



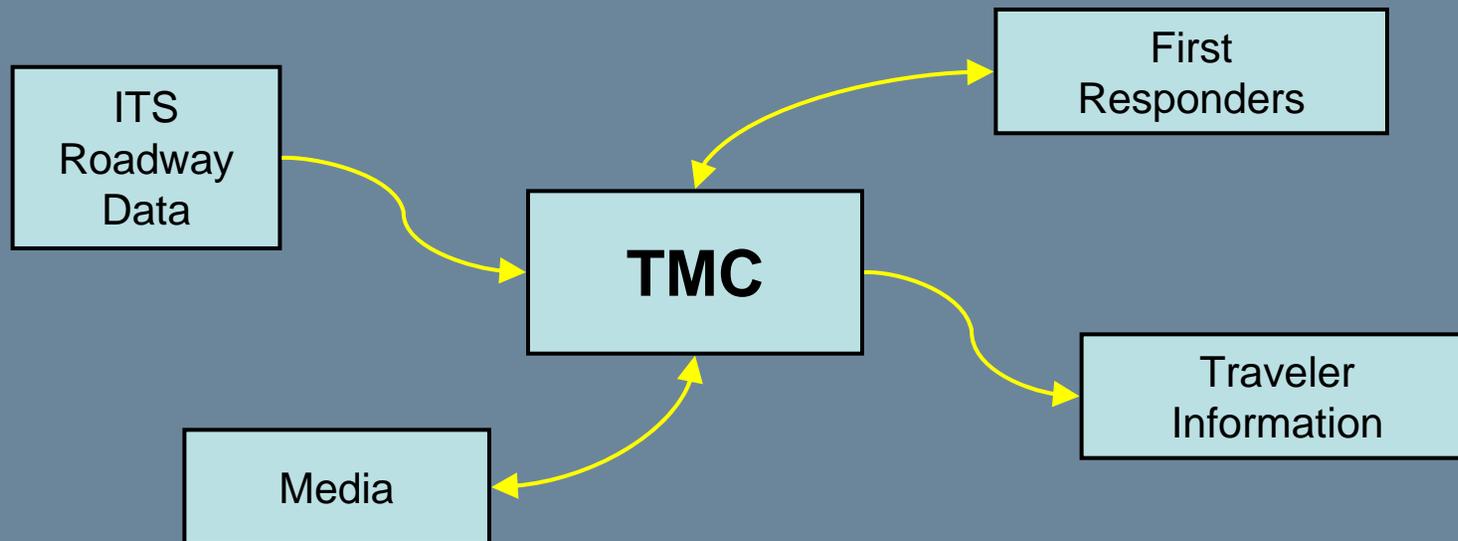
West Michigan TMC

TMC Startup and Operations

URS

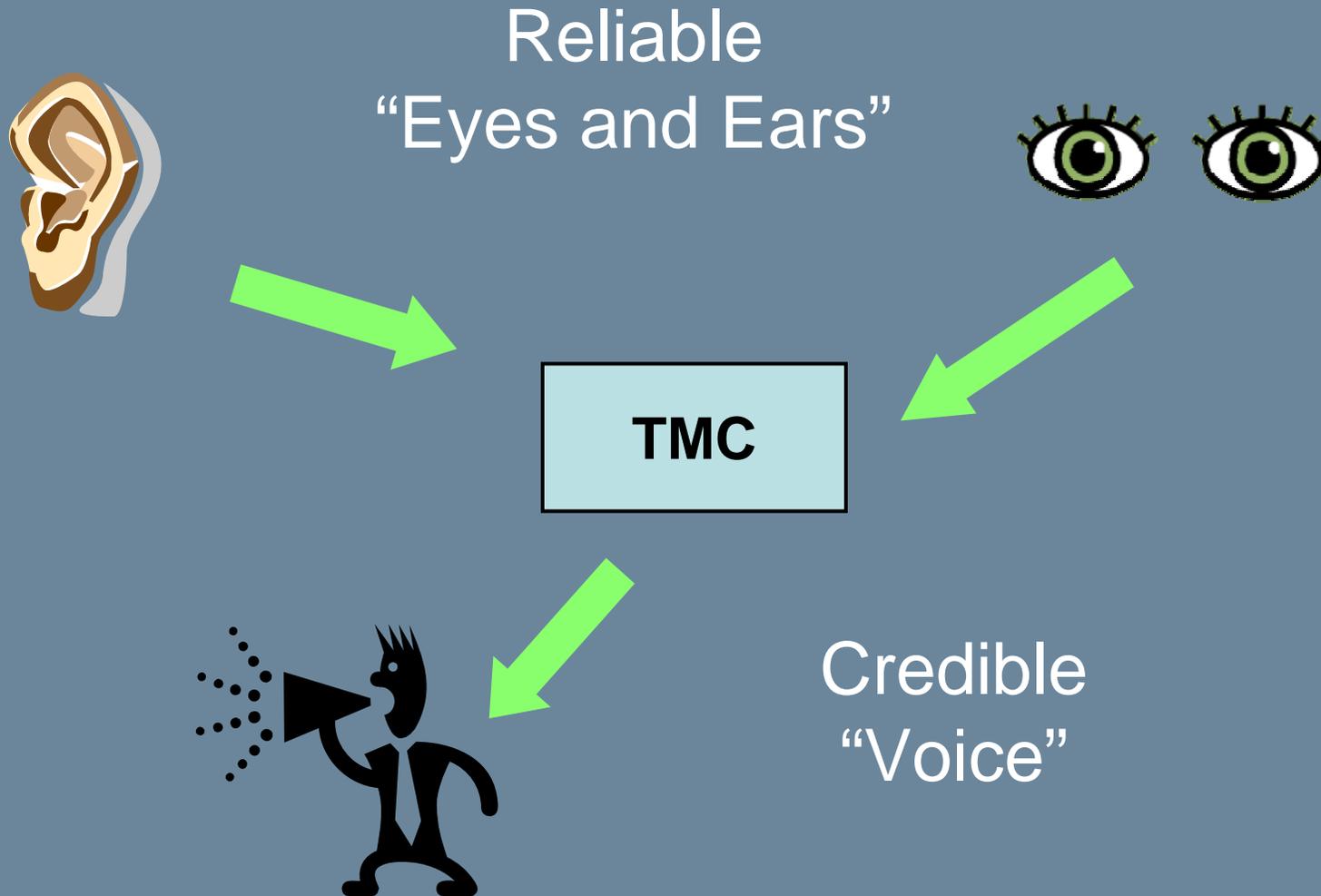
June 12, 2009

What is a Traffic Management Center (TMC)?



When do you need a TMC?





Long-term **commitment** to
maintenance and operations...

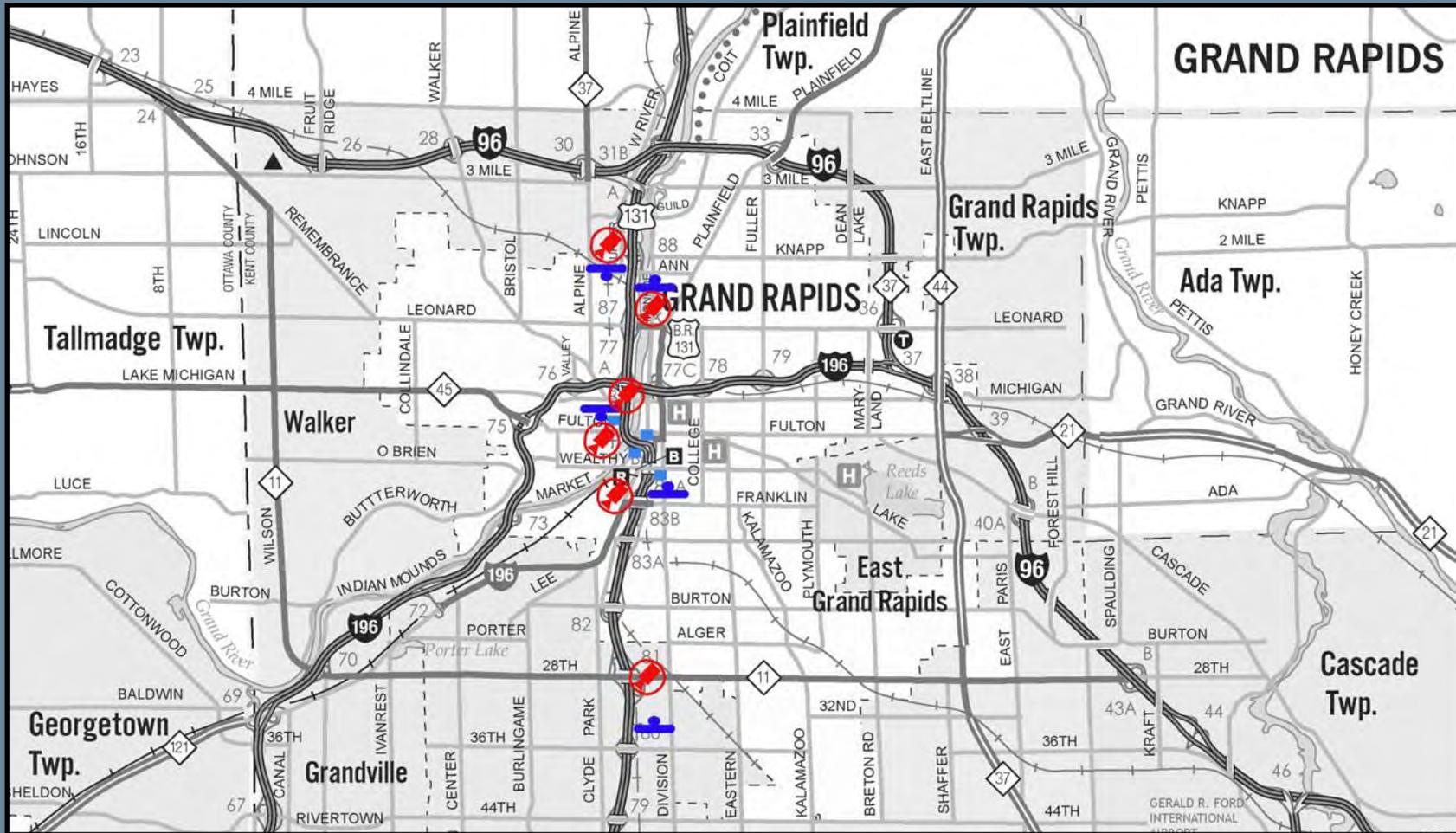


Careful **coordination**
with
partnering agencies...

