



Technology Committee

August 29, 2025

Lake County ***PASSAGE*** and **Traffic Signal Technology**

Division of Transportation

Jonathan Nelson, P.E. - Assistant County Engineer

Ryan Legare – TMC Manager

Agenda

- Lake County *PASSAGE* network
- Traffic signal components & software
- Advanced Traffic Management System (ATMS) components
- Traveler information
- Security
- Expansion projects



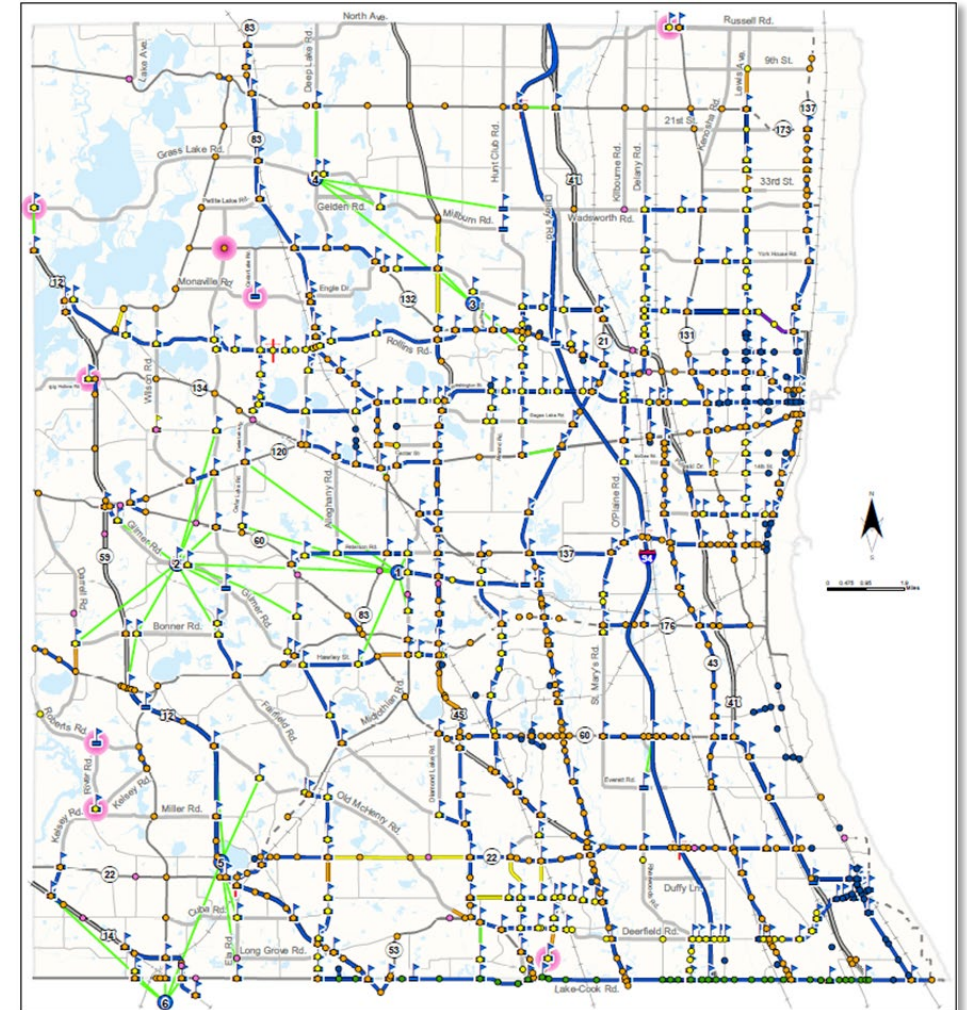
Lake County *PASSAGE*



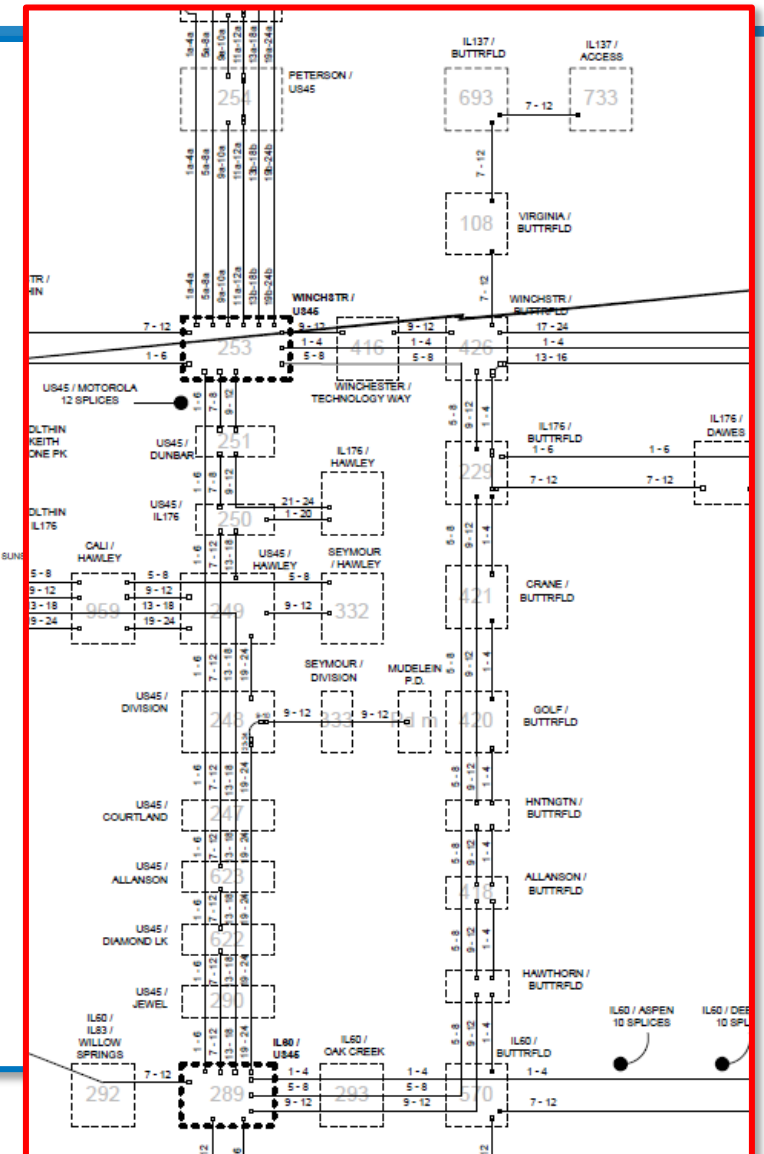
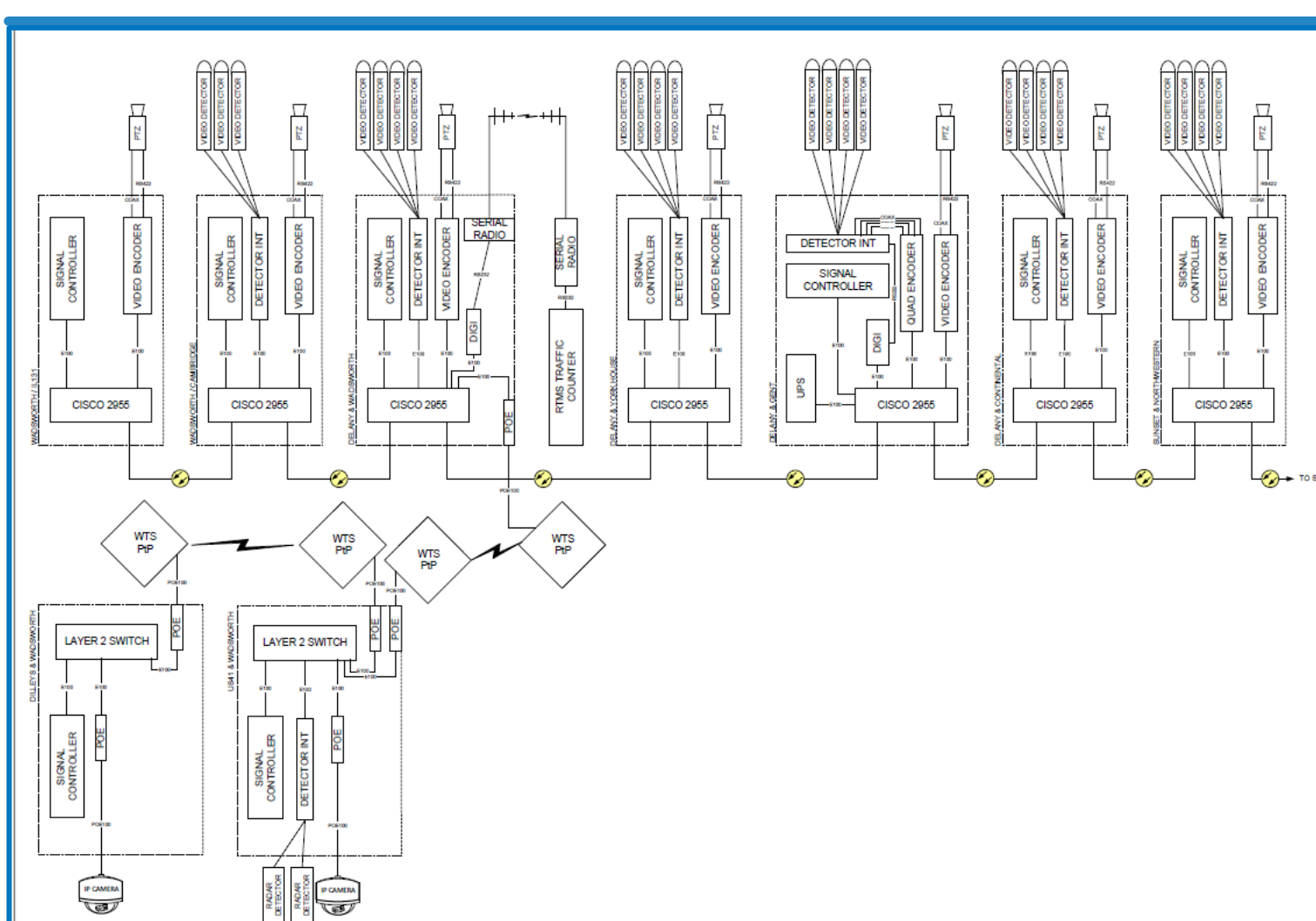
- **History**
- **3 goals:**
 - **Improve signal system coordination**
 - **Provide real time traffic monitoring**
 - **Direct more effective incident management**
- **Program for Arterial Signal Synchronization and trAvel GuidancE**

