

Using High-Tech to Offer Alternate Route Choices

I-39/90 Expansion Project

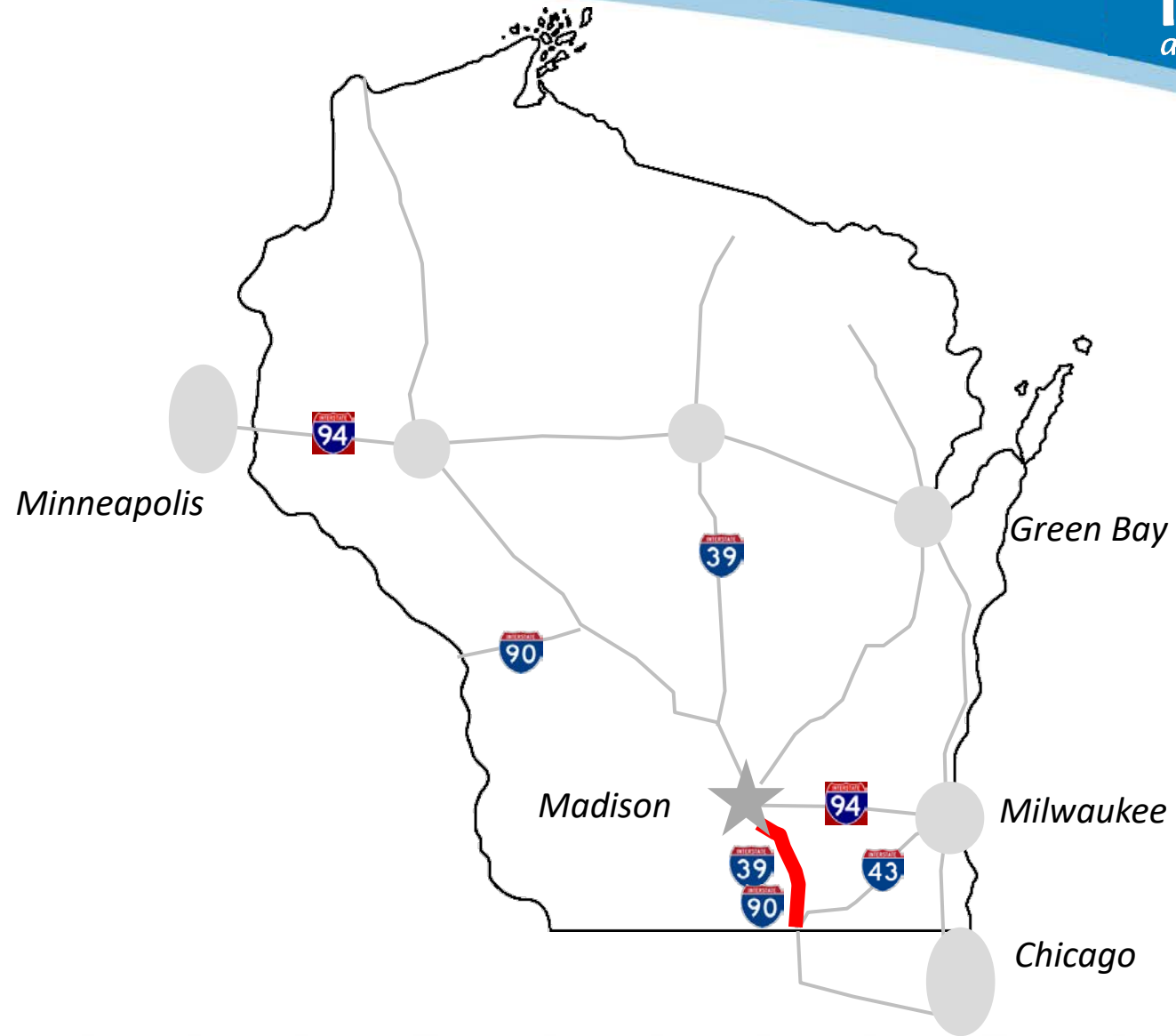
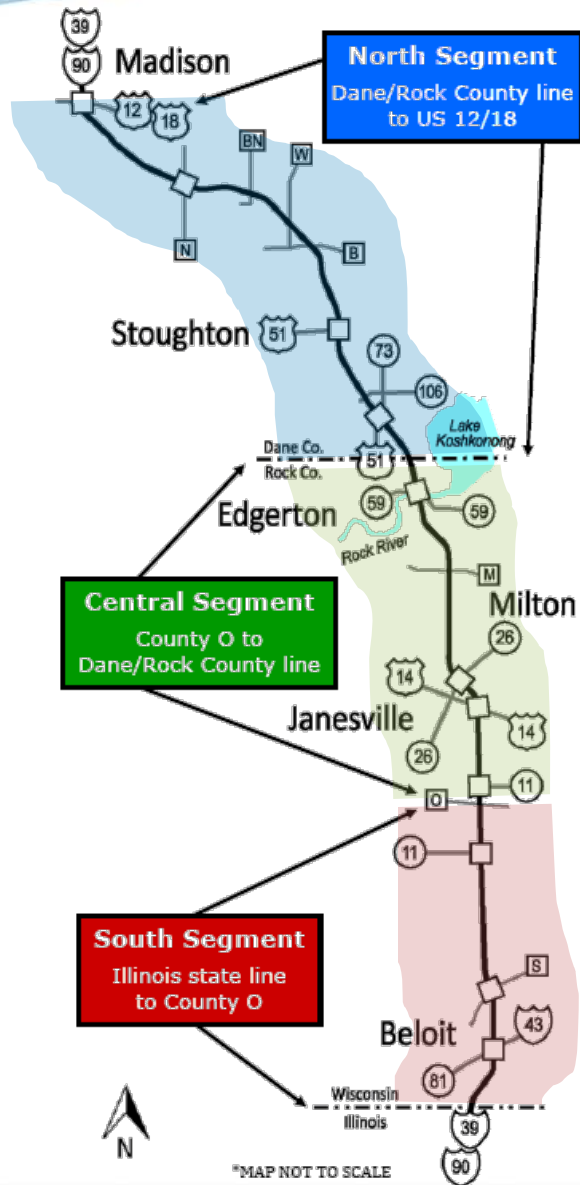
Luke Holman, PE – Strand Associates, Inc.

