Citizens, Technical and Local Officials Advisory Committees



Citizens **Advisory Committee**



Technical Advisory Committee



Local Officials Advisory Committee







COVID-19 Pandemic Impacts on Traffic

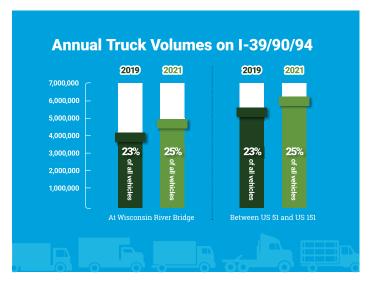
The COVID-19 pandemic and resulting social distancing and stay-at-home orders decreased commuter traffic volumes on I-39/90/94.



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

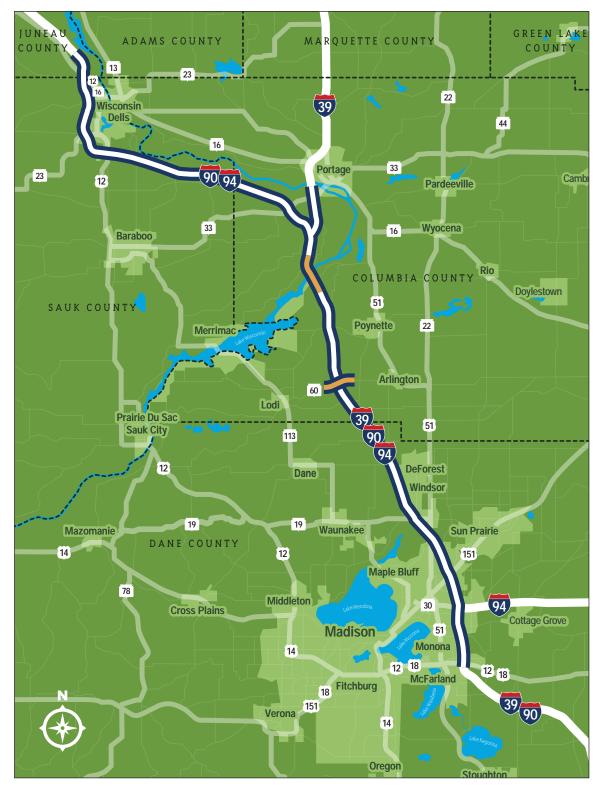








I-39/90/94 Corridor Study Location



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.











Study Summary



67 miles

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



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:



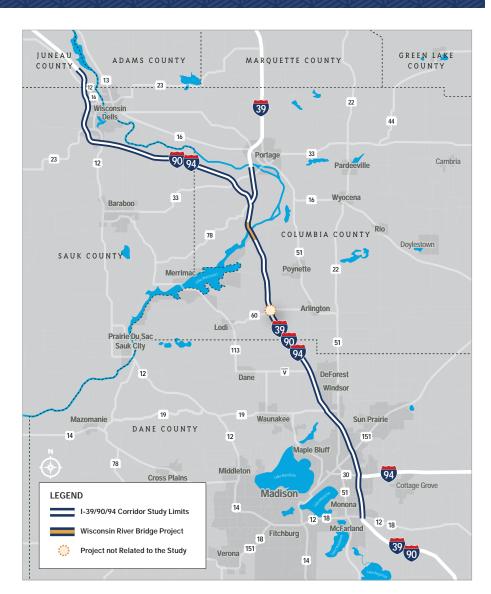
24 projects

24 rehabilitation/maintenance projects anticipated over the next 30 years



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

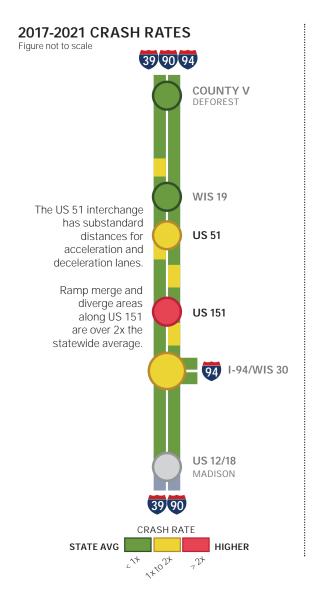






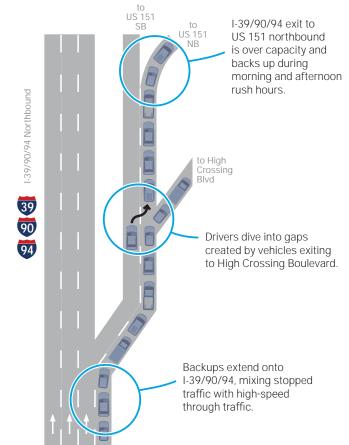


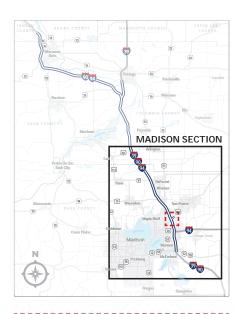
Crash Rates and Details - Madison Section

