK XI/IX TRIPS	⇧ 10-20%	⇧ 15-25%

MODEL RESULTS

Travel demand model outputs were used to compare existing + committed, or E+C, model runs for 2026 and 2045 for key metrics such as Vehicle Miles Traveled (VMT), Vehicle Hours Traveled (VHT), and volume-to-capacity (v/c) ratios. These metrics were analyzed systemwide for the 10-county model area. In addition, corridor-specific metrics were analyzed for the most unreliable segments in the Knoxville Regional TPO area as detailed in the Congestion Management Process (CMP).

The adjustments detailed in Table J-1 resulted in a 4% and 7% decrease in VMT and a 6% and 11% reduction in VHT in 2026 and 2045, respectively. Table J-2 illustrates this observed change across roadways of different functional classifications. In the short-term scenario, travel trend adjustments result in the largest VMT reductions on collectors and local roadways in both urban and rural areas. Long-term, these trends continue with interstates seeing the least impact on VMT. Conversely, the interstate system is expected to see a significant share of VHT reduction. When looking at changing travel trends by vehicle classification, passenger travel is expected to decrease while truck traffic increases in both scenarios as expected.

Table J-2. VMT and VHT by Functional Classification

	FUNCTIONAL CLASSIFICATION	2026 E+C	2026 COVID	2045 E+C	2045 COVID	2026 CHANGE	2045 CHANGE
VMT	Rural Interstates	4,345,629	4,364,730	5,135,680	5,258,982	0.4%	2.4%
	Other Rural Principal Arterials	1,135,714	1,108,917	1,324,466	1,262,573	-2.4%	-4.7%
	Rural Minor Arterials	1,851,785	1,790,325	2,166,553	2,014,594	-3.3%	-7.0%
	Rural Major Collectors	1,339,078	1,276,549	1,658,925	1,508,281	-4.7%	-9.1%
	Rural Minor Collectors	429,757	400,327	563,793	476,530	-6.8%	-15.5%
	Rural Local Roads	114,855	107,993	137,633	122,766	-6.0%	-10.8%
	Urban Interstates	8,315,036	8,107,906	9,309,055	8,843,036	-2.5%	-5.0%
	Other Urban Freeways	345,007	325,891	393,734	346,838	-5.5%	-11.9%
	Other Urban Principal Arterials	7,183,224	6,860,932	8,037,268	7,296,640	-4.5%	-9.2%
	Urban Minor Arterials	4,092,702	3,861,651	4,724,763	4,165,508	-5.6%	-11.8%
	Urban Collectors	2,169,940	2,020,776	2,600,789	2,219,540	-6.9%	-14.7%
	Urban Local Roads	380,890	351,727	464,660	390,942	-7.7%	-15.9%
VHT	Rural Interstates	66,359	66,922	90,977	101,402	0.8%	11.5%
	Other Rural Principal Arterials	23,078	22,293	27,576	25,829	-3.4%	-6.3%
	Rural Minor Arterials	39,779	38,162	48,319	44,129	-4.1%	-8.7%
	Rural Major Collectors	28,931	27,503	36,529	32,849	-4.9%	-10.1%
	Rural Minor Collectors	10,554	9,802	13,996	11,716	-7.1%	-16.3%
	Rural Local Roads	3,348	3,119	4,130	3,621	-6.8%	-12.3%
	Urban Interstates	140,529	133,643	165,972	148,810	-4.9%	-10.3%
	Other Urban Freeways	6,099	5,733	7,022	6,099	-6.0%	-13.1%
	Other Urban Principal Arterials	210,025	195,819	247,386	212,136	-6.8%	-14.2%
	Urban Minor Arterials	129,327	119,383	156,126	130,547	-7.7%	-16.4%
	Urban Collectors	72,158	66,275	87,776	72,421	-8.2%	-17.5%
	Urban Local Roads	12,841	11,699	15,655	12,793	-8.9%	-18.3%

Table J-3. VMT and VHT by Vehicle Classification

	VEHICLE CLASSIFICATION	2026 E+C	2026 COVID	2045 E+C	2045 COVID	2026 CHANGE	2045 CHANGE
VMT	Passenger Vehicles	28,790,937	27,433,821	32,923,656	29,595,924	-4.7%	-10.1%
	Commercial Trucks	3,620,337	3,817,831	4,366,467	4,998,865	5.5%	14.5%
VHT	Passenger Vehicles	701,315	654,113	842,678	726,943	-6.7%	-13.7%
	Commercial Trucks	65,823	68,928	85,610	98,542	4.7%	15.1%

Model outputs also allowed for analysis of those facilities currently at 50% capacity or more, measured with the v/c ratio. As shown in Table J-4, significant reductions in both VMT and VHT are expected in both the short-term and long-term scenarios for facilities with a v/c ratio above 0.84. In the short-term, miles driven on above-capacity facilities decreases by 27% with a long-term decrease of nearly 30%. Accompanying this change in travel mileage, both the short-term and long-term reduction in hours spent driving on these facilities decreased by nearly 40%. These changes in travel trends ultimately reduce the number of lane miles operating near or above capacity in the region despite projected growth.

