MOBILITYPLAN 2050

Appendix D

Congestion Management Process

Contents

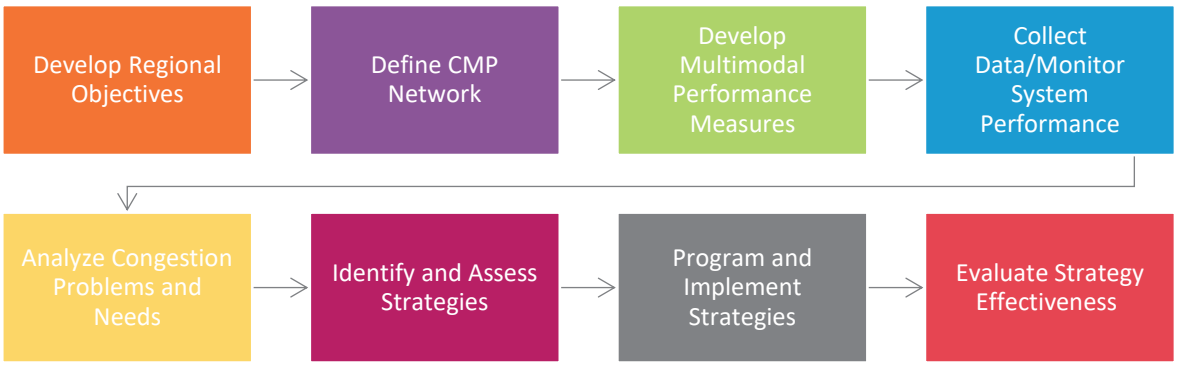
Introduction

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 IIJA/BIL 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 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 for small/local projects and 2nd highest priority for the large/regional projects whereas reducing congestion was the top priority for large/regional projects and and 2nd highest for small/local projects. Providing more options was found to be less of a priority with that goal being ranked sixth and eighth for the small/local and large/regional project types respectively. To complement these goals, a series of objectives were developed in previous versions of the Mobility Plan process dating as far back as the Mobility Plan 2040 and still hold true today.

Table 1 lists the objectives directly supporting the CMP as well as the corresponding performance measures further detailed in Step 3.

Table 1. Mobility Plan Goals and Related CMP Objectives

IIJA/BIL 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. • 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 • Work with partners to integrate complete streets planning	• High-Injury Network (HIN) project implementation
SYSTEM EFFICIENCY	Congestion Reduction	Use our system more efficiently through technology like traffic signal coordination, real-time traffic information, and emergency response vehicles	• Promote efforts that encourage transportation alternatives to single-occupancy vehicle travel. • Continue to invest in regional ITS and TSMO efforts. • Ensure proper consideration of appropriate congestion mitigation strategies in the project development and implementation process.	• V/C Ratio • Level of Travel Time Reliability (LOTTR) • Travel Time Index (TTI) • Bottleneck Identification

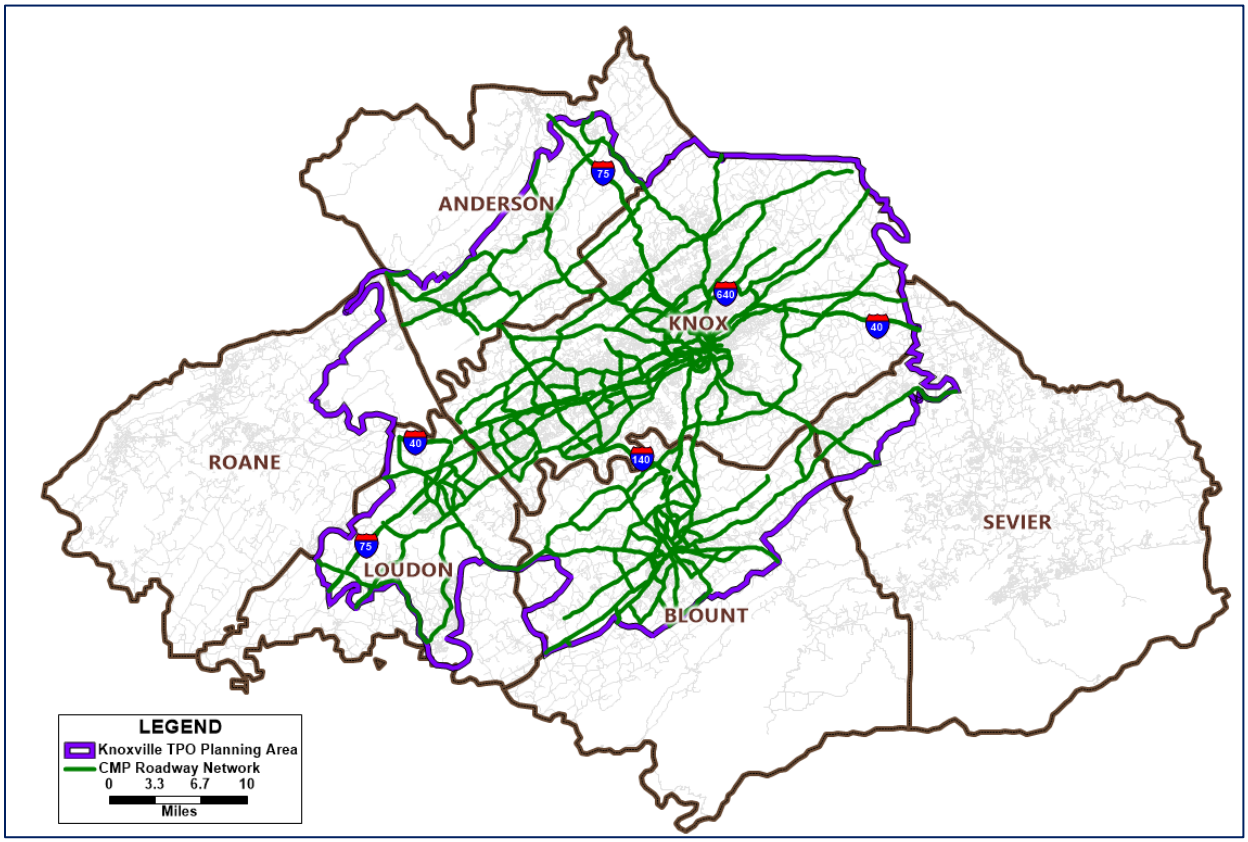
The importance and role of each objective was emphasized throughout the development of the Mobility Plan 2050 update, which relied heavily on the fairly recent updates of the CMP and Regional ITS Architecture update that were completed during the Mobility Plan 2045 process and stakeholder engagement. During the major ITS Architecture update performed for the previous Mobility Plan and 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.

This version of the CMP includes updated data analysis to leverage data sources such as the updated TPO regional travel demand forecasting model and the latest tools and information available from "big data" platforms such as the INRIX Probe Data Analytics and National Performance Research Data Set (NPMRDS) available through the Regional Integrated Transportation Information System (RITIS) platform. In this way, the TPO is able to continuously monitor congestion levels and use up to date information in the project identification and selection process that is perhaps the key element of each Mobility Plan update process.

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 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 2** and **Table 3**. 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 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 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 overall Mobility Plan project prioritization process that relate to the specific causes of congestion. More

specifically, safety information from the recently completed TPO Regional Roadway Safety Action Plan both on observed crashes on "High Injury Network" (HIN) corridors as well as a predictive analysis of where crashes are most likely to occur based on traffic and roadway characteristics factored into project selection. These metrics assess potential safety issues that could be sources of nonrecurring congestion and align with the CMP objective related to safety. Additionally, 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. 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 the Performance Measurement section of the Mobility Plan.

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 for the base year 2022 and future years of 2035 and 2050. This data should be available for use in the CMP with each Mobility Plan update.

- Quantification of corridor Travel Time Indices (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.

- 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 High Injury Network and Predictive Crash Analysis factors were utilized from the TPO Regional Roadway Safety Action Plan which was derived largely using data from the statewide TITAN crash database platform.

Tables 3 - 6 on the following pages highlight the performance of the CMP network based on the v/c and TTI metrics, with the data also presented in **Table 4** later in this appendix while the multimodal and safety

information is presented in other sections of the Mobility Plan. As shown in **Figures 3 - 5**, 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 2022 "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.

