

Goal 6 – Be designed and operated for an efficient level of service and safety.

Congestion Locations

Congestion has a negative impact on roadway performance. Congestion not only causes traffic delays and decreases the efficiency of the transportation system, but also increases accidents and air pollution. Based on data reported by the American Society of Civil Engineers (ASCE), congestion in the Toledo area costs motorists \$233 per person per year in fuel and lost time.

Transportation professionals have developed a process to measure congestion by calculating the traffic volume (V) and capacity (C) for each road section and comparing them (V/C ratio). We consider a road "congested" if the V/C ratio is greater than 0.9. (This means we are using 0.9 or more of the street capacity).

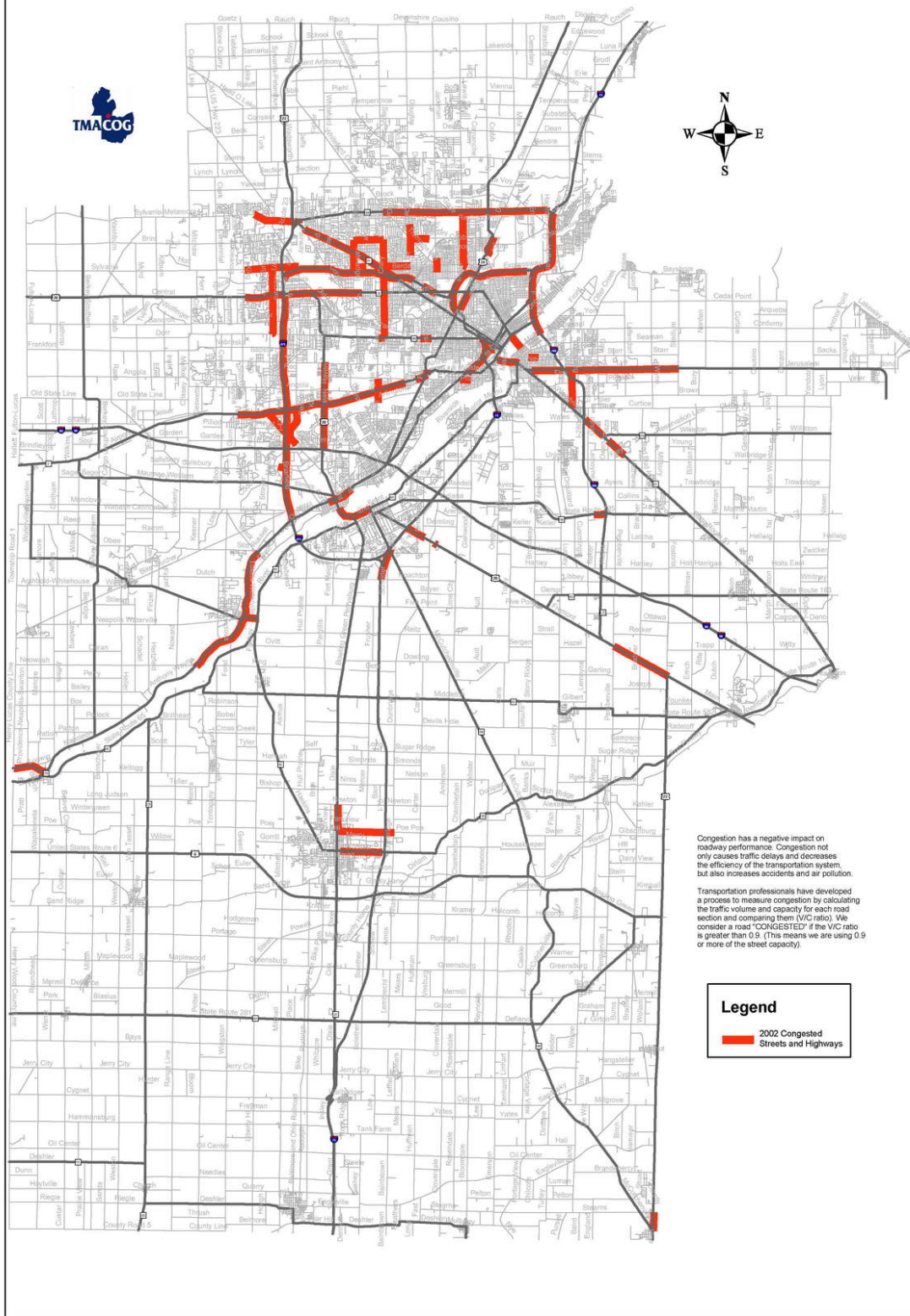
Map 6.1 shows a draft of the congested locations in the TMACOG region based upon the V/C ratio. The data is still being analyzed and it is anticipated that there will be some minor changes to the map but the overall trends should remain consistent.