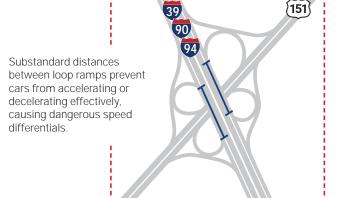


US 151 INTERCHANGE

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







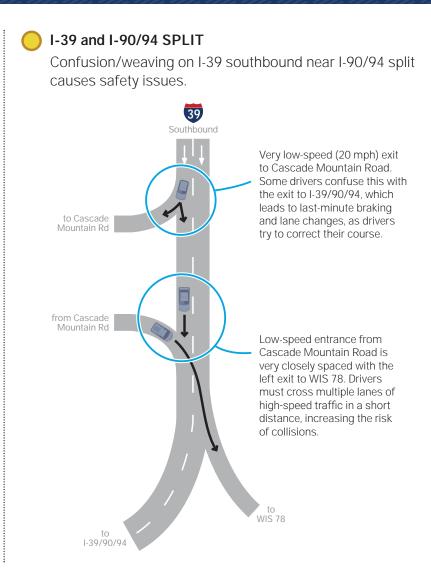


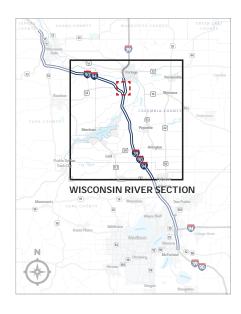




Crash Rates and Details – Wisconsin River Section

2017-2021 CRASH RATES Figure not to scale **WIS 33** The Cascade Mountain PORTAGE Road interchange is CASCADE less than a mile from MOUNTAIN ROAD 90 the I-39 I-90/94 split, I-39 and 94 and the mainline at these two interchanges I-90/94 SPLIT experience crash rates that are at least twice the statewide average. **COUNTY CS** The WIS 60 interchange, which has crash rates more than 125% higher **WIS 60** than the statewide average, is being reconstructed this year. **COUNTY V** DEFOREST 39 90 94 CRASH RATE STATE AVG HIGHER









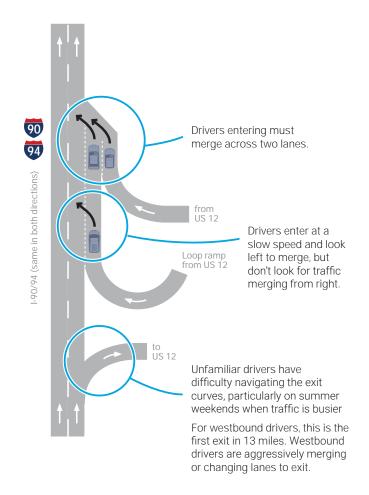


Crash Rates and Details – Wisconsin Dells Section

2017-2021 CRASH RATES Figure not to scale 90 94 **US 12/WIS 16** All four of the WI DELLS Wisconsin Dells interchanges have **WIS 13** crash rates above the statewide average. **WIS 23** Mainline crash rates are also higher than **US 12** the statewide average in this area. **WIS 33** I-39 1-90/94 **SPLIT** PORTAGE 39 90 94 CRASH RATE STATE AVG HIGHER

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 quardrail/bridge pier preventing escape



WIS 33 WESTBOUND OFF-RAMP

Low-speed loop exit with inadequate deceleration



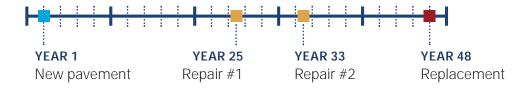




Pavement and Bridge Condition Overview

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.

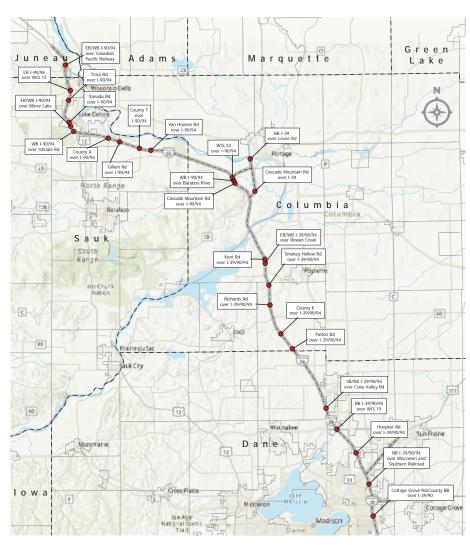
I-90 and I-94 are Wisconsin's two original Interstate routes. Much of this corridor was originally constructed in the early 1960s, and while maintenance cycles have varied throughout the years, several segments along the corridor are in need of reconstruction or major rehabilitation work.



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.





