AKRON METROPOLITAN AREA TRANSPORTATION STUDY

AMATS

2024 CONGESTION MANAGEMENT PROCESS

2024 CONGESTION MANAGEMENT PROCESS

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Akron Metropolitan Area Transportation Study
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Cooperative transportation planning by the Village, City and County governments of Portage and Summit Counties and the Chippewa and Milton Township areas of Wayne County; in conjunction with the U.S. Department of Transportation and the Ohio Department of Transportation.

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1 | INTRODUCTION

Traffic congestion can frustrate drivers, impact local economic activity and create safety issues on the highway system. It can also be very localized or very short in duration. Traffic congestion can occur around schools at the beginning and end of the day. It can occur before and after concerts and sporting events. It can occur during periods of roadway construction. A major challenge of planning for traffic congestion comes with understanding the costs of improvements and both the positive and negative impacts that can follow.

Many traffic congestion improvements can damage the surrounding environment for other transportation users like bicyclists and pedestrians. It can also destabilize the built environment. It can also lead to induced demand, attracting more vehicles to an improved roadway only to see traffic increase and congestion return.
However, not all improvements for traffic congestion are bad. It is imperative when recommending improvements for traffic congestion that local communities consider all transportation users, the land use around the project and the impacts to safety.

As the Metropolitan Planning Organization for the greater Akron, it is the Akron Metropolitan Area Transportation Study's (AMATS) responsibility to ensure that traffic congestion is identified and addressed, appropriately and responsibly. As part of its long-range transportation planning process, AMATS develops a Congestion Management Process (CMP) every four years. The purpose of this process is to identify congestion in the region, evaluate strategies for congested locations, recommend improvements, and analyze past projects for congestion impacts.

The *2024 Congestion Management Process* identifies existing congestion on our region's arterials and freeways. It examines public transit levels of service and freight needs. It also isolates and examines congestion related to traffic incidents. Later sections identify demand and supply-side strategies to manage regional congestion. The final section includes project recommendations to reduce traffic congestion.

2 | CONGESTION MANAGEMENT PROCESS

The Congestion Management Process (CMP) is a federally required effort for metropolitan areas that are designated as Transportation Management Areas (TMAs). A TMA is a Census Bureau designated urban area with more than 200,000 residents. The Federal Highway Administration (FHWA) defines a CMP as: "a systematic and regionally accepted approach for managing congestion that provides accurate, up to date information on transportation system performance and assesses alternative strategies for congestion management that meets state and local needs."

Each CMP is required to include the following criteria per the CFR 450.322(a):

1. Methods to monitor and evaluate the performance of the multimodal transportation system
2. Definition of congestion management objectives and performance measures
3. Establishment of a coordinated program for data collection and system performance monitoring
4. Identification and evaluation of anticipated performance and expected benefits of congestion strategies
5. Identification of an implementation schedule, responsibilities and funding sources for each strategy
6. Implementation of process for periodic assessment of the effectiveness of implemented strategies

The CMP integrates with the entire metropolitan planning process, working to achieve the goals and objectives outlined in the long-range transportation plan and supporting the prioritization and programming of projects for the short and medium-term.

The CMP also supports Transportation Performance Management that is required by MPOs in the Bipartisan Infrastructure Law (BIL) passed in November of 2021. Transportation Performance Management is defined as a strategic approach that uses system information to make investment and policy decisions to achieve national performance goals. Performance measures related to the CMP include Level of Travel Time Reliability (LOTTR) and Level of Truck Travel Time Reliability (LOTTTR), Peak Hour Excessive Delay (PHED) and Mode Share or Non-Single Occupancy Vehicle (Non-SOV) travel.

2.1 | Methods to Monitor and Evaluate Performance

The roadway network considered for the CMP analysis is made up of 540 miles of roadways in the Akron metropolitan area and is shown on Map 2-1 (page 3). The following roadways are included in the network for the CMP:

- All roadways included on the National Highway System
- All roadways classified as Principal Arterials in the Federal Functional Classification System
- Major intersections that experience high traffic volumes
- All roadways identified as potential congestion problems by the AMATS Policy Committee
- Other roadways to ensure a continuous CMP highway system

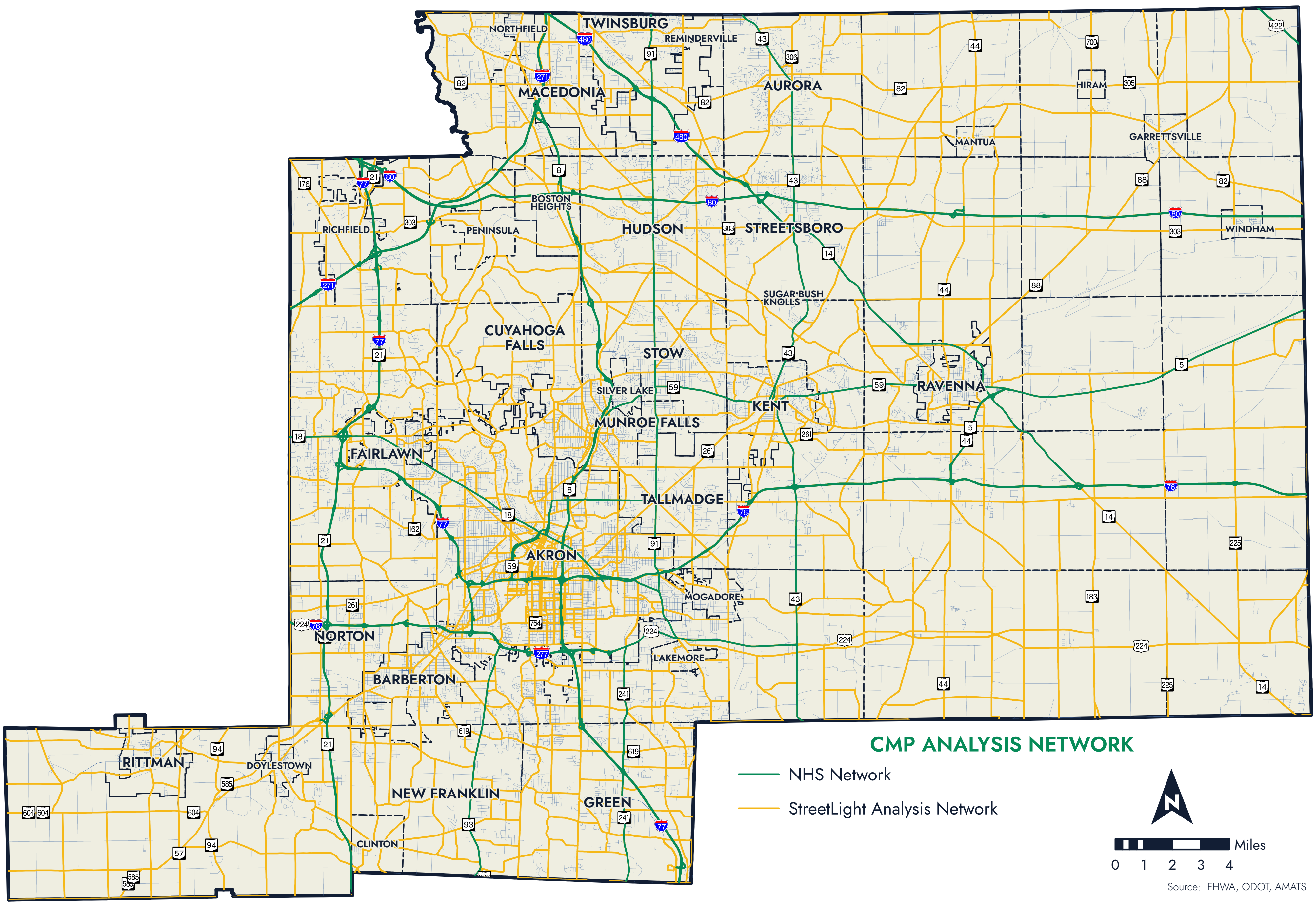
Although the CMP has traditionally focused primarily on the road network, the CMP network should consider the transit, bicycle, and pedestrian networks as well as their interface with the highway network. Doing so can help take advantage of strategies that rely upon the other modes to reduce single occupancy vehicle (SOV) travel. The AMATS area is served by two transit agencies, Portage Area Regional Transit Authority (PARTA) in Portage County and Metro Regional Transit Authority (METRO) in Summit County. The CMP reviews transit area on time data and headways as part of the analysis.

There are many types of data that can be used as part of the CMP process. The following list is not exhaustive but includes several common types of data that are used in the CMP.

2.1.1 | Traffic Volume Counts

It is necessary to collect traffic data to measure the performance of the transportation system. Traffic counts are taken on a regular basis on the roadway network. AMATS and ODOT coordinate traffic data collection efforts to make sure all necessary roadways are included. This data is then used as an input to model traffic congestion on the existing and future roadway network.

Map 2-1 | CMP Roadway Network



Public transit information was received from both public transit agencies (METRO RTA and PARTA) within the AMATS area. The CMP focuses on traffic congestion that is identified both at specific locations and at the system level.

2.1.2 | Electronic Traffic Datasets

Cell phone data collected by phone companies along highway corridors can be used to report travel speeds and origin-destination data. Cellular service providers and joint ventures with other private companies have begun to offer this service to some transportation agencies. This CMP report utilized data provided through INRIX and Streetlight.

2.1.3 | Transit Data

A wide range of transit data is available and gathered from transit agencies, including boarding and alighting statistics, total ridership, on-time performance, and transit vehicle capacity. Public transit information was received from both transit agencies (METRO RTA and PARTA) within the AMATS area.

2.1.4 | Bicycle / Pedestrian Data

Many MPOs collect data on the location and condition of bicycle/pedestrian facilities, such as sidewalks, bicycle lanes, and off-road paths. AMATS collects count information on the use of bicycle and pedestrian facilities, either manually or through the use of camera technology.

2.1.5 | Crash Data

AMATS publishes an annual report detailing traffic crashes in our region; the latest version being published in January 2024. *Traffic Crashes 2020-2022* analyzed traffic crashes for arterials and intersections between 2020 and 2022, utilizing crash records provided by the Ohio Department of Public Safety (ODPS) and the Ohio Department of Transportation (ODOT. This report is useful in determining locations where non-recurring congestion due to incidents is likely to occur .

In 2023, AMATS also produced its first *Safe Streets for All (SS4A) Action Plan*, which focuses more squarely on understanding and recommending strategies to reduce the most serious crashes, those that result in fatalities and serious injuries. Through the *SS4A Action Plan*, AMATS established a high-injury network of locations with the highest numbers of serious crashes. The *Action Plan* also included a detailed safety analysis of the region, recommended policy and process changes, and prioritized several project and strategy recommendations.

2.2 | Regional Objectives and Performance Measures

The objective of the CMP is to identify and minimize congestion and delay on the transportation system while ensuring project recommendations are safe, equitable and cost effective. Congestion management objectives define what the region wants to achieve regarding congestion management and are an essential part of an objectives-driven, performance-based approach to planning operations. Congestion management objectives should serve as one of the primary points of connection between the CMP and the upcoming long range transportation plan, Transportation Outlook 2050, and will serve as a basis for defining the direction of the CMP and performance measures that are used.

The development of congestion management objectives should rely heavily on stakeholder participation and an understanding of the needs and desires of the public related to congestion.

Regional objectives should ideally focus on outcomes — such as hours of delay, system reliability, and access to traveler information. However, they may also be written using output measures — such as incident clearance time or number of traffic signals retimed annually. In all cases, objectives should be stated in a way that meaningful performance measures can be derived from the objectives. An ideal objective should be SMART: Specific, Measurable, Agreed, Realistic, and Time restricted.

AMATS regional objectives were developed with the AMATS Policy and Technical Advisory Committee as well the general public through the AMATS CIC Committee. AMATS also reviewed these performance measures with interested public agencies and stakeholders in the region.

AMATS Regional Objectives Include:

1. To reduce the number of roadway segments identified as having long-term recurring congestion by five percent every four years as measured by percent congested (average speed/free flow speed) with congested roadways identified as being 35 percent congested or greater with a goal of reducing percent congested under 35 percent.
2. To reduce incident related congestion by prioritizing high crash roadways that also have identified congestion for infrastructure improvements with a goal of reducing crashes in those corridors by 2.0 percent per two-year period
3. To provide resources for communities to revise existing signal timings and coordinate with neighboring communities on signal timings with a goal of analyzing one corridor a year
4. To increase on-time performance of Metro RTA and PARTA transit routes with a goal of 80 percent on-time performance
5. To Increase GOhio Commute (Rideshare Program) users by two percent per year

2.3 | Established Program for Monitoring and Evaluation

AMATS collects and analyzes congestion data primarily using electronic traffic data from cell phones . This data is aggregated using the Streetlight and INRIX platforms to provide important traffic data. This data provides AMATS with the following:

- **Free Flow Speed** is equal to the Maximum Average Travel Speed that is observed in any one of the 24 hours of the day, averaged over all the days.
- **Average Travel Speed** for a segment, corridor, or network is the average of all speeds that are observed within the data period.
- The **Free Flow Factor** is calculated as the Average Travel Speed divided by the Free Flow Trip Speed. As the Average Travel Speed increases, Free Flow Factor increases and finally equals one, where Average Travel Trip Speed equals Free Flow Speed.
- **Congestion** is calculated as 1 minus the Free Flow Factor. If the Free Flow Factor is big, the congestion factor (1 - Free Flow Factor) will be small, indicating less congestion. If the Free Flow Factor is low, the congestion factor (1 - Free Flow Factor) will be high, indicating more congestion. There is no congestion when Free Flow Factor equals one.
- **Congested Network** represents all segments that has more than or equal to 25% congestion.

Through this data collection and analysis AMATS can identify and monitor segments with congestion as well as recommend strategies for congestion reduction.

For transit, AMATS reviews METRO RTA and PARTA on-time performance as well as headways. For safety analysis, AMATS analyzes congestion segments with its high crash locations identified in the *AMATS Traffic Crash Report*.

2.4 | Congestion Strategies

The identification and assessment of appropriate congestion mitigation strategies is a key component of the CMP. AMATS now needs to turn the data and analysis into a set of recommended solutions to effectively manage congestion and achieve congestion management objectives.

One size does not fit all, and congestion management strategies need to be designed according to the specific characteristics of the highway and adjacent area. These strategies are categorized into five tiers, ranked generally by efficacy of mitigating congestion:

Tier 1: Demand management
Tier 2: Traffic and roadway operational improvements
Tier 3: Public Transportation and multi-model improvements
Tier 4: ITS Strategies
Tier 5: Capacity expansion

2.4.1 | Congestion Strategy Recommendations

Implementation of CMP strategies occurs on three levels: system or regional, corridor, and project. Regional-level implementation of congestion management strategies occurs through inclusion of strategies in the fiscally constrained *Transportation Outlook 2050* and the *Transportation Improvement Program (TIP)*. At the corridor level, more specific strategies such as bicycle and pedestrian improvements and operational improvements can be assessed in studies and implemented using a variety of funding sources such as Surface Transportation Block Grant (STBG) program and Congestion Mitigation and Air Quality (CMAQ) program. Scoring systems could treat projects differently based on location or strategy type according to congestion levels, or community goals. For instance, more points might be allotted to projects in very congested locations, or, specifically to certain types of projects in the urban core than to projects in areas where further development is not desired.

2.4.2 | Implementation and Assessment

Evaluation of strategy effectiveness can be seen as either a sequential step within the CMP process or as an on-going process. This is an essential, required element of the CMP that is often overlooked. The primary goal of this action is to ensure that implemented strategies are effective at addressing congestion as intended, and to make changes based on the findings as necessary. Two general approaches are used for this type of analysis:

- System-level performance evaluation - Regional analysis of historical trends to identify improvement or degradation in system performance, in relation to objectives; and
- Strategy effectiveness evaluation - Project-level or program-level analysis of conditions before and after the implementation of a congestion mitigation effort

Findings that show improvement in congested conditions due to specific implemented strategies can be used to encourage further implementation of these strategies, while negative findings may be useful for discouraging similar strategies in similar situations.

3 | DEFINING CONGESTION

One of the critical and complex tasks of the CMP is to define congestion. Studies have shown that congestion is a relative rather than an absolute condition. People "feel" roads are congested at different levels of operations.

Technically, congestion occurs when the number of vehicles on a facility exceeds the maximum number of vehicles that a roadway or intersection can accommodate at that point in time, whether because of the physical limitations of the facility or because an event (such as rain) has temporarily hindered vehicular movement.

Traffic congestion is characterized by slower speeds, longer trip times, vehicular queueing, travel time uncertainty, and increased traffic collisions.

3.1 | Components of Congestion

While it is difficult to use a single value to describe all individuals' concerns about congestion, there are four components that interact in a congested roadway or system. These components vary among and within urban areas – smaller urban areas, for example, typically have shorter durations of congestion than larger areas.

- **Duration** – this is how much time congestion affects the travel system.
- **Extent** – this is an estimate of the number of people or vehicles affected by congestion, and by the geographic distribution of congestion.
- **Intensity** – this is the severity of the congestion that affects travel. It is typically used to differentiate between levels of congestion on transportation systems and to define the total amount of congestion.
- **Reliability** – this is the variation in the other three elements. Reliability is a measure of the extent to which the traveler's experience matches their expectation. The variable is the impact of non-recurrent congestion on the transportation system.

3.2 | Recurring and Non-Recurring Congestion

Research into travelers' views of congestion has shown that predictable travel times are a primary concern. Having reliable travel time is a crucial factor affecting traveler behaviors, including choices of route, departure time, and mode. One commonly accepted definition of travel time reliability, given by the Federal Highway Administration, states that "Drivers are used to congestion and they expect and plan for some delay, but most travelers are less tolerant of unexpected delays. Travel time reliability measures the extent of this unexpected delay." Travelers and firms may account for the variability in their trips and transport of goods by building in time buffers as insurance against late arrival. This implies that the consequences of late arrivals are costly. Congestion is broadly categorized as either recurring (predictable) or non-recurring (unpredictable) congestion. Congestion, both recurring and nonrecurring, varies significantly depending on the season, day of the week, and even time of day. Furthermore, both recurring and nonrecurring congestion may occur at the same time, exacerbating any event.

Recurring congestion is congestion that occurs repeatedly at predictable times and locations, e.g. at bottlenecks or on corridors with poorly coordinated traffic signals, usually during the peak hour periods. Simply put, recurring congestion occurs because travel demand exceeds system capacity. There are many strategies available to mitigate this type of congestion through demand management, operational improvements, and multimodal strategies. Integration of land-use and transportation decisions enables agencies to coordinate efforts to address this demand side of congestion. Elimination of all recurring congestion may not be either feasible (due to physical and financial constraints) or desirable (in terms of the implications to community of unfettered vehicular travel). Recurring congestion is generally considered the least frustrating because its effects are known and can be planned for.

In contrast, non-recurring congestion incidents can occur at any time, including during non-peak travel times, and are often associated with traffic crashes, weather events, special events, work zones, and emergencies. This is the congestion that most often frustrates people. It is especially bad when a non-recurring incident magnifies the magnitude and extent of congestion during "normal" recurring congestion. Nonrecurring congestion is difficult to address without proper prior planning. The sources of non-recurring congestion are broad:

- Roadway debris
- Roadway construction and maintenance work zones
- Inclement weather

- Disabled vehicles
- Law enforcement activities
- Traffic crashes
- Special events

3.2.1 | Congestion Caused by Trucks

Trucks are often slower to get moving; therefore, they can add to the length of congestion time. Once slowed down a truck will take longer to get started than a passenger car. Roadways with high volumes of truck traffic might be more congested than those that are almost exclusively passenger cars. It is very important to recognize corridors with high percentages of trucks when analyzing congestion. Truck freight movement is very important to keep the economy thriving.

3.2.2 | Congestion Caused by Railroad Grade Crossings

An at-grade crossing is where a railway and roadway intersect. The AMATS area has a number of at-grade crossings with significant train and vehicle volumes. This source of congestion is often overlooked when addressing congestion. When a passing train delays traffic on a busy roadway it creates a large platoon of vehicles that cause problems throughout the roadway network. Ideally, highway-rail grade crossings would be separated if feasible.

4 | METHODOLOGY AND ANALYSIS

4.1 | Roadway Methodology and Analysis

AMATS obtains traffic data through the collection of cell phone and other GPS device location data. Traffic data collected in this manner is done over a period of months or years and is more representative than data collected over one or two days. Once collected this data is aggregated and analyzed to provide transportation analysis.

