

OTO Congestion Management Process Phase III:
Congestion Monitoring and Strategy Evaluation 2024



OZARKS TRANSPORTATION
ORGANIZATION

A METROPOLITAN PLANNING ORGANIZATION

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Executive Summary

The Congestion Management Process (CMP) consists of three main phases. Phase I was a methodology to identify congestion and designate specific strategies to address congestion. Phase II was the identification of where congestion is occurring or is expected to occur. Phase III is the development of a monitoring program to determine if selected strategies are effective in dealing with congestion. The OTO monitors the CMP network with four performance metrics: volume to capacity ratio, crash frequency, peak travel delay, and intersection level of service (LOS). In 2024, these metrics were compared to the previous CMP completed in 2019 resulting in the following findings:

- 2023 per capita VMT for the OTO area has rebounded to the 2019 level after the decline due to COVID 19 in 2020. Data shows the VMT increase of 331,477 miles traveled daily, or 5.9%, since 2019. The OTO area population estimate has increased by 19,003 people, or 5.7%, since 2019.
- There was an increase in crashes at 134 intersections and a decrease at 93. Compared to MPO averages, 8% (192 of 240) signalized intersections had an acceptable number of crashes in 2024. This is a significant improvement compared to 25% (166 of 220) of intersections having an above-average crash frequency in 2019.
- A total of 32 intersections saw improved LOS and 21 intersections saw deteriorated LOS during morning commutes between 2019-2024. The PM commute saw similar movements, with 33 improving and 16 deteriorating.
- Overall improvement in intersection LOS demonstrates the effectiveness of roadway operations and signalization improvements in the OTO. Prioritized projects including fiber connections and further investment in Traffic Management Center resources have proven effective.
- Adding lanes has lowered volume to capacity ratios on roads that were considered over capacity in 2019. Conversion of US 160 from Springfield to Willard to a four lane expressway from a super-two lane road, adding lanes and turn lanes on Hwy 14 east and west of US 65, six laning US 65 from US 60 to Rte CC, and adding lanes on James River Freeway from US 65 to National Ave are examples where lower volume to capacity ratios have improved travel speeds.

To summarize, there have been numerous geometric improvements and additions of capacity. Extensive work has been done to improve coordination of the traffic signal system. Incident management remains a priority as crashes have increased since 2019. Great strides have been made increasing the bicycle and pedestrian network. These strategies have proven effective by reducing the percentage of severe delays during the AM and PM peaks.

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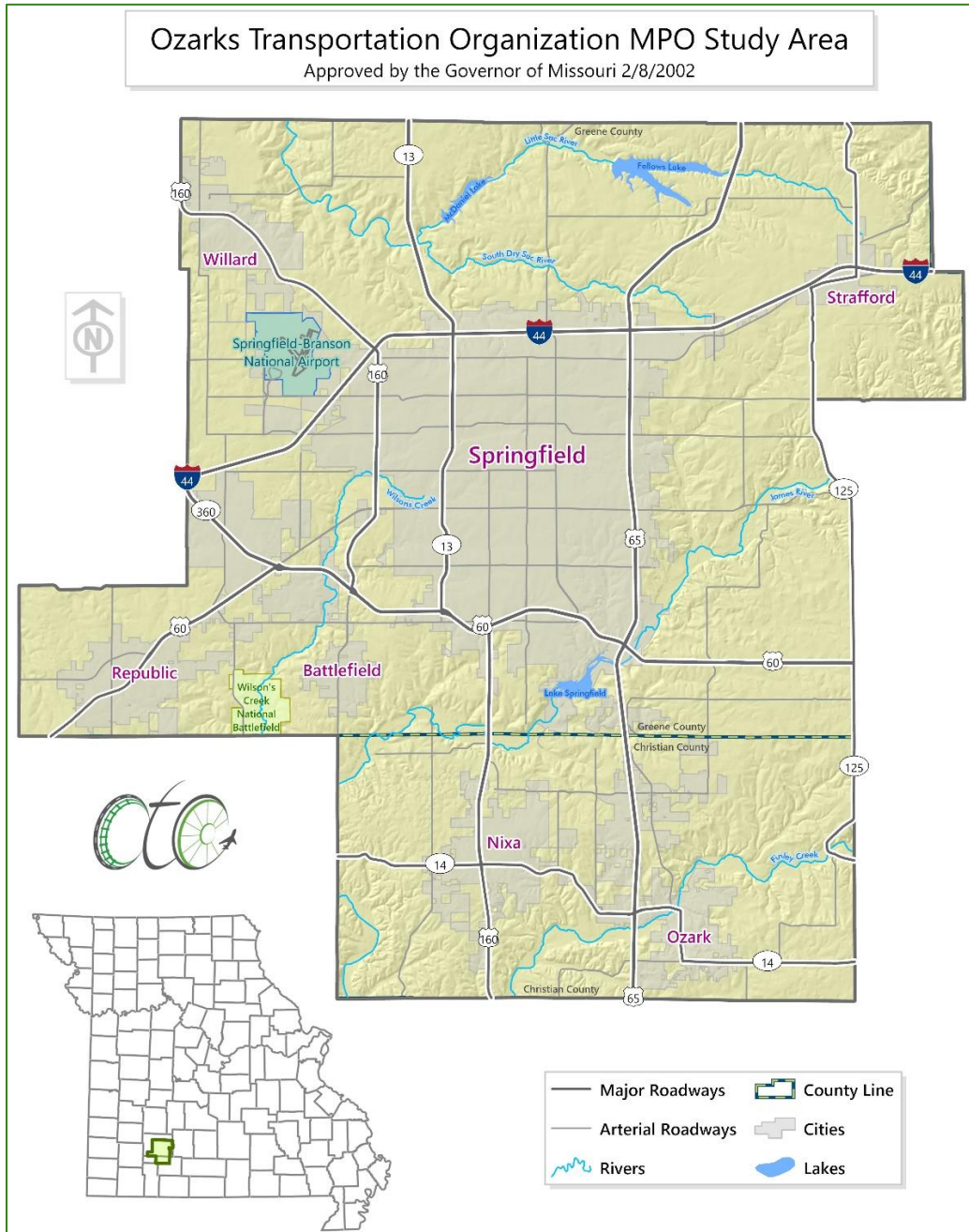
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Introduction

The Congestion Management Process (CMP) is a systematic approach to addressing congestion within the Ozarks Transportation Organization's (OTO) planning area, shown in Map 1. The process was developed through a collaborative effort involving local government and technical experts. The intent of the CMP is to improve the efficiency and effectiveness of both the existing and future transportation system through the implementation of Transportation System Management (TSM), which includes Intelligent Transportation Systems (ITS) and Travel Demand Management (TDM) techniques.



Map 1. OTO Study Area in Southwest Missouri

Background and Process Overview

The CMP consists of three main phases. Phase I is a methodology to identify congestion and designate specific strategies to address congestion. Phase II is the identification of where congestion is occurring or is expected to occur. Phase III is the development of a monitoring program to determine if selected strategies are effective in dealing with congestion at identified locations, and if not, identify other strategies to alleviate congestion. Phases I and II were completed in 2002 and 2008. The initial Phase III was completed in 2012 and updated in 2016 and again in 2020. This 2024 Congestion Monitoring report is an update to Phase III and should be updated every three to five years.

Overview of CMP Network

Phase I and II of the CMP identified the CMP network as OTO-area roadways that are part of the National Highway System (NHS). With passage of MAP-21, the CMP network was expanded in Phase III to include the Enhanced-NHS, the traditional NHS, and principal arterials. In addition, committee members chose to include segments of some principal arterials not included in the Enhanced-NHS, such as National north of Chestnut Expressway and Kearney west of I-44. In 2024, the CMP committee elected to include more routes that are expected to become congested to monitor where HERE speed probe data is now available. The CMP network defined in 2024 can be seen in Map 2 below.



Map 2. 2024 Revised CMP Network

Congestion Monitoring

The following four measures are the indicators the OTO has elected to monitor to determine where congestion is occurring. These measures are Roadway Volume-to-Capacity Ratio, Crash Frequency, Peak Travel Delay, and Intersection Level of Service (LOS). The maps for these indicators can be found at the end of the report.