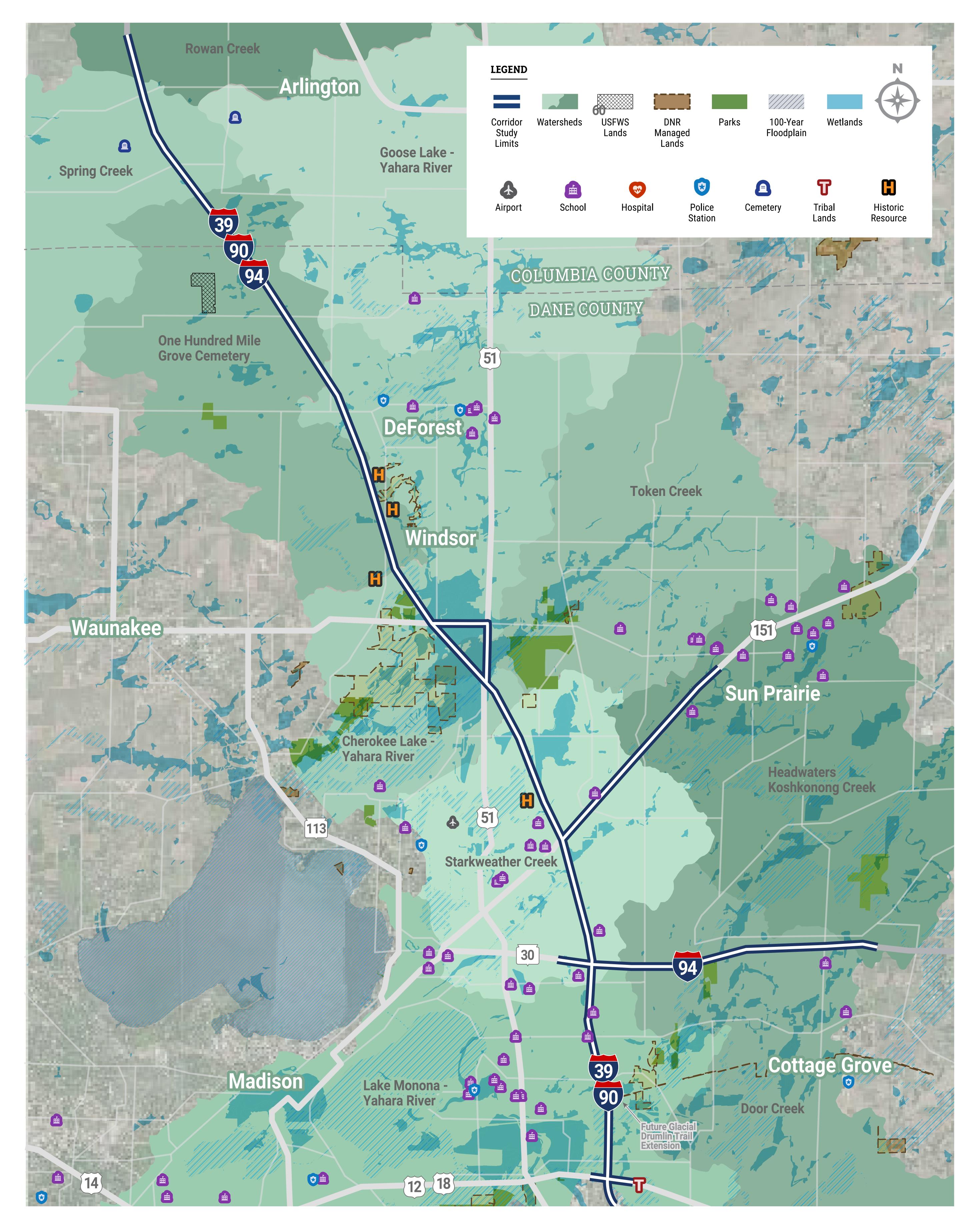
Bridges requiring maintenance or replacement prior to 2040







Environmental Considerations (South)

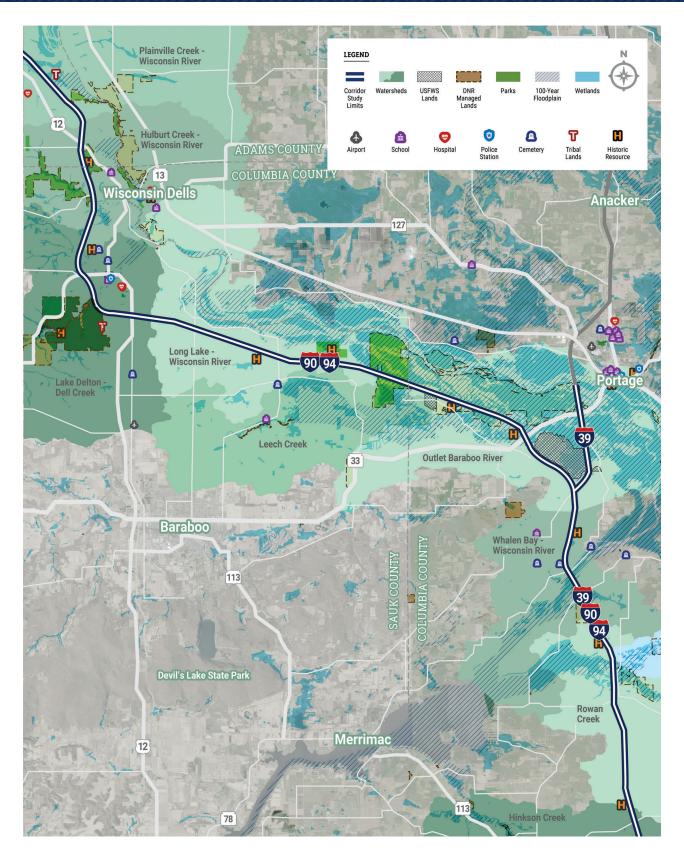








Environmental Considerations (North)