AMATS uses two providers for data collection and analysis of roadway congestion. The Ohio Department of Transportation (ODOT) contracts with both INRIX and Streetlight and shares access to this data with Ohio's MPOs, like AMATS. Streetlight data is used to evaluate the major arterial and lower federal functionally classified roads. INRIX data is used to analyze the freeway system. INRIX data is not available on roadways outside of the National Highway System (NHS), however Streetlight data is available for the entirety of AMATS system. Both INRIX and Streetlight have full year data for 2022. Therefore, AMATS CMP analysis year is 2022.

The congestion analyses focused on three time periods:

- Morning from 6:00 AM to 10:00 AM
- Mid-day from 10:00 AM to 4:00 PM
- Evening from 4:00 PM to 8:00 PM

The daily AM peak and the PM peak were derived from the morning and evening time periods. Some areas that have a high concentration of restaurants and retail businesses may also have a mid-day peak and these were also considered. Only weekdays were used since this is when most recurring congestion occurs. The roadway network considered for the CMP analysis is made up of 1200 miles of Federal Functional Classified (FFC) roadways in the greater Akron area.

The following roadways were included in the network for the CMP analysis:

- All roadways included on the National Highway System
- All roadways classified as Principal Arterials in the Federal Functional Classification System
- Major intersections that experience high traffic volumes
- All roadways identified as potential congestion problems by the AMATS Policy Committee
- Other roadways to ensure a continuous CMP highway system

To determine congestion, AMATS used the formula of 1 minus average speed/free flow speed. The free flow and average speed data were compiled in 1-hour periods and averaged over the entire year of 2022. If an event such as an accident or construction activity slowed traffic just temporarily the other days would average out that event. If the segment congestion was equal or greater than 25 percent, it was considered congested and included with appropriate strategies in the recommendation section of the CMP.

Based on the methodology described above, AMATS completed a roadway analysis. A comprehensive listing of all freeway segments, arterial segments, and intersections analyzed is listed in Appendix A. All congested roadways are listed in the recommendations chapter sorted from most to least congested. Recommendations for improving these congested segments are in Chapter 8 of this report.

4.2 | Transit Methodology and Analysis

The greater Akron area is served by two transit agencies, METRO RTA in Summit County and PARTA in Portage County. Transit can be a key component to reducing roadway congestion. It can be an effective strategy to reduce travel demand on roadways. Improving transit operations, improving access to transit, and expanding transit service can help reduce the number of vehicles on the road by making transit more attractive and accessible.

While transit congestion (passenger overcrowding) is not a general system-wide issue in the greater Akron area, on time performance and reliability are critical for an effective transit service. Transit on-time performance is affected by congestion on the roadway as well as passenger loading and unloading and payment to fare boxes. Congested transit routes can lead to poor on time performance and unreliability of the transit network. This is an issue to those who rely on transit, especially vulnerable populations such as individuals and families living in poverty, older adults, and the disabled. When transit is efficient and reliable, it can provide an effective alternative to single occupancy vehicle travel and help reduce traffic congestion. The information gathered below is to examine the performance of the transit fixed route system lists 2023 ridership, current levels of headway timing, on-time performance (OTP), number of vehicles on each route during peak service hours and a list of the top ten most used bus stop locations for METRO and PARTA. We have two different groupings of bus stop locations for PARTA as their service greatly differs when Kent State University is in session during the winter, spring and fall months.

4.2.1 | Transit Route Performance

Table 4-1 | PARTA Route Performance

ROUTE	2023 RIDERSHIP	HEADWAY AM/PM	HEADWAY SATURDAY	OTP AVG.	PEAK VEHICLES
30 - Interurban West	77,195	30 min.	140 min.	82%	2
35 - Interurban East	138,096	30 min.	140 min.	68%	3
40 - Suburban North	23,425	45 min.	70 min.	77%	1
45 - Suburban South	19,260	45 min.	70 min.	86%	1
46 - Downtowner (Thur-Sat)	922	30 min.	30 min.	52%	1
51 - Campus Loop	165,657	14 min.	n/a	48%	2
55 - Allerton	56,245	11 min.	n/a	61%	1
57 - Stadium Loop	33,725	30 min.	30 min.	56%	1
58 - Summit East	288,338	9 min.	n/a	58%	4
59 - Night Shuttle	23,892	30 min.	30 min.	35%	1
70 - Windham / Garrettsville	5,095	105 min.	n/a	77%	1
80 - Raven West / 85 - Raven East	9,613	180 min.	n/a	77%	2
90 Akron Express	14,589	105 min. (average)	n/a	67%	1
100 - Cleveland Express	2,743	2 times per day	n/a	71%	1
Total	**858,795**	**52 min.**	**72 min.**	**65%**	**22**

Table 4-2 | METRO Route Performance					
ROUTE	2023 RIDERSHIP	HEADWAY AM/PM	HEADWAY AFTER 7PM	OTP AVG.	PEAK VEHICLES
1 - West Market	530,829	15 min.	30 min.	81%	12
2 - Arlington	538,347	15 min.	30 min.	81%	8
3 - Copley Road / Hawkins	300,580	30 min.	60 min.	79%	9
6 - East Exchange / Canton	205,227	30 min.	60 min.	82%	6
8 - Kenmore / Barberton	250,958	30 min.	60 min.	84%	5
9 - Vernon Odom Blvd	106,106	60 min.	60 min.	82%	3
10 - Howard / Portage	239,221	30 min.	60 min.	82%	5
13 - Grant / Firestone	171,658	15 min.	30 min.	86%	16
15 - Brown / Inman	78,762	30 min.	60 min.	84%	5
16 - Euclid / V. Odom	95,022	15 min.	30 min.	83%	8
19 - Eastland	137,141	30 min.	60 min.	83%	2
20 - Tallmadge / Brimfield	60,807	60 min.	60 min.	82%	1
22 - Howe / Stow-Kent	76,000	60 min.	60 min.	80%	2
23 - Goodyear Heights	60,180	60 min.	60 min.	83%	1
25 - Kelly / Triplett	36,648	60 min.	60 min.	82%	2
26 - W Exchange / Delia	65,444	60 min.	60 min.	86%	3
27 - W Exchange / Merriman	50,238	60 min.	60 min.	82%	2
29 - S Main / Manchester	62,374	60 min.	60 min.	82%	2
31 - C Falls / Macedonia	65,112	60 min.	60 min.	77%	2
32 - Hudson	66,113	60 min.	60 min.	78%	2
40 - Manchester / Thornton	25,469	60 min.	60 min.	91%	1
55 - UAkron	10,471	15 min.	20 min.	69%	3
61 - North Coast Express	22,714	5 Trips	5 Trips	63%	3
Zone Bus	9,261	n/a	n/a	n/a	0
300 - Grocery	2,743	n/a	n/a	n/a	0
Total	**3,266,848**	**42 min.**	**53 min.**	**81%**	**103**

4.2.2 | Bus Stop Usage

Table 4-3 | PARTA's Most Used Bus Stop Locations Spring 2024

BUS STOP #	LOCATION	# ROUTE(S)
962	KENT Central Gateway	Multiple Routes
496	KSU Student Center	Multiple Routes
521	KSU Summit East	#57, #58
478	Ravenna Walmart	#35
523	Dix Stadium	#57, #58, #59
497	KSU Bowman Hall	#51, #57, #58
502	Moulton Hall	#35, #40, #51, #57
594	SR59 & PMHA West Bound	#35
425	Main & Parkway West Bound	#35, #80
190	UH Portage Medical Center	#35, #70, #80, #85

Table 4-4 | PARTA's Most Used Bus Stop Locations Summer 2024

BUS STOP #	LOCATION	# ROUTE(S)
962	KENT Central Gateway	Multiple Routes
954	SR 59 & PMHA West Bound	#35
622	Stow Target	#30
752	Main & Holly Park East Bound	#35, #40
425	Main & Parkway West Bound	#35, #80
478	Ravenna Walmart	#35
190	UH Portage Medical Center	#35, #70, #80, #85
654	SR 59 & PMHA East Bound	#35
519	Summit & Whitehall Terrace West Bound	#57, #58, #59
644	Main & Sycamore West Bound	#35, #80

Table 4-5 | METRO's Most Used Bus Stop Locations Summer 2024

BUS STOP #	LOCATION & ROUTE #	# OF PASSENGERS
1315	Waterloo Rd @ Giant Eagle - #13 & #15	11,461
186	S. Arlington St & Walmart - #2	10,638
15	S. Main St @ Main Library - #1 & #10	7,449
4002	Southgate Transit Center - #31 & #32	6,688
723	2nd St NW & W. Tuscarawas Ave - #3 & #8	6,442
23	W. Market @ Acme - #1	6,045
417	E. Market & Buchtel - #2	5,792
2689	Rothrock Rd & Montrose - #1	5,277
409	E. Market St @ City Hospital - #2	5,084
119	South Arlington & E. Exchange - #2	4,947

4.3 | Freight Methodology and Analysis

While congestion can be an inconvenience to the motoring public, it can also impact the local, regional and even national economy. The efficient movement of freight within and through a region is critically important to industry, retail commerce, agriculture, international trade and terminal operators. Metropolitan areas with air cargo airports, freight yards, trucking terminals, and shipping facilities, are especially affected by freight movement issues. Freight congestion can include delays at airports, water ports, rail facilities, and on highways. The CMP focuses on highway-based freight congestion and rail conflicts.

The AMATS Freight Report offers a detailed account of freight planning in the AMATS region. It was completed in September of 2024. The AMATS Freight Plan focuses on freight transportation concerns around regional job hubs. Job hubs are specific places of concentrated economic activity in a region. They are defined and identified based on the extent to which they exhibit the following four characteristics:

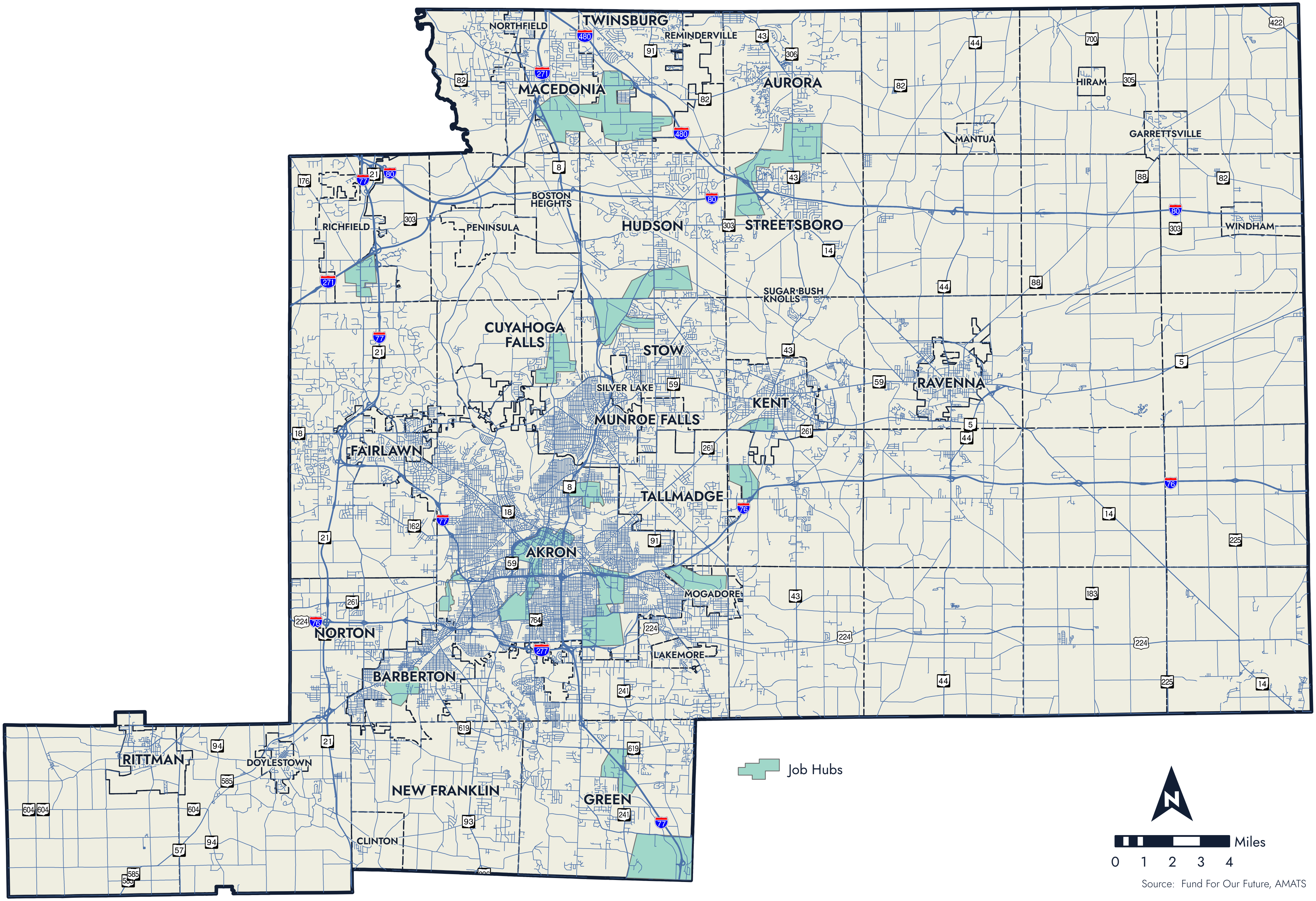
- A high concentration of traded sector jobs
- Multiple traded sector employers
- Alignment with local development patterns
- Alignment with civic priorities and economic development opportunities

The AMATS job hubs are distributed throughout the region and can be viewed on Map 4-1 on page 14

4.3.1 | Trucks

Freight movement, by way of trucks, is heavily concentrated on freeways and major state routes. In its 2024 Freight Plan, AMATS analyzed truck freight as it relates to key job hubs in the greater Akron area. AMATS overlayed the identified congested freeway and arterial segments to identify locations where congestion may have an impact on freight operations. The results are shown in Table 4-6 on page 16 and Map 4-2 on page 15.

Map 4-1 | AMATS Job Hubs



Source: Fund For Our Future, AMATS

Map 4-2 | Congestion in Relation to AMATS Job Hubs

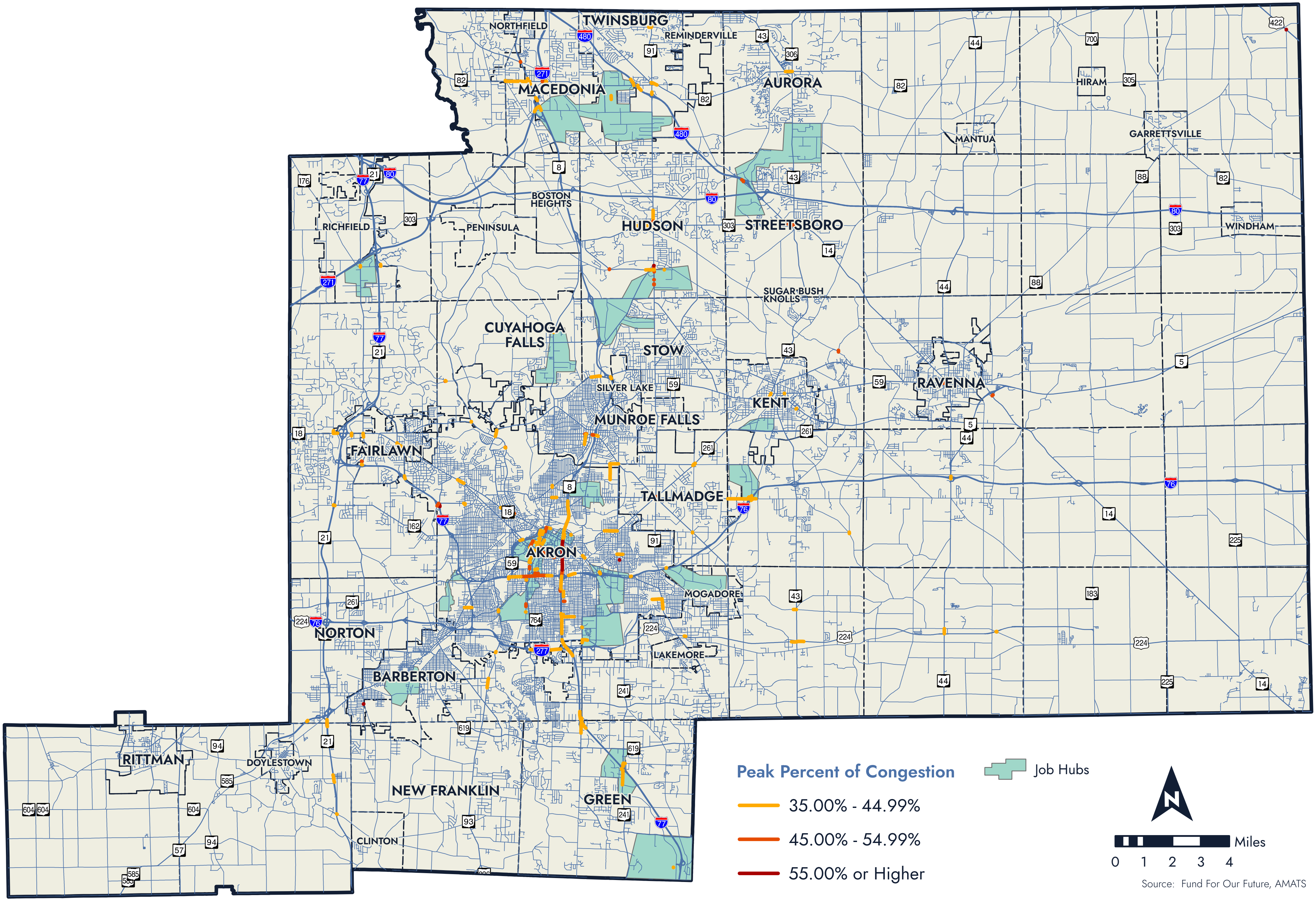


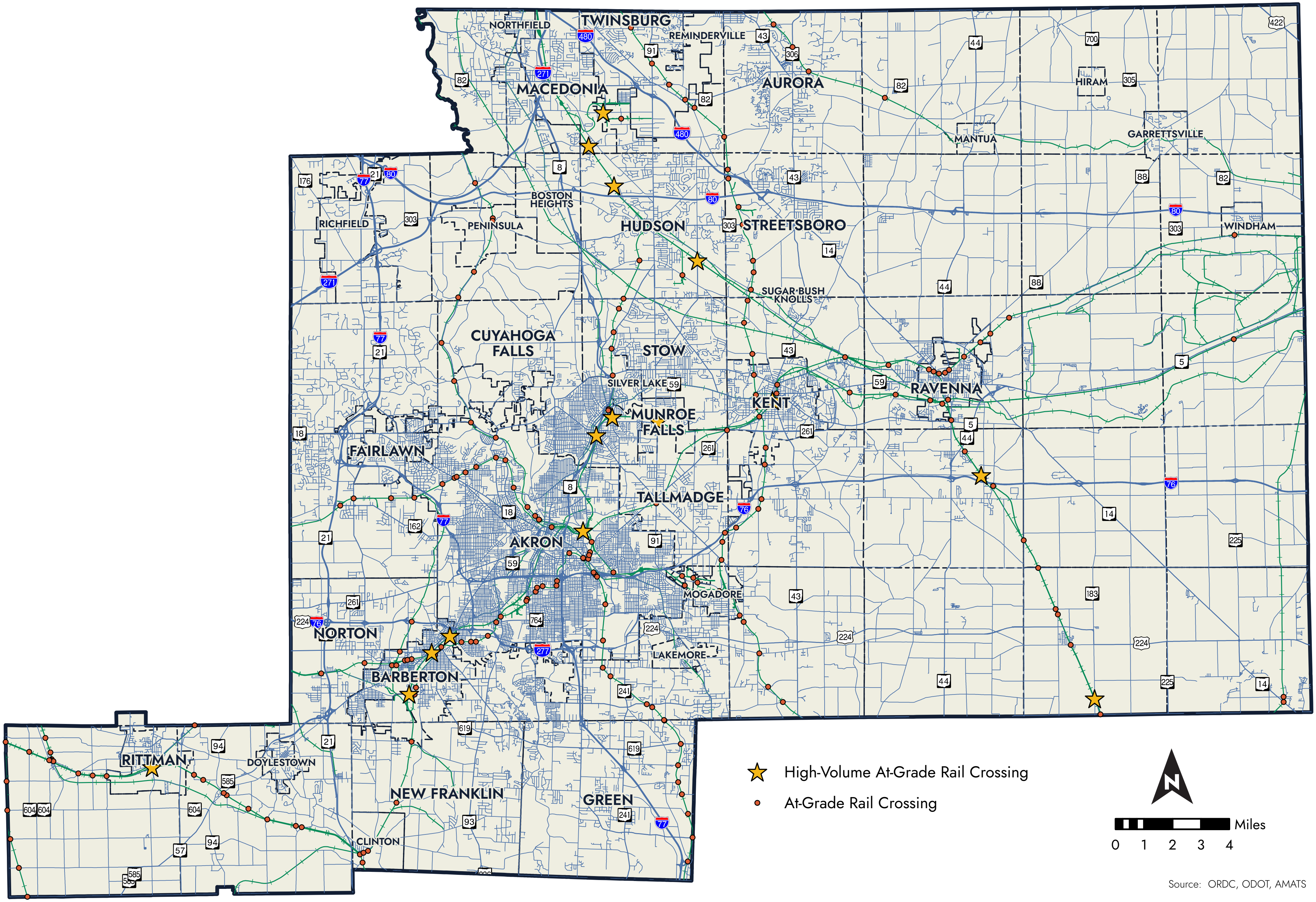
Table 4-6 | Congested Locations Around Job Hubs							
JOB HUB	LOCATION	NAME	MILES	PEAK PERIOD	TYPE	DIRECTION	% FREE FLOW
Downtown Akron	Akron	Arc Dr from Wolf Ledges Pkwy to E Exchange St	0.349	Peak AM / Mid-Day	Arterial	EB	50.18
Downtown Akron	Akron	W Bowery St from W Exchange St to W State St	0.177	Peak AM	Arterial	NB	51.19
Downtown Akron	Akron	S Main St from North of St. Mary's School to W Thornton St	0.079	Mid-Day	Arterial	SB	53.36
Green	Green	Massillon Rd (SR 241) from 0.068 Miles North of I-77 N Ramps to I-77 N Ramps	0.068	Peak PM	Arterial	SB	58.42
Green	Green	Massillon Rd (SR 241) from Boettler Rd to 0.03 Miles South of Sandy Knoll Dr	0.224	Mid-Day / Peak PM	Arterial	NB / SB	59.07
Green	Green	Massillon Rd (SR 241) from Graybill Rd to Boettler Rd	0.248	Mid-Day	Arterial	NB / SB	61.76
East Akron / Airport	Akron	Innovation Way (SR 241) from 3rd Ave to E Market St (SR 18)	0.067	Peak AM	Arterial	NB / SB	62.52
East Akron / Airport	Akron	E Waterloo Rd from 0.11 Miles East of Exeter Rd Merge to S Arlington St	0.178	Mid-Day	Arterial	WB	63.70
East Akron / Airport	Akron	S Arlington St from Arlington Circle to E Waterloo Rd	0.097	Mid-Day / Peak PM	Arterial	NB	64.10
Richfield	Richfield	Brecksville Rd from Broadview Rd / Wheatley Rd (SR 176) to 0.047 Miles North of SR 176	0.047	Peak PM	Arterial	NB / SB	64.99
Hudson / Stow	Hudson	Darrow Rd (SR 91) from 0.064 Miles South of Terex Rd to Terex Rd	0.064	Peak AM / Mid-Day	Arterial	NB	60.22