Table J-4. VMT, VHT, and Lane Miles by V/C Ratio

	V/C RATIO GROUP	2026 E+C	2026 COVID	2045 E+C	2045 COVID	2026 CHANGE	2045 CHANGE
VMT	v/c > 0.50	7,214,988	6,816,753	10,757,303	9,865,371	-5.5%	-8.3%
	v/c > 0.70	2,048,913	1,817,570	4,191,344	3,900,302	-11.3%	-6.9%
	v/c > 0.84	484,117	370,865	1,337,310	1,145,473	-23.4%	-14.3%
	v/c > 0.99	128,329	93,551	231,960	163,221	-27.1%	-29.6%
VHT	v/c > 0.50	170,203	150,206	274,565	228,743	-11.7%	-16.7%
	v/c > 0.70	58,831	47,894	125,276	105,774	-18.6%	-15.6%
	v/c > 0.84	21,933	15,457	55,010	45,368	-29.5%	-17.5%
	v/c > 0.99	9,583	6,048	17,917	10,869	-36.9%	-39.3%
LANE MILES	v/c > 0.50	1,752	1,639	2,106	1,772	-6.4%	-15.9%
	v/c > 0.70	691	622	1,126	961	-10.0%	-14.7%
	v/c > 0.84	243	212	498	453	-12.8%	-9.0%
	v/c > 0.99	106	81	179	147	-23.6%	-17.9%

CONCLUSION

Scenario planning has often been used to assess and plan for the range of possibilities in the transportation landscape. However, the COVID-19 pandemic has created new challenges and opportunities for transportation planning that this exploratory exercise seeks to analyze. In the short-term, reduced travel has the potential to impact the need for various projects, change how projects are prioritized, and reduce local tax revenues and thereby funding available for projects. In the long-term, reduced travel could potentially negate or defer the need for high-cost capacity projects, improve air quality, and reduce federal funding stemming from fuel tax revenues. Providing the ability to routinely assess changes in travel behavior and demand using the regional travel demand model allows the TPO to consistently evaluate the need for and prioritization of projects in our region.

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MOBILITY PLAN 2045

Appendix K

Connected and Autonomous Vehicles

K. CONNECTED AND AUTONOMOUS VEHICLES

INTRODUCTION

Fully autonomous vehicles that are capable of operating independently of a driver will one day become a reality on our roadways. What remains unclear, at least at this point, is the timeline for when these vehicles will be able to do this, when they will make up the majority of traffic, the degree to which the driver is no longer responsible for safe operation, and how the implementation of such vehicles will be conducted. Most experts, including the Society of Automotive Engineers (SAE), believe that connected and autonomous vehicles (CAVs) will be integrated in a phased approach based on the degree of automation and connectivity that exists in the vehicle fleet as well as the supportive capacity of roadway infrastructure and communication systems.

Given the novelty of autonomous technology at this point, most experts and transportation professionals (such as the SAE, the U.S. Department of Transportation, and others) recommend a phased approach when planning for the implementation of autonomous vehicles. This type of approach not only make sense from a practical standpoint but would also help to reduce sharp impacts to industries, allowing for greater time to adjust to new operating environments and technological developments. In this context, implementation is taken to mean both the increased use of autonomous vehicles by all consumers of the transportation network, as well as proliferation of connected and autonomous vehicles (CAVs) in policy discussion and public thought. With this in mind, it will be critical for the TPO to coordinate with its planning partners such as FHWA and TDOT to implement policies that support the safe and efficient adoption of CAV technology and infrastructure in the region.

A key distinction exists between levels of automation and phases of automation. Levels of automation throughout this document are based off the SAE International's automation levels (further discussed in Section III) and refers primarily to the degree to which automation exists within each vehicle. Phases of automation considers the automation level of the majority of newer cars being produced and is a less definitive measure of both the degree of automation in most cars at that time and the proportion of traffic operating with limited or full automation at that time. Phases of automation have no clearly defined

beginning and end, and rather represent a slow progression leading to each phase with considerable overlap. The phases of automation are further discussed and defined in Section IV of this document.

PUBLIC VS. PRIVATE RESPONSIBILITIES

A significant concern for CAV development and adoption, as with any emerging technology, is what responsibility public agencies, such as local governments, should take throughout the development, accommodation, and proliferation of Connected and Autonomous Vehicles. Private industry will likely remain a key driver in CAV adoption, creating and sustaining the demand that would eventually lead to proliferation of CAVs. Because of this, public-private partnerships, not only for financing, but also to maintain awareness of technological progress, are vital to successful and seamless integration of CAVs onto our roadways.

As will be discussed in depth further, infrastructure upgrades and maintenance are a key component of ensuring our roadways are ready and able to support CAVs at all phases of development. It is unlikely that infrastructure projects and maintenance will move beyond the public realm. Given the high costs associated with infrastructure upgrades, it is critical that public agencies across the region remain aware and continue to monitor technological requirements identified during CAV development. This will allow for greater flexibility and a more accurate ability to forecast future needs and identify potential issues.

Maintenance will also be a central issue in the discussion of public vs. private responsibilities. Current CAV technology relies heavily on cameras to sense the environment and guide the vehicles. Therefore, things such as roadway markings and pavement conditions take on greater importance as technology functions best under predictable circumstances, possibly leading to a higher level of maintenance required for roadways once CAVs begin to operate independently. Data management, networks, and connectivity are also critical components for CAVs to operate efficiently and safely, leading to potential questions of whether such things will begin to be considered part of highway infrastructure, and thus within the public realm. CAVs themselves will also require a higher degree of maintenance than current automobiles, bringing questions of what role public agencies will play in ensuring proper maintenance of CAVs for their safe operation on the road, as well as potential liabilities should a crash occur when a vehicle is operating completely autonomously.

