

## → Citizens, Technical and Local Officials Advisory Committees



**Citizens  
Advisory Committee**



**Technical  
Advisory Committee**



**Local Officials  
Advisory Committee**

# → COVID-19 Pandemic Impacts on Traffic

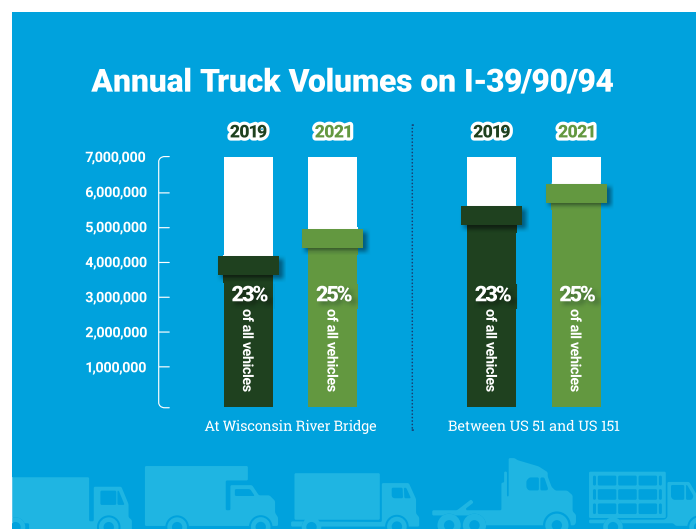
The COVID-19 pandemic and resulting social distancing and stay-at-home orders decreased commuter traffic volumes on I-39/90/94.



However, as the number of in-person trips declined and e-commerce purchases rose, the **volume of freight and delivery truck traffic** increased along the study corridor.

Continuous data collection at traffic-counting sites along the Interstate show **total corridor volumes have returned to pre-pandemic levels** as increased truck volumes have offset lagging volumes of commuter traffic.

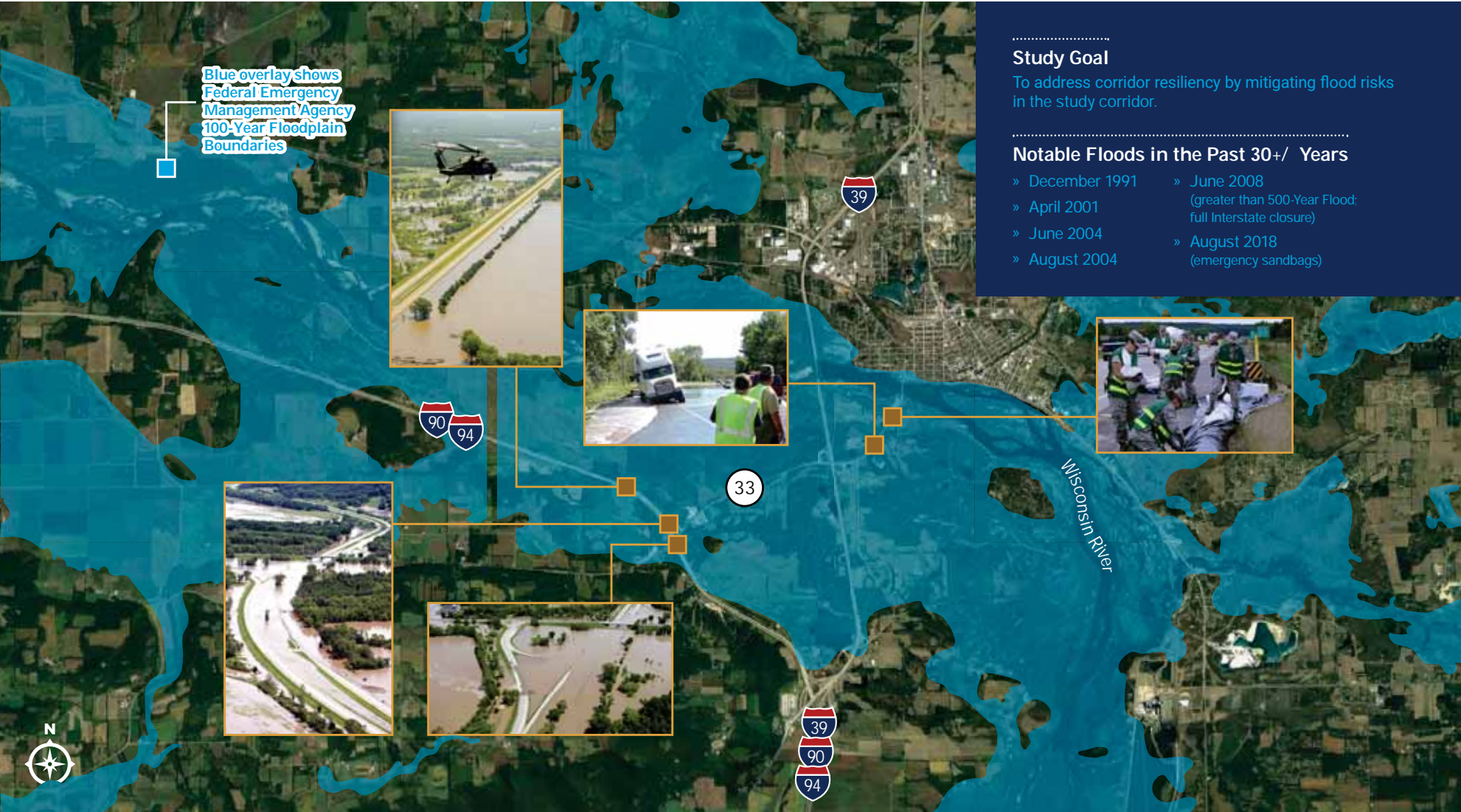
Total truck volumes along the I-39/90/94 study corridor increased 12%-16% between 2019 and 2021, **consistent with national trends of increased product shipping**, which results in trucks representing a slightly higher portion of total traffic.



Source: TCMaP: Wisconsin Department of Transportation Traffic Counts Map Application



→ Flood Events



# → I-39/90/94 Corridor Study Location

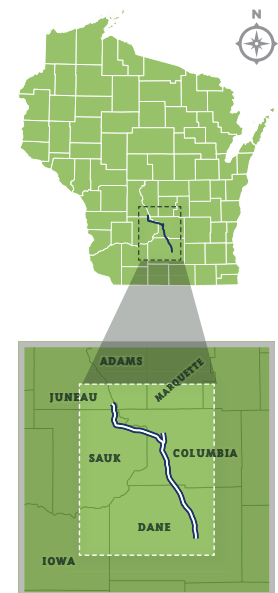


The **I-39/90/94 Corridor Study** will evaluate about 67 miles of I-39/90/94 between US 12/18 in Madison and US 12/ WIS 16 in Wisconsin Dells, and also I-39 from where it splits from I-90/94 to Levee Road near Portage. The study corridor travels through Dane, Columbia, Sauk and Juneau counties.

**LEGEND**

I-39/90/94 Corridor Study Limits

Project Not Included In This Study



# → Study Summary



LENGTH

67 miles

from US 12/18 to US 12/WIS 16 interchange



INTERCHANGES

15 interchanges

will be evaluated for safety and ability to accommodate existing and future traffic demand

If the I-39/90/94 Corridor Study does not move forward as a project, WisDOT anticipates that:



PAVEMENT

24 projects

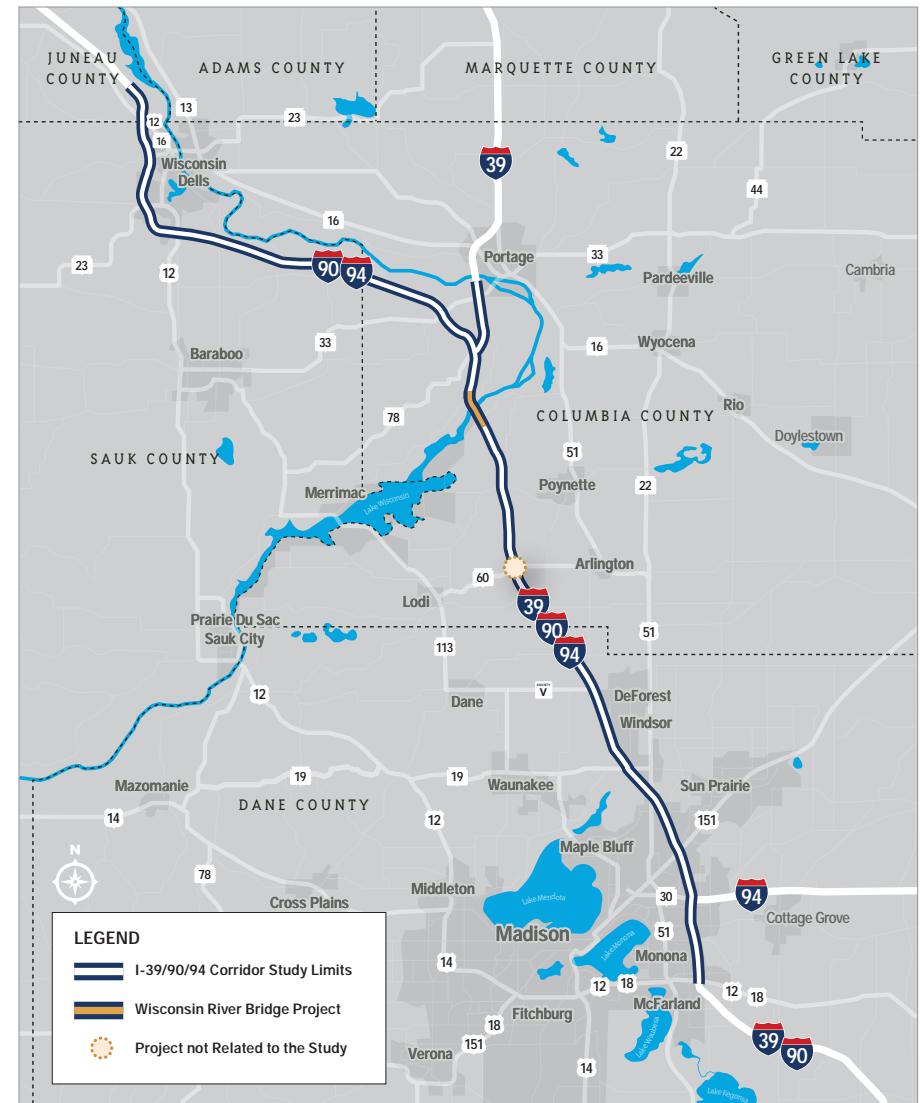
24 rehabilitation/maintenance projects anticipated over the next 30 years



BRIDGES

96 structures

will require replacement or significant deck work (30-year projection)





# → Study Purpose and Corridor Needs

## Study Purpose

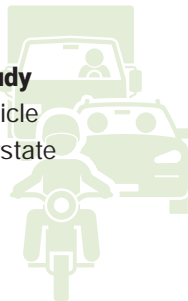
The I-39/90/94 Corridor Study will address existing and future **traffic** demands, **safety** issues, aging and outdated corridor **infrastructure**, and corridor **resiliency**.



## Corridor Needs

### Traffic

The **volumes of traffic along the study corridor are increasing**, causing vehicle congestion and backups on the interstate and decreasing travel time reliability.



### Safety

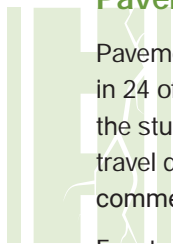
Crash rates along the study corridor, especially at interchanges, **exceed the statewide average crash rate**. Congestion and geometric/design deficiencies contribute to crashes



### Pavement

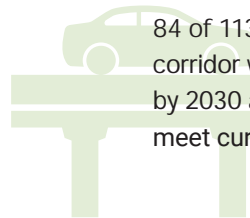
Pavement maintenance projects are anticipated in 24 of the next 30 years somewhere in the study corridor, which presents ongoing travel delay and congestion for daily commercial and recreational traffic.

Eventually, full pavement replacement is more cost effective than more repair. Emergency pavement projects also occur which disrupts regular maintenance and construction schedules.



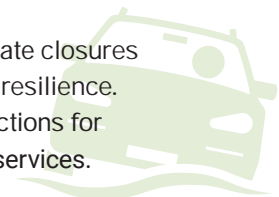
### Bridges

84 of 113 structures in the study corridor will be over 50 years old by 2030 and many bridges do not meet current design standards.

