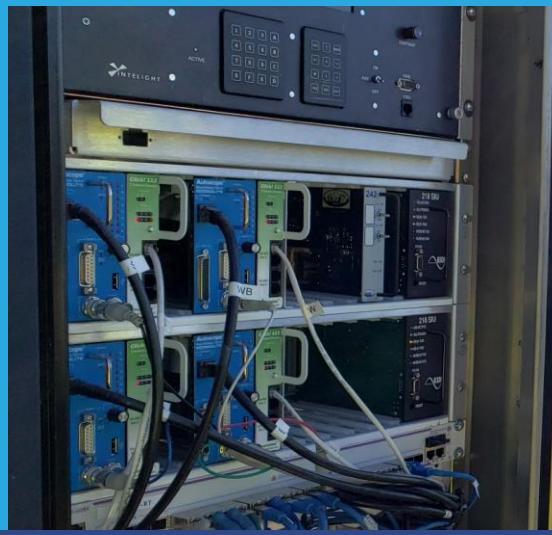
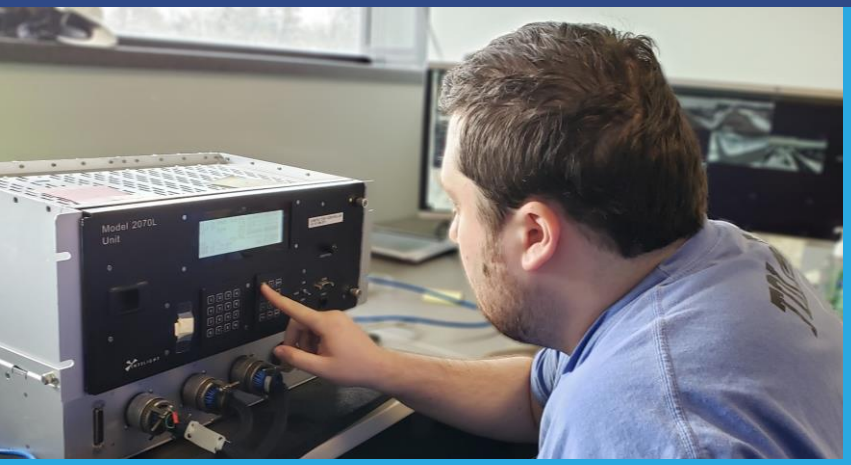


Department of Roads

Macomb County Department of Roads Traffic Operations Center

Monthly Performance Measures Report

JANUARY 2024



MACOMB COUNTY COMTEC Communications & Technology Center

AECOM

INTEGRAL BLUE

WSP

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Incident Updates & Alerts
GovDelivery
5,505 subscribers

Facebook
Macomb County Department of Roads
10,000 followers

X
@MacombNewsNow
5,088 followers

Website
https://roads.macombgov.org/Roads-Home
3,851 website visits

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Spotlight Moments

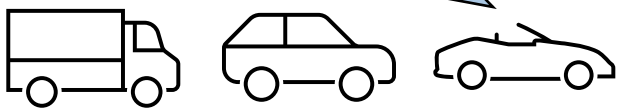
Department of Roads

North Avenue Corridor Optimization

January 26th, 2024

A motorist contacted the TOC with the following words of praise:

"Just wanted to give a shout out and thank the road commission for all the road work they do. Recently I've noticed that traveling north and south on North Ave. between 26 Mile Road and Hall Road that I can make all the lights and don't need to stop. I'm sure there are many other projects that I don't see. Anyways, some of us see it and appreciate it. THANK YOU!!!"
– Motorist feedback



Through the Corridor of Significance Analysis (COSA) program, the MCDR TOC Engineering staff successfully improved progression along North Avenue between M-59 (Hall Road) and 26 Mile Road.

