



Wisconsin Department of Transportation

**April 2017**

# **MAPSS**

## **Performance Improvement Report**

**Mobility**  
**Accountability**  
**Preservation**  
**Safety**  
**Service**



### **Mission**

Provide leadership in the development  
and operation of a safe and efficient  
transportation system

# Welcome to the

# **MAPSS**

# Performance

# Improvement Report

The Wisconsin Department of Transportation's (WisDOT) Performance Improvement program focuses on the core goal areas of Mobility, Accountability, Preservation, Safety and Service (MAPSS). The Scorecard measures in this report have been deemed of highest importance to our customers to show the current state of Wisconsin's transportation system. The progress of these measures is reported on the two-page Scorecard and in the body of this report. The department also has interactive webpages within each core goal area for customers who are interested in "drilling down" into the data.

Three Scorecard measures and one Additional Measure were scheduled to be reported this quarter but have been postponed. Updates to Delay, Reliability and Program Effectiveness have been postponed until the July 2017 update because of changes in supplier of the requisite data set and availability of time for analysis. Average Worker Compensation Claim Cost will be updated in July as well because of changes in the method of measurement.

Some measures are important in demonstrating transparency and accountability, but do not rise to the level of the Scorecard. The progress of these measures is reported in the appendix of this report and on interactive webpages under Additional Measures.

In addition to the measures we report externally, we also track measures that are important for the smooth internal operations of the department or support other important performance outcomes; these are reported internally to department managers and staff. For example, we track several internal highway construction project measures that support our Scorecard measures and ensure we continue to deliver our programs and services efficiently to serve the needs of the public.

The maturation and progress within this program is a continual process. We are pleased to share that many of the critical Scorecard measures have seen significant improvements and we continue to steadily approach our performance goals.

The latest MAPSS Quarterly Report and the interactive WisDOT webpages provide details of each performance metric. This information is located at: [www.mapss.wi.gov](http://www.mapss.wi.gov)

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April 2017

# Wisconsin Department of Transportation MAPSS Performance Scorecard



Goal has been met



Performance is trending in a favorable direction



Trend is holding



Performance is trending in an unfavorable direction

Performance measure	How we measure it	Current report period	Goal	Goal met	Trend	Comments
<b>Mobility:</b> Delivering transportation choices that result in efficient trips and no unexpected delays.						
<b>Delay (Hours of Vehicle Delay)</b> Seasonal quarter Fall 2016	Number of hours spent in Interstate traffic below posted speed	<b>3,959,120 hrs</b>	4,712,207 hrs	✓	↑	Vehicle delay decreased compared to fall 2015. Only one of the 10 Interstate corridors had increased delay (a lower number is better).
<b>Reliability (Planning Time Index)</b> Seasonal quarter Fall 2016	Index based on extreme travel time in a period	<b>1.15</b>	1.17	✓	↑	The planning time index (PTI) decreased compared to fall 2015. All corridors had decreased PTI with the exception of the I-39/90 corridor between Madison and the Illinois State line (a lower number is better).
<b>Transit Availability</b> Calendar year 2016	Percent of population served by transit	<b>56.0</b>	55.0	✓	↑	There was a three percent increase from 2015 to 2016. This increase was largely driven by increased access in several rural counties.
<b>Bicycling Conditions on Rural Highways</b> Calendar year 2016	Percent of rural highway miles with favorable bicycling conditions	<b>State hwy: 66.1; County roads: 91.4</b>	100 percent on roads where bicycles are not prohibited		↔	Overall, the number of miles rated as favorable for bicycling increased on county highways but decreased on state highways.
<b>Incident Response</b> Calendar year 2016	Percent of incidents cleared within a specific timeframe	<b>Inter-mediate incidents: 91.4; Major incidents 86.4</b>	Intermediate incidents: 90.0; Major incidents: 80.0	✓	↑	The department's coordination in this area continues to improve and both the intermediate and major incident clearance goals were met. The average clearance time of 78 minutes achieved in 2016 is one of the lowest in the last six years.
<b>Winter Response</b> State fiscal year 2016	Percent to bare-wet within a specific time period after a storm	<b>78 for 24-hr roads</b>	70.0 within specified time	✓	↑	The winter severity index was lower than in the previous year. Milder temperatures enabled salt to be more effective. Work continues on developing best practices for winter response.
<b>Accountability:</b> The continuous effort to use public dollars in the most efficient and cost-effective way.						
<b>Transportation Economic Assistance Grants</b> Calendar year 2016	Capital investment dollars achieved per grant dollar awarded	<b>\$96.10</b>	\$50.00	✓	↑	During 2016, the department issued eight grants for a total of \$5,468,250, allowing for a capital investment of \$525,420,000 and resulting in the creation of 787 new jobs. As a result, every grant dollar leveraged \$96.10 in capital investments.
<b>Timely Scheduling of Contracts</b> State fiscal year 2016	Percent of highway program funding scheduled during the first six months of each fiscal year	<b>57.1</b>	54.0	✓	↑	WisDOT continues to make improvements to ensure our processes allow sufficient time for effective resource planning and competitive bidding. A new goal of 54 percent was established in SFY 2015.
<b>On-time Performance</b> Calendar year 2015	Percent of highway projects completed on-time	<b>94.3</b>	100.0		↑	WisDOT deployed mobile devices to improve communications in the field and resolve issues in a timely manner. Other innovations were also implemented during the year.
<b>On-budget Performance</b> State fiscal year 2016	Final highway project cost as percent of original contract amount	<b>104.9</b>	103.0		↓	The department has set up an analysis team to review FY 2016 data, identify causes for cost increases and provide recommendation (a lower number is better).
<b>Surplus Property Management</b> State fiscal year-to-date 2017	Dollar value of surplus land sold	<b>\$2.03 mil</b>	\$2.75 mil		↔	The surplus land sales is expected to meet SFY2017 sales goal. Sixty two of the 178 parcels in the department's marketing plan have been sold to date.

The Wisconsin Department of Transportation MAPSS Performance Scorecard reviews five key goals and over-arching performance measures that guide us in achieving our mission "to provide leadership in the development and operation of a safe and efficient transportation system." Establishing goals and measuring results is essential to running a successful organization and meeting public expectations.