As of 2002 there were approximately 40 locations that met the 0.9 V/C criteria to be considered as congested locations. Many of the locations are those most often focused on in traffic reports such as I-475 between Central Ave and US 24, I-75 from the Jeep split to Alexis Rd., I-280 from the Maumee River to I-75, Airport Highway (SR 2) between Albon Rd and Westwood Ave and again between SR 51 and Stadium Rd, Reynolds Rd (US20) between the Turnpike and Hill Ave, and Monroe St between I-475 and Corey Rd. There are numerous other congested areas in the region that cause traffic delays including Wooster St. in Bowling Green, along the Maumee-Perrysburg, High Level, and Cherry St. Bridges, Secor Rd Between Dorr St. and Laskey Rd., and US 24 between Stitt Rd and Neowash Rd. Some of these areas have generally high traffic volumes throughout the day while others experience high volumes only during rush hour periods but one thing they have in common is that most also make the list of high accident locations.

The congestion on the freeways is a result of regional traffic using those high speed, limited access routes to more quickly get either around town or through it. At other locations (Secor Rd., Wooster St., Reynolds Rd, Airport Hwy, Monroe St.), arterial routes that are designed to carry larger flows of traffic have become centers of business and have a multitude of curb cuts allows motorists access to shopping centers and restaurants in addition to carrying traffic through the region. In other instances, most of the regions bridges across the Maumee River are congestion locations since there are a limit number of points to cross this natural barrier.

Given the variety of reasons for congestion on area roadways, there isn't a "one size fits all" solution. Widening the road may be the best option in some cases, while better traffic light timing, a new interchange, or improvements on adjacent roads to help reduce volumes may be best in others.

2002 STREET AND HIGHWAY CONGESTION



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Legend

2002 Congested Streets and Highways

Map 6.1: Draft 2002 Street and Highway Congestion

Accident Locations

TMACOG acquired accident information on the Ohio state system from the Ohio Department of Transportation. The state system consists of interstates and state routes in Ohio. ODOT used the High Crash Location Identification System (HCLIS) to determine where high rates of accidents have occurred. HCLIS is a flexible system for identifying high hazardous locations. HCLIS uses the latest three year data available (currently 2001-2003) for analysis. The three-year crash data is merged with the current, volume and road inventory data files and is associated with its operational characteristics.

The HCLIS uses the hazard index method to determine overall ranking. It calculates a priority index for each location. The user can specify any of the six ranking methods to be included as factors for the priority index and give each selected method any weighted value. The rank at each location for each method selected is multiplied by its corresponding weight. Those products are then summed, giving the priority index value for that location. The resulting priority index values of all locations are then sorted in ascending order, giving the HCLIS's hazard index rank for all location candidates. Map 6.2 shows the HCLIS rankings. The lower the value the higher the accident rate.

In the TMACOG area, the locations with the highest accident rates are primarily on the expressway system, on Wooster St. in Bowling Green, along SR 2, on SR 65, on SR 795 near I-280, and on Central Avenue and Alexis Rd in Toledo.

Along the expressway, the key locations where accidents have occurred are on I-475 by the US 23 split and on I-75 south of downtown Toledo by the Maumee River. Each of these locations have oncoming traffic merging on in close proximity to off ramps, causing conflicts and numerous accidents. In particular, the traffic heading southbound from US 23 onto I-475 has to contend with traffic merging into the right lane to exit at Central Ave.

Many of the high accident location occur at busy intersections, such as Central Ave and Reynolds Rd, and Alexis Rd and Jackman Rd. They are primarily at high volume locations where traffic will try to make it through signals and often conflict with vehicles turning into businesses or changing lanes. Many of the accidents could be prevented if commuters would exhibit more patience while driving and more carefully observe what is taking place around them.