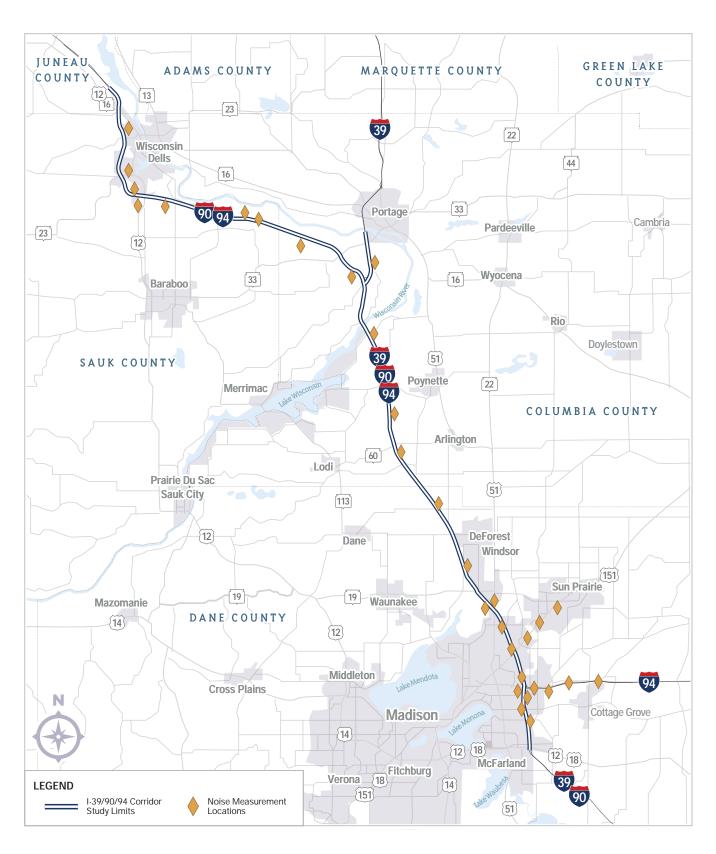








Traffic Noise Field Measurement Locations



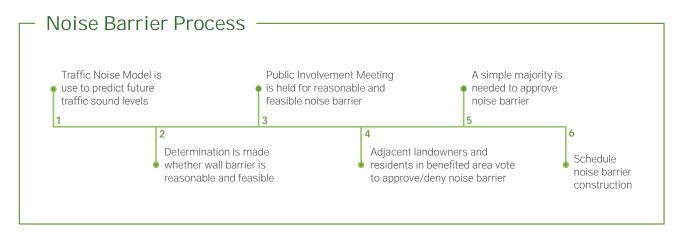






Noise Study Process Next Steps

How is Noise Measured? **EXTREMELY LOUD** Noise is measured using decibels 120 (dBA). The scale to the right shows **Rock Concert** the range of decibel levels for (120 dBA) everyday sounds. The volume and speed of traffic, along with the number of heavy-100 duty and freight trucks present, are factors in measuring noise level Motorcycle along a roadway. Distance from the (100 dBA) roadway also affects the perceived LOUD noise level. As distance from the 80 Vacuum Cleaner roadway doubles, the sound is (80 dBA) reduced by 3 dBA. 70 60 Conversation (60 dBA) **FAINT** Average Home **Rustling Leaves** Noise (40 dBA) (30 dBA)

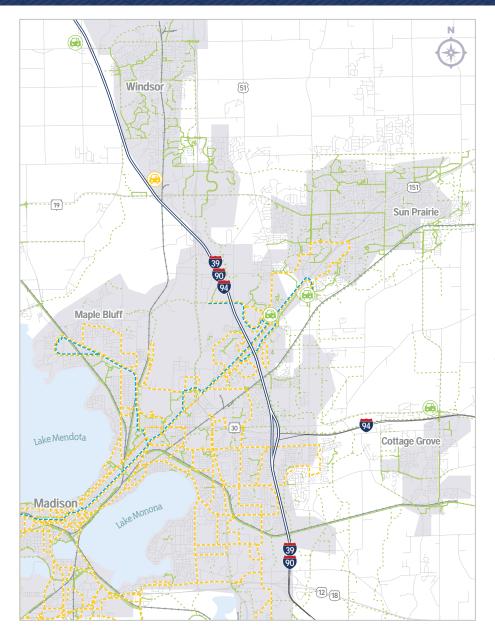


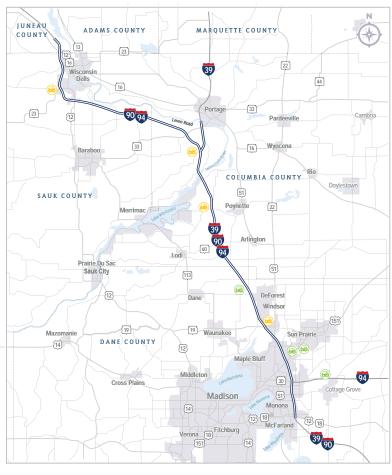






Transit, Rail, and Park and Ride Lots













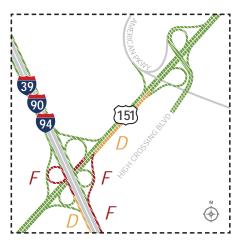
Peak-Hour Operations – South Section

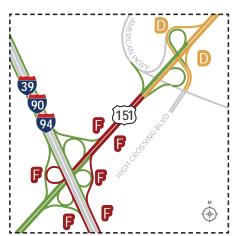
D



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.