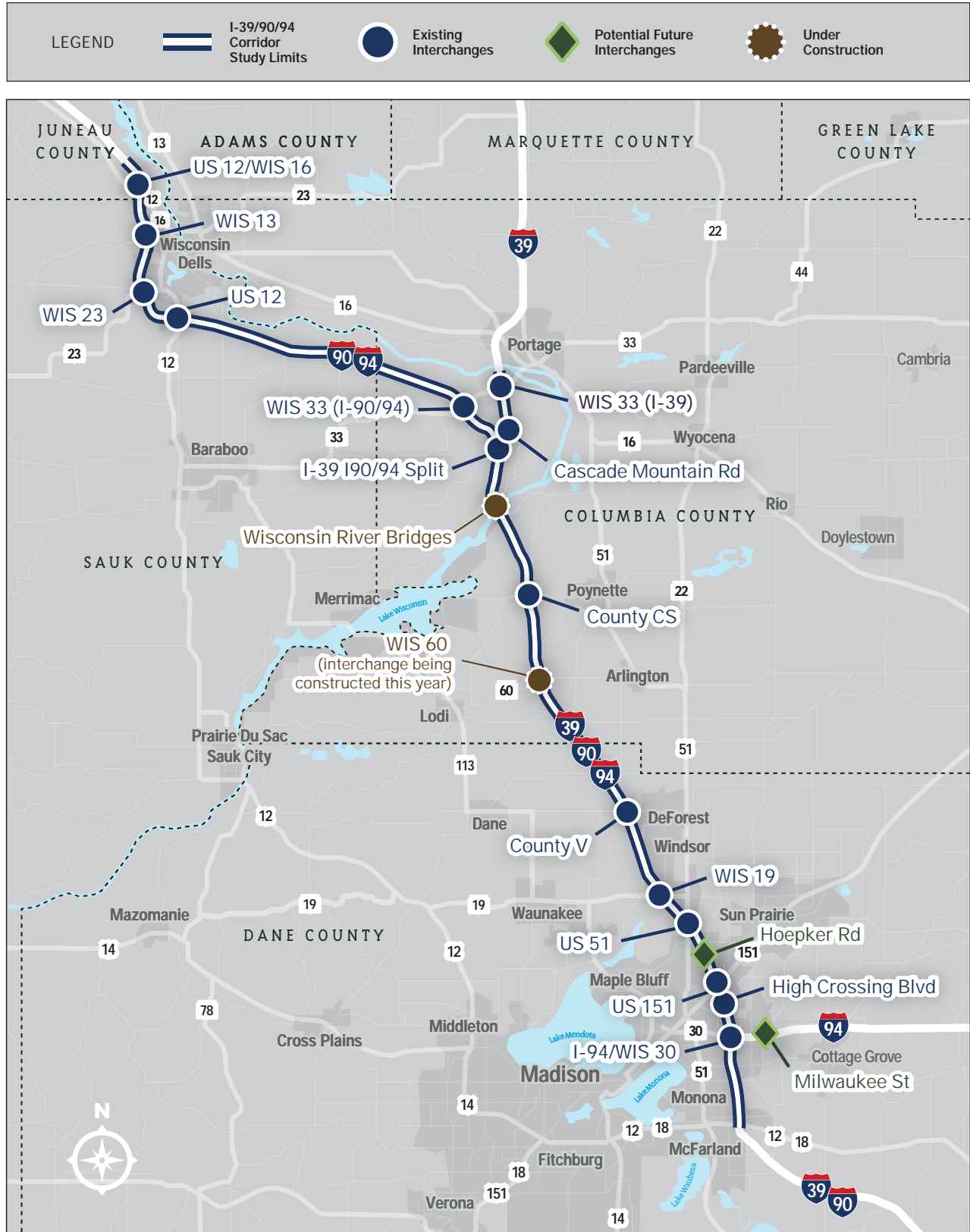


### Flooding

Flood events causing interstate closures since 2008 impact corridor resilience. Closures disrupt vital connections for commerce and emergency services.



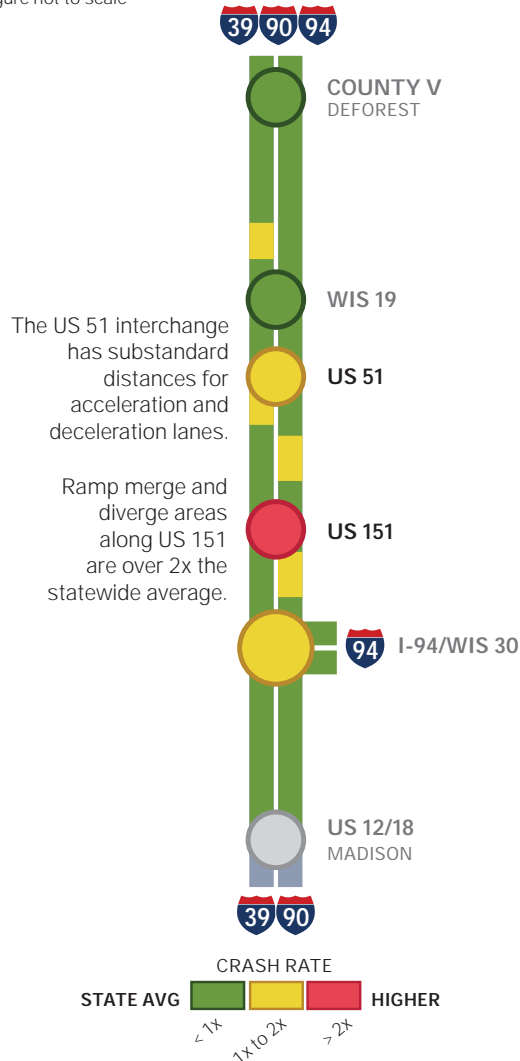
# I-39/90/94 Corridor Interchange Locations



# → Crash Rates and Details – Madison Section

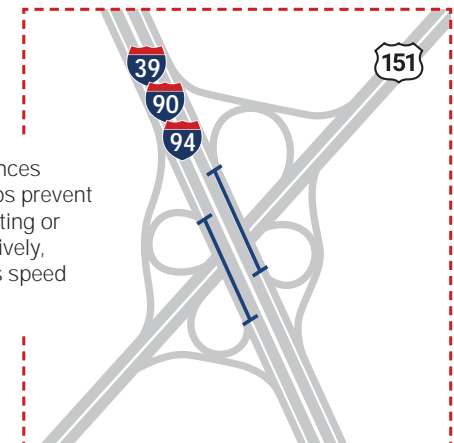
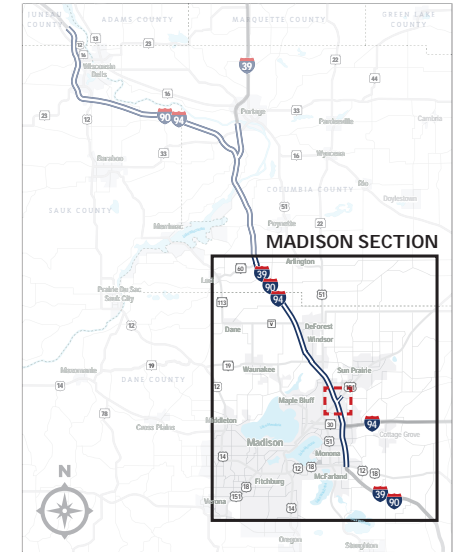
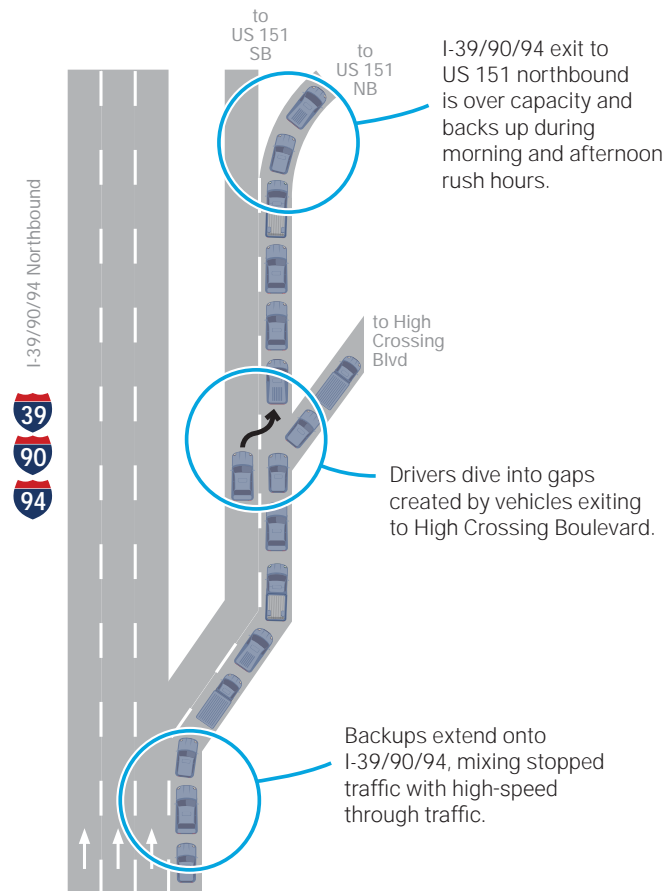
## 2017-2021 CRASH RATES

Figure not to scale



## US 151 INTERCHANGE

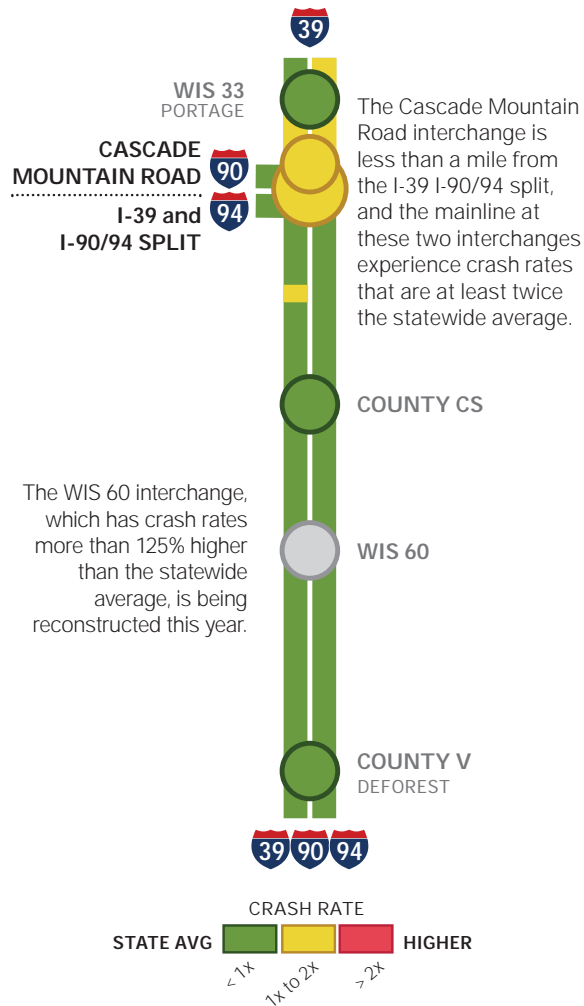
The safety issues at the US 151 interchange are a result of congestion and geometry.



# → Crash Rates and Details – Wisconsin River Section

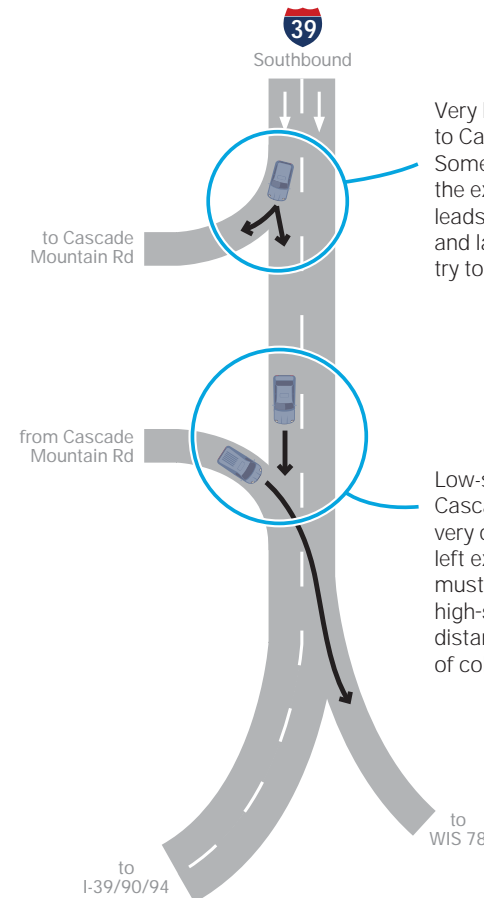
## 2017-2021 CRASH RATES

Figure not to scale



## I-39 and I-90/94 SPLIT

Confusion/weaving on I-39 southbound near I-90/94 split causes safety issues.