Figure 3. 2022 Volume-to-Capacity Ratio

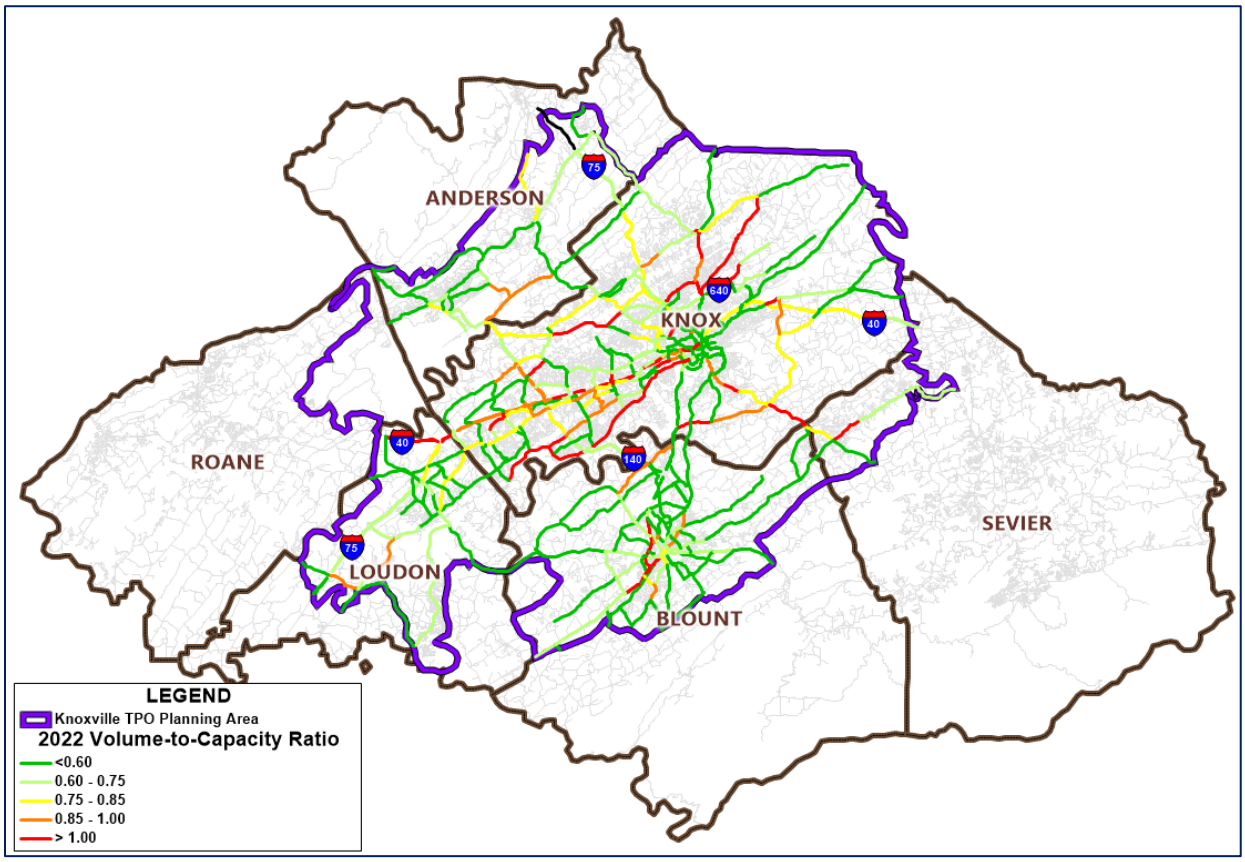


Figure 4. 2035 Volume-to-Capacity Ratio

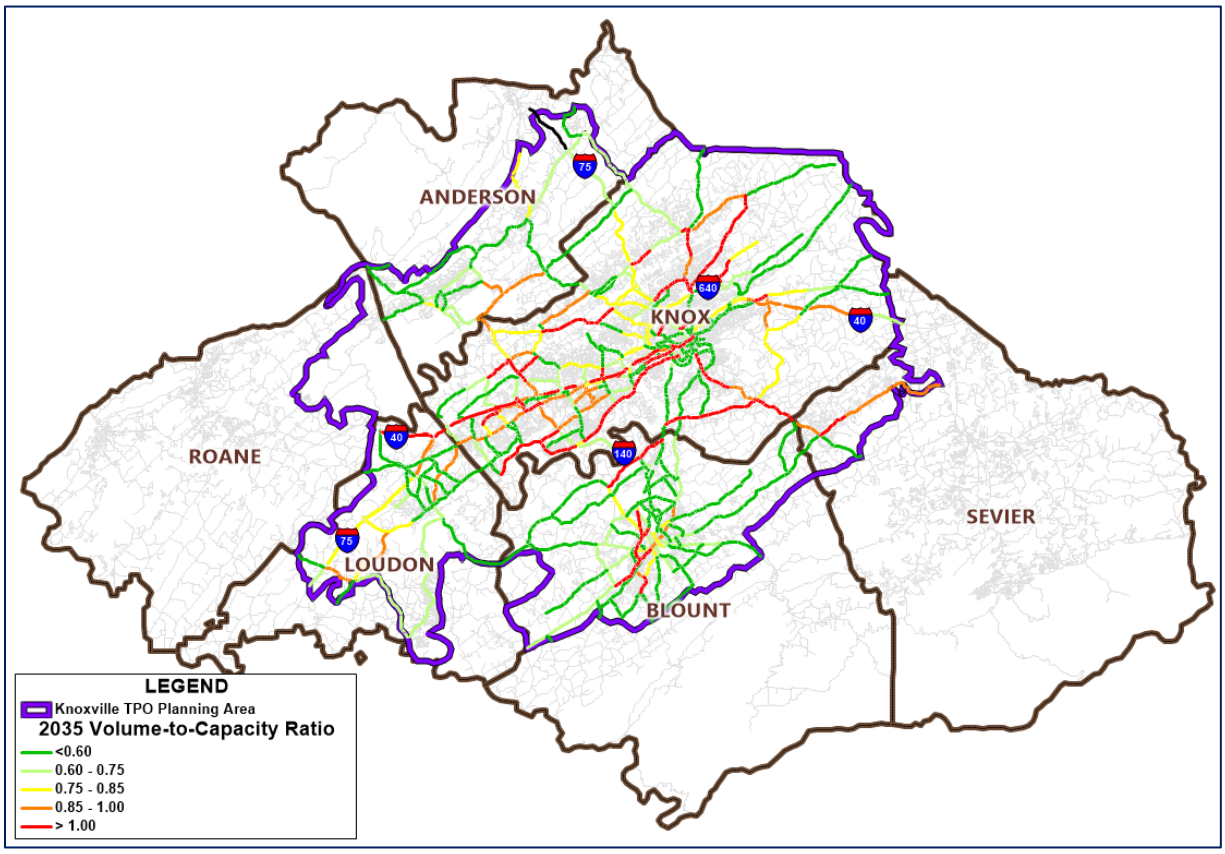


Figure 5. 2050 Volume-to-Capacity Ratio

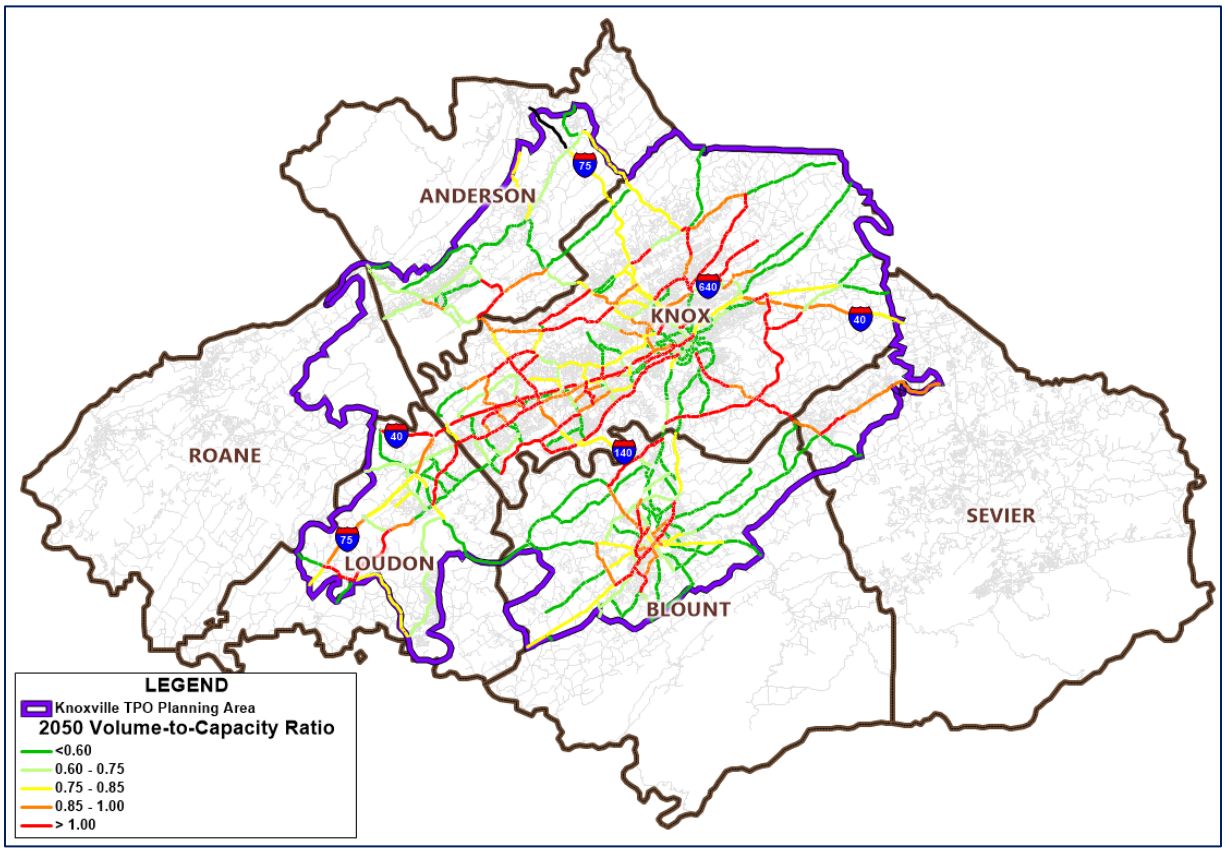
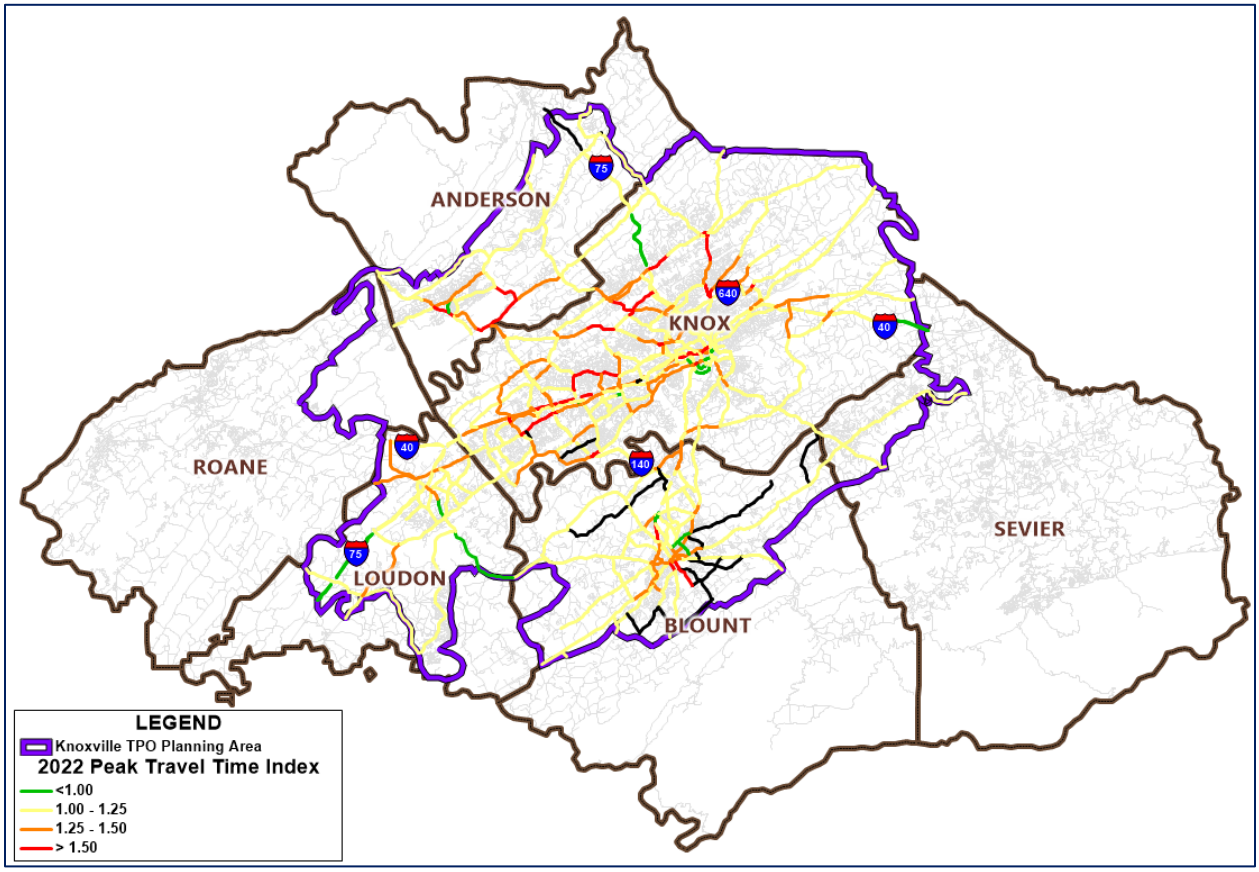


Figure 6 displays the "worst" 2022 TTI for either the AM or PM peak period. As mentioned, the TTI of a segment is a comparison of travel times along a segment during peak and off-peak periods and is indicative of the intensity of congestion. For example, if the TTI value is 2.0 then that means that it takes twice as long to traverse the segment in the peak period than during the off-peak, also known as "free flow" travel time. This map shows the average TTI across an entire CMP segment section, which may have shorter "spot" locations of more intense congestion as noted in the "Max TTI" field in **Table 5**.

Figure 6. 2022 Travel Time Index (Worst Peak Period)



The congestion measures in the CMP can also be tied back to the required FHWA Performance Management process and specifically to the measures in the PM3 area related to travel time reliability and peak hour excessive delay. The data analytic tools mentioned previously allow the TPO to home in on specific segments which are the most unreliable or have the highest delay to better target investments for projects or studies that would be most likely to improve performance.

Table 2 lists the most unreliable five interstate and ten 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. **Table 3** includes CMP segments with the highest aggregated Peak Hour Excessive Delay hours for the year 2022 for the top 5 segments on both Interstate and Non-Interstate routes. Projects implemented on segments such as these should include elements that will significantly reduce congestion in these areas.