NO DELAYS

Traffic is moving freely.



NO DELAYS

Stable flow with minimal congestion.



MINIMAL DELAYS

Stable flow with moderate congestion.



NOTABLE DELAYS

Congestion is increasing, but there are no major backups.



CONSIDERABLE DELAYS

Unstable flow; congested condition.



CONSIDERABLE DELAYS

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.









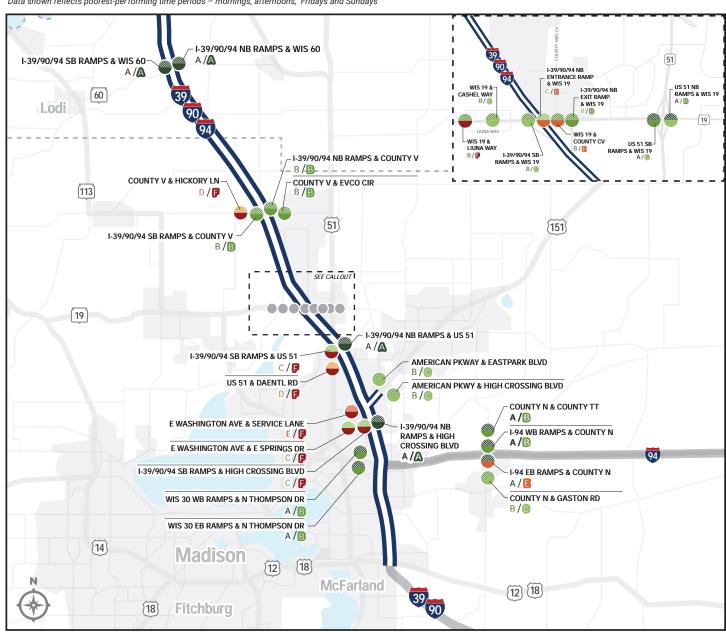




Peak-Hour Operations – South Section Intersections

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.



NO DELAYS

Traffic is moving freely.



NO DELAYS

Stable flow with minimal congestion.



MINIMAL DELAYS

Stable flow with moderate congestion.



NOTABLE DELAYS

Congestion is increasing, but there are no major backups.



CONSIDERABLE DELAYS

Unstable flow; congested condition.



CONSIDERABLE DELAYS

Major congestion; stop-and-go traffic.

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.







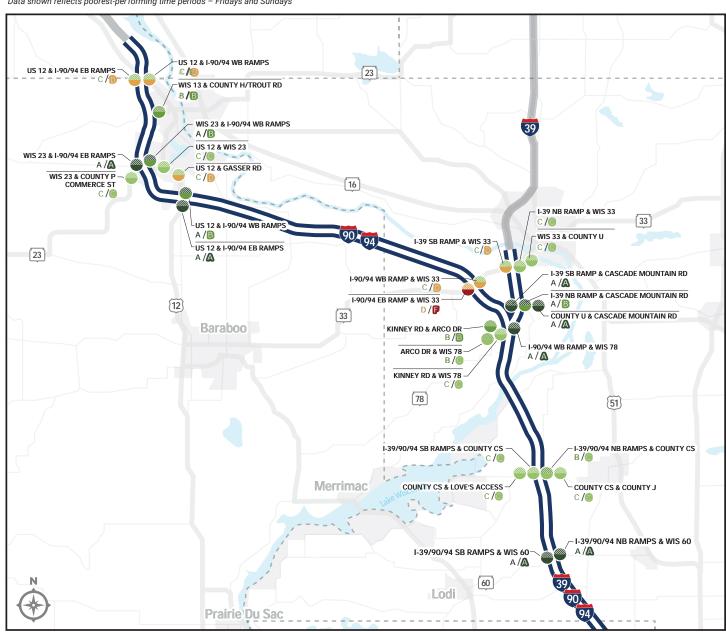




Peak-Hour Operations – North Section Intersections

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.



NO DELAYS

Traffic is moving freely.



NO DELAYS

Stable flow with minimal congestion.



MINIMAL DELAYS

Stable flow with moderate congestion.



NOTABLE DELAYS

Congestion is increasing, but there are no major backups.



CONSIDERABLE DELAYS

Unstable flow; congested condition.



CONSIDERABLE DELAYS

Major congestion; stop-and-go traffic.

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.