Roadway Volume-to-Capacity Ratio

The first measure OTO utilizes to monitor congestion is roadway volume-to-capacity ratio. This ratio is used to determine which roads have an average annual daily volume (AADT) that exceeds the road's daily capacity and which roads are approaching capacity. Traffic volumes that are used in the ratios are based on MoDOT AADT. An important indicator of traffic volumes is Vehicle Miles Traveled (VMT). The indicator represents the total number of miles driven by the OTO population each day. If VMT is rising, it is likely associated with increased traffic volumes. Recent trends indicate a concomitant rise in VMT and population growth.

Table 1 shows the 2023 per capita VMT for the OTO area has rebounded to the 2019 level after the decline due to COVID 19 in 2020. Data shows the VMT increase of 331,477 miles traveled daily, or 5.9%, since 2019. The OTO area population estimate has increased by 19,003 people, or 5.7%, since 2019. A nearly identical VMT per capita in 2019 & 2023 further demonstrates the colinear relation between VMT and population growth.

Table 1 OTO Daily Vehicle Miles Travelled

Year	VMT	OTO Population	VMT per Capita
2023	5,923,899	353,503	16.76
2022	5,705,465	351,277	16.24
2021	5,482,804	346,710	15.81
2020	5,025,591	343,141	14.65
2019	5,592,422	334,485	16.72
2018	5,460,495	332,321	16.43
2017	5,502,936	329,330	16.71

Map 3 includes volume-to-capacity ratios divided into three categories: *below capacity*, *nearing capacity*, and *at or above capacity*. Segments with a volume-to-capacity ratio of 0 to 0.77 are *below capacity* and offer an LOS of A, B, or C. Segments with a ratio of .78 to .86 are *nearing capacity* and offer a LOS of D. Ratios of 0.86 or above offer LOS E or F and are *at or above capacity*. For purposes of this study, LOS A, B, C, or D are acceptable. The Volume to Capacity status of roads can be reviewed in Table 2.

Table 2 Volume-to-Capacity Status 2019 - 2024

Remained Above Capacity	Moved to Above Capacity from Below Capacity	Moved Below Capacity from Above Capacity
Kansas Expressway - I-44 to Kearney	I-44 - Glenstone to West Bypass	US 160 - Jackson St to I-44

Kansas Expressway - Nichols to Battlefield	Chestnut Expressway - Cedarbrooke to US 65	US 60 - County Line to Illinois
Kearney - Kansas Expwy to Benton	Campbell - Primrose to Republic	US 60 - Hines to Rte 174
JRF - National to Campbell	Campbell - Sunshine to Battlefield	US 60 - Rte MM to JRF
US 60 - FR 189 to Rte NN	US 60 - US 65 to FR 189	JRF - National to JRF EB to US 65 SB ramp
US 60 - Rte MM to Rte 174	US 160 - Rte AA to Rte CC	Republic Rd - Rte FF to Kansas Expwy
Campbell - Battlefield to Primrose	Rte CC - Fremont to Cheyenne	Republic Rd - Fremont to Glenstone
Battlefield National to Campbell		National Ave - Chestnut Expwy to Walnut Lawn
Sunshine - Fort to Campbell		Division - Glenstone to US 65
Sunshine - Kimbrough to US 65		Battlefield - Fort to Campbell
Rte CC - Fremont to US 65		Battlefield - National to Glenstone
Rte J - US 65 to Rte NN		Sunshine - Scenic to Fort
Hwy 14 - 12th St to Church		Sunshine - Campbell to Kimbrough
Hwy 14 - Selmore to Rte W		Glenstone - Evergreen to Kearney
South/BU 65 - 9th to Selmore		Kansas Expwy - Nichols to Division

Crash Frequency

Crash frequency is important to consider because it affects the reliability of the transportation system. A fender bender may only cause traffic to back up for a few minutes, but for every minute a lane is blocked, it takes four minutes for traffic to return to normal flows. This slow recovery helps contribute to congestion. Crash data used in this analysis was exported from MoDOT's Crash Statistics Map TMS Application. Crash frequencies are analyzed for both intersections and along roadways. For comparison purposes, intersections are divided into major intersections (*over 30,000 entering volume*) and minor intersections (*under 30,000*). Roadway crashes per mile are compared to same year MPO crashes per mile for each roadway type name, such as freeway, expressway, 5-lane, or 3-lane. Map 4.1 and 4.2 contains crashes per mile for segments and crash frequencies for intersections for the CMP Network in the OTO area.

Segment Crashes per Mile

The roadway segment crash frequency is calculated by using the formula below. The 3-year crash frequency for each segment is then compared to the MPO average crash frequency for that period for that roadway type, i.e. freeway or 5-lane section. Crash frequencies for segments is calculated as follows:

$$\text{Segment Crash Frequency} = \text{Number of Crashes (3yr)} / \text{Length of Segment}$$

Below Average: Crash frequency for that segment is 50% or less of the MPO average crash frequency for that type of road during the same period.

Average: Crash frequency for that segment is between 50.1% and 150% of the MPO average crash frequency for that type of road during the same period.

Above Average: Crash frequency for that segment exceeds 150% of the MPO average crash frequency for that type of road during the same period.

Table 3 shows the change in crash frequency along CMP road segments. Four segments along three roads experienced decreased crash frequency relative to the average, and 8 segments along eight roads experienced increases relative to the average.

Table 3 Segment Crash Frequency 2019 - 2024

From Average or Below Average to Above Average	From Above Average to Average or Below Average	Remained Above Average
Glenstone - Sunset to Battlefield	Kansas Expwy - Kearney to Division	I-44 - Glenstone to Kansas Expwy
Kansas Expwy - Evergreen to Kearney	Sunshine - US 65 to Lone Pine	US 65 - Kearney to Division
Sunshine - Kansas Expwy to Scenic	Sunshine - From Campbell to Kansas Expwy	US 60 - National to Campbell
JRF - US 65 to Campbell	Glenstone - Battlefield to US 60	
US 60 - Hwy 174 to Oakwood		
Republic Rd - Campbell to National		
Rte CC - Fremont to US 65		
I-44 - From Kansas Expwy to Glenstone		

Intersection Crash Frequency

The intersection crash frequency is calculated by using the formula below. The 3-year crash frequency for each intersection is then compared to MPO average intersection crash frequency for that period. Two values are calculated for MPO intersection crash averages, intersections at or above 30,000 entering volumes and intersections below 30,000 entering volumes.

Intersection Crash Frequency = Number of Crashes (3yr)

Below Average: An intersection is considered to have a below average crash frequency if the three-year crash frequency is 50.0 percent or less of the MPO average crash frequency for signalized intersections during the same period.

Average: Intersection is considered to have an average crash frequency if the three-year average crash frequency for that segment is between 50.1 percent and 150.0 percent of the MPO's average crash frequency for signalized intersections during the same period.

Above Average: An intersection is considered to have an above average crash frequency if the three-year crash frequency for that segment exceeds 150.0 percent of the MPO’s average crash frequency for signalized intersections during the same period.

Table 4 shows changes in crash frequency at CMP intersections by type from 2019 to 2024. There was no change in the number of crashes at 13 intersections. There was an increase in crashes at 134 intersections and a decrease at 93. Compared to MPO averages, 8% (192 of 240) signalized intersections had an acceptable number of crashes in 2024. This is a significant improvement compared to 25% (166 of 220) of intersections having an above-average crash frequency in 2019.

Table 4 Intersection Crash Frequencies 2019 - 2024

From Average or Below Average to Above Average	From Above Average to Average or Below Average
National Ave & Commercial St	Republic Rd & Cox
US 60 & Oakwood Ave	US 60 & Hamilton
Campbell Ave & Battlefield	Glenstone Ave & Chestnut Expwy
Campbell Ave & Sunshine St	Rte J & Farmer Branch
National Ave & Sunshine St	Kearney St & US 60 NB Ramp
West Bypass & Division St	National Ave & Sunset St
Campbell Ave & James River Freeway WB Ramp	Glenstone & I-44 EB Ramp
Rte CC & Rte J	Battlefield Rd & Delaware Ave
Hwy 14 & South (BU 65)	Battlefield Rd & Ingram Mill
Glenstone Ave & Evergreen St	US 160 & Rte AA
US 160 & South (Nixa)	US 160 & I-44 EB Ramp
US 160 & Wasson Dr	Kearney St & National Ave
Kansas Expwy & Republic Rd	Rte J & 17th St
	Glenstone Ave & Bennett St
	Glenstone Ave & James River Freeway WB Ramp
	Kansas Expwy & Nichols St
	Chestnut Expwy & Benton St
	Sunshine St & Ventura Ave
	National Ave & Walnut St
	Battlefield Rd & Moulder Ave

Peak Travel Delay

Historical HERE speed data collected through RITIS®, commonly referred to as probe data, was used to calculate travel speeds along the CMP network in 2019 and 2024. Data from the morning rush, 7:15 am-8:15 am, and evening rush, 5:00 pm-6:00 pm in Springfield and 5:30 pm -6:30 pm outside of Springfield, was exported for weekdays during March, April, and May 2019 and 2024. To better represent the range in delay experienced, 25th percentile speeds were used in delay calculations. These 25th percentile speeds are then compared to posted

speed limits to calculate delay. A road is considered severely delayed if the travel speed is greater than 20 mph below the posted speed limit. Maps 5.1 and 5.2 shows travel delay for the AM and PM peaks, respectively.