Very low-speed (20 mph) exit to Cascade Mountain Road. Some drivers confuse this with the exit to I-39/90/94, which leads to last-minute braking and lane changes, as drivers try to correct their course.

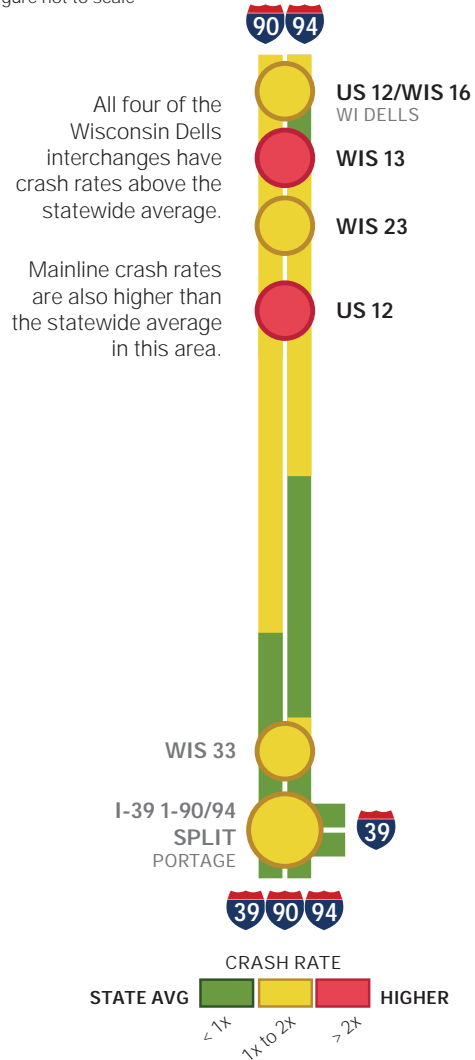
Low-speed entrance from Cascade Mountain Road is very closely spaced with the left exit to WIS 78. Drivers must cross multiple lanes of high-speed traffic in a short distance, increasing the risk of collisions.



# → Crash Rates and Details – Wisconsin Dells Section

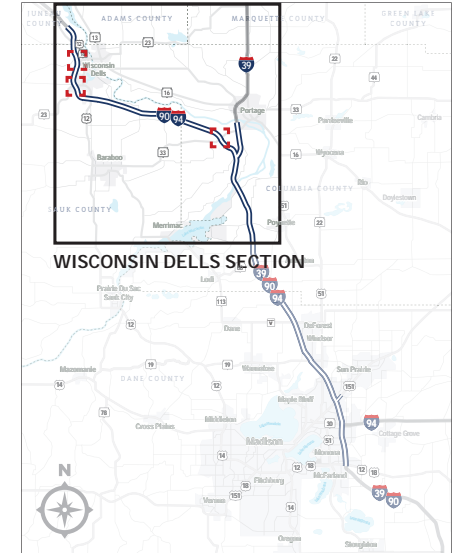
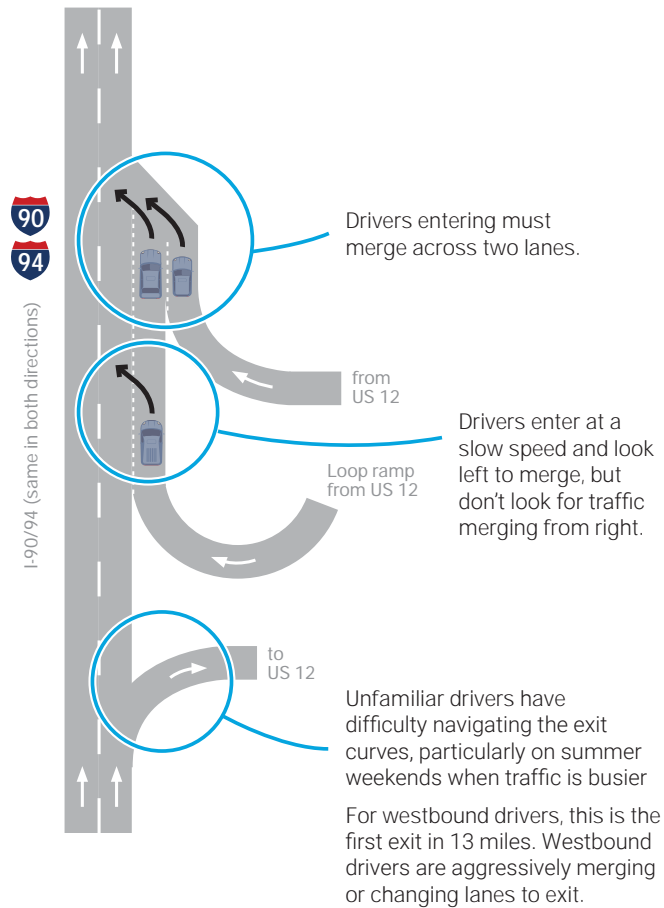
## 2017-2021 CRASH RATES

Figure not to scale



## ● US 12 INTERCHANGE

The US 12 interchange has numerous locations where a large number of crashes occur.



### WIS 13 EASTBOUND OFF-RAMP

Low-speed loop exit, narrow right shoulder and limited sight distance to exit curve



### WIS 23 EASTBOUND OFF-RAMP

Short acceleration lane with guardrail/bridge pier preventing escape



### WIS 33 WESTBOUND OFF-RAMP

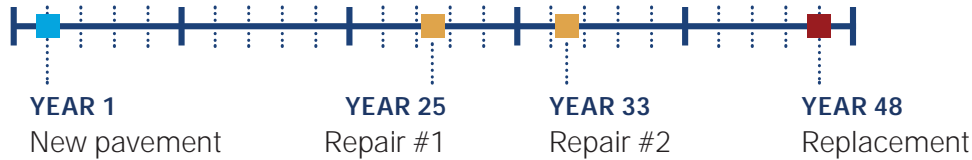
Low-speed loop exit with inadequate deceleration



# → Pavement and Bridge Condition Overview

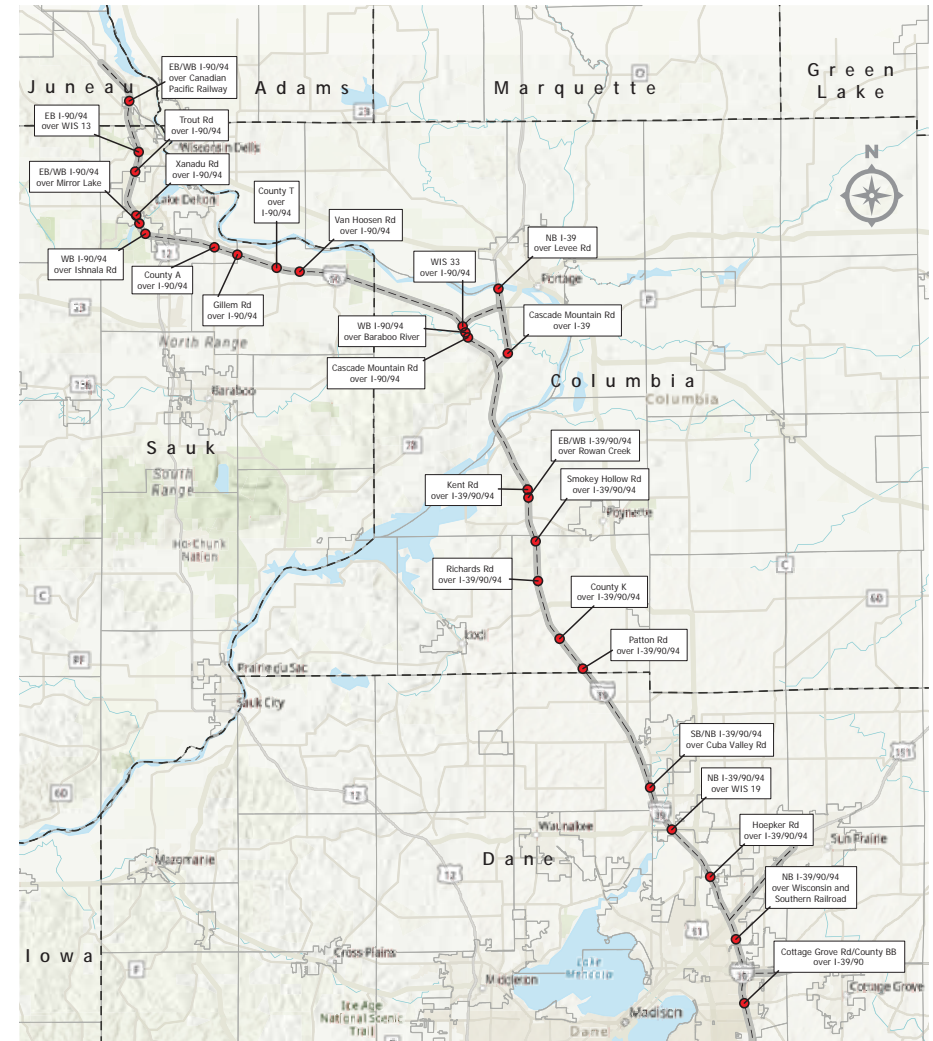
If the I-39/90/94 Corridor Study does not move forward as a project, WisDOT anticipates that the corridor will need 24 rehabilitation/maintenance projects over the next 30 years, causing regular travel delays and congestion.

I-90 and I-94 are Wisconsin's two original Interstate routes. Much of this corridor was originally constructed in the early 1960s, and while maintenance cycles have varied throughout the years, several segments along the corridor are in need of reconstruction or major rehabilitation work.