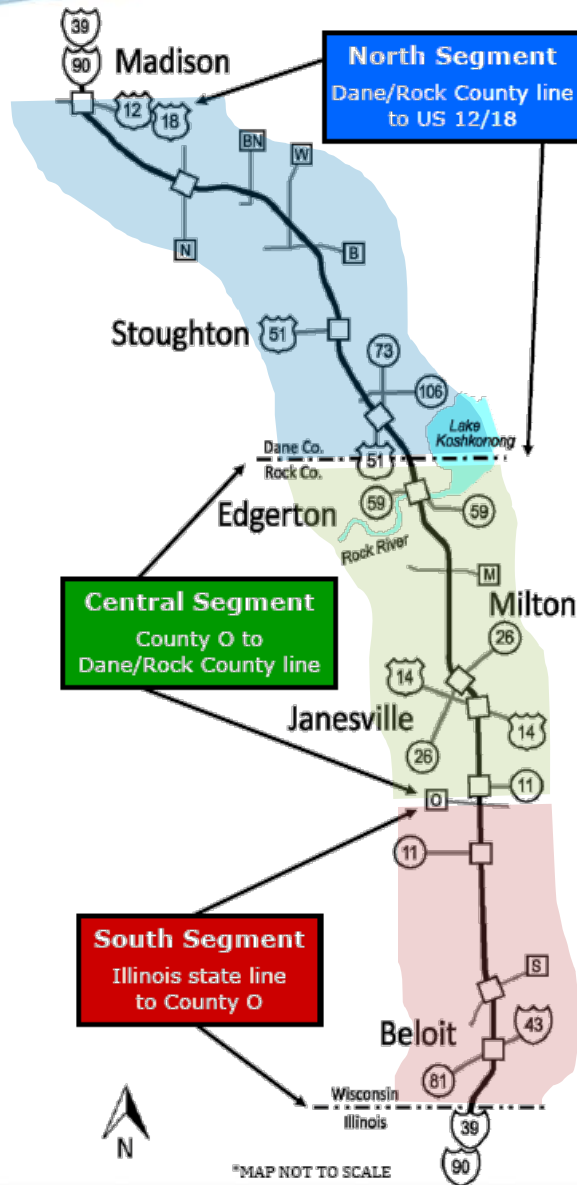


www.i39-90.wi.gov

TRAVEL WISCONSIN .COM







Interstate Improvements

- Originally built in 1958 – 1961
- Reconstruct and expand 45 miles of I-39/90 from four to six lanes
- Expand from four to eight lanes from WIS 11 to the WIS 26 interchange in Janesville
- Reconfigure 11 interchanges
- Construction through 2021

Why improve I-39/90?



Fatal crash near Janesville

Safety

- Interchanges and roadways have substandard features compared to today's design standards
- Crash rate is approximately 20 percent higher than statewide average

Congestion & Increased Traffic

- Current Traffic:
45,000 - 60,000 vehicles per day
- Projected 2040 Traffic:
80,000 - 100,000 vehicles per day
- Higher volumes:
Friday, Sunday & in summer

Why improve I-39/90?



Traffic backup on I-39/90

Safety

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Why improve I-39/90?

Major Tourism Route

- \$1.2 billion impact from visitor expenditures in communities along I-39/90. *(2013 data)*
 - Food, lodging, retail sales and recreation.

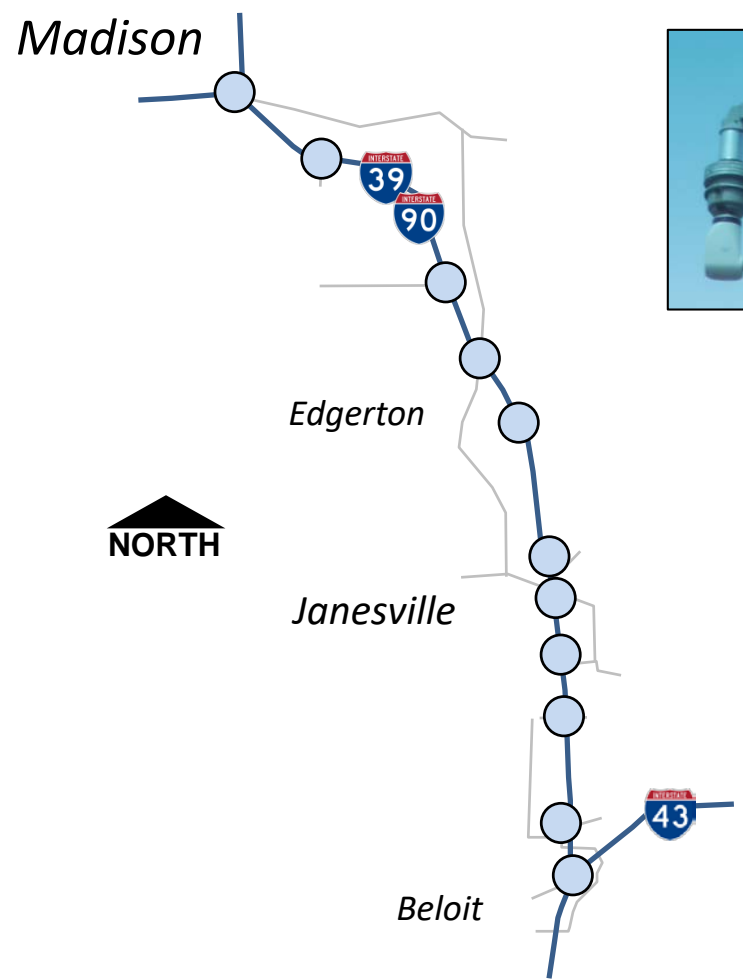
Movement of Goods

- Trucks handle 90% of all freight shipped in Wisconsin
- Trucks account for nearly 30% of total traffic.