Travel Speed Summary

The corridors experiencing severe delays in 2024 are many of the same corridors identified in 2019. Many of these are urban primary arterials or expressways that carry significant traffic volumes. However, there has been a reduction in the percentage of roadways experiencing peak hour congestion from 2019 to 2024. In 2019, the percentage of roadways congested during the AM peak was 7% and 16.8% during the PM peak. In 2024, the percentage of congested roadways was 3.5% during the am peak and 7.8% for the pm peak. Table 5 lists the roadways that remained congested from 2019 to 2024 during the AM and PM peaks.

Table 5 Severely Delayed Roadways 2019 & 2024

Remained Above Average AM	Remained Above Average PM
Rte CC - Eastbound from Fremont to US 65	Kansas Expwy - SB & NB Republic Rd to JRF
US 160 - Northbound from Rte AA to Plainview	Kansas Expwy - Northbound from Kearney to Evergreen
US 60 - Eastbound from Rte P to Hwy 174	Kansas Expwy - Southbound from Grand to Sunshine
Kansas Expwy - Northbound from Kearney to Evergreen	Hwy 413 - Westbound from West Bypass to FR 129
Kansas Expwy - Northbound from Republic Rd to Battlefield	Glenstone - Southbound from McLernon to I-44
National Ave - Northbound from Republic Rd to JRF	Glenstone - SB & NB Evergreen to Kearney
Battlefield Rd - Eastbound from Ingram Mill to US 65	Kearney - Westbound from Neergard to Glenstone
Chestnut Expwy - Westbound from US 65 to BNSF	Kearney - Eastbound from East Ave to National
Chestnut Expwy - Eastbound from Campbell to Jefferson	Kearney Eastbound from Neergard to US 65
Glenstone Ave - Southbound from McClernon to Kearney	Kearney - Westbound from Le Compte to US 65
Kearney St - Westbound from LeCompte Rd to US 65	Rte B - Northbound from I-44 to Hwy 266
	West Bypass - Southbound from Chestnut Expwy to Hwy 413
	Sunshine St - Westbound from Campbell to Kansas Expwy
	Sunshine St - EB & WB National to Glenstone
	Sunshine St - Eastbound from Deeswood to Oak Grove
	Sunshine St - EB & WB Deeswood to US 65
	Chestnut Expwy - Westbound from US 65 to BNSF

Remained Above Average AM	Remained Above Average PM
	Glenstone Ave - Northbound from St Louis to Chestnut Expwy
	Glenstone Ave - Southbound from Grand to Sunshine
	Glenstone Ave - Northbound from Seminole to Sunshine
	Battlefield Rd - Westbound US 65 to Ingram Mill Rd
	Battlefield Rd - EB & WB National to Glenstone
	Battlefield Rd - Westbound from National to Campbell
	National Ave - Northbound from Republic Rd to JRF
	Campbell Ave - Southbound from Battlefield to Republic
	US 60 - Eastbound from Rte P to Hwy 174
	US 160 - SB & NB from Rte CC to Plainview Rd
	Rte CC - Eastbound from Fremont to US 65

Intersection Level of Service

Intersection level of service is a function of delay. Accordingly, an intersection with LOS A would have a shorter delay than an intersection with LOS F. The longer traffic is delayed at an intersection, the lower/worse the level of service for that intersection. Maps 6.1 and 6.2 show changes in intersection LOS for the entire OTO region from 2019 to 2024. Intersection LOS data was provided by City of Springfield and MoDOT Southwest District staff via the Traffic Management Center.

Level of Service Scale:

- LOS A, B, C - Acceptable
- LOS D - Approaching Congested
- LOS E & F - Congested

Table 6 and **Table 7** contain summaries of intersection LOS for the AM and PM commutes. All intersections with 2019 data are represented in the totals included in each table.

Table 6 AM Intersection LOS Summary

2024 LOS	Total	No Change	LOS Improved			LOS Declined		
			From LOS D	From LOS E	From LOS F	From LOS ABC	From LOS D	From LOS E
LOS A, B, C	153	143	7	2	1	-	-	-
LOS D	21	16	-	2	0	3	-	-
LOS E	7	4	-	-	2	-	1	-
LOS F	2	2	-	-	-	-	-	-

Table 7 PM Intersection LOS Summary

2024 LOS	Total	No Change	LOS Improved			LOS Declined		
			From LOS D	From LOS E	From LOS F	From LOS ABC	From LOS D	From LOS E
LOS A, B, C	137	124	12	1	-	-	-	-
LOS D	40	31	-	6	-	3	-	-
LOS E	6	3	-	-	-	1	2	-
LOS F	0	-	-	-	-	-	-	-

Intersection LOS Summary

Overall, OTO’s intersections provide acceptable service. A total of 32 intersections saw improved LOS and 21 intersections saw deteriorated LOS during morning commutes between 2019-2024. The PM commute saw similar movements, with 33 improving and 16 deteriorating.

Strategies for Recurring Congestion Mitigation

Phase I of the adopted Congestion Management Process outlined five main strategies on which to focus the OTO Congestion Management Process. Recent projects related to the five strategies are outlined below.

Strategy #1 Improve Roadway Operations

Intersection Geometric Improvements: Table 8 contains a selection of major interchange and intersection improvements that were made to improve overall efficiency and operation of the CMP Network. Improvements are listed for Congested Corridors and for other corridors in the CMP Network.

Table 8 Geometric Intersection/Interchange Improvements 2019 - 2024

Roadway	Improvements
Hwy 14	Add turn lanes and replace signal on Jackson St at Rte NN
	Add turn lanes and replace signal on BU 65 (South) at Hwy 14 (3rd St)
US 160	Add intersection turn lanes on Massey Blvd at South St in Nixa
	Add intersection turn lanes and upgrade signals on Massey Blvd at Tracker Rd
	Add J-turn at FR 157 and add turn lanes at FR 192
	Add J-turn at Westgate
	Add intersection turn lanes on West Bypass at Rte 744
Kansas Expwy	Upgrade signals and add turn lanes at Sunset and Walnut Lawn
US 60	Reconfigure interchange at Glenstone
Rte M	Add roundabout at FR 103 and Repmo Dr in Republic

Roadway	Improvements
Rte MM	Ramp intersection improvements at I-44
Glenstone	Modify access, signals, and replace bus stop pads from Valley Water Mill to US 60
US 65	Add J-turn at Bluegrass Road (FR 94)

Intersection Signalization Improvements: Traffic engineers at the TMC of the Ozarks regularly observe individual intersections and corridors and make timing adjustments based on actual functionality. As technology allows, these improvements might be refined signal offsets, adjusted cycle lengths, changes to coordination status, creation of optional timing plans, or even peer-to-peer operations. Table 9 contains a selection of signalization improvements made over the last few years.