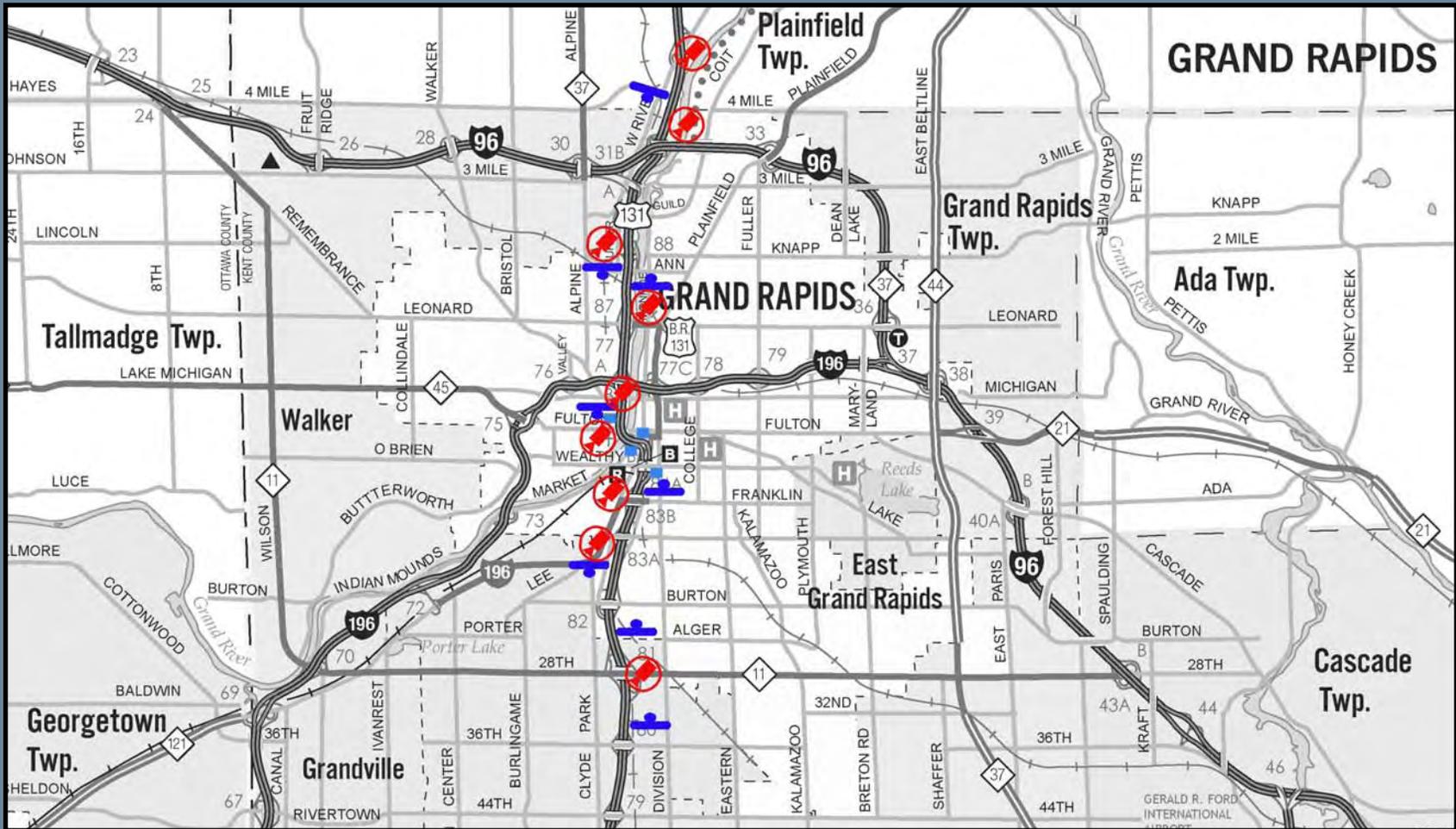
Ongoing **communication**
with stakeholders...

The Beginning...