4.3.2 | Rail

There are approximately 393 at-grade crossings in the AMATS area (many are on abandoned or out of service rail lines). High volume crossings are prioritized by scoring the number of trains per day and the average daily traffic volume (ADT). Table 4-7 below lists locations that have scores greater than 100. The number of trains per day varies from year to year depending on the count locations provided by ORDC and PUCO. Ideally, highway-rail grade crossings would be separated if feasible. Grade separation projects eliminate safety and delay concerns by redirecting the vehicle, pedestrian and bicycle traffic above or below the railroad tracks. Construction of overpasses and underpasses are very costly, and not always feasible due to geographic configuration.

Table 4-7 | High-Volume At-Grade Rail Crossings

RANK	STREET	TRAINS PER DAY	VEHICLE ADT	SCORE
1	Stow Rd (Hudson)	45	10,257	462
2	N Main St (Munroe Falls)	27	15,580	421
3	Broad Blvd (Cuyahoga Falls)	32	12,872	412
3	Twinsburg Rd (Macedonia)	74	5,573	412
5	Bailey Rd (Cuyahoga Falls)	27	12,716	343
6	Hines Hill Rd (Hudson)	62	4,035	250
7	Summit St (Kent)	27	8,304	224
8	Fairview Ave (Barberton)	38	5,211	198
9	Snyder Ave (Barberton)	32	5,395	173
10	W Waterloo Rd (Barberton)	31	5,558	172
11	SR 183 (Atwater Twp)	45	3,800	171
12	N Arlington St (Akron)	27	5,838	158
13	Lynn Rd (Rootstown Twp)	62	2,328	144
14	E Highland Rd (Twinsburg Twp)	10	10,799	108
15	S Main St (Rittman)	27	3,851	104



Source: ORDC, ODOT, AMATS

5 | INCIDENT-RELATED CONGESTION

Incident-related traffic congestion is congestion that occurs due to a non-recurring incident. In most cases, this incident is a traffic crash. While crashes can happen anywhere at any time, some locations are more prone to crashes than others. Locations with both frequent crashes and recurrent congestion will be significantly more congested. Effective transportation planning requires that incident-related congestion be analyzed.

In order to analyze incident-related traffic congestion, traffic crash data must be reviewed. AMATS publishes an annual report detailing traffic crashes in our region; the latest version being published in January 2024. Traffic Crashes 2020-2022 analyzed traffic crashes for arterials and intersections between 2020 and 2022, utilizing crash records provided by the Ohio Department of Public Safety (ODPS) and the Ohio Department of Transportation (ODOT) for the years 2020, 2021 and 2022.

5.1 | Freeways

The analysis of freeway crashes in the AMATS area is done by the central office of the Ohio Department of Transportation (ODOT) in Columbus. ODOT's analysis of freeways is done using their own methodology which is derived from the Highway Safety Manual. The freeway system is divided into *rural* and *urban* and is analyzed by examining segments that are one-tenth of a mile long.

In an effort to make data-driven decisions and determine operationally sensitive corridors throughout the state, ODOT has developed the Traffic Operations Assessment Systems Tool (TOAST). In TOAST routes are segmented into the State Priority System with breaks at the urban area boundaries, interchange center points, and road functional class changes. Multiple data categories make up TOAST. For each category, data ranges were normalized into values of 0-10, then multiplied by a weighting factor. The total score for a route is calculated as a percent based on the score for each category divided by the total possible maximum score. In general, the higher the percent, the better the route is performing; whereas, the lower the percent, the more likely a route is to benefit from improvements. The data categories that make up TOAST are listed below:

- **Travel Time Performance -** Percent of time motorists can travel at or near (90%) of the reference speed (free-flow speed defined by data provider).
- **Bottlenecks -** A potential bottleneck is detected when speeds on a segment drop to 65% of reference speeds and cause at least a two-minute delay.
- **Incident Clearance -** The time from report of an incident until the entire scene is cleared.
- **Secondary Crashes -** Percent of crashes that occurred as a result of a previous incident.
- **Volume Per Lane -** Calculated based on a weighted average for each segment.
- **Freight Corridors -** Weighted average of percent trucks (average daily truck volume ÷ average daily total volume).
- **Safety Performance -** A route's potential for safety improvement by density based on its peer group.

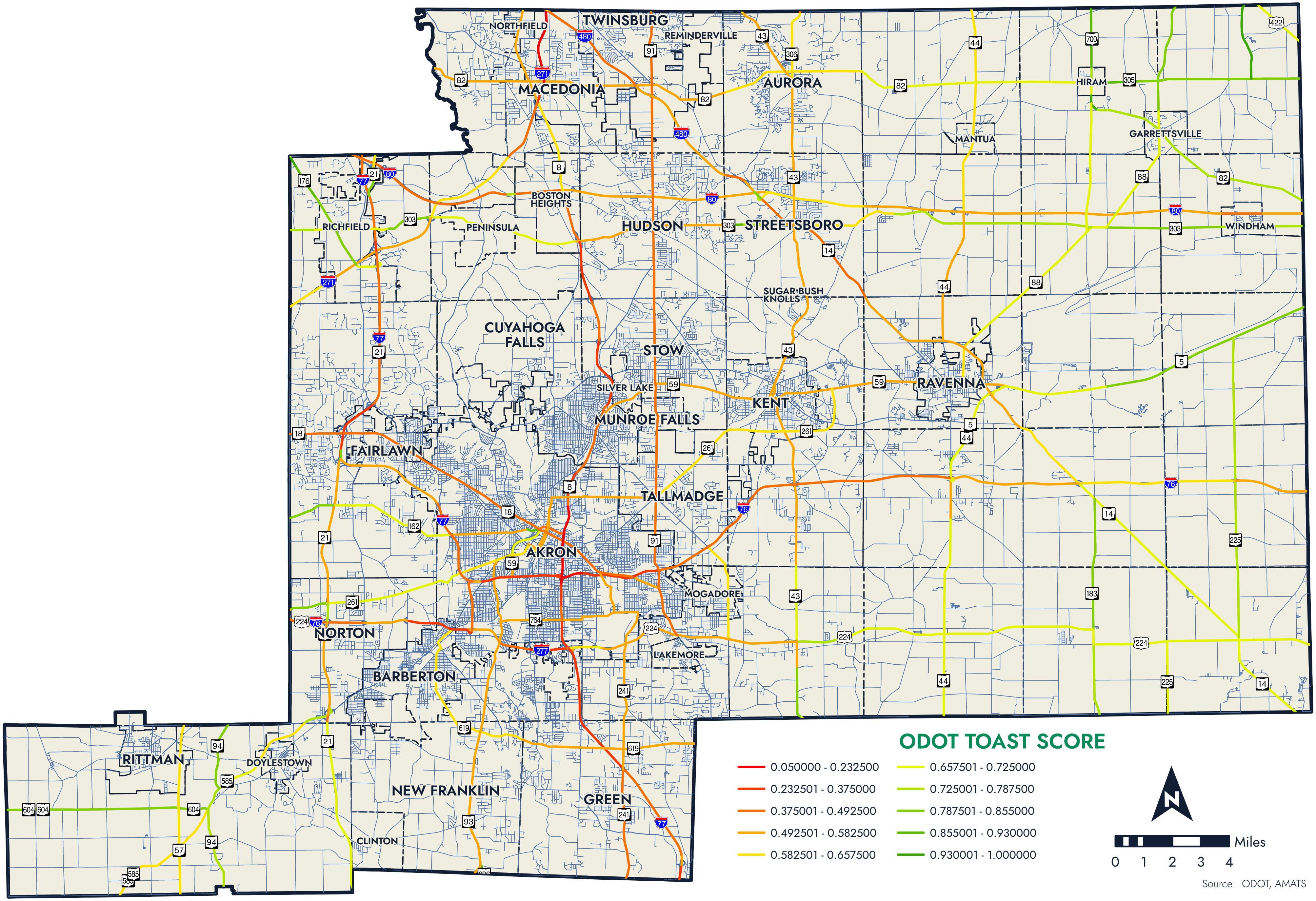
TOAST scores for calculated routes within the AMATS area are shown on Map 5-1 (page 20).

5.2 | Arterials

Areas of incident-related congestion are determined based on a composite score which considers both number of crashes and their severity to determine locations where incident-related congestion is most likely to occur. For a complete description of how the composite score is determined, please review the methodology in the AMATS *Traffic Crashes 2020-2022* report. Table 5-1 (page 22) and Map 5-2 (page 21) display the top 50 arterial locations.

5.3 | Intersections

Similar to arterial segments, areas of incident-related intersection congestion are determined based on composite score. The top 50 high crash intersections are listed on Table 5-2 (page 27), and displayed on Map 5-3 (page 26).


TWINSBURG
NORTHFIELD
REMINDERVILLE
MACEDONIA
AURORA
HIRAM
MANTUA
GARRETTSVILLE
BOSTON HEIGHTS
RICHFIELD
PENINSULA
HUDSON
STREETSBORO
WINDHAM
SUGAR BUSH KNOLLS
CUYAHOGA FALLS
STOW
SILVER LAKE
MUNROE FALLS
KENT
RAVENNA
FAIRLAWN
TALLMADGE
AKRON
MOGADORE
NORTON
LAKEMORE
BARBERTON
RITTMAN
DOYLESTOWN
NEW FRANKLIN
GREEN
CLINTON
ODOT TOAST SCORE
0.050000 - 0.232500
0.232501 - 0.375000
0.375001 - 0.492500
0.492501 - 0.582500
0.582501 - 0.657500
0.657501 - 0.725000
0.725001 - 0.787500
0.787501 - 0.855000
0.855001 - 0.930000
0.930001 - 1.000000
N
Miles
0 1 2 3 4
Source: ODOT, AMATS

Map 5-2 | Top 50 High Crash Road Sections

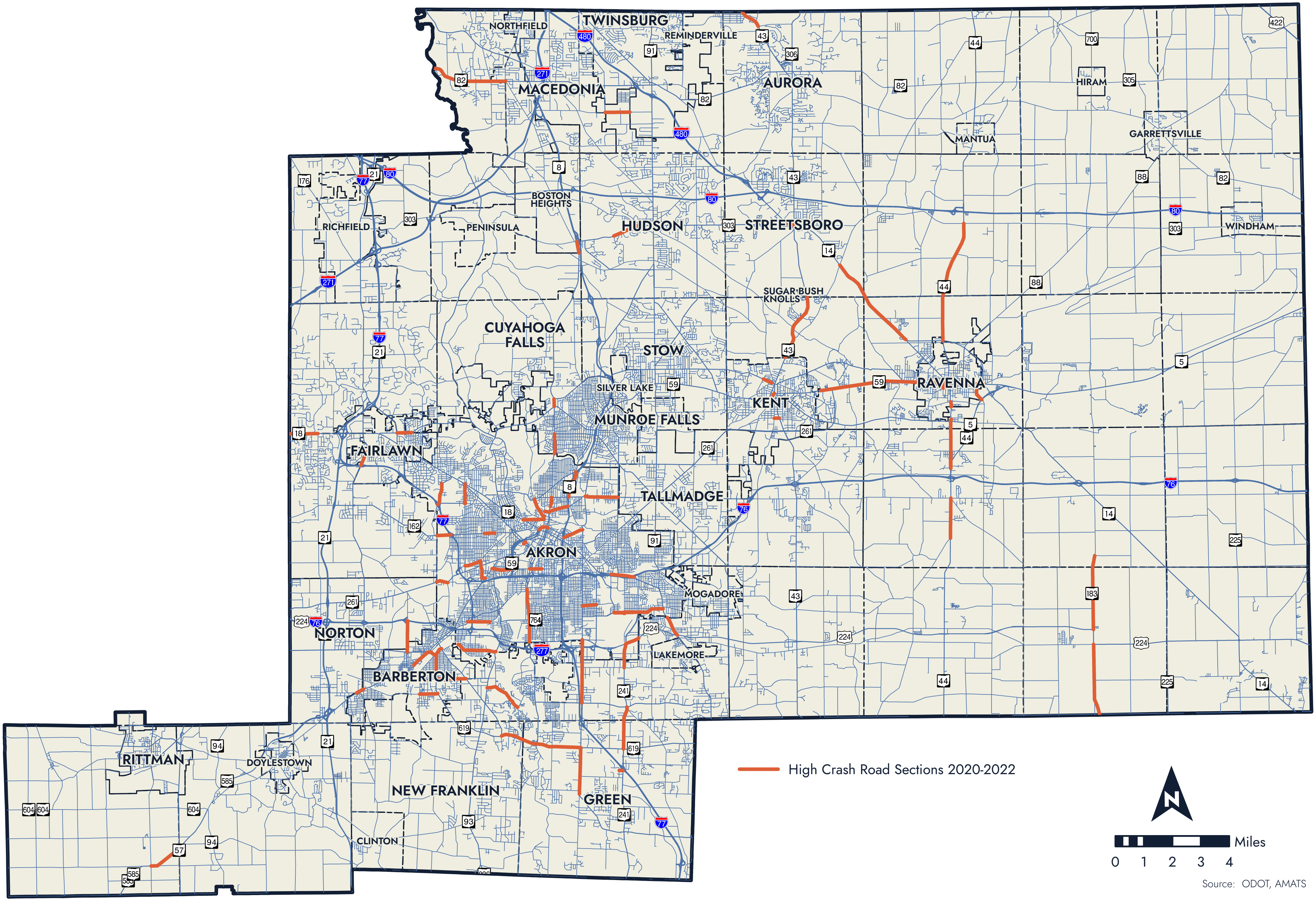


Table 5-1 | Top 50 High Crash Road Sections												
Ranked by Score Based on Number of Crashes and Percent of Fatal and Injury Crashes 2020-2022												
OVERALL RANK	ROADWAY SECTION	LENGTH (MILES)	TOTAL CRASHES	CRASHES PER MILE PER YEAR	CRASHES PER MILE PER YEAR RANK	FATAL & INJURY PERCENT	FATAL & INJURY RANK	TOTAL RANK SCORE	BIKE RELATED	PED RELATED	SS4A HIN	LOCATION
1	SR 59 from Alpha Dr to SR 261	0.41	15	12.20	21	0.600	3	24	0	0	No	Franklin Twp
2	Massillon Rd (SR241) from Krumroy Rd (CR 130) to Oakes Dr / Akron SCL	0.29	11	12.64	20	0.545	12	32	0	0	No	Springfield Twp
3	M.L. King Blvd (SR 59) from W Market St Overpass to N Broadway St	0.18	21	38.89	2	0.429	40	42	0	0	Yes	Akron
4	Copley Rd (SR 162) from Storer Ave to East Ave	0.36	29	26.85	5	0.414	47	52	1	0	Yes	Akron
5	Vernon Odom Blvd (SR 261) from Collier Rd / Akron Corp Line to Romig Rd	0.36	8	7.41	46	0.500	15	61	0	2	No	Akron
6	E Main St (SR 59) from Freedom St (SR 88) to SR 14/SR 44	0.75	44	19.56	8	0.386	59	67	0	0	No	Ravenna / Ravenna Twp
7	Copley Rd (SR 162) from Collier Rd to St Micheals	0.50	9	6.00	59	0.556	9	68	0	0	No	Akron / Copley Twp
8	Norton Ave/Fairview Ave from Wooster Rd N to 5th St NE (SR 619)	0.33	6	6.06	57	0.500	15	72	0	0	No	Barberton
8	E Turkeyfoot Lake Rd (SR 619) from S Main St to Arlington Rd	1.56	37	7.91	42	0.486	30	72	0	0	No	Green
10	State Rd from Cuyahoga Falls Corp Line to Broad Blvd	0.66	37	18.69	9	0.378	64	73	0	0	No	Cuyahoga Falls
11	Wooster Rd W from Johnson Rd to 31st St	0.29	7	8.05	40	0.429	40	80	0	0	No	Norton / Barberton
12	E Glenwood Ave from Howard St to SR 8	0.84	22	8.73	32	0.409	49	81	0	0	No	Akron
13	Massillon Rd/Geo Washington (SR 241) from Oaks Dr/Akron Corp Line to E Waterloo Rd (US 224)	0.55	18	10.91	24	0.389	58	82	0	0	No	Akron
13	Arlington Rd from Greensburg Rd to Turkeyfoot Lake Rd (SR 619)	1.68	35	6.94	48	0.457	34	82	0	0	No	Green
15	SR 43 from Kent North Corp Line to Streetsboro South Corp Line	2.40	61	8.47	38	0.410	48	86	0	0	Yes	Franklin Twp

Table 5-1 | Top 50 High Crash Road Sections

Ranked by Score Based on Number of Crashes and Percent of Fatal and Injury Crashes
2020-2022