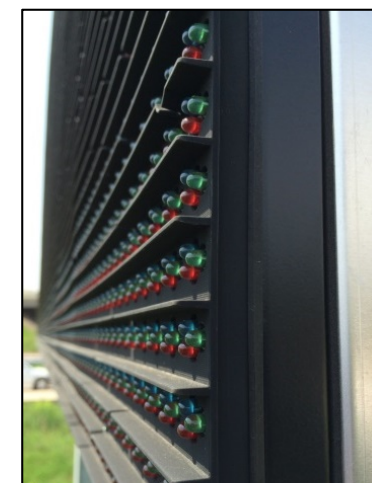


Heavy truck traffic on I-39/90

Traveler Information Enhancements



CCTV



Full matrix color DMS



Median DMS

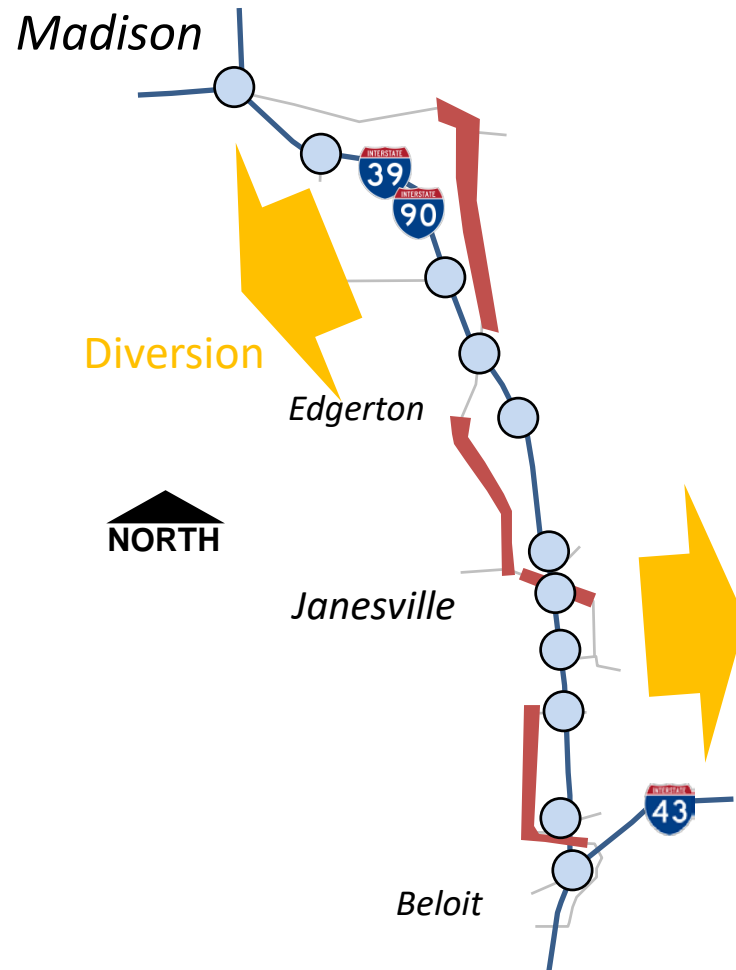


Bluetooth Detectors



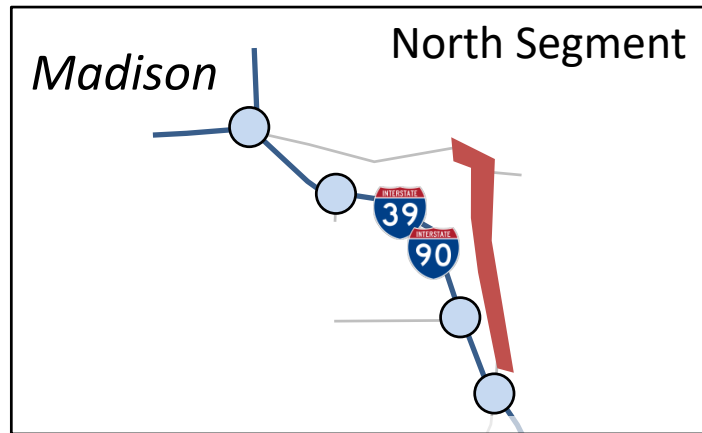
Adaptive Signals

Alternate Route Enhancements



- Resurface/Reconstruct
- Interchange
- Bridges
- Traffic Signals
- Adaptive Signals