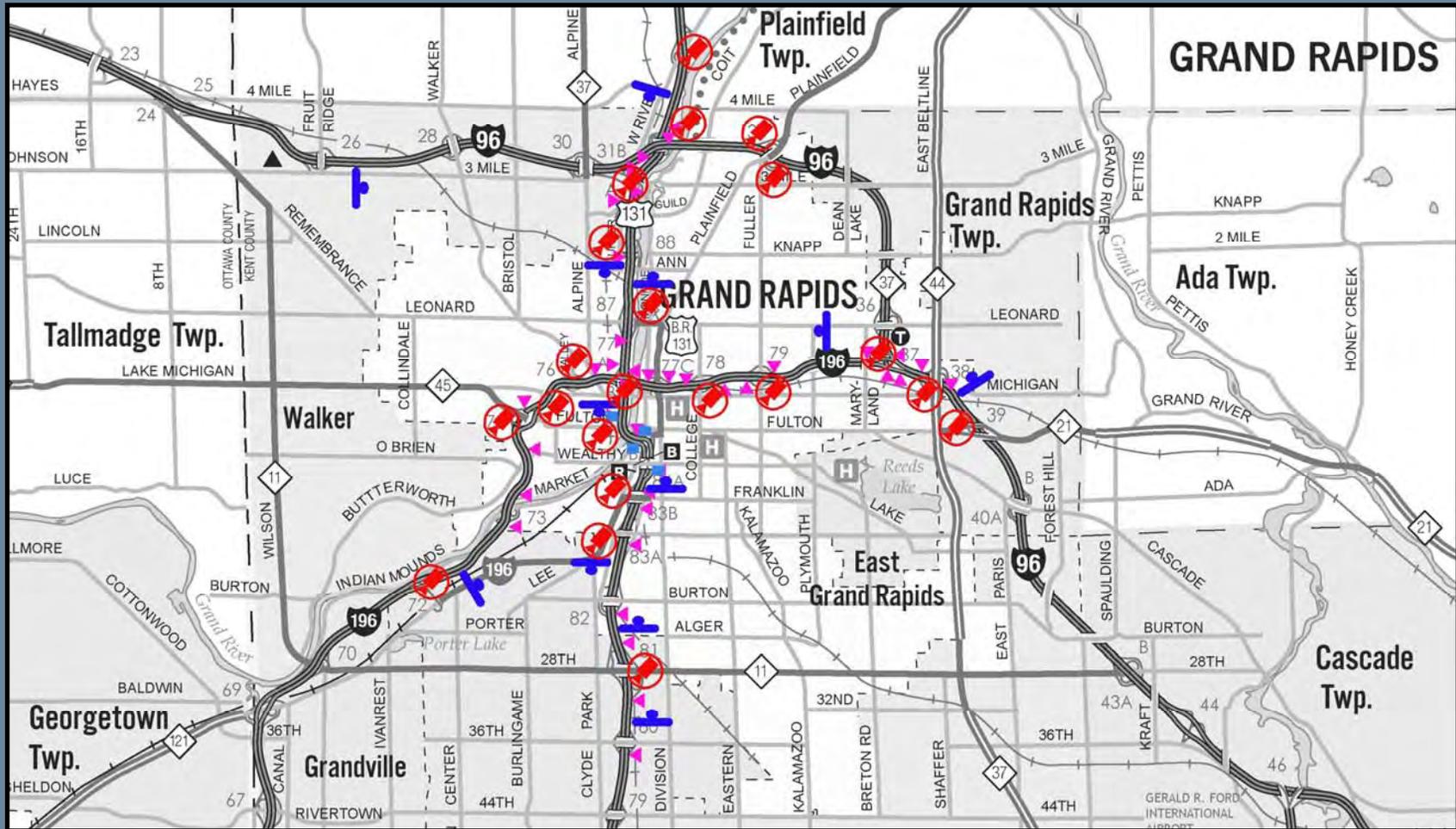
1999: 15 Field Devices



2001: 21 Field Devices



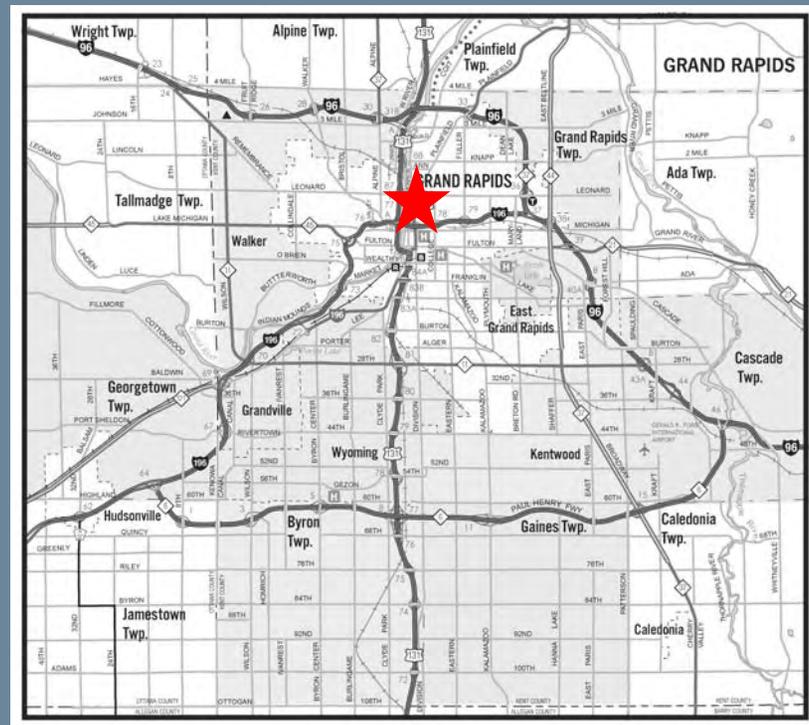
2009: 80 Field Devices



Interim TMC (2005)

- Implemented at MDOT's Grand Rapids construction office
- Single workstation with control of system
- Utilized by MDOT Traffic & Safety and Construction personnel for monitoring the traffic network

West Michigan TMC (2006)



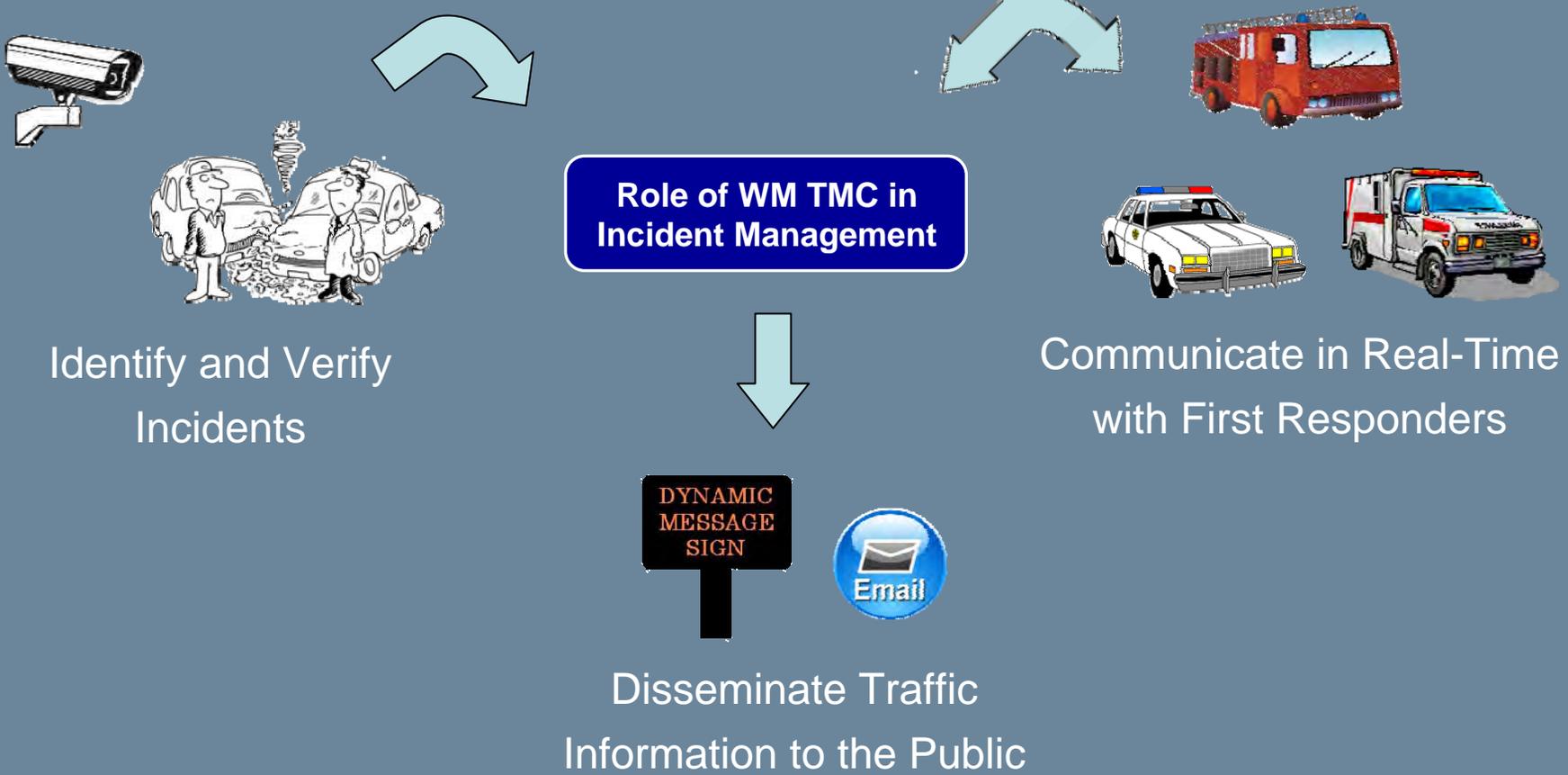


Operational Objectives

- Notify motorists of current traffic conditions
- Improve traffic incident response times
- Reduce congestion along the freeways
- Reduce secondary crash rates



Freeway Traffic Incident Management



Identify and Verify Incidents

- Monitor freeway system for incidents
 - Assist law enforcement in verifying incidents
 - Coordinate with dispatchers to provide visual of incidents





Communicate in Real-Time with First Responders

- Telephone
- Email
- 800 Mhz Radio



Freeway Traffic Incident Management



First Responders

- Michigan State Police (MSP)
- Grand Rapids Police Department (GRPD)
- Kent County Road Commission (KCRC)
- Kent County Sheriff
- Grand Rapids Fire Department
- Towing Companies



Disseminate Incident Information

- DMS
- High-impact incident email notifications
- Communication with media partners

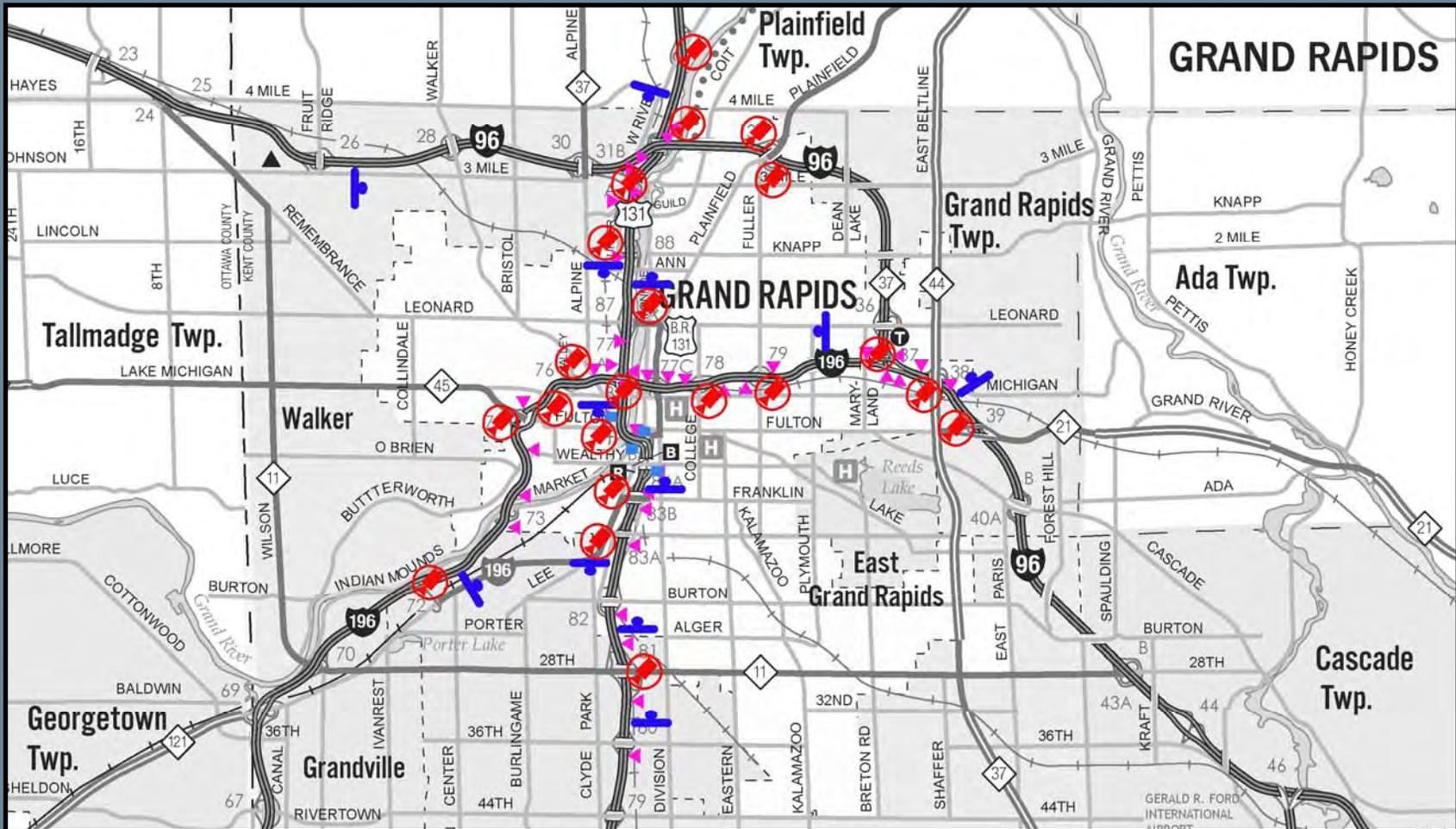




Media Partners

- WWMT 3
- Wood TV 8
- WZZM 13
- WXMI 17
- Radio traffic reporters
- Traffic websites