Table 9 Signalization Improvements 2019 - 2024

Roadway	Improvements
Republic Rd	Republic Rd & Kansas Expressway signal retiming reconstruction
Jefferson Ave	Downtown Jefferson signals' coordination adjusted to slow traffic down
Campbell Ave	Campbell & Primrose and Campbell & Walnut lawn (AM Peak only) coordinated with Campbell to south (rather than north)
	Campbell & Battlefield changed to operate in Red Rest in overnight hours
	Campbell & Republic signal retiming reconstruction
	Sunshine & Campbell changed to operate in Red Rest in overnight hours
National Ave	Battlefield & National changed to operate in Red Rest in overnight hours
	Republic & National changed to operate in Red Rest in overnight hours
Fremont Ave	Peer-to-peer operation put into effect on South Fremont between Primrose and Republic outside of peak hour coordinated plans
Central Ave	Central street cycle length lowered between 14:30 and 16:30 on weekdays
	peer-to-peer operation set up for Central & Benton
Glenstone Ave	coordination improvements on Saturdays on Glenstone btwn 12:00 and 16:00
Battlefield Rd	improvements to Battlefield & Carver school signal operation
Springfield Arterials	Where possible, detector settings were changed for detectors in lanes with protected only movements to lock vehicle detector calls until a green light is serviced Previously, if the detector "dropped" a call (meaning it only detected a vehicle for a moment), the controller retains a call for green until the green is serviced

Roadway	Improvements
Springfield Arterials	Advanced Walk activated at several more intersections. Up to 87, or 61% of intersections.
Springfield Arterials	holiday timing in retail areas changed significantly

Incident Management - Detection, Response & Clearance: The OTO region continues to make great strides with its incident management program. The region’s TIM committee meets quarterly and hosts an annual regional TIM exercise. Major incidents are debriefed at these quarterly meetings and actions are identified to address issues experienced during response efforts. The TMC of the Ozarks also continues to make progress in its ability to detect and track incidents. The TMC can deploy warnings on the region’s digital message signs and make alterations to signal timing if needed.

Bus Turnout Construction: City Utilities of Springfield does not plan to add additional turnouts to its routes.

Strategy #2 Reduce Vehicle Miles Traveled (VMT) at Peak Travel Times

Land Use Policies/Regulations: OTO communities have land use policies and regulations that support mixed use developments. These developments create the opportunity to live and work in the same location. Existing mixed-use developments include Farmers Park and Quarry Town in Springfield. Planned developments include Iron Grain Mixed-Use Development in Republic and Gauge Crossing in Willard.

Employer Flextime Benefits/Compressed Work Week: Encouraging employers to consider allowing employees to maintain a flexible schedule allowing the employee the option to commute during non-peak hours.

Strategy #3 Shift Trips from Automobile to Other Modes

This strategy includes improvements beyond those made adjacent to roadways that are included in the Congestion Management Process network. Improvements made anywhere in the OTO study area that encourage people to use alternative modes may lessen the impacts of traffic system area wide.

Fleet Expansion/Bus Service Expansion: City Utilities Transit has no plans to make any major fleet expansions in the next couple years. The utility purchased two electric buses in 2022 and recently received 6 vehicles for their paratransit services. These new buses were replacement vehicles. The utility completed a transit improvement study in 2024 that recommended route modifications to increase productivity while still serving their current customer base. The route modifications include some reductions of the service area on less productive routes and increased service frequency on routes servicing the transit center during weekdays.

Improve/Expand Bicycle and Pedestrian Networks: The region’s overall bicycle and pedestrian network is growing each year, as shown in Table 10. The City of Ozark and OTO have completed portions of the Chadwick Flyer Trail. Greene County constructed a multi-use path along the Kansas Expressway extension and the City of Springfield completed sections of the Grant Avenue Parkway, Galloway Creek Greenway, and Fassnight Creek Greenway. As new subdivisions are built, the region’s sidewalk network is expanded. Additionally, the

municipalities are actively completing and implementing ADA Transition Plans on public rights-of-way and the Missouri Department of Transportation is working on improving pedestrian facilities along major arterials, such as Kansas Expressway, Kearney St, Glenstone Ave and State Highway 14 in Nixa and Ozark. The construction work associated with these plans is improving the accessibility of the region’s sidewalks. The OTO has also invested over \$11 million in TAP and CRP funding towards sidewalk and trail projects that will be completed during 2022, 2023 and 2024.

Table 10 Bicycle/Pedestrian Network Improvements

Type of Network	2018	2022
Bike-Lane	29.44	22.7
Shared Lanes	29.58	37.32
Trails	64.51	71.32
Sidewalks	1,115	1,299
Percent of Roads with Sidewalks	32.07	33.54

Increased Micromobility options: In 2022 the City of Springfield established regulations for micromobility devices and since approved two permits for operations to companies renting e-scooters (electric scooters) on public right of way. The operation permits are limited to areas in the greater downtown area which stretches from Kearney St in the north to Cherokee St in the south and Kansas Expressway in the west to Glenstone Ave in the east. Most ridership in the first years occurs in the downtown core and around the campus of Missouri State University, which also launched a scooter sharing program on campus.

Strategy #4 Shift Trips from SOV to HOV Automobile/Van

Rideshare Matching Services: The OTO continues to offer carpool services through OzarksCommute.com. In 2023 the service had 2,856 registered users.

Vanpool/Employer Shuttle Programs: Several area employers and multifamily housing complexes implemented vanpool or shuttle programs in the past. Examples included Mercy Medical Center, TLC Properties, Missouri State University, and Prime Trucking. During the COVID-19 pandemic, most vanpool programs discontinued service and programs experienced a decline in ridership with a change of commute patterns.

Improved/Increased Park-and-Ride Facilities & Capital Improvements: There is one MoDOT park-and-ride lot at US 65 and Evans Road. The lot has 50 spaces and is currently underutilized. No expansions are planned.

Strategy #5 Add Capacity

The OTO recognizes that added roadway capacity is often not a long-term fix for a congestion problem. Induced demand and the continuation of existing development patterns often result in increased traffic volumes. However, additional capacity is often needed to serve growing traffic volumes. Capacity has been added to corridors that are identified as congested and to non-congested corridors that have a volume-to-capacity problem. Projects aiming to add capacity to congested CMP roads are listed in Table 11.

Table 11 Capacity Improvements 2019 - 2024

Roadway	Planned or programmed improvements
Hwy 14	Add lanes, turn lanes from Fort St to 0.2 miles east of Tiffany Blvd
	Add lanes from 32nd St to 22nd St
	Add lanes and pedestrian signal on Jackson St from 16th St to 0.1 mile west of Rte NN
	Add turn lane from 6th to 14th
US 160	Add lanes for four-lane expressway from 0.3 miles west of FR 94 to west of I-44
	Reconfigure intersection at Rte CC
BU 65 (South St)	Add lanes and pedestrian signals on South St. from Rte 65 to Rte 14 (3rd Street)
US 60	Operational and safety improvements on James River Freeway from 0.5 miles west Glenstone to US 65
	Interchange improvements at Hwy 125
	Add lanes on JRF, improve ramps from National to Rte 65
	Add lanes on James River Freeway from Campbell to National
	Add lanes on James River Freeway from Kansas Expwy to Campbell
Rte MM	Add lanes, realignment, and at-grade RR separation from US 60 to FR 160
	Add lanes from I-44 to MO 360
I-44	Add lanes from MO 13 to US 65 in Springfield
MO 744	Add lanes and modify signals on Kearney from Springfield-Branson National Airport to LeCompte Rd
US 65	Add lanes from Rte CC to Hwy 14
	Add lanes from Hwy 14 to Rte F

Strategy Effectiveness

Efforts to maintain or improve congested conditions have had successes. Observable successes are primarily the result of two mitigation strategies: *Improving Roadway Operations* and *Adding Capacity*. Despite rising volumes, the region has improved acceptable Intersection LOS at signalized intersections and has seen improved travel times associated with capacity projects. Apart from expansion of the bicycle/pedestrian network that rely on people using their automobiles less have been less effective. In addition, while strategies to get businesses to alter work schedules have been unsuccessful, the Springfield school district has staggered start times for grade levels and increased school bus ridership, alleviating peak travel delays in some areas.

Strategy #1: Improve Roadway Operations

Overall improvement in intersection LOS demonstrates the effectiveness of roadway operations and signalization improvements in the OTO. Prioritized projects including fiber connections and further investment in Traffic Management Center resources have proven effective. In addition, geometric improvements at some intersections have been effective in

reducing peak hour delays. Table 12 lists other operational improvements listed in the 2025 - 2029 State Transportation Improvement Program (STIP).

Table 12 Planned Roadway Operational Improvements

Roadway	Planned or programmed improvements
ITS	Add ITS for Ozarks Traffic on Massey Blvd from FR 192 to South St. in Nixa
	Add ITS for Ozarks Traffic at various locations on James River Freeway, Rte FF, and in Ozark
	Add ITS equipment and software on Chestnut Expwy from Lullwood Ave to Scenic and from east of Hwy 13 to Delaware Ave
	Add ITS equipment and software on Chestnut Expwy from West Bypass to Kansas Expwy
Glenstone	Modify access, signals, and replace bus stop pads from Valley Water Mill to US 60
Rte D	Safety and operational improvements from Glenstone to 0.3 miles east of FR 199

Strategy #2: Reduce Vehicle Miles Traveled (VMT) At Peak Travel Times

The OTO will continue to encourage local business to offer flex time and move shift changes to non-peak travel times. The OTO will also work with area communities to encourage land use patterns that facilitate transit service and walking/biking. Behavioral strategies, such as this, rely on expanded cooperation between elected officials in OTO communities and business leaders to implement these local level decisions.