- The total average travel time and the total number of stops were reduced for both northbound and southbound drivers.
- The table below summarizes the data collected from a before-after analysis as well as the net effects the COSA program had on the corridor.
- The green color indicates a measurable reduction in total average travel time, delay, stop delay, and total average number of stops. The orange color reflects an increase in these measures.
- The data was collected by control room technicians, **Mark Brasmer** and **Mike Ray**, as well as traffic operations engineer, **Berkan Sahin**. Analysis and optimization was performed by traffic operations engineer, **Mehedi Hasan**.

Final Results of the COSA Program along North Ave Corridor

Corridor Direction	Period of Day	Total Avg. Travel Time (Sec.)		Time Savings	Total Avg. Travel Time Delay (Sec.)		Time Savings	Total Avg. Stop Delay (Sec.)		Time Savings	Total Avg. Number of Stops		Stops Reduction
		Before	After		Before	After		Before	After		Before	After	
NB	AM	539s	538s	1s	100s	99s	1s	67s	56s	11s	2.3	1.8	0.5
	Off-Peak	503s	447s	56s	64s	8s	56s	47s	0s	47s	1.2	0	1.2
	PM	627s	616s	11s	188s	177s	11s	151s	127s	24s	3.3	3	0.3
SB	AM	561s	530s	31s	122s	91s	31s	104s	88s	16s	2.3	2	0.3
	PM	580s	487s	93s	141s	48s	93s	105s	45s	60s	2.3	1	1.3

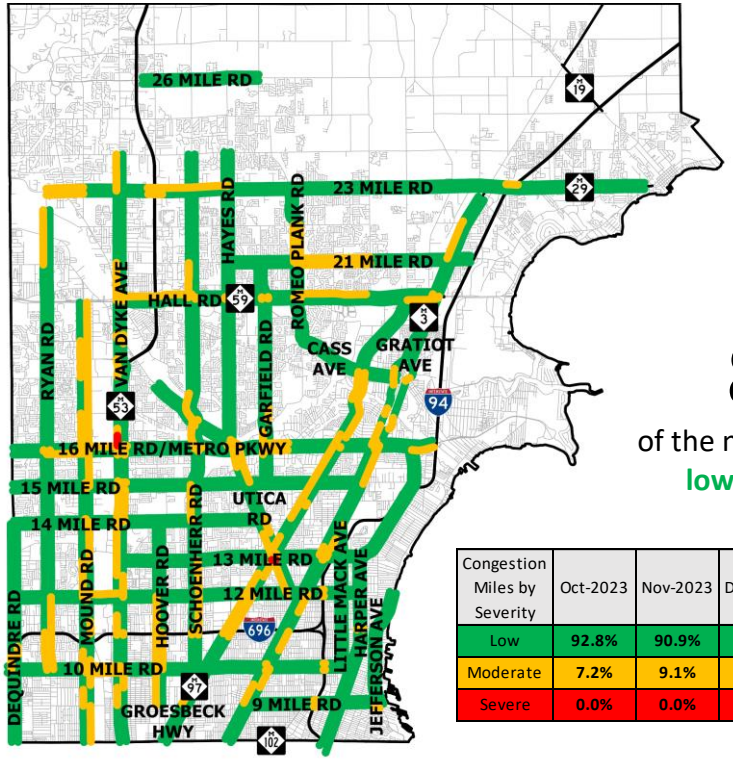
Monthly Mobility

Department of Roads

Traffic operations engineers oversee 737 signalized intersections on 1,700 miles of roads within Macomb County. They routinely look for poor traffic flow and identify opportunities for improvement through traffic signal timing adjustments. Congestion, which is defined as when vehicle speeds are less than the free-flow speed along a roadway, is the metric used for identifying poor traffic flow. Traffic operations engineers use congestion data from the Regional Integrated Transportation Information System (RITIS) which collects probe vehicle data from cell phones and navigation devices that emit GPS locations. The data displayed shows congestion percent which is averaged per weekday minute for a given month. Roadway segment congestion levels are categorized into the following severity levels: Low (vehicle speeds were >=85% of free-flow speeds), Moderate (vehicle speeds were >=50% and <85% of free-flow speeds), and Severe (vehicle speeds were <50% of free-flow speeds).