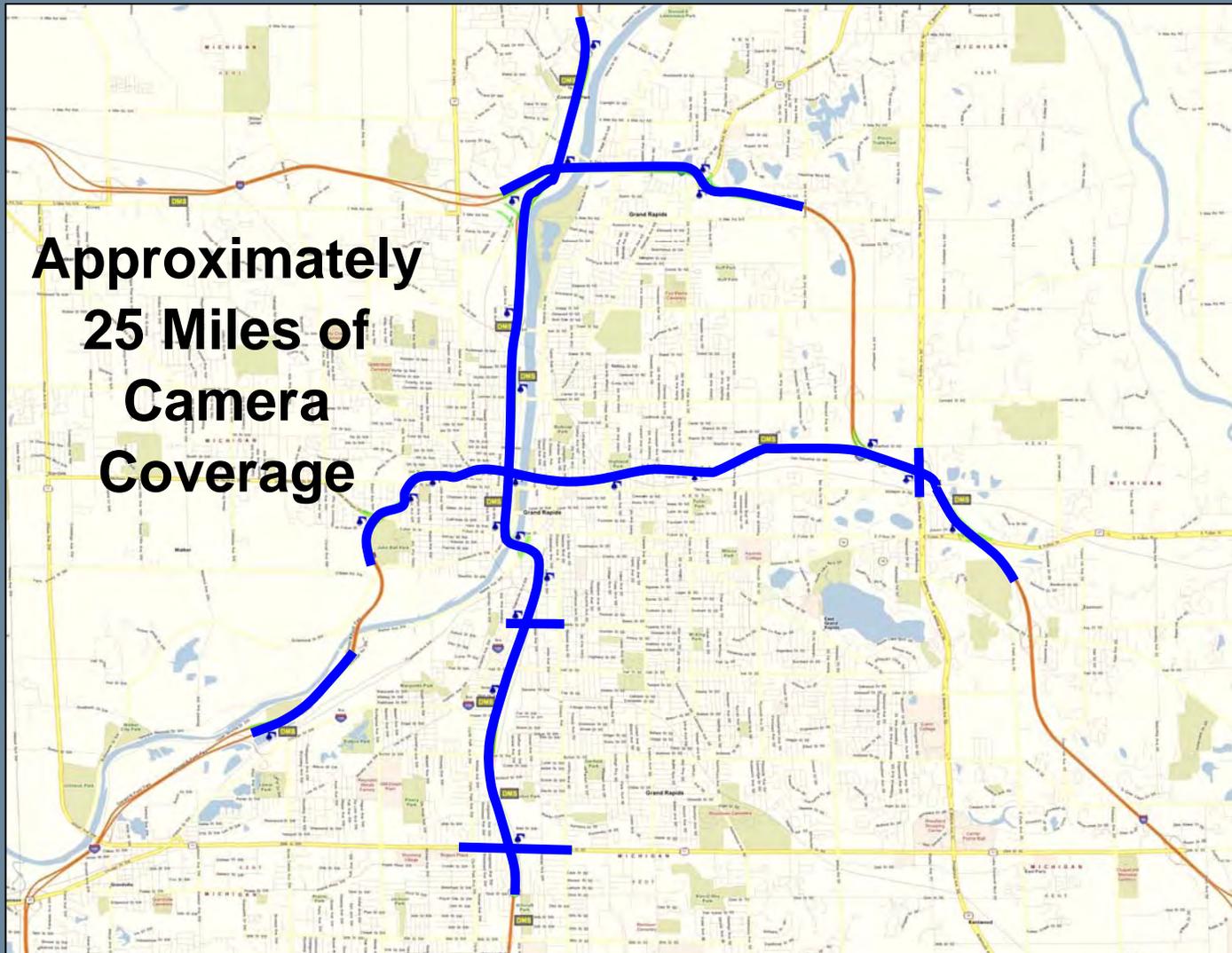
2009: 80 Field Devices



Current Field Devices

- 23 CCTV Cameras
- 42 Vehicle Detectors (MVDS)
- 11 Dynamic Message Signs (DMS)
- 4 Variable Speed Signs (VSS)



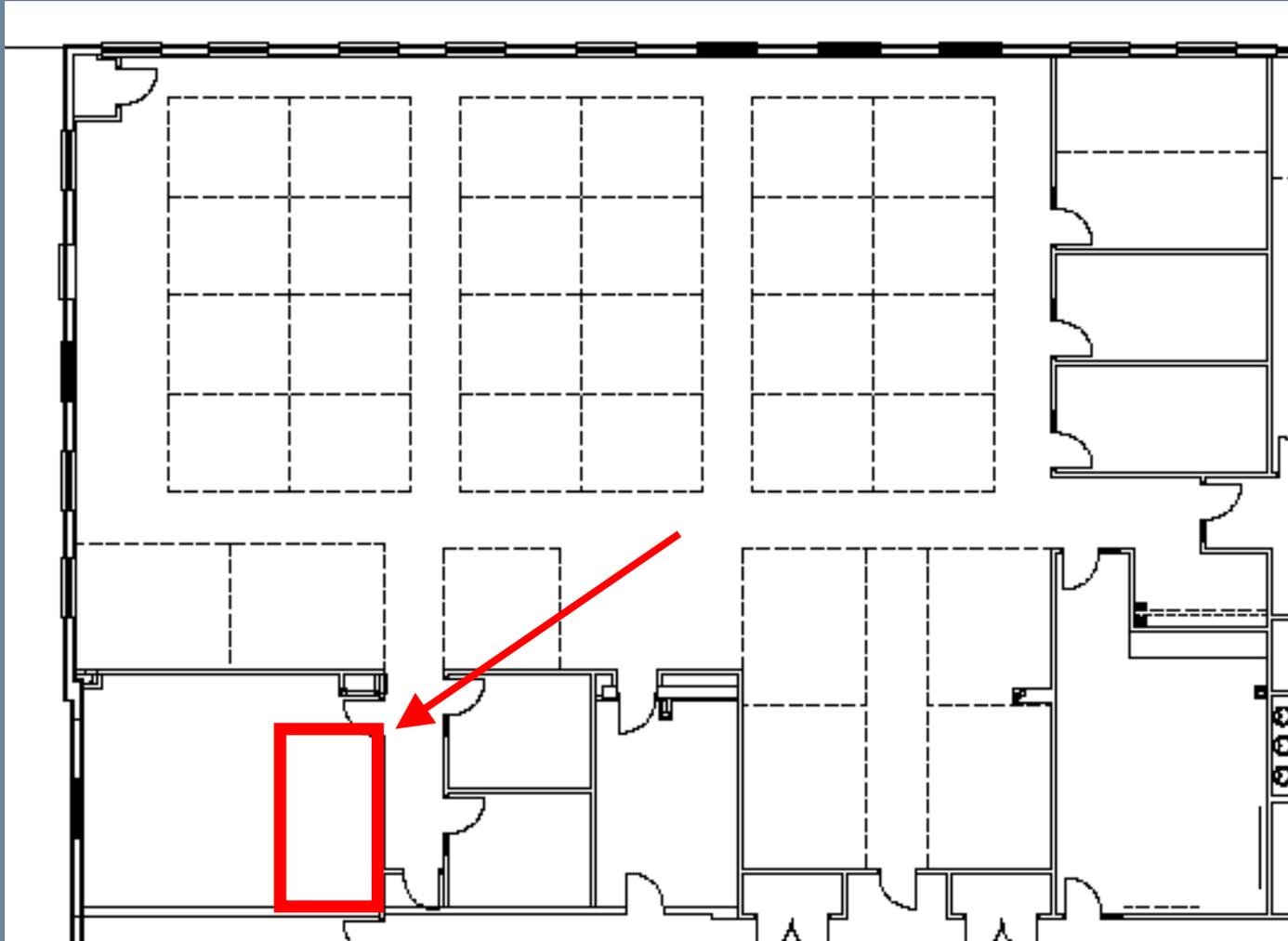




Maintenance

- City of Grand Rapids (Kent County Area)

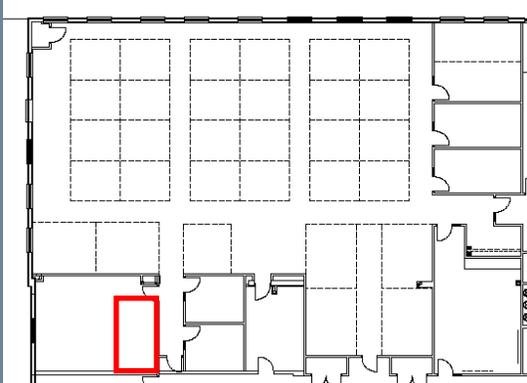
The Control Room...