## BRIDGES OVER MIRROR LAKE

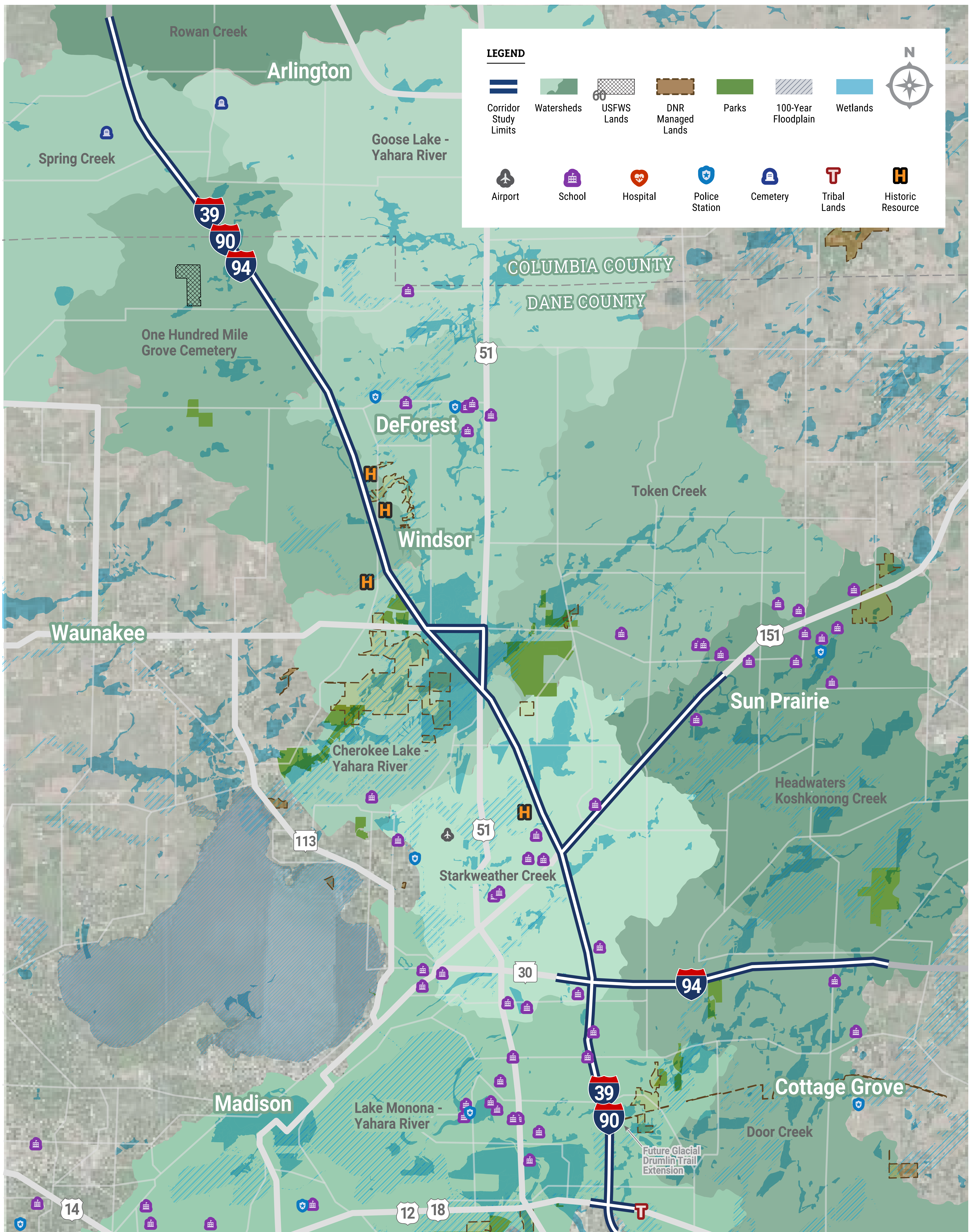
Like many bridges along this corridor, the bridges over Mirror Lake are reaching the end of their useful lives. Repair and maintenance are a challenge on these bridges due to their narrow width and high recreational traffic volumes, especially in the summer.



● Bridges requiring maintenance or replacement prior to 2040

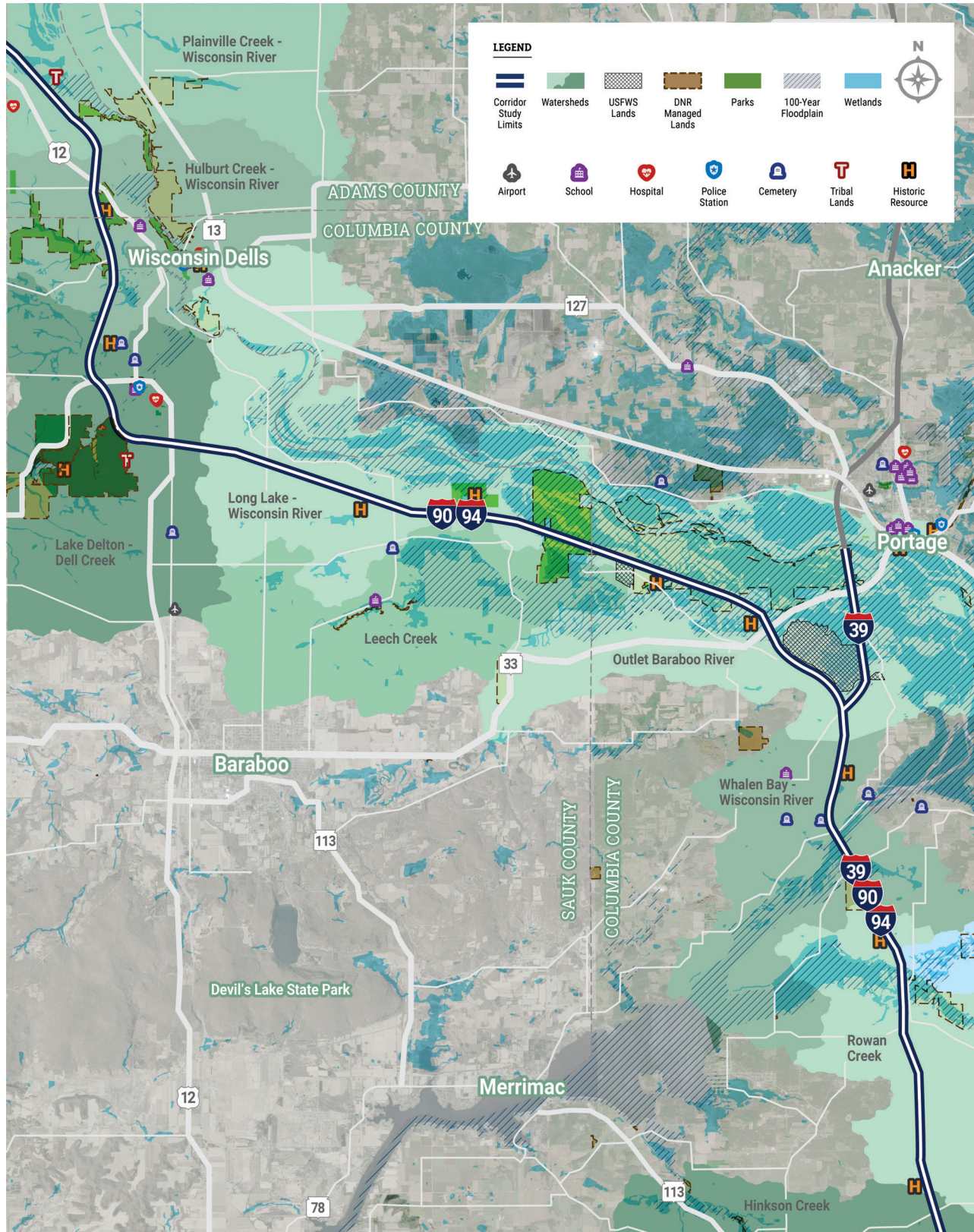


# → Environmental Considerations (South)

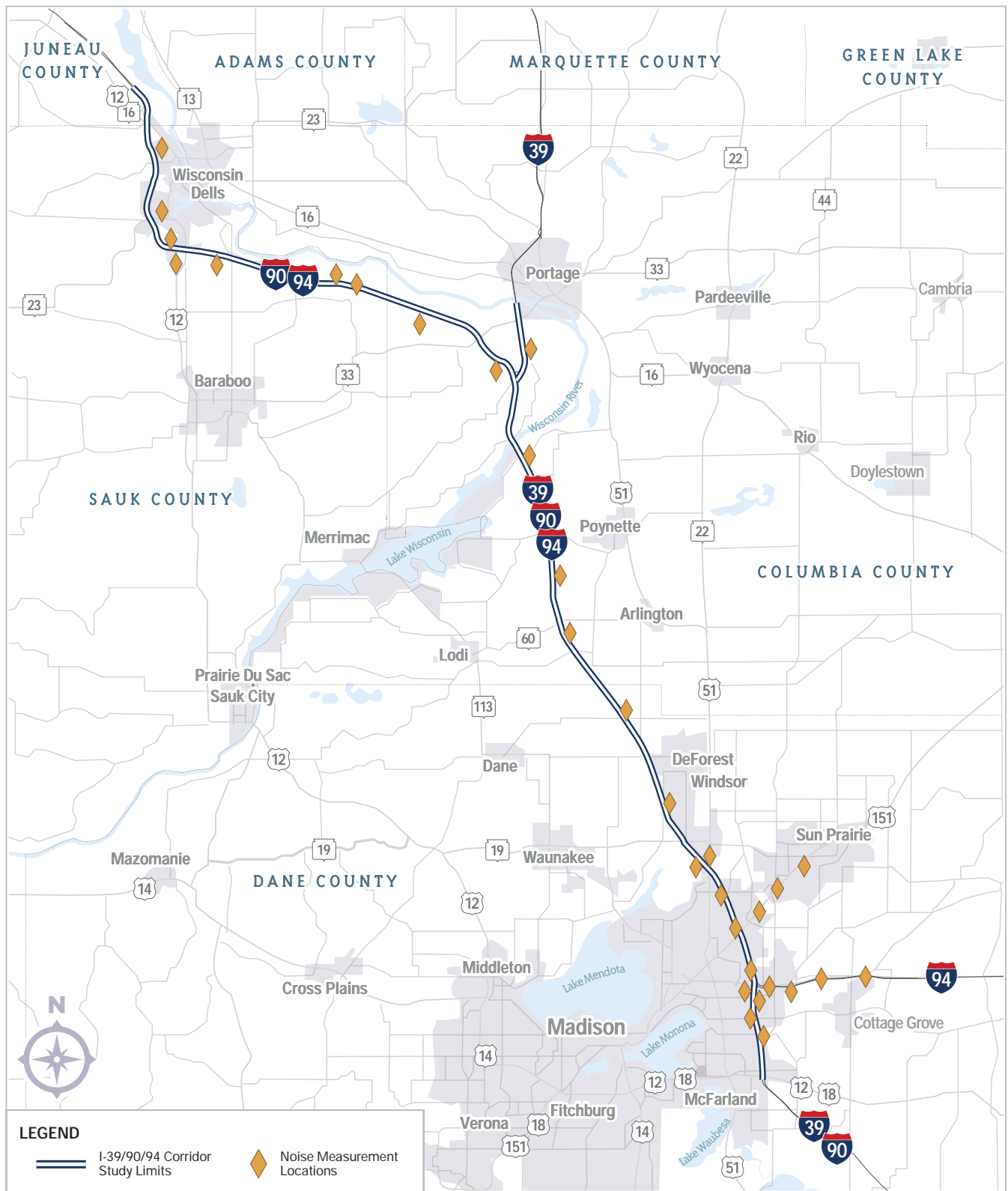




# → Environmental Considerations (North)



# Traffic Noise Field Measurement Locations



## → Noise Study Process Next Steps

### How is Noise Measured?

Noise is measured using decibels (dBA). The scale to the right shows the range of decibel levels for everyday sounds.

The volume and speed of traffic, along with the number of heavy-duty and freight trucks present, are factors in measuring noise level along a roadway. Distance from the roadway also affects the perceived noise level. As distance from the roadway doubles, the sound is reduced by 3 dBA.



Average Home Noise  
(40 dBA)

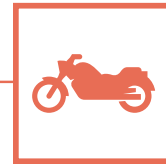
120

#### EXTREMELY LOUD

Rock Concert  
(120 dBA)

110

100



Motorcycle  
(100 dBA)

90

80

#### LOUD

Vacuum Cleaner  
(80 dBA)

70

60



Conversation  
(60 dBA)