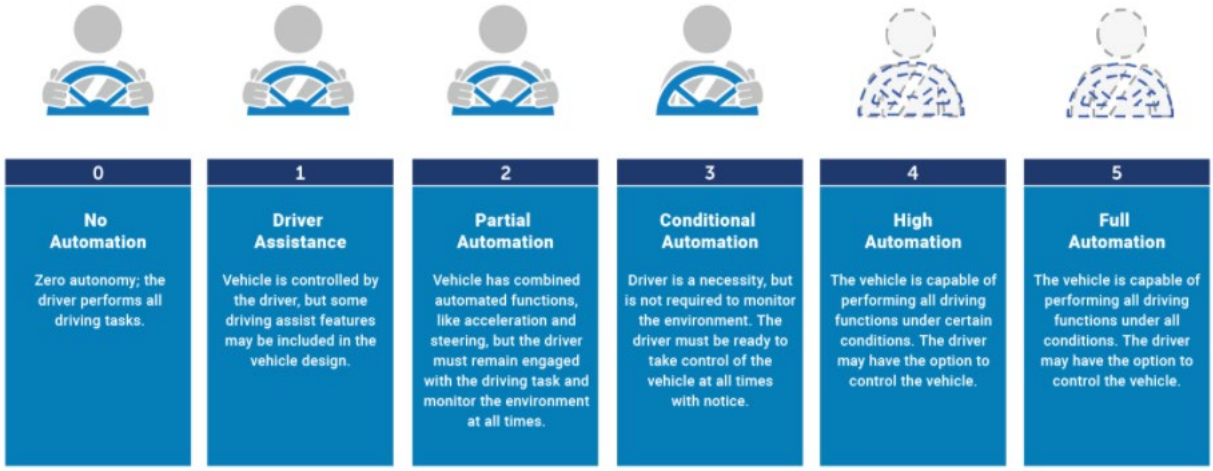
State and local governments have a primary interest in making sure people can get where they need to go safely. Local governments within the TPO area will likely remain the primary agents for enforcing traffic

laws, conducting safety inspections, planning, and operating transit and roadway infrastructure. Additionally, the U.S. DOT recommends that state and local governments prepare for automated vehicles through the following measures (U.S. Department of Transportation, 2018):

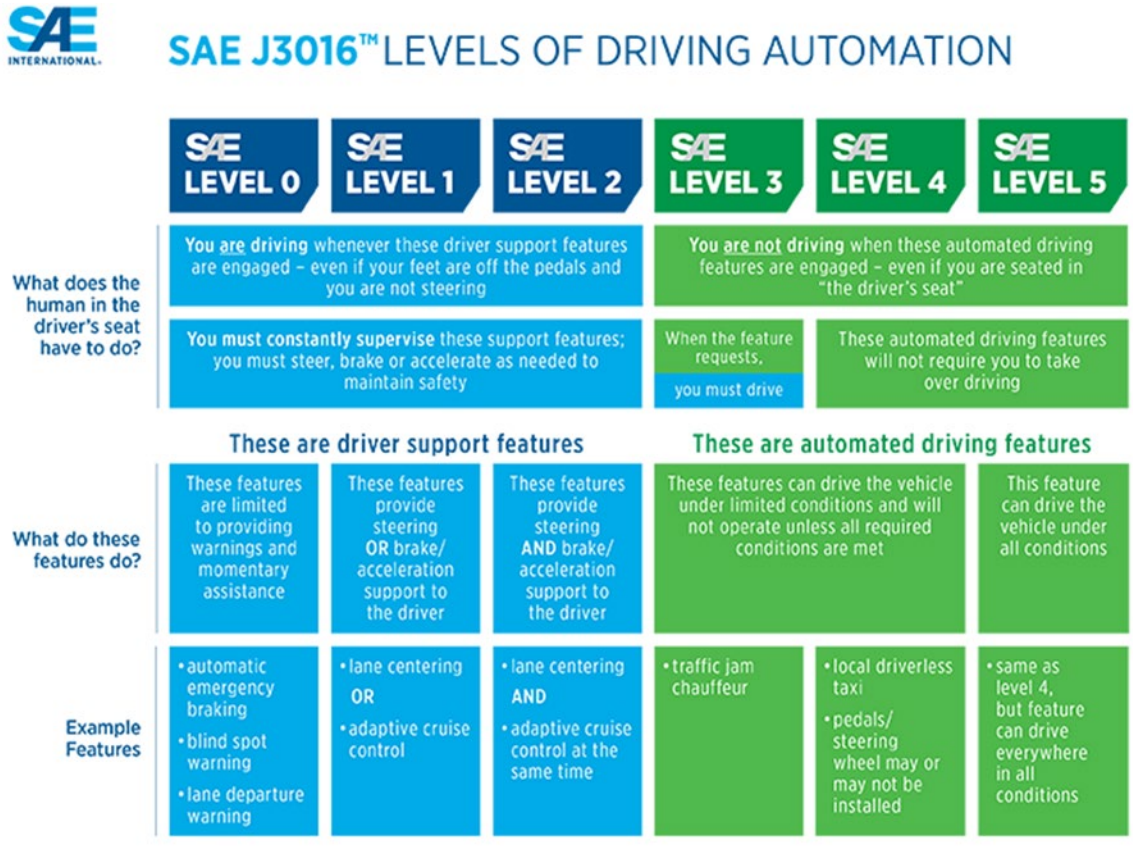
- Review laws and regulations that might create barriers to testing and deploying automated vehicles.
- Adapt policies and procedures to account for automated vehicles.
- Assess infrastructure elements, such as road markings and signage, so that they are conducive to the operation of automated vehicles.
- Provide guidance, information, and training to prepare the transportation workforce and general public.
- Stay abreast of technological developments as autonomous technology progresses.
- Understand the near-term opportunities that automation may provide.
- Consider how land use, including curb space, will be affected.
- Facilitate safe testing and operation of automated vehicles on local streets.
- Engage with citizens throughout the CAV implementation process