Control Room (150 sft)

- Two main workstations (CCTV/DMS)
- One vehicle detection workstation
- One ACTRA laptop
- Multiple video monitors
- 800 MHz radio (backup communications)
- Television & radio for monitoring news



Staffing

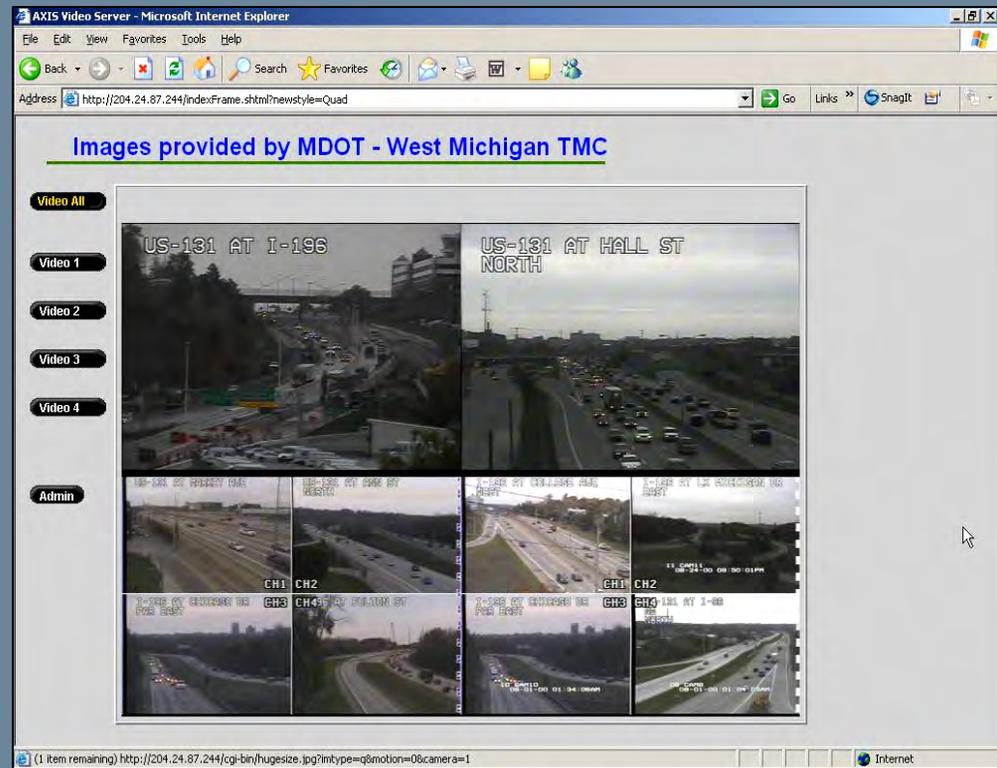
- 70 hours per week
- Limited weekend hours during the summer
- Special events coverage (e.g. River Bank Run)
- GRPD maintains operations during off-hours

Control Room Hours of Operation

Time Period	Days	Hours
October – April	Monday – Friday	6 am – 8 pm
	Saturday – Sunday	As needed
May – September	Monday – Thursday	6 am – 8 pm
	Friday	6 am – 9 pm
	Saturday	12 pm – 6 pm
	Sunday	4 pm – 8 pm
Special Events	All	As needed
Holidays and Holiday Weekends	New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving, Christmas	As needed

Video Feed Access

- Law Enforcement





Video Feed Access

- Law Enforcement
- Media





Video Feed Access

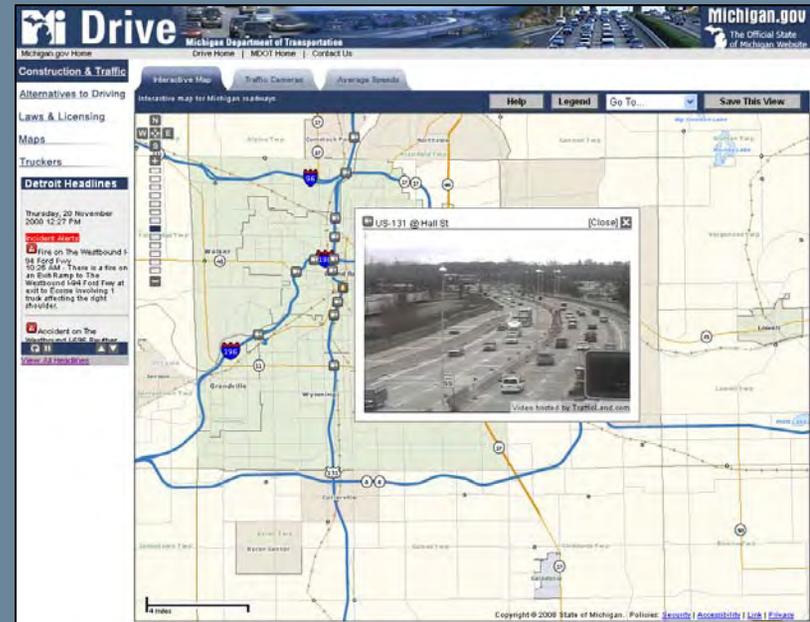
- Law Enforcement
- Media
- General Public



www.michigan.gov/drive

Video Feed Access

- Law Enforcement
- Media
- General Public

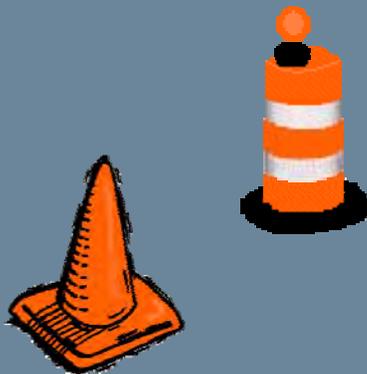


Performance Measures...



Control Room Activity Log

- Control Room communication
- Traveler Information
- Incident management
- Construction
- ITS field device reliability





Control Room Activity Log

MDOT ITS Control Center Activity Log - Davenport, Lou

Event Log Construction Media Log Shift Report Feedback Admin Logoff

Event: ID: 1328 New Edit
 Type: Construction
 Sub-Type: ---
 Weather: ---
 Road Cond: ---
 Construction Project: ---

Date/Time: Start: 05/26/2009 9:05 AM Est.
 End: ---

Backup: Same Dir: None Backups Unknown
 Cross Street: ---
 Mile Marker: ---
 Opp Dir: None Backups Unknown
 Cross Street: ---
 Mile Marker: ---

Phases: 9
 1: FC M LS LG LR L LC C RC R RR RG RS OF
 Start Date: 05/26/2009 Time: 9:05 AM Est.
 2: FC M LS LG LR L LC C RC R RR RG RS OF
 Date: --- Time: --- Est.
 3: FC M LS LG LR L LC C RC R RR RG RS OF
 Date: --- Time: --- Est.
 4: FC M LS LG LR L LC C RC R RR RG RS OF
 Date: --- Time: --- Est.

Location: Freeway Non-freeway Other
 Freeway: I-96 Dir: EB
 Cross Street: Fulton St (M-21)
 Cross St End: ---
 Mile Marker: --- Mile Marker End: ---
 Mainline
 Ramp Exit Ramp

Involved: Quantity: ---
 --- + -
 --- + -
 --- + -
 --- + -

Signs:

Sign	Date/Time

Notes:
 Put message on the FruitRidge DMS. Will be closed until June per Shanti

Calls: Event ID: 1328 Non-Event Check In/Out ITS Maintenance Today

Agency	Contact	Phone	I/O	Date/Time	Notes
City of GR - ITS Maint	Randy Erickson	616-446-0523	Out	05/26/2009 10:10 AM	Inform Randy that we could not put a message on the last line on the new FruitRidge DMS
MDOT - Construction	Shanti Ceane	616-292-5330	Out	05/26/2009 10:09 AM	Exit ramp will be closed until June sometime.

Event History: Today Open Events Type: --- Sub-Type: --- Copy to Clipboard

Event ID	Start Date/Time	End Date/Time	Event Type	Sub-Type	Freeway	Dir	Cross Street	Notes
1331	05/26/2009 04:19 PM	05/26/2009 08:00 PM	Disabled Vehicle	Other/Unknown	I-196	WB	Chicago Dr (I-196)	White pickup truck w/ cover and black car. With a .2 mile spread bet
1330	05/26/2009 04:00 PM	05/26/2009 04:53 PM	Disabled Vehicle	Flat Tire	I-196	WB	Plymouth Ave	Tan car w/ back right tire off of it. MSP assisting.
1329	05/26/2009 12:32 PM	05/26/2009 02:30 PM	Crash	---	I-196	WB	Fuller Ave	2 car accident on right shoulder not blocking.
1327	05/26/2009 09:15 AM	---	Construction	---	I-196	WB	College Ave	Bridge construction
1328	05/26/2009 09:05 AM	---	Construction	---	I-96	EB	Fulton St (M-21)	Put message on the FruitRidge DMS. Will be closed until June per SI
1326	05/26/2009 06:56 AM	05/26/2009 07:38 AM	Disabled Vehicle	Other/Unknown	US-131	NB	Hall St	DV blocking the left lane.
1325	05/26/2009 04:31 PM	05/26/2009 07:38 AM	Disabled Vehicle	Other/Unknown	US-131	SB	Hall St	SUV on entrance ramp, other truck pulled up to help push SUV over



Monthly Report

- Available at www.michigan.gov/ITS

The screenshot shows the Michigan Department of Transportation website. The main heading is "West Michigan Traffic Management Center". Below the heading, there is a paragraph describing the TMC as MDOT's Intelligent Transportation Systems (ITS) center for West Michigan, overseeing a traffic monitoring system covering over 22 freeway miles in the greater Grand Rapids area. A list of features includes 17 Closed Circuit TV Cameras, 10 Dynamic Message Signs, and 4 Variable Speed Signs. There is also a section titled "What we are doing" which describes a fiber-optic based communications system. The page includes a navigation menu on the left with categories like "roads & travel", "rail & public transit", and "news & information". On the right, there are sections for "Quick Links" and "Performance Reports".