50

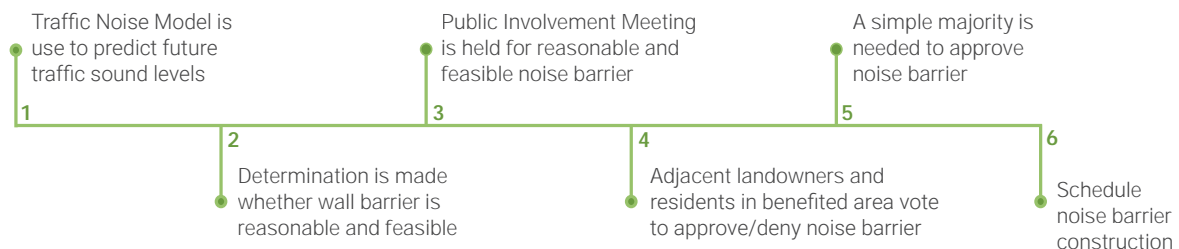
40

30

#### FAINT

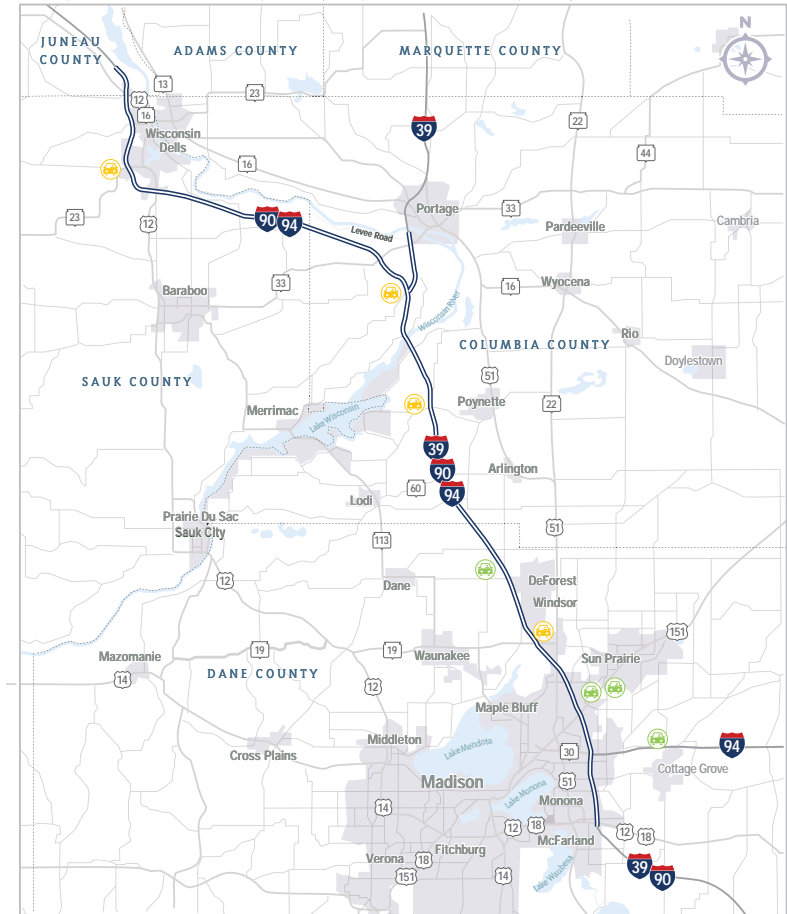
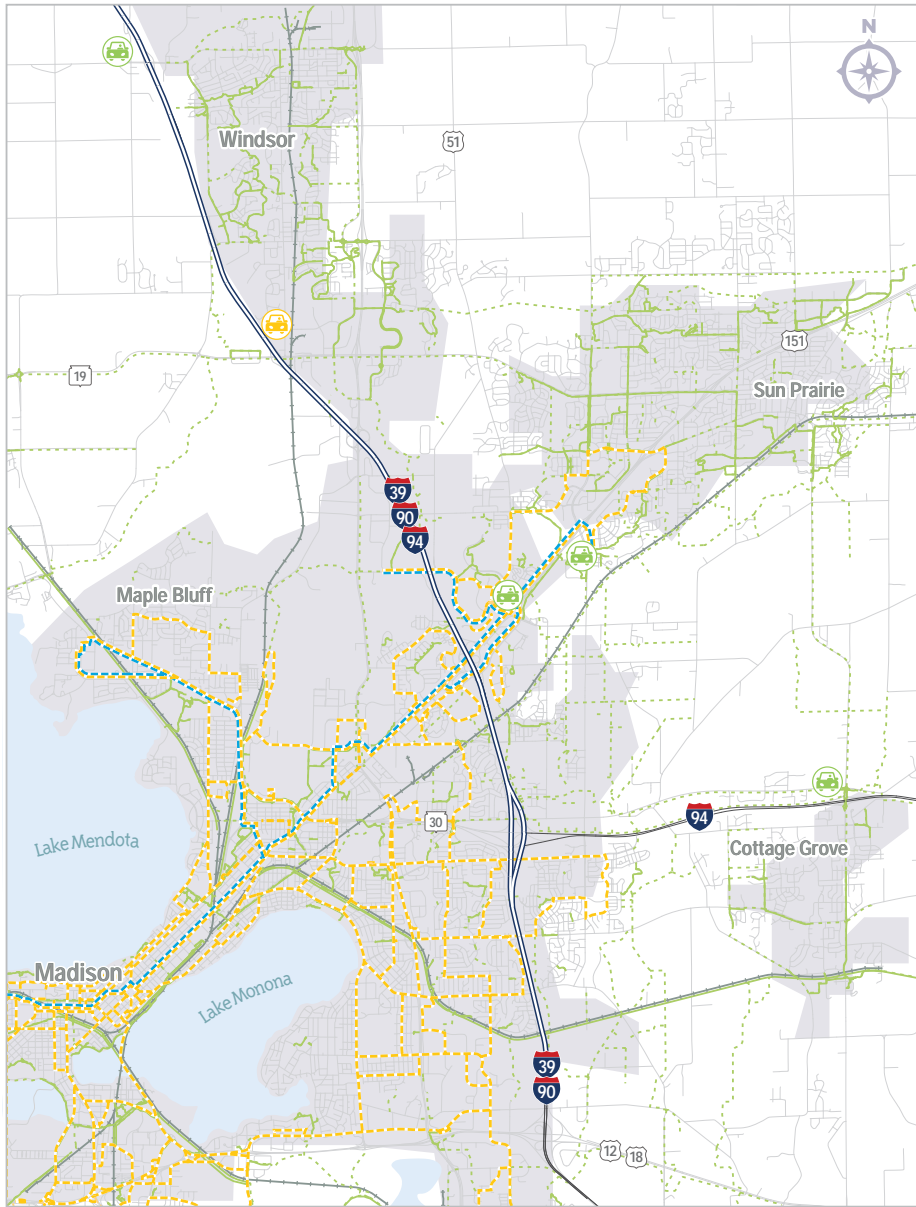
Rustling Leaves  
(30 dBA)

### Noise Barrier Process





→ Transit, Rail, and Park and Ride Lots



### LEGEND

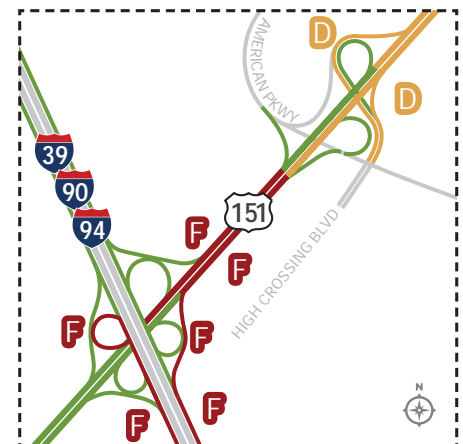
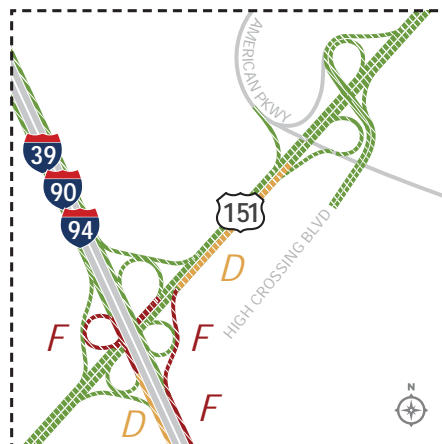
- |   |                                  |   |                                  |
|---|----------------------------------|---|----------------------------------|
|  | I-39/90/94 Corridor Study Limits |  | Existing Bike Path               |
|  | Metro Transit Bus Routes         |  | Planned Bike Path                |
|  | Planned BRT Routes               |  | Park & Ride Lot                  |
|  | Railroad                         |  | Potential Future Park & Ride Lot |

# → Peak-Hour Operations – South Section

- A
- B
- C
- D
- E
- F



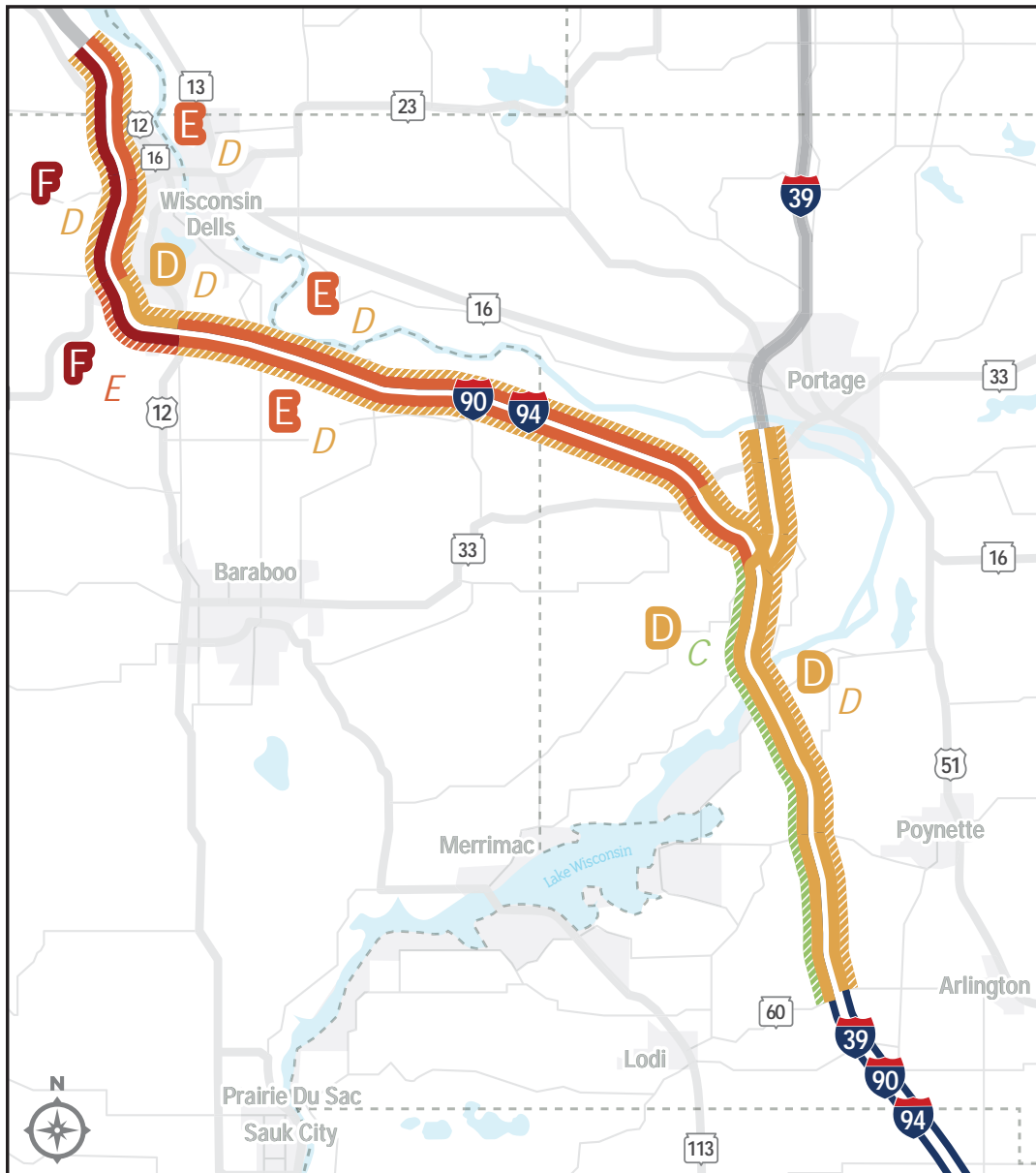
The US 151 interchange experiences congestion due to **over-capacity ramps and northbound/southbound weaving.**



# → Peak-Hour Operations – North Section

## EXISTING AND FUTURE LEVEL OF SERVICE

Data shown reflects poorest-performing time periods – Fridays and Sundays



Increased traffic is expected to lead to frequent congestion and increased travel times.

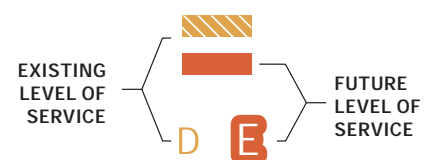
### LEVEL OF SERVICE MEASUREMENTS

A rating scale for the amount of traffic on a roadway compared with the capacity of that type of roadway section.

<b>A</b>	<b>NO DELAYS</b> Traffic is moving freely.	<b>D</b>	<b>NOTABLE DELAYS</b> Congestion is increasing, but there are no major backups.
<b>B</b>	<b>NO DELAYS</b> Stable flow with minimal congestion.	<b>E</b>	<b>CONSIDERABLE DELAYS</b> Unstable flow; congested condition.
<b>C</b>	<b>MINIMAL DELAYS</b> Stable flow with moderate congestion.	<b>F</b>	<b>CONSIDERABLE DELAYS</b> Major congestion; stop-and-go traffic.