It is worth noting that the implications of CAV adoption on transportation policy regionally, in Tennessee, and across the country is largely uncertain. The pace of adoption is largely driven by the private sector as technological advances continue, issues of liability are worked out, and public consumption increases. For this reason and at this time, the TPO seeks opportunities to be informed of ongoing CAV initiatives in the state and nationally. As an example, the TPO, City of Knoxville, and TDOT participate in the **TennSMART Consortium**, which includes representation from both the public and private sectors. By taking advantage of the state's automotive industry, this coalition aims to position Tennessee on the fast track to adopting CAV technology and other smart infrastructure initiatives. The TPO sees collaborative research efforts like this as a starting point for better understanding potential policy and infrastructure implications of these emerging technologies.

LEVELS OF AUTOMATION



Source: Automated Vehicles for Safety: The Road to Full Automation, 2020. National Highway Traffic Safety Administration.

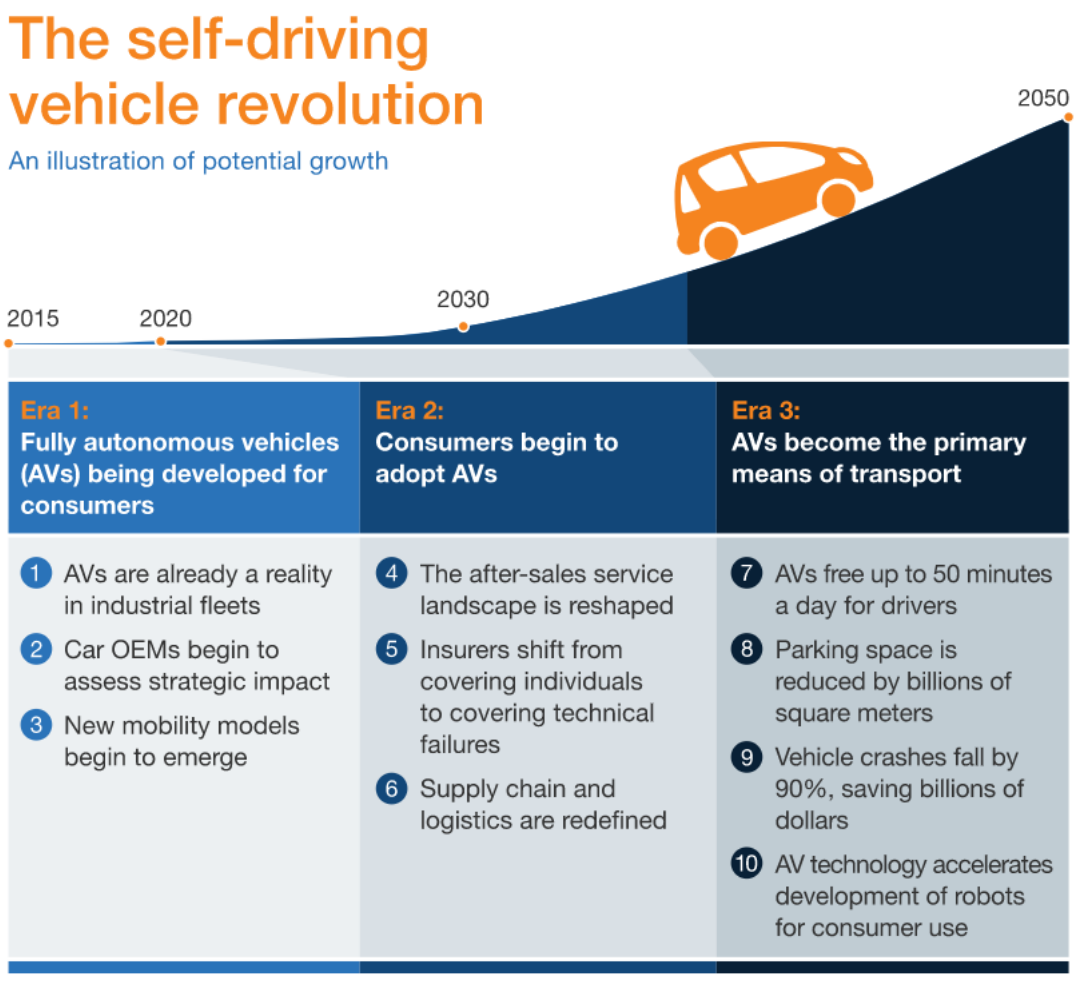


Source: Jennifer Shuttleworth, 2019, SAE International Administration

- Level 0 – No automation. Driver provides the dynamic driving task, although there may be systems in place to help the driver (i.e. emergency braking).
- Level 1 – Driver assistance. Lowest level of automation. Vehicle features an automated system for driver assistance (steering assistance and adaptive cruise control). Driver still monitors other aspects of driving such as steering and braking.
- Level 2 – Partial automation. The vehicle can control both steering and acceleration. Driver still monitors safe operation and can take control of the car at any time.
- Level 3 – Conditional automation. Vehicle has "environmental detection" capabilities and can make informed decisions autonomously. Still requires human override and the driver must remain alert and ready to take control if the system is unable to execute the task.
- Level 4 – High automation. Vehicle can intervene if things go wrong or there is a system failure. Human drivers not required in most circumstances, but a human still has the option to manually override. *Level 4 autonomous vehicles will likely be geofenced and only able to operate fully autonomous in certain areas or under certain circumstances until enough machine learning is acquired to pass safety measures to enter full automation.
- Level 5 – Full automation. Vehicles do not require human attention and the dynamic driving task is eliminated. Level 5 vehicles also do not need steering wheels or acceleration/brake pedals. *Level 5 autonomous vehicles would be able to operate anywhere and with mixed traffic.

PHASES OF CAV ADOPTION

As with any emerging technology, the proliferation of CAVs onto our roadways will take a phased approach, both due to technological limitations, as well as the market forces that drive such change. The determining factor for each phase will likely be the level of automation available in most newer vehicles operating on the roadway at the time. Such an approach will likely take many decades to transition between each phase, with no clear or neat separation between each phase, but instead a gradual shift between them. The illustration below shows this concept and demonstrates how market forces affect both the development and adoption of CAVs.



Source: Ten ways autonomous driving could redefine the automotive world by Michele Bertoncello and Dominik Wee, 2015. McKinsey & Company.

Phase 1: Combined Function Automation

Characteristics