Alternate Route Enhancements



Edgerton

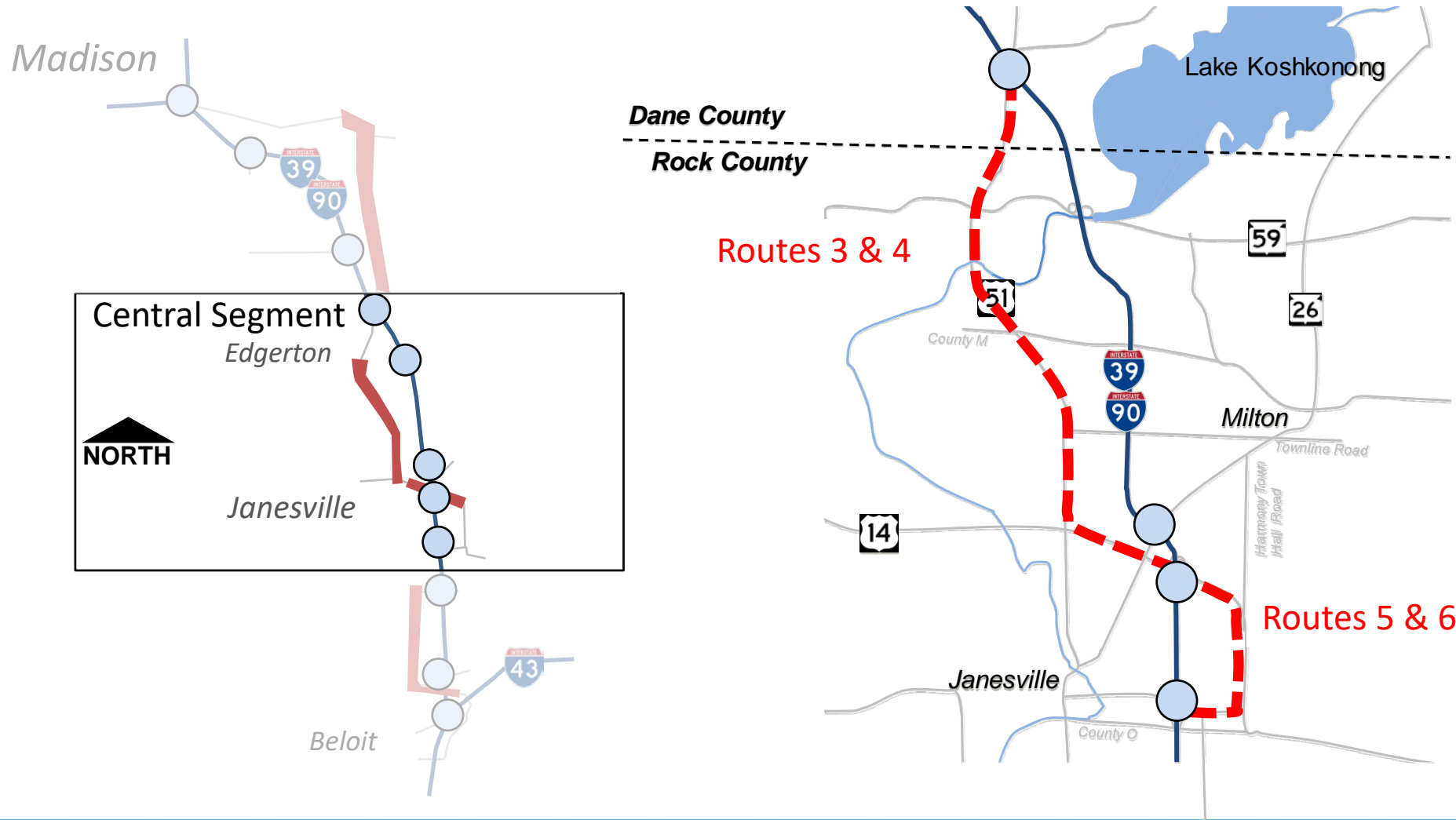
Janesville

Beloit

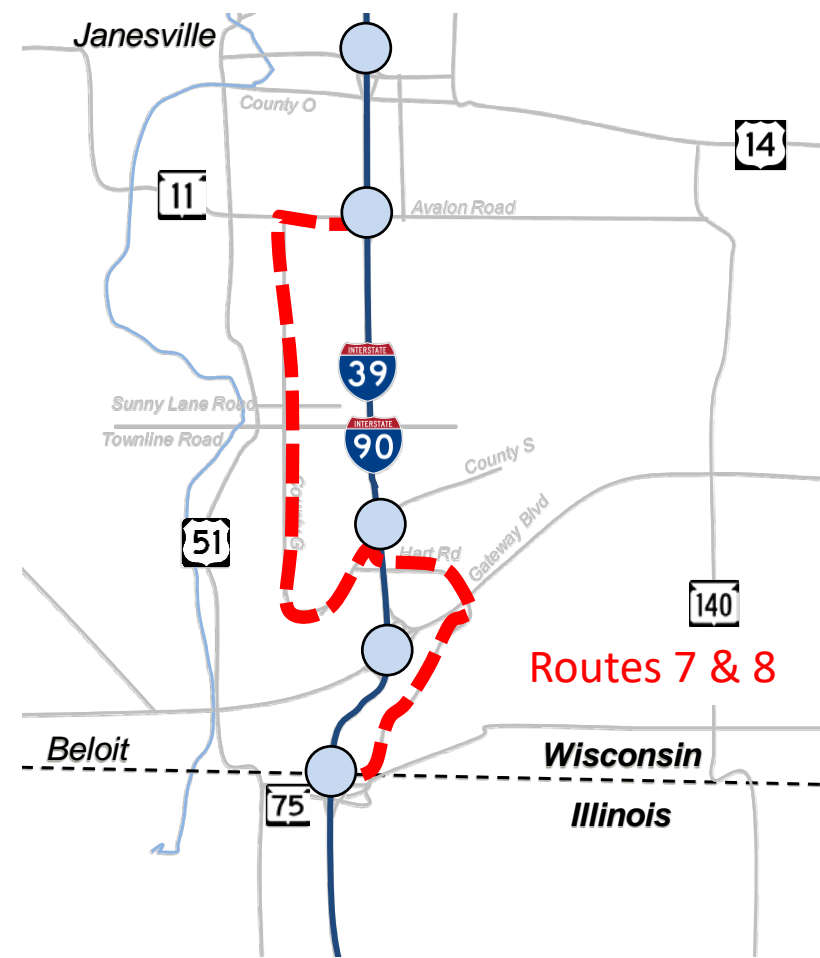
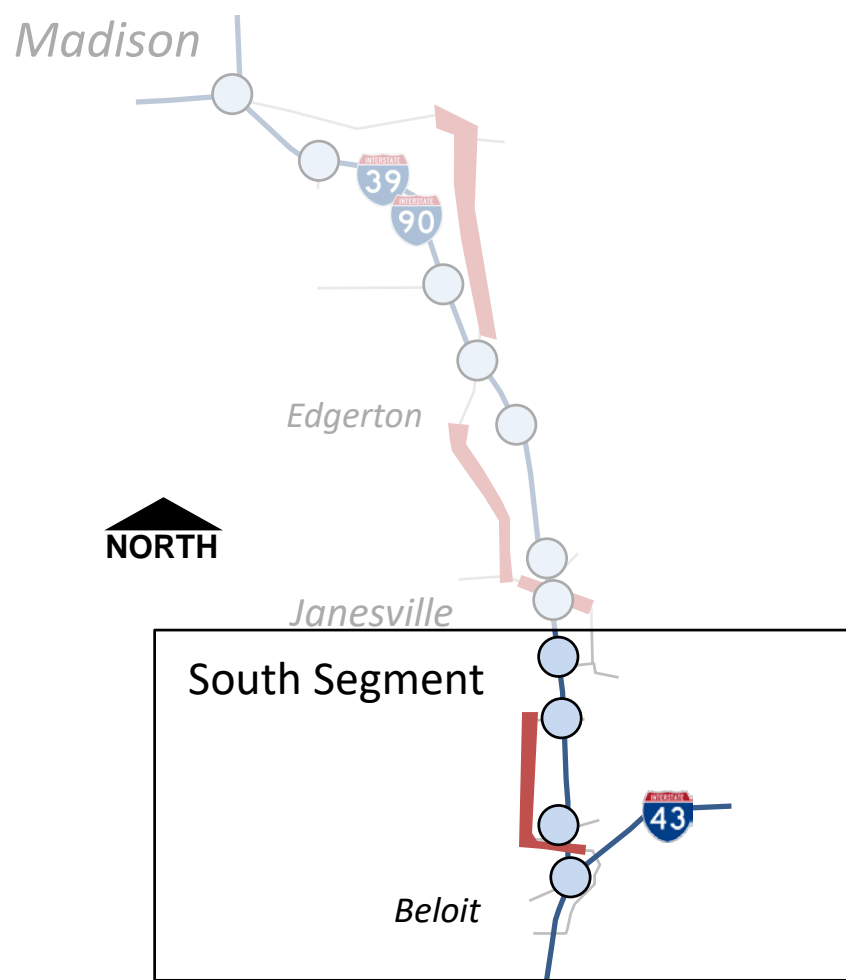
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Alternate Route Enhancements