Monthly Report

- Available at www.michigan.gov/ITS

Department of Michigan Transportation

Michigan.gov Home | MDOT Home | Site Map | Contact MDOT | FAQ | State Web Sites

Printer Friendly | Text Version | Email Page | Text Size

West Michigan Traffic Management Center

The West Michigan Traffic Management Center (TMC) is MDOT's Intelligent Transportation Systems (ITS) center for West Michigan, and oversees a traffic monitoring system covering over 22 freeway miles in the greater Grand Rapids area, instrumented with:

- 17 Closed Circuit TV Cameras
- 10 Dynamic Message Signs
- 4 Variable Speed Signs

Performance Reports

- 2008 Annual Report PDF
- Monthly Reports Archive

Printer Friendly | Text Version | Email Page | Text Size

Monthly Performance Reports

2009					
January	February	March	April	May	June
July	August	September	October	November	December
2008					
January	February	March	April	May	June
July	August	September	October	November	December
2007					
January	February	March	April	May	June
July	August	September	October	November	December
2006					
January	February	March	April	May	June
July	August	September	October	November	December

[Top of Page](#)



Reporting

West Michigan TMC
Serving the Grand Rapids Area Freeways

January 2009

Control Room Coverage

Control Room Hours of Operation

Time Period	Days	Hours
October - April	Monday - Friday	8 am - 8 pm
	Saturday - Sunday	8 am - 6 pm
May - September	Monday - Thursday	8 am - 8 pm
	Friday	8 am - 12 pm
	Saturday	8 pm - 8 pm
	All	As needed

The following report is limited to data collected during the hours of operation for the control room and within the ITS device coverage area.

ITS Device Locations and Coverage Area

Page 1

West Michigan TMC
Serving the Grand Rapids Area Freeways

Control Room Support Activity

Communication History

Month Total of Unplanned Incidents per Weekday Hour

Monthly High Impact Unplanned Incident Activity

Incident	Jan 2009	Dec 2008	Jan 2008	Previous 12-Month Avg.
Lane Closures	41	27	1	11
Ramp Closures	-	-	1	0
Power by Closures	2	1	-	1

Total Monthly Unplanned Incidents by Roadway

Roadway	Jan 2009	Dec 2008	Jan 2008	Previous 12-Month Avg.
I-496 (4.5 mi)	15	3.5	7	1.6
I-96 (8.5 mi)	7	5.5	22	2.8
US-131 (11 mi)	5	4.6	24	2.2
Total	27	13.6	53	6.6

Incident Hot Spots

- 5 crashes
- 4 crashes
- 3 disabled vehicles

Page 2

West Michigan TMC
Serving the Grand Rapids Area Freeways

Incident Management Information

Managed by Type

Vehicle Composition of Incidents

Incident History*

Traffic Impacts by Incident Type

Incident Hot Spots

Page 4

West Michigan TMC
Serving the Grand Rapids Area Freeways

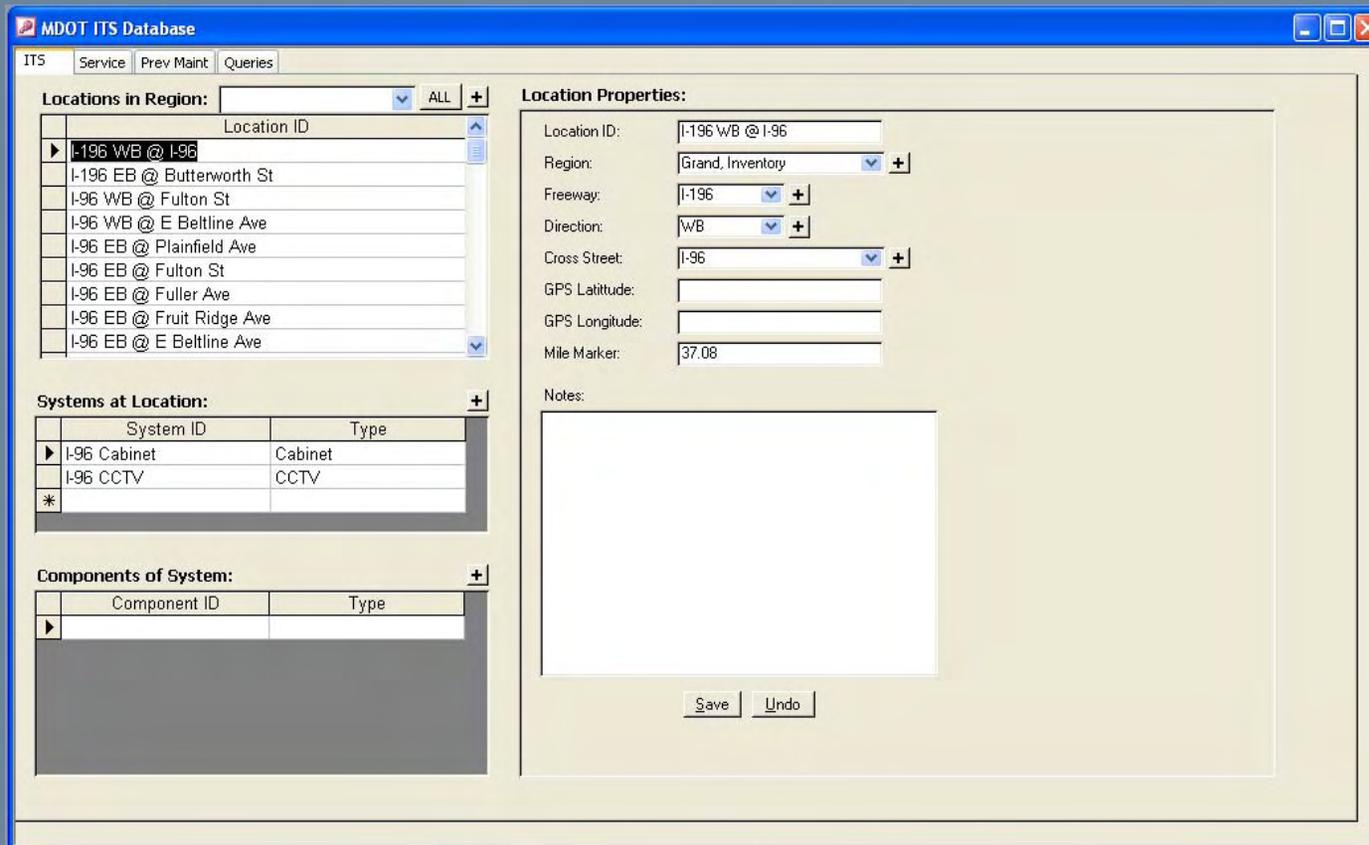
DATA KEY INFORMATION

Description	Purpose	Data Source
Displays the total number of DMS messages by type that occurred during the month.	Provides a snapshot view of the level of effort and need related to DMS messages.	Control Room Activity Log Manually entered information by the operator.
Displays the top 3 DMS in terms of the number of unique messages displayed for the month.	Provides a snapshot view of the "most active" DMS for traveler information, which may indicate areas where additional DMS or other forms of traveler information may be necessary.	Control Room Activity Log Manually entered information by the operator.
Displays the number of email incident notifications sent out by Control Room operators for the current month, previous month, month last year and the monthly average for the previous 12 months.	Provides a snapshot view of the control room workload in a historical context.	QA/QC Log Manually entered information by operations supervisor.
Displays the accuracy of email incident notification messages sent out to stakeholders. Accuracy measures include format and content.	Provides a quantitative method of quality control on operator interactions with stakeholders.	QA/QC Log Manually entered information by operations supervisor.

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Software Development...