Network

- **314** miles of fiber
- **677** traffic signals connected
- **467** PTZ cameras
- Connected to
 - IDOT
 - Cook County DOTH
 - Illinois Tollway
 - Municipalities



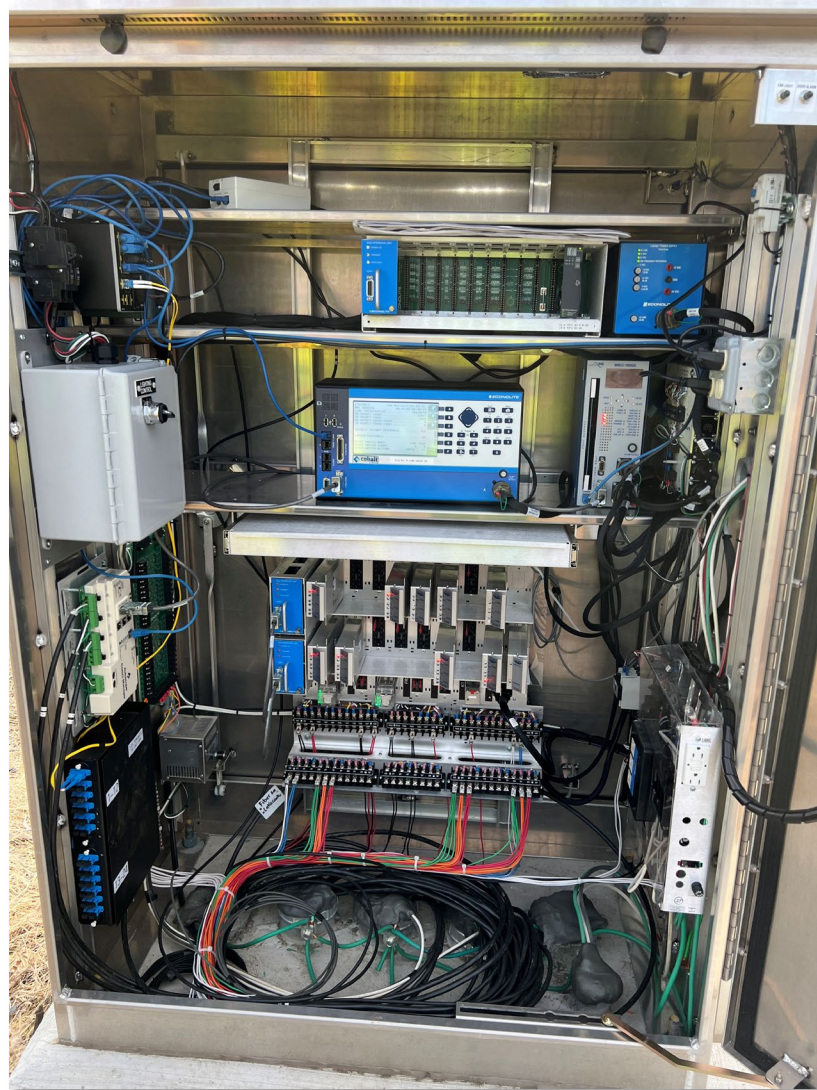
Network



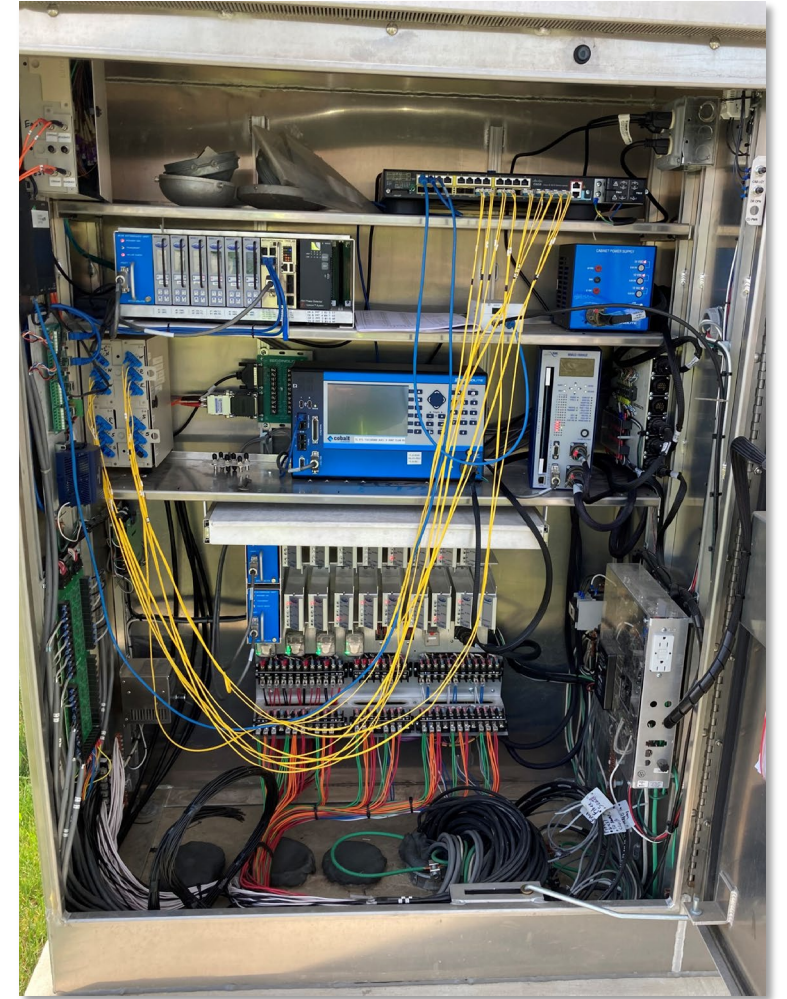
Traffic Signal Components



Traffic Signal Components



Traffic Signal Components



Traffic Signal Components



Traffic Signal Components