The first phase of CAV adoption is characterized by most newer privately owned vehicles being equipped with levels 0-2 of SAE automation. The driver is still responsible for safe operation of the vehicle, and must take an active role in all tasks related to driving. Features such as adaptive cruise control, lane assistance, parking assist, and other Advanced Driver Assistance Systems (ADAS) may fulfill some driving tasks such as acceleration and steering, but overall, the driver must actively monitor and take a primary role in all driving functions for safe operation of the vehicle.

Development

Most experts agree that we are currently in phase 1 of CAV adoption as CAV technology is being rapidly developed and tested across the country. During this phase, private demand and market forces will likely continue to lead to increased levels of ADAS which will slowly develop into more automation and less direct involvement from the driver during vehicle operation. Supply chains and private corporations will also likely become early fielders of CAV technology as this phase progresses due to the financial benefits of innovation and early adoption of CAV technology.

Regional Impacts and Implications

During this exploratory phase, agencies across the region should continue to monitor CAV technological progress in order to better forecast future needs and demands. Policy discussion during this phase will likely center around future implications of further CAV development and adoption, as well as regulatory issues that might arise as CAV technology progresses and vehicles are able to operate more autonomously in later phases.

Phase 2: Limited Self-Driving Automation

Characteristics

The second phase of CAV adoption and integration will be characterized by newer vehicles reaching SAE levels 3 and 4 of automation. These vehicles will be able to operate autonomously under certain conditions and in certain situations. The driver is still required and must be ready to take control of the

vehicle at any time, but does not need to be consistently and actively engaged at all times and in all driving functions. Features such as "traffic jam chauffer" are available and can operate autonomously when certain conditions are met in predictable scenarios.

Development

This phase will again be largely driven by private adoption of new CAV technology with ever increasing capacity for automation. During this phase, significant "machine learning" will likely begin as vehicles begin to operate fully autonomously under specific conditions. Private companies will likely also begin to significantly adopt CAVs to operate certain functions, such as on-campus shuttles, "last-mile" delivery and truck platooning to reduce costs and expand services offered.

Regional Impacts and Implications

During this phase, the regulatory novelty of CAV technology will likely become a significant factor in policy change and discussion (both locally and nationally). Agencies will likely be required to take a more active role in regulating CAVs and CAV adoption, especially in areas such as responsibility and vehicle maintenance to ensure safe operation and make determinations of liability when collisions occur. This phase would likely also see increased demand for highway maintenance and public/private partnerships to pay for necessary infrastructure upgrades to facilitate further CAV adoption.

Phase 3: Full Automation with Mixed Traffic

Characteristics

This phase is characterized by most newer vehicles coming with SAE level 5 automation, where the vehicle is capable of performing all driving functions under all conditions. During this phase, the driver of a fully autonomous vehicle will no longer be required to play an active, or even passive role in driving or monitoring the vehicle's operation. While the driver may have the option to control the vehicle, some fully autonomous vehicles in this phase will likely begin to lack common features of cars such as steering wheels, pedals, mirrors, etc. This phase, however, is differentiated from the final phase of CAV integration because these fully autonomous vehicles will be operating alongside vehicles with lower levels of automation, and even some with no automation.