OVERALL RANK	ROADWAY SECTION	LENGTH (MILES)	TOTAL CRASHES	CRASHES PER MILE PER YEAR	CRASHES PER MILE PER YEAR RANK	FATAL & INJURY PERCENT	FATAL & INJURY RANK	TOTAL RANK SCORE	BIKE RELATED	PED RELATED	SS4A HIN	LOCATION
16	E Thornton St from S Main St to Grant St	0.42	13	10.32	27	0.385	60	87	0	0	No	Akron
16	N Forge St from Fountain St to N Arlington St	0.70	13	6.19	54	0.462	33	87	0	0	No	Akron
18	Diagonal Rd from S Hawkins Ave to Superior Ave	0.59	11	6.21	53	0.455	35	88	0	0	No	Akron
18	Robinson Ave from 5th St (SR 619) to State St	1.05	28	8.89	31	0.393	57	88	0	0	No	Barberton
20	S Cleveland-Massillon Rd from I-77 to Rosemont Blvd/Elgin Dr	0.53	22	13.84	16	0.364	74	90	0	0	No	Copley Twp / Fairlawn
21	E Waterloo Rd (US 224) from Geo Washington Blvd (SR 241) to Akron Corp Line	0.51	16	10.46	26	0.375	65	91	0	0	No	Akron
22	Sandy Knoll Dr from Corporate Woods Pkwy to Massillon Rd (SR 241)	0.13	2	5.13	78	0.500	15	93	0	0	No	Green
22	W Turkeyfoot Lake Rd (SR 619) from Green West Corp Line to S Main St	0.50	13	8.67	33	0.385	60	93	0	1	No	Green
24	N Main St (SR 261) from Olive St (W) to E Tallmadge Ave	0.32	14	14.58	12	0.357	82	94	0	0	No	Akron
25	Snyder Ave from Van Buren Ave to 5th St SE	0.65	9	4.62	86	0.556	9	95	0	0	No	Barberton
25	Wooster Rd N from Hopocan Ave to Norton Ave	0.67	15	7.46	45	0.400	50	95	0	0	No	Barberton
27	New Milford Rd from SR 5/SR 44 to Ravenna South Corp Line	0.41	6	4.88	81	0.500	15	96	0	0	No	Ravenna / Ravenna Twp
28	Akron-Cleveland Rd from Boston Heights SCL to Streetsboro Rd (SR303)	0.40	5	4.17	95	0.600	3	98	1	0	No	Boston Heights
28	SR 59 from Brady Lake Rd (CR 162) to Ravenna West Corp Line	0.45	20	14.81	10	0.350	88	98	0	0	No	Ravenna Twp
30	Triplett Blvd from Hilbish Ave to Canton Rd (SR 91)	0.92	15	5.43	69	0.467	32	101	0	0	No	Akron
31	Canton Rd (SR 91) from Waterloo Rd (US224) to Akron SCL	0.72	22	10.19	28	0.364	74	102	0	2	Yes	Akron / Springfield Twp

Table 5-1 | Top 50 High Crash Road Sections												
Ranked by Score Based on Number of Crashes and Percent of Fatal and Injury Crashes 2020-2022												
OVERALL RANK	ROADWAY SECTION	LENGTH (MILES)	TOTAL CRASHES	CRASHES PER MILE PER YEAR	CRASHES PER MILE PER YEAR RANK	FATAL & INJURY PERCENT	FATAL & INJURY RANK	TOTAL RANK SCORE	BIKE RELATED	PED RELATED	SS4A HIN	LOCATION
31	SR 14 from Diagonal Rd to Streetsboro East Corp Line	1.30	25	6.41	52	0.400	50	102	0	0	Yes	Streetsboro
33	W Turkeyfoot Lake Rd (SR 619) from State St to New Franklin East Corp Line	0.81	15	6.17	55	0.400	50	105	0	0	No	New Franklin
34	Wabash Ave from W Cedar St to W Exchange St	0.09	1	3.70	107	1.000	1	108	0	0	No	Akron
34	Carnegie Ave from Sarlson Ave to Manchester Rd (SR 93)	1.41	18	4.26	93	0.500	15	108	0	0	No	Akron
34	Russell Ave/Superior Ave from East Ave to Diagonal Rd	0.74	19	8.56	36	0.368	72	108	0	0	No	Akron
34	Arlington Rd (CR 15) from Killian Rd (CR135) to Bruce Rd/Akron SCL	1.51	66	14.57	13	0.333	95	108	1	1	Yes	Coventry / Springfield Twp
38	W Thornton St from East Ave to Rhodes Ave	0.70	11	5.24	74	0.455	35	109	0	1	No	Akron
39	Prospect St (CR 74) from SR 5/44 to Hayes Rd (CR 138)	1.70	30	5.88	61	0.400	50	111	0	1	Yes	Rootstown / Ravenna Twp
40	W Main St (SR 59) from Diamond St to Sycamore St	0.37	15	13.51	18	0.333	95	113	0	0	No	Ravenna
41	W Streetsboro St (SR 303) from Nicholson Dr to Boston Mills Rd	0.79	16	6.75	51	0.375	65	116	0	0	No	Hudson
42	W Wilbeth Rd from Kenmore Blvd to Maryland Ave	0.77	11	4.76	82	0.455	35	117	0	0	No	Akron
42	Fairchild Ave from Majors Lane to Hudson Rd	0.33	12	12.12	22	0.333	95	117	0	0	No	Kent
44	Medina Rd (SR 18) from Medina Line Rd (CR 2) to S Hametown Rd (CR253)	1.00	29	9.67	29	0.345	92	121	0	0	No	Copley / Bath Twp
45	SR 44 from Hartville Rd (CR 69) to Tallmadge Rd (CR 18)	1.42	15	3.52	119	0.600	3	122	0	0	No	Rootstown Twp
45	Sycamore St from W Main St (SR 59) to Highland Ave	0.18	2	3.70	107	0.500	15	122	0	0	No	Ravenna
45	Sycamore St from Riddle Ave to W Main St (SR 59)	0.18	2	3.70	107	0.500	15	122	0	0	No	Ravenna

Table 5-1 | Top 50 High Crash Road Sections												
Ranked by Score Based on Number of Crashes and Percent of Fatal and Injury Crashes 2020-2022												
OVERALL RANK	ROADWAY SECTION	LENGTH (MILES)	TOTAL CRASHES	CRASHES PER MILE PER YEAR	CRASHES PER MILE PER YEAR RANK	FATAL & INJURY PERCENT	FATAL & INJURY RANK	TOTAL RANK SCORE	BIKE RELATED	PED RELATED	SS4A HIN	LOCATION
45	S Main St from Waterloo Rd to Wilbeth Rd (SR 764)	0.77	20	8.66	34	0.350	88	122	0	0	No	Akron
45	SR 14 from SR 303 (W) to SR 303 (E)	0.33	56	56.57	1	0.321	121	122	0	0	No	Streetsboro
50	Smith Rd from Ghent Rd to Owosso Ave	0.53	11	6.92	49	0.364	74	123	0	0	No	Akron / Bath Twp / Fairlawn

Map 5-3 | Top 50 High Crash Intersections

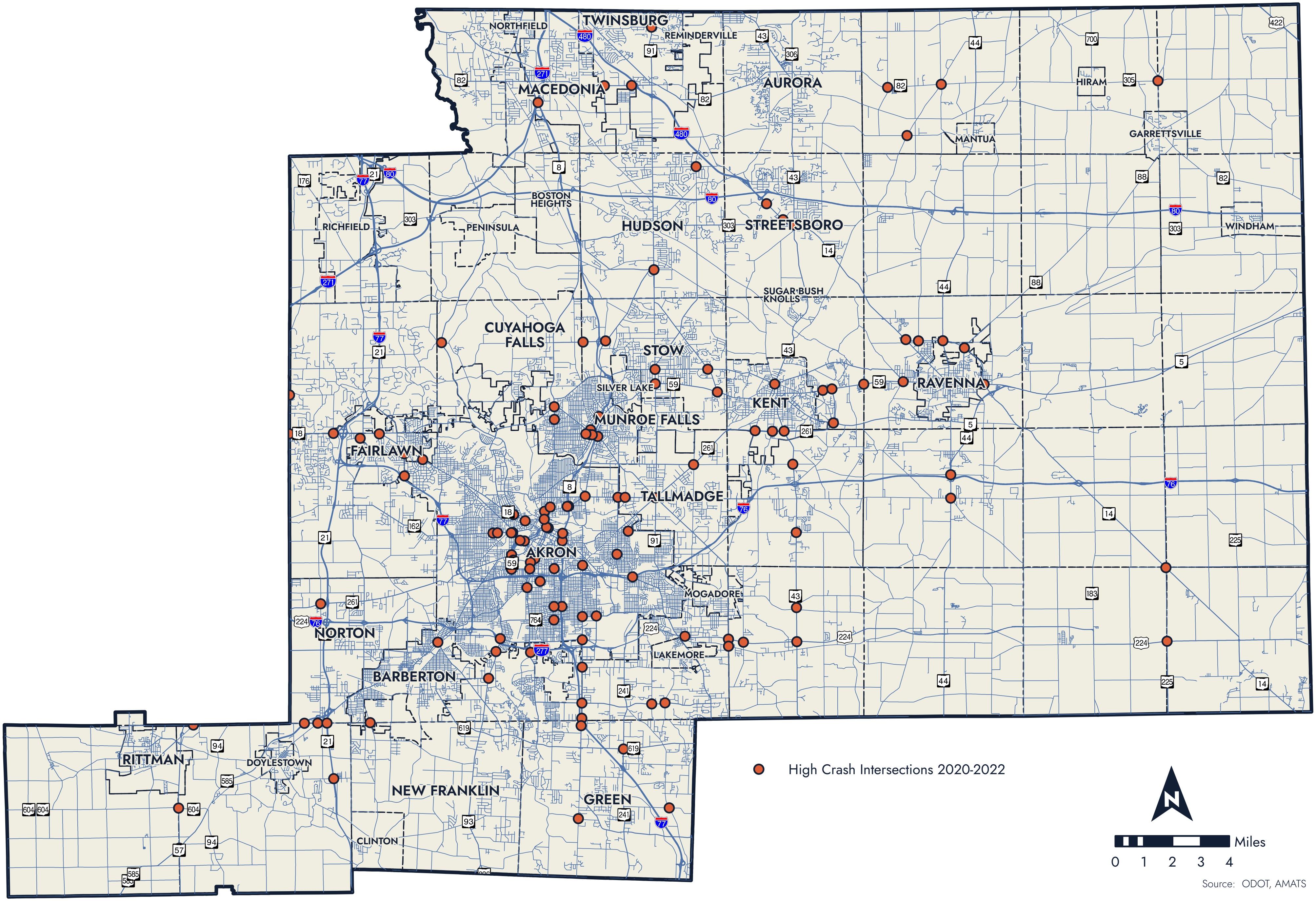


Table 5-2 | Top 50 High Crash Intersections										
Ranked by Score Based on Number of Crashes and Percent of Fatal and Injury Crashes 2020-2022										
OVERALL RANK	STREET AND INTERSECTING STREET	TOTAL CRASHES	TOTAL CRASHES RANK	FATAL & INJURY PERCENT	FATAL & INJURY RANK	TOTAL RANK SCORE	BIKE RELATED	PED RELATED	SS4A HIN	LOCATION
1	SR 14 and SR 44 / N Chestnut St	37	8	0.568	25	33	0	1	Yes	Ravenna Twp / Ravenna
2	Riverview Rd and Ira Rd	20	48	0.650	14	62	1	0	No	Cuyahoga Falls
3	Medina Rd (SR 18) and Medina Line Rd	26	27	0.500	36	63	0	0	Yes	Bath Twp / Copley Twp
3	N Howard St and Glenwood Ave	23	37	0.565	26	63	1	0	Yes	Akron
5	S Broadway St and Rosa Parks Dr	24	35	0.500	36	71	0	0	Yes	Akron
6	S High St and Bartges St	25	32	0.480	48	80	0	0	No	Akron
7	Wadsworth Rd (SR 57) and Easton Rd (SR 604)	15	80	0.800	3	83	0	0	No	Chippewa Twp / Milton Twp
8	SR 261 and Mogadore Rd	20	48	0.500	36	84	0	0	No	Kent
8	Cleveland Massillon Rd and Eastern Rd	20	48	0.500	36	84	0	0	No	Norton / New Franklin
10	US 224 and SR 225	23	37	0.478	49	86	0	0	No	Atwater Twp / Deerfield Twp
11	SR 14 and Alliance Rd	15	80	0.667	7	87	0	0	No	Atwater Twp / Deerfield Twp
11	Bartges St and Dart Ave	15	80	0.667	7	87	0	0	No	Akron
13	SR 59 and SR 261	24	35	0.458	55	90	0	0	No	Franklin Twp
14	S Arlington Rd and Chenoweth Rd / I-77 NB On-ramp	22	39	0.455	56	95	0	0	No	Coventry Twp / Springfield Twp
15	SR 261 and Summit Rd	18	63	0.500	36	99	0	1	No	Franklin Twp
15	SR 21 and Eastern Rd	18	63	0.500	36	99	0	1	Yes	Chippewa Twp / Norton
17	Perkins St (SR 59) and SR 8 SB Ramps / Goodkirk St	37	8	0.405	96	104	0	1	No	Akron
18	Brown St and Archwood Ave	19	57	0.474	50	107	0	0	Yes	Akron
19	S Arlington Rd and I-77 SB Ramps	35	11	0.400	97	108	0	0	No	Green
20	Waterloo Rd and Portage Line Rd	16	73	0.500	36	109	0	0	No	Springfield Twp / Suffield Twp
20	Killian Rd and Pressler Rd	14	94	0.643	15	109	0	0	No	Springfield Twp
22	Medina Line Rd and Granger Rd	15	80	0.533	33	113	0	0	No	Bath Twp

Table 5-2 | Top 50 High Crash Intersections										
Ranked by Score Based on Number of Crashes and Percent of Fatal and Injury Crashes 2020-2022										
OVERALL RANK	STREET AND INTERSECTING STREET	TOTAL CRASHES	TOTAL CRASHES RANK	FATAL & INJURY PERCENT	FATAL & INJURY RANK	TOTAL RANK SCORE	BIKE RELATED	PED RELATED	SS4A HIN	LOCATION
22	Copley Rd (SR 162) and Madison Ave	20	48	0.450	65	113	1	0	No	Akron
22	W Market St (SR 18) and Valley St	15	80	0.533	33	113	2	1	No	Akron
22	Eastern Rd and Rittman Rd	15	80	0.533	33	113	0	0	No	Chippewa Twp
26	SR 44 and Tallmadge Rd	14	94	0.571	23	117	0	0	No	Rootstown Twp
26	SR 57 and SR 585	14	94	0.571	23	117	0	0	Yes	Milton Twp / Chippewa Twp
28	S Main St and Thornton St	39	6	0.385	112	118	0	0	No	Akron
29	SR 82 and Mantua Center Rd	17	68	0.471	51	119	0	0	No	Mantua Twp
30	S Maple St (SR 162) and W Cedar St	27	26	0.407	95	121	0	2	Yes	Akron
31	W Market St (SR 18) and Rhodes Ave	21	43	0.429	81	124	0	2	No	Akron
31	W Market St (SR 18) and Revere Rd	21	43	0.429	81	124	0	0	No	Akron
33	S Arlington Rd and Krumroy Rd / Thierry Ave	13	106	0.615	19	125	0	0	No	Coventry Twp / Springfield Twp
33	Hudson Dr and Steels Corners Rd / Allen Rd	13	106	0.615	19	125	0	0	No	Stow
33	E Aurora Rd (SR 82) and Chamberlin Rd	13	106	0.615	19	125	0	0	No	Twinsburg
36	SR 261 and Franklin Ave / Sunnybrook Rd	12	124	0.750	5	129	0	1	Yes	Kent
36	S Arlington St and S Case Ave / Johnston St	31	18	0.387	111	129	0	1	No	Akron
36	Kent Rd (SR 59) and Fishcreek Rd	18	63	0.444	66	129	0	0	No	Stow
36	West Ave (SR 261) and Thomas Rd	18	63	0.444	66	129	0	1	No	Tallmadge
40	Myersville Rd and Killian Rd	14	94	0.500	36	130	0	0	No	Springfield Twp
41	US 224 and Martin Rd	12	124	0.667	7	131	0	0	No	Suffield Twp
42	Manchester Rd (SR 93) and Carnegie Ave	35	11	0.371	121	132	1	0	No	Akron
43	Rhodes Ave and W Thornton St	13	106	0.538	31	137	0	0	No	Akron
43	US 224 and E Waterloo Rd	13	106	0.538	31	137	0	0	No	Springfield Twp
45	SR 14/44 and N Freedom St (SR 88)	26	27	0.385	112	139	0	0	No	Ravenna
45	SR 5/44 and Lynn Rd	29	21	0.379	118	139	0	0	No	Rootstown Twp
47	SR 59 and Rhodes Rd/Ashton Ln	11	143	0.818	2	145	1	0	No	Franklin Twp

Table 5-2 | Top 50 High Crash Intersections										
Ranked by Score Based on Number of Crashes and Percent of Fatal and Injury Crashes 2020-2022										
OVERALL RANK	STREET AND INTERSECTING STREET	TOTAL CRASHES	TOTAL CRASHES RANK	FATAL & INJURY PERCENT	FATAL & INJURY RANK	TOTAL RANK SCORE	BIKE RELATED	PED RELATED	SS4A HIN	LOCATION
47	SR 14 and Infirmary Rd	20	48	0.400	97	145	0	0	No	Ravenna Twp
47	US 224 and Portage Line Rd (SR 532)	20	48	0.400	97	145	0	0	No	Springfield Twp / Suffield Twp
50	MLK Jr. Blvd (SR 59) and N High St (SR 261)	39	6	0.359	140	146	0	0	No	Akron

6 | PERFORMANCE MEASURES

Transportation Performance Management is required by MPOs as stated in the past three federal transportation bills. Transportation Performance Management is defined as a strategic approach that uses system information to make investment and policy decisions to achieve national performance goals. Within Transportation Performance Management, there are performance measures. Performance measures related to the CMP include Level of Travel Time Reliability (LOTTR) and Level of Truck Travel Time Reliability (LOTTTR), Peak Hour Excessive Delay (PHED) and Mode Share or Non-Single Occupancy Vehicle (Non-SOV) travel. Each of these performance measures have their own respective targets.

6.1 | Travel Time Reliability and Freight Movement Performance Measures

Federal rules 23 CFR 490.507 and 23 CFR 490.607 establish National Highway System (NHS) travel time reliability and Interstate System freight reliability measures. For both personal travel time reliability and freight travel time reliability measures, ODOT is required to establish 2-year and 4-year targets within a four-year performance period. The two current (2024) targets are listed in Table 6-1 to the right.

Table 6-1 | ODOT Travel Time Reliability Targets

LEVEL OF TRAVEL TIME RELIABILITY		
TRAVEL TIME RELIABILITY	**2-YEAR TARGET**	**4-YEAR TARGET**
Interstate Travel Time Reliability	> 85%	> 85%
Non-Interstate Travel Time Reliability	> 80%	> 80%
LEVEL OF TRUCK TRAVEL TIME RELIABILITY		
TRUCK TRAVEL TIME RELIABILITY	**2-YEAR TARGET**	**4-YEAR TARGET**
Interstate Truck Travel Time Reliability	< 1.50	< 1.50

Level of Travel Time Reliability (LOTTR) assesses the consistency or dependability of travel times from day to day or across different times of the day on the Interstate and Non-Interstate NHS systems. FHWA defines LOTTR as the percent of person-miles on the Interstate and NHS that are reliable. LOTTR is calculated as the ratio of the longer travel times (80th percentile) to a "normal" travel time (50th percentile), using data sourced from FHWA's National Performance Management Research Data Set (NPMRDS). ODOT is participating in FHWA's Performance Management Analytical Tool pooled fund where a contractor assists states in calculating NPMRDS travel time reliability metrics.

Data are collected in 15-minute segments during all time periods between 6 AM and 8 PM. Reliability measures are grouped into three weekday time periods (6-10 AM, 10 AM - 4 PM, 4- 8 PM) and one weekend time period (6 AM – 8 PM). Any roadway segment or corridor that has a reliability index of 1.5 or greater during any time period is considered to be unreliable. For example, a roadway segment with a freeflow speed of 60 mph where the observed average travel speed during one of the time study periods is 40 mph, would have a LOTTR value of 1.5.

Truck Travel Time Reliability (TTTR) is the ratio generated by dividing the 95th percentile travel time by the normal time (50th percentile) for each Interstate segment. The TTTR Index is established by multiplying each segment's largest ratio of five reporting periods by its length then dividing the sum of all length-weighted segments by the total length of Interstate. If the longer truck travel time is greater than or equal to 1.5, the roadway segment or corridor is considered unreliable. Data for TTTR are also collected in 15-minute segments during all time periods throughout the day and are grouped into the same time periods mentioned above.

The variability or change in congestion on a day-to-day basis provides a measure of reliability. Recurring congestion is generally predictable, regularly occurring, and typically caused by excess demand compared to the capacity of the system. Conversely, non-recurring congestion causes unreliable travel times and is caused by transient events such as traffic incidents, weather conditions, work zones, or special events. This form of congestion is often the most frustrating for travelers. National estimates indicate that nearly 50% of all congestion is non-recurring (FHWA, October 2023).

AMATS' actual performance is documented in Table 6-2.