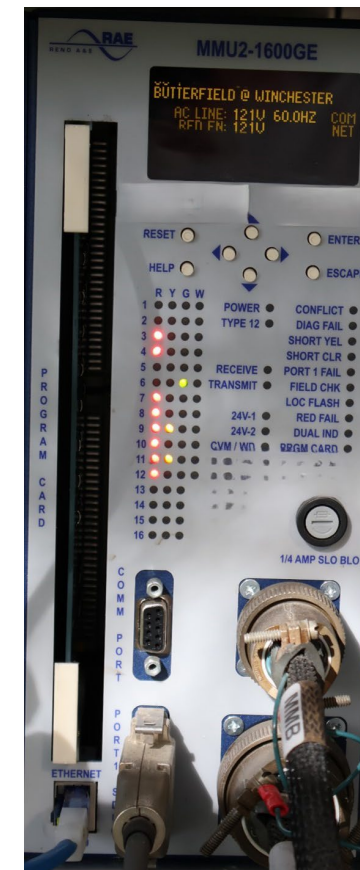
Controller



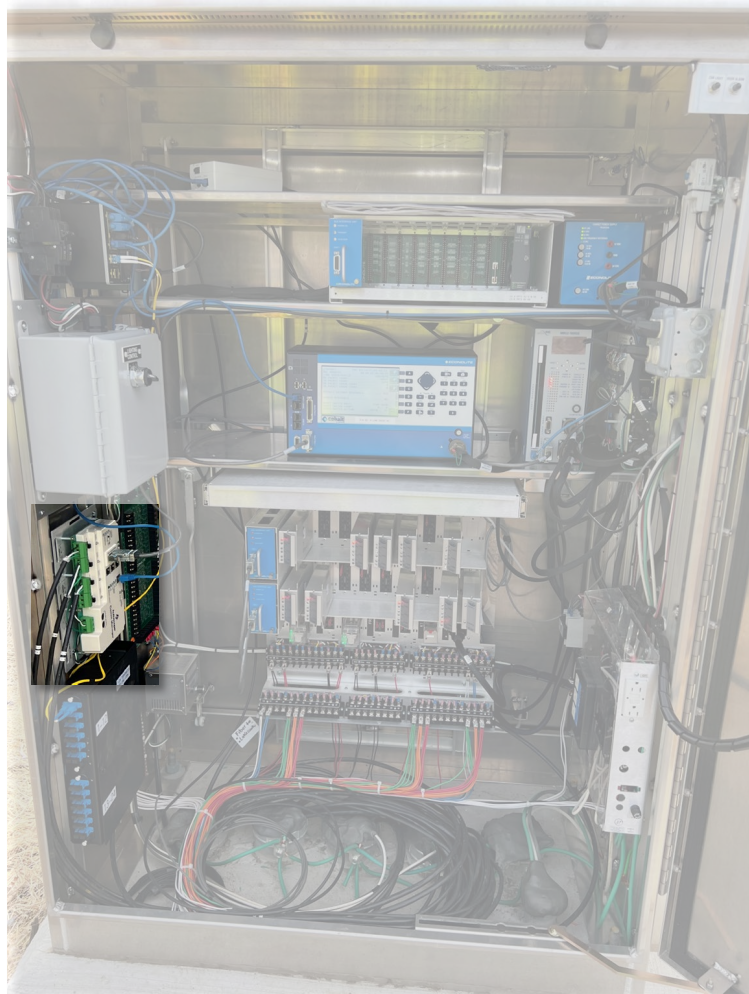
Traffic Signal Components



Malfunction Management Unit



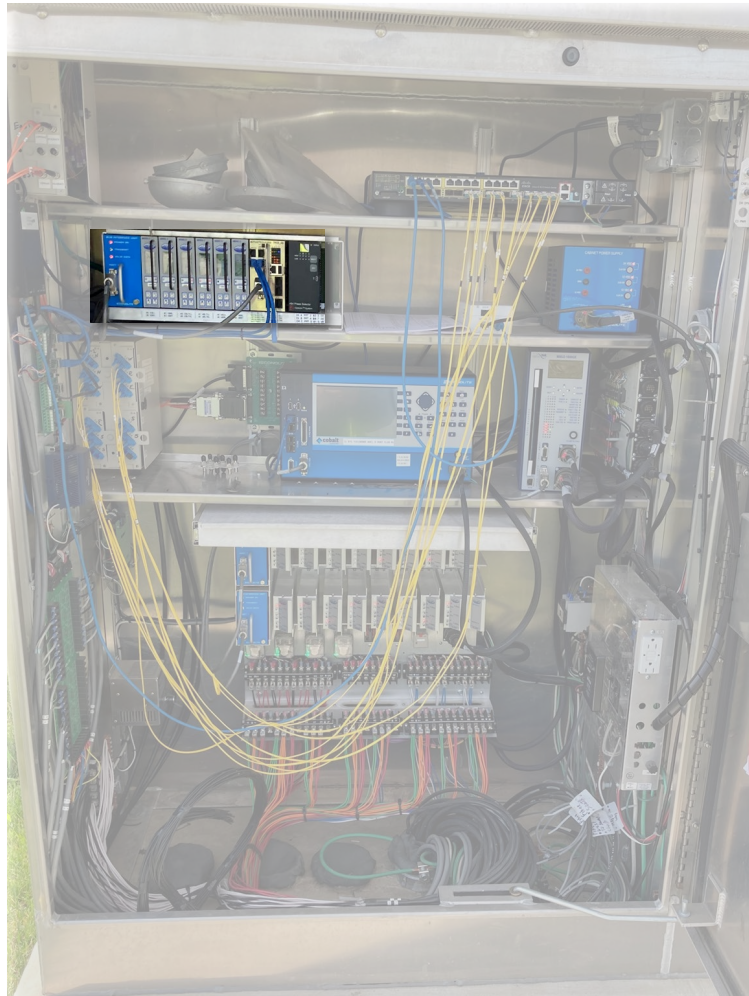
Traffic Signal Components



Detection



Traffic Signal Components



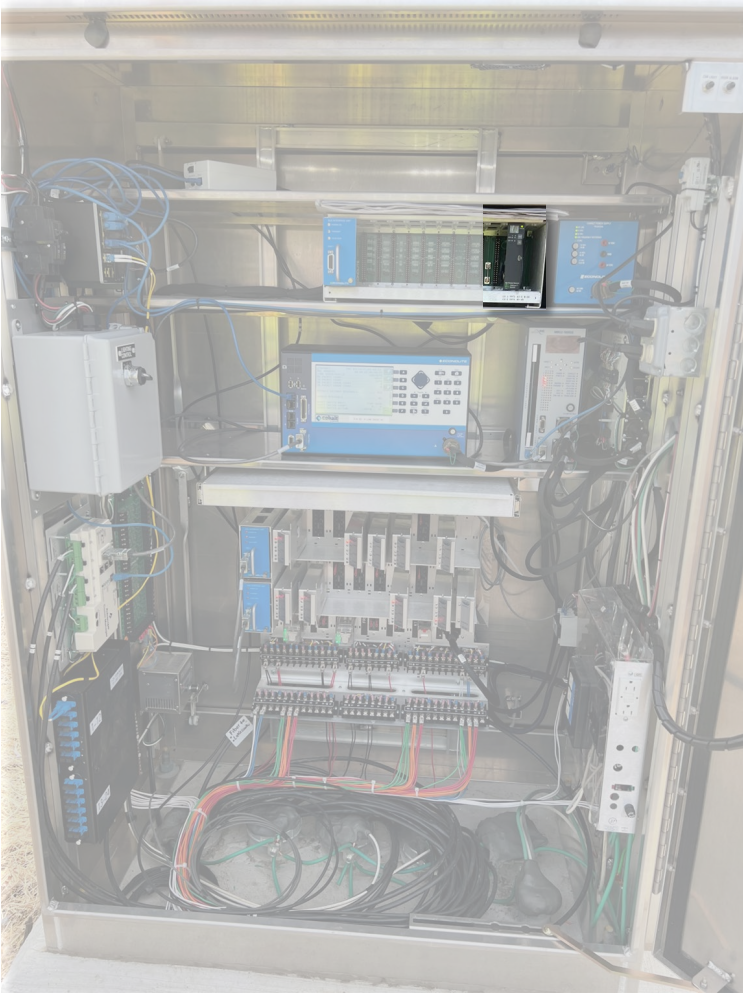
August 29, 2025

Detection

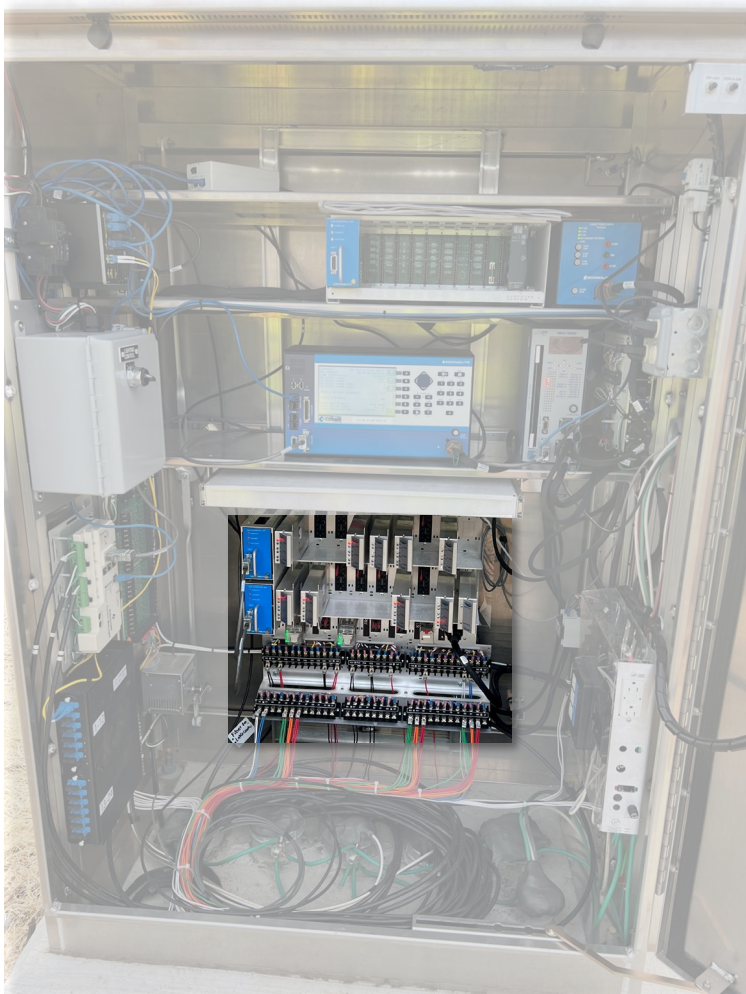


Traffic Signal Components