**For more information on MAPSS, visit [www.mapss.wi.gov](http://www.mapss.wi.gov)**



Goal has been met



Performance is trending in a favorable direction



Trend is holding



Performance is trending in an unfavorable direction

Performance measure	How we measure it	Current report period	Goal	Goal met	Trend	Comments
<b>Preservation:</b> Protecting, maintaining and operating Wisconsin's transportation system efficiently by making sound investments that preserve and extend the life of our infrastructure, while protecting our natural environment.						
<b>Program Effectiveness</b> Calendar year 2015	Scheduled improvement projects compared to modeled roadway needs (as a percent)	<b>Location: 86; Scope: 65; Time: 85</b>	Location: 80; Scope: 65; Time: 65	✓	↑	Location, scope and time will likely continue to improve as refinements to a statewide scoping theme and prioritization mechanism are completed and implemented.
<b>State Highway Pavement Condition (backbone)</b> Calendar year 2015	Percent of state highway pavement rated fair or above	<b>97.6</b>	90.0 rated fair or above	✓	↑	Backbone pavement needs are prioritized because while they represent only 13.5 percent of state trunk highway miles, they carry 49 percent of traffic and approximately 70 percent of the freight tonnage and value.
<b>State Highway Pavement Condition (non-backbone)</b> Calendar year 2015	Percent of state highway pavement rated fair or above	<b>78.8</b>	80.0 rated fair or above		↓	While pavement conditions are affected by numerous factors, much of the decrease is attributable to the improvement budget being insufficient to maintain current system conditions.
<b>State Bridge Condition</b> Calendar year 2015	Percent of state bridges rated fair or above	<b>96.8</b>	95.0	✓	↔	State bridge conditions are holding steady and exceeding the goal.
<b>State-owned Rail Line Condition</b> Calendar year 2016	Percent of state-owned rail line meeting FRA Class 2 Standard (>10 mph)	<b>72.9</b>	95.0		↑	In 2016, there was a net increase of 70.6 miles meeting FRA Class 2 standards through WisDOT funded projects. This is a 9.9 percentage point increase from 2015 to 2016 in the number of miles that meet the standards.
<b>Airport Pavement Condition</b> Calendar year 2016	Percent of airport pavement rated fair or above	<b>86.0</b>	90.0		↓	A one percentage point decrease from 2015 primarily results from decreased Pavement Condition Index values for taxiway and aircraft parking apron pavements at air carrier airports.
<b>State Highway Roadside Maintenance</b> Calendar year 2016	Grade point average for the maintenance condition of state highways	<b>2.66</b>	3.0		↑	Conditions increased slightly in 2016, with routine maintenance agreements and improvement projects funding highway maintenance needs.
<b>Material Recycling</b> State fiscal year 2016	Percent of virgin materials replaced with recycled materials	<b>13.37</b>	10.0	✓	↓	The department is committed to the recycling effort. Almost all projects incorporate recycled materials.

### Safety: Moving toward minimizing the number of deaths, injuries and crashes on our roadways.

<b>Traffic Fatalities</b> Calendar year-to-date 2017 (Preliminary)	Number of traffic fatalities	<b>99</b>	First Quarter target is 99 Annual target is 526	✓	↑	As of March 31st there have been 99 fatalities in 2017. Our long-term goal is zero preventable deaths (a lower number is better).
<b>Serious Traffic Injuries</b> Calendar year-to-date 2017 (Preliminary)	Number of serious injuries	<b>537</b>	First Quarter target is 565 Annual target is 3,026	✓	↑	As of March 31st, 537 persons have received serious injuries in 2017. Our long-term goal is zero preventable deaths (a lower number is better).
<b>Traffic Crashes</b> Calendar year-to-date 2017 (Preliminary)	Number of traffic crashes	<b>24,667</b>	First Quarter target is 28,953 Annual target is 113,612	✓	↑	As of March 31st, there have been 24,667 traffic crashes in 2017. Our long-term goal is zero preventable deaths (a lower number is better).
<b>Safety Belt Use</b> Calendar year 2016	Percent of vehicle occupants wearing a seat belt	<b>88.4</b>	86.0 by 2016	✓	↑	While Wisconsin's safety seat belt usage reached an all-time high in 2016, we lag behind neighboring states like Illinois and Michigan, with use rates of more than 90 percent.

### Service: High quality and accurate products and services delivered in a timely fashion by a professional and proactive workforce.

<b>DMV Wait Times</b> Calendar year-to-date 2017	Percent of DMV service center customers served within 20 minutes	<b>89.12</b>	80.0	✓	↑	DMV has continued to maintain service levels beyond the 80 percent target.
<b>DMV Electronic Services</b> Calendar year 2016	Number of DMV electronic service transactions	<b>4.96 mil</b>	4.34 mil	✓	↑	Electronic services usage is trending in line with our two percent per year increase goal with an 18 percent increase in online plate renewals.
<b>DMV Driver License Road Test Scheduling</b> Calendar year-to-date 2017	Available tests as a percent of estimated demand	<b>99</b>	90.0	✓	↑	DMV has continued the annual trend of achieving 90 percent or higher service levels that began in 2014.
<b>DMV Phone Service</b> Calendar year-to-date 2017	Percent of DMV phone calls answered within two minutes	<b>65.54</b>	80.0		↑	Calendar year 2017 has begun four percentage points higher than the final closing figures of 2016.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Mobility: Delay (Hours of Vehicle Delay)

**Report Date:** April 2017

**Data Frequency:** Quarterly (Seasonal Quarters)

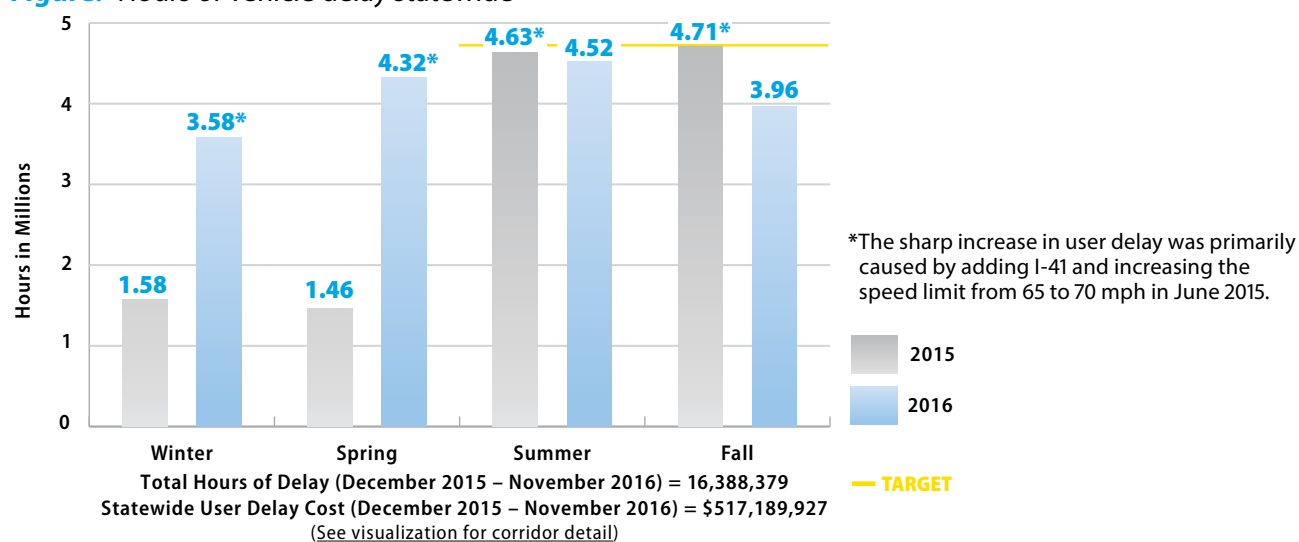
**Division:** Transportation System Development

**Why is it important?** Reducing the annual total hours of vehicle delay and its resulting user delay cost on a corridor supports regional economic productivity and development.

Highway congestion occurs when traffic demand exceeds the available capacity of the highway system, this can be measured as vehicle delay. Congestion results in slower speeds, longer trip times, higher levels of harmful emissions and increased costs for auto, bus and freight movements. Congestion is broken into two categories: recurring (regular high volumes, traffic jams) and unexpected (crashes, bad weather).

**Performance measure target:** The Wisconsin Department of Transportation (WisDOT) began reporting this Mobility measure in Winter 2014. The department's quarterly seasonal goal is to reduce vehicle delay and user delay cost from the same quarter of the previous year.