Weekday AM Peak (6–9AM)

The AM peak this month saw increased levels of moderate congestion. This was most likely due to the snowy weather conditions drivers faced on their morning commutes.



82%

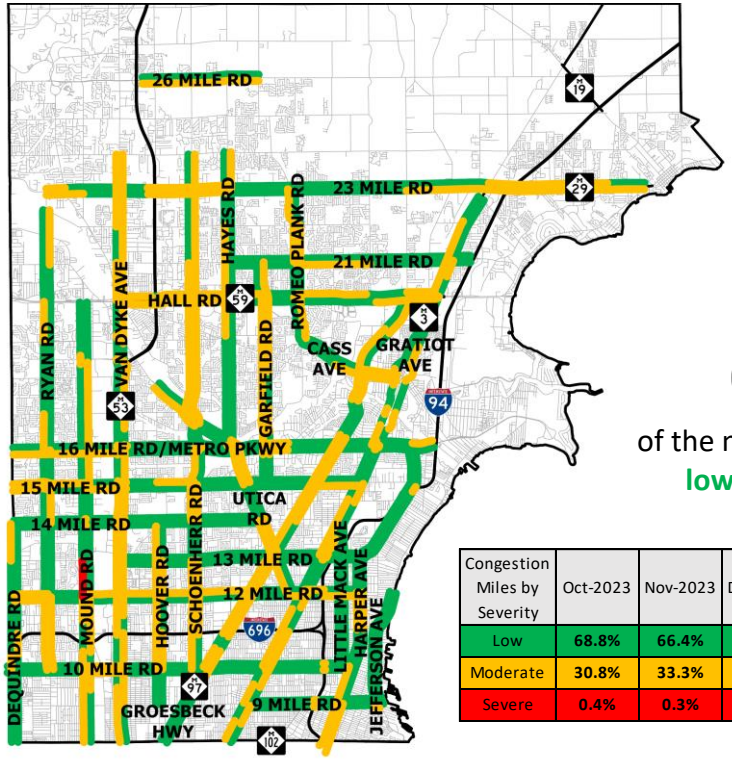
of the network had **low congestion**

Congestion Miles by Severity	Oct-2023	Nov-2023	Dec-2023	Jan-2024
Low	92.8%	90.9%	91.3%	82.1%
Moderate	7.2%	9.1%	8.7%	17.8%
Severe	0.0%	0.0%	0.0%	0.1%

35.8% total AM peak time this month with moderate/severe congestion | **▲66%** from previous month

Weekday PM Peak (3–6PM)

Compared to last month, drivers faced similar amounts of congestion on Macomb County corridors.



60%

of the network had **low congestion**

Congestion Miles by Severity	Oct-2023	Nov-2023	Dec-2023	Jan-2024
Low	68.8%	66.4%	60.3%	59.7%
Moderate	30.8%	33.3%	39.6%	40.1%
Severe	0.4%	0.3%	0.0%	0.2%

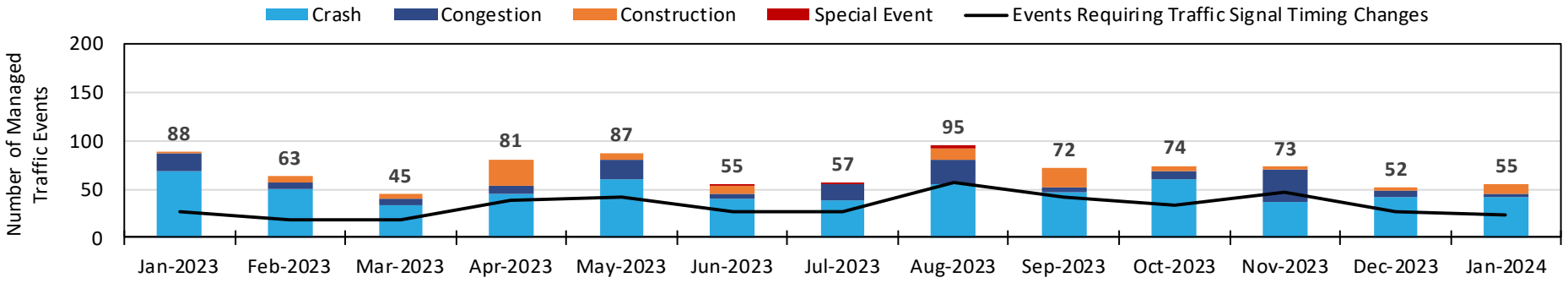
51.4% total PM peak time this month with moderate/severe congestion | **▲4%** from previous month