Solutions to these issues could include changes in roadway signage and striping, or structural modifications may be needed at some locations.

Safety Hot Spots

Data on safety hotspots was taken from the Ohio Department of Transportation on the state system in Ohio. Safety hot spots are defined as any two-mile section of freeway with more than 200 crashes or a non-freeway location with more than 150 crashes over a three year period. Map 6.3 shows safety hot spot locations based on these criteria.

Freeway System Locations:

- I-475 near Central Ave.
- I-475 near Airport Hwy.
- I-475 between Talmadge Rd. and I-75
- I-75 from the Michigan line to Ottawa River Rd.
- I-75 from I-280 to the Wood County border

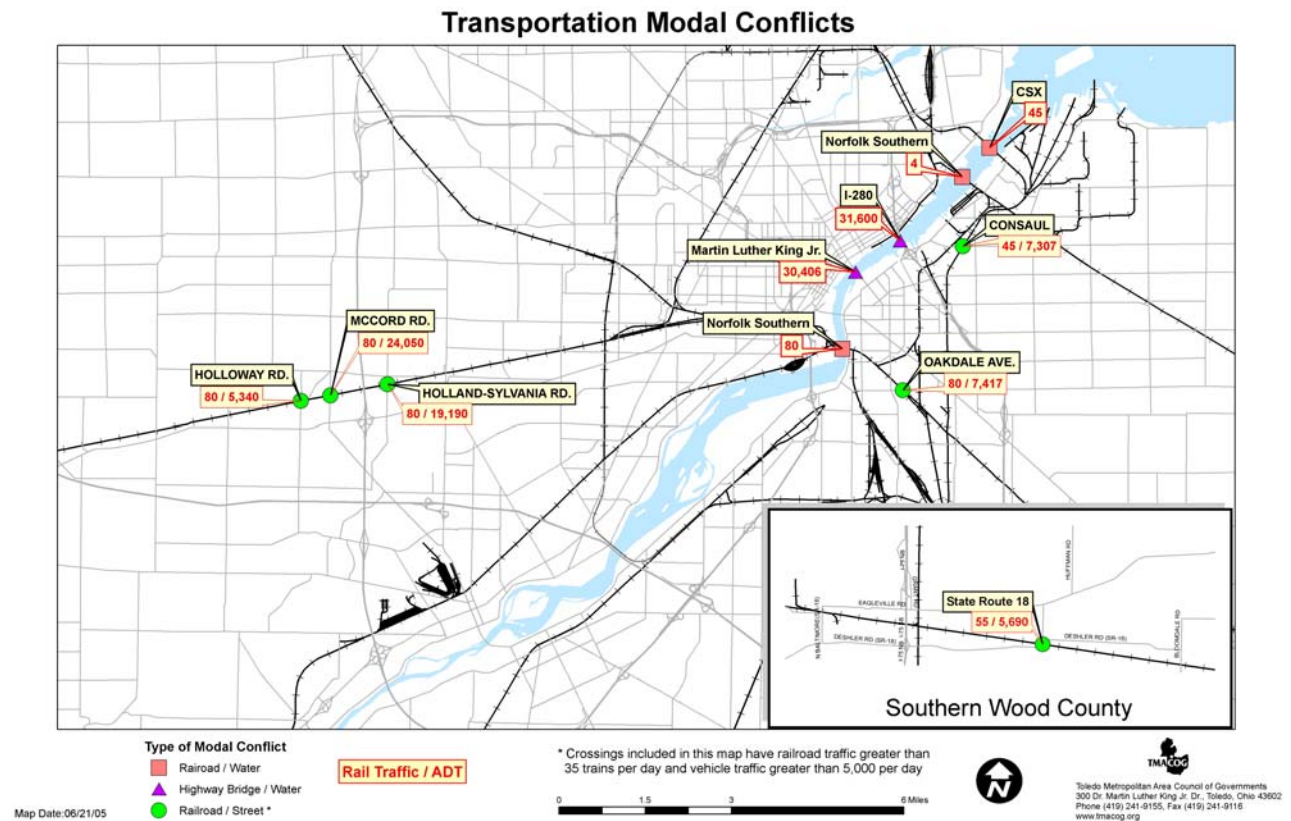
Non-Freeway Locations:

- Alexis Rd from Talmadge Rd. to Detroit Ave,
- Monroe St. from Laskey Rd. to Central Ave.
- Central Ave. from King Rd. to Reynolds Rd.
- Central Ave. from Talmadge Rd. to Monroe St.
- Central Ave. from Collingwood Blvd. To Cherry St. – Cherry St. from Central Ave. to the Greenbelt Pkwy.
- Reynolds Rd. from Central Ave. to just south of Holland Rd.
- Dorr St. from Reynolds Rd. to Parkside Ave.
- Detroit Ave. from Fearing Blvd. To I-75
- Airport Hwy. from Albon Rd. to just east of Byrne Rd.
- Airport Hwy. from Champion St. to Broadway St., north on Summit St., across the Anthony Wayne bridge and along Woodville Rd to I-280
- Miami St from the Wood County border to Fassett St., east on Fassett St. to Oak St., Oak St. to Woodville Rd.
- Anthony Wayne Trail from Erie St. to South Ave.
- Anthony Wayne Trail from Monclova Rd. to Key St.
- SR. 20 from about 7th St. to south of Crossroads Pkwy.
- Wooster St. from Thurston Ave. to I-75

Modal Conflict Locations

Modal conflict locations are those where two different modes of transportation intersect and must accommodate one another. These can include locations such as highways or rail lines crossing the river, or rail lines crossing highways. Map 6.4 shows modal conflict locations in the TMACOG Area. The map identifies conflict locations at bridge locations on the Maumee River up to the end of the shipping channel at the Norfolk Southern crossing, and at street locations where the roadway volume is over 5,000 vehicles per day and the rail volume is over 35 trains per day. Based on this criteria, eleven locations are identified:

- Maumee River at the CSX Bridge
- Maumee River at the Norfolk Southern Bridge
- Maumee River at the I-280 bridge *
- Maumee River at the Martin Luther King Jr bridge
- Maumee River at the Norfolk Southern bridge (south of the Anthony Wayne bridge)
- CSX rail line at Consaul St.
- Norfolk Southern rail line at Oakdale Ave.
- CSX rail line at SR18
- Norfolk Southern rail line at Holland-Sylvania Rd.
- Norfolk Southern rail line at McCord Rd.
- Norfolk Southern rail line at Holloway Rd.



Map 6.4: Modal Conflict Locations

Expressway Needs Study

The Expressway Needs Study was a multi year effort by the Toledo Metropolitan Area Council of governments (TMACOG) to review problems, needs, opportunities and transportation solutions on the existing expressway system in Lucas and Wood Counties in the Toledo metropolitan area. Begun in 1996, the report documents the needs assessment for expressway facilities in the TMACOG area, analyzes various modal and project concepts to address those needs and recommends the mode, design concept, and scope of specific project improvements and strategies to advance into preliminary engineering.

The overall study was conducted in two phases. Phase 1 (needs assessment/modal alternatives) included three main tasks. The first task identified current or anticipated problems on the expressways or nearby related roadways and then investigated those problems to better understand their nature. The second task was to use computer forecast models and other available analyses to evaluate different modal alternatives to address these problems. The third task of Phase 1 was to divide the expressway system into logical analysis segments listed in priority order for Phase 2 studies.



Map 6.5 MIS Corridors

Phase 2 then conducted more detailed planning and engineering studies on two Major Investment Study (MIS) corridors that addressed the top four analysis segments from phase 1. Part of the MIS process was to develop and evaluate transportation improvement alternatives by analyzing the impacts, benefits and costs of the solutions. The end goal of the Expressway Needs Study and the MIS was a refined set of major improvement projects and lower cost transportation strategies to enhance the expressway system in the Toledo metropolitan area.

The final recommended list of expressway transportation improvement projects resulting from the TMACOG

Expressway Needs Study (Phase 1 and the Phase 2A MIS) are presented for each of two MIS corridors (Map 6.5) in priority order. They are the result of extensive discussions, review and evaluation by the MIS Scoping Committee (a.k.a. TMACOG Planning Committee), the

Transportation Council and by study consultants (Parsons Transportation Group) and TMACOG staff.