Alternate Route Enhancements



Operational Challenge





Operational Challenge



I-39/90 NB at Prairie Hill Rd (S of IL/WI State Line)

**DELAYS AHEAD
ALT ROUTE
AT EXIT 185**

I-39/90 NB at Hart Rd

**SEVERE DELAYS
NEXT 6 MILES
ALT ROUTE AT EXIT 183**

Operational Challenge



I-39/90 SB/EB at S of County M

**RIGHT LANE CLOSED
AT MM 176
EXPECT SEVERE DELAYS**

I-39/90 SB/EB at S of County M

**E RACINE ST
VIA I-39/90 20 MIN
VIA ALT ROUTE 14 MIN**

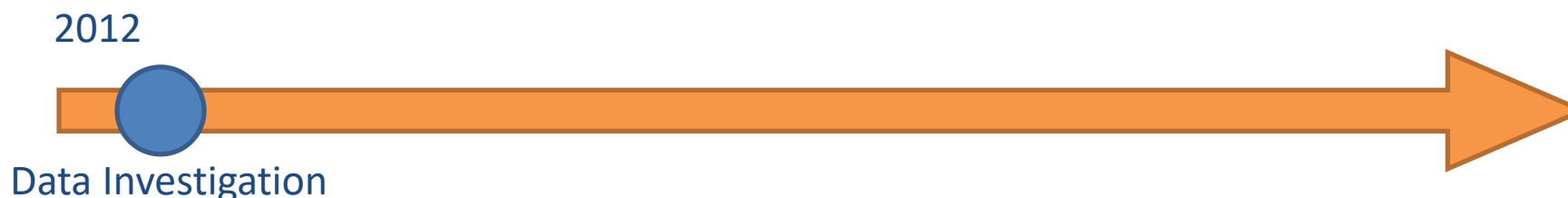
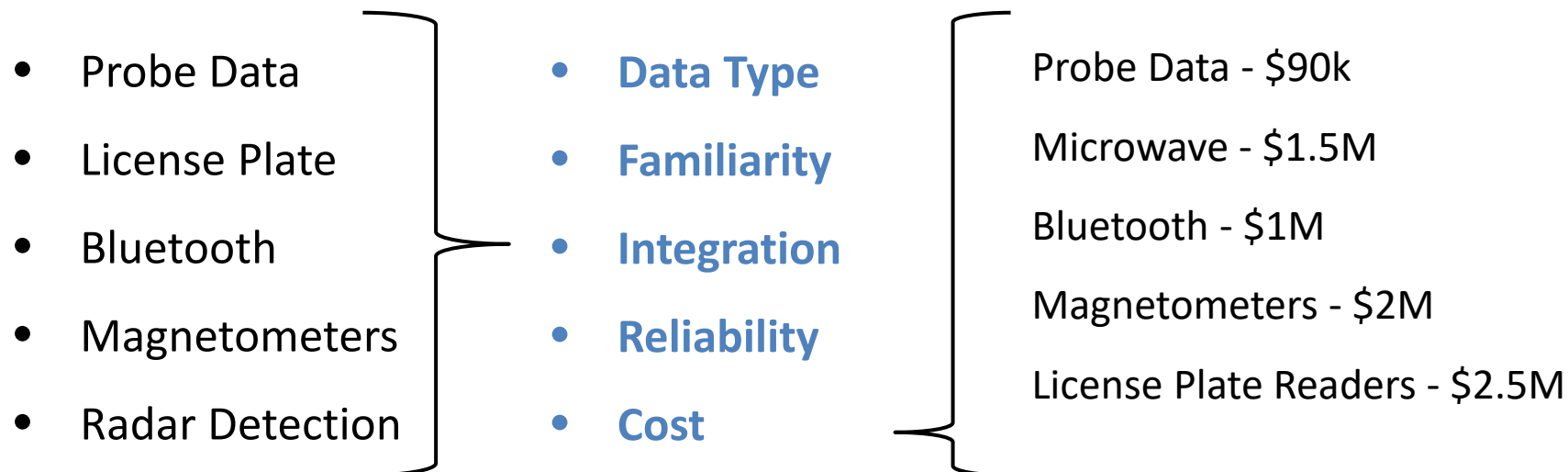
Objective – Comparable TT



173 Total Directional Miles

Initial Data Investigation

Alt Route Travel Time – Technology Investigation



Initial Data Investigation

RFI/Webinar

- Probe Data
- License Plate
- Bluetooth
- Magnetometers
- Radar Detection

5 Vendors

INRIX

Traffax Inc.