### LEVEL OF SERVICE KEY

The hatched lines indicate the current level of service and the unhatched lines indicate the level of service predictions for 2050.

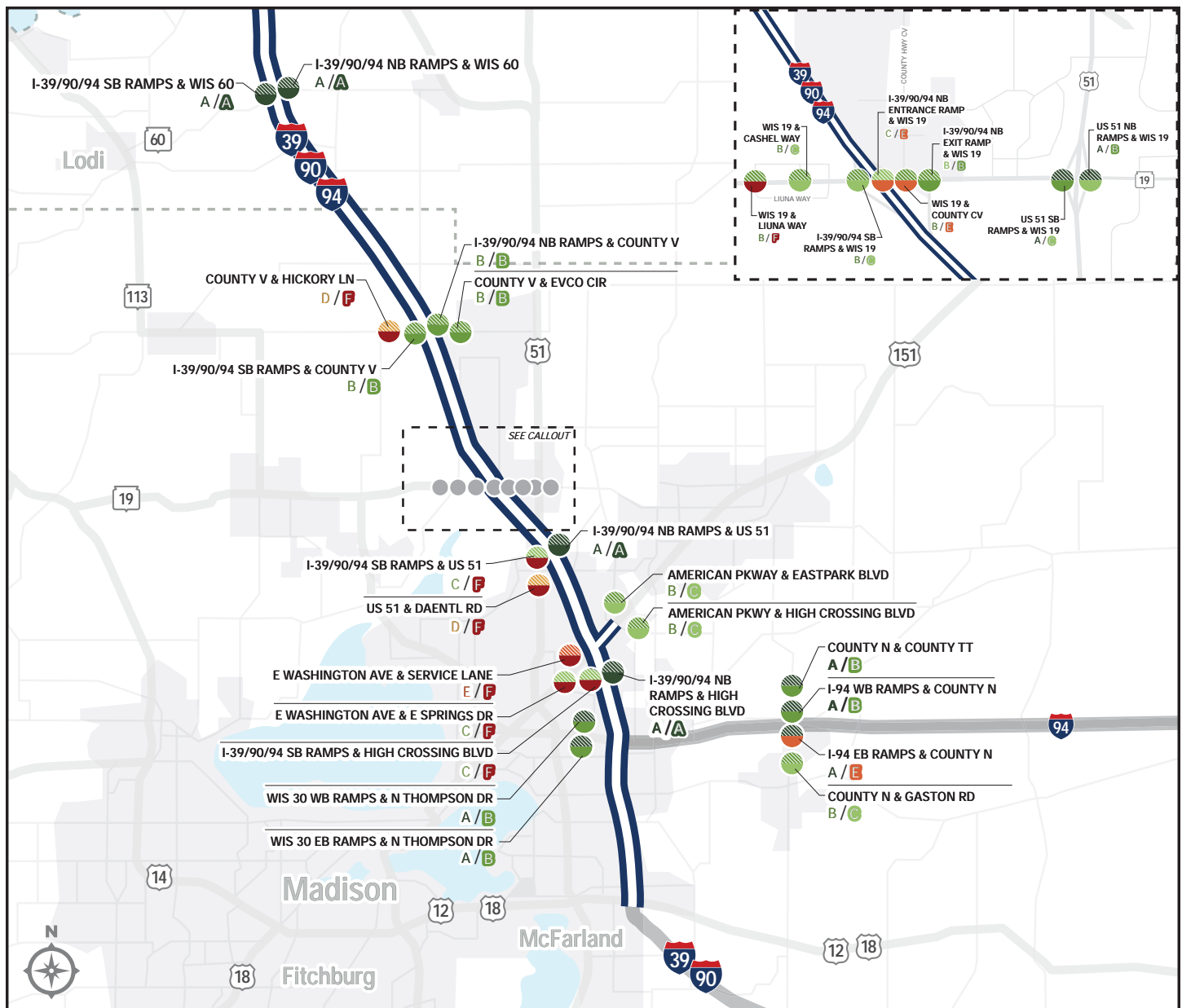




# → Peak-Hour Operations – South Section Intersections

## EXISTING AND FUTURE LEVEL OF SERVICE AT INTERSECTIONS

Data shown reflects poorest-performing time periods – mornings, afternoons, Fridays and Sundays



### LEVEL OF SERVICE MEASUREMENTS

A rating scale for the amount of traffic on a roadway compared with the capacity of that type of roadway section.

<b>A</b>	<b>NO DELAYS</b> Traffic is moving freely.	<b>D</b>	<b>NOTABLE DELAYS</b> Congestion is increasing, but there are no major backups.
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### LEVEL OF SERVICE KEY

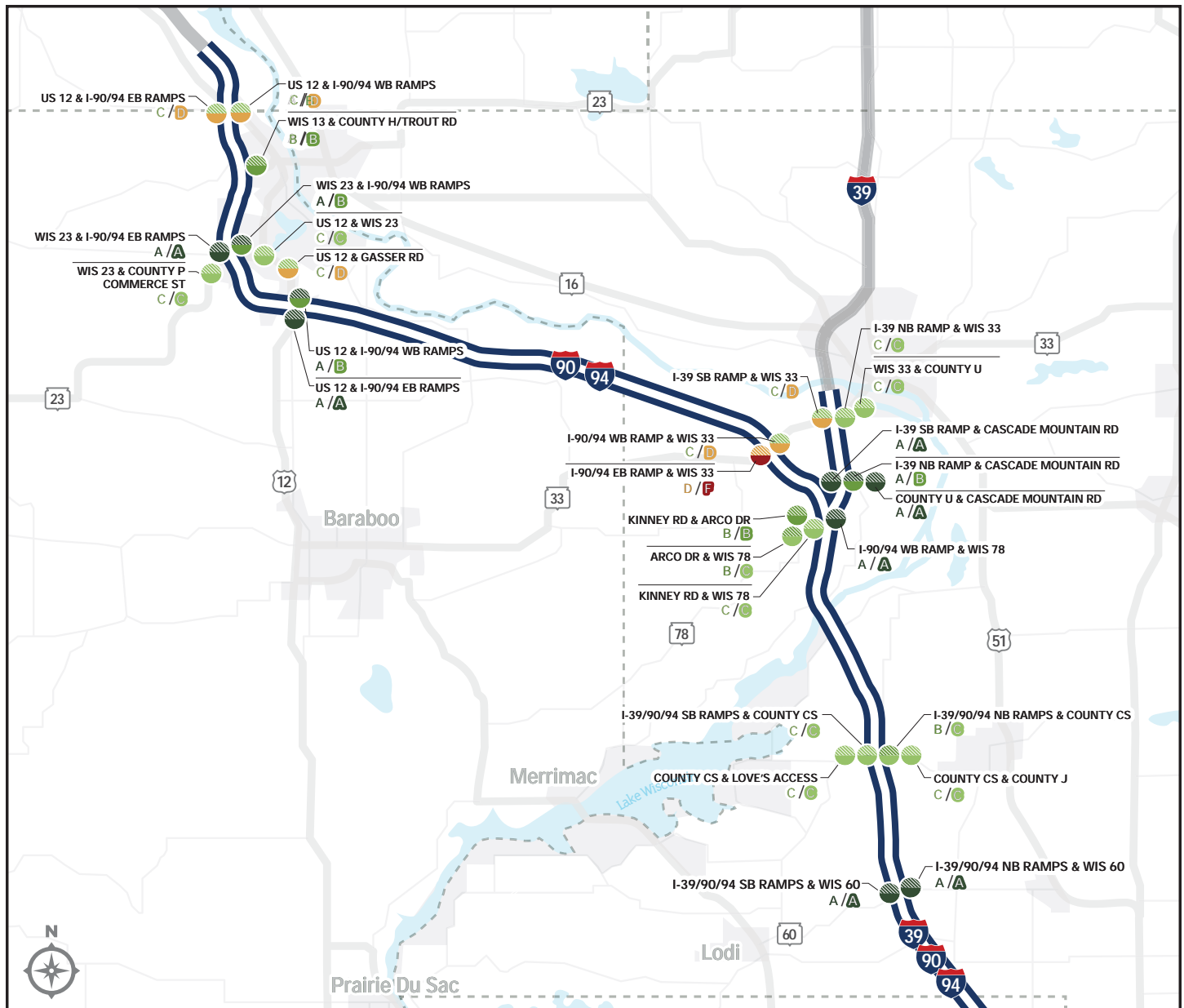
Each intersection has a hatched section indicating the current level of service and an unhatched section indicating the level of service forecasts for 2050.



# → Peak-Hour Operations – North Section Intersections

## EXISTING AND FUTURE LEVEL OF SERVICE AT INTERSECTIONS

Data shown reflects poorest-performing time periods – Fridays and Sundays



### LEVEL OF SERVICE MEASUREMENTS

A rating scale for the amount of traffic on a roadway compared with the capacity of that type of roadway section.

<b>A</b> NO DELAYS Traffic is moving freely.	<b>D</b> NOTABLE DELAYS Congestion is increasing, but there are no major backups.
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### LEVEL OF SERVICE KEY

Each intersection has a hatched section indicating the current level of service and an unhatched section indicating the level of service forecasts for 2050.



# → Study Schedule

2022

2023

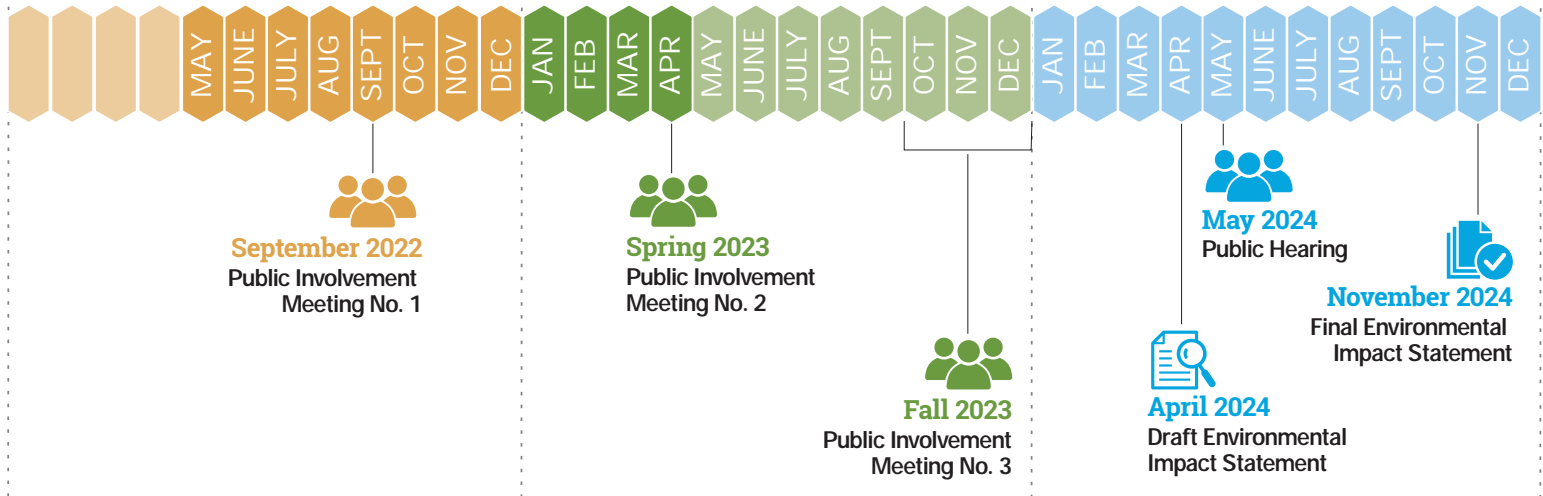
2024



Corridor  
Study Tasks



Public Input  
Opportunities



# → What is “Modernization”?

Modernizing the Interstate is critical to maintaining a safe and accessible transportation network. The I-39/90/94 modernization alternatives would upgrade the infrastructure to meet current state and federal standards whenever possible.