Traffic Incident Management

Department of Roads

Operations technicians monitor roadway cameras, locate traffic concerns, and disseminate traffic information to the motoring public through GovDelivery, Facebook, and Twitter. Traffic events managed by the TOC include crashes, congestion, construction (planned and unplanned projects), and special events. When a traffic event is identified, the operations technicians work together with the traffic operations engineers to determine if a traffic signal timing change is necessary to reduce congestion for drivers.

Managed Traffic Events (Mon–Fri, 6AM–6PM)



55

managed traffic events this month

▲6% from previous month

▼38% from this month last year

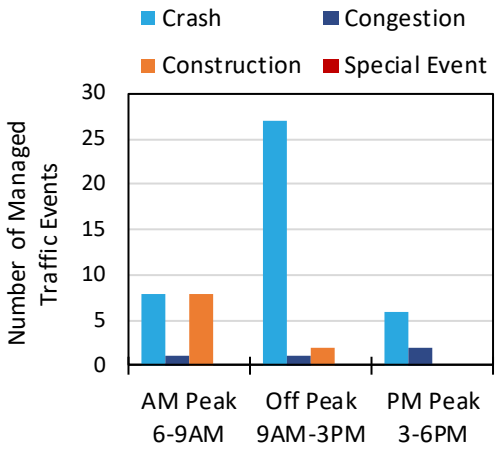
23

managed traffic events requiring traffic signal timing changes this month

▼12% from previous month

▼15% from this month last year

Managed Traffic Events this Month by Time of Day



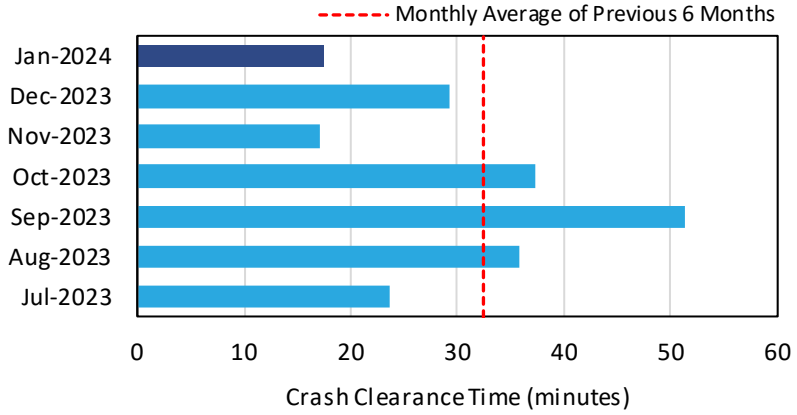
Crash Clearance Time

18 mins.