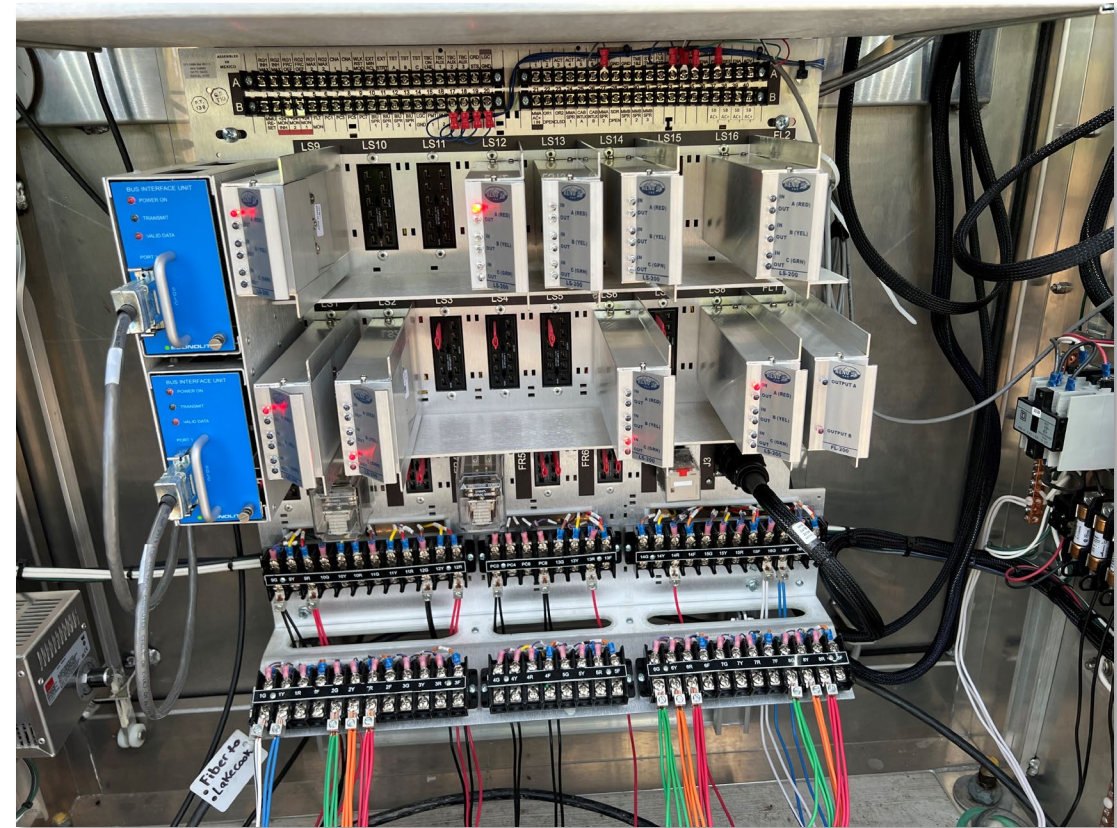
Preemption



Traffic Signal Components

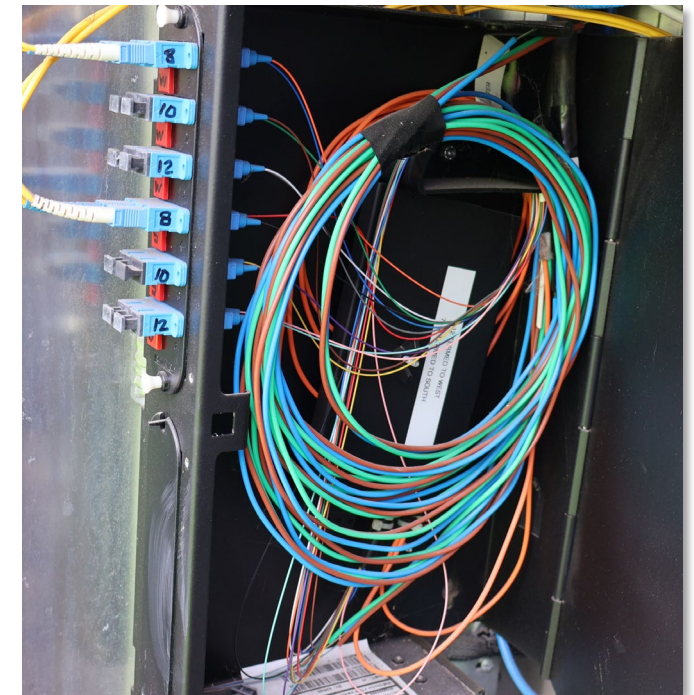
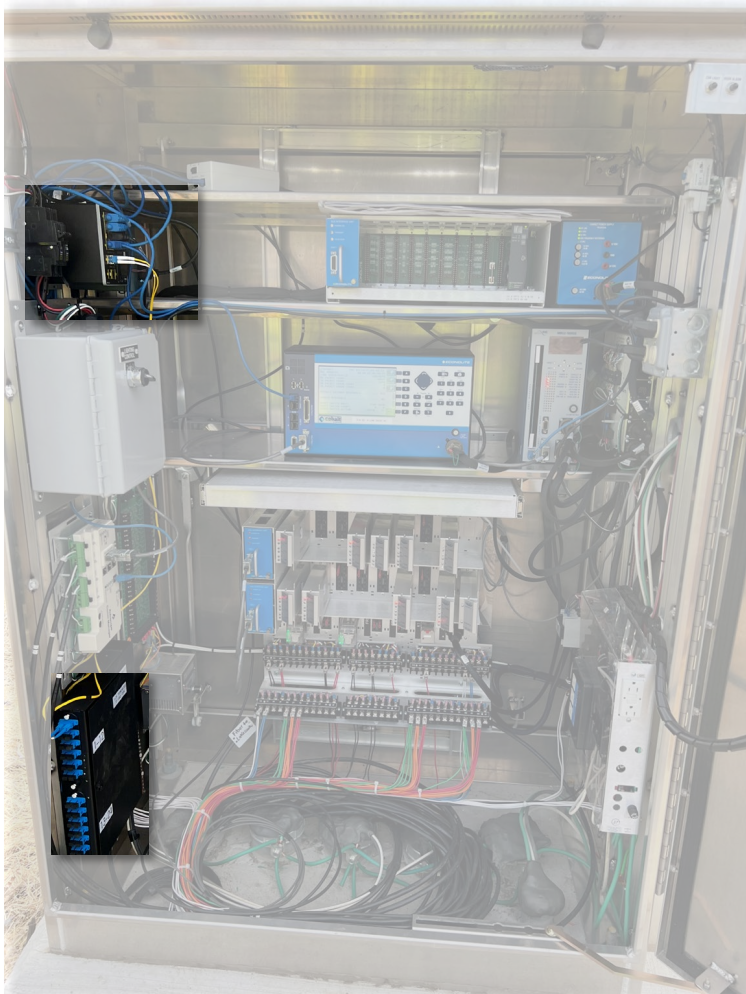


Load Switches & Field Wiring



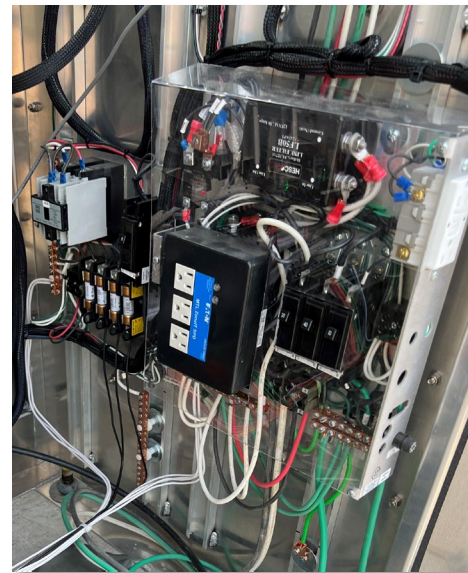
Traffic Signal Components

Communication



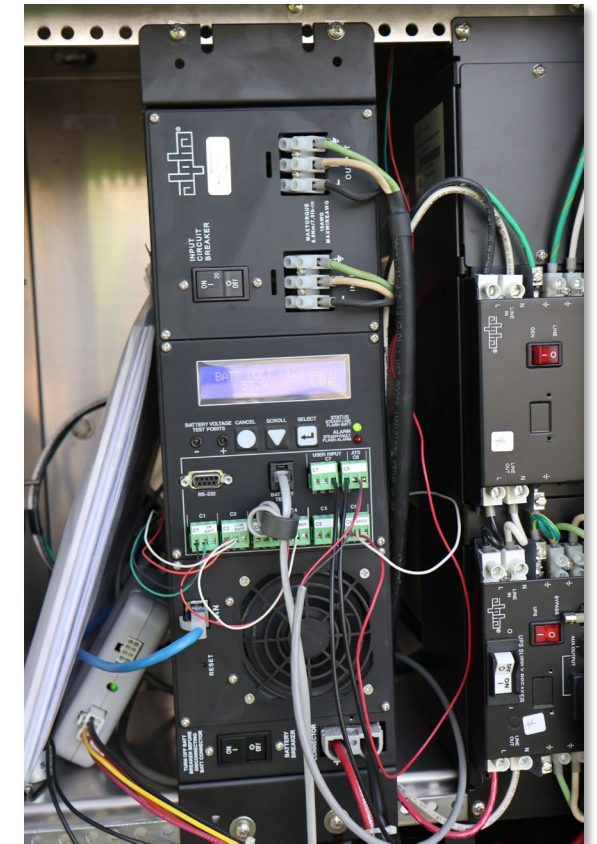
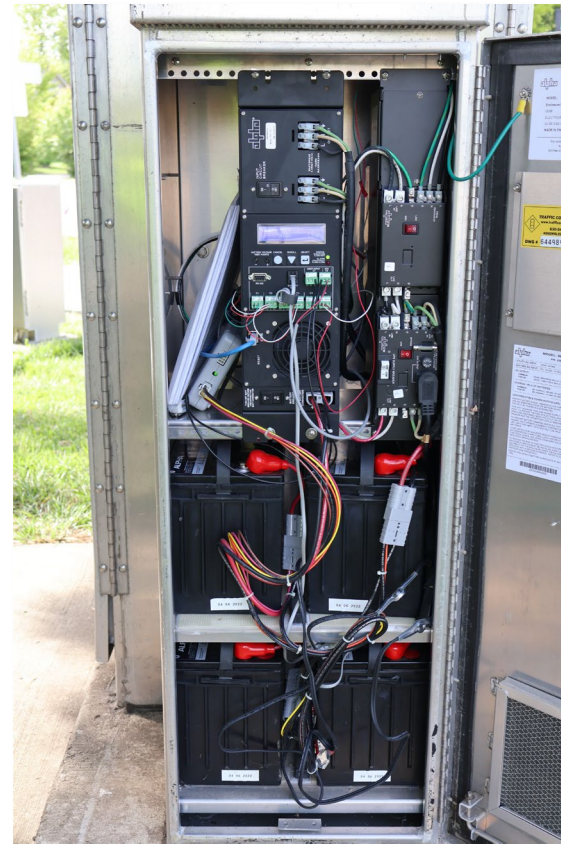
Traffic Signal Components