TomTom



Established/Known
Technology

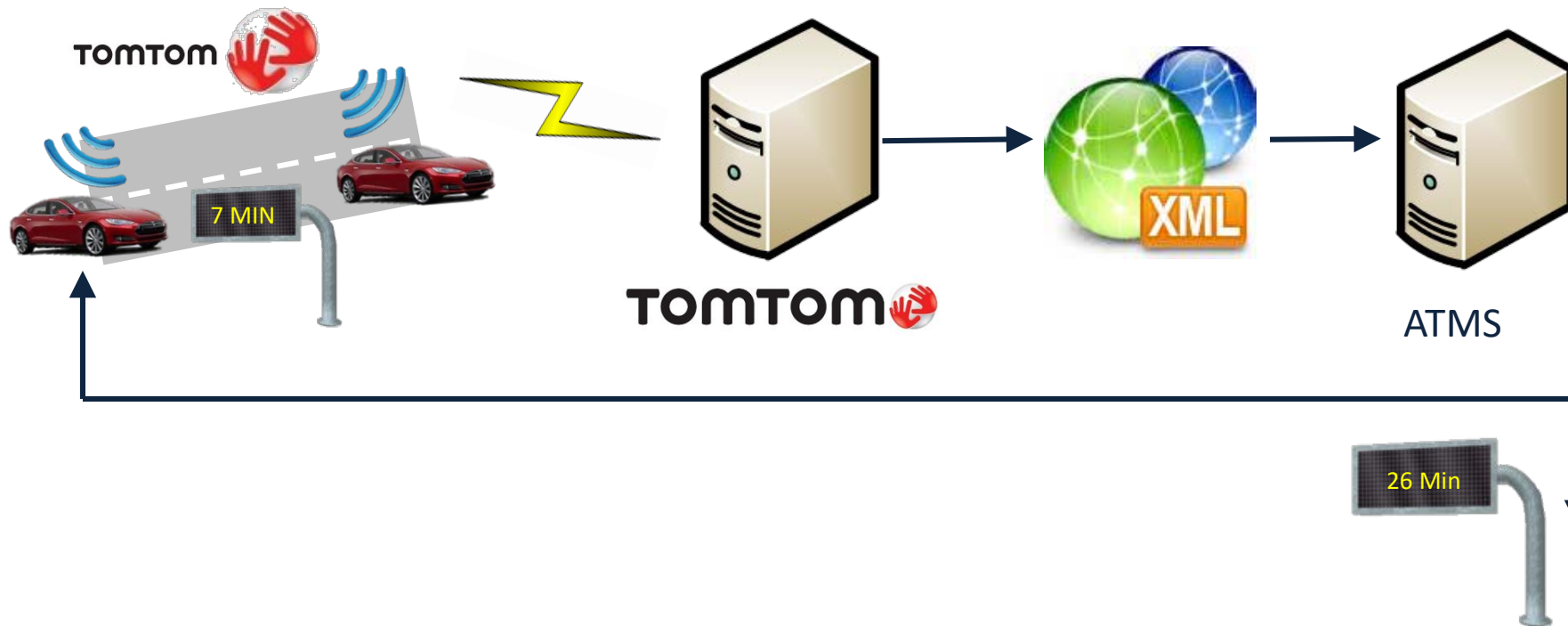
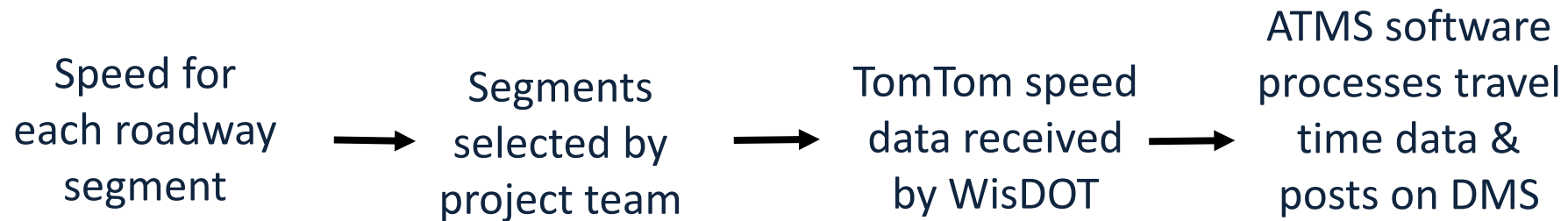


What is Probe data?