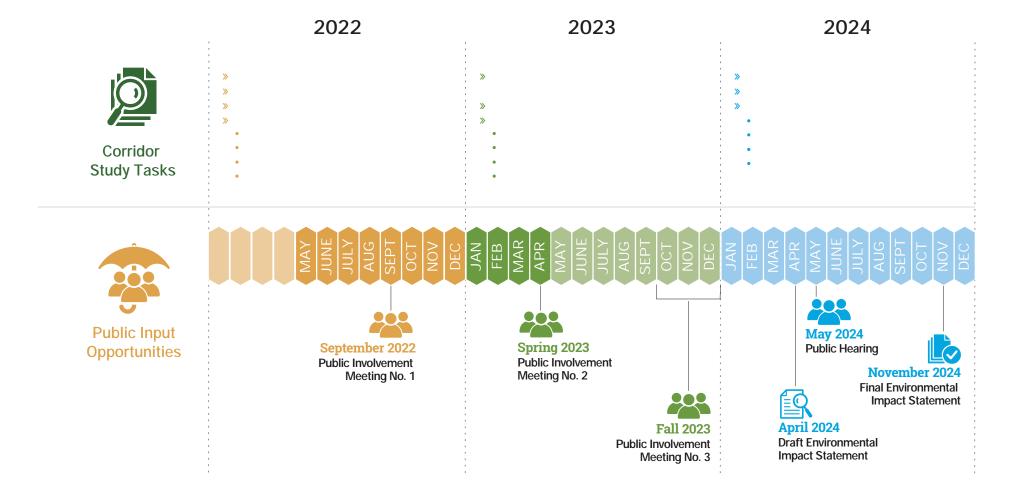








Study Schedule









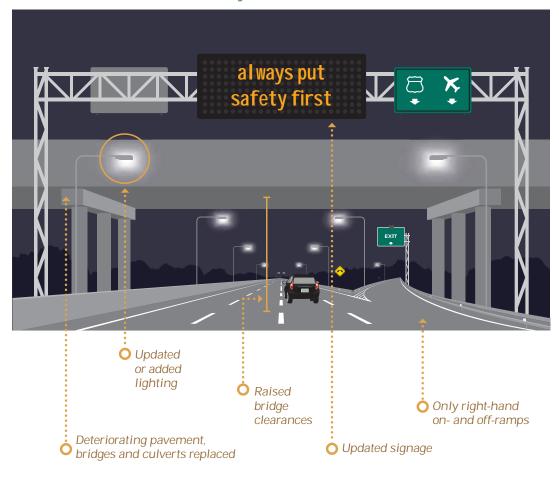
What is "Modernization"?

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.