Development

While this phase is characterized by privately owned vehicles operating autonomously across a wide range of locations and scenarios, commercial enterprises, such as freight, delivery services, and mass transit will also likely be early adopters of fully autonomous vehicles due to the financial benefits. In fact, because of these cost benefits, corporations and even some public agencies will likely be among the first to develop and field fully autonomous vehicles in this phase.

Regional Impacts and Implications

Because fully autonomous vehicles will have to operate along with non-autonomous vehicles, there exists greater safety concerns in this phase. Machine learning may have issues attempting to predict human behavior that might run counter to the logically best choice at the time. Responsibility and liability concerns will likely remain a major issue during this phase. For example, the insurance industry may be completely restructured to cover maintenance costs rather than collision liability as crashes become less frequent and maintenance standards are increased for CAVs. Our region, in particular, would likely see significant changes during this beginning of widespread CAV adoption due to the many insurance and freight companies located within the area. Regulatory and policing practices would also begin to change significantly, as less time would be devoted to traffic stops and crash investigations. Significant infrastructure upgrades will also be required during this phase in order to accommodate the increased usage of CAVs across roads within the region.

Phase 4: Full-Automation with Near Total Automation

Characteristics

This phase of CAV integration is characterized by the proliferation of SAE level 5 autonomous vehicles. In this phase CAVs make up all, or nearly all, commercial and private vehicles operating on the roadway. With SAE level 5 autonomous vehicles, the driver is no longer required to monitor driving functions, and instead the machine maintains complete responsibility for all driving functions across all scenarios. Because of this, liability issues will remain a major topic of discussion with regards to who is responsible for both incidents, as well as maintenance of the vehicle. During this phase, private ownership of CAVs might cease, and instead individuals would lease vehicles directly from manufacturers or third parties.

Development

Unlike the previous phases where corporations or public sector agencies drive development and proliferation, during this phase private consumers will likely create the market forces that result in full proliferation of CAVs. This phase will likely take the longest due to this, but will likely also see the most significant shift to industries affected by CAV proliferation (such as insurance companies, local law enforcement agencies, rest stops, travel services, etc.).

Regional Impacts and Implications

During this phase, safety concerns shift away from potential collisions and driver neglect and more towards system level safety for the entire transportation network. Issues such as cyber security, maintenance concerns, and environmental impacts become the main public safety concerns for transportation due to the physical safety dividends paid by widespread CAV integration. During this phase, the transportation network becomes increasingly accessible to vulnerable populations, such as the elderly and persons with disabilities, allowing for significant positive economic impacts as these groups are able to live more independently.

During this phase CAVs free as much as 50 min/day/person freeing up travel time for productive activities, with potentially 1 billion hours of time saved per day globally. CAVs could also reduce need for parking space in the US by more than 5.7 billion square meters, as parking spaces can be made 15% tighter due to no need for people to exit. For example, in Knoxville, there are approximately 21 parking garages or public parking lots in and around downtown. With approximately 300 square feet for each parking space, simple math would indicate that the redevelopment of these spaces for more productive enterprises could yield significant economic benefits for our area. (Bertoncello, 2015) (Kavanagh, 2015).

By midcentury, the penetration of AVs and other ADAS could ultimately cause vehicle crashes in the United States to fall from second to ninth place in terms of their lethality ranking among accident types. Today, car crashes have an enormous impact on the US economy. For every person killed in a motor-vehicle accident, 8 are hospitalized, and 100 are treated and released from emergency rooms. The overall annual cost of roadway crashes to the US economy was $212 billion in 2012. Taking that year as an example, advanced ADAS and AVs reducing accidents by up to 90 percent would have potentially saved about $190 billion. (Bertoncello, 2015).

POTENTIAL ISSUES SURROUNDING AUTOMATED VEHICLE TECHNOLOGY

Connected and Autonomous Vehicles (CAVs) present a host of potential issues that must be taken into consideration at all phases of development and integration. Issues and negative impacts associated with CAV integration primarily center around safety concerns during the initial development and integration phases, as well as significant costs associated with infrastructure upgrades needed to fully integrate CAVs into the transportation network.

Safety

Safety challenges are most significant during the initial phases of CAV integration. While this point may seem fairly obvious, practical experiences are needed to generate and enhance machine learning. As CAVs encounter new challenges or issues from use, updates to software can be generated to better predict and learn from these experiences. Additionally, safety challenges will likely reach their peak during Phase III of CAV integration when CAVs will be operating in mixed traffic with human drivers. Issues would likely arise from the machine's inability to predict likely actions taken by human drivers that may be at odds with the optimal actions programmed into CAVs. These initial safety concerns will most likely reduce significantly once full automation occurs in Phase IV due to the high-level of machine learning and predictability of machine behavior during this phase, however cyber security issues will likely remain present throughout the entirety of CAV integration.

Cost Burden

Another significant concern associated with CAV adoption and integration are the high costs of the infrastructure upgrades needed to fully integrate CAVs. CAVs would require a constant stream of information in order to operate safely and effectively. This would likely come from sensors, transmitters, and other electronic components located along roadways, such as on signs, traffic signals, and on road striping. Additionally, once infrastructure upgrades are complete, maintenance standards and costs would be much higher than today due to the price of such electronic components, as well as the need to maintain road markings to remain visible to cameras and sensors on CAVs. CAVs may also present an equity issue, as costs associated with private ownership and maintenance would likely be high, especially during the initial phases of adoption and integration.