average crash clearance time this month

▼46%

compared to monthly average of previous 6 months

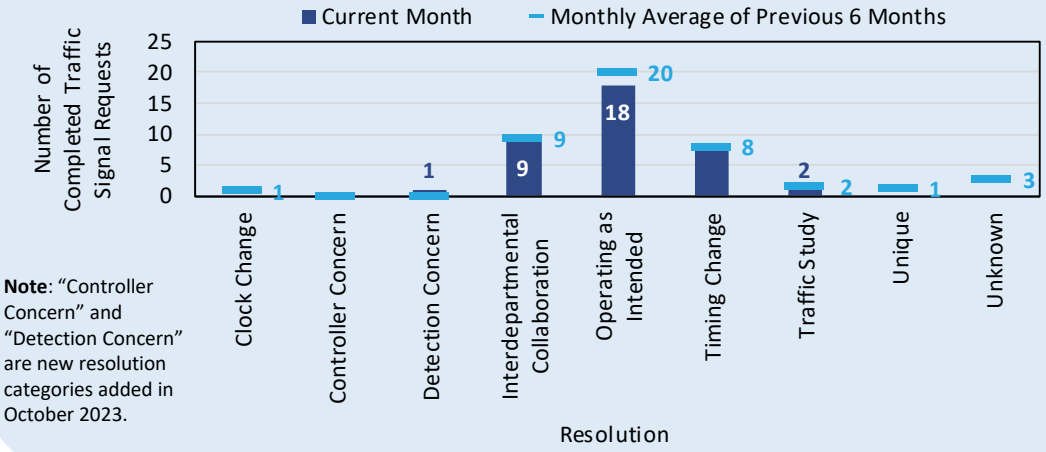


Traffic Signal Requests

Department of Roads

Motorists driving in Macomb County can report traffic signal concerns to our operations technicians. The operations technicians disseminate these requests to the appropriate group for a timely resolution.

Completed Traffic Signal Requests



Note: "Controller Concern" and "Detection Concern" are new resolution categories added in October 2023.

38

completed traffic signal requests this month

▼13%

compared to monthly average of previous 6 months

Signalized Intersections Requiring Maintenance

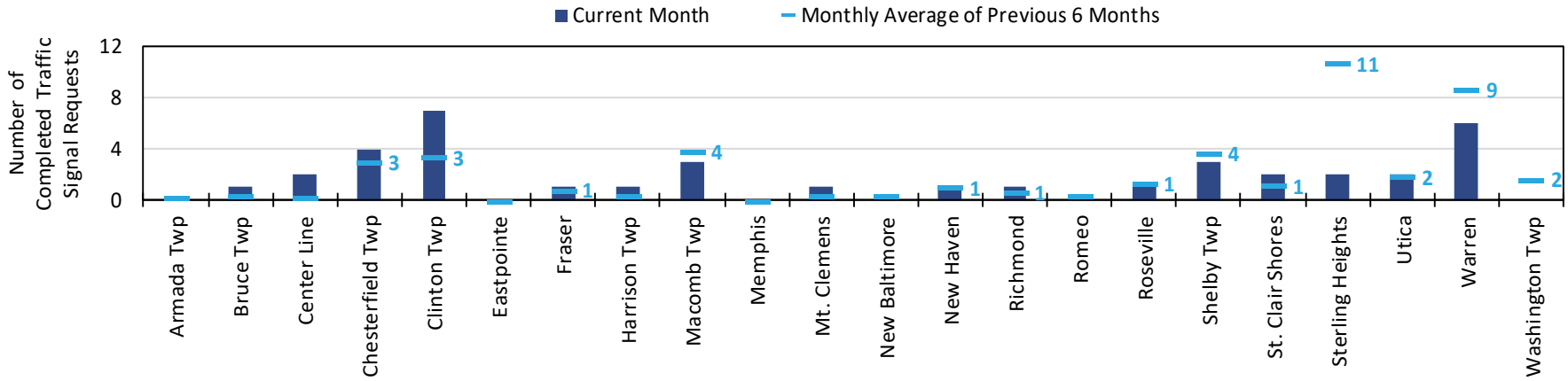
Reports of intersections in flash or burnt-out traffic signal bulbs are verified by the TOC and forwarded to the Macomb County Electrical Department