Table 2. Most Unreliable Interstate and Non-Interstate Segments

	RANK	SEGMENT	LOTTR
INTERSTATE	1	Westbound I-40/I-75 from I-140/Pellissippi Pkwy to west of Lovell Rd	3.16
	2	Westbound I-40 from Alcoa Hwy to I-75/I-640	3.02
	3	Eastbound I-40/I-75 from I-140/Pellissippi Pkwy to west of Cedar Bluff Rd	2.72
	4	Eastbound I-40/I-75 from Campbell Station Rd to Lovell Rd	2.00
	5	Eastbound I-40/I-75 from Watt Rd to Campbell Station Rd	1.68
NON-INTERSTATE	1	S. Illinois Ave (SR-62) from Lafayette Dr to Edgemoor Rd	1.97
	2	Neyland Dr (SR-115) from Alcoa Hwy to Kingston Pk	1.67
	3	Clinton Hwy (SR-9) at W. Emory Rd	1.62
	4	Henley St from Summit Hill Dr to Blount Ave	1.61
	5	Asheville Hwy (SR-9) from Gov John Sevier Hwy to I-40	1.60
	6	Western Ave (SR-62) from Texas Ave to I-640	1.57
	7	Charles G. Seviers Blvd (SR-61) from Longmire Rd to I-75	1.57
	8	Broadway (SR-33) from Western Ave to Central St	1.57
	9	U.S. 11 from Sugar Limb Rd to U.S. 321	1.57
	10	Ed Shouse Dr from Middlebrook Pk to Western Ave	1.56

Table 3. Interstate and Non-Interstate Segments with Highest Peak Hour Excessive Delay

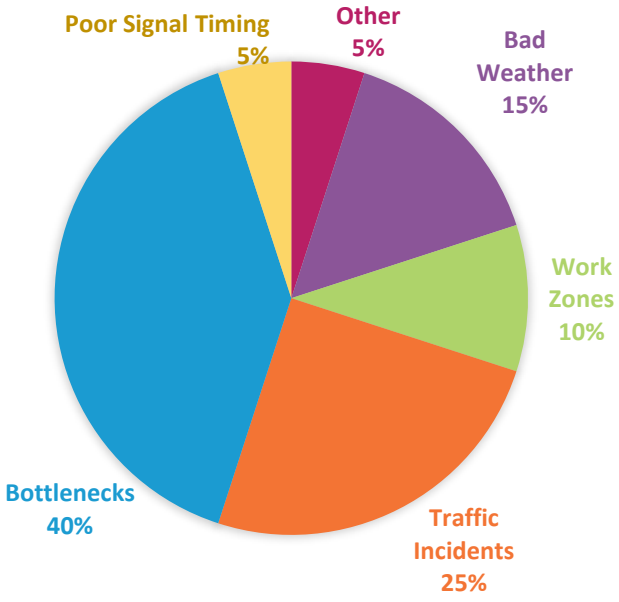
	RANK	SEGMENT	PHED
INTERSTATE	1	I-40/75 from Pellissippi Pkwy to Cedar Bluff Rd	312,387
	2	I-40/75 from Lovell Rd to Pellissippi Pkwy	277,307
	3	I-40/75 from Watt Rd to Lovell Rd	163,355
	4	I-40 from Alcoa Hwy to James White Pkwy	150,189
	5	I-40 from I-640 to Alcoa Hwy	135,434
NON-INTERSTATE	1	Broadway from Rifle Range Rd to Emory Rd	174,168
	2	Broadway from I-640 to Cedar Ln	157,127
	3	U.S. 321 from William Blount Dr to U.S. 129 Bypass	147,529
	4	Kingston Pk from Pellissippi Pkwy to Gallaher View Rd	130,241
	5	Kingston Pk from Gallaher View Rd to Morrell Rd	129,307

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 oftentimes unexpectedly. According to FHWA, non-recurring congestion accounts for approximately half of roadway congestion experienced by drivers.

Previous 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:

Figure 7. FHWA Causes of Congestion



- **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 their original design. This issue was identified in multiple locations across the region and includes corridors such as Tazewell Pike, Cedar Lane, Northshore Drive, 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** – Particularly 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.

- **Lack of Bicycle and Pedestrian Infrastructure** – 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 pedestrian 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 ridgelines 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 several 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.

The public was also engaged as part of the larger Mobility Plan effort and asked to pinpoint congestion issues in the region through an interactive online mapping exercise documented elsewhere in the Plan document.

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

  Regional CMP Goals
  - Safety and Security
  - Congestion Reduction

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

  Implementation Cost
  - Moderate

- **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

  Regional CMP Goals
  - More Options
  - Congestion Reduction

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

  Implementation Cost
  - Moderate/High

priority, improved pedestrian networks, better amenities along routes like shelters and benches, and compatible fare payment methods across services.

- **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 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.

  Regional CMP Goals
  - More Options
  - Congestion Reduction

  Anticipated Benefits
  - Reduced SOV Trips
  - Increased Transit Ridership

  Implementation Cost
  - Low/Moderate

- **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.

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. 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.

Table 4 documents congestion issues and potential causes for the entire CMP network. Corridors that reach a v/c ratio of 0.85 by 2050 are identified and highlighted in this table. **Table 4** displays these congested corridors based on the horizon in which the corridor crosses the 0.85 threshold and

corresponds with the corridor IDs in **Figure 8.** 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 are also highlighted in **Table 4** as they could indicate spot congestion along the corridors.

Finally, **Table 5** documents all identified solutions described in Step 6 that are part of the fiscally constrained Mobility Plan 2050. Every congested corridor was assigned a project although it should be noted that several utilize the "catch-all" project denoted as 24-706, which is the Travel Congestion & Clean Air Improvement Grouping with the intention of smaller ITS and operational improvements being sought during interim project calls. A relatively small percentage of the projects included in the Mobility Plan include major roadway capacity additions along a corridor. These roadway capacity additions are listed in **Table 5**, which includes the justification for the improvements and enumerates the additional measures taken to preserve the roadway capacity over the long term as is required by the CMP regulations.

Figure 8. Congested Corridors

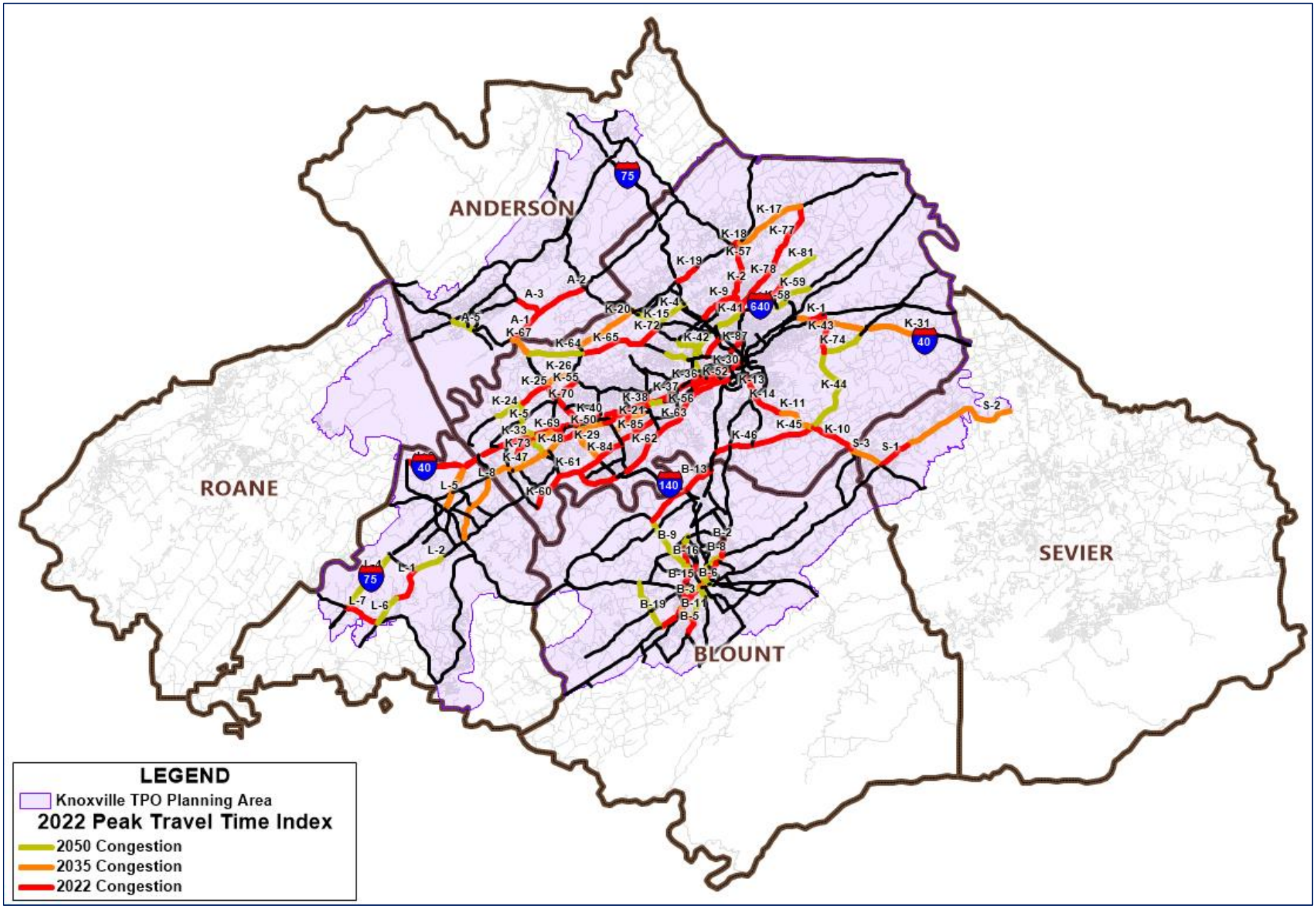


Table 4. Performance of All CMP Corridors and Mobility Plan Project Identification