Table 6-2 | AMATS Travel Time Reliability

LEVEL OF TRAVEL TIME RELIABILITY								
YEAR	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**AVERAGE**	**TARGET**
Interstate TTR	97.6%	98.6%	98.5%	98.8%	100.0%	100.0%	99.2%	> 85.0%
Non-Interstate NHS TTR	59.9%	89.3%	90.4%	89.3%	97.7%	93.8%	92.1%	> 80.0%
Interstate TTTR Index	1.31	1.27	1.27	1.30	1.13	1.19	1.23	< 1.50

AMATS meets the performance targets for travel time reliability on the interstate system and on truck travel time. The AMATS non-interstate system currently meets the target. Overall state of Ohio performance is documented in table 6-3:

Table 6-3 | Ohio Travel Time Reliability

LEVEL OF TRAVEL TIME RELIABILITY								
YEAR	2016	2017	2018	2019	2020	2021	AVERAGE	TARGET
Interstate TTR	90.9%	91.2%	89.3%	89.8%	99.5%	98.4%	93.6%	> 85.0%
Non-Interstate NHS TTR	66.1%	89.9%	90.0%	92.6%	95.7%	95.5%	92.7%	> 80.0%
Interstate TTTR Index	1.40	1.33	1.37	1.36	1.17	1.19	1.28	< 1.50

6.1.1 | Peak Hour Excessive Delay (PHED)

Current AMATS area congestion-related targets (PM3) were approved with Policy Resolution 2022-14 (August 11, 2022). A full discussion of air quality-related performance measures can be found in the AMATS *CMAQ Performance Plan 2022-2026*. The purpose of the AMATS CMAQ Performance Plan was to develop an updated baseline of targets and discuss intended air quality improvement to be made over the next four years. Air quality related targets and progress are monitored on an on-going basis and tracked in relation to CMAQ funded projects. These activities are performed in coordination with AMATS' air quality partners in the area, along with ODOT. With a mid-performance period progress report, due October 1, 2024, four-year targets may be adjusted, and two-year condition/ performance will be reported as baselines.

Traffic congestion will be measured by the annual hours of peak hour excessive delay (PHED) per capita on the National Highway System (NHS). The threshold for excessive delay will be based on the travel time at 20 miles per hour or 60% of the posted speed limit travel time, whichever is greater, and will be measured in 15-minute intervals. Peak travel hours are defined as 6-10 am local time on weekday mornings and 3-7 pm on weekday afternoons, providing flexibility to state DOTs and MPOs. The total excessive delay metric will be weighted by vehicle volumes and occupancy.

AMATS is located in part of the Cleveland urbanized area (UZA). Consequently, ODOT, NOACA and AMATS coordinated the setting of targets for the Cleveland area using past data. The Akron and Cleveland urbanized area performance is documented in the Charts 6-1 and 6-2, respectively.

Chart 6-1 | Akron Urbanized Area:
Annual % Non-Single Occupancy Vehicle Use

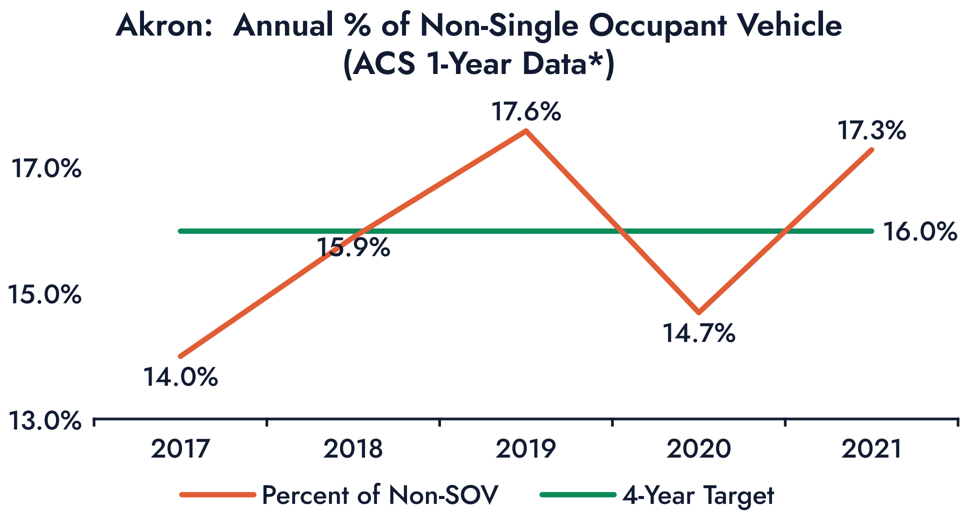
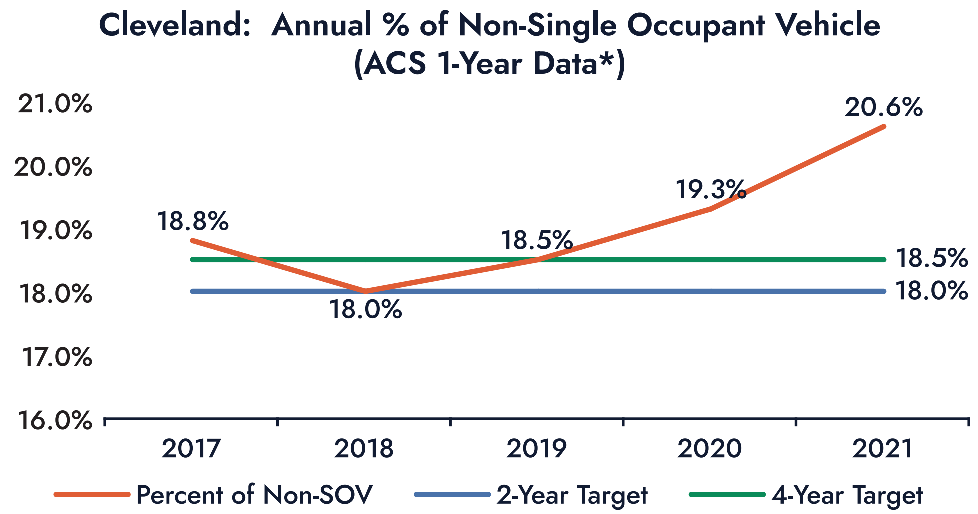


Chart 6-2 | Cleveland Urbanized Area:
Annual % Non-Single Occupancy Vehicle Use



6.1.2 | Mode Share (Non-SOV Travel)

Mode share is a measure of the percentage of each mode on all surface transportation occurring in the urbanized area. Modes of surface transportation include driving alone in a motorized vehicle (Single Occupancy Vehicle), car or van pooling, public transportation, commuter rail, walking, or bicycling as well as travel that is avoided by telecommuting. Non-SOV travel, defined by the FHWA, applies to any travel occurring on modes other than driving alone in a motorized vehicle. An analysis of mode share includes a calculation of the percent of Non-SOV travel within the urbanized area. This metric is derived from the U.S. Census Bureau's American Community Survey (ACS) data. Higher levels of Non-SOV travel can reduce an area's traffic congestion by removing additional vehicles from the roadways. The PHED and Non-SOV measures and targets for the Akron and Cleveland areas are listed in Table 6-4:

Table 6-4 | Peak Hour Excessive Delay and Non-Single Occupancy Vehicle Travel

Approved Targets: PHED and Non-SOV Travel (PM3) Peak Hour Excessive Delay / Non-Single Occupancy Vehicle Travel			
URBANIZED AREA / MPO	**MEASURE**	**2-YEAR TARGET**	**4-YEAR TARGET**
Akron (AMATS)	PHED	N/A	< 5.0
	Non-SOV Travel	> 16.0%	> 16.0%
Cleveland (NOACA)	PHED	N/A	< 8.0
	Non-SOV Travel	> 18.5%	> 19.0%

7 | STRATEGIES AND ASSESSMENTS

In order to reduce congestion, AMATS must develop a set of strategies that consider both the demand and supply of traffic. A strategy or combination of strategies that are appropriate for deficient corridors are selected based on the intensity of congestion and the other analyses completed in the CMP. Effectively managing congestion over time requires a multi-faceted approach. The strategies are categorized by type of congestion mitigation.

The tiers are:

- Tier 1: Demand management
- Tier 2: Traffic and roadway operational improvements
- Tier 3: Public Transportation improvements
- Tier 4: ITS Strategies
- Tier 5: Capacity expansion

7.1 | Tier 1: Demand Management

Demand-side strategies represent a forward-thinking approach to managing traffic congestion. Demand-side strategies include those that focus on reducing vehicles on the roadway either permanently or during the busiest times of the day. City rush-hours are an example of when demand exceeds supply. A highway that easily accommodates traffic throughout most of the day can be congested during morning and afternoon peak hours.

Demand-side management is any strategy that reduces the number of vehicles on the road at one time. Generally, demand-side congestion strategies cost significantly less than supply-side ones do. Below are examples of potential demand management strategies:

- **Telecommuting –** Telecommuting can directly reduce work-related trips during the peak hours of the day when most congestion occurs. Since the Covid-19 pandemic, the Akron region has seen telework become mainstream. This has reduced travel demand on the region's roadways. Another related benefit is an improvement in air quality.
- **Flexible/Alternative Work Hours –** Working outside the typical workweek and workday timeframe. It may not eliminate vehicles on the road but could reduce vehicles on the road during peak hours when congestion is typically worse.
- **Carpooling –** More than one person using a vehicle for a trip with similar origin or destination. Carpooling reduces SOV due to commuters sharing a ride with one or more people for trips. This reduces the number of vehicles on the road. Ohio is served by the GOhio Commute website which is an online portal for finding carpool matches. This software makes it easier to create carpools and vanpools by matching similar trip origins, destinations, and times.
- **Employer Incentive Program –** Incentives may be offered by employers to encourage carpooling or public transportation.
- **Encouraging a Shift to Alternative Modes of Transportation –** Transit, bicycling, walking, or other non-motorized travel can be used as an alternative to general travel and commuting. Bicycle and pedestrian modes may also include e-bikes, scooters, skateboards, mobility-assistance devices, etc. Though buses are vehicles on the road, they retain the capability to significantly reduce the total number of vehicle miles traveled by carrying many trips in one vehicle. Bicycling, walking, and other modes of alternative transportation can also eliminate vehicle miles traveled. However, these modes may not be feasible if trip lengths are too long. Typical trip length for a bicycle commute is up to four miles and up to one mile for a pedestrian.

7.2 | Tier 2: Traffic and Roadway Operational Improvements

Tier 2 strategies play an important role in congestion management. These strategies emphasize getting more out of the existing transportation system. The strategies include but are not limited to the following:

- **Intersection and street improvements by adding and extending exclusive turning lanes –** exclusive and safe space for vehicles waiting to turn left.
- **Access management –** reduces the number of ingress/egress points onto a roadway and more effectively channels traffic and improves safety by reducing conflict points.
- **Variable speed limits –** allows traffic to efficiently utilize capacity at a safe speed.

- **Variable message signs** — enables drivers to take alternative routes to avoid congestion.
- **Exclusive shoulder lanes for buses** — frequent stopping can occur outside of the flow of traffic.
- **Geometric improvements to road and intersections** — improves traffic flow and reduces incident related congestion by correcting geometric deficiencies.
- **Channelization** — facilitates the safe and orderly movement of traffic and defines the paths of traffic by physical separation.
- **Median barriers (moveable) to facilitate more capacity during peak periods** — more lanes for peak demand flow without adding more pavement.
- **Traveler information** — information given to travelers to help reduce uncertainty and stress. It also can help avoid congestion, improve safety and save time.
- **Complete Streets** — Designing streets to enable safe access for users of all ages and abilities, including pedestrians, bicyclists, motorists, and transit riders.
- **Overpasses or underpasses at congested intersections or railroads** — provides uninterrupted traffic flow by removing intersection conflict points.
- **Roundabouts to improve stop-controlled or signalized intersections** — typically reduces vehicle queuing at intersections and improves traffic flow.

7.3 | Tier 3: Public Transportation (Transit) Improvements

The public transportation improvement strategies focus on making public transportation more convenient and accessible in the AMATS region. It is worth mentioning that these strategies may be linked with tier 1 and tier 2 strategies. METRO and PARTA control the transit service strategies within the AMATS region with AMATS offering suggestions. The following strategies are included in this category:

- **Expanding transit services** — adds new vehicles to expand transit services.
- **Optimal control of headways by realigning transit service schedules and stop locations** — provides better accessibility to transit to a greater share of the population.
- **Providing real-time information on transit schedules and arrivals using various ITS strategies** — provides real-time information so potential transit riders can estimate wait time.
- **Universal transit fare cards and incentives** — may be offered to students, employees, or residents to help reduce the cost of transit to the user.
- **Bus Rapid Transit** — high-quality bus-service that utilizes dedicated lanes, busways, traffic signal priority, off-board fare collection and enhanced or elevated stations to make transit more efficient and reliable. These lines work best in dense urban areas.
- **Prioritizing transit vehicles at traffic signals** — gives transit vehicles priority at signals to help them run on schedule.

7.4 | Tier 4: ITS Strategies

These strategies are strongly linked with most of the congestion management strategies. The recommended ITS strategies in the AMATS region are listed below:

- **Traffic Signal Improvements** — Optimizing and coordinating the timing of traffic signals to improve traffic flow through a corridor or specific intersections.
- **Simulation models** — Although AMATS has established travel demand models for predicting and evaluating the traffic in the region, simulation models may be used to analyze and evaluate the impact of operational strategies.
- **Cars Connected to Cars / Cars Connected to Infrastructure** — When one vehicle can communicate to another vehicle nearby—in front, behind, etc. it's the core of autonomous driving technology. Sensors detect what's going on around the vehicle and additional technology can share that data with other vehicles on the road. The vehicle is also able to send and receive information about the infrastructure that can include physical things such as traffic signals and weather alert systems. The vehicle can send that data out while simultaneously the infrastructure can send important data back to it.
- **Real-time traffic feedback** — The real-time traffic data provides information about congestion throughout the region . Many cell phone applications exist to provide real time traffic data and provide routing guidance to avoid areas of congestion.

7.5 | Tier 5: Capacity Expansion

Capacity expansion in the greater Akron area is only considered feasible for the worst congested roadway segments. There is a limited amount of funding available for new road and lane construction. Construction and right-of-way costs for new roads are very expensive. New roads and adding additional through lanes is considered a last resort as system preservation is the main objective in the AMATS region. Financial restrictions, adverse environmental impacts, and project duration also make capacity improvements less attractive and feasible . In addition, traffic counts throughout the region, overall, are trending downward. As the region continues to struggle with maintaining population and the continued presence of remote work, it is hard to project the level of traffic growth required to construct expansion projects.

Capacity expansion may be necessary on the busiest arterials and freeways as most other roadways are not congested enough to warrant such an improvement. These roadways may benefit from capacity expansion projects as it will improve flow of all vehicles including transit and freight vehicles, not just passenger vehicles. This could reduce emissions and fuel consumption, and increased productivity and economic development. However, typically constructing new lanes is followed with additional demand for the roadway as travel times improve. More vehicles begin to use the roadway which then begins to reduce travel times. This is referred to as induced demand. Adding capacity can also have adverse impacts on safety, alternative transportation modes and livability.

The capacity improvements include the following strategies:

- **Removing bottlenecks by constructing new lanes –** removes or corrects short, isolated, and temporary lane reductions and substandard design elements.
- **Adding travel lanes on major freeways** (including truck climbing lanes on grades)

7.6 | Evaluation of Strategies

Congestion management strategies were evaluated based upon their effectiveness and feasibility. The effectiveness was determined by how well each strategy would reduce congestion in the AMATS area. To make this determination, the strategies were reviewed by examining regional characteristics, previous local success of the strategies and examples from other urban areas. Decisions on the effectiveness of each strategy were made based on the data collected and staff input. Feasibility was rated by the degree to which the strategy could be realistically implemented in the region. Table 8-1 lists the strategies along with their corresponding effectiveness and feasibility.

Table 7-1 | Congestion Management Strategies

TIER	STRATEGY	BENEFITS	EFFECTIVENESS	FEASIBILITY
Tier 1: Demand Management	Telecommuting	Reduces traffic, especially during peak hours	Medium / High	Medium
	Flexible / Alternative Work Hours	Reduces traffic, especially during peak hours	Medium	Low / Medium
	Carpooling	Reduces traffic, especially during peak hours	Medium / High	Medium
	Employer Incentive Program	Reduces traffic, especially during peak hours	Medium / High	Low
	Alternative Modes of Transportation	Reduces traffic	Low / Medium	Low
Tier 2: Operational Improvements	Adding exclusive left turning lanes	Improves traffic flow / safety	Medium	Medium
	Access Management of roadway / driveways	Improves traffic flow / safety	Medium	Medium
	Variable speed limits	Improves traffic capacity / flow	Low / Medium	Low
	Variable message signs	Improves traffic flow and reduces additional congestion	Low / Medium	Medium
	Exclusive shoulder lanes for buses	Improves traffic flow / safety	Medium	Low
	Geometric improvements to road and intersections	Improves traffic flow / safety	Medium / High	High
	Channelization	Improves traffic flow / safety	Low / Medium	Medium
	Median barriers (moveable) to facilitate more capacity during peak period	Improves traffic capacity / flow	Medium / High	Low
	Traveler information	Improves traffic flow / safety	Low / Medium	High
	Complete Streets	Improves capacity for alternative modes of transportation	Low / Medium	Medium
	Overpasses or underpasses at congested intersections or railroads	Improves traffic capacity / flow	High	Low / Medium

Table 7-1 | Congestion Management Strategies

TIER	STRATEGY	BENEFITS	EFFECTIVENESS	FEASIBILITY
Tier 3: Public Transit Improvements	Expanding transit services	Encourages transit use / reduces SOV vehicles.	Medium	Low
	Optimal control of headways by realigning transit service schedules and stop locations	Makes transit easier to use / reduces SOV vehicles.	Medium	Medium
	Providing real-time information on transit schedules and arrivals using various ITS strategies	Makes transit easier to use / reduces SOV vehicles.	Low	Medium
	Universal transit fare cards and incentives	Makes transit easier to use / reduces SOV vehicles.	Low / Medium	High
	Bus Rapid Transit	Makes transit easier to use / reduces SOV vehicles.	High	Medium
	Prioritizing transit vehicles at traffic signals	Makes transit easier to use / reduces SOV vehicles.	Medium	Medium
Tier 4: ITS Strategies	Traffic Signal Improvements	Improves traffic flow / safety	Medium / High	High
	Simulation models	Helps determine and fund projects with the most impact	Medium / High	Medium
	Cars Connected to Cars/Cars Connected to Infrastructure	Improves traffic flow / safety	Medium / High	Low
	Real-time traffic feedback	Improves traffic flow and reduces additional congestion	Medium / High	High
Tier 5: Capacity Expansion	Removing bottlenecks by constructing new lanes	Improves traffic flow / safety	Medium	Low
	Closing gaps in the existing network	Improves traffic flow / safety	Medium	Low
	Add travel lanes on major freeways and streets (including truck climbing lanes on grades)	Improves traffic flow / safety	Medium	Low

Using the 2022 congestion scan of the transportation network, AMATS identified 108 congested freeways and arterial segments. Each segment identified includes its peak congestion percentage, and the peak period of congestion. Appropriate strategies, i.e., tiers listed in Section 7.6, that should be considered for reducing congestion on the segment are listed in the recommendation column. It is noted when a corridor has a project planned or recently completed along with the recommendation to monitor this corridor.

8.1 | Freeways

The region's freeways are in the midst of a major overhaul, especially near Akron's downtown where many of the freeways converge. The Ohio Department of Transportation's Beltway project has included multiple ramp closures and detours over the last two years. The State Route 8 Bridge replacement project over the Cuyahoga Valley just north of Akron's downtown is also currently under construction. These large-scale construction projects that are ongoing make it difficult to recommend improvements for the region's congested segments. This is because projects under construction during the analysis year of 2022 would include detours and closures that impact the surrounding freeway traffic which could skew the analysis or projects that are now under construction include improvements that may alleviate some of the congestion identified in the 2022 scan. These concerns can be applied to every freeway segment AMATS identified in its 2022 scan. The segments were either impacted by current construction or impacted by improvements that will be constructed in the next few years.