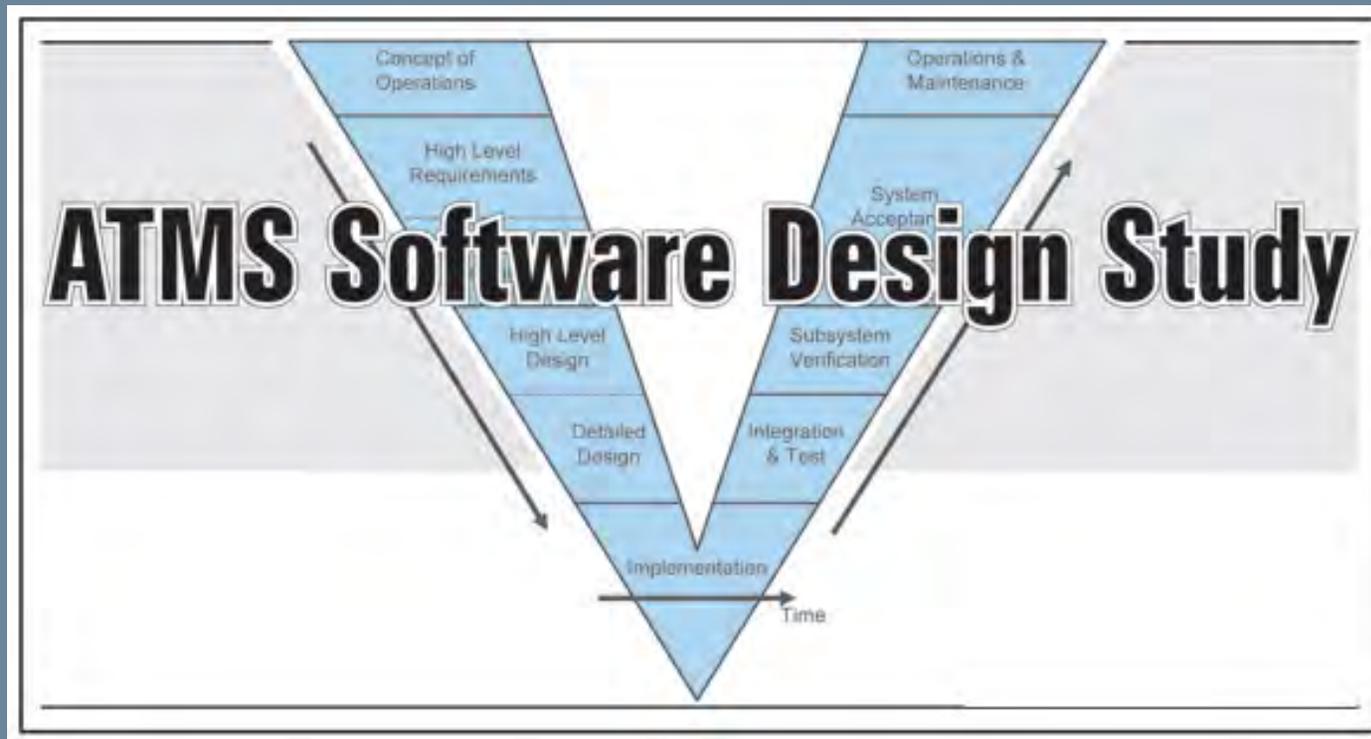
Preventative Maintenance Database



Travel Time Software

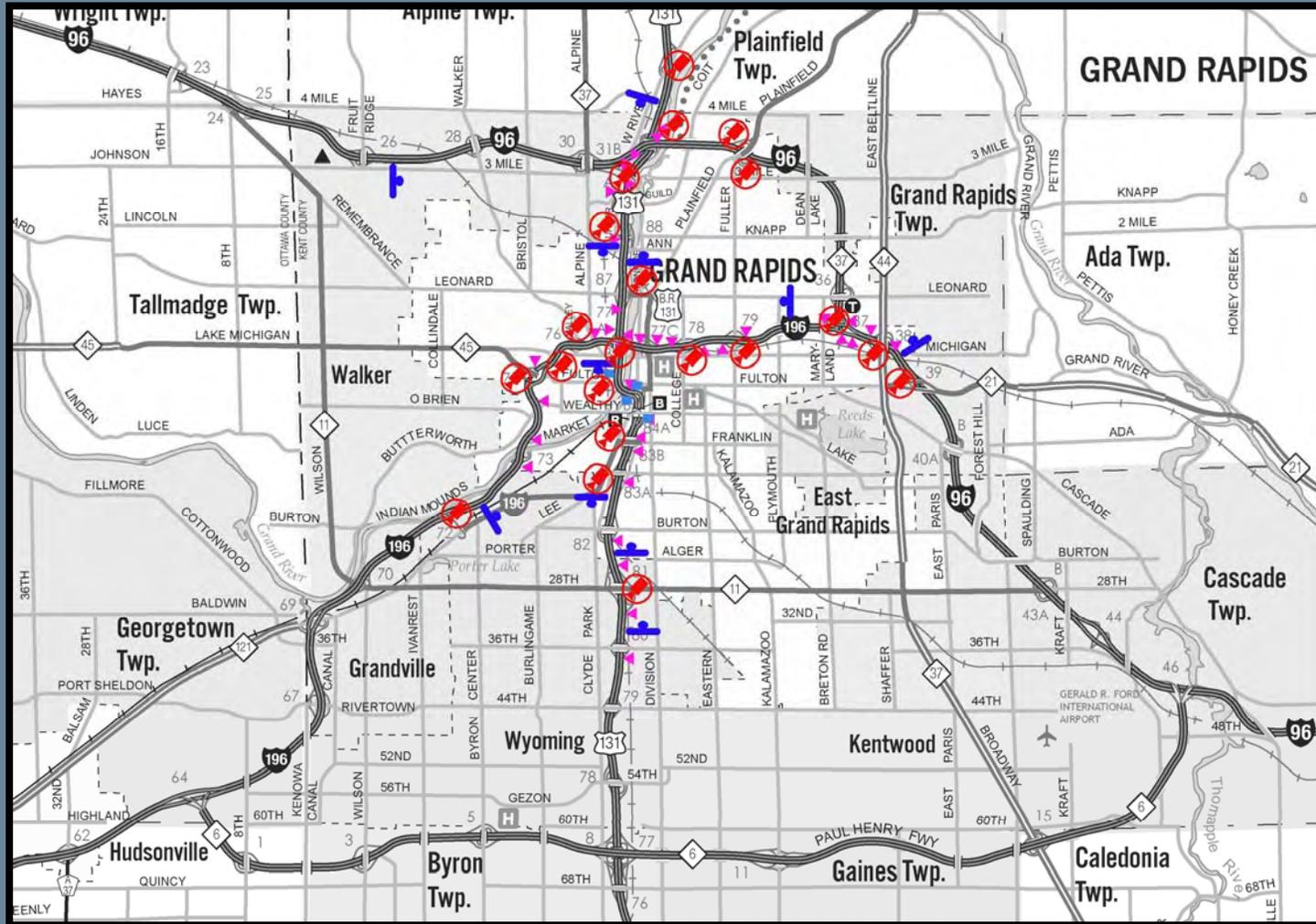


Statewide Advanced Traffic Management System

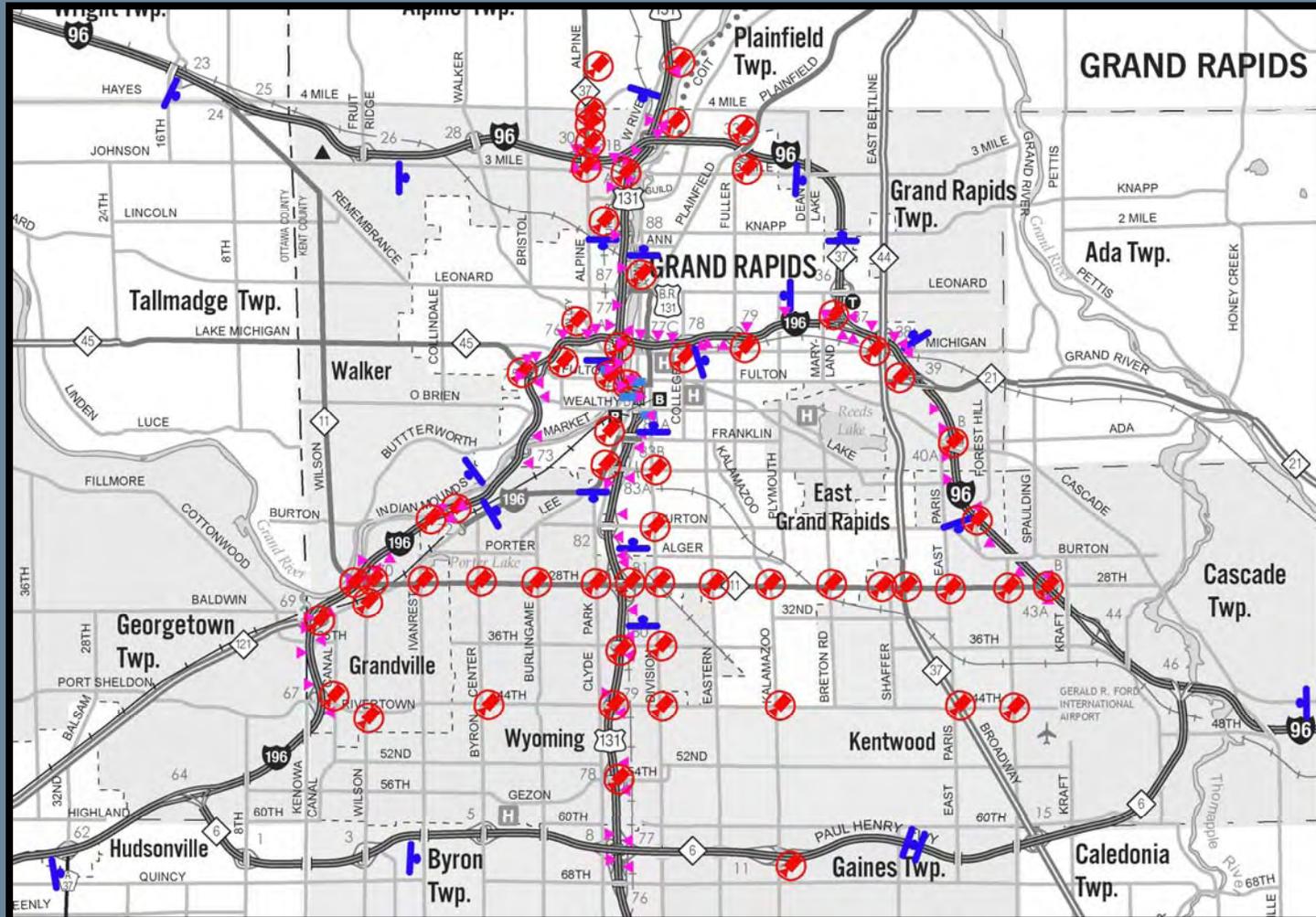


Infrastructure Expansion...