**Figure:** Hours of vehicle delay statewide



**How do we measure it?** Delay is defined as the extra time spent driving in congested road conditions, as compared to free flowing travel conditions. Delay is reported on the state's 10 Interstate corridors. Hours of delay are calculated by measuring the number of vehicles on a corridor and then comparing actual travel times for segments of a route to the amount of time it would take to travel that same corridor at the posted speed limit. User delay cost is determined by multiplying user cost, vehicle delay and vehicle occupancy rates. User delay cost data is split into two categories: passenger cars and freight vehicles.

**How are we doing?** Statewide hours of vehicle delay decreased by 753,089 during the 2016 fall quarter compared to the 2015 fall quarter. Statewide user delay costs decreased by \$20,346,577 during the 2016 fall quarter compared to the 2015 fall quarter. The value of time for autos and trucks have been adjusted for 2016 and is represented in the results this quarter. Nine of the 10 Interstate corridors had reduced delay, with the I-41 corridor between Green Bay and Milwaukee having the largest decrease compared to the fall quarter of 2015. Large construction projects that concluded during this period resulted in improved traffic flow.

**What factors affect results?** Vehicle delay is comprised of recurrent and non-recurrent delay. Recurrent delay is caused by normal fluctuations in traffic demand such as morning and evening commuter traffic. Non-recurrent delay differs by seasons and areas of the state. Factors include: traffic surges from weekend holidays and special events; weather related delays and incidents; and work zone impacts such as road closures, lane restrictions and traffic detours.

**What are we doing to improve?** The department has joined a data-sharing partnership with Waze. The free, two-way data share, called the Waze Connected Citizens Program, helps WisDOT get more information on real-time road activity directly from driver reported hazards. In exchange, WisDOT provides real-time construction, crash and road closure data from 511 Wisconsin to Waze. One of the larger goals of the partnership is to ensure drivers have the best safety and mobility information possible. Information provided by WisDOT is currently available on the Waze app. Waze data will be incorporated into a redesigned 511 Wisconsin website that will be coming online this spring.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Mobility: Reliability (Planning Time Index)

**Report Date:** April 2017

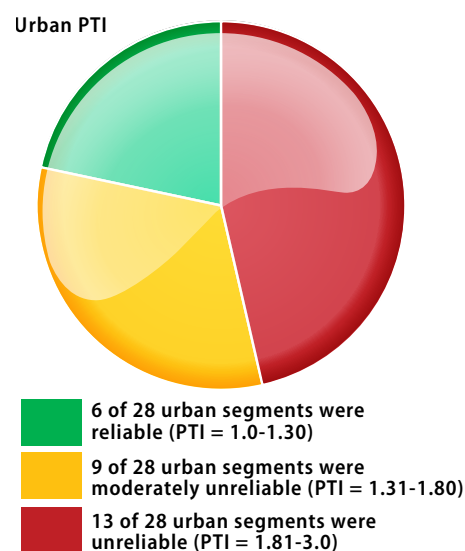
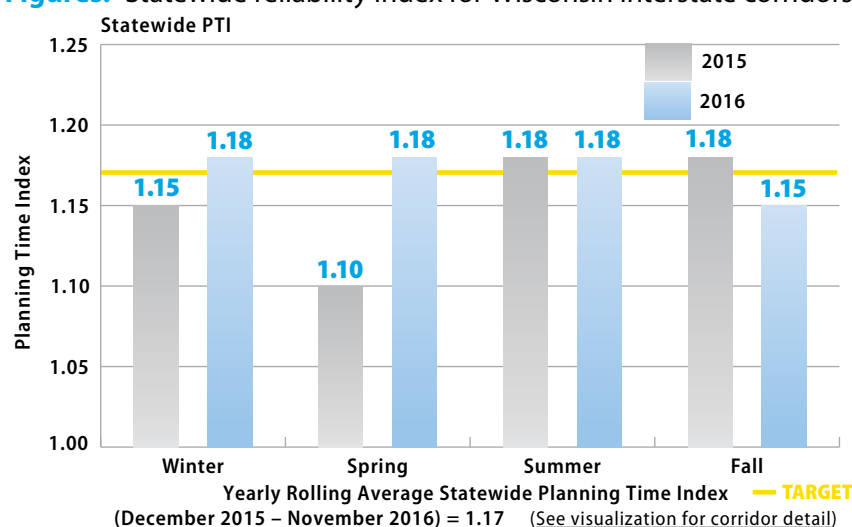
**Data Frequency:** Quarterly (Seasonal Quarters)

**Division:** Transportation System Development

**Why is it important?** Travelers expect to arrive safely and on time at their destination. Their confidence level and certainty of on-time arrival are intuitive measures of transportation system reliability. Planning Time Index (PTI) expresses that same value in a mathematical term that helps travelers more precisely budget travel time and transportation planners better measure system performance.

**Performance measure target:** The Wisconsin Department of Transportation (WisDOT) began reporting this Mobility measure in Winter 2014. WisDOT's initial seasonal quarterly goal is to reduce the PTI value from the same period of the prior year.

**Figures:** Statewide reliability index for Wisconsin Interstate corridors



**What it means:** PTI of 1.5 means that for a 20 minute trip, you will complete your trip in 30 minutes ( $20 \times 1.5 = 30$ ) the majority of the time.

**How do we measure it?** Reliability is reported on 10 Interstate corridors and 28 urban freeway and highway segments. The planning time index is calculated from two basic measures: travel time at the posted speed limits and the 95th percentile travel time, marking the most extreme travel delay in a period (the worst of 20 trips). The ratio of these two measures constitutes the index. This measure is represented by direction and by weekday, non-holiday peak periods. Travel time information for this measure was acquired from an FHWA-sponsored national data set.

**How are we doing?** The statewide PTI decreased for the fall quarter of 2016 as compared to fall 2015. The I-39/90 corridor between Madison and the Illinois State line is the only corridor that saw a Planning Time Index increase. The other nine corridors saw a decrease or no change in their fall quarter PTI. Two fewer urban segments were reliable than during the 2015 fall quarter and the number of moderately unreliable segments increased by two. Drivers in the Milwaukee urban corridor continue to experience the least reliable travel times.

**What factors affect results?** Travel reliability measures variability of congestion. A wide variation in the recorded travel time indicates low reliability and a high planning time index. Traffic incidents, weather conditions, special events, holiday travel, sporadic demands and work zones are all dynamic components of traffic congestion that may adversely affect travel time reliability. Reducing or mitigating the impact of these factors serves to improve travel time reliability.

**What are we doing to improve?** The department continues to place emphasis on prompt clearance of traffic incidents on the freeway through the Traffic Incident Management Program. In addition, WisDOT has been using creative dynamic message signs to provide information on road conditions and alert drivers on the Interstate. A Truck Parking Information Management System (TPIMS) has been installed along 172 miles of I-94 eastbound to monitor parking stalls, allowing drivers to have up-to-date information on truck parking. The system's goal is to safely move people and goods by allowing drivers ample time to plan their rest schedule. The system is in place to mitigate "reduced alertness" among commercial drivers, which creates inefficiency for trucking companies as well as safety concerns for the traveling public. WisDOT has also been awarded a grant from the USDOT to assess causes of non-recurrent congestion using state-of-the-practice tools. These tools will enhance WisDOT's existing economic evaluation and traffic analysis for planning and programming highway improvements and operations.