Map 8-1 | Congested Freeway Recommmendations

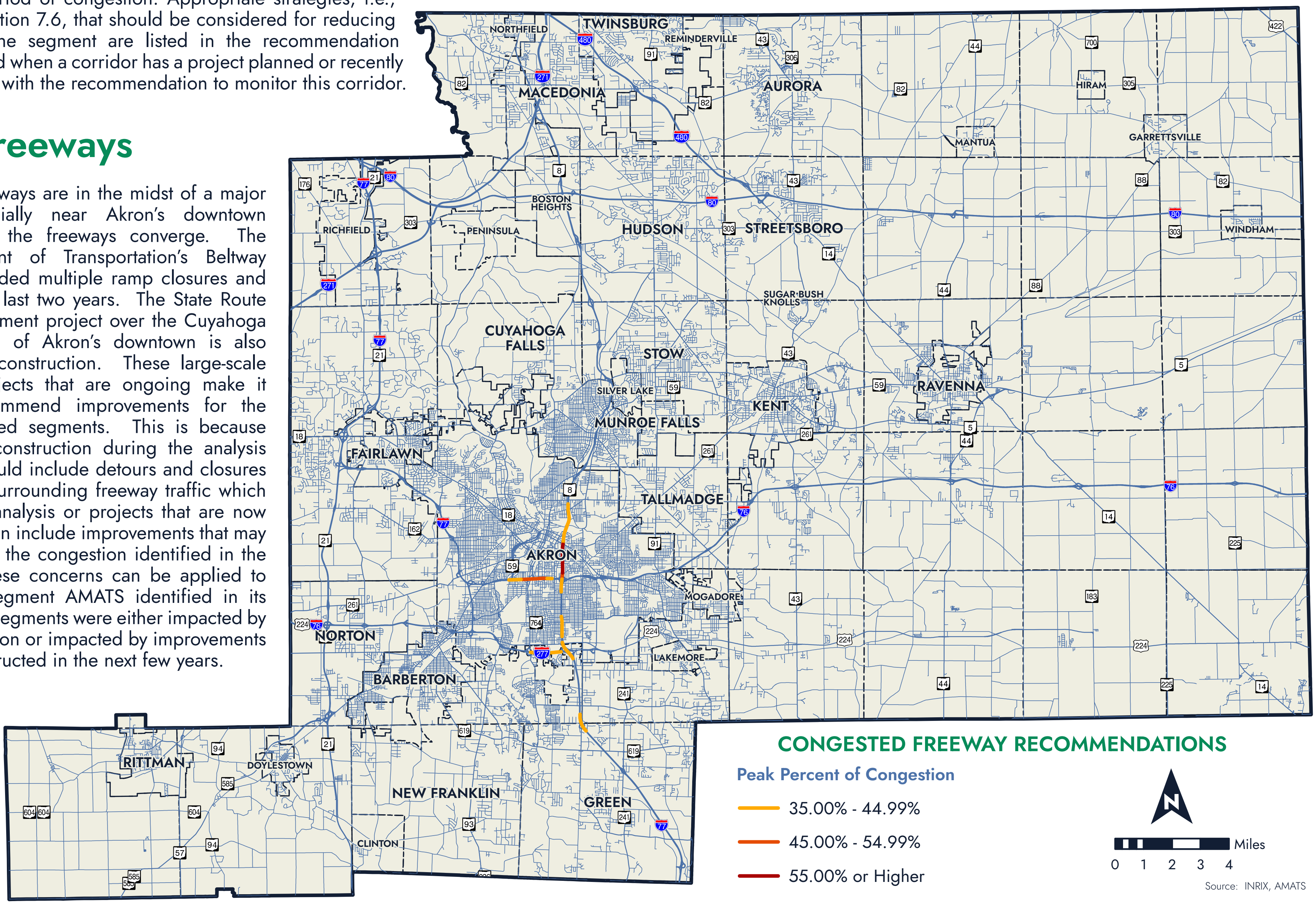


Table 8-1 | Freeway Recommendations					
	SEGMENT NAME	DESCRIPTION	PEAK % CONG.	PEAK PERIOD	RECOMMENDATION
1	OH-8 (SB)	I-76 (Segment 1)	56.4	PM	Construction (continue to monitor)
2	I-76/I-77 (EB)	Wolf Ledges Pkwy/Exit 22 (Segment 2)	53.2	PM	Construction (continue to monitor)
3	I-76/I-77 (EB)	Wolf Ledges Pkwy/Exit 22 (Segment 1)	52.2	PM	Construction (continue to monitor)
4	OH-8 (SB)	OH-18/East Market Street (Segment 2)	51.4	PM	Construction (continue to monitor)
5	I-76/I-77 (EB)	Grant Street/Exit 22 (Segment 2)	50.8	PM	Construction (continue to monitor)
6	OH-8 (SB)	I-76 (Segment 2)	50.5	PM	Construction (continue to monitor)
7	I-76/I-77 (EB)	Main Street/South Broadway Street/Exit 22 (Segment 1)	50.3	PM	Construction (continue to monitor)
8	OH-8 (SB)	OH-18/East Market Street (Segment 1)	49.3	PM	Construction (continue to monitor)
9	I-76/I-77 (EB)	Grant Street/Exit 22 (Segment 1)	48.6	PM	Construction (continue to monitor)
10	OH-8 (SB)	OH-59/Perkins Street (Segment 2)	43.4	PM	Construction (continue to monitor)
11	I-76/I-77 (EB)	I-77/OH-8/Exit 23	42.1	PM	Construction (continue to monitor)
12	I-76/I-77 (EB)	Main Street/South Broadway Street/Exit 22 (Segment 2)	41.6	PM	Construction (continue to monitor)
13	I-76/I-77 (EB)	Dart Avenue/Exit 21 (Segment 1)	40.5	PM	Construction (continue to monitor)
14	I-77 (SB)	I-76/I-77/Exit 125	40.2	PM	Construction (continue to monitor)
15	I-277 (EB)	I-77/Exit 4	39.8	PM	Construction (continue to monitor)
16	I-76/I-77 (EB)	Dart Avenue/Exit 21 (Segment 2)	39.5	PM	Construction (continue to monitor)
17	I-77 (SB)	OH-764/Wilbeth Road/Exit 123	37.6	PM	Construction (continue to monitor)
18	I-77 (NB)	Arlington Road/Exit 120	37	AM	Construction (continue to monitor)
19	OH-8 (SB)	East Glenwood Avenue (Segment 2)	36.7	PM	Construction (continue to monitor)
20	OH-8 (SB)	OH-59/Perkins Street (Segment 1)	36.2	PM	Construction (continue to monitor)
21	I-77 (SB)	I-277/US-224/Exit 122 (Segment 2)	36	PM	Construction (continue to monitor)
22	I-77 (SB)	Waterloo Road/Exit 123	35.6	PM	Construction (continue to monitor)
23	OH-8 (SB)	East Glenwood Avenue (Segment 1)	35	PM	Construction (continue to monitor)
24	I-77 (SB)	I-277/US-224/Exit 122 (Segment 1)	35	PM	Construction (continue to monitor)

8.2 | Arterials

AMATS congestion analysis identified 84 congested segments on the arterial roadway network. None of the segments identified received a tier 5 recommendation for added capacity as none of the segments had congestion that would be appropriate for major widenings. As the roadway network continues to age, AMATS believes an prudent approach is to focus on travel demand, operational improvements, alternative modes of transportation and intelligent transportation strategies to reduce congestion.

Map 8-2 | Congested Arterial Recommmendations

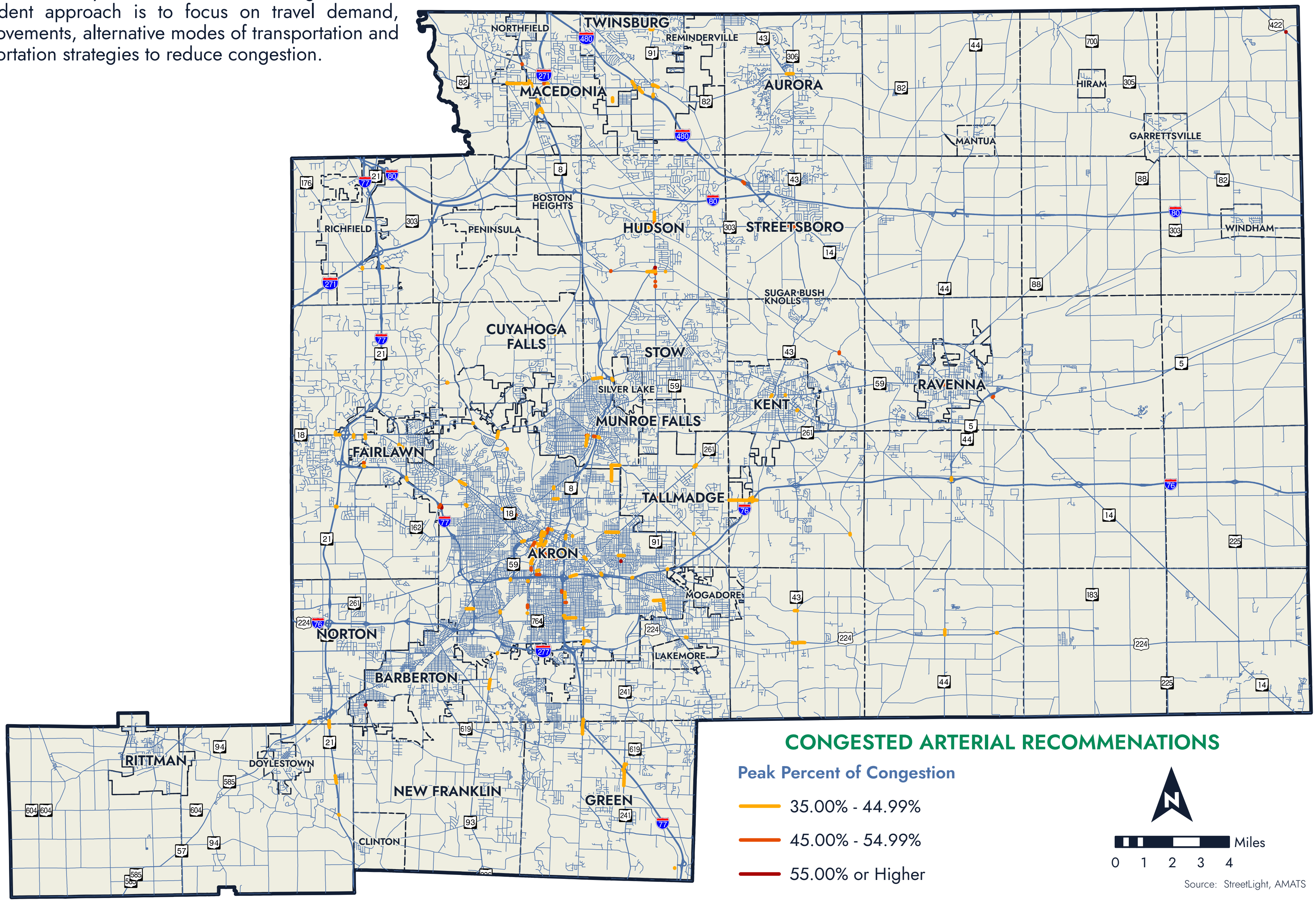


Table 8-2 | Arterial Recommendations

	SEGMENT NAME	DESCRIPTION	PEAK % CONG.	PEAK PERIOD	RECOMMENDATION
1	West Avenue (SR 261)	Heading into Tallmadge Circle	61.4	PM	2
2	Southwest Avenue	Heading into Tallmadge Circle	60.5	PM	2
3	Southeast Avenue	Heading into Tallmadge Circle	55.4	MD	2
4	Northwest Avenue	Heading into Tallmadge Circle	55.4	MD / PM	2
5	Northeast Avenue (SR 261)	Heading into Tallmadge Circle	53.5	MD / PM	2
6	Darrow Road (SR 91)	SB From Terex Road to Hudson Drive	53.2	AM / MD	Existing Project (116924,116929) - Monitor
7	East Avenue	Heading into Tallmadge Circle	52.2	MD	2
8	SR 8	SB at Valley View Intersection	51.0	AM / MD	2, 4
9	South Avenue (SR 91)	Heading into Tallmadge Circle	50.8	MD / PM	2
10	Broad Boulevard	WB from SR 8 to Front Street	50.3	MD	2, 3, 4
11	Arc Drive	NB at Exchange Street Intersection	49.8	AM / MD	4
12	White Pond Drive	At IR 77 Interchange	49.3	PM	2
13	West Bowery Street	West Exchange Street (SR 261) to West State Street	48.8	PM	3, 4
14	South Main Street	SB North of Thornton Street	46.6	MD	3, 4
15	North Main Street (SR 91)	SR 303 to Aurora Street	46.5	MD / PM	Existing Project (116924) - Monitor
16	East Exchange Street	Grant Street to Brown Street	46.3	MD	Existing Project (102701) - Monitor
17	North High Street	East Market Street (SR 18) to Perkins Street (SR 59)	45.9	AM / MD	3, 4
18	Cleveland East Liverpool Road (SR 14)	SR 303 to SR 43	45.2	PM	Existing Project (105213) - Monitor
19	West Main Street (SR 59)	Sycamore Street to Chestnut Street	45.1	MD	4
20	Broad Boulevard	SR 8 to Newberry Street	44.2	PM	3, 4, Rail Conflict
21	West Bowery Street	Quaker Street to Main Street	43.9	MD / PM	Building Construction - Monitor
22	Terex Road	EB start of divided highway to Hudson Drive	43.9	AM / PM	Existing Project (116924,116929) - Monitor
23	US 224	EB start of divided highway to SR 43	43.1	PM	2, 4
24	Howe Avenue	Buchholzer Boulevard to Barney's Busy Corners	43.1	PM	3, 4
25	East Aurora Road	Olde 8 to SR 8	42.9	PM	3, 4
26	Ravenna Road	SR 91 to SR 82	42.7	MD / PM	4
27	SR 5;SR 44	NB at the IR 76 Interchange	42.2	MD / PM	2, 4
28	US 224	WB start of divided highway to SR 43	41.7	PM	2, 4
29	South Broadway Street (SR 261)	University Avenue to Bowery Street	41.6	AM / MD	3, 4

Table 8-2 | Arterial Recommendations					
	SEGMENT NAME	DESCRIPTION	PEAK % CONG.	PEAK PERIOD	RECOMMENDATION
30	Massillon Road (SR 241)	SB from IR 77 to Raber Road	41.6	PM	Existing Project (90415) - Monitor
31	Tallmadge Road	Highway View Drive to Mogadore Road	41.4	MD / PM	Existing Project (112755) - Monitor
32	Broad Boulevard	Between SR 8 Ramps	41.1	PM	3, 4
33	SR 21	NB into Eastern Road	41.1	PM	4
34	Darrow Road (SR 91)	SB into Glenwood Drive Roundabout	41.0	PM	Monitor
35	Massillon Road (SR 241)	Boettler Road to IR 77	40.9	MD / PM	Existing Project (103172) - Monitor
36	Ghent Road	At West Market Street (SR 18)	40.8	PM	4
37	South Arlington Road	Moore Road to IR 77	40.8	PM	3, 4
38	Manchester Road (SR 93)	Portage Lakes Drive to Robinson Avenue	40.6	MD	2, 4
39	West Market Street (SR 18)	Ghent Road to Miller Road	40.4	MD	2, 3, 4
40	Northeast Avenue (SR 261)	NB into East Howe Road Roundabout	40.2	PM	Monitor
41	SR 8	SB IR 271 to Highland Road	40.1	AM	Existing Project (121067) - Monitor
42	SR 8	SB at Macedonia Commons Boulevard	40.1	MD	4
43	SR 8	NB at SR 82	40.0	AM / MD	4
44	Darrow Road (SR 91)	NB at Terex Road	39.8	AM / MD	Existing Project (116924,116929) - Monitor
45	South Arlington Road	NB at IR 77 Interchange	39.7	MD / PM	2, 4
46	SR 8	SB at SR 82	39.5	PM	4
47	Eastwood Avenue	Hazel Street to Brittain Road	39.3	PM	2, 4
48	Manchester Road (SR 93)	Towpath Trailhead to Carnegie Avenue	39.2	PM	2, 4
49	West Bowery Street	Cedar Street (SR 261) to Exchange Street (SR 261)	39.0	AM	4
50	Terex Road	Hudson Drive to Darrow Road (SR 91)	38.6	MD / PM	Existing Project (116924,116929) - Monitor
51	West Market Street (SR 18)	North Portage Path to Rhodes Avenue	38.4	PM	3, 4
52	Massillon Road (SR 241)	Graybill Road to Boettler Road	38.2	MD	Existing Project (103172) - Monitor
53	Martin Luther King Boulevard (SR 59)	Broadway Street (SR 261) to Summit Street	38.1	PM	4
54	South Cleveland Massillon Road	Brookwall Drive to SR 18	38.1	MD / PM	Existing Project (103293)
55	Darrow Road (SR 91)	SB Start of Divided Highway to IR 480	38.1	MD	3, 4
56	East Market Street (SR 18)	Arlington Street to Exchange Street	37.8	AM	Existing Project (116462) - Monitor
57	North Main Street	Cuyahoga Falls Avenue to Norman Street	37.7	PM	Existing Project (112716) - Monitor

	Table 8-2 | Arterial Recommendations				
	SEGMENT NAME	DESCRIPTION	PEAK % CONG.	PEAK PERIOD	RECOMMENDATION
58	Innovation Way (SR 241)	3rd Street to East Market Street (SR 18)	37.5	AM	4
59	North Portage Path	Merriman Road to Portage Trail	37.5	PM	2, 3, 4
60	US 224	East Waterloo Road to Ewart Road	37.4	MD / PM	2, 4
61	South Hawkins Avenue	NB into Mull Avenue Traffic Circle	37.3	PM	Monitor
62	South Mantua Street (SR 43)	SR 59 to W Main Street	37.3	MD / PM	Monitor
63	South Arlington Road	SB from IR 77 to Chenoweth Road	37.2	PM	2, 3, 4
64	SR 8	NB IR 271 to Macedonia Commons Boulevard	37.1	MD / PM	2, 4
65	Tallmadge Road	Tallmadge Corp Line to Highway View Drive	37.1	MD / PM	2, 4
66	East Tallmadge Avenue (SR 261)	North Main Street (SR 261) to Dayton Street	36.9	PM	Existing Project (88556) - Monitor
67	Canton Road (SR 91)	Triplett Boulevard to Albrecht Avenue	36.9	PM	4
68	East Aurora Road (SR 82)	Macedonia Commons Boulevard to Freeway Drive	36.8	AM	1, 4
69	Northeast Avenue (SR 261)	SB into East Howe Road Roundabout	36.5	PM	Monitor
70	Canton Road (SR 91)	Albrecht Avenue to Wedgewood Drive	36.4	MD / PM	4
71	North Main Street (SR 91)	Aurora Street to Prospect Street	36.4	MD / PM	Existing Project (116924) - Monitor
72	West Garfield Road (SR 82)	Aurora Road (SR 43) to Chillicothe Road (SR 306)	36.3	MD / PM	Existing Project (107761) - Monitor
73	East Waterloo Road	South Arlington Street to end of divided highway	36.3	MD	4
74	SR 44	US 224 to Waterloo Road	36.2	PM	2, 4
75	South Arlington Street	Arlington Circle to Waterloo Road	35.9	MD / PM	4
76	Mull Avenue	EB into Hawkins Ave Traffic Circle	35.8	PM	Monitor
77	Broad Boulevard	EB from Second Street to SR 8 Ramps	35.8	PM	3, 4
78	Medina Road (SR 18)	Crystal Lake Road to IR 77	35.6	PM	1, 3, 4
79	West Market Street (SR 18)	Bryden Drive to Hawkins Avenue	35.5	PM	3, 4
80	Riverview Road	SB into Smith Road Roundabout	35.3	PM	Monitor
81	West Streetsboro Street (SR 303)	Boston Mills Road to North Main Street (SR 91)	35.2	PM	Existing Project (117269) - Monitor
82	SR 8	SB at SR 82 intersection	35.2	AM	1, 3, 4
83	Graham Road	Bailey Road to Hudson Drive	35.1	MD / PM	2, 3, 4
84	Brecksville Road	SB at Broadview Road/SR 176 Intersection	35.0	PM	1, 4

9 | EVALUATING STRATEGY EFFECTIVENESS

Understanding if congestion reduction strategies are effective post implementation can be challenging because projects are often constructed with another goal in mind. An example of this would be a complete street project that had a goal to improve the roadway for bicyclists, pedestrians and transit users. The roadway may be safer, but congestion may not have been alleviated.

It also is difficult to immediately determine strategy effectiveness because of the lag in data availability. Because the use of cellphone data is relatively new, it is difficult to evaluate projects that happened before the data was available. Additionally, because of data lag, AMATS might not have post implementation data for a few years after the project is completed.

These challenges aside, it is important to try to evaluate past projects to identify if certain strategies for congestion reduction work better than others in the greater Akron region.