These recommendations considered the ratings from the detailed evaluations but also considered the logical construction sequencing and available development funding. As a result, the MIS Scoping Committee recommended the implementation of these projects as shown below.

The MIS process involved an extensive analysis of the needs on the expressway system in the area, considered a wide range of modal and construction alternatives, evaluated these alternatives and developed a set of recommendations. The mode, design concept, and scope for a set of improvement strategies and projects to advance for implementation is shown graphically in Map 6.6.

FIRST MIS CORRIDOR

(I-475 and US 23 from the I-75/I-475 System Interchange (in Perrysburg) to the Michigan state line)

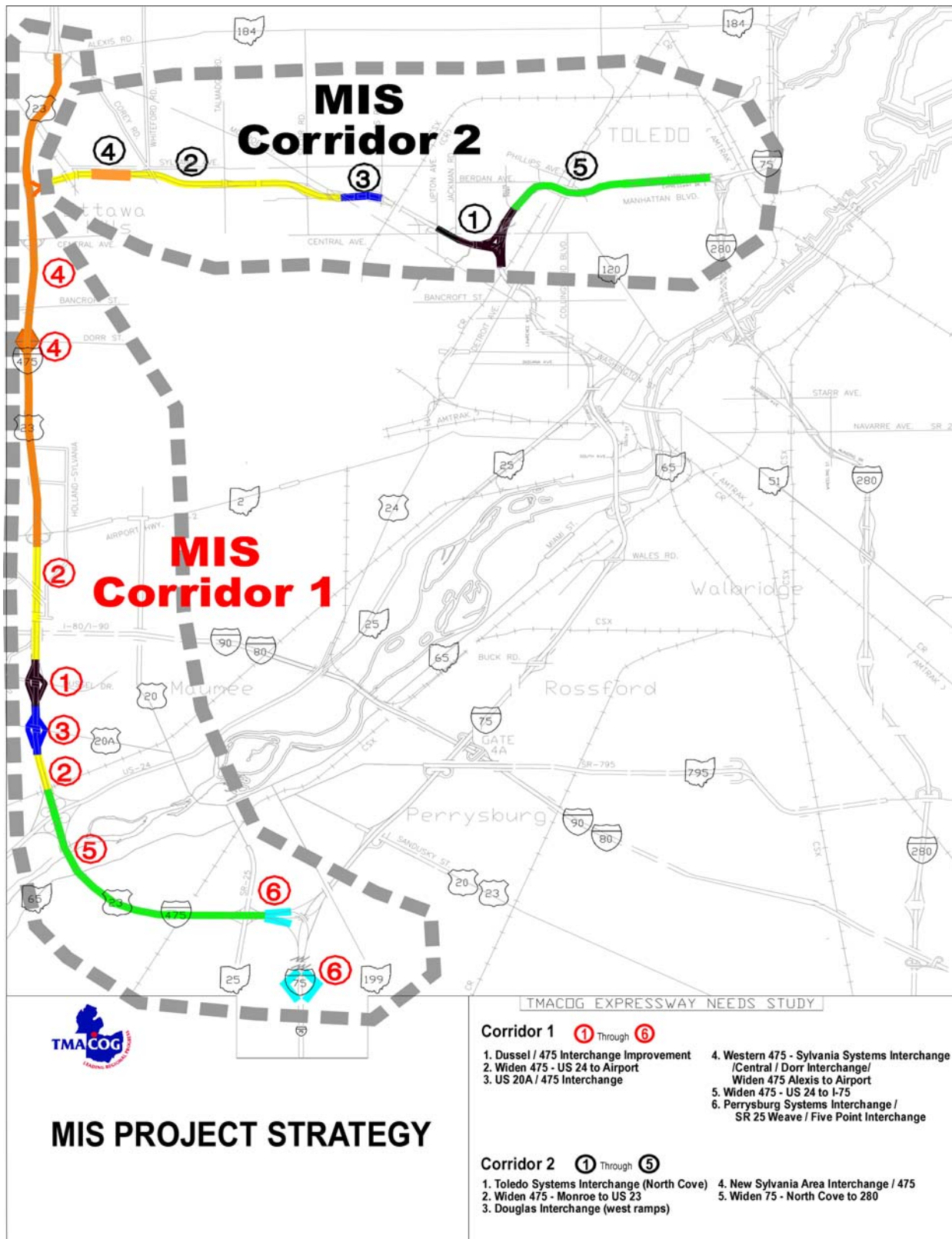
1. Complete Phase 1 of the US-20A/Salisbury Road/Dussel Drive interchange*
2. Widen I-475 from Airport Highway to US-24
3. Complete Phase 2 of the new US-20A/Salisbury Road/Dussel Drive interchange*
4. Complete the I-475/US-23 System Interchange and Central Avenue Interchange Upgrade including I-475 widening from Alexis Road to Airport Highway and Dorr Street Interchange.
5. Widen I-475 from US-24 to I-75 in Perrysburg
6. Complete the I-475/US-23 System Interchange Upgrade in Perrysburg Including Channelizing the Multi-lane Merges and a New Interchange at Five Point Road