Budget Shortfalls

The majority, if not all, CAVs would likely be electric vehicles, due to convenience factors associated with electric motors and the large proportion of electric components needed to effectively operate autonomously. Because of this, CAVs could deepen the revenue shortfalls associated with gas taxes, leaving significant funding shortfalls in federal and state budgets for roadways as CAV integration progresses. Governments at all levels will be tasked to identify new revenue streams to maintain the transportation infrastructure.

Policy

Since CAVs are an emerging technology, there exists a significant amount of uncertainty in the planning process. Because of these unknowns, there remains a host of administrative and policy related challenges around CAV integration. Issues will likely remain for the foreseeable future surrounding liability and responsibility, not only for safe operation, but in instances of malfunction as well. For example, insurance companies will likely have to significantly restructure policies due to CAV adoption. If a fully autonomous vehicle is involved in a traffic collision, who is responsible for the damages?

Regulatory

There is also a degree of uncertainty for regulatory agencies and governing bodies' responsibilities in the implementation of CAVs. For example, should public funds be used for required infrastructure upgrades needed to implement a private company's fleet of autonomous vehicles, or should partnered funding be used? Legislative bodies and regulatory agencies will also likely have to restructure existing policies and mechanisms to effectively regulate a transportation network dominated by CAVs. Municipalities in the region would likely have to retrain and restructure law enforcement and parking enforcement once fully autonomous vehicles make up the majority of traffic. Local governments in the area will also have to adjust their structure and practices as transportation needs may greatly shift, moving away from major infrastructure involvement to more of a regulatory capacity. Another potential shift that widespread CAV use might cause would be a shift in security focus away from internal security (such as safety measures, speed monitoring, DUI enforcement, etc.) to a focus on protecting from external threats to the transportation network (such as cybersecurity, terrorism, weather, and environmental impacts). This would essentially result in a refocusing away from local level issues (i.e. driver safety, local traffic patterns,

etc.) to more system level issues that might be outside of the scope of local governments within the region.

POTENTIAL BENEFITS OF CONNECTED AND AUTONOMOUS VEHICLE TECHNOLOGY

While there potentially are, and likely will remain, issues with CAV adoption and integration, the probable benefits to the region and transportation network are numerous and substantial. The National Highway Traffic Safety Administration (NHTSA) has highlighted four main areas of potential benefit regarding CAVs: Economic and societal, efficiency and convenience, mobility, and safety.

Economic and Societal

The widespread adoption and integration of CAVs can provide a host of potential economic benefits for the region. A 2010 NHTSA study showed that motor vehicle crashes in that year cost $242 billion in economic activity, including $57.6 billion in lost workplace productivity, and $594 billion due to loss of life and decreased quality of life from injuries. During the final phases of CAV integration, parking garages, plazas, and on-street parking real estate located in city centers and other high-density areas will be available for redesignation and development, allowing new businesses and attractions to be brought in. In certain situations smaller roadways required for CAVs could also potentially reduce right-of-way requirements in high density areas and city centers, allowing for reallocation of previous motorized space to non-motorized modes. Additionally, improvements in pedestrian safety will greatly improve the walkability of urban areas, stimulating economic growth and improving public health. Local budgets within the region might also see a significant shift in public safety priorities. Funding traditionally allocated to things such as DUI enforcement, combating speeding and distracted driving, and might instead be used to fund other activities and free up law enforcement within the region to focus on other aspects of public safety. (National Highway Traffic Safety Administration, 2020).

CAV adoption could also have significant benefits for equity and access to the transportation network. Widespread CAV adoption could potentially lead to a shift away from private ownership of vehicles, leading to increased use of ride-share systems, autonomous taxis, or even leasing/renting vehicles directly from manufacturers. Shifts in consumer demands such as these have the potential to considerably decrease the costs of accessing the transportation network. This would be especially impactful for an area

such as Knoxville with a large proportion of senior citizens, low-income communities, persons with disabilities, and other vulnerable populations. CAVs also have the potential to greatly reduce costs and increase levels of service for public transit, allowing for even greater access to transportation through public transit providers and an extension of services to larger areas within the surrounding community. Greater equity resulting from widespread CAV proliferation could also pay considerable economic dividends as vulnerable populations within the region would be afforded greater independence and the ability to more fully participate in the local and regional economy through employment and consumption of goods.

Environmental

With most vehicles transitioning to electric motors during the CAV integration process, negative environmental impacts to the region would significantly be reduced. This would lead to improvements in air and water quality with a reduction in vehicle emissions and storm water contamination from parking lot and roadway runoff. Noise pollution and impacts to wildlife habitats would also be reduced due to less idling and engine noise. Deer strikes and other collisions with animals would likely be greatly reduced once CAVs make up the majority of traffic on the roadway as a result of improved decision making and reaction time.