Corridor Name	Corridor Limits	Capacity	AM Max TTI	PM Max TTI	AM Avg TTI	PM Avg TTI	2022 V/C	2035 V/C	2050 V/C	Congested Corridor ID	Spot Congestion	Proposed CMP Strategies	Mobility Plan Project ID
ANDERSON COUNTY													
Charles G. Seviers Blvd	JD Yarnell Ln - I-75	34,500	1.67	2.27	1.19	1.24	0.70	0.72	0.74		X	ITS/Operational	24-706
	SR 9 - JD Yarnell Ln	34,500	1.22	1.29	1.04	1.10	0.62	0.64	0.66				
Clinch Ave	Edgemoor Rd - SR 61	35,700	1.39	1.16	1.05	1.00	0.47	0.49	0.51				
Dutch Valley Rd/Frost Bottom Rd	U.S. 25 - SR 62	13,520	1.19	1.14	1.01	1.03	0.18	0.19	0.20				
Edgemoor Rd	SR 62 - Melton Lake Rd	16,900	1.63	3.23	1.15	1.83	0.93	0.96	1.00	A-1		Bike/Ped, Roadway Capacity	09-101a
	Melton Lake Rd - Clinton Hwy	16,900	2.77	2.08	1.43	1.29	0.88	0.91	0.95	A-2		Bike/Ped, Roadway Capacity	09-101b
Emory Valley Rd	Lafayette Ave - Melton Lake Rd	15,600	1.13	1.17	1.03	1.04	0.57	0.57	0.58				
I-75	SR 61 - Raccoon Valley Rd	76,500	1.01	1.08	0.97	1.01	0.72	0.75	0.78				
Lafayette Ave	Oak Ridge Turnpike - Illinois Ave	32,900	1.63	1.78	1.09	1.17	0.50	0.52	0.54				
Main St	I-75 - SR 61	13,520	1.84	1.81	1.09	1.09	0.75	0.79	0.84				
Melton Lake Rd	Emory Valley Rd - Edgemoor Rd	12,480	1.72	3.03	1.10	1.72	0.94	0.98	1.00	A-3		ITS/Operational	13-101
	Oak Ridge Turnpike - Emory Valley Rd	12,480	1.10	1.17	1.03	1.09	0.64	0.68	0.70				
N. Illinois Ave	Oak Ridge Turnpike - W. Outer Dr	35,700	1.68	1.72	1.36	1.34	0.52	0.57	0.63				
Norris Fwy	Knox County Line - SR 61	13,520	2.03	1.99	1.09	1.06	0.61	0.73	0.81		X	ITS/Operational	24-706
	SR 61 - Campbell County Line	13,520	1.11	1.24	1.03	1.02	0.10	0.11	0.14				
Oak Ridge Turnpike	Roane County Line - Illinois Ave	35,700	1.38	1.27	1.06	1.04	0.54	0.59	0.62				
	Illinois Ave - New York Ave	34,500	1.46	1.60	1.25	1.33	0.61	0.64	0.66				
	New York Ave - Melton Lake Rd	34,500	2.21	2.65	1.19	1.33	0.60	0.61	0.62		X	ITS/Operational	13-802 (2045MP)
Raccoon Valley Rd	Clinton Hwy - Knox County Line	13,520	1.98	1.89	1.23	1.14	0.31	0.32	0.39		X	ITS/Operational	24-706
Rutgers Ave	Oak Ridge Turnpike - Illinois Ave	32,900	1.39	1.67	0.90	0.93	0.30	0.31	0.33				
S. Illinois Ave	Knox County Line - Bethel Valley Rd	61,800	1.03	3.26	1.00	1.86	0.62	0.66	0.69	A-4			
	Bethel Valley Rd - Lafayette Ave	53,500	1.08	2.24	1.00	1.30	0.62	0.66	0.69		X	ITS/Operational	24-706
	Lafayette Ave - Oak Ridge Turnpike	34,500	1.43	2.29	1.23	1.56	0.78	0.84	0.89	A-5			
Scarboro Rd	Illinois Ave - Bethel Valley Rd	15,600	1.81	1.99	1.13	1.23	0.67	0.70	0.73		X	ITS/Operational	24-706
SR 61	Melton Lake Rd - SR 9	33,915	1.44	2.37	1.06	1.11	0.53	0.54	0.56		X	ITS/Operational	24-706
	SR 62 - Oak Ridge Turnpike	13,520	1.93	2.23	1.14	1.14	0.39	0.42	0.45		X	ITS/Operational	24-706
	I-75 - Norris Fwy	35,700	1.35	1.63	1.08	1.13	0.64	0.68	0.71				
Tri-County Blvd	W. Outer Dr - Roane County Line	35,700	1.34	1.56	1.10	1.11	0.52	0.59	0.66				
US 25 W	Knox County Line - Edgemoor Rd	26,775	1.21	1.10	1.04	1.01	0.56	0.59	0.63				
BLOUNT COUNTY													
Alcoa Hwy	Hunt Rd - I-140	61,800	1.14	1.30	1.07	1.22	0.28	0.29	0.31				13-210
	Singleton Station Rd - C.L.	92,700	2.47	3.29	1.25	1.32	0.51	0.55	0.60		X	Bike/Ped, Roadway Capacity	09-216
	Pellissippi Pkwy - Singleton Station Rd	61,800	1.05	1.07	1.03	1.06	0.22	0.23	0.25				09-216
Bessemer St	US 129 - Hall Rd	15,600	1.26	1.54	1.02	1.19	0.98	1.14	1.34	B-1		Bike/Ped, Roadway Capacity	24-208
	Hall Rd - Springbook Rd	12,480	1.09	1.04	1.06	0.99	0.37	0.43	0.51				
Blockhouse Rd	Montvale Rd - Wilkinson Pk	12,480	#N/A	#N/A	#N/A	#N/A	0.10	0.11	0.13				

Corridor Name	Corridor Limits	Capacity	AM Max TTI	PM Max TTI	AM Avg TTI	PM Avg TTI	2022 V/C	2035 V/C	2050 V/C	Congested Corridor ID	Spot Congestion	Proposed CMP Strategies	Mobility Plan Project ID
Brick Mill Rd	U.S. 129 - U.S. 411	12,480	1.15	1.09	1.07	1.03	0.19	0.21	0.24				
Broadway Ave	Hunt Rd - Washington St	13,520	2.00	1.96	1.25	1.28	0.89	0.95	1.03	B-2		Intersection imp, Bypass	09-212, 09-232
	US 129 - Lamar Alexander Pkwy	13,520	1.69	1.71	1.15	1.16	1.31	1.37	1.43	B-3		Roadway Capacity	09-242
	Lamar Alexander Pkwy - Washington St	13,520	1.68	1.71	1.11	1.26	0.84	0.89	0.93	B-4		ITS/Operational	24-706
Brown School Rd	Sevierville Rd - Old Knoxville Hwy	12,480	#N/A	#N/A	#N/A	#N/A	0.40	0.43	0.45				
Burnett Station Rd	Chapman Hwy - Sevierville Rd	12,480	#N/A	#N/A	#N/A	#N/A	0.31	0.37	0.44				
Calderwood Hwy	Monroe County Line - U.S. 411 S	13,520	1.12	1.12	1.05	1.03	0.56	0.59	0.66				
Calderwood St/Cusick St	US Hwy 411 - Alcoa Hwy	24,675	1.30	1.52	1.02	1.22	0.62	0.71	0.80				
Carpenter Grade Rd	Mint Rd - Raulston Rd	12,480	#N/A	#N/A	#N/A	#N/A	0.33	0.37	0.44				
	Raulston Rd - Sandy Springs Rd	12,480	1.24	1.15	1.11	1.07	0.92	1.15	1.43	B-5		Minor Capacity	09-223 (2045MP)
Court St	Memorial Dr - U.S. 321	12,480	1.50	1.75	1.50	1.75	0.57	0.63	0.71				
Cusick Rd	Singleton Sta. Rd - U.S. 129	12,480	1.33	1.33	1.12	1.10	0.35	0.49	0.62				
Dogwood Dr	Sevierville Rd - Lamar Alexander Pkwy	12,480	#N/A	#N/A	#N/A	#N/A	0.10	0.11	0.13				
Everett High Rd	Sevierville Rd - Lincoln Rd	12,480	1.03	1.16	0.99	1.00	0.36	0.42	0.51				
Faraday St/Mill St/Springbrook Rd	Hunt Rd - Wright Rd	12,480	1.16	1.09	1.06	1.01	0.13	0.17	0.23				
Foch St/Home Ave	U.S. 321 - U.S. 129	12,480	1.03	1.38	1.03	1.38	0.50	0.55	0.61				24-201
Foothills Mall Dr	Lamar Alexander Pkwy - US 411	32,900	1.46	2.15	0.88	1.03	0.47	0.54	0.63		X	ITS/Operational	24-706
	U.S. 321 - U.S. 129	32,900	1.56	1.60	1.17	1.27	0.53	0.58	0.65				
Hall Rd	Alcoa Hwy - Lincoln St	32,900	1.34	1.37	1.08	1.17	0.57	0.63	0.70				
Hall Rd/Washington St	Lincoln St - US 321	32,900	1.34	1.85	1.14	1.36	0.74	0.81	0.89	B-6		Bypass	09-232
High St	Brown School Rd - Washington St	16,380	1.73	1.45	1.36	1.23	0.66	0.71	0.76				24-209
Hunt Rd	Louisville Rd - Alcoa Hwy	15,600	2.03	1.32	1.27	1.15	0.51	0.58	0.66		X	ITS/Operational	24-706
Hunt Rd	Alcoa Hwy - SR 33	15,600	1.38	1.62	1.09	1.11	0.47	0.53	0.62				
Hunt Rd/Old Glory Rd	U.S. 321 - Louisville Rd	12,480	1.68	1.67	1.15	1.16	0.54	0.62	0.69				
I-140	C.L. - U.S. 129	76,500	1.12	1.08	1.04	1.02	0.57	0.64	0.71				
Lamar Alexander Pkwy	Tuckaleechee Pk - Washington St	35,700	1.57	1.48	1.08	1.11	0.63	0.70	0.78				
	William Blount Dr - Alcoa Hwy	35,700	1.74	1.90	1.17	1.22	0.66	0.72	0.81				
	Alcoa Hwy - Broadway Ave	34,500	1.57	2.04	1.14	1.29	0.74	0.81	0.89	B-7		ITS/Operational	24-706
	W. Broadway Ave - Washington St	34,500	1.49	1.53	1.19	1.36	0.67	0.73	0.80				
	Loudon County Line - Wm Blount Dr	35,700	1.11	1.11	1.00	0.99	0.34	0.39	0.44				
	Tuckaleechee Pk - SR 337	35,700	1.29	1.10	1.05	1.02	0.39	0.45	0.51				
Lincoln Rd	Hall Rd - Old Knoxville Hwy	12,480	1.33	1.32	0.98	0.94	0.67	0.76	0.92	B-8		ITS/Operational	24-706
Louisville Rd	Alcoa Hwy - Topside Rd	13,520	1.41	1.65	1.10	1.17	0.71	0.83	0.94	B-9		Minor Capacity	13-215
Louisville Rd/Miser Sta Rd/Quarry Rd	U.S. 321 - Topside Rd	13,520	1.31	1.41	1.09	1.09	0.25	0.29	0.34				
McArthur Rd	Springbrook Rd - Old Knoxville Hwy	12,480	1.23	1.12	1.10	1.03	0.24	0.29	0.35				
Memorial Dr/Pleasant Hill Rd	Duncan Rd - Lamar Alexander Pkwy	12,480	#N/A	#N/A	#N/A	#N/A	0.04	0.05	0.07				
Mentor Rd	Wright Ferry Rd - Louisville Rd	12,480	#N/A	#N/A	#N/A	#N/A	0.13	0.20	0.28				
Middlesettlement	U.S. 129 - Old Glory Rd	35,700	1.33	1.62	1.04	1.08	0.27	0.33	0.39				
Mint Rd	Carpenters Grade Rd - Old Niles Ferry Rd	12,480	#N/A	#N/A	#N/A	#N/A	0.23	0.26	0.28				
Miser Station Rd	Quarry Rd - Louisville Rd	12,480	#N/A	#N/A	#N/A	#N/A	0.10	0.12	0.14				
Montvale Rd	Southview Dr - Boardman Ave	13,520	1.55	1.30	1.09	1.05	0.36	0.41	0.46				
	Boardman Ave - Lamar Alex Pkwy	13,520	1.90	1.74	1.51	1.50	0.77	0.84	0.93	B-10		Minor Capacity	24-207
	Six Mile Rd - Southview Dr	13,520	1.10	1.09	1.05	1.02	0.36	0.41	0.47				
Montvale Station Rd	Carpenter Grd Rd - Montvale Rd	12,480	1.37	1.49	1.08	1.04	0.69	0.79	0.92	B-11		ITS/Operational	24-706
Morganton Rd	Foothills Mall Rd - Wm Blount Dr	16,380	1.25	1.29	1.14	1.14	0.66	0.74	0.81				
	Wm Blount Dr - Henry Ln	12,480	1.73	1.59	1.06	1.06	0.44	0.50	0.55				
Old Knoxville Hwy	Sam Houston School Rd - Hunt Rd	32,900	1.56	1.79	1.28	1.34	0.57	0.64	0.73				
	Sam Houston Rd - Knox County Line	13,520	1.18	1.23	1.06	1.06	0.57	0.66	0.78				
Old Niles Ferry Rd	Calderwood Hwy - W. Broadway Ave	12,480	1.85	1.71	1.11	1.06	0.44	0.55	0.68				
Raulston Rd	Montvale Rd - Carpenter Grade Rd	12,480	#N/A	#N/A	#N/A	#N/A	0.40	0.53	0.69				