# Wisconsin Department of Transportation MAPSS Performance Improvement



## Mobility: Transit Availability

**Report Date:** April 2017

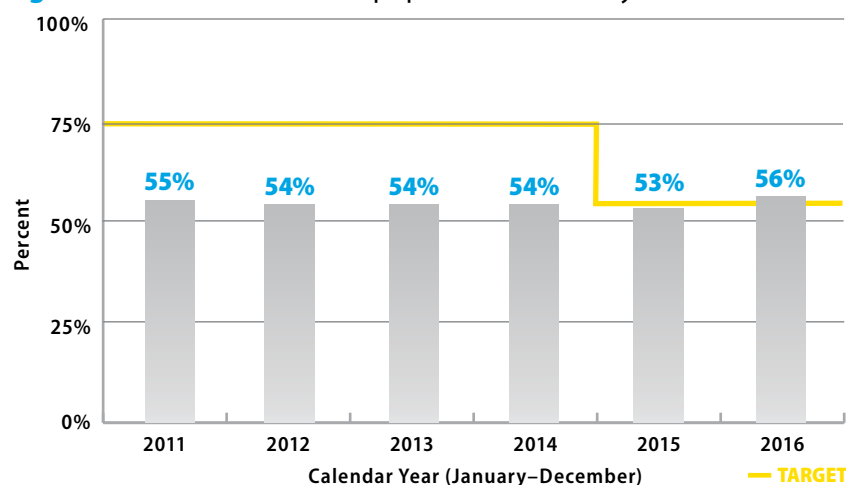
**Data Frequency:** Annual (Calendar Year)

**Division:** Transportation Investment Management

**Why is it important?** Transit provides a lifeline to those who depend on it to obtain medical care, make shopping trips, travel to school or work and to meet other basic needs. Approximately 48 percent of Wisconsin transit riders travel to work, 23 percent to school, 18 percent to retail, tourism or recreational destinations, and 10 percent to health care services. Greater transit availability means greater mobility for Wisconsin citizens. Transit service is a key component of a comprehensive, multimodal transportation system and contributes to an enhanced quality of life in Wisconsin communities.

**Performance measure target:** The department's goal is to increase the percent of the population with access to transit service to 55 percent.

**Figure:** Percent of Wisconsin population served by transit



Note: The target was revised from 75 percent to 55 percent in 2015 to align with the national average.

**How do we measure it?** The total population with access to transit is calculated by adding together the population that resides within one-quarter mile walking distance from a fixed bus route for Wisconsin's bus systems and the population within the service area for shared-ride taxi and other public transit systems (i.e., not fixed route). The total population with access is then divided by Wisconsin's total population to determine the percent of the population with access to public transit each calendar year. Only transit services that are supported with public resources are considered in this calculation. The department's methodology is consistent with industry standards for measuring access to transit.

**How are we doing?** Approximately 56 percent of the state's population has access to public transit. This represents an increase of three percentage points from 2015 to 2016. While several transit systems discontinued service for 2016, several systems began service or increased coverage areas during the same time. The net increase was largely driven by increased access in several rural counties. Nationally, it is estimated that 55 percent of the population has access to public transit.

**What factors affect results?** Transit service availability is determined by local government decisions with planning assistance offered by WisDOT to help identify appropriate options. The degree of investment in transit from federal, state and local sources is a major factor affecting this performance measure. For example, transit routes and service areas may differ year-to-year in response to budget levels. Efforts by communities to encourage commercial and residential land use decisions that increase population density in areas having transit access also have an effect. Transit service operated on a regional, as opposed to a community-by-community basis, also tends to increase the percent of the regional population with access to transit.

**What are we doing to improve?** The department actively provides technical assistance to local transit providers in the areas of planning and budgeting, and frequently sponsors transit development plans and feasibility studies to ensure that transit investments are data driven, sustainable and promote effective service. Department staff review transit system budgets and service profiles annually to ensure transit operations are consistent with state and federal regulations, as well as department goals and best practices. Management performance reviews of urban bus systems every five years along with annual cost efficiency report analyses for all systems helps ensure that Wisconsin transit systems function efficiently and effectively in meeting mobility needs.

# Wisconsin Department of Transportation

## MAPSS Performance Improvement



### Mobility: Bicycling Conditions on Rural Highways

**Report Date:** April 2017

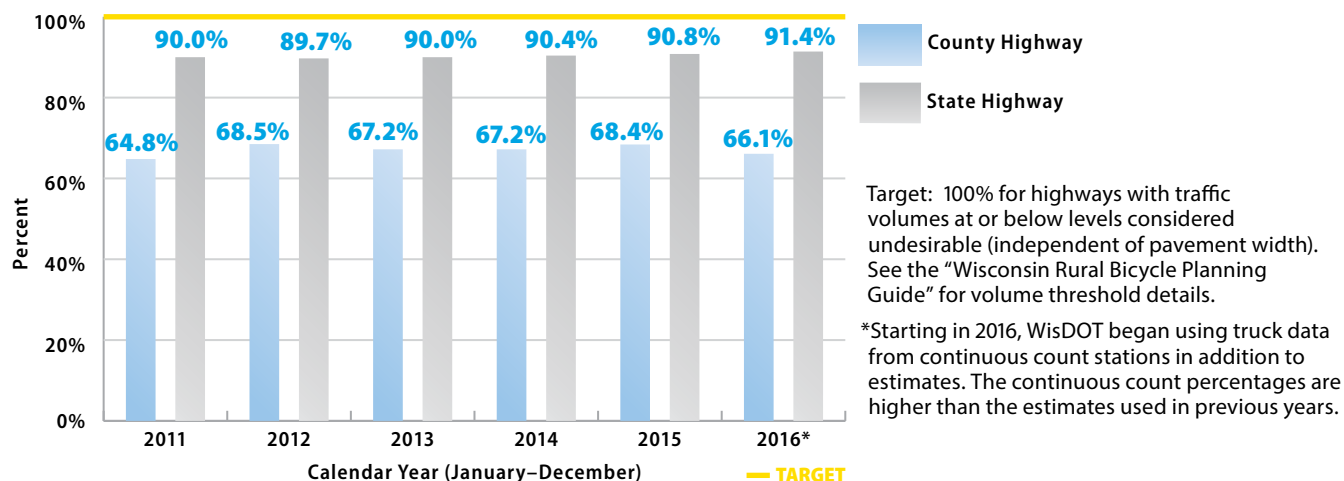
**Data Frequency:** Annual (Calendar Year)

**Division:** Transportation Investment Management

**Why is it important?** Bicycle travel is an essential component of a multimodal transportation system. The option to travel by bicycle is important for people too young to drive, people who cannot drive or people who choose not to drive. Monitoring rural highway conditions for bicycling helps planners and designers identify potential facility improvements for all modes of travel. This is especially important in areas that are currently less suitable for bicycle travel and are experiencing growth or increased auto congestion. Generally, projects that create safety and operational improvements for all roadway users also result in improved conditions for bicyclists.

**Performance measure target:** The department's goal is to have favorable conditions for bicycling on all rural county and state highways on which bicycles are permitted to travel. Favorable is defined as having conditions rated as 'best' or 'moderate' for bicycling.