67

signalized intersections requiring maintenance this month

▲20% compared to monthly average of previous 6 months

Completed Traffic Signal Requests per Municipality

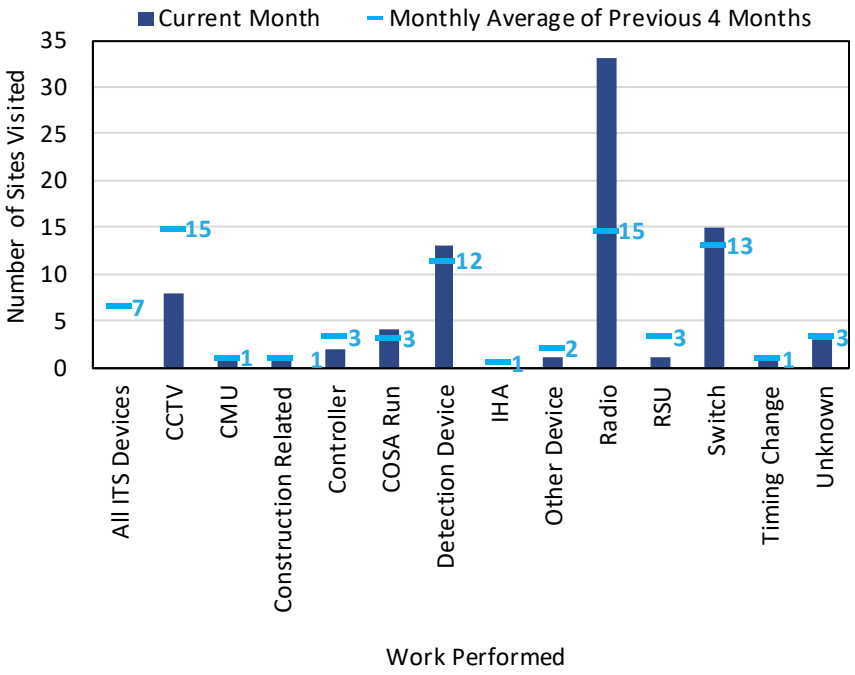


Field Work and Traffic Signal Timing Changes

Department of Roads

IT/ITS technicians work in the field on a variety of devices at signalized intersections to maintain the Macomb County transportation network. Traffic operations engineers configure vehicle detection zones at signalized intersections, as well as perform traffic signal timing changes due to traffic events, motorist requests, or through proactive approaches.

Field Work



83

sites visited this month

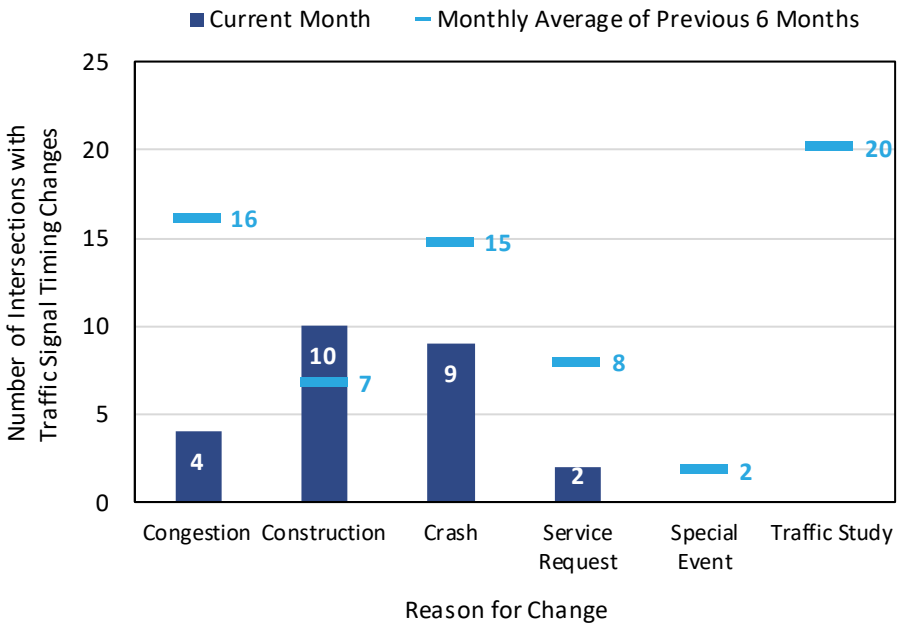
▲3% compared to monthly average of previous 6 months