Power



Traffic Signal Components

Back-up Power



Traffic Signal Components

Pedestrian Crossings



Traffic Signal Components



Streetlight

Pan Tilt Zoom (PTZ) camera

Video detection camera

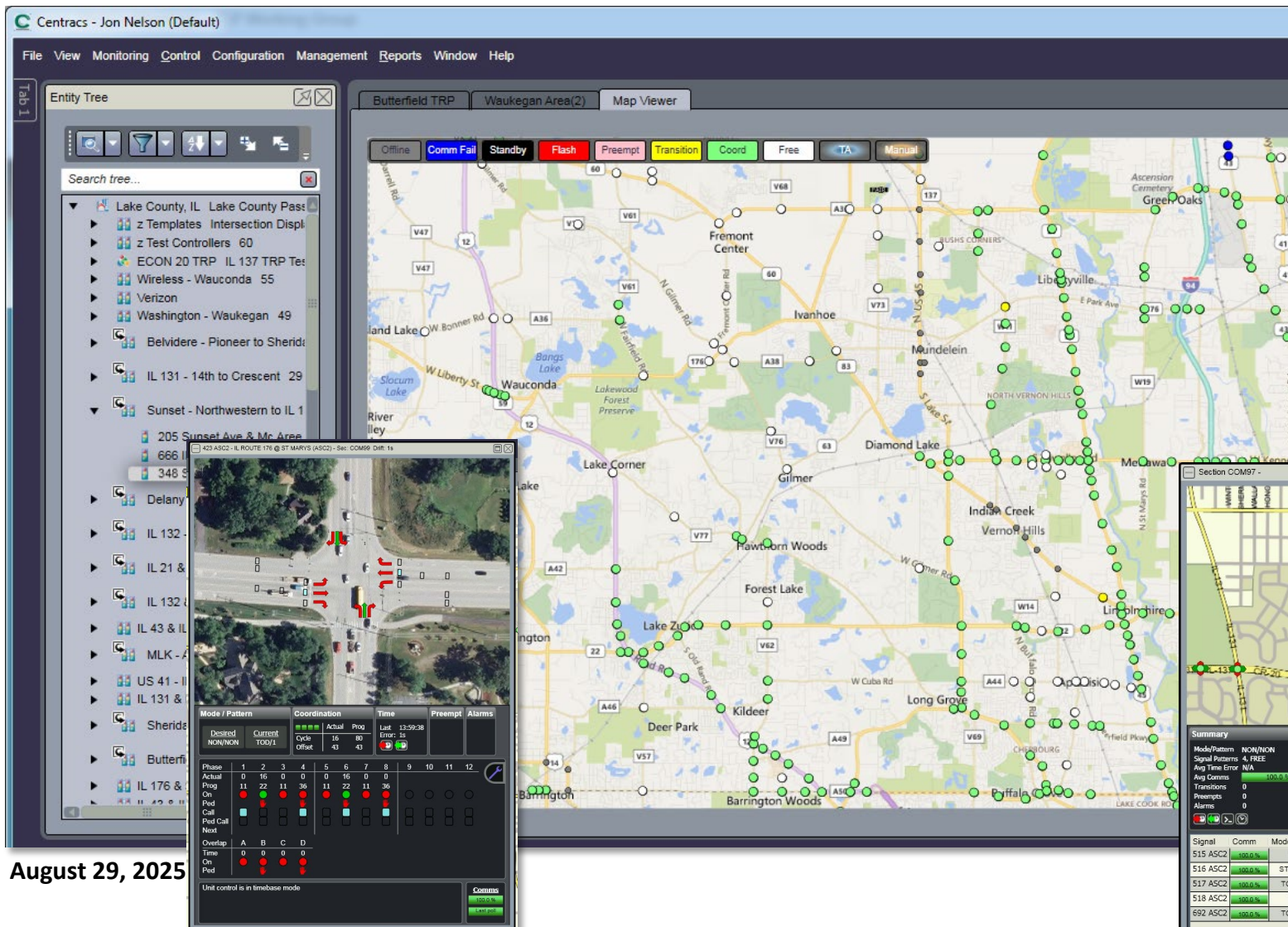
Reflective backplate

LED street name sign

Traffic Signal Software

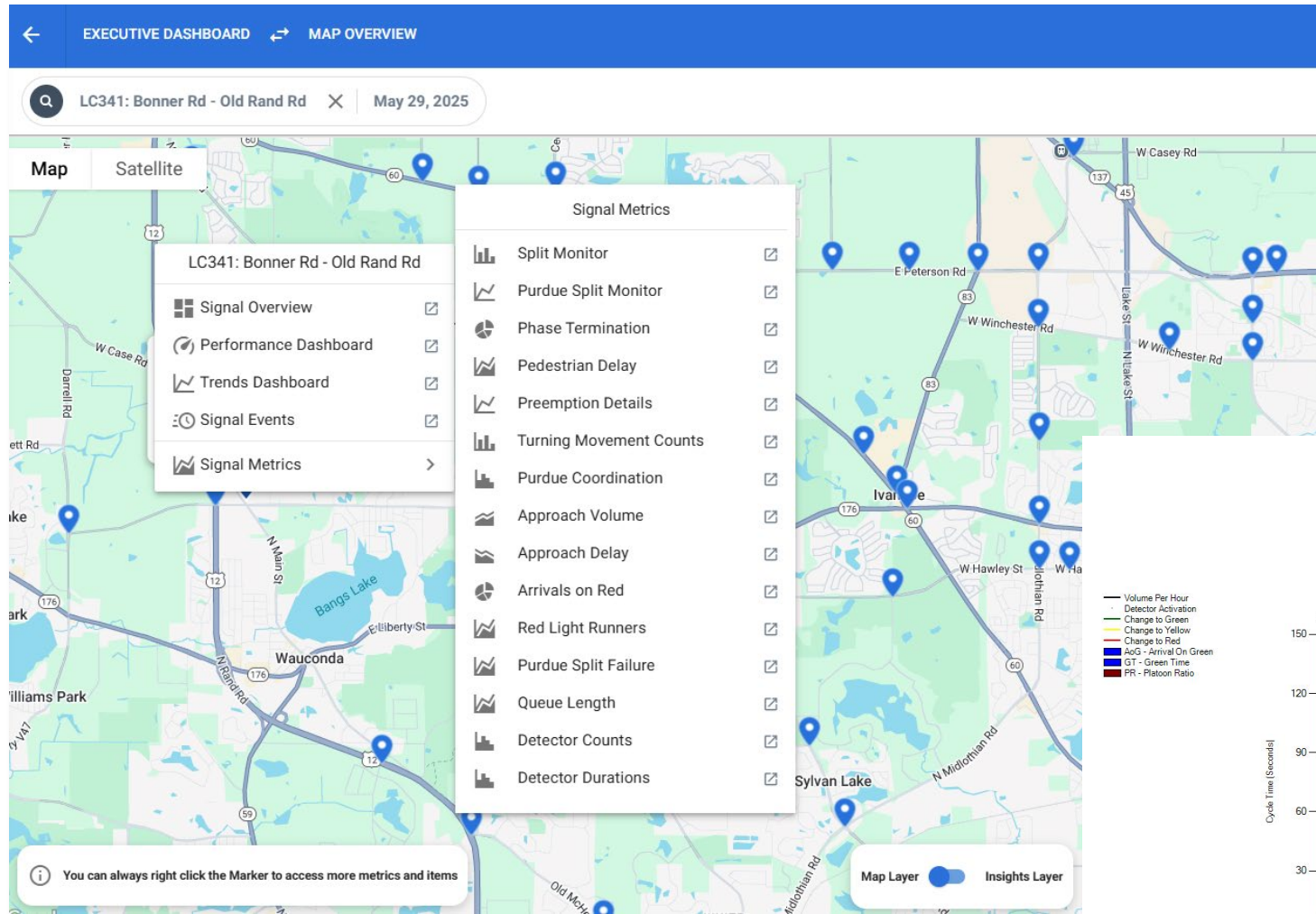
Central Signal Software

- Monitor operations
- Real-time displays
- 24/7 notification



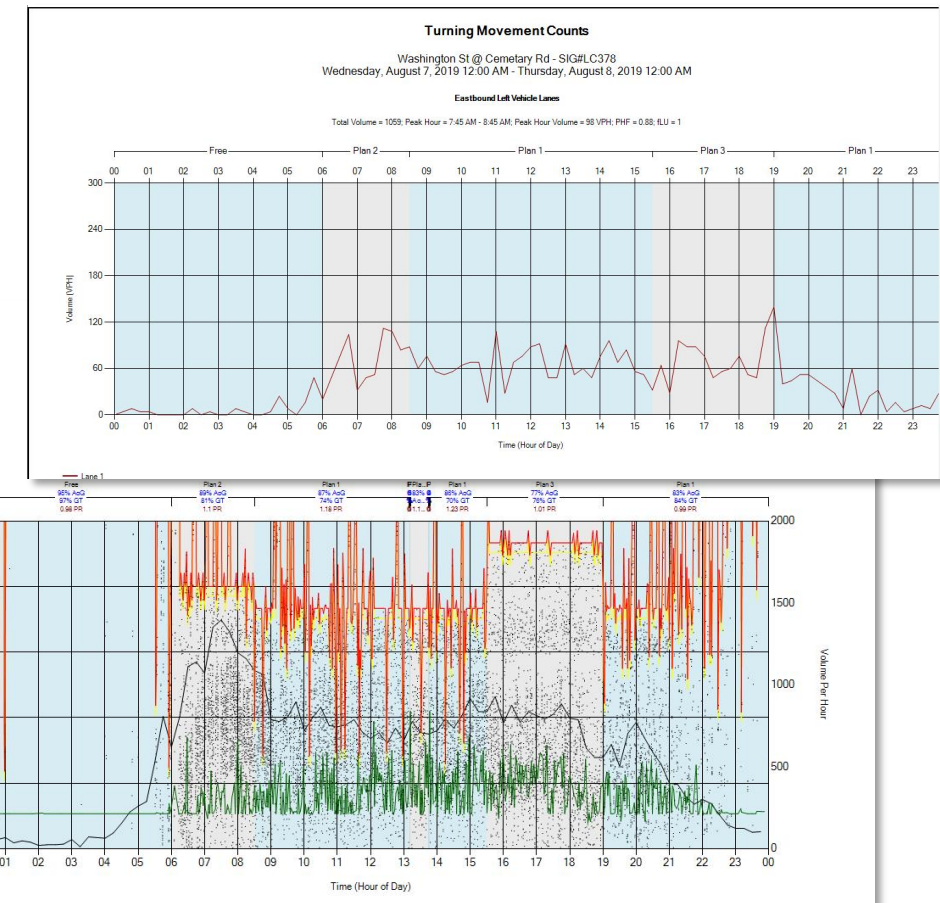
August 29, 2025

Traffic Signal Software



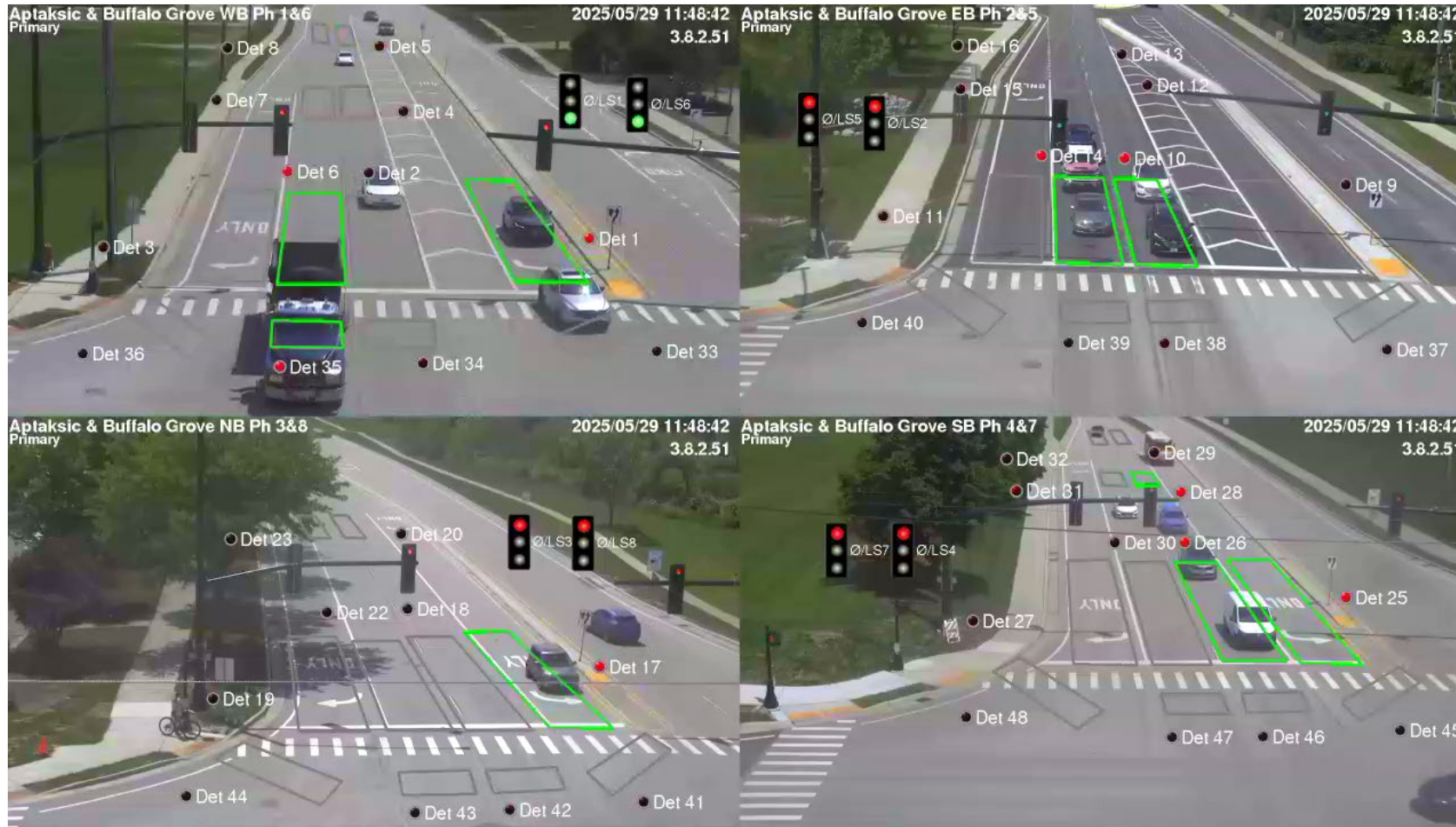
August 29, 2025