Strategy #3: Shift Trips from Automobile to Other Modes

The OTO will continue to pursue policies that encourage and facilitate alternative modes of transportation. The OTO Board of Directors adopted [Towards A Regional Trail System](#) as its new regional trail plan in July 2021. This new plan lays out a vision for 45 by 45, or 45 miles of new trail by 2045. The OTO has prioritized sidewalk construction with all MoDOT sponsored projects. The OTO wants to see sidewalks built alongside road projects. The OTO is also involved with *Let's Go Smart: Transportation Collaborative*, a community partnership designed to encourage residents to consider their transportation choices every day. The organization encourages walking, biking, riding the bus, and other forms of active transportation. The City of Springfield's Sustainability Office helps coordinate city activities related to environmental sustainability, including the sustainability of transportation choices. This office is involved with many area transportation initiatives. These actions all make it easier for OTO residents to shift to other modes of travel.

Strategy #4: Shift Trips from SOV to HOV Automobile/Van

The OTO is partnering with MoDOT to offer a rideshare matching portal, locally available through the Ozarks Commute website. This site offers opportunities for area businesses to encourage carpooling and for residents to find rides on their own. Facilitating the creation of rideshare groups is an important way the OTO can encourage shifts in people's commuting behaviors.

Strategy #5: Add Capacity

Adding lanes has lowered volume to capacity ratios on roads that were considered over capacity in 2019. Conversion of US 160 from Springfield to Willard to a four lane expressway from a super two lane road, adding lanes and turn lanes on Hwy 14 east and west of US 65, six laning US 65 from US 60 to Rte CC, and adding lanes on James River Freeway from US 65 to National Ave are examples where lower volume to capacity ratios have improved travel speeds.

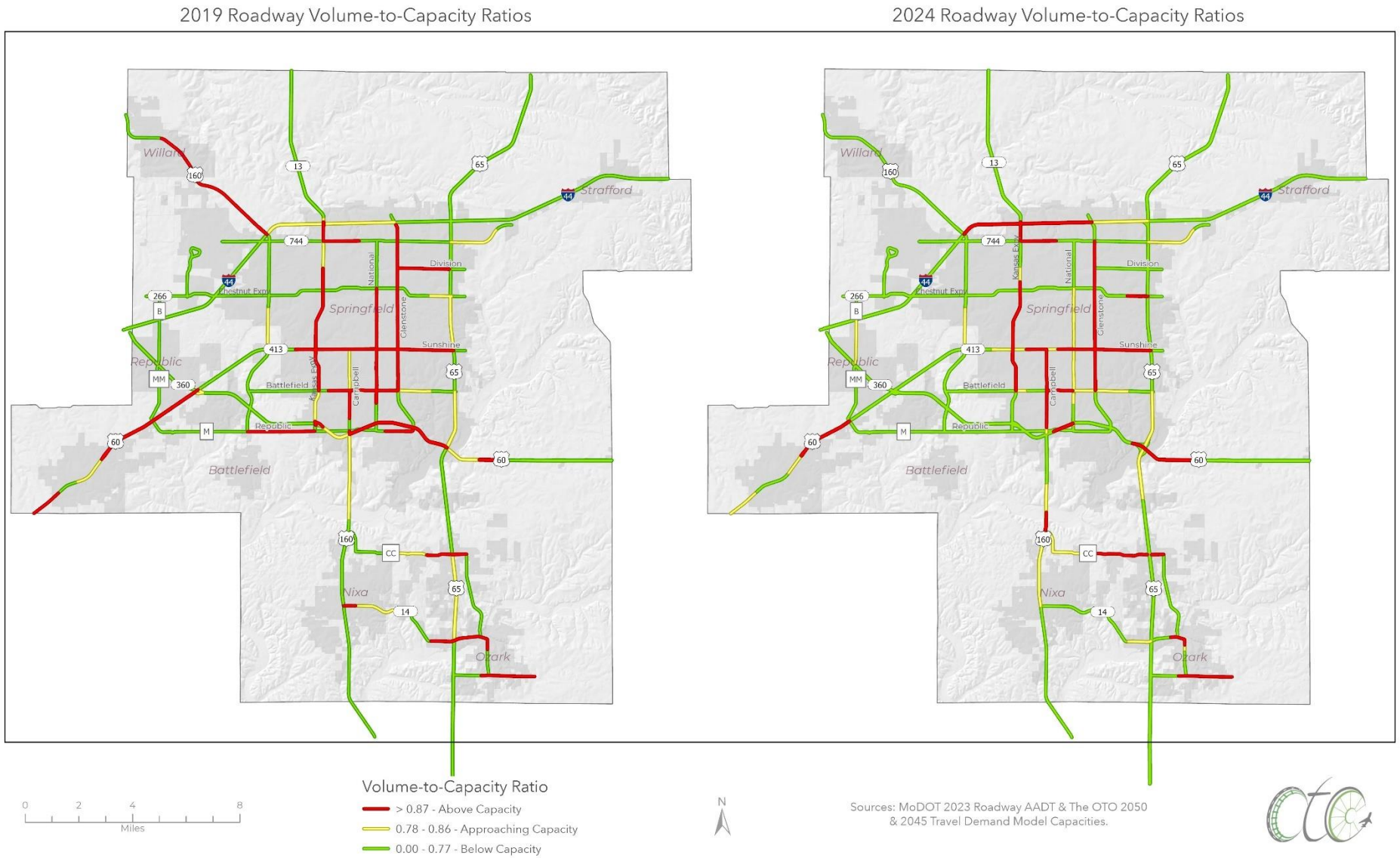
Conclusion

This congestion monitoring report looks at the identified network and the efforts taken to address congestion. There have been extensive efforts undertaken in the past three years which are outlined in the implementation strategies section of the report. To summarize, there have been numerous geometric improvements and additions of capacity. Extensive work has been done to improve coordination of the traffic signal system. Incident management remains a priority as crashes have increased since 2019. Great strides have been made increasing the bicycle and pedestrian network. These strategies have proven effective by reducing the percentage of severe delays during the AM and PM peaks.

The OTO will continue to pursue the five strategies for recurring congestion mitigation. The strategies include important engineering and behavior solutions for congestion. Early priorities for the 2025-2029 STIP include several projects drawing from these strategies.

The maps comparing the four-performance metrics included in this report, volume to capacity ratio, crash frequency, peak hour travel delay, and intersection level of service are included on the following pages. They provide clear evidence of improvements in congestion on much of the CMP network. While much has been done, the CMP committee has selected several roadways to be added to the CMP network to monitor in anticipation of congestion occurring over the next 20 years. These include areas in Ozark east of US 65, Rtes M and MM in Republic, Division St and Rte YY east of US 65, and Rte 266 west of I44 to Rte AB. By being proactive, the OTO remains committed to providing a useful and continuous effort to monitor and address congestion in the OTO area.