Efficiency and Convenience

CAVs will likely provide greatly increased efficiency in the transportation network, freeing up commuting times to more productive activity. A 2015 study estimates that approximately 6.9 billion hours were spent in traffic delays in 2014, and also estimates that CAVs could free up as much as 50 minutes per person per day on average. Widespread CAV implementation in freight could also provide economic benefits by reducing supply chain needs and costs, allowing for greater purchasing power by consumers, and subsequently leading to increased demand for goods amongst consumers. The reduction in unproductive commuting times and reduced aversion by consumers to longer commutes will also lead to a larger labor pool for our area as more remote areas become increasingly connected to regional hubs, such as Knoxville. Conversely, there also exists a potential increase in sprawl as residents might relocate further away from regional hubs, such as Knoxville. (Bertoncello, 2015).

Mobility

It remains to be seen when, how, and to what extent CAVs will be implemented throughout the region, resulting in difficulties in projecting societal benefits from CAV implementation. There exists, however, substantial potential benefits in both increased mobility and increased accessibility to transportation by vulnerable populations such as the elderly, disabled persons, and those living below the poverty line. Currently, there are 49 million Americans over the age of 65, and an additional 53 million Americans with some form of disability. According to a 2017 study conducted by the Ruderman Foundation, CAVs could create new employment opportunities for approximately 2 million people with disabilities through providing new mobility options. Across much of the country, employment and independent living rests on the ability to drive. (Claypool, 2017).

Safety

Perhaps the most significant and impactful benefit from full CAV integration would be the major improvements in roadway safety across all modes of transportation. Vehicular collisions would be greatly reduced and possibly eliminated during the latter phases of CAV integration by eliminating human error and unpredictability. These safety benefits would also extend to pedestrian, freight, bike, and other modes of transportation, allowing for increased volumes of multi-modal transportation. (National Highway Traffic Safety Administration, 2020).

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MOBILITY PLAN 2045

Appendix L
Adoption Letters

U.S. Department of Transportation

Federal Highway Administration
Tennessee Division

404 BNA Drive, Suite 508
Nashville, Tennessee 37217
Phone (615) 781-5770

Federal Transit Administration
Region IV

230 Peachtree St. N.W., Suite 1400
Atlanta, Georgia 30303
Phone (404) 865-5600

May 31, 2021

In Reply Refer To:
HDA-TN

Mr. Matthew Meservy
Director, Long Range Planning Division
Tennessee Department of Transportation
James K. Polk Building, Suite 900
505 Deaderick Street
Nashville, TN 37243

Subject: Air Quality Conformity Determination for Knoxville, TN

Dear Mr. Meservy:

The Federal Highway Administration (FHWA) Tennessee Division and Federal Transit Administration (FTA) Region IV Office, in coordination with the Environmental Protection Agency (EPA) Region IV Office, have reviewed the Air Quality Conformity Determination adopted by the Knoxville Regional Transportation Planning Organization (TPO) Executive Board and the Lakeway Area Metropolitan Transportation Planning Organization (LAMTPO) Executive Board on April 28, 2021.

The Air Quality Conformity Determination covers the Knoxville, TN maintenance area for the 2008 8-hour ozone standard, the maintenance area for the 2006 daily PM2.5 standard, and the former maintenance area for the 1997 8-hour ozone standard. This determination addresses the planned transportation improvements from the Knoxville Regional TPO's Mobility Plan 2045, the TPO's amended Fiscal Year 2020-2023 Transportation Improvement Program (TIP), and the LAMTPO's 2045 Metropolitan Transportation Plan, adopted on April 28, 2021.

Based on our review, we find the above-referenced documents meet the transportation conformity requirements of Title 40 Code of Federal Regulations (CFR) Part 93 and conform to the applicable National Ambient Air Quality Standards (NAAQS) for the Knoxville, TN region.

For any questions regarding this determination, please contact Sean Santalla, Transportation Planning Specialist, FHWA Tennessee Division at (615) 781-5767 or sean.santalla@dot.gov or Andres Ramirez, Community Planner, FTA Region IV at (404) 865-5611.

Sincerely,

YVETTE G TAYLOR Digitally signed by YVETTE G TAYLOR Date: 2021.05.24 15:11:31 -04'00'

PAMELA M KORDENBROCK Digitally signed by PAMELA M KORDENBROCK Date: 2021.05.25 11:25:14 -05'00'

Yvette G. Taylor, PhD
Regional Administrator
FTA Region IV

Pamela M. Kordenbrock
Division Administrator
FHWA TN Division

cc: Mayor Terry Frank, Chair, Knoxville Regional TPO Executive Board
Mayor Mark Potts, Chair, LAMTPO Executive Board
Ms. Sabrina David, Deputy Division Administrator, FHWA TN Division
Ms. Theresa Claxton, Program Development Team Leader, FHWA TN Division
Mr. Sean Santalla, Transportation Planning Specialist, FHWA TN Division
Mr. Andres Ramirez, Community Planner, FTA Region IV
Ms. Dianna Myers, Environmental Scientist, EPA Region IV
Ms. Kelly Sheckler, Environmental Scientist, EPA Region IV
Mr. Kwabena Aboagye, OCT Planning Manager, TDOT
Mr. Troy Ebbert, OCT Region 1 Planning Supervisor, TDOT
Mr. Marc Corrigan, Environmental Consultant, TDEC
Mr. Jeff Welch, Director, Knoxville Regional TPO
Mr. Rich DesGroseilliers, MTPO Coordinator, Lakeway Area MTPO