ATSPM Automated Traffic Signal Performance Measures



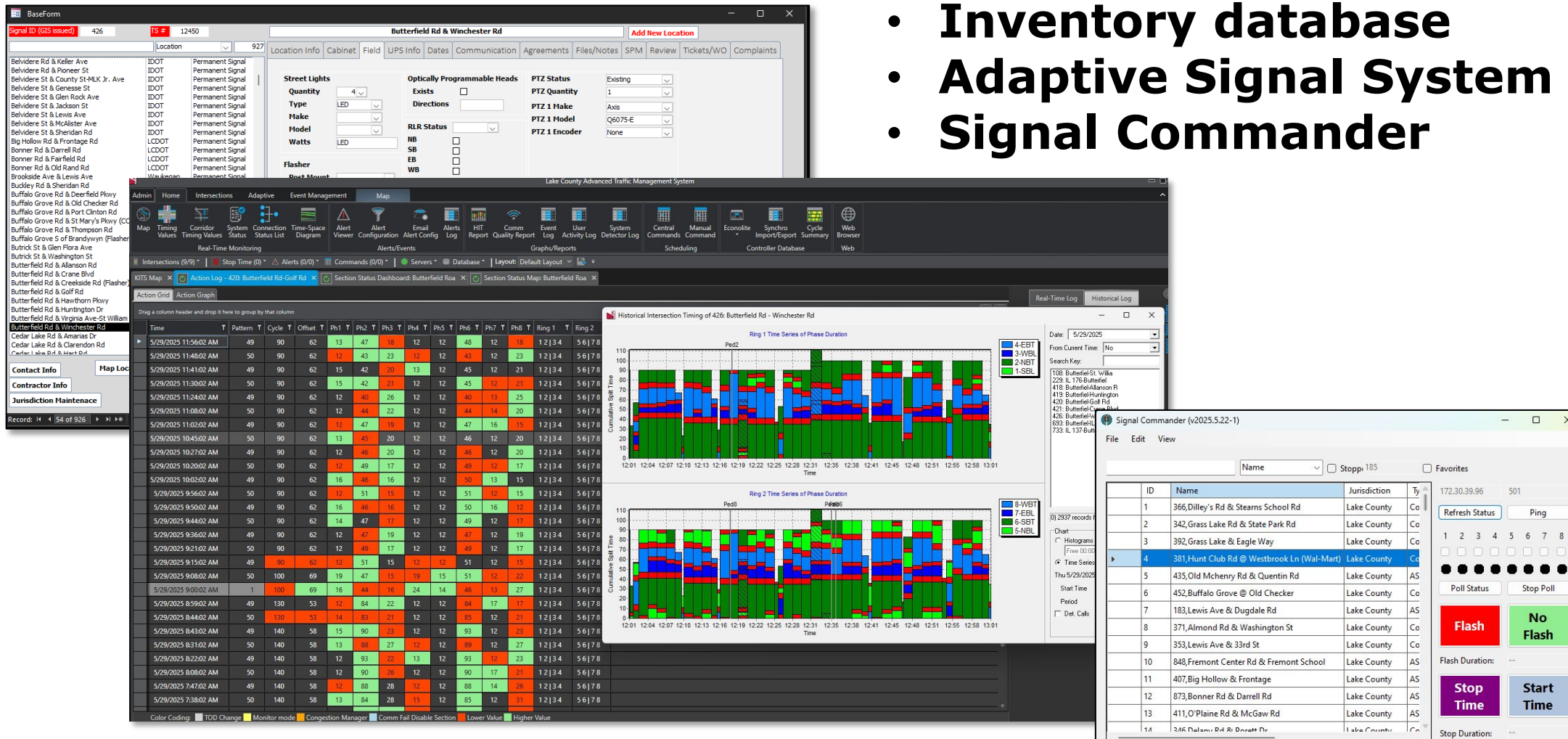
Traffic Signal Software

Detection



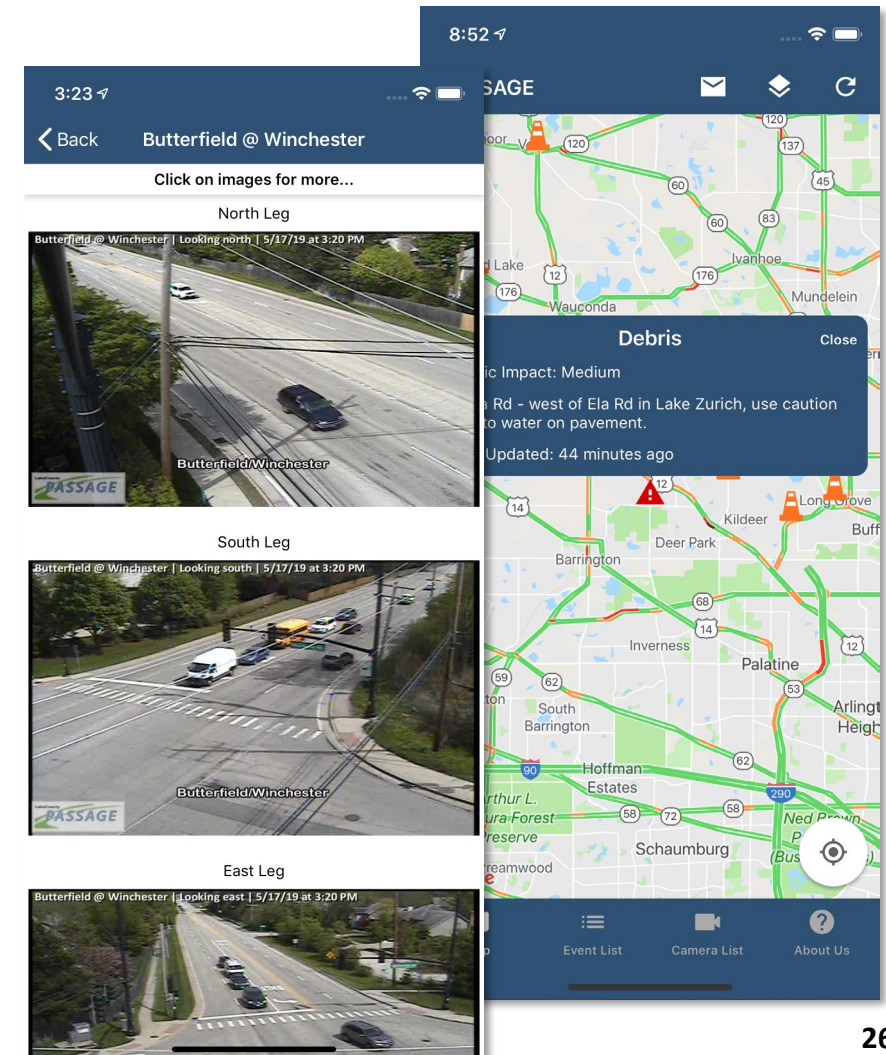
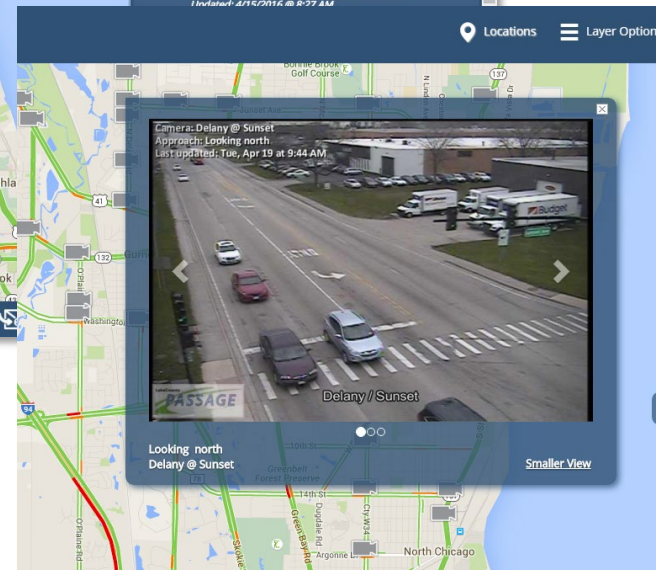
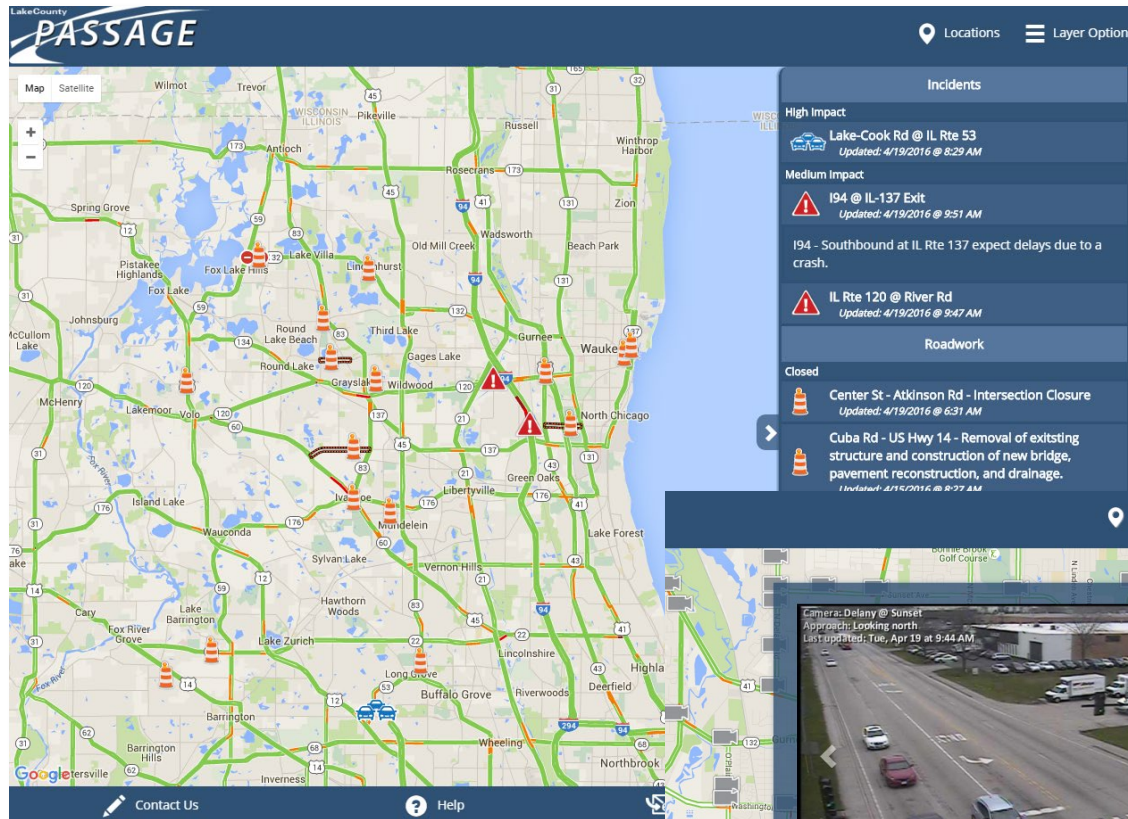
Traffic Signal Software

- Inventory database
- Adaptive Signal System
- Signal Commander




[illegible]

Traveler Information




Traveler Information

Crash - IL Rte 21

 Lake County PASSAGE
To

IL Rte 21 - northbound at I-94 in Gurnee expect heavy delays due to a crash.



IL 21 / Gages Lake

[Lake County PASSAGE](#) | Ph. 847-377-7000