**Figure:** Percent of rural county/state highways rated best/moderate condition for bicycling



**How do we measure it?** Annually, the total number of rural miles of state and county highways with bicycling conditions rated as 'best' or 'moderate' is divided by the total number of non-freeway miles of state and county highways to arrive at the percentage. The department's ratings for bicycling conditions on rural highways is defined in the "Wisconsin Rural Bicycle Planning Guide," which describes the calculations for determining conditions as 'best,' 'moderate,' or 'undesirable'. The calculation includes two primary factors: traffic volume and pavement width. It also accounts for the percent of trucks and percent of solid yellow pavement markings along the roadway (which is an indicator of hills and curves). Traffic count data lags one year behind the date of the measure.

**How are we doing?** In 2016, the percent of rural county highways rated as 'best' or 'moderate' conditions for bicycling increased to 91.4 percent. This was primarily attributed to the addition of paved shoulders. The percentage of state highways that accommodate bicycles decreased to 66.1 percent. This is due to revised state highway truck percentage data and increasing traffic volumes.

**What factors affect results?** Vehicles per day, travel lane width, and the presence or absence of paved shoulders are the primary determinants of rural bicycling conditions. As traffic on roadways increases, the favorable conditions for bicycling can decrease. Inclusion of a wider travel lane or paved shoulder on a roadway can improve conditions for bicycling.

**What are we doing to improve?** WisDOT's paved shoulder policy for pavement replacement, reconstruction, and new construction projects on rural state highways is a standard shoulder width of five feet on asphalt roadways on the state highway system. In addition, department staff continue to work with the Wisconsin County Highway Association on a paved shoulder policy for county highways. Paved shoulders are provided for safety and operational improvements to benefit all roadway users.



# Wisconsin Department of Transportation MAPSS Performance Improvement



## Mobility: Incident Response

**Report Date:** April 2017

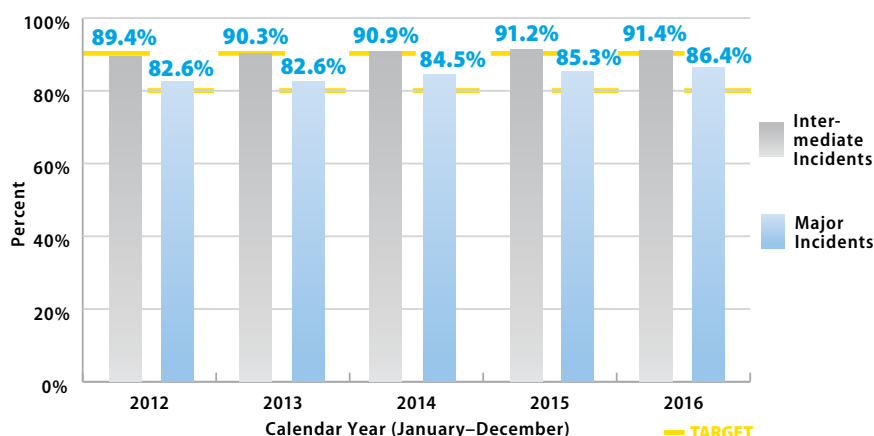
**Data Frequency:** Annual (Calendar Year)

**Division:** Transportation System Development

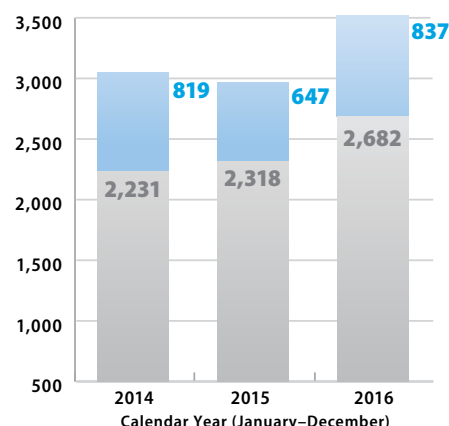
**Why is it important?** Incidents happen on the Interstate and state highway system every day, from minor property damage incidents to serious traffic crashes. This measure focuses on the amount of time it takes to clear intermediate and major traffic incidents on the Interstate and state highways. Intermediate traffic incidents typically affect travel lanes and usually require traffic control on the scene to divert road users past the blockage. Major traffic incidents usually involve hazardous material (HAZMAT) spills, overturned tractor-trailers, fatalities, multiple vehicles, and/or other natural or man-made disasters. Major incidents can result in closing all or part of a roadway. Restoring the roadway to full operation as quickly as possible helps reduce secondary incidents, minimize delay for people and freight, and decreases the associated economic impact of traffic delays.

**Performance measure target:** The department's goal is to reduce the length of time traffic flow is disrupted by long-term incidents on the Interstate and state highway system. The goal is to clear 90 percent of all intermediate incidents in less than two hours and to clear 80 percent of all major incidents in less than four hours.

**Figure 1:** Percent of the time that target clearance time is met



**Figure 2:** Number of traffic incidents



**How do we measure it?** The incident clearance time is defined as the time from when an agency with responsibility to respond first becomes aware of the incident and the time when the last responder leaves the scene. This measure tracks the percent of intermediate and major incidents cleared in less than two and four hours respectively. This measure does not include extended duration weather related emergency transportation events such as flooding.

**How are we doing?** The department met the goal on both major and intermediate incidents. The average clearance time of 78 minutes achieved in 2016 is one of the lowest in the last six years.

**What factors affect results?** The specific location, time of day, weather condition, incident complexity, and the number of simultaneous incidents all affect the amount of time required to clear the highway.

**What are we doing to improve?** The department will continue to conduct After Action Reviews on significant incidents across the state in order to help identify strengths, best practices and opportunities for improvement associated with clearance activities. In 2016, Wisconsin met Federal Highway Administration's (FHWA's) goal of having 20 percent of all identified responders in the state trained in Traffic Incident Management (TIM). Since 2012, over 5,400 of the state's responders have been trained. We have established an initiative to ensure all tow operators that work on the STH are trained on TIM. The department is seeking to train 30 percent (8,124) of state's responders in TIM by the end of 2017. The course promotes responder safety, safe and quick clearance, and improved communication among all responder disciplines to aid in the quick restoration of traffic flow. Through a partnership with the Department of Justice (DOJ), the TIM training is now a required block of instruction for all new law enforcement officers certified in the state.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Mobility: Winter Response

**Report Date:** April 2017

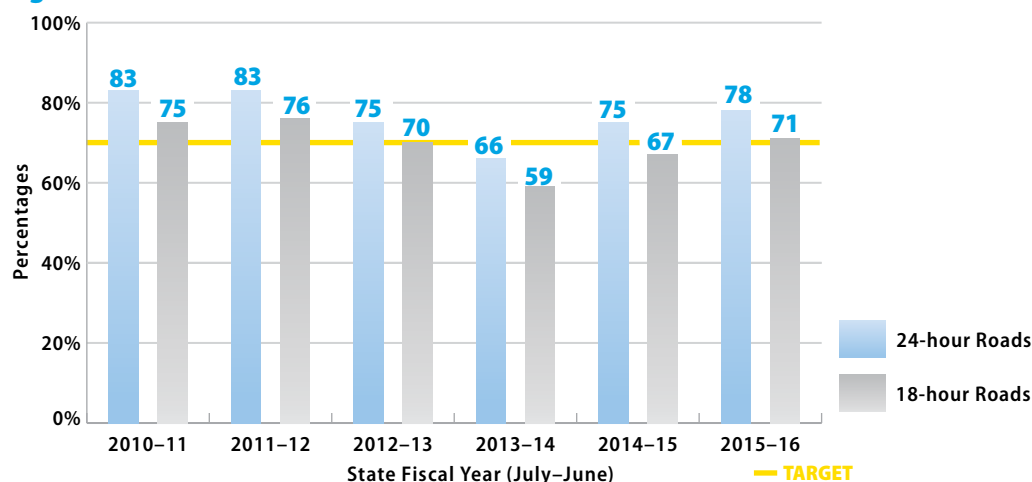
**Data Frequency:** Annual (State Fiscal Year)

**Division:** Transportation System Development

**Why is it important?** Returning roads to the condition they were in before a winter storm restores the capacity of the system to move traffic. This allows safe travel to work, school and other destinations. Clear roads also meet the needs for emergency travel and restore travel time reliability, which is important to the movement of freight.