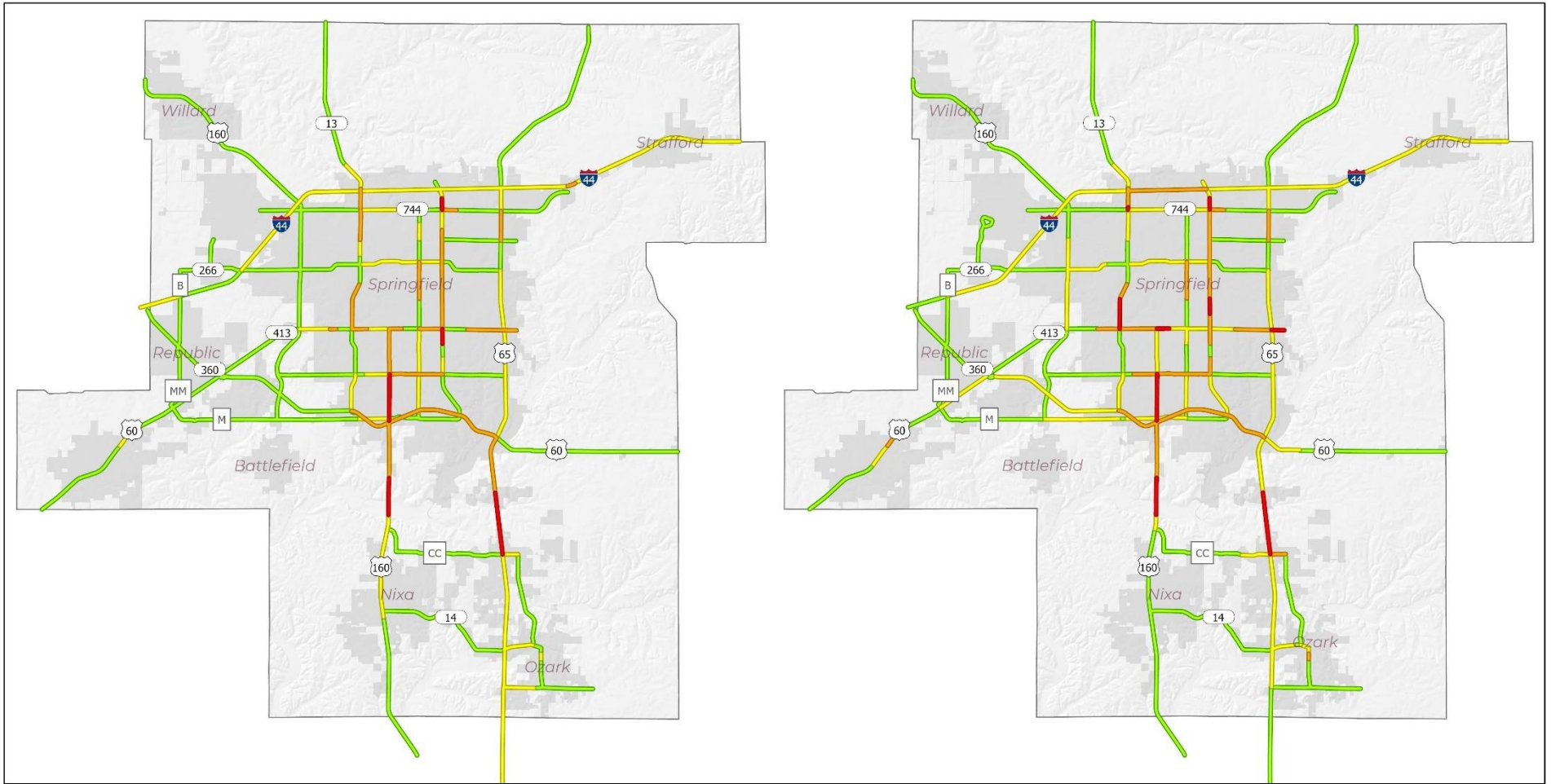
Map 3. Volume-to-Capacity Ratio



Map 4.1. Crashes per Mile 2019 - 2024

Crashes per Mile 2019

Crashes per Mile 2024



Crashes Per Mile

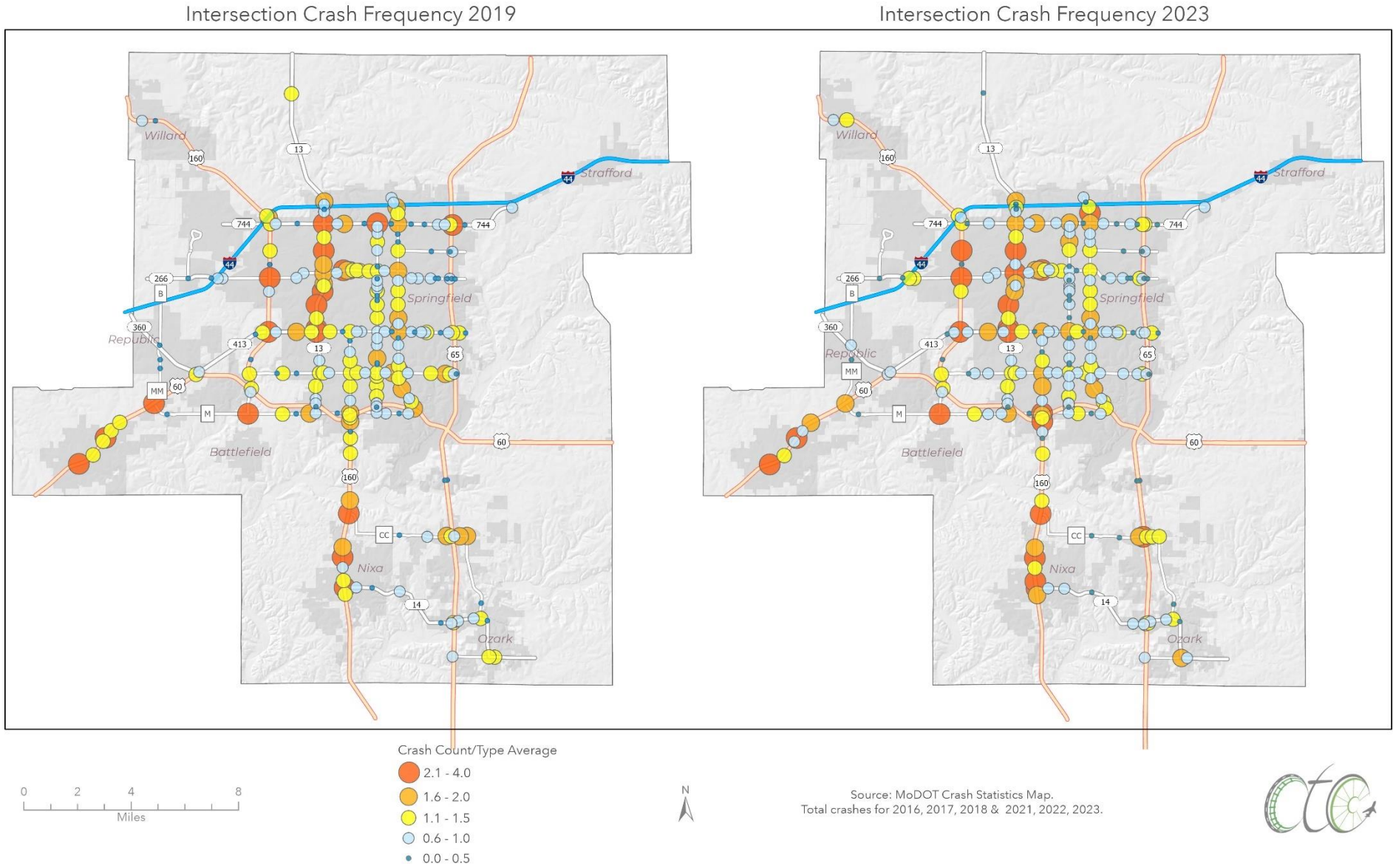
- > 85.0
- 40.1 - 85.0
- 20.1 - 40.0
- 1.0 - 20.0