SECOND MIS CORRIDOR

(I-475 and I-75 from I-475/US-23 System Interchange to I-75/I-280 System Interchange)

1. Complete the I-475/I-75 (“Jeep Split”) System Interchange Upgrade and only mainline widening necessitated by this project.
2. Widen I-475 from US-23 to Monroe Street (east of Secor).
3. Douglas Road Interchange Ramps (for west “side” of interchange including collector/distributor street to Monroe Street) New Sylvania/West Toledo Interchange (west of Talmadge Road)
4. Widen I-75 from Systems Interchange (North Cove) to I-280

*Asterisk denotes that specific project development activities are being undertaken by a local sponsor.



Map 6.6 Expressway Need Recommendations

Access Management

“Access management” focuses on the process of balancing access to property with the need to preserve roadway function. Access management applies roadway and land use techniques in order to preserve the safety, function, and capacity of transportation corridors. Access management provides for reasonable driveway access, and protects public investment in highway infrastructure. Access management can also improve the environment for pedestrians, bicycles, and motor vehicles in all settings and on all roadway types by reducing and consolidating driveway conflict points.

Zoning overlay districts are an important tool for being able to control driveway access to business and commercial establishments and can help improve safety by limiting the number of access points to a site. There are currently seven locations in the TMACOG area that use overlay districts from access management. These locations are:

- **Airport Highway in Springfield Twp.**
450’ north and south of the Airport Highway Centerline from Holland/Sylvania RD. to Eber Rd.
- **Airport Highway in Swanton Twp.**
660’ north and south of the airport highway centerline from Springfield Twp. Border to the village of Swanton border.
- **SR 2 Jerusalem Twp.**
600’ north and south of the SR2 centerline from the Oregon City border to the Ottawa County border.
- **Central Ave (US 20) Sylvania Twp.**
400’ north and south of the Central Ave. centerline from McCord Rd to the western TWP limit
- **Route 20A Monclova Twp**
600’ north and south of the 20A centerline from I-475 to Whitehouse –Spenser Rd.
- **SR 64 Waterville Twp.**
600’ either side of the SR 64 centerline from the limits of the Village of Waterville to the limits of the Village of Whitehouse.
- **US 24 Waterville Twp.**
600’ either side of the US 24 centerline from the limits of the Village of Waterville to the Waterville Twp boundary.

Intelligent Transportation Systems (ITS)