**Performance measure target:** Roads maintained 24 hours a day are to be cleared within four hours and roads that are maintained 18 hours a day are to be cleared in six hours of the end of the storm. Eighteen-hour roads have lower traffic counts, concentrated in peak travel time periods, and are not serviced between 10 p.m. and 4 a.m. The department's goal is achieve these targets 70 percent of the time.

**Figure:** Percent that bare-wet conditions are met after winter storm events



**How do we measure it?** Each county provides weekly reports covering each storm event. They record the time at two points: when each storm event ends and when roads were restored to bare/wet pavement. For each storm event, the time to bare/wet pavement is calculated as the elapsed time between these two points. The performance measure is the average percent for all storm events that bare/wet pavement conditions are met for 18-hour roads (within six hours) and on 24-hour roads (within four hours). Data is compiled for each state fiscal year (July-June). Winter severity is calculated each year based on a set of weather factors including the number of snow and freezing rain events, total duration of all storms, total snow accumulation and number of incidents (blowing snow, drifting, ice and frost). The index is the gauge by which the department measures the impact of winter on our roads with a typical winter rating of 100.

**How are we doing?** Both the 24-hour and 18-hour roads measures improved over last year, with both roads exceeding the 70 percent goal. The winter severity index was lower than in the previous year. This winter was rated a little below a typical winter or 90 on the severity scale compared to the 2014-2015 rating of 100. Milder temperatures enabled salt to be more effective. Spring 2016 was also milder.

**What factors affect results?** Performance is largely impacted by severity of winter conditions, although winter storm timing does appear to impact the amount of time it takes to clear 18-hour roads. Simultaneous storms that happen less than 8 hours apart increase the time needed to clear the road. Controllable factors include the timing of the response, availability of resources, and the effectiveness of the response. The department and counties are constrained by financial resources from fully deploying best practices for winter response.

**What are we doing to improve?** We are working to ensure the right materials and resources are available and used for the conditions before, during and after each storm event. The department continues to identify best practices based on data from studies conducted in other states, especially in regard to the practice of anti-icing. We are beginning to implement route optimization, which strategically routes trucks based on locations of shops, salt and fuel supplies to minimize downtime for snowplow operators. Dane, Green, Brown, Eau Claire, La Crosse, Marquette and Waukesha counties will begin utilizing their new optimized routes by next winter.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Accountability: Transportation Economic Assistance Grants

**Report Date:** April 2017

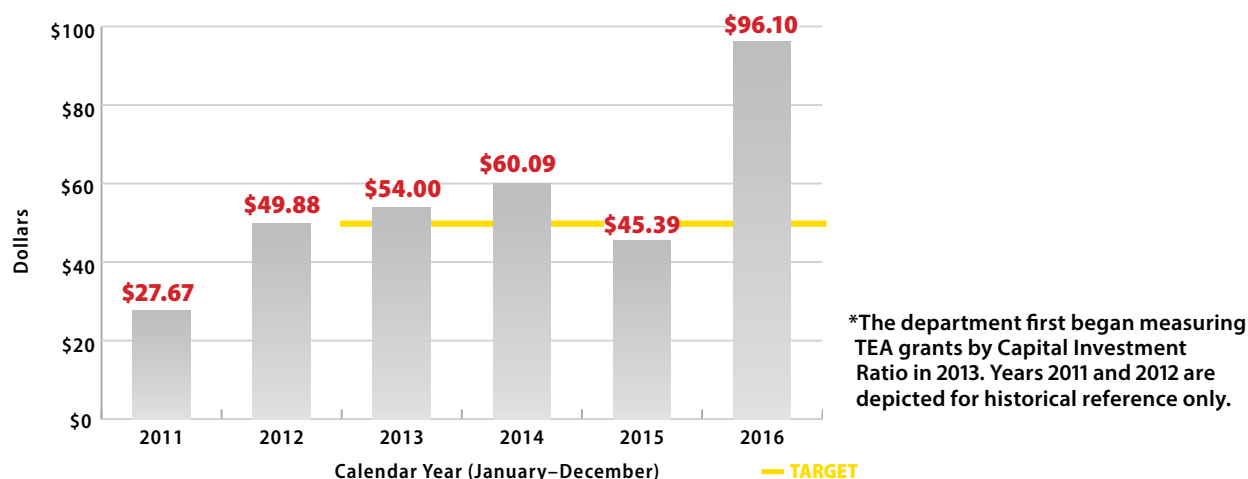
**Data Frequency:** Semi-annually (Calendar Year)

**Division:** Transportation Investment Management

**Why is this important?** The Transportation Economic Assistance (TEA) program provides state matching grants of up to 50 percent, or \$5,000 maximum per job, to aid governing bodies supporting local private businesses, and consortiums for road, rail, harbor and airport projects that help attract employers to Wisconsin, or encourage business and industry to remain and expand within Wisconsin. The program strives to increase the number of jobs statewide by responding to the transportation needs of an economic development project contingent on a transportation facility improvement. The goal is to attract and retain business in Wisconsin, which increases the number of local job opportunities, improves the local tax base, and boosts spending in the local economy.

**Performance measure target:** Achieve \$50 of capital investment for every \$1 of grant funds awarded.

**Figure:** Capital investment dollars per grant dollar awarded



**How do we measure it?** The ratio is calculated by dividing the total amount of capital the businesses expect to invest in their new or expanded facility (i.e., their “capital investment”) by the total grant dollars awarded. A higher number is desired. The amount of the TEA grant is determined by evaluating and approving the cost estimates for the transportation improvement project and by how many jobs will be created.

**How are we doing?** WisDOT exceeded the goal in 2016. The department coordinated with several local partners on application submittals and project scoping. As of December 31, 2016, the department issued eight grants totaling \$5,468,250. The businesses involved in the eight projects expect to make a total capital investment of \$525.5 million. As a result, each grant dollar leveraged \$96.10 in capital investments.

**What factors affect results?** The local and state economy, along with other factors, have an effect on business investment levels. TEA grants awarded to local governments are based on the total number of jobs that are guaranteed to be created as a result of the business development. Grant dollar awards relative to the capital investment vary based on the quantity of each component, even as other benefits are likely to be realized. For example, rail improvement projects tend to cost more per foot than roadway improvements, creating additional grant dollar expenditures with equal capital investments. The net result is a lower capital investment to grant dollar ratio.