Table 9-1 | Freeway Strategy Evaluation Table

SEGMENT NAME	DIRECTION	COMMUNITY	PEAK	2019 CONG. %	2022 CONG. %	EFFECTIVENESS	PROJECT
I-271 From SR 82 and I-480	NB	Macedonia	AM	68.0	5.1%	Significant Impact	Project 89548 complete, included adding through lanes

Table 9-2 | Arterial Strategy Evaluation Table

SEGMENT NAME	DIRECTION	COMMUNITY	PEAK	2019 CONG. %	2022 CONG. %	EFFECTIVENESS	PROJECT
Cedar St from Rand St to Dart Ave	EB	Akron	AM	56.5%	16.0%	Significant Impact	Project 88990 completed, included signal interconnect and bike lanes, Monitor
SR 14 from SR 303 W Jct to SR 303 E Jct	EB	Streetsboro	PM	56.0%	30.3%	Significant Impact	Project 99879 completed, included signal interconnect, Monitor
W Exchange St from Dart Ave to Rand St	WB	Akron	AM	46.4%	13.2%	Significant Impact	Project 88990 completed, included signal interconnect and bike lanes, Monitor
SR 14 from I-80 ramps to SR 43	EB	Streetsboro	PM	45.9%	18.0%	Significant Impact	Project 99879 completed, included signal interconnect; Monitor
SR 82 from SR 306 to SR 43	WB	Aurora	AM	45.6%	20.6%	Significant Impact	Project 107761 planned, includes signal interconnect; Monitor
Home Ave from Annapolis Ave to Howe Ave	NB	Akron/ Cuyahoga Falls	MD	42.6%	26.3%	Significant Impact	Project 93819 underway, includes extended turn lanes on Home Ave; Monitor
Ravenna Rd from Chamberlin Rd to Cuyahoga Co Line	NB	Twinsburg	AM	39.4%	22.5%	Significant Impact	Project 113165 planned, includes intersection improvements at Shephard; Monitor
Aurora Hudson Rd from I-480 SB Ramps to Frost Rd	EB	Streetsboro	AM	39.1%	19.5%	Significant Impact	Project 92561 completed, included signal interconnect, turn lanes, bridge widening; Monitor
SR 82 from SR 43 to SR 306	EB	Aurora	AM	38.5%	25.3%	Significant Impact	Project 107761 planned, includes signal interconnect; Monitor
Cleveland Massillon Rd from Bywood Ave to Elgin Dr	SB	Fairlawn	PM	36.8%	12.0%	Significant Impact	Project 103293 underway, includes widen to 5 lanes, roundabout, signal upgrade; Monitor
SR 91 North Ave from Howe Rd to Tallmadge Circle	SB	Tallmadge	PM	36.6%	12.0%	Significant Impact	Project 93444 completed, included reconstruction with turn lanes and sidewalks; Monitor

Table 9-2 | Arterial Strategy Evaluation Table							
SEGMENT NAME	DIRECTION	COMMUNITY	PEAK	2019 CONG. %	2022 CONG. %	EFFECTIVENESS	PROJECT
SR 59 under the SR 18 Market St bridge	EB	Akron	AM	36.2%	1.3%	Significant Impact	Project 75436 completed, included SR 59 rerouting and intersection improvements at Howard/Main; Monitor
Cleveland Massillon Rd through Copley Circle	SB	Sum Co - Copley Twp	AM	42.7%	21.1%	Significant Impact	Project 103171 completed, included additional turn lanes; Monitor
SR 91 Canton Rd through the US 224 Intersection	NB	Sum Co - Springfield Twp	PM	38.7%	5.8%	Significant Impact	Project 89113 underway, includes concrete median and turn lanes; Monitor
Cleveland Massillon Rd through Copley Circle	NB	Sum Co - Copley Twp	AM	38.7%	16.8%	Significant Impact	Project 103171 completed, included additional turn lanes; Monitor
US 224 through the SR 91 intersection	EB	Sum Co - Springfield Twp	PM	38.4%	12.8%	Significant Impact	Project 89113 underway, includes concrete median and turn lanes; Monitor
SR 91 Canton Rd through the US 224 intersection	SB	Sum Co - Springfield Twp	PM	37.7%	17.3%	Significant Impact	Project 89113 underway, includes concrete median and turn lanes; Monitor
Cleveland Massillon Rd bet the Ridgewood Roads	NB	Fairlawn / Copley Twp	PM	36.6%	17.1%	Significant Impact	Project 108131 completed, included add turn lanes; Monitor
Waterloo Rd through the Arlington St intersection	EB	Akron	PM	36.0%	10.9%	Significant Impact	Project 96359 completed, included intersection improvements; Monitor
Cleveland Massillon Rd through Ghent Rd intersection	NB	Sum Co - Bath Twp	AM	35.9%	31.1%	Minor Impact	Project to realign intersection and add new right turn lane underway; Monitor

9.1 | Methodology

To evaluate past projects, AMATS ran corridor analyses on all 2019 congested locations that were identified as having projects either just completed or under construction in the *2020 Congestion Management Process*. AMATS used the most recent available full year data for project evaluations (2022) that were used for the CMP analysis. The corridor analyses AMATS ran provide the data necessary to calculate the congestion percentage in 2022 for each corridor. The congestion percentage from 2022 was then compared to the 2019 congestion percentage. If projects reduced congestion by more than 10 percent, it was considered a significant impact. If it was less than 10 percent but greater than zero it was considered a minor impact, and if it was a high level of congestion it was considered to have no impact.

9.2 | Project Evaluation

Overall AMATS saw a reduction in all past projects that were evaluated. While encouraging, it is also true that the latest full year data was collected toward the tail end of the COVID-19 Pandemic in 2022. The greater Akron area has seen a significant reduction in traffic throughout the area compared to pre-pandemic levels. While the projects evaluated as part of the CMP have improved corridor congestion, it is also safe to assume traffic volumes were lower in 2022 than they were in 2019.

Despite the pandemic's role in changing travel behavior, it is still important to highlight some of the projects that reduced congestion:

9.2.1 | Signal Projects

Several projects involving signal interconnect improvements were constructed prior to 2022, all of which yielded among the highest reductions in congestion for recent AMATS projects. The projects covered two corridors in Akron, two corridors in Aurora, and three corridors in Streetsboro. Averaged, they reduced congestion percentages by 26.4 points.

Signal interconnect projects are a relatively low-cost way to, in many cases, significantly improve traffic flow through a corridor. AMATS is completing its first-ever traffic signal inventory project. This project will help AMATS and its member communities better-understand the needs at the approximately 1,000 signalized intersections throughout the area. More importantly, it will help to prioritize which intersections may benefit most from signal upgrades.

9.2.2 | Roundabout and Lane Addition Project

The City of Fairlawn constructed a project along Cleveland-Massillon Road that included several improvements aimed at reducing congestion and improving safety. The roadway was widened to five lanes (from two-to-three lanes), a signal was improved, and a new roundabout was constructed. Although some of these improvements were beyond the congested segment's limits, this segment experienced a 24.8 point reduction in its congestion percentage.

Roundabouts have been widely demonstrated to improve traffic flow for most intersections because they typically reduce and can, in many cases, essentially eliminate the queueing of traffic approaching intersections. AMATS and ODOT have several funding sources that can fund roundabout projects (these are discussed in greater detail in Chapter 4 of AMATS' *Areawide Roundabout Study*).

While adding additional driving lanes can often reduce congestion, larger roads encourage more travel, and more traffic at higher speeds can increase safety concerns for vehicles and make travel difficult for non-motorized transportation. Such Tier 5 Congestion Management Strategies, as described previously, should be considered with significant caution.

9.2.3 | Access Management Project

Springfield Township improved the Canton Road corridor to provide improved access management by constructing median barriers, adding turn lanes, and implementing legal U-turns to reduce conflict points and improve the overall flow of traffic. Between 2019 and 2022, nearly all northbound congestion was eliminated, this direction of the corridor going from 38.7% to 5.8% congestion, a 32.9 point reduction. The southbound direction saw a 20.4 point decrease in congestion, and the eastbound leg of intersecting SR 224—which also saw similar improvements to access management—decreased by 25.6 points.

Access management projects provide significant benefits to congestion and safety. While these projects often involve significant coordination with property owners and have the potential to create controversy during the planning stages of project development, AMATS strongly encourages projects that help manage and channel access. Many of AMATS' past reports, including most of its past *Connecting Communities* planning studies, recommend access management directly or indirectly.

While all projects were shown to reduce congestion, some were less successful at reducing congestion. The only listed project with a minor impact to congestion was Bath Township's Cleveland Massillon Road and Ghent Road project. This project added a turn lane and re-configured turning movements at the intersection. While congestion was slightly reduced, the project goals also included improving safety.

The COVID-19 pandemic certainly played a role in the data analyzed for the project evaluations, it is still positive that post project these previously congested corridors all saw decreases in congestion.

The analysis supports that improvements like roundabouts, limited access and signal interconnects can help reduce congestion.

10 | CONCLUSION

As the Metropolitan Planning Organization for the greater Akron, it is the Akron Metropolitan Area Transportation Study's (AMATS) responsibility to ensure that traffic congestion is identified and addressed, appropriately and responsibly. Through the CMP analysis, it is clear that the greater Akron region's congestion is localized and many identified congested corridors are currently being addressed.

With the limited resources available to the region, it is critical that communities consider congestion improvements that can provide maximum benefit for the lowest cost, while balancing the safety of all users.

Table A-1 below shows all arterial and collector roadway corridors within the AMATS planning area with between 25% and 34.99% congestion. While these roadways did not meet congestion thresholds of 35%, they still displayed some level of minor congestion. Over 2,700 corridors were analyzed in total, including those below 25% congestion. Any corridor congestion values not on this list, i.e. below 25%, are available upon request.

Table A-1 | StreetLight Congestion Analysis (25%-34.99% Congestion)

SEGMENT ID	SEGMENT NAME	FFC	LENGTH (MILES)	PEAK % CONGESTION	PEAK % FREE FLOW	DAY PART
1216344452	Howe Avenue / 19851300	4	0.028	34.97	65.03	Mid-Day / Peak PM
1220152326	Haymaker Parkway / 1382189	3	0.284	34.93	65.07	Peak PM
1216606612	Stow Road / 20819349	4	0.101	34.86	65.14	Peak PM
1221125862	Bailey Road / 13685005	5	0.079	34.78	65.22	Mid-Day / Peak PM
1216333049	State Road / 13569309	4	0.182	34.71	65.29	Peak PM
1216437802	South Water Street / 1380955	5	0.178	34.68	65.32	Peak PM
1220109801	West Market Street / 245288	3	0.756	34.62	65.38	Mid-Day
1216437298	East Main Street / 868560	3	0.086	34.46	65.54	Mid-Day / Peak PM
1220165526	Rock Spring Road / 22488760	5	0.125	34.45	65.55	Peak PM
1220464106	South Arlington Road / 18415115	4	0.070	34.33	65.67	Mid-Day / Peak PM
1216333084	Portage Trail / 17891867	3	0.149	34.17	65.83	Mid-Day
1216343666	North Main Street / 242931	5	0.150	34.09	65.91	Peak AM / Mid-Day
1216486544	SR 261 / 1380959	3	0.416	34.08	65.92	Peak PM
1216370285	East State Street / 22513765	5	0.070	34.01	65.99	Mid-Day / Peak PM
1216437243	North Freedom Street / 16612277	4	0.177	34.00	66.00	Mid-Day / Peak PM
1220919764	Copley Road / 893618	4	0.419	33.98	66.02	Peak PM
1216470633	Cleveland East Liverpool Road / 245866	3	1.944	33.96	66.04	Mid-Day
1220860734	Copley Road / 14988073	4	0.093	33.91	66.09	Mid-Day / Peak PM
1220152328	East Summit Street / 255026	4	0.356	33.78	66.22	Mid-Day / Peak PM
1216632475	East Howe Road / 14522140	4	0.060	33.77	66.23	Peak PM
1216333031	4th Street / 13933480	5	0.157	33.76	66.24	Peak AM / Peak PM
1221125721	Graham Road / 893789	4	0.149	33.75	66.25	Peak PM
1220078975	Medina Road / 18723947	3	0.019	33.72	66.28	Mid-Day / Peak PM
1216206845	East Wilbeth Road / 22766422	4	0.022	33.59	66.41	Mid-Day / Peak PM
1216363201	Rand Avenue / 21828804	5	0.186	33.55	66.45	Mid-Day / Peak PM
1216344491	East Tallmadge Avenue / 1381929	3	0.047	33.51	66.49	Peak AM / Mid-Day / Peak PM
1220860474	Copley Circle / 20906394	4	0.024	33.46	66.54	Peak AM / Mid-Day / Peak PM
1220977220	Steese Road / 20777167	5	0.024	33.45	66.55	Peak PM
1221078325	South Seiberling Street / 20488781	5	0.015	33.33	66.67	Peak AM / Mid-Day / Peak PM
1221143837	Darrow Road / 15817523	3	0.048	33.29	66.71	Peak PM
1216206199	South Main Street / 15745948	3	0.123	33.27	66.73	Mid-Day / Peak PM
1216333044	Broad Boulevard / 14259457	4	0.148	33.27	66.73	Mid-Day
1221122560	Terex Road / 19888548	4	0.140	33.26	66.74	Peak PM
1220977214	East Streetsboro Road / 21434447	5	0.079	33.25	66.75	Peak PM
1220490767	Great Lakes Boulevard / 14274707	3	0.124	33.24	66.76	Peak PM
1216223801	South Main Street / 22111628	3	0.225	33.18	66.82	Mid-Day
1220019949	Medina Road / 245539	3	0.398	33.12	66.88	Mid-Day
1216363357	Howe Avenue / 243252	4	0.121	33.05	66.95	Peak PM
1216608211	SR 303 / 19065624	4	0.270	33.03	66.97	Mid-Day / Peak PM
1220466224	Darrow Road / 14330101	3	0.043	33.01	66.99	Peak PM
1219638320	East Hines Hill Road / 18453500	5	0.060	32.96	67.04	Mid-Day / Peak PM
1216370129	South High Street / 893649	3	0.104	32.92	67.08	Mid-Day
1221431881	Cleveland East Liverpool Road / 20935347	3	0.184	32.89	67.11	Peak AM
1219866479	Southeast Avenue / 13750879	4	0.031	32.75	67.25	Mid-Day / Peak PM
1220014480	Merriman Road / 239669	3	0.515	32.75	67.25	Peak PM
1216437293	North Chestnut Street / 21366971	4	0.177	32.65	67.35	Mid-Day
1216216866	Copley Road / 18341518	4	0.150	32.60	67.40	Peak PM
1220091024	Medina Road / 13878073	3	0.538	32.57	67.43	Peak PM
1216206057	South Main Street / 247144	4	0.165	32.55	67.45	Peak AM
1221090792	East Waterloo Road / 20490359	3	0.050	32.46	67.54	Peak PM
1220076440	Ghent Road / 17028524	4	0.246	32.44	67.56	Peak PM
1216486431	North Water Street / 242934	4	0.282	32.37	67.63	Peak PM
1216358772	East Highland Road / 21120141	5	0.086	32.25	67.75	Peak PM
1219638313	East Highland Road / 22314644	5	0.298	32.24	67.76	Peak PM
1216216197	Merriman Road / 21164636	4	0.088	32.23	67.77	Peak AM
1216217182	East Steels Corners Road / 255160	4	0.162	32.20	67.80	Peak PM
1221122360	Darrow Road / 15192754	3	0.059	32.18	67.82	Mid-Day / Peak PM
1220076333	West Market Street / 245538	3	0.524	32.18	67.82	Mid-Day
1216370327	University Avenue / 24135298	5	0.071	32.18	67.82	Mid-Day / Peak PM
1216356237	Mull Avenue / 22430122	5	0.029	32.14	67.86	Peak PM
1219667265	West Aurora Road / 19744193	4	0.514	32.13	67.87	Mid-Day
1221139819	Fishcreek Road / 16542696	4	0.256	32.12	67.88	Peak PM
1221134565	North Munroe Road / 15369121	5	0.031	32.07	67.93	Peak PM
1221134711	Darrow Road / 1380523	3	0.472	31.96	68.04	Mid-Day
1220921087	Norton Avenue / 21187972	4	0.145	31.95	68.05	Peak AM / Mid-Day
1216208147	Copley Road / 868303	4	1.411	31.83	68.17	Peak PM
1216342939	East Market Street / 22833116	3	0.065	31.69	68.31	Mid-Day
1221390095	SR 44 / 1382278	4	0.439	31.53	68.47	Mid-Day
1216369743	State Road / 243753	4	0.274	31.51	68.49	Mid-Day / Peak PM
1221146612	Seasons Road / 17956119	4	0.073	31.48	68.52	Peak PM
1216333093	Broad Boulevard / 16810916	4	0.040	31.47	68.53	Mid-Day
1220978376	East Market Street / 902663	3	0.112	31.46	68.54	Peak PM
1216468240	SR 59 / 17145176	3	0.024	31.40	68.60	Peak AM
1221431636	East Main Street / 20664517	4	0.030	31.40	68.60	Peak PM
1216216868	West Exchange Street / 251905	4	0.028	31.38	68.62	Mid-Day
1221091062	East Turkeyfoot Lake Road / 15874016	4	0.020	31.30	68.70	Peak PM
1216437416	SR 5 - SR 44 / 911345	3	0.220	31.29	68.71	Peak AM / Mid-Day / Peak PM
1216470418	Cleveland East Liverpool Road / 1381930	3	0.938	31.29	68.71	Mid-Day / Peak PM
1216342989	Martin Luther King Boulevard / 18073501	3	0.065	31.26	68.74	Peak PM
1221143923	Liberty Road / 24241919	5	0.026	31.25	68.75	Peak PM
1221090121	Tallmadge Road / 911341	4	0.956	31.21	68.79	Peak PM
1216486567	SR 261 / 247607	3	0.420	31.20	68.80	Mid-Day / Peak PM
1216356538	East Tallmadge Avenue / 16938879	4	0.223	31.15	68.85	Peak PM
1220846873	Graham Road / 23899981	4	0.135	31.14	68.86	Mid-Day
1219976889	East Cuyahoga Falls Avenue / 14559015	4	0.329	31.10	68.90	Peak PM
1220860871	Mull Avenue / 16752920	4	0.082	31.00	69.00	Peak AM
1216342836	East Market Street / 249757	3	0.066	30.98	69.02	Mid-Day
1216333069	Broad Boulevard / 15647877	4	0.074	30.97	69.03	Peak PM
1216344276	East Cuyahoga Falls Avenue / 16591404	4	0.021	30.96	69.04	Peak AM
1216205461	South Main Street / 17388452	4	0.409	30.94	69.06	Peak PM
1220860521	2nd Street Northwest / 866771	5	0.390	30.94	69.06	Peak AM / Mid-Day / Peak PM
1216629111	East Summit Street / 247478	4	0.257	30.93	69.07	Mid-Day
1216332384	Hudson Drive / 15953731	4	0.081	30.89	69.11	Mid-Day / Peak PM
1216628860	East Main Street / 242943	3	0.087	30.87	69.13	Mid-Day / Peak PM

Table A-1 | StreetLight Congestion Analysis (25%-34.99% Congestion)