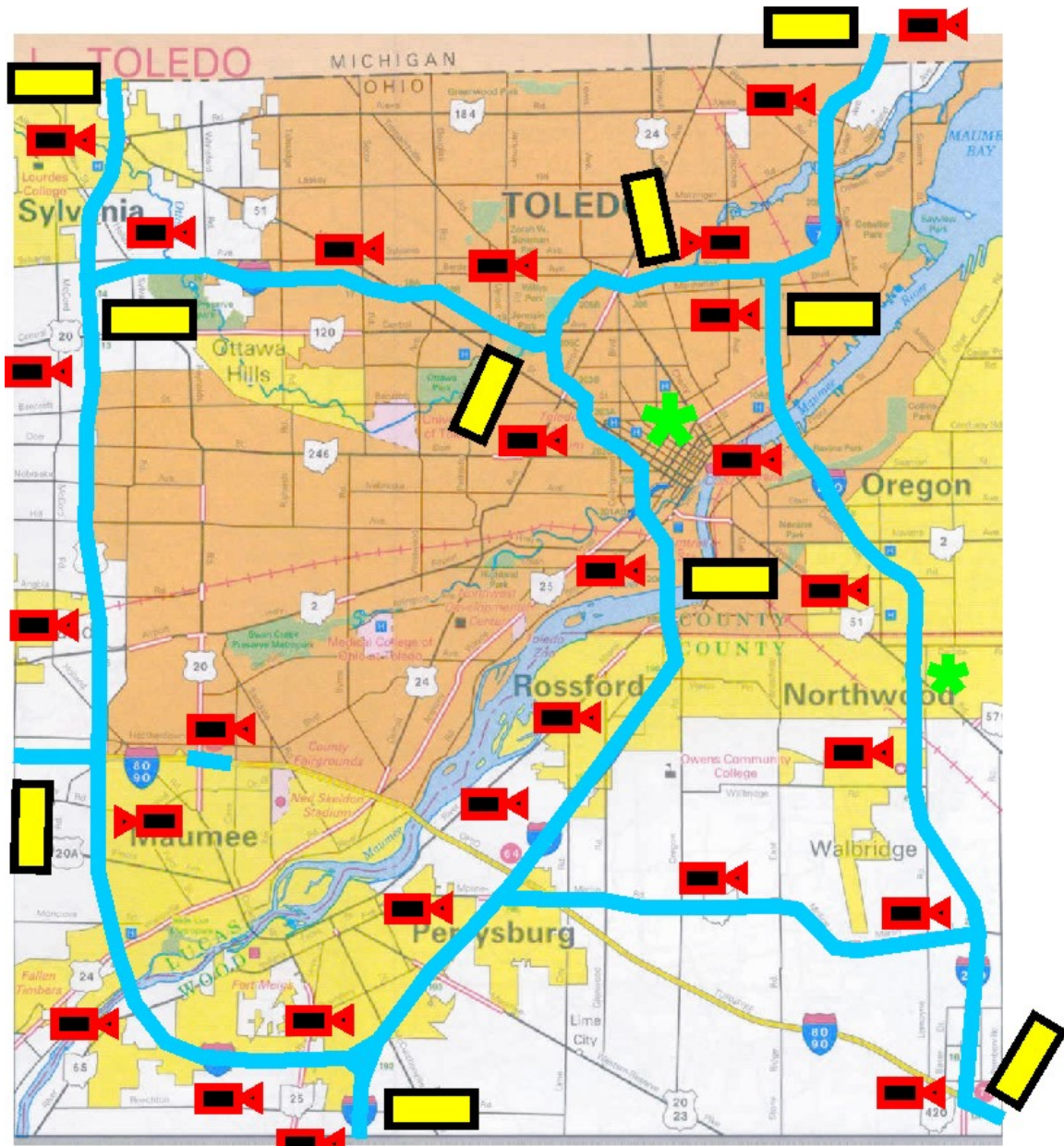
The Toledo Metropolitan Area Regional Intelligent Transportation Systems (ITS) Architecture is a roadmap for transportation systems integration in Lucas, Wood, and portions of Monroe Counties over the next 15 years. The architecture has been developed through a cooperative effort by the region's transportation agencies, addressing roads, transit, and rail/highway crossings in the region. The architecture represents a shared vision of how each agency's systems will work together in the future, sharing information and resources to provide a safer, more efficient, and more effective transportation system for travelers in the region. Map 6.7 shows the proposed locations of cameras and signage in the TMACOG region.

The architecture is an important new tool that will be used by:

- Operating agencies to recognize and plan for transportation integration opportunities in the region.
- Planning agencies to better reflect integration opportunities and operational needs in the transportation planning process.
- Other organizations and individuals that use the transportation system in the region.

The architecture provides an overarching framework that spans all of these organizations and individual transportation projects. Using the architecture, each transportation project can be viewed as an element of the overall transportation system, providing visibility into the relationship between individual transportation projects and ways to cost-effectively build an integrated transportation system over time.

The architecture proposed would include 10 dynamic message signs, 60 cameras, 45 vehicle flow detectors, 37 miles of fiber optics, and 24 wireless installations. The system is scheduled to go into design in FY2009 and construction in FY2011 with a projected cost of \$15 million.



Map 6.7: ITS Architecture