- 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



Elements of a Modernized Freeway



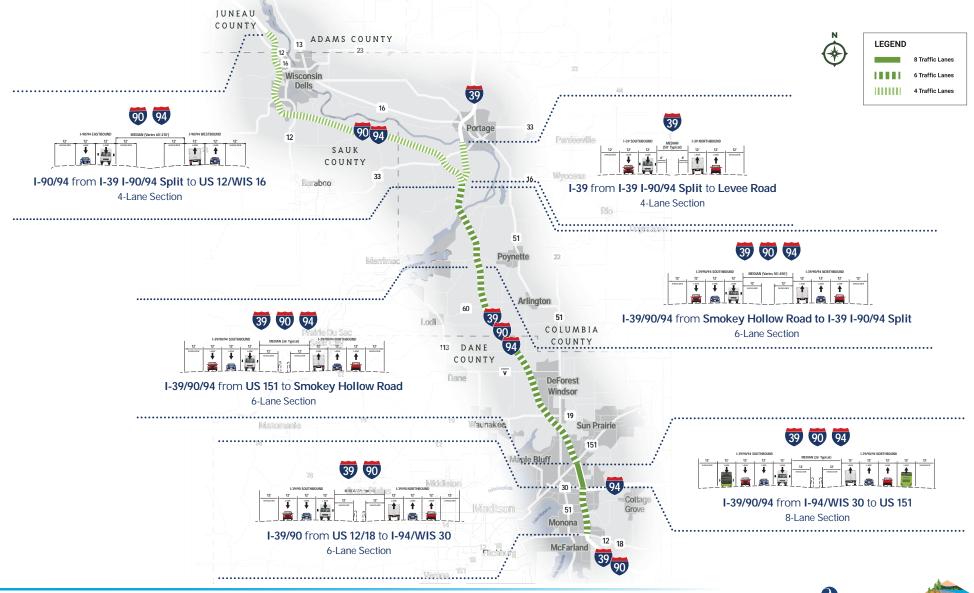








Typical Sections: Modernization of Existing Travel Lanes

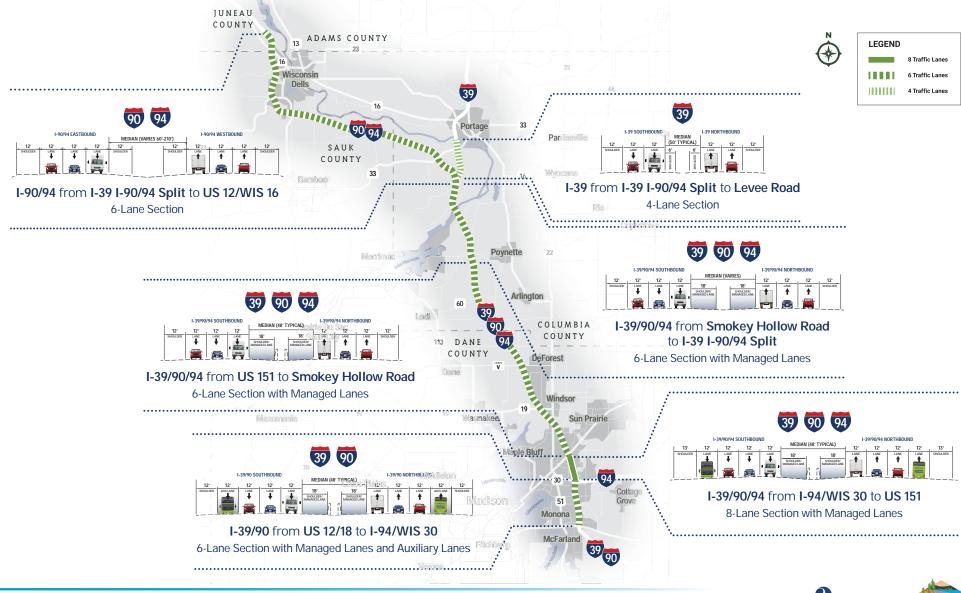








Typical Sections: Modernization with Managed Lanes



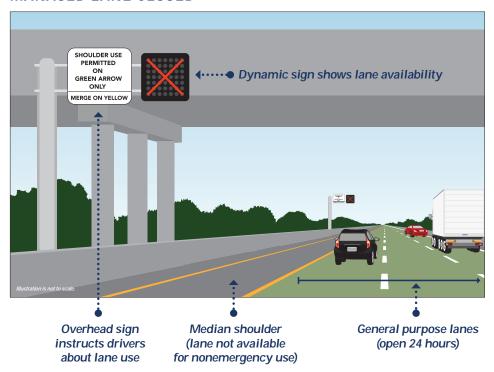




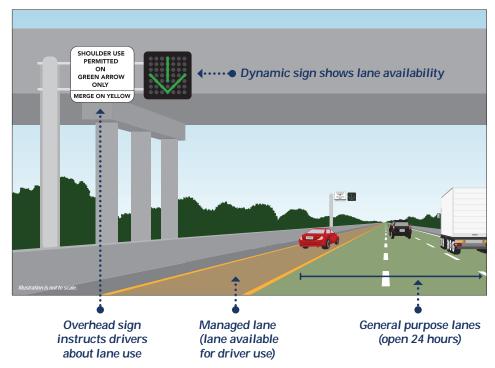


About Managed Lanes

MANAGED LANE CLOSED



MANAGED LANE OPEN



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.

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

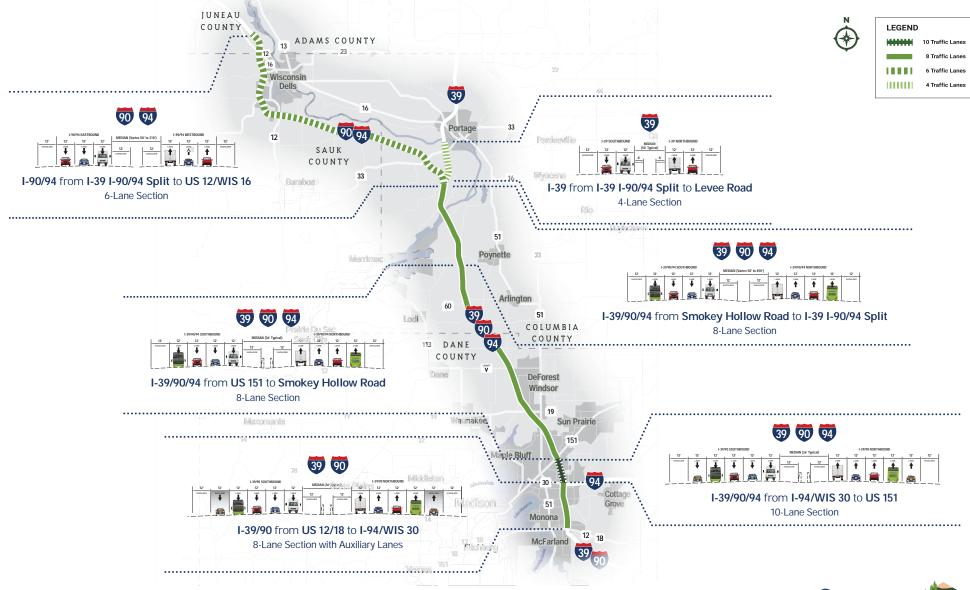
A hard shoulder running concept similar to the Madison Beltline Flex Lane is one option WisDOT is considering for I-39/90/94 between the US 12/18 Beltline Interchange and the I-39 I-90/94 Split. This option temporarily would allow traffic to use the median shoulder during times of heavy traffic.