Corridor Name	Corridor Limits	Capacity	AM Max TTI	PM Max TTI	AM Avg TTI	PM Avg TTI	2022 V/C	2035 V/C	2050 V/C	Congested Corridor ID	Spot Congestion	Proposed CMP Strategies	Mobility Plan Project ID
Russell Rd	U.S. 129 - Old Knoxville Hwy	12,480	1.30	1.31	1.06	1.03	0.29	0.43	0.51				
Sandy Springs Rd	Montvale Station Rd - U.S. 411	12,480	3.13	2.98	1.47	1.25	0.83	0.95	1.09	B-12		ITS/Operational	24-706
Sevierville Rd	Brown School Rd - Northfield Dr	13,520	1.05	1.04	1.05	1.04	0.65	0.69	0.74				
	Northfield Dr - Chapman Hwy	13,520	1.14	1.21	1.04	1.05	0.45	0.49	0.53				
SR 162	Old Knoxville Hwy - U.S. 129	76,500	1.06	1.10	1.02	1.02	0.19	0.22	0.24				
Topside Rd	Alcoa Hwy - I-140	13,520	2.47	3.29	1.36	1.49	0.89	1.04	1.16	B-13		Minor Capacity	09-248
	I-140 - Louisville Rd	13,520	1.19	1.48	1.08	1.10	0.88	1.08	1.19	B-14		ITS/Operational	24-706
Tuckaleechee Pk	U.S. 321 W - U.S. 321 E	12,480	#N/A	#N/A	#N/A	#N/A	0.24	0.26	0.29				
US 129 Bypass	US 411 - Louisville Rd	34,500	1.85	1.83	1.16	1.28	1.16	1.26	1.35	B-15		Capacity	17-202
	Louisville Rd - Hall Rd	35,700	1.20	3.27	1.01	1.51	1.09	1.19	1.29	B-16		Capacity	17-202
	Hall Rd - Hunt Rd	92,700	1.12	1.02	0.99	0.97	0.73	0.80	0.88	B-17		Previous Roadway Capacity	09-218 (2045MP)
US 411	William Blount Dr - US 129	35,700	1.50	1.96	1.23	1.39	1.06	1.14	1.22	B-18		Interchange Reconfiguration	24-203
	Loudon County Line - Wm Blount Dr	35,700	1.21	1.31	1.02	1.03	0.63	0.69	0.76				
Wildwood Rd	Old Knoxville Hwy - Nails Creek Rd	12,480	#N/A	#N/A	#N/A	#N/A	0.28	0.33	0.41				
Wilkinson Pk	Blockhouse Rd - Court St	12,480	#N/A	#N/A	#N/A	#N/A	0.43	0.48	0.54				
William Blount Dr	U.S. 321 - U.S. 411 South	12,480	1.44	1.44	1.17	1.15	0.67	0.75	0.85	B-19		ITS/Operational	24-706
Wright Rd	U.S. 129 - Hunt Rd	12,480	1.24	1.16	1.07	1.05	0.44	0.48	0.53				
	Hunt Rd - Lincoln Rd	12,480	1.51	1.38	1.22	1.07	0.28	0.32	0.38				
Wrights Ferry Rd	U.S. 129 - Topside Rd	12,480	#N/A	#N/A	#N/A	#N/A	0.21	0.26	0.34				09-207
KNOX COUNTY													
17th St	Cumberland Av - Western Av	23,940	1.35	1.61	1.07	1.16	0.49	0.56	0.57				
5th Ave	Cherry St - Broadway	34,500	1.47	1.54	1.09	1.10	0.26	0.37	0.52				
Alcoa Hwy	C.L. - Maloney Rd	92,700	1.24	1.16	1.12	1.09	0.53	0.57	0.61				
	Maloney Rd - Woodson Dr	105,400	1.08	1.09	0.99	1.00	0.45	0.48	0.51				
	Woodson Dr - Cherokee Trail	92,700	1.12	1.13	1.06	1.06	0.49	0.54	0.58				
	Cherokee Tr - Kingston Pk	105,400	1.04	1.11	1.00	1.05	0.64	0.71	0.75				
	Kingston Pk - I-40	105,400	1.01	1.16	0.99	1.08	0.64	0.72	0.75				
Amherst Rd	Middlebrook Pk - Ball Camp Pk	12,480	1.67	1.70	1.15	1.15	0.36	0.40	0.46				
Andrew Johnson Hwy	C.L. - Asheville Hwy	35,700	1.57	1.85	1.11	1.11	0.49	0.54	0.58				
Asheville Hwy	AJ Hwy - Sevier County Line	13,520	1.54	1.55	1.13	1.10	0.31	0.39	0.54				
	John Sevier Hwy - I-40 E Ramps	35,700	1.38	1.86	1.11	1.38	1.13	1.25	1.42	K-1		ITS/Operational	24-706
	Asheville Hwy -Brakebill Rd	35,700	1.08	1.08	1.01	1.01	0.63	0.71	0.77				
	Brakebill Rd - John Sevier Hwy	35,700	3.40	3.09	1.29	1.27	0.67	0.76	0.85		X	ITS/Operational	24-706
	I-40 E Ramps - Prosser Rd	35,700	1.31	1.35	1.04	1.10	0.28	0.38	0.51				
Atlantic Ave	Bruhin Rd - Broadway	12,480	#N/A	#N/A	#N/A	#N/A	0.26	0.27	0.28				
Beaumont Ave/Keith Ave	Liberty St - I-275	12,480	1.32	1.04	1.11	1.01	0.19	0.22	0.23				
Beaver Ridge Rd	Emory Rd - Oak Ridge Hwy	12,480	1.31	1.34	1.26	1.27	0.47	0.54	0.55				
	Oak Ridge Hwy - Hardin Valley Rd	12,480	1.75	1.48	1.20	1.16	0.73	0.79	0.84				
Blount Ave/Sevier Ave/Anita Dr	Henley St - James White Pkwy	16,380	1.68	1.68	1.14	1.14	0.26	0.30	0.33				
Bluegrass Rd	Northshore Dr - Ebenezer Rd	12,480	#N/A	#N/A	#N/A	#N/A	0.22	0.25	0.28				
Boyd Station Rd	Loudon County Line - Virtue Rd	12,480	1.09	1.11	1.02	1.03	0.30	0.34	0.40				
Broadway	I-640 W Ramps - Grainger Ave	31,160	1.40	1.69	1.11	1.22	0.54	0.58	0.60				
	Central St - Grainger Ave	24,600	1.05	1.26	0.97	1.04	0.24	0.27	0.28				
	Brown Gap Rd - Cedar Ln	35,700	2.33	1.82	1.40	1.36	0.90	0.95	0.99	K-2		ITS/Operational, Public Transit	17-1006, 13-602
	Cedar Ln - I-640 W Ramps	32,800	1.74	2.25	1.29	1.67	1.01	1.07	1.12	K-3		ITS/Operational, Public Transit	17-1006, 13-603
	Summit Hill Dr - Central St	16,300	1.24	1.21	1.07	1.05	0.29	0.35	0.38				
Bruhin Rd/Central St	Bruhin Rd - Woodland Ave	16,380	1.35	1.38	1.11	1.12	0.58	0.65	0.70				
Callahan Dr	Central Ave Pk - Pleasant Ridge Rd	32,900	1.81	2.83	1.26	1.55	0.78	0.85	0.99	K-4		ITS/Operational	24-706
Campbell Station Rd	Kingston Pk - Concord Rd	31,100	1.71	1.90	1.14	1.22	0.38	0.47	0.57				
	I-40 W Ramps - Hardin Valley Rd	12,480	1.53	2.00	1.18	1.27	0.54	0.69	0.87	K-5		Minor Capacity	10-700

