



# Travel Time Reliability and Delay Report

## Travel Time Reliability

The Wisconsin Department of Transportation wants travelers to arrive safely and on-time at their destinations. Having a high level of confidence and certainty of on-time arrival are measures of the reliability of the transportation system.

### How do we measure travel reliability?

**GOAL:**  
**Improve the reliability of highway travel**

Because system reliability is important to so many individuals and businesses, WisDOT developed a travel time reliability performance measure as part of its MAPSS Performance Improvement Program. The statewide travel time reliability performance (PTI) measure: tracks the reliability of ten Interstate corridors and 28 urban freeway and highway segments. This provides a precise way to budget travel time and measure system performance.

### Planning Time Index (PTI) value



To calculate reliability, the department developed a Planning Time Index that gives a numerical value for travel reliability.

WisDOT tracks ten Interstate corridors and 28 urban freeway and highway segments

### Sample travel scenario



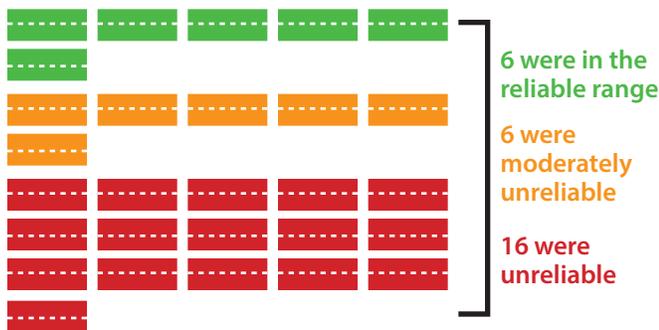
$$20 \text{ minutes} \times 1.5 \text{ PTI} = 30 \text{ minutes}$$

A PTI of 1.5 means travel is moderately unreliable. A traveler going for a 20 minute trip during a peak period would be assured of completing the trip in 30 minutes or less at least 95 percent of the time.



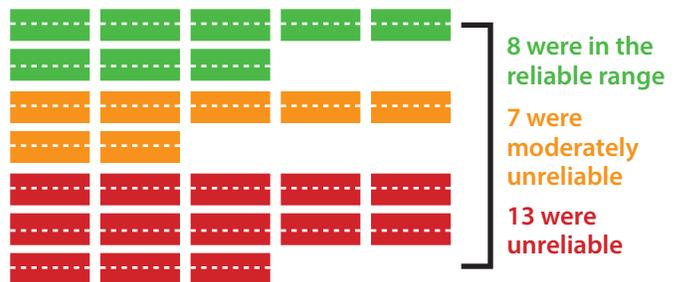
### 2014 Fall Quarter

For 28 urban freeway and highway segments:



### 2015 Fall Quarter

For 28 urban freeway and highway segments:

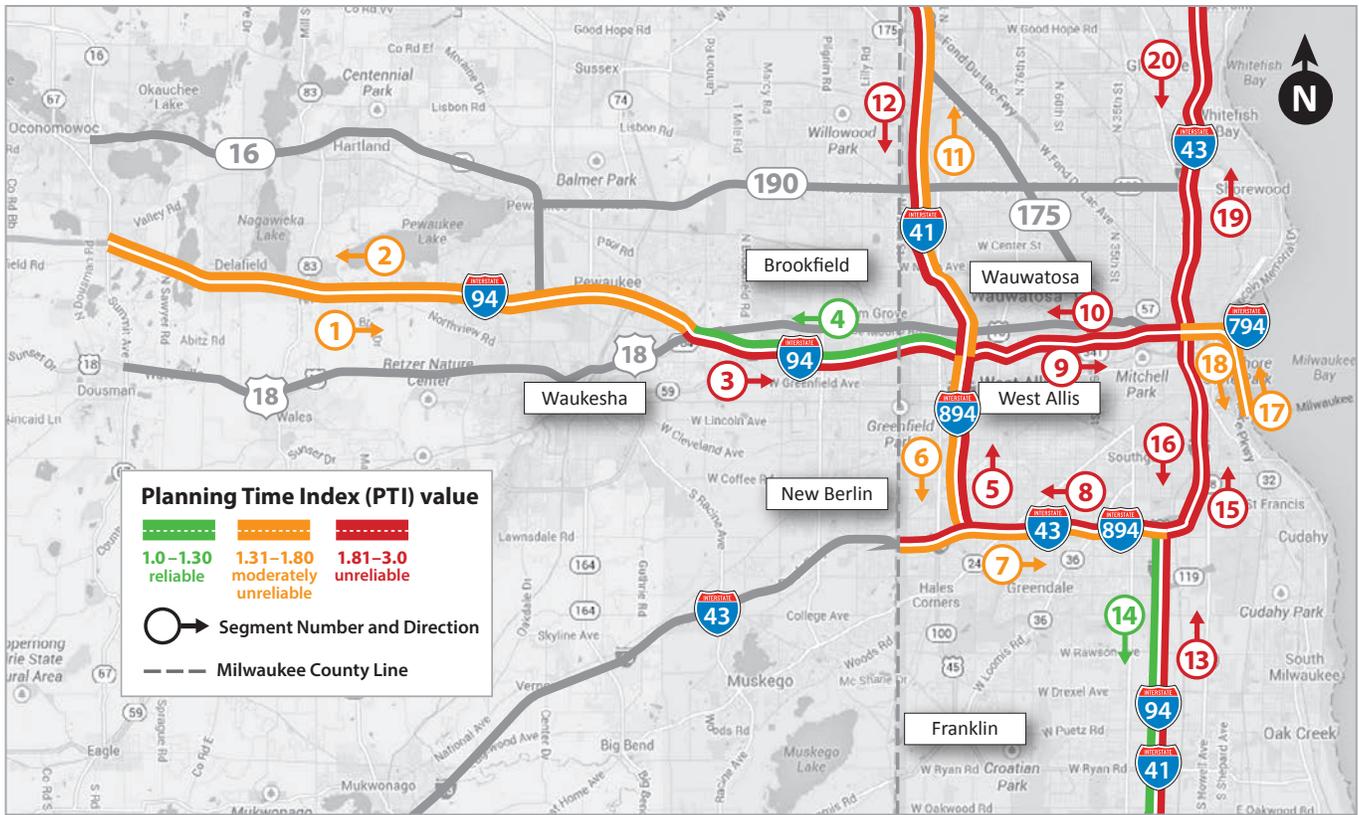


## Efforts to improve

Many things can adversely affect travel time reliability, including traffic incidents, weather, special events, holiday traffic and work zones. Reducing or mitigating the impact of these factors serves to improve travel time reliability.

The department is working to improve traffic signal systems, ramp meters, maintenance and work zone management to reduce traffic congestion. As part of the Zoo Interchange reconstruction in southeast Wisconsin, an integrated corridor management system is in place to improve traffic flow during construction. Travelers can also get real-time traffic information from the 511 Traveler Information System and choose to avoid congested routes. Some travelers are willing to accept delay as long as reliable information is available about the length of the delay.

# Milwaukee Area Travel Time Reliability (Worst Peak)



## Milwaukee Freeway Peak Travel Times: 2015 Fall Quarter

Map Link	Planning Time Index (PTI)	Highway	From	To	Distance Miles	Normal Travel Time Minutes	Worst Peak Travel Time Minutes	Worst Peak
1	1.35	I-94 EB	WIS 67	US 18	15.5	13.3	17.9	PM
2	1.66	I-94 WB	US 18	WIS 67	15.5	13.3	22.1	PM
3	2.53	I-94 EB	US 18	Zoo interchange	7.2	7.8	19.7	PM
4	1.29	I-94 WB	Zoo interchange	US 18	7.0	7.0	9.1	PM
5	3.26	I-894 WB	Hale interchange	Zoo interchange	4.7	5.1	16.7	AM
6	1.75	I-894 EB	Zoo interchange	Hale interchange	4.5	4.9	8.6	PM
7	1.73	I-43NB/894EB	Waukesha County Line	Mitchell interchange	7.5	8.2	14.2	AM
8	1.85	I-43SB/894WB	Mitchell interchange	Waukesha County Line	7.0	7.6	14.1	PM
9	2.87	I-94 EB	Zoo interchange	Marquette interchange	5.6	6.4	18.4	AM
10	2.76	I-94 WB	Marquette interchange	Zoo interchange	5.8	6.6	18.2	PM
11	1.60	US 45 NB	Zoo interchange	Waukesha County Line	9.8	10.7	17.1	PM
12	3.17	US 45 SB	Waukesha County Line	Zoo interchange	9.8	10.7	33.9	PM
13	1.82	I-94 WB	Racine County Line	Mitchell interchange	8.6	8.1	14.7	AM
14	1.15	I-94 EB	Mitchell interchange	Racine County Line	8.8	8.2	9.5	PM
15	2.35	I-94 WB	Mitchell interchange	Marquette interchange	5.7	6.3	14.8	AM
16	2.19	I-94 EB	Marquette interchange	Mitchell interchange	5.9	6.5	14.2	PM
17	1.59	I-794 WB	Carferry Dr	Marquette interchange	3.6	4.3	6.9	AM
18	1.64	I-794 EB	Marquette interchange	Carferry Dr	3.5	4.2	6.9	AM
19	2.22	I-43 NB	Marquette interchange	Ozaukee County Line	11.0	12.1	26.8	PM
20	2.39	I-43 SB	Ozaukee County Line	Marquette interchange	10.9	12.2	29.2	PM