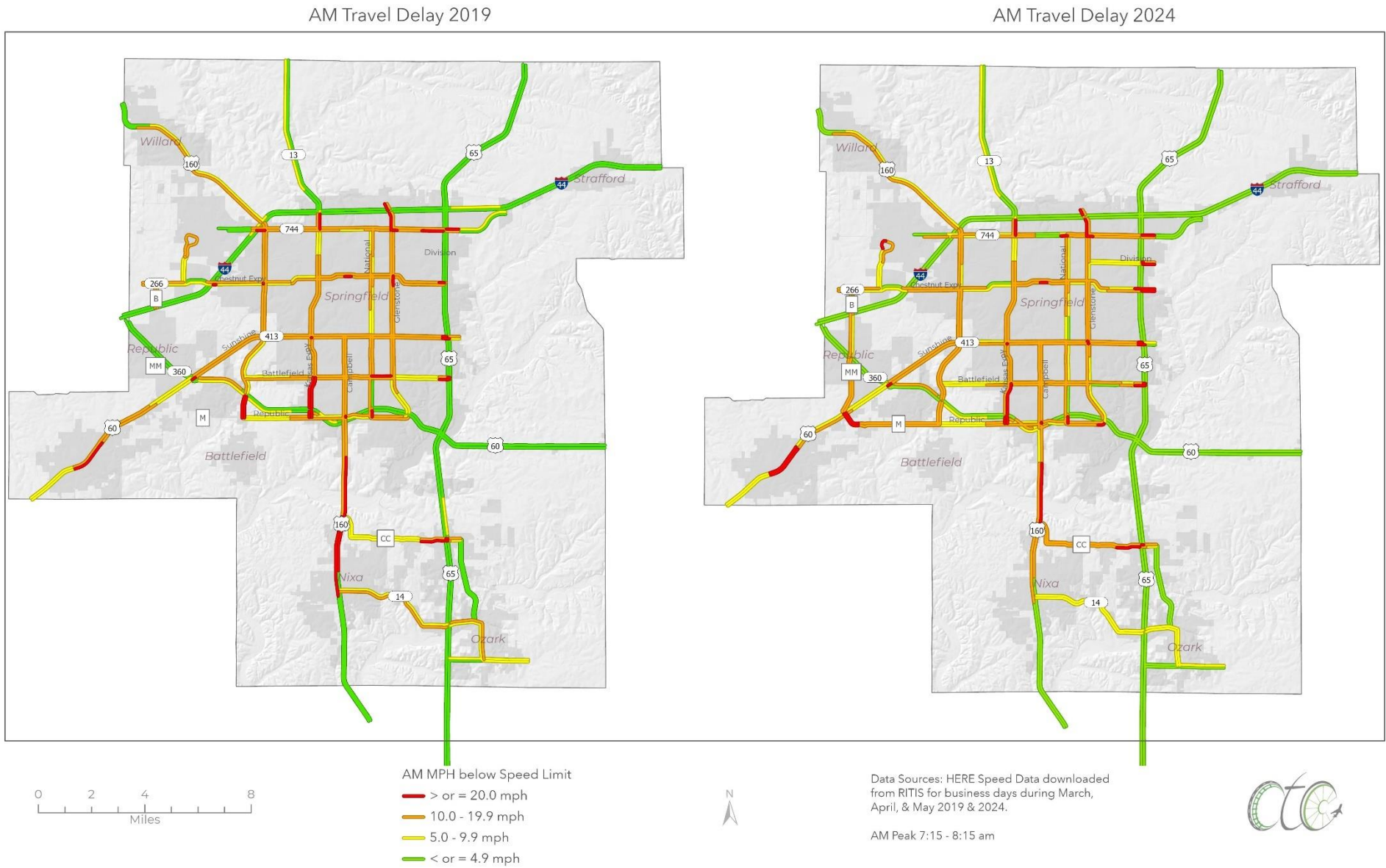
Data Source: MoDOT Crash Statistics Map, Total Crashes for 2017, 2018, 2019 & 2021, 2022, 2023



Map 4.2. Intersection Crash Frequency 2019 - 2024

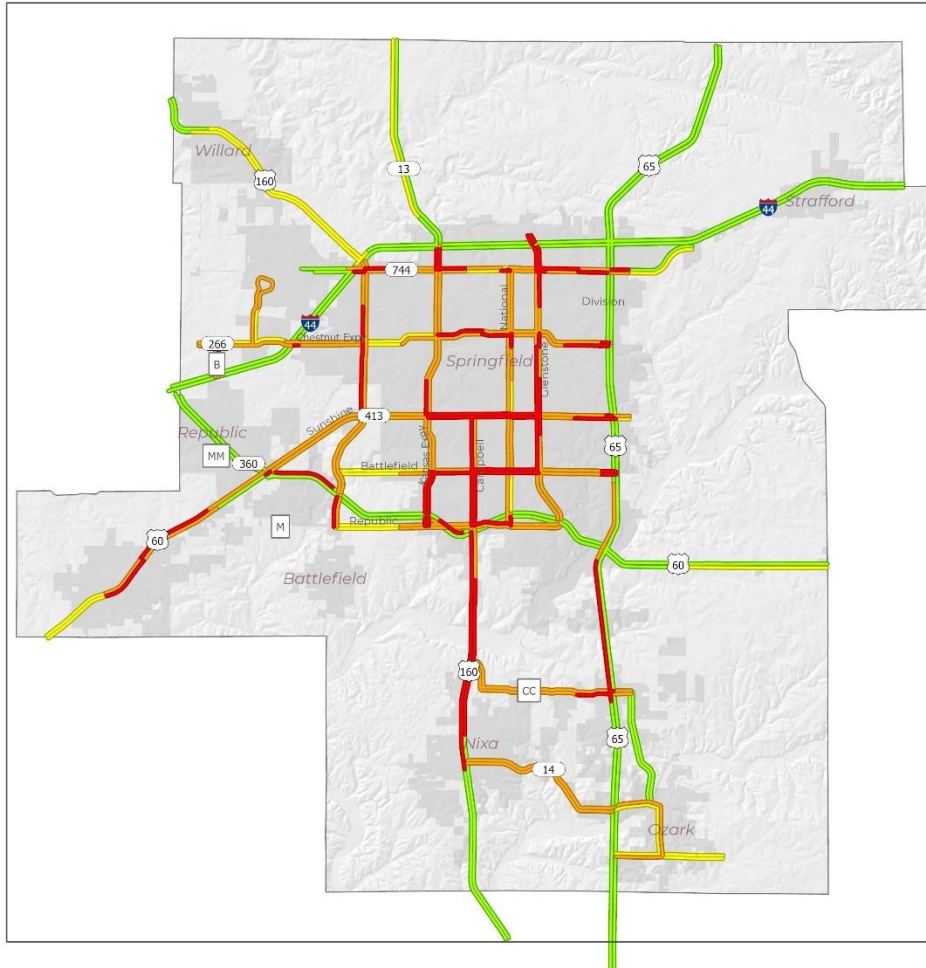


Map 5.1. AM Peak Travel Delay 2019 - 2024

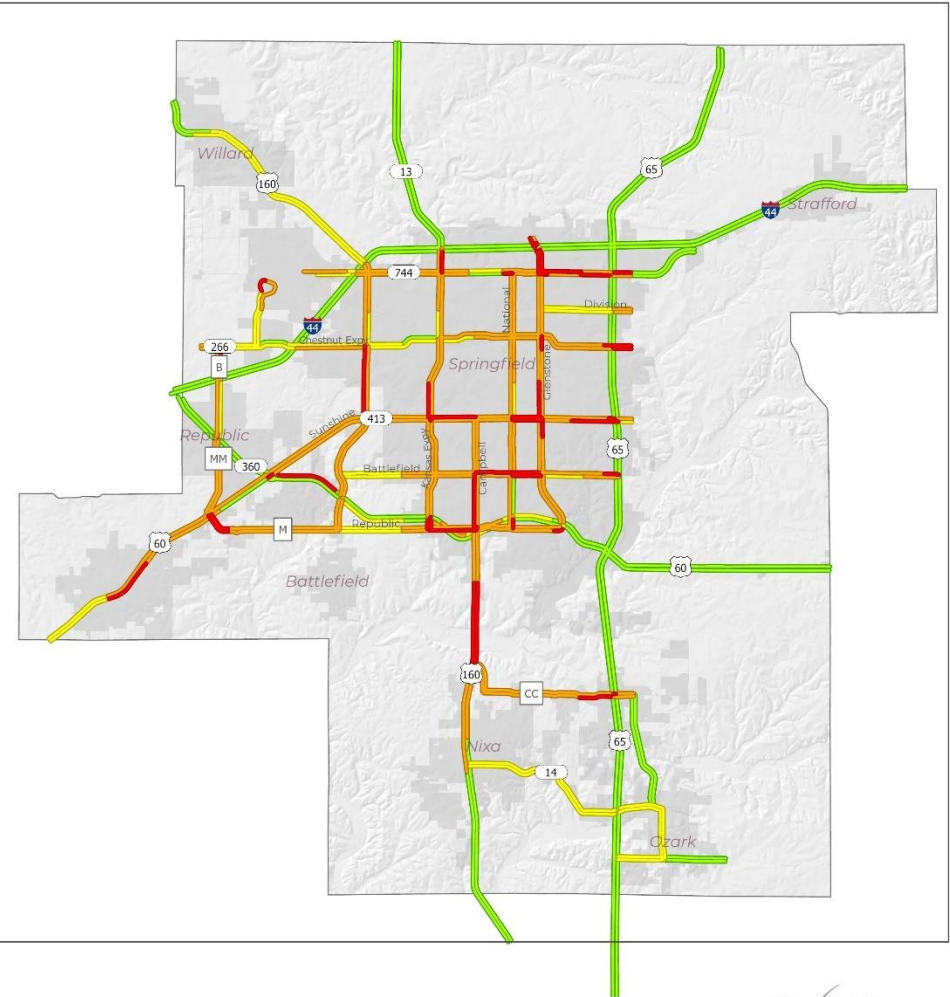


Map 5.2. PM Travel Delay 2019 - 2024

PM Travel Delay 2019



PM Travel Delay 2024



PM MPH below Speed Limit

- > or = 20.0 mph
- 10.0 - 19.9 mph
- 5.0 - 9.9 mph
- < or = 4.9 mph



Data Sources: HERE Speed Data downloaded from RITIS for business days during March, April, & May 2019 & 2024.