Corridor Name	Corridor Limits	Capacity	AM Max TTI	PM Max TTI	AM Avg TTI	PM Avg TTI	2022 V/C	2035 V/C	2050 V/C	Congested Corridor ID	Spot Congestion	Proposed CMP Strategies	Mobility Plan Project ID
Campbell Station Rd	Kingston Pk - Parkside Dr	34,500	1.55	1.38	1.25	1.06	0.69	0.77	0.85	K-6		ITS/Operational	13-813 (2045MP)
	Parkside Dr - I-40	32,900	1.71	2.09	1.36	1.58	1.09	1.16	1.21	K-7		ITS/Operational	13-813 (2045MP)
Cedar Bluff Rd	Middlebrook Pk - Dutchtown Rd	32,900	2.00	2.54	1.42	1.50	0.60	0.64	0.68		X	ITS/Operational	24-706
	Dutchtown Rd - Peters Rd	32,900	1.57	1.65	1.14	1.23	0.70	0.73	0.75				
	Peters Rd - Kingston Pk	32,900	0.91	1.09	0.89	0.99	0.86	0.90	0.92	K-8		ITS/Operational	24-706
Cedar Ln	Central Ave Pk - Broadway	12,480	1.68	1.79	1.14	1.19	1.04	1.09	1.13	K-9		ITS/Operational	24-706
Central Ave Pk	Emory Rd - Bruhin Rd	12,480	1.49	1.86	1.14	1.16	0.60	0.66	0.75				
Central St	Woodland Ave - Fifth Ave	24,675	1.28	1.32	1.04	1.06	0.31	0.37	0.40				
	Fifth Ave - Summit Hill Dr	15,600	1.35	1.55	1.09	1.16	0.24	0.27	0.30				
Chapman Hwy	C.L. to John Sevier Hwy	26,775	1.36	1.48	1.14	1.21	1.08	1.19	1.30	K-10		Minor Capacity, Safety	09-626d (2045MP)
	John Sevier Hwy - Lindy Dr	35,700	1.17	1.37	1.08	1.17	0.81	0.87	0.94	K-11		Minor Capacity, Safety	24-614
	Lindy Dr - Stone Rd	26,775	1.09	1.16	1.06	1.09	1.04	1.10	1.17	K-12		Minor Capacity, Bike/Ped	24-612
	Blount Ave - Fronda Ln	32,800	1.65	1.90	1.21	1.41	0.98	1.01	1.05	K-13		Minor Capacity, Bike/Ped	24-610
	Stone Rd - Fronda Ln	26,775	1.00	1.11	0.98	1.04	0.97	1.02	1.08	K-14		Minor Capacity, Bike/Ped	24-612
Cherry St	Cecil Ave - I-40 W Ramps	26,775	1.15	1.10	1.10	1.06	0.37	0.38	0.39				
	I-40 W Ramps - Magnolia Ave	32,800	1.26	1.27	1.02	1.12	0.53	0.55	0.52				
Choto Rd	Boyd Station Rd - Northshore Dr	12,480	1.64	2.31	1.14	1.22	0.43	0.47	0.54		X	Minor Capacity	24-608
Clinton Hwy	C.L. - Powell Dr	35,700	1.48	2.03	1.19	1.43	0.67	0.71	0.76		X	ITS/Operational	24-706
	Powell Dr - Callahan Dr	35,700	2.17	2.55	1.27	1.51	0.77	0.82	0.89	K-15		Roadway Capacity, Bike/Ped	24-604
	Callahan Dr - Merchant Dr	35,700	1.48	2.19	1.09	1.27	0.70	0.75	0.81		X	ITS/Operational	24-706
	Merchant Dr - I-275/I-640	34,500	1.42	1.76	1.17	1.33	0.62	0.67	0.71				
Concord Rd	Campbell Station Rd - Northshore Dr	31,100	3.46	1.88	1.38	1.27	0.38	0.43	0.47		X	ITS/Operational	24-706
	Kingston Pk - Campbell Station Rd	31,100	1.08	0.99	1.00	0.98	0.38	0.41	0.41				
Concord St	Sutherland Ave - Kingston Pk	24,675	1.44	1.51	0.97	0.96	0.27	0.31	0.32				
Cumberland Ave	Alcoa Hwy Ramps - 22nd St	31,160	1.68	1.99	1.38	1.67	1.03	1.17	1.18	K-16		ITS/Operational	24-706
	22nd St - 17th St	24,600	1.20	1.67	1.08	1.46	0.61	0.62	0.62				
	17th St - 11th St	31,160	1.09	1.51	0.94	0.99	0.33	0.37	0.38				
	11th St - Henley St	31,160	1.14	1.24	0.99	1.10	0.42	0.50	0.52				
Dutchtown Rd	Pellissippi Pkwy - Cedar Bluff Rd	16,380	1.52	1.69	1.21	1.24	0.67	0.73	0.80				
Ebenezer Rd	Northshore Dr - S. Peters Rd	32,900	1.30	1.32	1.12	1.11	0.45	0.49	0.51				
Ed Shouse Dr	Western Ave - Middlebrook Pk	32,900	1.82	2.83	1.14	1.37	0.66	0.72	0.76		X	ITS/Operational	24-706
Emory Rd	Tazewell Pk - Grainger County Line	13,520	1.13	1.11	1.04	1.04	0.23	0.25	0.31				
	Tazewell Pk - Maynardville Pk	13,520	1.96	1.71	1.15	1.16	0.83	0.89	1.00	K-17		Roadway Capacity, Bike/Ped	09-643
	Maynardville Pk - Norris Fwy	13,520	1.72	1.63	1.46	1.53	1.03	1.12	1.27	K-18		ITS/Operational	24-706
	Norris Fwy - Dry Gap Pk	35,700	1.28	1.12	1.04	1.03	0.60	0.65	0.72				
	Dry Gap Pk - I-75N Ramps	34,500	3.05	3.29	1.65	1.82	0.94	1.01	1.09	K-19		Interchange Reconfiguration	09-652
	Beaver Ridge Rd - Clinton Hwy	13,520	1.84	1.97	1.14	1.19	0.81	0.93	1.07	K-20		Roadway Capacity, Bike/Ped	24-609
	Clinton Hwy - Powell Dr	35,700	2.52	2.52	1.27	1.17	0.24	0.25	0.28		X	ITS/Operational	24-706
	Powell Dr - I-75 N Ramps	34,500	1.96	2.65	1.23	1.43	0.64	0.69	0.77		X	Interchange Reconfiguration	09-652
Everett Rd	Yarnell Rd - Kingston Pk	12,480	1.14	1.16	1.02	1.02	0.28	0.41	0.55				
Francis Rd	Middlebrook Pk - Amherst Rd	12,480	1.54	1.79	1.21	1.26	0.40	0.41	0.44				
Gallaher View Rd	Westland Dr - I-40 E Ramps	12,480	1.66	2.01	1.16	1.21	0.93	0.99	1.01	K-21		ITS/Operational	24-706
	I-40 E Ramps - Middlebrook Pk	32,900	1.84	1.94	1.19	1.27	0.70	0.73	0.75				
Gleason Dr	Morrell Rd - Montvue Rd	32,900	0.94	0.95	0.94	0.95	0.37	0.39	0.39				
	Montvue Rd - Ebenezer Rd	12,480	1.32	1.33	1.14	1.18	0.84	0.88	0.89	K-22		ITS/Operational	24-706
Grigsby Chapel Rd	Smith Rd - Campbell Station Rd	16,380	1.23	1.15	1.10	1.05	1.00	1.22	1.39	K-23		ITS/Operational	13-813 (2045MP)
Hardin Valley Rd	Steele Rd - Hickory Creek Rd	16,380	1.99	1.56	1.23	1.14	0.47	0.68	0.93	K-24		Roadway Capacity, Bike/Ped	24-621
	Steele Rd - Pellissippi SB Ramps	16,380	1.57	1.71	1.34	1.35	0.99	1.11	1.29	K-25		Roadway Capacity, Bike/Ped	24-621
	Pellissippi SB Ramps - Middlebrook Pk	32,900	2.15	2.11	1.33	1.34	0.82	0.93	1.10	K-26		ITS/Operational	24-706
Heiskell Ave/Texas Ave	Western Ave - Bruhin Rd	12,480	1.72	2.28	1.15	1.28	1.06	1.12	1.18	K-27		ITS/Operational	24-706

Corridor Name	Corridor Limits	Capacity	AM Max TTI	PM Max TTI	AM Avg TTI	PM Avg TTI	2022 V/C	2035 V/C	2050 V/C	Congested Corridor ID	Spot Congestion	Proposed CMP Strategies	Mobility Plan Project ID
Henley St	Summit Hill Dr - Blount Ave	49,300	1.64	1.63	1.12	1.19	0.53	0.58	0.60				
Hickory Creek Rd	Buttermilk Rd - Hardin Valley Rd	12,480	1.32	1.50	1.06	1.04	0.25	0.33	0.43				
I-140	Dutchtown Rd - I-40	76,500	1.56	1.72	1.14	1.37	0.90	0.99	1.07	K-28		ITS/Operational	18-201 (2045MP)
	C.L. - Westland Dr	76,500	1.25	1.36	1.05	1.06	0.64	0.72	0.80				
	Westland Dr - I-40	76,500	1.23	1.29	1.05	1.13	0.82	0.90	0.97	K-29		ITS/Operational	18-201 (2045MP)
I-275	I-640 - I-40	115,300	1.22	1.12	1.05	1.01	0.58	0.62	0.66				
I-40	Alcoa Hwy - James White Pkwy	135,300	1.76	2.72	1.23	1.77	1.01	1.03	1.02	K-30		ITS/Operational	
	Midway Rd - Sevier County Line	120,200	0.98	0.99	0.96	0.97	0.64	0.73	0.83				
	Midway Rd - I-640	120,200	0.98	1.19	0.96	1.02	0.76	0.87	0.98	K-31		ITS/Operational	
	I-640 - James White Pkwy	115,300	1.93	1.25	1.11	1.05	0.78	0.82	0.83				
	I-640 - Alcoa Hwy	156,000	1.74	3.25	1.24	2.20	0.86	0.91	0.91	K-32		Roadway Capacity	21-601
I-40/I-75	Loudon County Line - Lovell Rd	120,200	1.25	1.81	1.06	1.36	0.99	1.07	1.11	K-33		Roadway Capacity	09-691
	Lovell Rd - I-140	156,000	1.22	2.99	1.03	2.35	0.91	0.98	1.03	K-34		Corridor Study	
	I-640 Ramps	120,200	1.69	2.19	1.26	1.50	0.95	1.01	1.00	K-35		Roadway Capacity	21-601
	I-640 - Papermill Dr	176,000	1.32	1.44	1.08	1.23	1.16	1.23	1.25	K-36		Corridor Study	
	Papermill Dr - West Hills	176,000	1.13	1.65	1.05	1.35	1.14	1.21	1.23	K-37		Corridor Study	
	West Hills - Gallaher View Rd	176,000	1.17	1.62	1.11	1.31	1.12	1.19	1.22	K-38		Corridor Study	
	Gallaher View Rd - Cedar Bluff Rd	176,000	1.43	2.87	1.24	2.05	1.08	1.15	1.18	K-39		Corridor Study	
	Cedar Bluff Rd - Pellissippi Pkwy	176,000	1.34	3.30	1.16	2.28	1.02	1.10	1.15	K-40		Corridor Study	
I-640	I-275 - Broadway	120,200	1.19	1.13	1.00	1.04	0.73	0.81	0.91	K-41			
	Broadway - I-40E	120,200	1.03	1.14	0.99	1.05	0.52	0.60	0.72				
I-640/I-75	I-40W - I-275	120,200	1.72	1.41	1.18	1.16	0.79	0.84	0.91	K-42		Interchange Improvements	09-654
I-75	Emory Rd - I-640	120,200	1.27	1.22	1.05	1.05	0.75	0.80	0.84				
	Emory Rd - Raccoon Valley Rd	76,500	0.98	1.06	0.96	1.00	0.76	0.79	0.83			Roadway Capacity	09-692
Inskip Dr	Clinton Hwy - Cedar Ln	12,480	1.05	1.05	1.01	1.05	0.44	0.48	0.50				
James White Pkwy	I-40 - Hill Ave	70,200	1.16	1.12	1.04	1.03	0.38	0.41	0.43				
	Hill Ave - Moody Ave	70,200	1.27	1.17	1.07	1.05	0.20	0.24	0.27				21-606
John Sevier Hwy	Asheville Hwy - Strawberry Plains Pk	17,745	3.40	3.09	1.43	1.38	0.88	0.94	1.09	K-43		ITS/Operational	24-706
	Strawberry Plains Pk - Chapman Hwy	17,745	1.69	1.64	1.17	1.20	0.76	0.82	1.02	K-44		ITS/Operational	24-706
	Chapman Hwy - Martin Mill Pk	17,745	1.48	1.38	1.08	1.07	0.92	1.01	1.16	K-45		Roadway Capacity	09-644
	Martin Mill Pk - Alcoa Hwy	17,745	2.90	3.51	1.30	1.38	1.12	1.22	1.38	K-46		Roadway Capacity	09-644
Kingston Pk	Loudon County Line - Campbell Station Rd	35,700	1.38	1.59	1.11	1.17	0.79	0.94	1.13	K-47		ITS/Operational	13-813 (2045MP)
	Campbell Station Rd - Lovell Rd	34,500	1.79	2.08	1.26	1.54	0.82	0.93	1.04	K-48		ITS/Operational	13-813 (2045MP)
	Lovell Rd - Mabry Hood Rd	34,500	1.58	2.36	1.32	1.51	0.98	1.06	1.10	K-49		ITS/Operational	24-617
	Mabry Hood Rd - Cedar Bluff Rd	32,800	1.64	1.82	1.09	1.33	0.84	0.90	0.90	K-50		ITS/Operational	24-617
	Cedar Bluff Rd - Gallaher View Rd	32,800	1.48	1.99	1.15	1.50	0.92	0.98	0.99	K-51		ITS/Operational	24-617
	Gallaher View Rd - Morrell Rd	32,800	1.26	1.67	1.04	1.21	0.77	0.81	0.80				
	Morrell Rd - Papermill Rd	32,800	1.17	1.35	1.02	1.22	0.79	0.85	0.85	K-51		ITS/Operational	24-617
	Papermill Rd - Northshore Dr	34,500	1.13	1.37	1.01	1.17	0.64	0.71	0.72				
	Northshore Dr - Lyons View Pk	32,800	1.61	1.95	1.17	1.45	0.51	0.55	0.55				
	Lyons View Pk - Alcoa Hwy N Ramps	24,600	1.40	1.71	1.08	1.29	1.08	1.20	1.22	K-52		ITS/Operational	24-617
Liberty St	Sutherland Ave - Keith Ave	24,675	1.43	1.38	1.02	1.01	0.35	0.37	0.38				
Lovell Rd	Kingston Pk - I-40 E Ramps	34,500	1.30	1.50	1.04	1.22	0.99	1.08	1.14	K-53		ITS/Operational, Intersection	24-606
	I-40 E Ramps - Outlet Dr	34,500	1.76	1.72	1.30	1.32	0.93	1.02	1.08	K-54		ITS/Operational	24-706
	Outlet Dr - Pellissippi Pkwy	35,700	1.40	1.57	1.11	1.18	0.55	0.61	0.66				
	Pellissippi Pkwy - Middlebrook Pk	13,520	1.31	1.76	1.13	1.27	1.14	1.21	1.32	K-55		Roadway Capacity	09-637
Lyons View Pk	Northshore Dr - Kingston Pk	12,480	1.25	2.15	1.02	1.29	1.05	1.16	1.22	K-56		Intersection Improvements	24-601
Magnolia Ave	Prosser Rd - Cherry St	34,500	1.11	1.24	1.03	1.12	0.35	0.49	0.67				
Martin Mill Pk	John Sevier Hwy - Ogle Ave	12,480	1.53	1.57	1.12	1.13	0.24	0.26	0.32				
Martin Mill Pk/Maryville Pk/Ogle Ave	Blount County Line - Chapman Hwy	13,520	1.28	1.29	1.09	1.08	0.40	0.45	0.54				