Typical Sections: Modernization Plus Added General Purpose Lane

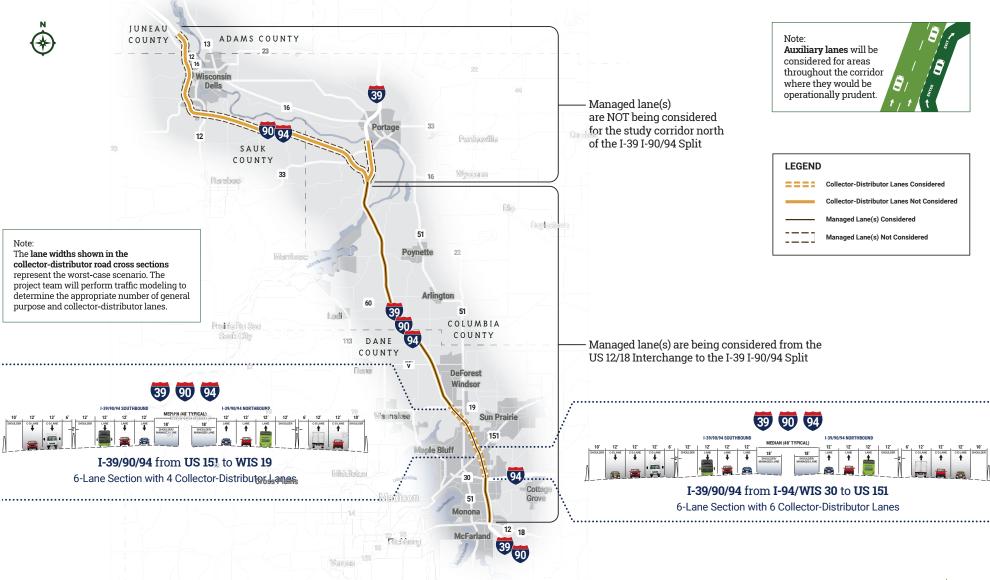








Potential Collector-Distributor, Managed and Auxiliary Lanes









Existing Corridor Conditions

US 12/WIS 16 INTERCHANGE

- » Three ramps do not meet design standards
- » Westbound entrance ramp has high crash rate

WIS 13 INTERCHANGE

- » Three ramps do not meet
- Two entrance ramps have high crash rates



- meet design standards
- » The westbound entrance and eastbound exit ramps have high crash rates



I-90/94 AND WIS 33 INTERCHANGE

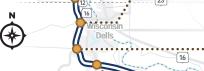
- » No entrance or exit ramps meet design standards.
- » High crash rate on southbound exit ramp.



I-39/WIS 33 INTERCHANGE

- No entrance nor exit ramps meet design standards
- The westbound entrance and eastbound exit ramps have high crash rates.







[16]

[51]

60

113

Arlington

[51]

I-39 I-90-94 SPLIT INTERCHANGE

- No system interchange ramps meet design standards
- The distance between the I-39 I-90/94 Split and the Cascade Mountain Road Interchange is shorter than required, causing drivers to potentially cross multiple lanes in a short distance and increasing risk of collision.
- Exit and entrance ramps on I-39 southbound (including the Cascade Mountain Road exit ramp) have high crash rates
- Most of these interchanges are in the Federal Emergency Management Association floodplain.

US 12 INTERCHANGE

- » Six of eight ramp movements don't meet design standards
- » The four non-loop ramps have high crash rates

[23]

- » Southbound to westbound entrance ramp overlaps the northbound to westbound loop entrance ramp, causing drivers to merge across two lanes
- » Northbound to eastbound entrance ramp overlaps the southbound to eastbound loop entrance ramp, causing drivers to merge across two lanes

WIS 19 INTERCHANGE

- » Adiacent at-grade railroad crossing inventory reports one daily through train, one nightly through train, and one switching train per day at speeds of 5-10 mph.
- Five signalized intersections are located between Tierney Crossing and Pepsi Way (just longer than 1 mile).
- I-39/90/94 eastbound ramp terminal intersection has high crash rate and operates at level of service (LOS) D.
- County CV southbound left turn operates at LOS D in afternoon peak traffic hour.
- » About 86 o f afternoon peak-hour traffic on westbound I-39/90/94 exit ramp turns left onto WIS 19.

COUNTY CS INTERCHANGE

- » No entrance and exit ramps meet design standards
- » High crash rate on southbound exit ramp

COUNTY V INTERCHANGE

» Existing ramp terminal intersections have severe crash rates

HOEPKER ROAD

- No existing interchange.
- The City of Madison requested that WisDOT investigate a new interchange at Hoepker Road or Hanson Road to provide access to the developing east side including the American Family Insurance campus area and UW Health East Madison Hospital. Hoepker Road is the preferred location because it would improve the US 51/Hoepker Road intersection without impacting Dane County Regional Airport.

US 51 INTERCHANGE

- » Left-turn movement at I-39/90/94 eastbound exit ramp terminal has poor level of service
- » The following ramps have elevated crash levels:
 - I-39/90/94 westbound exit
 - US 51 southbound exit to westbound I-39/90/94
 - US 51 southbound exit to eastbound I-39/90/94



McFarland

I-94 AND

US 151 AND HIGH CROSSING BOULEVARD INTERCHANGES

- » Weave along US 151 between American Parkway and I-39/90/94 has poor traffic operations
- - I-39/90/94 westbound to High Crossing Boulevard
- » I-39/90/94 westbound to US 151 northbound ramp has poor traffic operations

MILWAUKEE STREET » No existing interchange.

The City of Madison requested that WisDOT investigate a new interchange at I-94 and an extended Milwaukee Street.

- » The following ramps have elevated crash levels:
- I-39/90/94 westbound to US 151
- · US 151 northbound to I-39/90/94 eastbound
- US 151 southhound to I-39/90/94 easthound

I-94/WIS 30 INTERCHANGE

- » »The following ramps currently have undesirable left-hand exits and/or entrances:
- I-39/90 northbound to WIS 30 westbound
- I-94 westbound to I-39/90 southbound
- WIS 30 eastbound to I-39/90/94 northbound Substandard horizontal and vertical curves
- » Eastbound WIS 30 to eastbound US 151 movement requires drivers to weave across four lanes

KEY





SERVICE INTERCHANGES



POTENTIAL NEW INTERCHANGES