SEGMENT ID	SEGMENT NAME	FFC	LENGTH (MILES)	PEAK % CONGESTION	PEAK % FREE FLOW	DAY PART
1220078928	Medina Road / 910665	3	0.054	30.78	69.22	Mid-Day / Peak PM
1216206354	East Exchange Street / 246122	4	0.169	30.76	69.24	Mid-Day
1221136095	Tallmadge Road / 19212263	4	0.144	30.74	69.26	Peak PM
1220844944	Massillon Road / 905490	3	0.075	30.71	69.29	Peak PM
1216370231	South Maple Street / 23038790	4	0.105	30.71	69.29	Peak AM
1216370238	East Bowery Street / 23650571	4	0.069	30.66	69.34	Mid-Day / Peak PM
1220846925	Graham Road / 15925039	4	0.188	30.66	69.34	Peak PM
1216338808	East Aurora Road / 18976147	4	0.145	30.58	69.42	Mid-Day
1221142860	East Steels Corners Road / 868794	4	0.769	30.52	69.48	Mid-Day / Peak PM
1216216900	West Exchange Street / 21293590	4	0.093	30.49	69.51	Peak PM
1216211334	East Exchange Street / 902712	4	0.102	30.49	69.51	Mid-Day
1216632183	Tallmadge Road / 22687765	4	0.144	30.44	69.56	Mid-Day / Peak PM
1216211313	Arc Drive / 15218652	4	0.027	30.43	69.57	Peak AM
1219978259	Bauer Boulevard / 13480186	5	0.147	30.42	69.58	Peak PM
1216363114	Manchester Road / 14714726	3	0.015	30.40	69.60	Mid-Day / Peak PM
1219866587	Southeast Avenue / 14233540	4	0.053	30.36	69.64	Peak PM
1221390555	State Route 14 / 1380394	4	0.176	30.30	69.70	Peak AM / Mid-Day
1220919728	Vernon Odom Boulevard / 15357103	4	0.055	30.20	69.80	Mid-Day / Peak PM
1216345511	Old South Main Street / 22526313	5	0.019	30.16	69.84	Mid-Day / Peak PM
1216370093	South Main Street / 17313815	5	0.068	30.03	69.97	Mid-Day / Peak PM
1216629223	South Lincoln Street / 249895	5	0.260	30.00	70.00	Mid-Day / Peak PM
1216378619	West Bartges Street / 867282	5	0.556	30.00	70.00	Peak PM
1221390077	SR 5;SR 44 / 23159562	3	0.047	29.97	70.03	Mid-Day / Peak PM
1216211419	South Main Street / 251912	5	0.083	29.94	70.06	Peak PM
1216678709	Stow Road / 15031653	4	0.225	29.94	70.06	Peak PM
1221122815	East Wilbeth Road / 867523	4	0.052	29.93	70.07	Mid-Day
1216357141	South Arlington Road / 14019587	4	0.007	29.88	70.12	Mid-Day / Peak PM
1216208031	Diagonal Road / 1369942	5	0.021	29.87	70.13	Peak PM
1220856512	Manchester Road / 17877065	3	0.242	29.87	70.13	Peak PM
1220013280	West Market Street / 21349979	3	0.581	29.73	70.27	Peak AM / Mid-Day
1216370141	tertiary / 22520325	5	0.021	29.73	70.27	Mid-Day / Peak PM
1220078932	Medina Road / 18723948	3	0.027	29.70	70.30	Mid-Day / Peak PM
1221123630	Darrow Road / 23823050	3	0.087	29.70	70.30	Peak PM
1221143670	Glenwood Drive / 15147811	5	0.038	29.69	70.31	Peak PM
1220467521	West Avenue / 893061	3	0.961	29.59	70.41	Mid-Day / Peak PM
1216370042	Dart Avenue / 14869111	5	0.180	29.56	70.44	Peak AM
1216332131	Ghent Road / 249369	4	0.077	29.49	70.51	Peak PM
1221391464	Ranfield Road / 15578178	5	0.050	29.35	70.65	Peak PM
1220977391	East Waterloo Road / 16696399	3	0.231	29.32	70.68	Peak PM
1216370927	East Market Street / 1380963	3	0.099	29.27	70.73	Mid-Day / Peak PM
1220019812	North Cleveland Massillon Road / 239771	4	0.431	29.26	70.74	Mid-Day / Peak PM
1220859247	West State Street / 16245960	5	0.123	29.23	70.77	Peak PM
1220978276	Mogadore Road / 14312938	5	0.029	29.22	70.78	Peak AM
1216363074	Manchester Road / 16070682	3	0.542	29.20	70.80	Mid-Day / Peak PM
1216342892	East Buchtel Avenue / 849915	4	0.176	29.19	70.81	Mid-Day
1216468328	Cleveland East Liverpool Road / 249906	3	0.310	29.13	70.87	Peak AM
1220860563	West Hopocan Avenue / 17130335	5	0.103	29.10	70.90	Mid-Day
1219668577	New Milford Road / 18126625	5	0.033	29.03	70.97	Mid-Day / Peak PM
1216361826	South Main Street / 22111643	3	0.297	29.01	70.99	Mid-Day
1221125627	Darrow Road / 14233444	3	0.505	29.01	70.99	Peak PM
1216222400	Chestnut Boulevard / 22001153	5	0.074	28.99	71.01	Peak PM
1220978145	North Main Street / 243258	3	0.396	28.97	71.03	Peak PM
1216380325	East Waterloo Road / 20748985	4	0.242	28.97	71.03	Peak PM
1221089883	Bailey Road / 240560	4	0.931	28.95	71.05	Mid-Day / Peak PM
1220882028	Akron Road / 13760229	3	0.223	28.95	71.05	Peak PM
1216360020	Martin Luther King Boulevard / 1381931	3	0.118	28.94	71.06	Peak AM / Peak PM
1221090079	Portage Trail / 21506525	3	0.103	28.93	71.07	Peak PM

Table A-1 | StreetLight Congestion Analysis (25%-34.99% Congestion)

SEGMENT ID	SEGMENT NAME	FFC	LENGTH (MILES)	PEAK % CONGESTION	PEAK % FREE FLOW	DAY PART
1216357653	South Arlington Road / 1382527	4	0.449	28.88	71.12	Mid-Day / Peak PM
1221090182	Howe Avenue / 250235	4	0.684	28.85	71.15	Peak PM
1216206761	South Main Street / 23071384	3	0.212	28.83	71.17	Peak PM
1221129814	Middleton Road Extended / 17295456	5	0.118	28.81	71.19	Peak AM
1216544489	State Route 43 / 892662	3	0.159	28.81	71.19	Peak AM
1220844265	Northwest Avenue / 21565901	4	0.317	28.78	71.22	Peak AM
1216211333	South High Street / 902710	3	0.083	28.77	71.23	Peak AM
1219668804	East Summit Street / 857052	4	0.144	28.76	71.24	Mid-Day
1216629232	South Water Street / 868552	3	0.476	28.73	71.27	Peak PM
1220156799	SR 44 / 16065721	4	0.159	28.71	71.29	Peak PM
1221132084	East Aurora Road / 855681	4	0.179	28.68	71.32	Peak PM
1216342948	North Union Street / 20043514	4	0.191	28.67	71.33	Mid-Day / Peak PM
1216333192	Portage Trail / 15167063	3	0.127	28.61	71.39	Mid-Day / Peak PM
1220860508	Wooster Road North / 893404	3	0.384	28.55	71.45	Mid-Day / Peak PM
1221090978	East Waterloo Road / 16166521	3	0.211	28.53	71.47	Mid-Day / Peak PM
1216356535	East Cuyahoga Falls Avenue / 16270007	4	0.272	28.48	71.52	Mid-Day / Peak PM
1219669061	Summit Road / 867516	4	0.077	28.47	71.53	Peak PM
1220046634	Ghent Road / 17028523	4	0.110	28.42	71.58	Mid-Day / Peak PM
1216211440	West Cedar Street / 16049586	4	0.105	28.41	71.59	Peak PM
1216223810	West Thornton Street / 22412601	5	0.077	28.40	71.60	Mid-Day
1216363170	Portage Lakes Drive / 15767303	5	0.307	28.39	71.61	Mid-Day
1216356989	South Arlington Road / 14019586	4	0.019	28.34	71.66	Mid-Day / Peak PM
1219950710	West High Street / 21512366	6	0.544	28.34	71.66	Mid-Day / Peak PM
1216606553	Barlow Road / 20122119	5	0.053	28.31	71.69	Peak PM
1216223769	South Main Street / 18875436	3	0.225	28.28	71.72	Mid-Day
1216342860	East Market Street / 1369908	3	0.281	28.24	71.76	Mid-Day
1220108993	Smith Road / 239765	3	0.953	28.23	71.77	Mid-Day / Peak PM
1216450369	Aurora Hudson Road / 250600	5	0.164	28.22	71.78	Peak PM
1220120314	Copley Circle / 20129419	4	0.013	28.21	71.79	Peak AM / Mid-Day
1221074609	5th Avenue / 23779055	5	0.262	28.18	71.82	Peak AM
1221078437	East Market Street / 13341598	3	0.204	28.17	71.83	Peak AM / Mid-Day
1216207725	East Buchtel Avenue / 242948	4	0.056	28.17	71.83	Peak AM
1221122674	Myersville Road / 23478844	5	0.030	28.14	71.86	Mid-Day / Peak PM
1221091067	East Turkeyfoot Lake Road / 257663	3	0.110	28.14	71.86	Mid-Day / Peak PM
1220152332	West Summit Street / 868548	5	0.104	28.09	71.91	Peak AM / Mid-Day / Peak PM
1220468468	4th Street Southwest / 1382250	4	0.174	28.08	71.92	Peak PM
1220469782	Wooster Road North / 23947992	3	0.029	28.04	71.96	Mid-Day / Peak PM
1216342947	South Broadway Street / 19678427	3	0.179	27.97	72.03	Peak AM / Peak PM
1220521358	Fulton Road / 23840961	6	0.038	27.95	72.05	AM Peak
1216437343	East Main Street / 867522	3	0.416	27.92	72.08	Mid-Day / Peak PM
1221122637	South Arlington Street / 1381924	4	0.111	27.91	72.09	Peak PM
1216207898	Perkins Street / 20182233	3	0.023	27.90	72.10	Peak AM
1220919772	Copley Road / 857003	4	0.121	27.90	72.10	Mid-Day / Peak PM
1219867884	East Waterloo Road / 14753374	5	0.055	27.88	72.12	Peak AM
1220012057	West Market Street / 245781	3	0.227	27.87	72.13	Peak PM
1216356829	West Market Street / 24189958	3	0.672	27.86	72.14	Peak PM
1216437824	North Water Street / 21865895	4	0.041	27.84	72.16	Peak AM / Mid-Day / Peak PM
1219978727	East Tallmadge Avenue / 23813537	3	0.055	27.81	72.19	Mid-Day
1221143663	East Waterloo Road / 15633148	3	0.245	27.79	72.21	Mid-Day / Peak PM
1221150230	Ravenna Road / 23149491	4	0.019	27.77	72.23	Peak AM / Mid-Day / Peak PM
1221132204	Darrow Road / 23203054	3	0.056	27.77	72.23	Mid-Day
1216206311	East Exchange Street / 15743248	4	0.098	27.76	72.24	Peak PM
1220859251	West State Street / 1369868	5	0.059	27.73	72.27	Peak AM / Peak PM
1220457857	Darrow Road / 13239358	3	0.378	27.72	72.28	Peak PM
1219977061	East Cuyahoga Falls Avenue / 855960	4	0.535	27.68	72.32	Peak PM
1216541755	Fishcreek Road / 857379	4	0.852	27.65	72.35	Peak PM
1220977324	Massillon Road / 867065	3	0.628	27.64	72.36	Peak PM

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SEGMENT ID	SEGMENT NAME	FFC	LENGTH (MILES)	PEAK % CONGESTION	PEAK % FREE FLOW	DAY PART
1220978356	East Market Street / 15850408	3	0.126	27.63	72.37	Peak PM
1220152255	South Water Street / 1369943	3	0.077	27.62	72.38	Mid-Day / Peak PM
1216357072	West Tallmadge Avenue / 21460462	4	0.194	27.60	72.40	Peak AM
1221073478	Goodkirk Street / 17537652	5	0.192	27.55	72.45	Mid-Day / Peak PM
1216342984	South High Street / 19232398	3	0.191	27.53	72.47	Mid-Day / Peak PM
1220091026	Medina Road / 21692772	3	0.139	27.50	72.50	Peak PM
1216208122	Superior Avenue / 21543107	5	0.172	27.45	72.55	Mid-Day
1221091494	Massillon Road / 24286810	3	0.046	27.45	72.55	Mid-Day / Peak PM
1221376126	SR 8 / 23762183	4	0.190	27.45	72.55	Mid-Day / Peak PM
1221117180	Triplett Boulevard / 13818634	3	0.143	27.44	72.56	Peak PM
1219977573	Stow Road / 17551035	5	0.031	27.42	72.58	Peak AM / Mid-Day / Peak PM
1216211471	East Exchange Street / 22104887	4	0.071	27.39	72.61	Peak PM
1220900777	5th Street Southeast / 18707819	4	0.520	27.38	72.62	Mid-Day
1221396567	State Route 43 / 16525337	3	0.273	27.34	72.66	Peak AM
1216207826	North Forge Street / 23761467	5	0.111	27.33	72.67	Mid-Day
1219867780	Canton Road / 19637550	3	0.058	27.32	72.68	Mid-Day / Peak PM
1216362396	Manchester Road / 23471506	4	0.602	27.29	72.71	Mid-Day
1216206765	East Wilbeth Road / 13970438	4	0.184	27.29	72.71	Peak PM
1216370315	South Main Street / 13687723	5	0.097	27.27	72.73	Mid-Day / Peak PM
1216437704	East Main Street / 892865	4	0.238	27.27	72.73	Peak PM
1216350144	East Market Street / 14973371	3	0.060	27.20	72.80	Mid-Day
1221089999	Broad Boulevard / 24370521	4	0.012	27.20	72.80	Peak PM
1216216002	South Maple Street / 21360152	4	0.085	27.19	72.81	Mid-Day / Peak PM
1216516412	State Route 43 / 1381469	3	1.016	27.13	72.87	Mid-Day / Peak PM
1216345395	West State Street / 856997	5	0.113	27.09	72.91	Mid-Day
1216362185	East Wilbeth Road / 15328095	4	0.382	27.00	73.00	Peak PM
1221146445	East Hines Hill Road / 18453499	5	0.102	26.96	73.04	Peak PM
1221132226	Darrow Road / 893815	3	0.251	26.95	73.05	Mid-Day / Peak PM
1216467703	Cleveland Road / 17195922	4	0.023	26.93	73.07	Peak AM
1221074630	South Arlington Street / 17272119	4	0.211	26.92	73.08	Peak PM
1220045284	North Cleveland Massillon Road / 19868068	4	0.212	26.92	73.08	Peak PM
1221431853	State Route 43 / 247434	3	0.463	26.91	73.09	Peak PM
1216362383	North Portage Path / 902777	4	0.231	26.86	73.14	Peak PM
1216356214	South Hawkins Avenue / 245783	4	0.030	26.83	73.17	Mid-Day / Peak PM
1216368081	Olde Eight Road / 19894714	5	0.029	26.81	73.19	Peak AM / Mid-Day
1219866658	Eastwood Avenue / 23944135	5	0.033	26.81	73.19	Peak PM
1219659630	SR 8 / 14329164	4	0.023	26.81	73.19	Peak AM
1219977025	East Tallmadge Avenue / 246130	3	0.121	26.80	73.20	Mid-Day / Peak PM
1216358353	SR 8 / 16500997	4	0.024	26.77	73.23	Peak PM
1219597287	Brecksville Road / 16393137	4	0.033	26.74	73.26	Peak PM
1221136988	East Aurora Road / 911126	4	0.488	26.73	73.27	Mid-Day / Peak PM
1219640257	Wheatley Road / 14661840	5	0.051	26.65	73.35	Peak PM
1216211496	East Exchange Street / 857053	4	0.126	26.63	73.37	Mid-Day
1216370899	South Arlington Street / 902660	4	0.091	26.61	73.39	Peak AM / Mid-Day / Peak PM
1220469787	2nd Street Northwest / 19445273	5	0.096	26.61	73.39	Mid-Day / Peak PM
1216362041	East Archwood Avenue / 22604736	5	0.124	26.60	73.40	Peak AM
1216603366	State Route 43 / 892670	3	0.440	26.59	73.41	Mid-Day / Peak PM
1216211447	West Cedar Street / 15314637	4	0.016	26.58	73.42	Mid-Day / Peak PM
1221136967	Darrow Road / 23203053	3	0.024	26.51	73.49	Mid-Day / Peak PM
1216629016	Fairchild Avenue / 254764	4	0.077	26.51	73.49	Mid-Day / Peak PM
1216211367	East Exchange Street / 13526896	4	0.071	26.51	73.49	Peak AM / Mid-Day / Peak PM
1216363157	Monroe Street / 23247243	5	0.042	26.50	73.50	Mid-Day / Peak PM
1216370116	West Market Street / 22985224	3	0.411	26.48	73.52	Mid-Day
1216222644	East Streetsboro Road / 24182093	4	0.053	26.48	73.52	Peak PM
1221132037	Darrow Road / 254406	3	0.132	26.47	73.53	Peak PM
1219978293	Brittain Road / 24290504	4	0.821	26.40	73.60	Mid-Day / Peak PM
1216208223	South Hawkins Avenue / 17821855	4	0.215	26.37	73.63	Peak PM

Table A-1 | StreetLight Congestion Analysis (25%-34.99% Congestion)

SEGMENT ID	SEGMENT NAME	FFC	LENGTH (MILES)	PEAK % CONGESTION	PEAK % FREE FLOW	DAY PART
1219940701	North Aurora Road / 242557	3	0.277	26.35	73.65	Mid-Day / Peak PM
1216356557	North Main Street / 247116	4	0.065	26.34	73.66	Peak AM
1216207868	Perkins Street / 856498	3	0.066	26.34	73.66	Peak AM / Mid-Day / Peak PM
1216374613	South Arlington Road / 859697	4	0.594	26.33	73.67	Peak PM
1221122563	Darrow Road / 13688555	3	0.010	26.33	73.67	Peak AM / Mid-Day
1221136514	Triplett Boulevard / 13700357	4	0.261	26.33	73.67	Mid-Day / Peak PM
1220463026	State Road / 13569308	4	0.328	26.32	73.68	Peak PM
1216207763	Fountain Street / 22213173	5	0.166	26.31	73.69	Peak PM
1219866659	Southeast Avenue / 14785182	4	0.148	26.29	73.71	Peak PM
1221126154	East Aurora Road / 16818666	4	0.130	26.25	73.75	Mid-Day
1220472880	Mount Pleasant Street Northwest / 859377	5	0.268	26.22	73.78	Peak PM
1216369791	State Road / 893193	4	0.465	26.21	73.79	Mid-Day
1221088439	Kent Road / 893073	3	2.190	26.15	73.85	Mid-Day / Peak PM
1221012227	South Main Street / 247860	3	0.053	26.04	73.96	Peak PM
1221089990	East Portage Trail / 20510811	3	0.069	26.02	73.98	Peak PM
1221142498	Eastwood Avenue / 17964878	5	0.265	25.99	74.01	Peak AM
1221133656	Darrow Road / 23504723	3	0.143	25.93	74.07	Mid-Day
1221134683	Darrow Road / 250427	3	0.148	25.90	74.10	Peak AM / Mid-Day / Peak PM
1221143752	Liberty Road / 16101989	5	0.019	25.85	74.15	Peak PM
1216362033	South Main Street / 20178616	3	0.072	25.82	74.18	Peak PM
1220021903	South Hawkins Avenue / 20652294	4	0.454	25.81	74.19	Mid-Day
1220490760	Great Lakes Boulevard / 22208101	3	0.133	25.74	74.26	Peak PM
1216526983	West Main Street / 19561709	3	0.177	25.74	74.26	Mid-Day
1221088591	North Arlington Street / 17851713	4	0.296	25.74	74.26	Mid-Day / Peak PM
1220857400	Greenwich Road / 1369870	4	0.526	25.72	74.28	Peak AM
1220464087	South Arlington Road / 248964	4	0.511	25.70	74.30	Mid-Day / Peak PM
1220856659	Manchester Road / 15662822	3	0.094	25.69	74.31	Peak AM / Mid-Day / Peak PM
1220468529	Kenmore Boulevard / 911340	4	0.080	25.68	74.32	Peak PM
1216358151	Olde Eight Road / 251124	5	0.138	25.66	74.34	Peak PM
1220856538	Manchester Road / 1369876	3	0.580	25.62	74.38	Mid-Day
1216346338	West Exchange Street / 17880769	4	0.080	25.52	74.48	Peak AM
1220977208	East Streetsboro Road / 21434458	5	0.021	25.46	74.54	Peak PM
1221073521	East Exchange Street / 17319634	4	0.076	25.31	74.69	Peak AM / Mid-Day / Peak PM
1216370261	South Main Street / 13547802	5	0.034	25.31	74.69	Mid-Day
1216218005	Broadway Avenue / 14785412	4	0.024	25.29	74.71	PM Peak
1219803903	South Aurora Road / 901627	3	0.359	25.29	74.71	Mid-Day / Peak PM
1221431791	East Main Street / 251907	3	0.073	25.28	74.72	Mid-Day / Peak PM
1221090040	Broad Boulevard / 1370221	4	0.015	25.27	74.73	Peak PM
1216361299	South Arlington Street / 17272120	4	0.168	25.22	74.78	Mid-Day / Peak PM
1220120440	South Cleveland Massillon Road / 24244024	4	0.022	25.21	74.79	Peak PM
1216191728	State Road / 20540054	4	0.326	25.17	74.83	Mid-Day / Peak PM
1220467455	Brittain Road / 13222411	4	0.744	25.13	74.87	Peak PM
1216206631	Old South Main Street / 14324007	5	0.015	25.12	74.88	Mid-Day
1216370874	East Exchange Street / 14188692	4	0.674	25.04	74.96	Mid-Day / Peak PM
1216350290	North Broadway Street / 21945366	3	0.167	25.01	74.99	Peak PM

2024 CONGESTION MANAGEMENT PROCESS

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AMATS

This report was prepared by the Akron Metropolitan Area Transportation Study (AMATS) in cooperation with the U.S. Department of Transportation, the Ohio Department of Transportation, and the Village, City and County governemtns of Portage and Summit Counties and a portion of Wayne County.