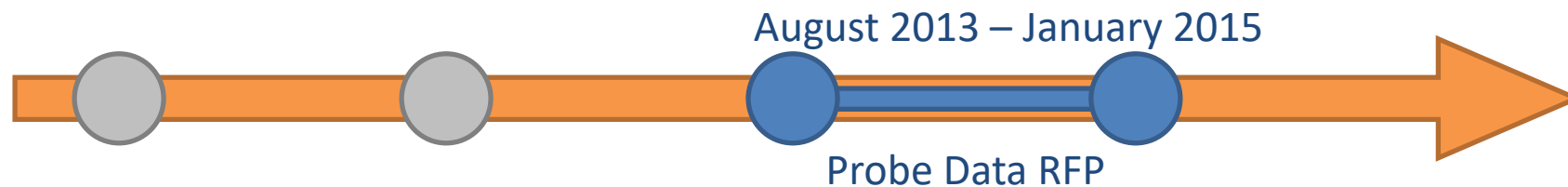
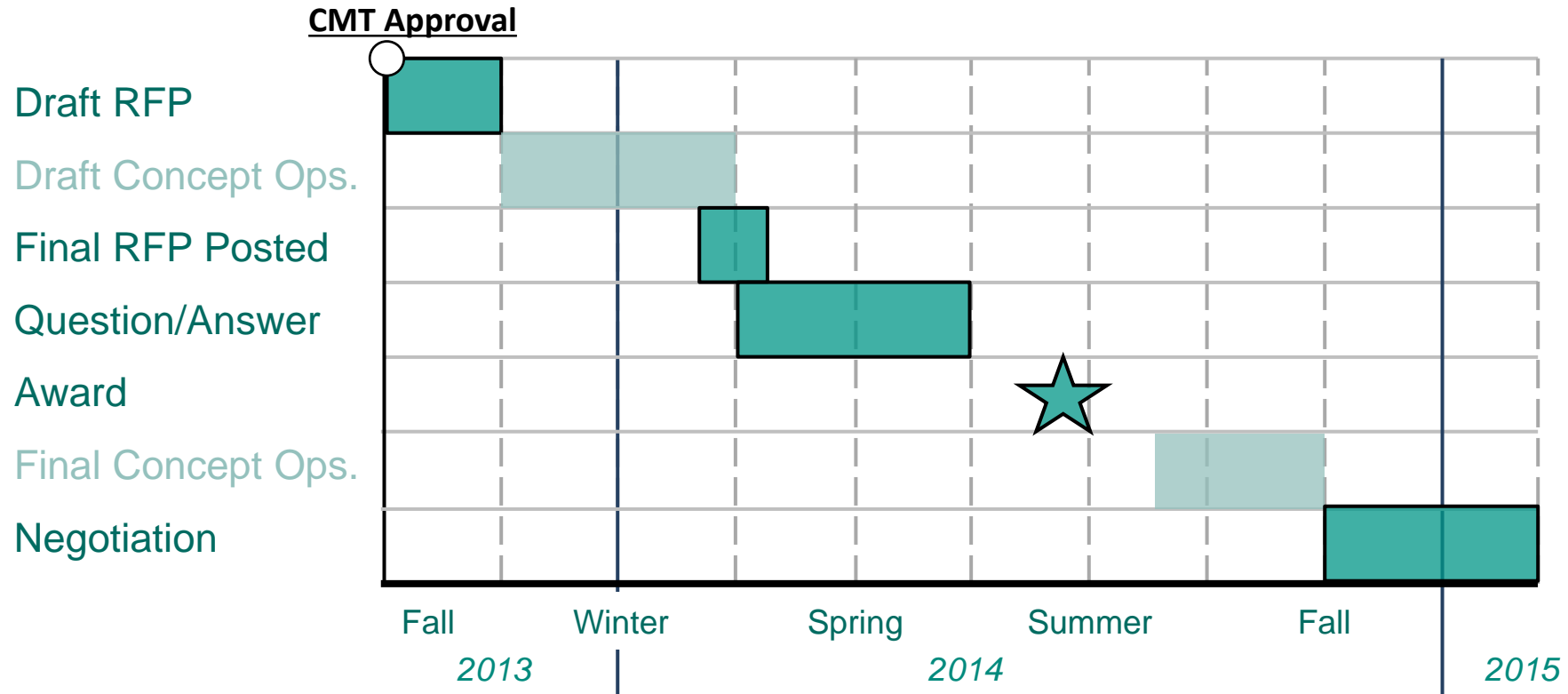


Data taken from these sources to provide Real-Time Travel times

How data becomes a travel time



Probe Data RFP Schedule



Probe Data RFP Schedule

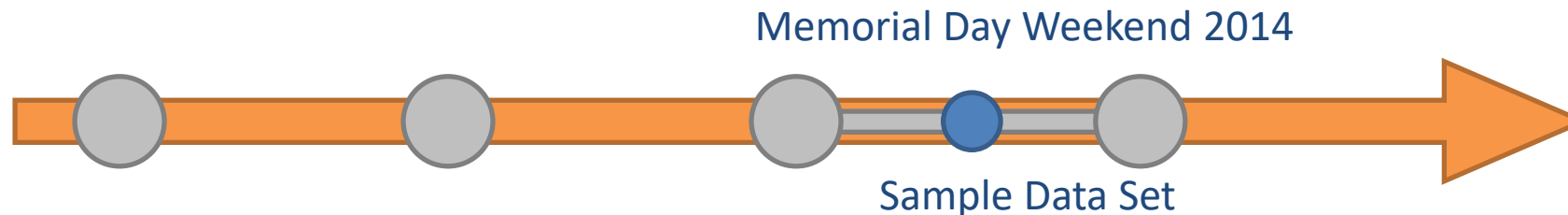
Sample Data Set - Comparison

- Data Format
- Quality
- Real Time/Historic



Sample Data Set

- IH 39/90
- Hwy 73
- US 51
- Local Rds.