Corridor Name	Corridor Limits	Capacity	AM Max TTI	PM Max TTI	AM Avg TTI	PM Avg TTI	2022 V/C	2035 V/C	2050 V/C	Congested Corridor ID	Spot Congestion	Proposed CMP Strategies	Mobility Plan Project ID
Maynardville Hwy	C.L. - Emory Rd	35,700	1.57	1.43	1.06	1.03	0.43	0.48	0.54				
	Emory Rd - Brown Gap Rd	34,500	1.94	2.90	1.26	1.54	1.14	1.22	1.30	K-57		ITS/Operational	19-604
McFee Rd	Kingston Pk - Boyd Station Rd	16,380	1.35	1.32	1.09	1.10	0.50	0.60	0.68				
Merchant Dr	Pleasant Ridge Rd - Clinton Hwy	16,380	1.31	1.51	1.16	1.15	0.61	0.66	0.71				
	Clinton Hwy - Central Ave Pk	32,900	1.51	2.15	1.16	1.40	0.66	0.69	0.72		X	ITS/Operational	24-706
Middlebrook Pk	Vanosdale Rd - Weisgarber Rd	35,700	1.46	1.73	1.14	1.25	0.66	0.74	0.79				
	Weisgarber Rd - Ed Shouse Rd	34,500	1.45	1.68	1.19	1.21	0.67	0.75	0.80				
	Ed Shouse Rd - Liberty St	35,700	1.33	1.58	1.06	1.16	0.40	0.44	0.46				
	Liberty St - Western Ave	35,700	1.44	1.62	1.14	1.21	0.45	0.50	0.51				
	Hardin Valley Rd - Cedar Bluff Rd	35,700	1.58	1.61	1.09	1.17	0.52	0.57	0.62				
	Cedar Bluff Rd - Gallaher View Rd	35,700	2.22	3.63	1.26	1.52	0.70	0.77	0.85		X	ITS/Operational	18-603 (2045MP)
	Gallaher View Rd - Vanosdale Rd	34,500	2.50	2.85	1.48	1.57	0.69	0.77	0.84		X	ITS/Operational	18-603 (2045MP)
Millertown Pk	Mill Rd - Roberts Rd	12,480	1.21	1.15	1.06	1.03	0.26	0.29	0.36				
	Washington Pk - I-640 W Ramps	12,480	1.40	1.93	1.14	1.36	0.64	0.73	0.87	K-58		ITS/Operational	24-706
	I-640 W Ramps - Loves Creek Rd	32,900	1.64	2.22	1.37	1.77	0.63	0.68	0.79		X	ITS/Operational	24-706
	Loves Creek Rd - Harris Rd	12,480	1.49	1.57	1.10	1.10	0.62	0.68	0.86	K-59		ITS/Operational	24-706
Moody Ave	Chapman Hwy - James White Pkwy	32,900	1.31	1.36	1.09	1.11	0.24	0.28	0.33				
Morrell Rd	Northshore Dr - Westland Dr	12,480	1.38	1.57	1.32	1.25	0.68	0.71	0.73				
	Westland Dr - Kingston Pk	32,900	1.48	1.92	0.94	1.24	0.57	0.59	0.61				
Neyland Dr	Kingston Pk - Joe Johnson Dr	35,700	1.86	1.98	1.20	1.22	0.39	0.46	0.48				
	Joe Johnson Dr - Lake Loudoun Blvd	35,700	0.99	1.02	0.92	0.94	0.38	0.47	0.51				
	Lake Loudoun Blvd - Walnut St	35,700	1.10	1.16	1.05	1.14	0.38	0.49	0.54				
Norris Fwy	Maynardville Hwy - Union County Line	13,520	1.45	1.65	1.07	1.08	0.67	0.72	0.80				
Northshore Dr	Choto Rd - Concord Rd	12,480	2.42	2.62	1.22	1.25	1.19	1.30	1.41	K-60		Minor Capacity	09-680
	Concord Rd - I-140 E Ramps	13,520	2.06	2.49	1.29	1.39	1.07	1.16	1.27	K-61		Minor Capacity	09-646
	I-140 E Ramps - Ebenezer Rd	34,500	1.51	1.93	1.32	1.64	0.73	0.80	0.85				
	Ebenezer Rd - Morrell Rd	13,520	1.36	1.38	1.08	1.15	1.05	1.11	1.16	K-62		Minor Capacity	09-645
	Westland Dr - Kingston Pk	35,700	1.51	2.67	1.22	1.48	0.44	0.46	0.47		X	ITS/Operational	24-706
	Kingston Pk - Papermill Dr	32,800	1.17	1.32	0.96	1.06	0.75	0.77	0.76			Minor Capacity	09-658
	Morrell Rd - Westland Dr	13,520	1.54	1.69	1.22	1.27	1.35	1.43	1.48	K-63		ITS/Operational	24-706
Oak Ridge Hwy	Pellissippi Pkwy - Byington-Beaver Ridge	13,520	1.26	2.29	1.10	1.18	0.77	0.85	0.94	K-64		Roadway Capacity	09-673
	Byington-Beaver Ridge - Harrell Rd	16,900	1.89	1.70	1.41	1.30	1.02	1.10	1.21	K-65		Roadway Capacity	09-638
	Harrell Rd - Schaad Rd	13,520	2.10	2.09	1.50	1.53	1.26	1.37	1.51	K-66		Roadway Capacity	09-638
	C.L. - Oak Ridge Hwy	61,800	1.06	2.05	1.02	1.40	0.81	0.85	0.89	K-67		Roadway Cap, Access Control	09-647
Papermill Dr	Kingston Pk - Weisgarber Rd	12,480	#N/A	#N/A	#N/A	#N/A	1.25	1.28	1.25	K-68		Minor Capacity	09-689
	Northshore Dr - I-40 W Ramps	34,500	1.31	1.66	1.07	1.11	0.71	0.73	0.71				
	I-40 W Ramps - Liberty St	12,480	1.43	1.26	1.19	1.15	0.65	0.69	0.68				
Parkside Dr	Campbell Station Rd - Lovell Rd	32,900	1.66	2.00	1.01	1.27	0.79	0.85	0.86	K-69		ITS/Operational	13-813 (2045MP)
	Lovell Rd - Mabry Hood Rd	32,900	1.37	1.57	1.07	1.14	0.45	0.49	0.50				
Pellissippi Pkwy	Hardin Valley Rd - Dutchtown Rd	61,800	1.25	1.39	1.11	1.09	0.98	1.06	1.11	K-70		Roadway Cap, Access Control	09-647
	Oak Ridge Hwy - Hardin Valley Rd	61,800	1.08	1.10	1.03	1.03	0.73	0.78	0.83				
Peters Rd	Seven Oaks Dr - Cedar Bluff Rd	32,900	1.10	1.43	0.90	1.10	0.69	0.71	0.70				
	Cedar Bluff Rd - Kingston Pk	32,900	1.00	1.23	0.93	1.06	0.45	0.48	0.48				
	Kingston Pk - Ebenezer Rd	32,900	1.15	1.21	1.11	1.13	0.58	0.62	0.64				
Peters Rd/Parkside Dr	Mabry Hood Rd - Seven Oaks Dr	32,900	1.05	1.20	1.03	1.12	0.43	0.46	0.46				
Pleasant Ridge Rd	Schaad Rd - Merchant Dr	16,380	1.35	1.50	1.19	1.24	0.72	0.77	0.82				
	Merchant Dr - Sanderson Rd	16,380	1.24	1.12	1.17	1.05	0.78	0.84	0.88	K-71		ITS/Operational	24-706
	Sanderson Rd - Western Ave	16,380	1.80	1.75	1.35	1.25	0.35	0.39	0.40				
Powell Dr	Clinton Hwy - Emory Rd	34,500	2.76	3.37	1.27	1.36	0.34	0.37	0.42		X	ITS/Operational	24-706
Raccoon Valley Dr	Norris Fwy - Anderson County Line	13,520	1.26	1.33	1.03	1.02	0.34	0.34	0.39				