PM Peak 5:00 - 6:30 pm



Table 6.1. AM Intersection Level of Service 2019 - 2024

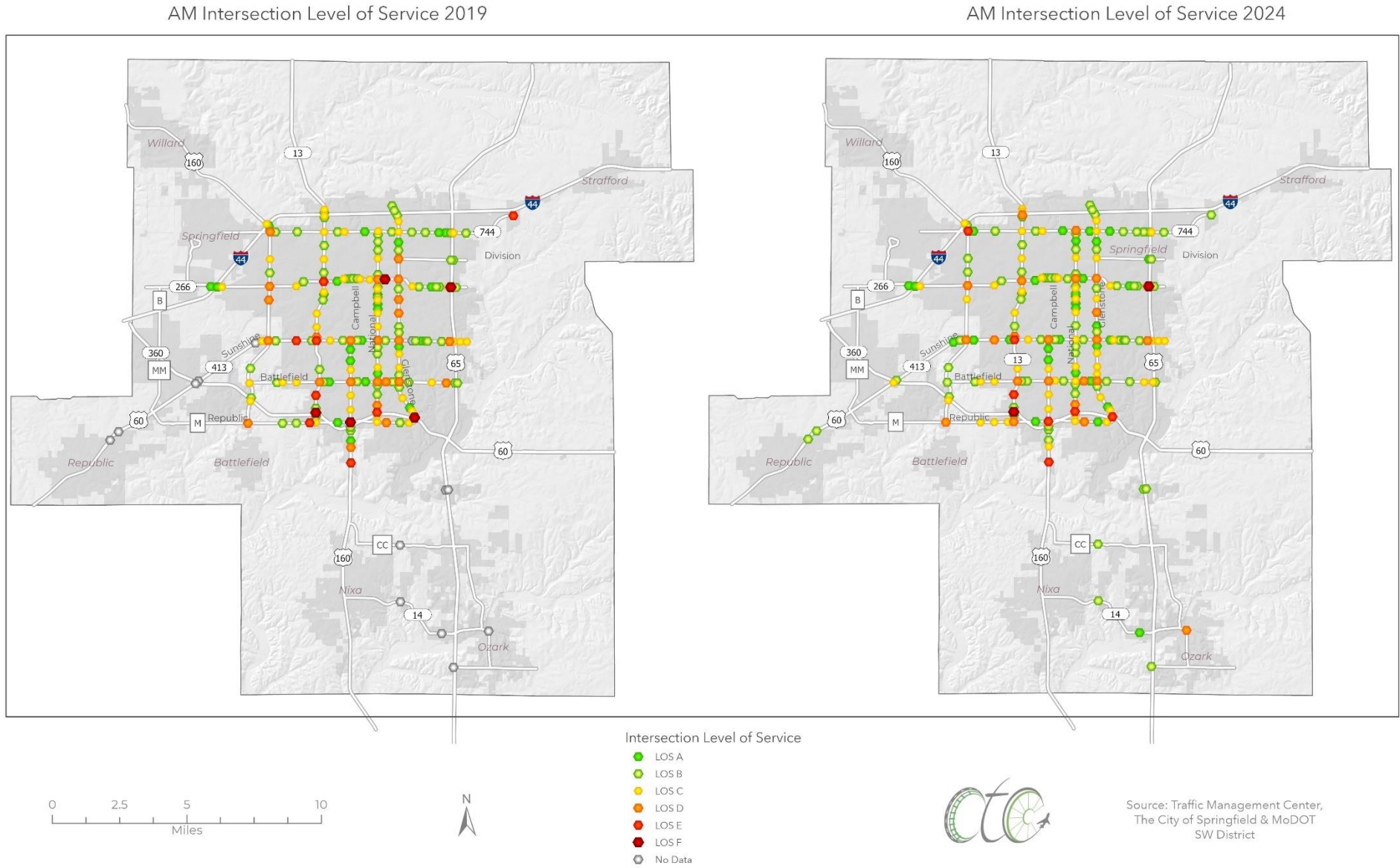
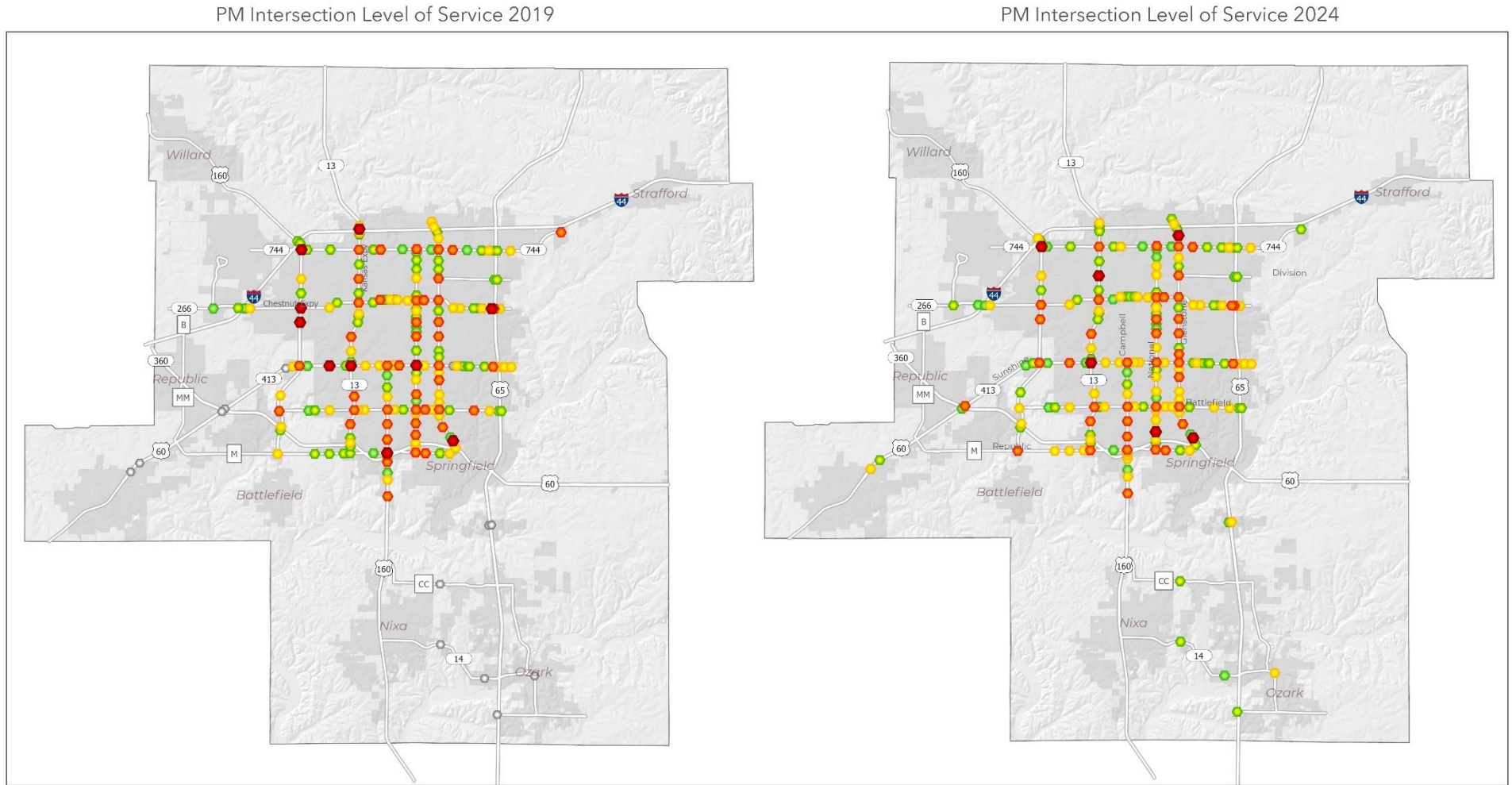


Table 6.2. PM Intersection Level of Service 2019 - 2024



Intersection Level of Service

● A

● B

● C

● D

● E

○ No Data

Street_Centerline



Source: Traffic Management Center,
The City of Springfield & MoDOT SW
District