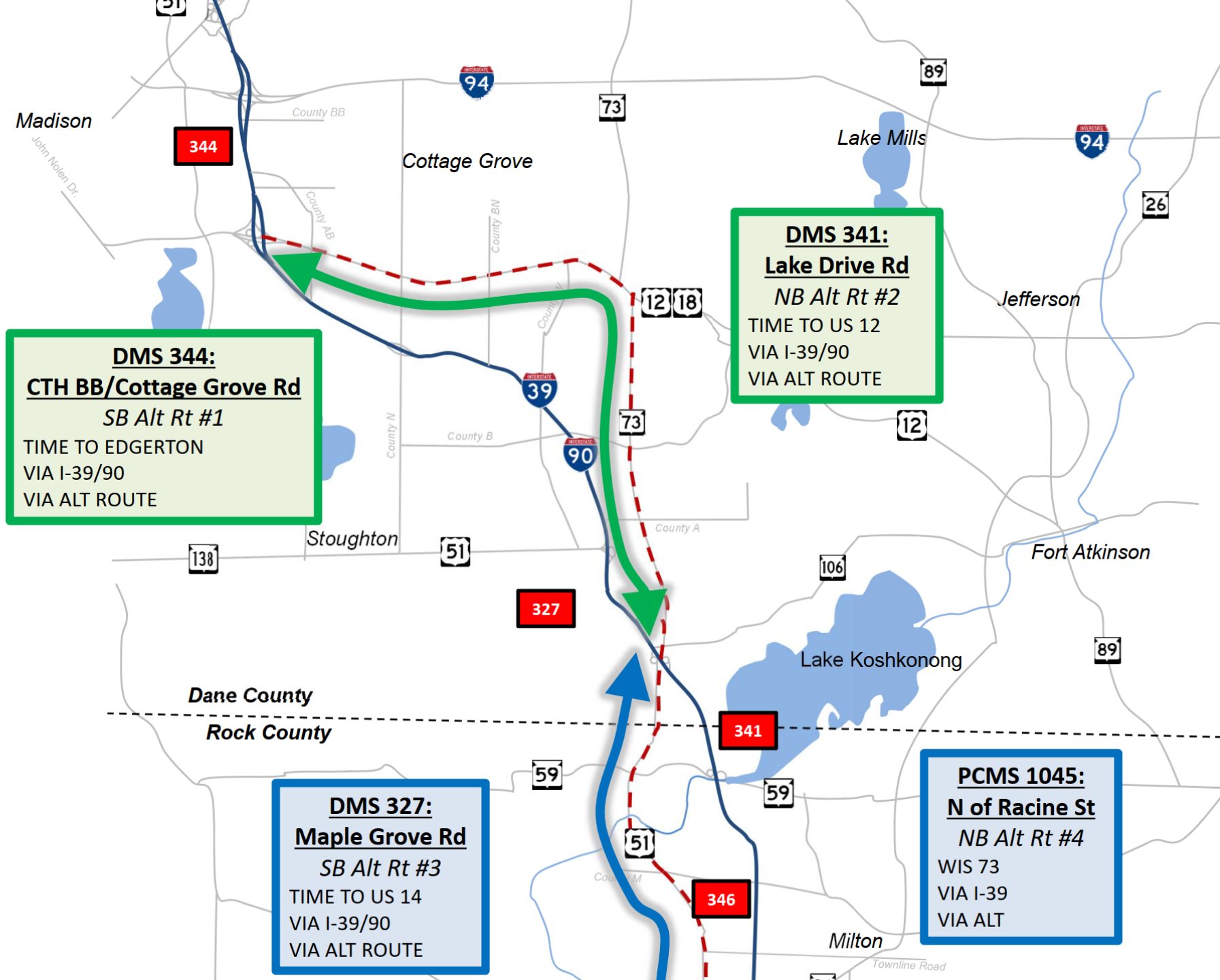


Concept Of Operations

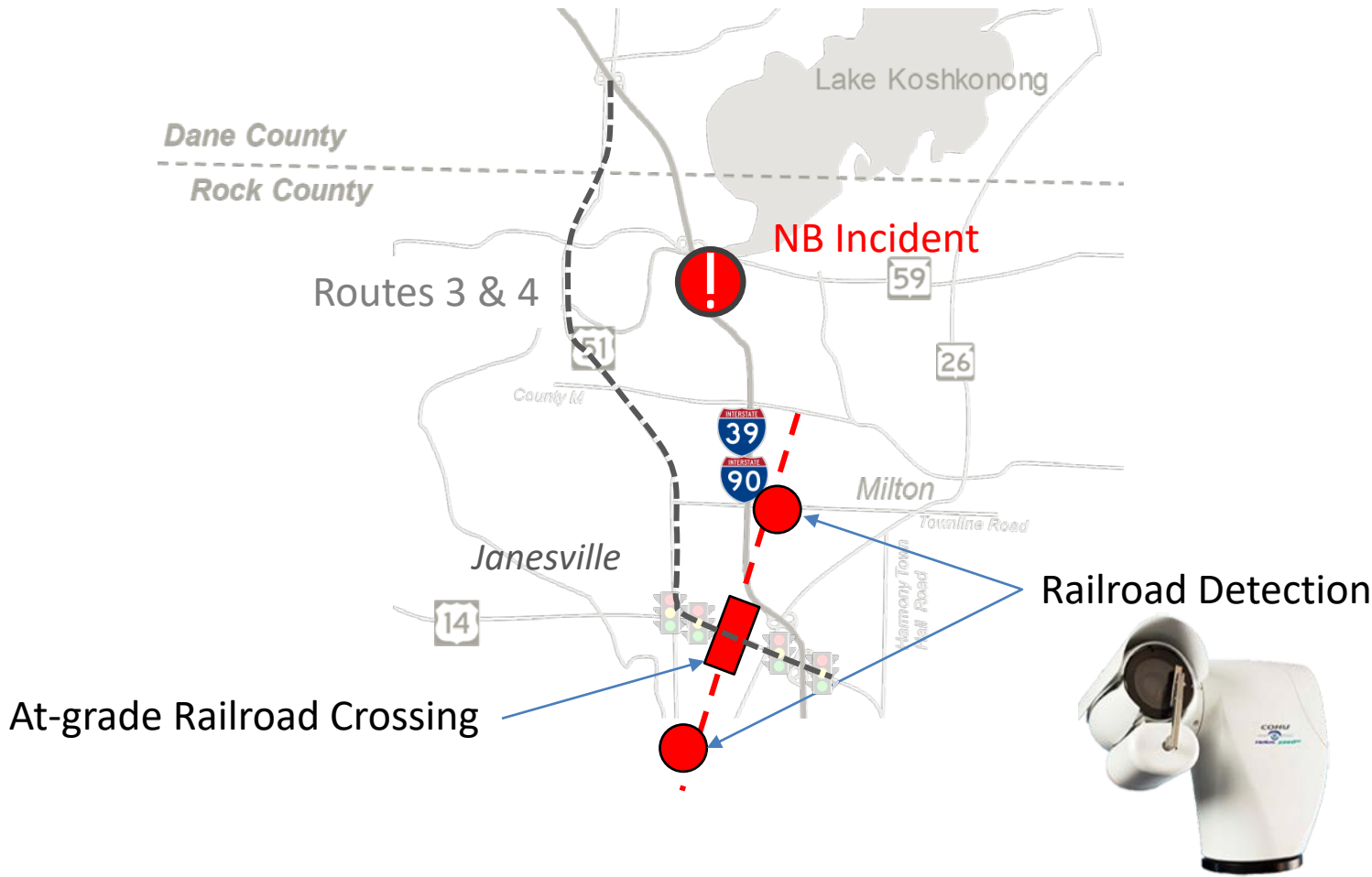
DMS/PCMS Use for Alternate Routes

- Establish Alternate Route Segments
- Define Message Set Priorities
- Assign Message Sets to DMS/PCMS
- Develop Algorithm for Comparative TT
 - Original -> Schedule
 - Current -> Comparative





Train Detection Alerts



Train Detection Alerts



Lessons Learned / Highlights / Next Steps

- Dynamic Work Zones
- Integration and Changes of TomTom Links
- New ATMS Integration Features
- Incident / Queue Detection



Questions?

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