If you no longer want to receive e-mail alerts about events, please visit [Lake C](#)



Lake County PASSAGE
@LCPASSAGE

PASSAGE is an Intelligent Transportation System designed to provide motorists real time traffic information. For more details visit

📍 Lake County, IL
🌐 [lakecountypassage.com](#)
📅 Joined June 2009

📷 Photos and videos

Tweets 40.5K Following 7 Followers 3,194 Likes 38

Tweets Tweets & replies Media

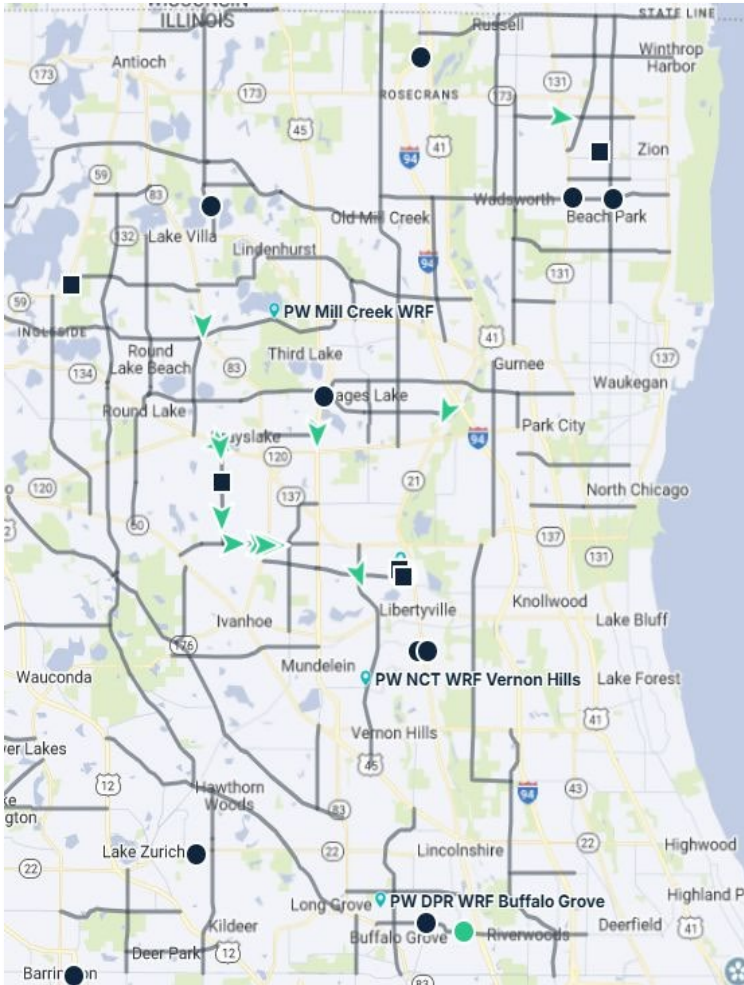
 **Lake County PASSAGE** @LCPASSAGE · 1h
UPDATE: IL Rte 120 - from I-94 to US Hwy 41, expect delays due to pavement resurfacing.