112

hours spent in field this month

▼19% compared to monthly average of previous 6 months

Traffic Signal Timing Changes



25

intersections with traffic signal timing changes this month

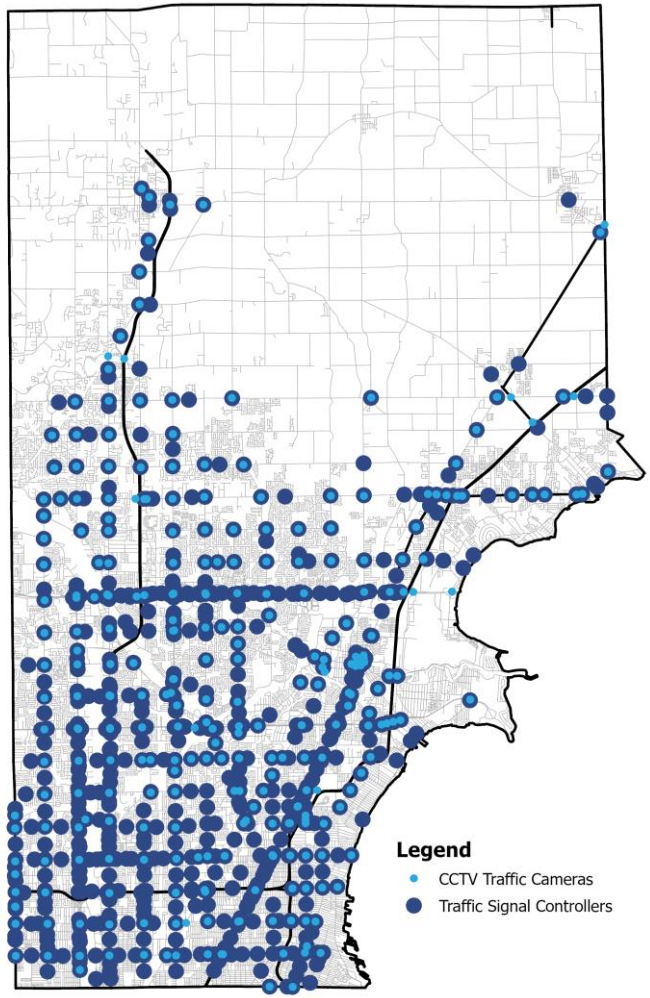
▼63% compared to monthly average of previous 6 months

Infrastructure Connectivity

Department of Roads

Macomb County has an extensive ITS network that is maintained by IT/ITS technicians. This includes **315** closed-circuit television (CCTV) traffic cameras and **701** traffic signal controllers that are located at signalized intersections throughout the county. It is important to upkeep and maintain the communication availability to these devices so that they can be remotely accessed by traffic operations engineers.

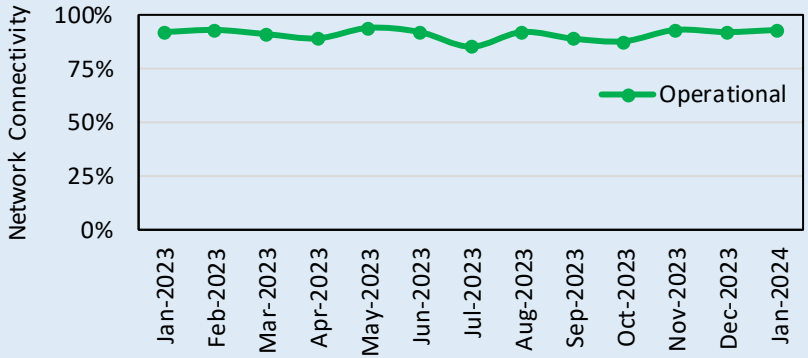
Macomb County ITS Map



315

CCTV Traffic Cameras

CCTV Traffic Camera Network Connectivity



701

Traffic Signal Controllers

Traffic Signal Controller Network Connectivity