# Madison Area Travel Time Reliability (Worst Peak)



## Madison Freeway Peak Travel Times: 2015 Fall Quarter

Map Link	Planning Time Index (PTI)	Highway	From	To	Distance Miles	Normal Travel Time Minutes	Worst Peak Travel Time Minutes	Worst Peak
1	2.19	US 12 EB	US 14 West	I-90	15.6	17.0	37.3	PM
2	2.06	US 12 WB	I-90	US 14 West	15.6	17.0	35.1	AM
3	1.18	I-90 WB	Siggelkow Rd	Badger interchange	5.6	4.8	5.7	PM
4	1.22	I-90 EB	Badger interchange	Siggelkow Rd	5.6	4.8	5.9	AM
5	1.16	I-90 WB	Badger interchange	County V	11.6	9.9	11.5	PM
6	1.13	I-90 EB	County V	Badger interchange	11.4	9.8	11.0	AM
7	1.14	I-94 EB	Badger interchange	County N	4.1	3.5	4.0	AM
8	1.14	I-94 WB	County N	Badger interchange	4.0	3.4	3.9	PM

## Travel Time Delay

Highway congestion occurs when traffic demand exceeds the available capacity of the highway system. Congestion can be recurring (regular peak periods) or unexpected (incidents and bad weather). Whatever the cause, congestion results in slower speeds, longer trip times, higher levels of harmful emissions and increased costs for auto, bus and freight.

## How are we doing?

The addition of I-41 to the Delay measure added 132 miles of Interstate to the total reported mileage and accounts for about 46 percent of the increase in delay. The I-41 corridor currently has four improvement projects: the north leg of the Zoo Interchange, WIS441 Tri-County, Lomira and Pilgrim Road projects. The speed limit increase to 70 mph as well as newly adjusted user delay costs compound the I-41 delay, more than doubling the hours of delay for this same period from last year.

**TOTAL HOURS OF DELAY**  
during a one year period

**12.4 million**

**TOTAL USER DELAY COST**  
during a one year period

**\$387 million**



Hours  
increased by  
**2.8 million**



Statewide hours of vehicle delay increased by 2.8 million hours during the 2015 Fall Quarter compared to the 2014 Fall Quarter

## How do we measure travel delay?

**GOAL:**  
Reduce vehicle  
delay and user  
delay cost

The Department of Transportation has established a travel delay mobility performance measure as part of its MAPSS Performance Improvement Program.

### Delay

Defined as the extra time spent driving in congested road conditions as compared to free flowing travel conditions.

### Hours of delay

Calculated by measuring the number of vehicles on a corridor and then comparing actual travel times to the amount of time it would take to travel the same corridor at the posted speed limit.

### User delay cost

Calculated by multiplying user value of time, vehicle delay and vehicle occupancy rates.



Travel delay is reported on the state's ten Interstate corridors

## Efforts to improve

Any interference of the normal flow of traffic because of special events, peak period traffic, crashes, construction or poor weather adversely affect actual travel time. The department uses a variety of traffic management strategies that include efforts to:

- Deploy more advanced Intelligent Transportation System technologies
- Maximize existing roadway space to match peak period demands
- Share information through electronic message boards and 511 Traveler Information System
- Clear disabled vehicles more quickly
- Encourage drivers to select alternative routes
- Provide efficient and timely winter weather management
- Expand highway capacity through highway improvement projects

**MAPSS**  
Performance  
Improvement



Complete details on all measures are on the web:  
[www.mapss.wi.gov](http://www.mapss.wi.gov)

Mobility  
Accountability  
Preservation  
Safety  
Service



**Know before you go! For details on Wisconsin travel, go to [www.511wi.gov](http://www.511wi.gov) or dial 511.**