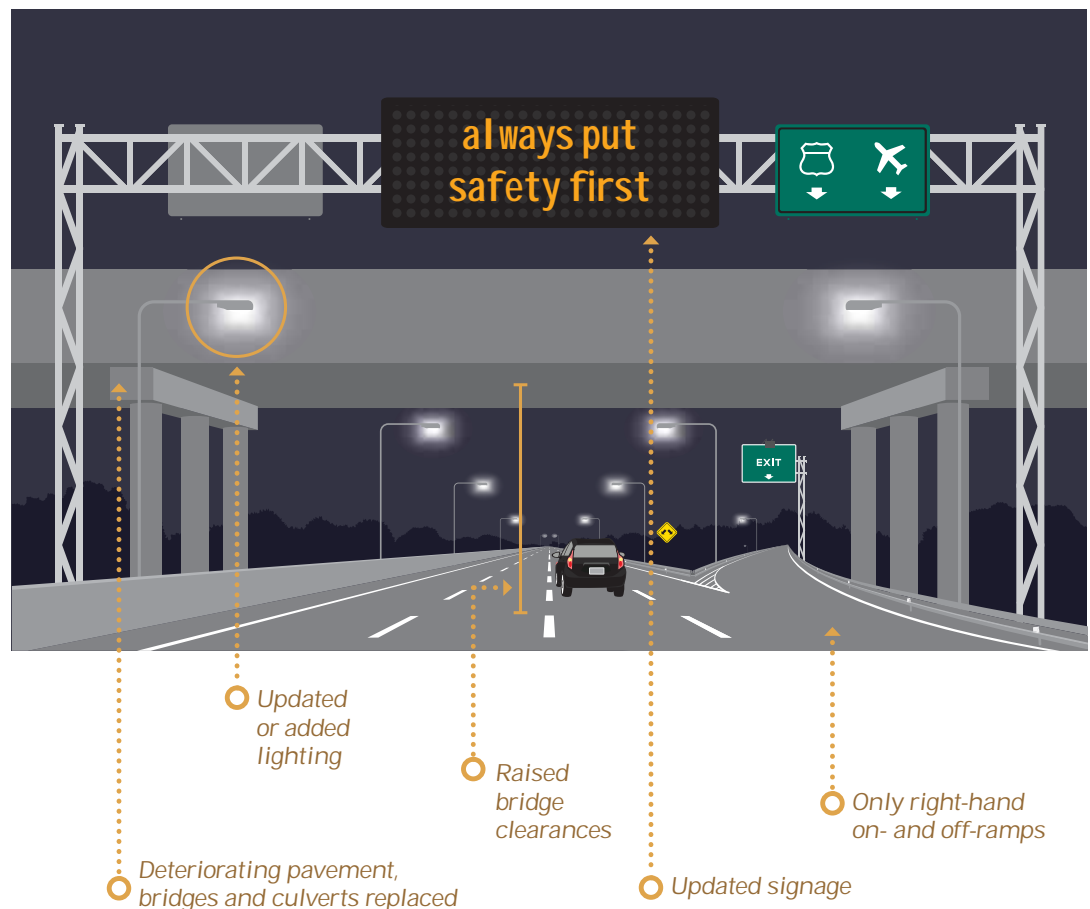


THE FOLLOWING ELEMENTS CONTRIBUTE to MODERNIZING a FREEWAY:

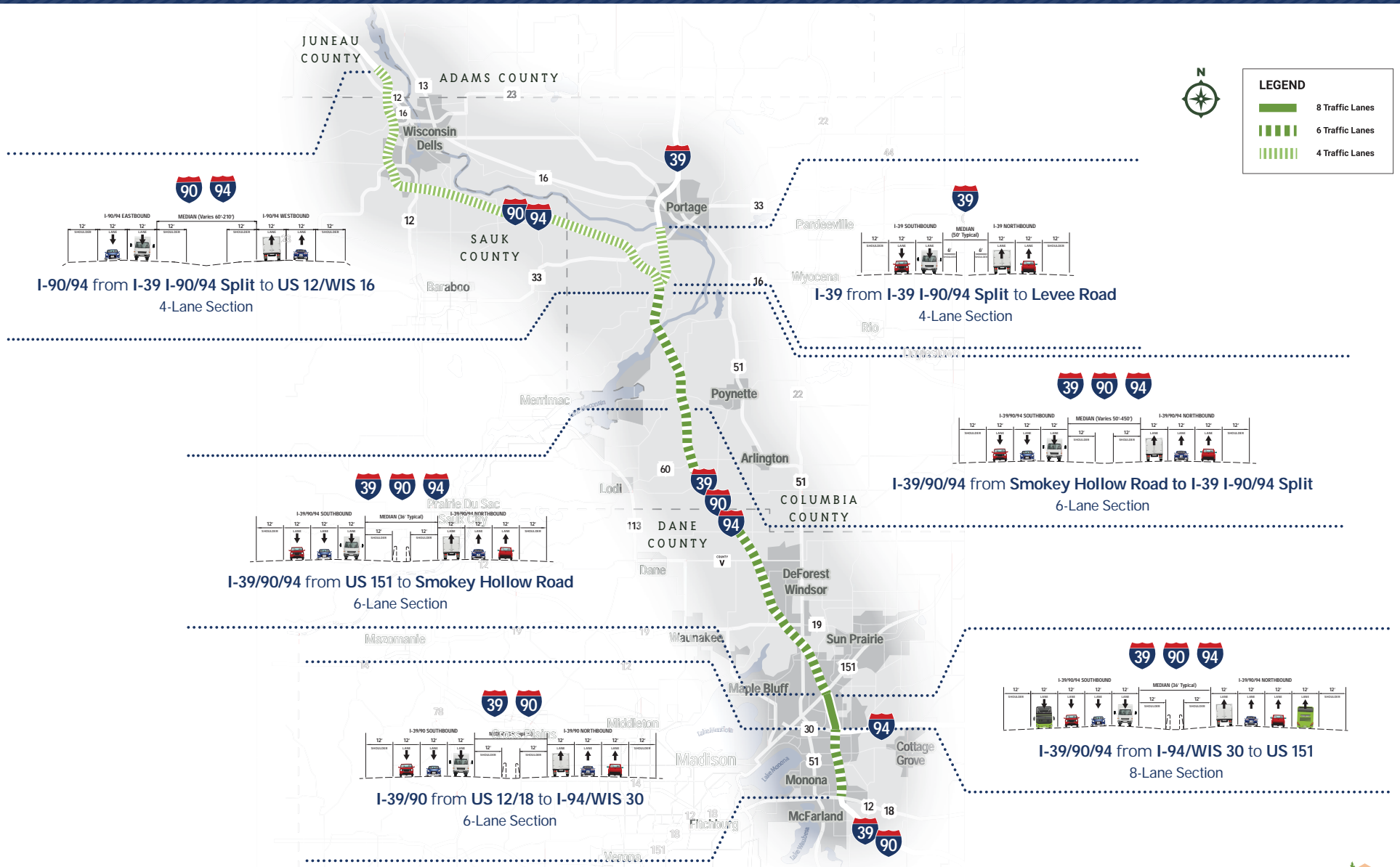
- Consider safety first
- Replace deteriorating pavement, bridges and culverts
- Move all ramp movements to the right, eliminating left-hand entrances and exits
- Increase lengths of on- and off-ramps
- Raise bridge clearances
- Expand road shoulder widths
- Improve horizontal and vertical roadway curves
- Update or add lighting
- Update roadway signage
- Consider opportunities to add bike and pedestrian facilities
- Add noise walls, where warranted and feasible
- Expand capacity, where needed