 **Lake County PASSAGE** @LCPASSAGE · 2h
CLEARED: IL Rte 60 - Eastbound, west of IL Rte 21 in Vernon Hills expect heavy delays due to a crash.

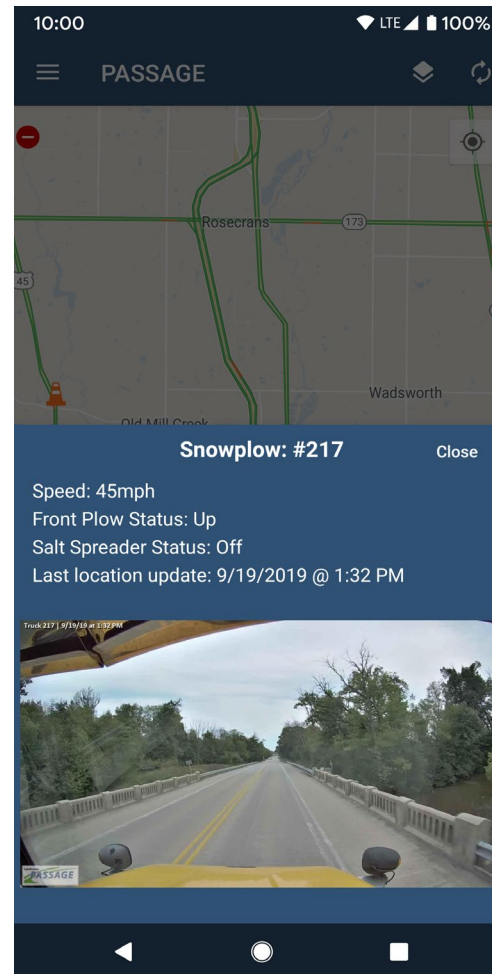
 **Lake County PASSAGE** @LCPASSAGE · 2h
IL Rte 60 - Eastbound, west of IL Rte 21 in Vernon Hills expect heavy delays due to a crash.



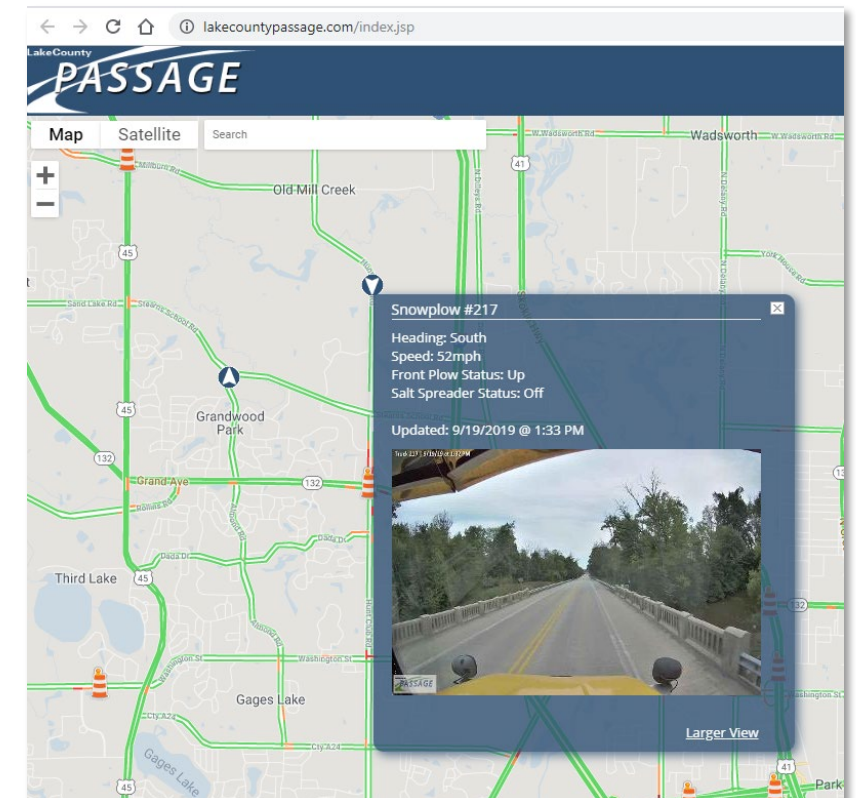
Traveler Information

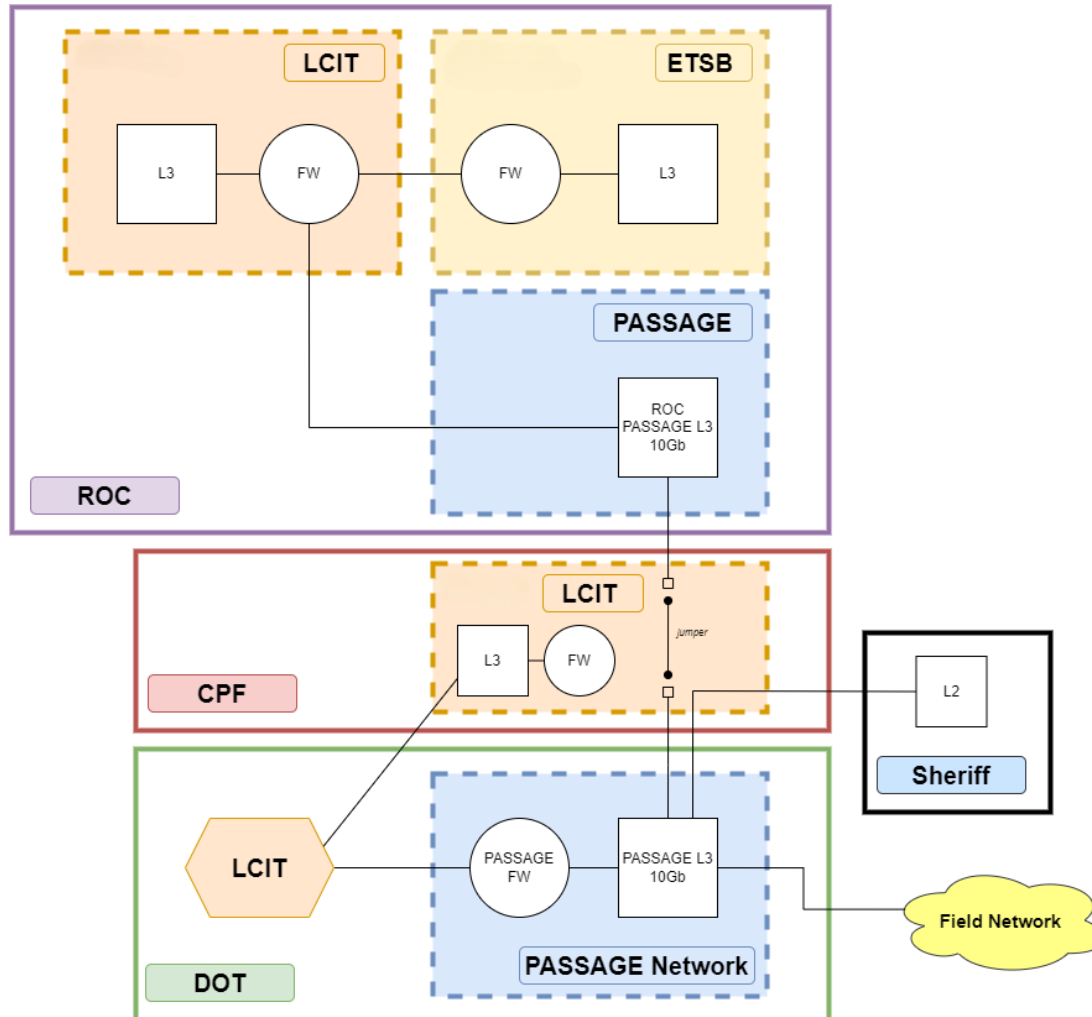


August 29, 2025



Automatic Vehicle Location (AVL)





- **Firewalls**
- **LCIT coordination**
 - **CISA Scans**
- **Cybersecurity best practices**
- **Switch configuration**

Future Projects

- ***PASSAGE* expansion project**
 - Adding signals, cameras, redundant fiber routes
- ***PASSAGE* network project**
 - Testing new fiber installation methods to limit downtime due to frozen conduit
- **APS projects**
 - Installing additional Accessible Push buttons
- **Connected Vehicle Demonstration project**

Transportation Management Center



Monday – Friday 6:00 AM – 7:00 PM

August 29, 2025



LakeCounty



Questions?

Contact us!

Office: 847.377.7400

PASSAGE: 847.377.7000

Email: passage@lakecountyil.gov

Web: www.lakecountypassage.com