**What are we doing to improve?** The department conducts extensive outreach at business/industry functions, the Governor’s Small Business Summit, region-sponsored local program symposiums, and teams with partner state agencies like the Wisconsin Economic Development Corporation and Department of Administration to promote the TEA Program. WisDOT has streamlined the environmental clearance process and published resources to help guide sponsors and consultants on how to complete the programmatic environmental review. WisDOT is also working to streamline the delivery process to speed-up and ease the burden of moving a project from application to construction.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Accountability: Timely Scheduling of Contracts

**Report Date:** April 2017

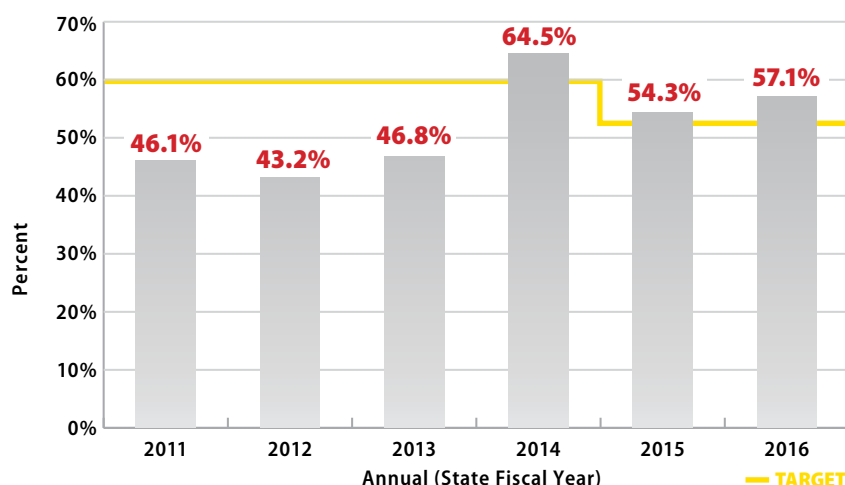
**Data Frequency:** Annual (State Fiscal Year)

**Division:** Transportation System Development

**Why is this important?** The process for timely scheduling of contracts is critical because it distributes improvement projects into monthly bid lettings over the course of the state fiscal year. This enhances program delivery by balancing the workload for the department and the road building industry. The department's ultimate objective is to maximize competitive bids, provide the department flexibility in adjusting lettings in the last half of the fiscal year for let contract savings or overages, and allow the department to spend additional federal funds if they are received late in the year.

**Performance measure target:** Contract for 54 percent of the improvement program funding in the first half of the state fiscal year between the months of July and December.

**Figure:** Percent of annual road construction contract funds scheduled for bid letting during first six months of fiscal year



<sup>1</sup> In 2010, the department received significant ARRA funding late in the year. Timing of the ARRA funded projects and the increased total value had a negative effect on the department's ability to meet this performance measure target.

**How do we measure it?** Monthly snapshots allow the department to compare the actual funding amounts programmed with predefined monthly targets.

**How are we doing?** Having a predefined plan with a greater percentage of work being let prior to January 1st each year allows the road building industry to efficiently plan and schedule work forces and equipment for the upcoming construction season. In 2008, the goal was 50 percent and was increased to 60 percent in 2009. With input from the road building industry, the department set a new goal of 54 percent in state fiscal year 2015. This more evenly distributes the let construction contracts which improves resource planning and encourages more competitive bids. For FY16, the department met the goal, with 57% of the construction contracts awarded in the first half of the year.

**What factors affect results?** Several large projects in one year present scheduling challenges. These projects create large spikes in the let distribution flow. Advancing projects into the fiscal year due to let estimate savings or to spend additional funding increases the number of projects loaded in the last quarter of the fiscal year.

**What are we doing to improve?** The department's planning, project development, contract proposal management and Bureau of State Highway Programs meet regularly to discuss and look for opportunities to better manage this process. The group plans to set up a Project Letting Plans committee that will analyze the measure and propose possible improvements including scheduling of contract types and project distribution over the winter months. The department continues to collaborate with industry representatives to ensure both project scheduling and work processes are synced. Local program project management has recently expanded to a full six-year cycle to mirror the process used by the state program with the goal of improving project scheduling.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Accountability: On-time Performance

**Report Date:** April 2017

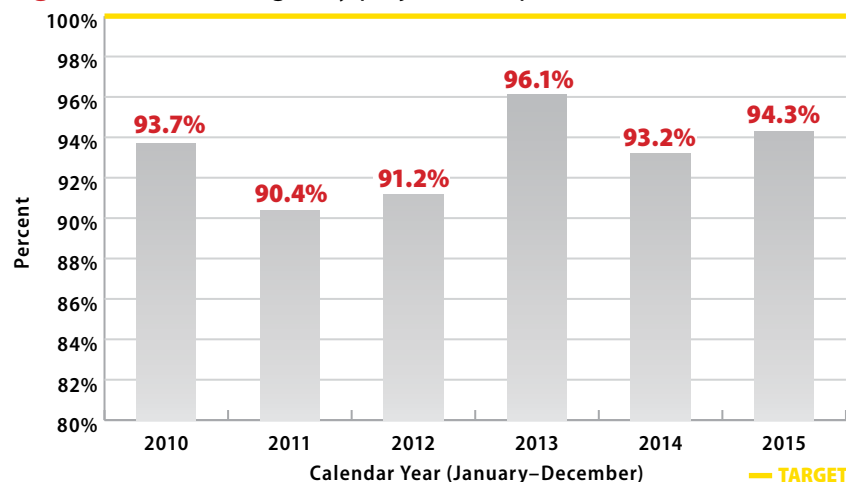
**Data Frequency:** Annual (Calendar Year)

**Division:** Transportation System Development

**Why is this important?** This measure indicates the department's ability to estimate and manage the amount of time it will take to complete a highway construction project. The better the department is at determining project time, the better able we are to schedule future projects to effectively utilize contractor resources. The general public and businesses are affected by construction projects. When the department adheres to a schedule, the better everyone can plan for the impact.

**Performance measure target:** The department's goal is to meet the project time frame specified in the construction contract 100 percent of the time.

**Figure:** Percent of highway projects completed on time



**How do we measure it?** This measure reports the percent of construction projects that were completed within the original project time frame specified and any agreed upon extensions. The numbers are calculated by identifying construction projects that had work completed during the calendar year and then comparing the actual date/days the project took to complete with the date/days that were specified in the contract.

**How are we doing?** The number of construction contracts completed on time increased by just over one percent for contracts with work completed in 2015. Construction administration staff continue to focus on project communication to minimize contract problems and keep the contract on-time.

**What factors affect results?** Factors affecting this measure include adverse weather, plan changes during construction, material delays or shortages, utility work delays and contractor scheduling. The on-time performance is also impacted by the quality and completeness of project designs.