AMERICAN ASSOCIATION  
OF STATE HIGHWAY AND  
TRANSPORTATION OFFICIALS  
**AASHTO**

## Elements of a Modernized Freeway

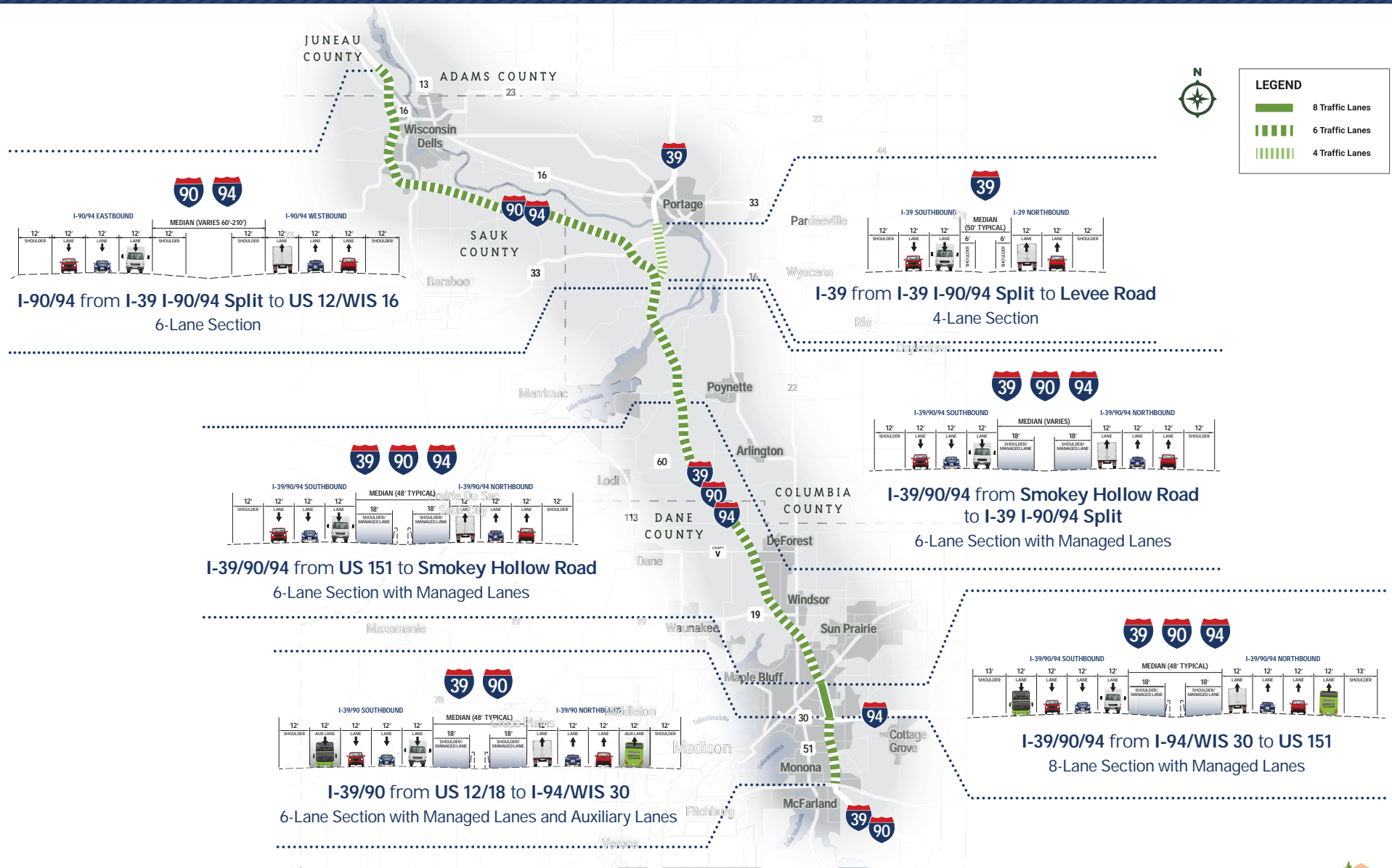


# → Typical Sections: Modernization of Existing Travel Lanes



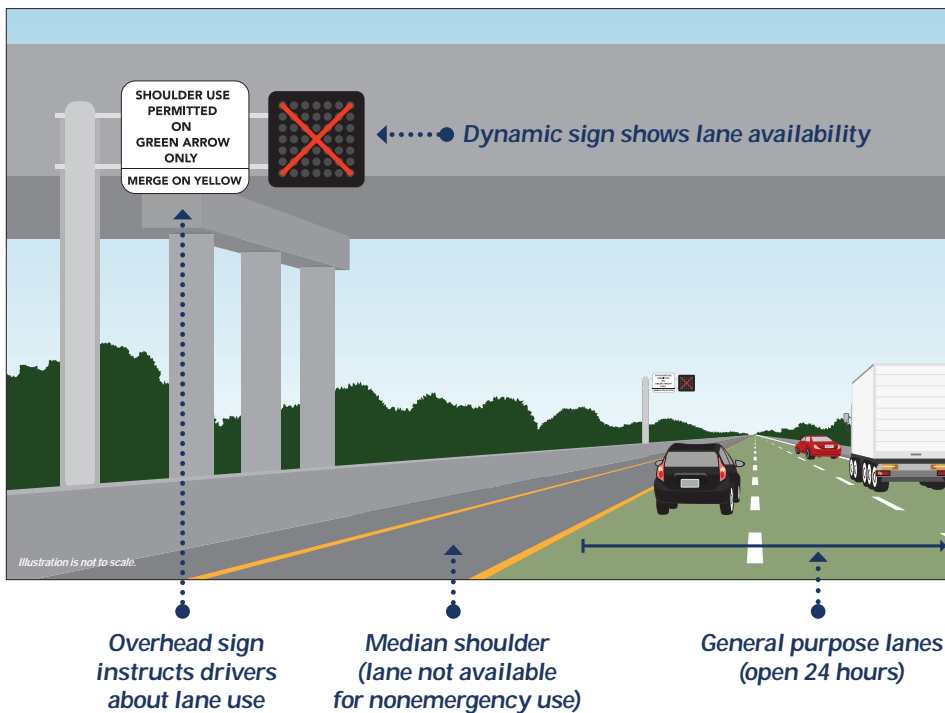


# → Typical Sections: Modernization with Managed Lanes



# → About Managed Lanes

## MANAGED LANE CLOSED



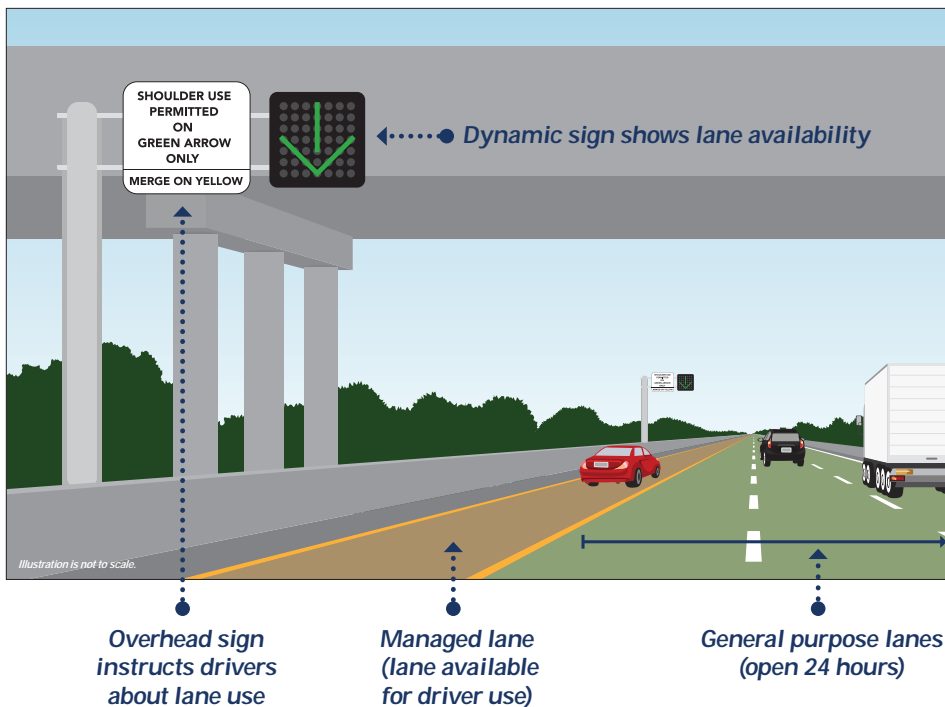
## What are managed lanes?

Managed lanes are a transportation systems management and operations strategy. The Federal Highway Administration defines "managed lanes" as highway facilities or lanes on which operational strategies are implemented proactively and managed in response to changing conditions; for example, designating the left or right shoulder of a roadway for temporary travel during certain hours of the day to alleviate congestion and improve travel time reliability.

## Why is the study considering managed lanes?

Traffic volumes between the US 12/18 Beltline Interchange and the I-39 I-90/94 Split (near Portage) vary based on the time of year and day of the week. For example, during Friday and Sunday afternoons in summer, recreational traffic increases the frequency of crashes and traffic backups. Managed lanes are one alternative for effectively managing these varying traffic volumes.

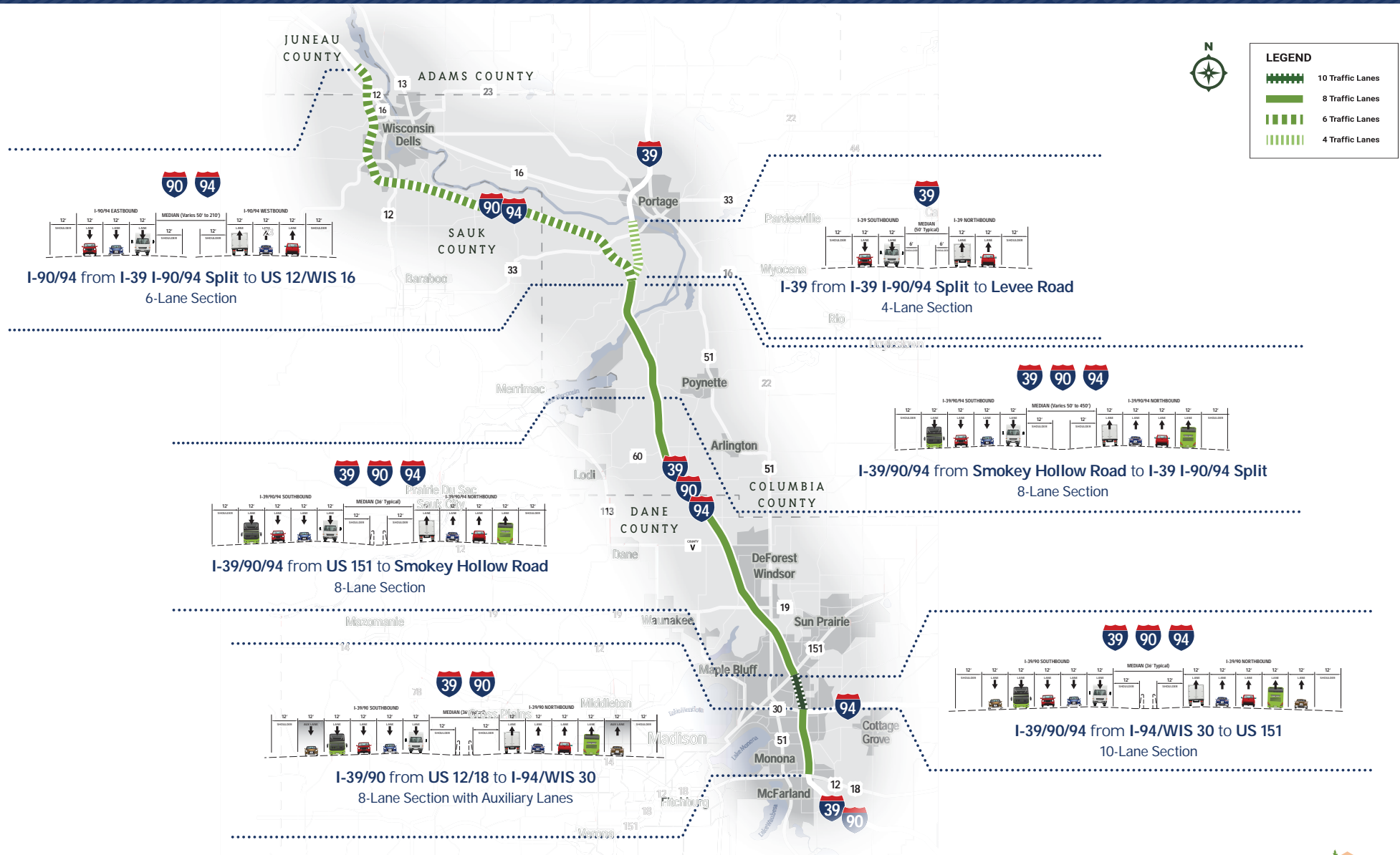
## MANAGED LANE OPEN



## How might a managed lane alternative work on the study corridor?

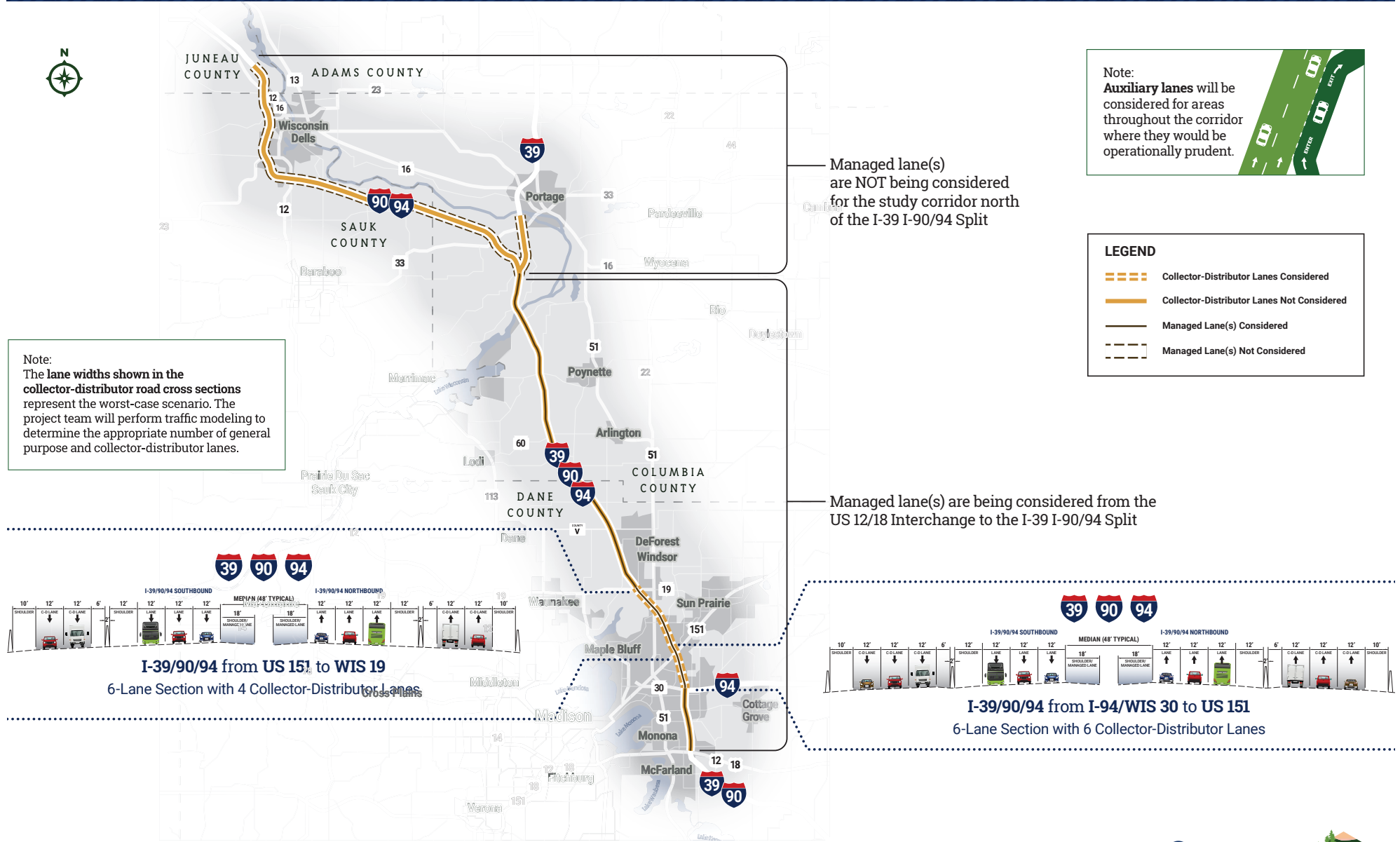
A hard shoulder running concept similar to the Madison Beltline Flex Lane is one option WisDOT is considering for I-39/90/94 between the US 12/18 Beltline Interchange and the I-39 I-90/94 Split. This option temporarily would allow traffic to use the median shoulder during times of heavy traffic.

# → Typical Sections: Modernization Plus Added General Purpose Lane





# → Potential Collector-Distributor, Managed and Auxiliary Lanes



# Existing Corridor Conditions