Corridor Name	Corridor Limits	Capacity	AM Max TTI	PM Max TTI	AM Avg TTI	PM Avg TTI	2022 V/C	2035 V/C	2050 V/C	Congested Corridor ID	Spot Congestion	Proposed CMP Strategies	Mobility Plan Project ID
Rutledge Pk	Roberts Rd - Grainger County Line	35,700	1.76	2.24	1.13	1.12	0.30	0.32	0.35		X	ITS/Operational	24-706
	Roberts Rd - Loves Creek Rd	35,700	1.81	1.66	1.08	1.05	0.39	0.42	0.47				
	Loves Creek Rd - I-40 W Ramps	35,700	1.65	1.48	1.29	1.28	0.59	0.62	0.69				
	I-40 W Ramps - Prosser Rd	35,700	1.36	1.37	1.14	1.18	0.22	0.26	0.33				
Schaad Rd	Pleasant Ridge Rd - Oak Ridge Hwy	12,480	1.04	1.24	0.90	1.01	1.32	1.42	1.66	K-72		Roadway Capacity	09-625
	Clinton Hwy - Pleasant Ridge Rd	32,900	1.39	1.76	1.29	1.54	0.63	0.67	0.77				
Smith Rd	Kingston Pk - Grigsby Chapel Rd	12,480	1.38	1.28	1.15	1.13	0.63	0.80	0.93	K-73		ITS/Operational	24-706
Strawberry Plains Pk	John Sevier Hwy - Pine Grove Rd	12,480	1.39	1.51	1.03	1.04	0.77	0.84	1.03	K-74		ITS/Operational	24-706
	Pine Grove Rd - Huckleberry Springs Rd	32,900	2.16	2.04	1.37	1.41	0.49	0.53	0.66		X	ITS/Operational	24-706
	Huckleberry Springs Rd - Asheville Hwy	12,480	1.10	1.05	1.00	0.94	0.44	0.50	0.69				
Summit Hill Dr	Broadway - Central St	31,700	1.24	1.16	0.97	0.99	0.42	0.48	0.51				
	Central St - MLK Ave	31,700	1.63	1.53	1.12	1.04	0.38	0.41	0.44				
Sutherland Ave	Westwood Rd - Hollywood Rd	16,380	1.39	1.53	1.03	1.12	0.33	0.35	0.36				
	Hollywood Rd - Liberty St	12,480	1.36	1.90	1.17	1.32	1.08	1.14	1.17	K-75		ITS/Operational	24-706
	Liberty St - Middlebrook Pk	12,480	1.79	2.01	1.16	1.19	0.95	1.03	1.05	K-76		ITS/Operational	24-706
Tazewell Pk	Emory Rd - Murphy Rd	13,520	1.25	1.41	1.10	1.14	1.08	1.15	1.24	K-77		Intersection Improvements	24-607
	Murphy Rd - Jacksboro Pk	13,520	2.20	1.69	1.26	1.23	1.07	1.13	1.21	K-78		ITS/Operational	24-706
	Jacksboro Pk - Old Broadway	13,520	1.34	2.82	1.15	1.61	1.31	1.37	1.41	K-79		ITS/Operational	24-706
Turkey Creek Rd	Virtue Rd - Concord Rd	12,480	1.15	1.19	1.01	1.00	0.47	0.54	0.65				
Vanosdale Rd	Kingston Pk - Middlebrook Pk	12,480	1.62	1.89	1.40	1.41	1.01	1.04	1.06	K-80		ITS/Operational	24-706
Virtue Rd	Kingston Pk - Boyd Station Rd	12,480	1.11	1.11	1.05	1.04	0.41	0.43	0.47				
Volunteer Blvd	Cumberland Ave - Lake Loudoun Blvd	32,900	1.26	1.44	0.92	0.93	0.37	0.50	0.48				
	Lake Loudoun Blvd - Cumberland Ave	32,900	1.18	1.26	1.13	1.14	0.28	0.36	0.36				
Washington Pk	Murphy Rd - Maloneyville Rd	12,480	1.53	1.13	1.22	1.04	0.68	0.75	1.02	K-81		ITS/Operational	24-706
	Millertown Pk - I-640 WB Ramps	15,600	1.05	1.36	0.97	1.20	0.54	0.61	0.74				
	I-640 WB Ramps - Murphy Rd	15,600	1.76	1.88	1.16	1.33	1.20	1.33	1.58	K-82		Roadway Capacity, Bike/Ped	09-615
Watt Rd	Everett Rd - Kingston Pk	16,380	1.77	1.72	1.11	1.13	0.63	0.73	0.82			Interchange Improvements	09-651
Weisgarber Rd	Kingston Pk - Middlebrook Pk	34,500	1.30	1.30	1.06	1.06	0.59	0.62	0.64				
Western Ave	Schaad Rd - Palmetto Rd	35,700	1.11	1.14	1.06	1.06	0.54	0.60	0.70				
	Palmetto Rd - Third Creek Rd	35,700	1.57	1.78	1.24	1.35	0.75	0.81	0.90	K-83		ITS/Operational	24-706
	Third Creek Rd - Ed Shouse Dr	35,700	2.13	2.28	1.79	1.87	0.66	0.70	0.77		X	ITS/Operational	24-706
	Ed Shouse Dr - Texas Ave	51,800	1.82	2.17	1.31	1.32	0.69	0.77	0.83		X	ITS/Operational	24-706
	Texas Ave - Keith Ave	35,700	1.10	1.15	1.00	1.02	0.36	0.43	0.47				
	Keith Ave - University Ave	35,700	1.58	1.73	1.16	1.19	0.34	0.40	0.43				
	University Ave - Broadway	35,700	1.61	1.91	1.17	1.37	0.48	0.57	0.60				
Westland Dr	I-140 W Ramps - Ebenezer Rd	16,380	1.75	1.87	1.39	1.38	0.89	0.98	1.03	K-84		ITS/Operational	24-706
	Ebenezer Rd - Morrell Rd	12,480	1.22	1.33	1.11	1.16	0.87	0.95	0.98	K-85		ITS/Operational	24-706
	Morrell Rd - Northshore Dr	12,480	1.26	1.29	0.98	1.02	0.67	0.74	0.83			Intersection Improvements	24-601
	Northshore Dr - I-140 W Ramps	12,480	1.77	1.82	1.19	1.23	1.02	1.09	1.15	K-86		ITS/Operational	24-706
Woodland Ave	Branner St - St. Marys St	12,480	1.08	1.06	1.04	1.02	0.97	1.04	1.09	K-87		Complete Street	19-606
	St. Marys St - Broadway	26,775	1.13	1.03	1.12	1.00	0.28	0.30	0.31				
Yarnell Rd	Everett Rd - Lovell Rd	12,480	1.25	1.27	1.05	1.04	0.27	0.43	0.65				
LOUDON COUNTY													
Broadway St	Browder Hollow Rd - US 321	32,800	2.28	2.31	1.10	1.17	0.29	0.33	0.40		X	Intersection Improvements	17-407
E. Lee Highway	Grove St - Sugar Limb Rd	13,520	2.19	2.11	1.44	1.46	0.88	1.00	1.17	L-1		ITS/Operational	24-706
	Sugar Limb Rd - Browder Hollow Rd	13,520	1.12	1.20	1.03	1.05	0.67	0.79	1.00	L-2		ITS/Operational	24-706
Ford Rd/Muddy Creek Rd	U.S. 11 - U.S. 70	12,480	1.19	1.15	1.06	1.05	0.16	0.18	0.20				
Harrison Rd	Browder Hollow Rd - Kingston St	16,380	1.31	1.13	1.12	1.06	0.50	0.61	0.77				
I-40	US 321 - I-75	76,500	1.20	1.61	0.98	1.05	1.03	1.14	1.23	L-3		Interchange Improvements	09-691
I-75	Monroe County Line - SR 72	76,500	1.00	1.01	0.97	0.99	0.58	0.66	0.75				21-400b

Corridor Name	Corridor Limits	Capacity	AM Max TTI	PM Max TTI	AM Avg TTI	PM Avg TTI	2022 V/C	2035 V/C	2050 V/C	Congested Corridor ID	Spot Congestion	Proposed CMP Strategies	Mobility Plan Project ID
I-75	SR 72 - Sugar Limb Rd	76,500	1.04	1.02	1.00	1.00	0.69	0.77	0.85	L-4		Roadway Capacity	21-400c
	Sugar Limb Rd - US 321	76,500	1.06	1.05	0.98	1.00	0.71	0.78	0.85				21-400d
	US 321 - I-40	76,500	1.08	1.44	1.00	1.12	0.82	0.88	0.92	L-5		Roadway Capacity	21-400a
Kingston St/Old SR 95	U.S. 321 - U.S. 11	12,480	1.29	1.23	1.08	1.08	0.48	0.56	0.69				24-401
Lee Hwy/Mulberry St	Monroe County Line - SR 72	13,520	1.79	1.58	1.08	1.07	0.34	0.40	0.51				
Martel Rd	Knox County Line - U.S. 11	12,480	1.07	1.12	1.01	1.02	0.26	0.29	0.35				
Mulberry St	SR 72 - Grove St	13,520	1.81	1.77	1.28	1.26	0.63	0.77	1.01	L-6		ITS/Operational	24-706
Shaw Ferry Rd	Town Creek Rd - U.S. 11	12,480	1.16	1.20	1.00	1.01	0.28	0.29	0.34				
SR 72	Roane County Line - I-75 SB Ramps	16,380	1.52	1.57	1.08	1.06	0.31	0.37	0.41				
	I-75 SB Ramps - US 11	16,380	1.44	1.48	1.15	1.19	0.86	0.97	1.09	L-7		ITS/Operational	24-706
	US 11 - Tellico Pkwy	13,520	1.44	1.48	1.07	1.08	0.59	0.67	0.75				
Sugar Limb Rd	I-75 - U.S. 11	12,480	1.78	1.46	1.14	1.11	0.73	0.75	0.74				
Tellico Pkwy	SR 72 - U.S. 321	16,900	1.30	1.41	1.06	1.08	0.60	0.66	0.73				
Town Creek Rd	Kingston St - Ford Rd	12,480	1.53	1.68	1.14	1.12	0.10	0.11	0.12				
US 11	US 321 - Kingston Pk	13,520	1.66	2.43	1.12	1.20	0.77	0.92	1.08	L-8		Intersection Improvements	24-402
US 321	US 11 - Simpson Rd	49,200	1.17	1.29	0.89	0.98	0.45	0.47	0.50				
	Simpson Rd - I-75	34,500	1.96	1.92	1.23	1.36	0.70	0.73	0.78				
	I-75 - US 70	35,700	1.92	1.65	1.23	1.24	0.45	0.48	0.54				
	Blount County Line - Tellico Pkwy	35,700	1.03	1.01	1.00	0.97	0.33	0.37	0.42				
	Tellico Pkwy - US 11	35,700	1.24	1.27	1.06	1.07	0.69	0.75	0.80				
	US 70 - I-40	35,700	1.62	2.17	1.27	1.40	0.30	0.34	0.38		X	ITS/Operational	24-706
US 70	Roane County Line - U.S. 11	13,520	2.56	2.14	1.37	1.27	0.44	0.54	0.69		X	ITS/Operational	24-706
SEVIER COUNTY													
Boyds Creek Hwy	Chapman Hwy - Porterfield Gap Rd	13,520	1.52	1.3	1.21	1.16	1.02	1.14	1.28	S-1		Minor Capacity	24-500
	Porterfield Gap Rd - SR-66	13,520	1.31	1.38	1.06	1.07	0.75	0.87	0.99	S-2		Minor Capacity	24-501
Chapman Hwy	Wye Dr - Boyds Creek Hwy	35,700	1.36	1.59	1.04	1.05	0.47	0.53	0.59				
Chapman Hwy	Boyds Creek Hwy - Knox County Line	35,700	1.18	1.47	1.07	1.16	0.79	0.87	0.96	S-3		Minor Capacity	24-210

Table 5. Capacity Project Justification

Project ID	Route	Termini	Jurisdiction	Length	Type of Improvement	Capacity Addition	Additional Measures to Preserve Capacity
Anderson County Projects							
09-101a	Edgemoor Rd	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	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							
09-202	Robert C Jackson Extension - Phase 1	Wildwood Rd to Pellissippi Place Existing Terminus	Alcoa	0.7	Construct new 4-lane roadway	High V/C ratio, operations & public transit not applicable	Project will include median/continuous center turn lane and accommodations for bikes/peds
09-216	Alcoa Hwy	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
09-232	Pellissippi Pkwy (SR-162) Extension	Old Knoxville Hwy (SR-33) to Lamar Alexander Pkwy (US-321/SR-73)	Blount County	4.4	Construct new 4-lane roadway	High V/C ratio along bypassed routes, operations & public transit not applicable	Project will include full access control (no direct driveway access)
09-239	Montvale Rd	Montvale Station Rd to Southview Drive	Maryville	2	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
09-257	Relocated Alcoa Hwy (SR-115/US- 129)	Proposed Interchange at Tyson Blvd to existing SR-115 at S. Singleton Station Rd	Alcoa	4.9	Construct new 4-lane divided highway with auxiliary lanes and new interchanges	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
10-260	Foothills Mall Dr Extension - Phase 2	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
13-203	Robert C Jackson Dr Extension - Phase 2	Louisville Rd (SR-334) to US 129 Bypass (SR-115)	Alcoa	0.5	Construct new 4-lane roadway and grade separated interchange connecting US-129 and Associates Boulevard	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)
24-208	West Bessemer Street Widening	Calderwood Rd to N Hall Rd	Alcoa	0.5	Widen from 2 to 5 lane cross section with center turn lane. Includes sidewalk	High V/C ratio	Project will include accommodations for bikes/peds
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	Project will include median/continuous center turn lane and accommodations for bikes/peds
09-637	Lovell Rd	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
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	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	Corridor safety and capacity improvements to include access control, interchange reconstruction, frontage roads, auxiliary	High V/C ratio, public transit options not applicable	Project would convert from limited to full access control facility
09-654	I-75/I-640/I-275 Interchange	Interchange at I-640/I-275/75 - Exit 3	Knoxville/Knox County	0.6	Interchange reconstruction along with the addition of auxiliary lanes in each direction on I-75	Geometric deficiencies	Full access control facility, ITS
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 bike/ped accommodations
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
09-692	I-75	Emory Rd (SR 131) to Raccoon Valley Rd (SR-170)	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
13-603	I-40/75	Lovell Rd (SR 131)	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
22-600	Everett Road Widening	El Camino Ln to Buttermilk Rd	Knox County	0.8	Widen from 2 to 4 lanes with median and/or center turn lane, including bicycle and pedestrian facilities	High V/C ratio from future development	Full access control facility, ITS
Loudon County Projects							
21-400 (a-d)	I-75	Pond Creek Road (SR 323) to I-40/I- 75 Junction	Loudon County	16	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 reassess 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.