2009: 80 Field Devices



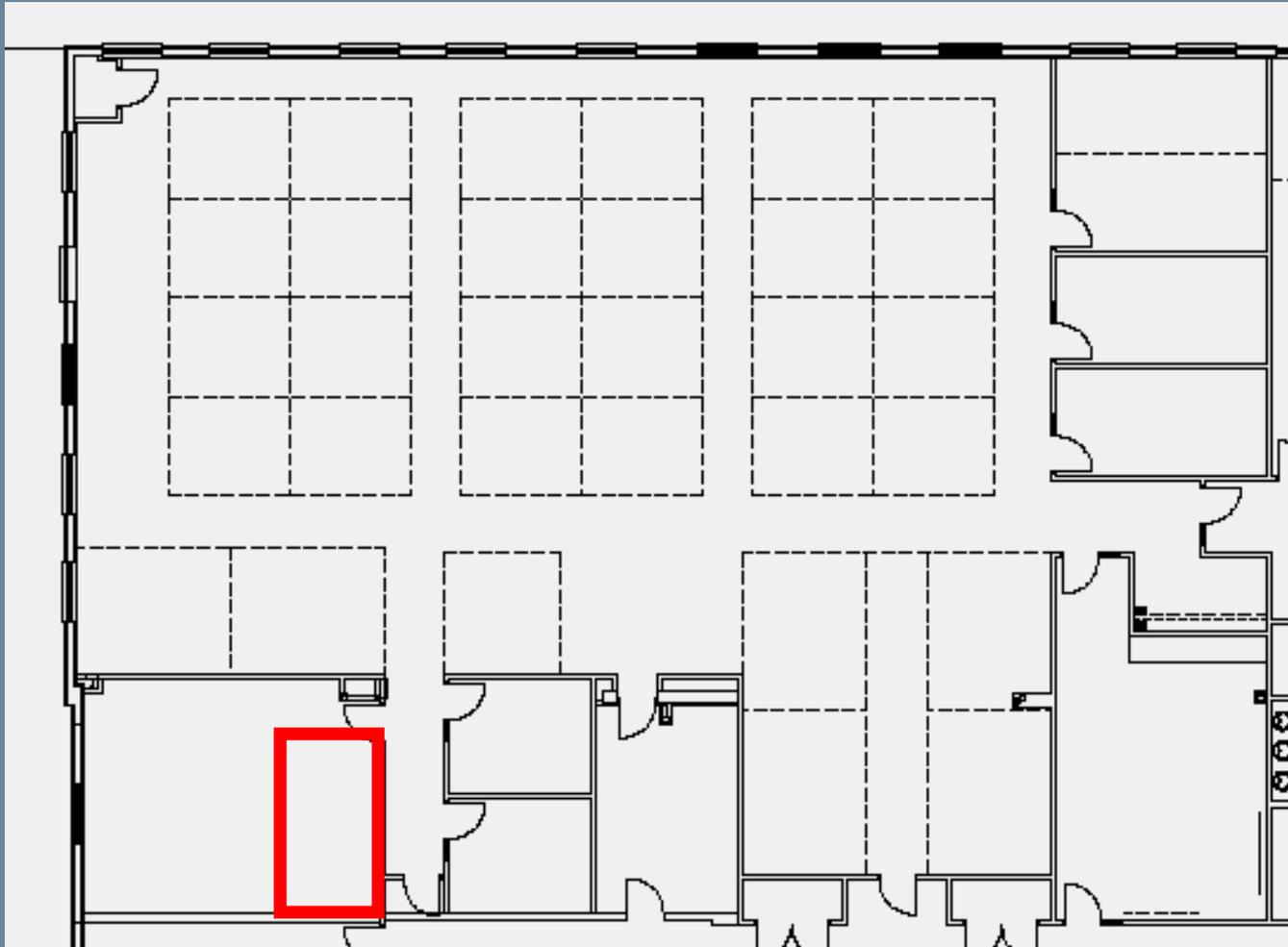
2011: 220 Field Devices

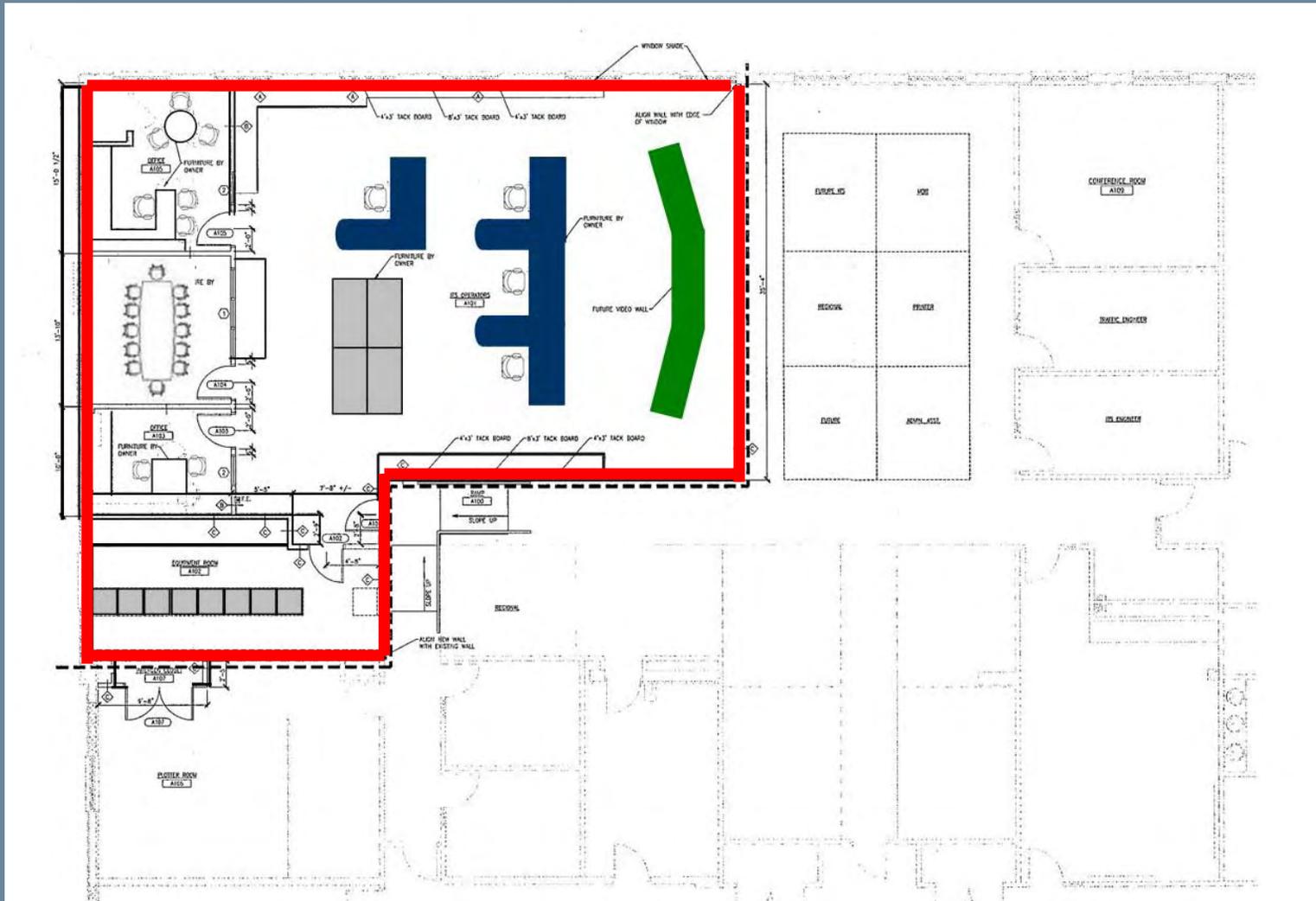


Upcoming Infrastructure Expansion

- 30 DMS
- 40 CCTV cameras
- 70 vehicle detectors
- 25 miles of fiber
- Arterial Management

Control Room Expansion...





Possibilities...

Freeway Courtesy Patrol



Michigan State Police

Lessons Learned...

Interagency Coordination

- Thinking beyond the local scene
- Co-location with law enforcement and Computer-Aided Dispatch (CAD)
- Partnering with the media

Planning for Growth

- Establish an ITS Architecture
- Develop arterial communications in parallel with freeway communications system
- Keep interdependencies between deployment projects limited and simple

Performance Metrics

- Early consideration
- A platform that matches the need

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