**What are we doing to improve?** The department schedules larger, more complex construction contracts in the fall or early winter prior to the anticipated construction year to ensure contractors have adequate time to schedule the resources needed to complete the project on time. Over the past year, the department has deployed mobile devices to WisDOT project management staff in order to improve communication with contractors and resolve issues including those that impact project schedules. Additional improvements include the deployment of Automated Machine Guidance (AMG) Grading and Prefabricated Structures. The AMG is driven by GPS and 3D model data and allows for fewer grading passes and quicker validation by both contractors and field inspectors. The prefabricated structures are built in factories under controlled conditions, reducing the time needed to complete the project.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Accountability: On-budget Performance

**Report Date:** April 2017

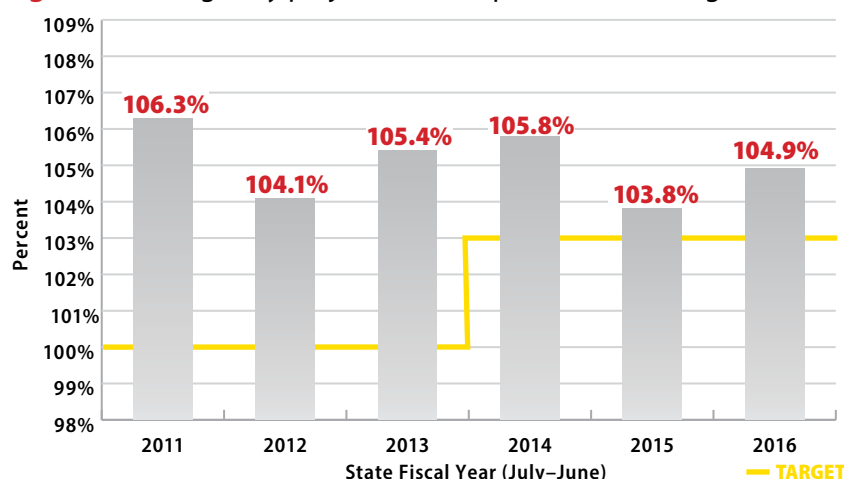
**Data Frequency:** Annual (State Fiscal Year)

**Division:** Transportation System Development

**Why is it important?** The department aims to have the final project cost as close as possible to the amount that was originally contracted when the project was let out for bid. While managing to our budget is important, WisDOT's top priority is delivering a quality project. Therefore, projects costs may increase due to an issue recognized in the field.

**Performance measure target:** The department's goal is to have the actual project costs not exceed the original contract amount by more than three percent. With an industry average of 105 percent, the department's aspirational goal is 103 percent.

**Figure:** Final highway project cost as a percent of the original contract amount



**How do we measure it?** This measure was updated in 2016 to compare the final construction cost (excluding engineering and project oversight) with the original contract amount of all projects that were completed during the fiscal year. Previously, this measure compared projects that were let during the fiscal year and had achieved 95 percent of their contract budget before the end of the state fiscal year. This new methodology ensures all projects, even those that take a number of years to complete are captured. This change aligns the On-budget and Engineering Construction Cost Index datasets and better demonstrates the final average cost of all construction projects regardless of when they are awarded.

**How are we doing?** The statewide average increased just over a percent to 104.9 percent, within the industry average. Upon analysis, the largest contributing factor to this increase is unanticipated, but necessary plan items or quantities.

**What factors affect results?** Actual costs are affected by the quality and completeness of project designs, new findings or changes in field conditions, weather condition and contract oversight. Additional factors may be late additions to project scope due to safety condition, changes in customer expectations and local non-participating requests during construction.

**What are we doing to improve?** Division region offices annually review and identify lessons learned on construction cost increases. These are discussed in an open forum with construction and design engineers in order to identify areas that can be improved upon. An analysis team has been established to review FY2016 data in order to identify the root causes associated with cost increases. This group is tasked with identifying best practices, issue/risk management techniques and provide recommendations for mitigating costs attributed to various reason codes. Beginning with the next construction season, a mid-project budget check-in will be required on all construction projects.



# Wisconsin Department of Transportation MAPSS Performance Improvement



## Accountability: Surplus Property Management

**Report Date:** April 2017

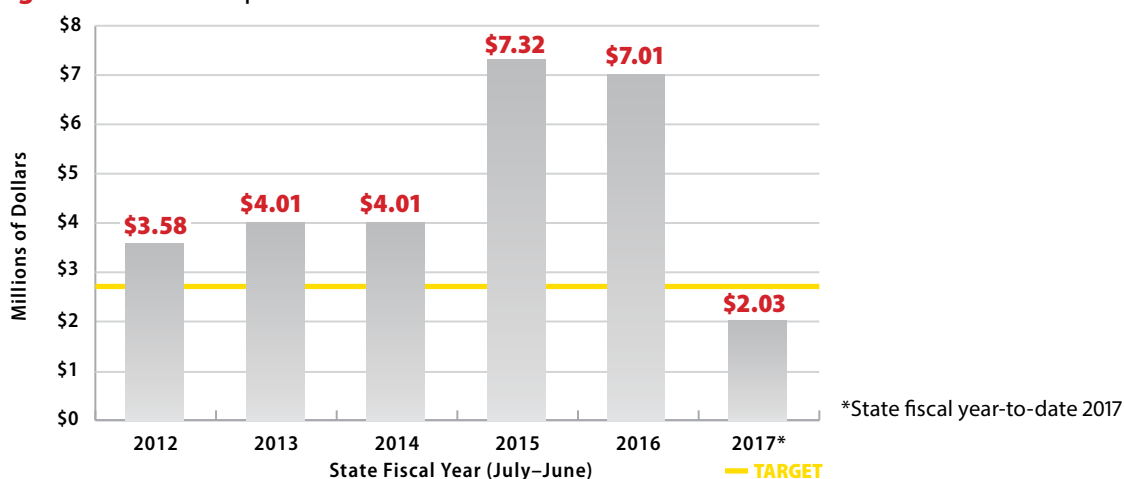
**Data Frequency:** Quarterly (State Fiscal Year)

**Division:** Transportation System Development

**Why is it important?** The department purchases property for transportation improvement projects. Once the project design and construction is complete, land that is no longer needed by the state can be made available for private development. The revenue generated by surplus land sales is deposited into the Transportation Fund to be available for other transportation improvements. Surplus land that is sold spurs local economic development since the parcels often have good access and visibility. When land is returned to the tax rolls, local governments benefit because they can generate new property tax revenue from the property.

**Performance measure target:** The department's goal is to generate \$2.75 million in revenue each state fiscal year through the sale or lease of surplus property in accordance with Wisconsin State Statute 85.15(2) and to return as much land as possible to the local tax rolls.

**Figure:** Value of surplus land sold



**How do we measure it?** The department's regional offices enter sale and lease data into a central system. This data is then broken down into four categories—sale of land, sale of buildings and personal property, rental income, and lease income. The total revenue from surplus land sales is compiled for each region; all regions are combined for the total state revenue each fiscal year.

**How are we doing?** Fiscal year 2017 revenue is expected to meet the \$2.75 million annual goal. Sixty two of 178 parcels on the department's marketing plan have been sold to date.

**What factors affect results?** The make-up of the surplus land inventory and locating an interested buyer are the most significant factors. Only about seven percent of the current inventory is identified as having marketable access. Twenty-two percent of the property is being held for future projects, four percent is for wetland mitigation and 66 percent has no access. Property parcels with no access to the highway are dependent upon the willingness of abutting property owners to acquire surplus remnants and return the parcels to the local tax rolls.

**What are we doing to improve?** The department continues to improve marketing efforts by:

- Documenting, promoting and training staff on the use of assessed value on low value parcel sales.
- Focusing on the sale of surplus land parcels with high maintenance costs.
- Reviewing market rental rates for each region to maximize lease revenue and rental income.
- Using real estate brokers to maximize advertisement and exposure of large value properties to the public.

Based on the outcome of a Lean Government process improvement initiative, the department recently updated the process used in assessing the value of low value parcels with limited access and a single abutter. This change yields savings on appraisal costs, reduces maintenance costs and shortens the amount of time it takes to prepare parcels for sale.

In addition, the use of the real estate inventory management system program has allowed the department to separate land not intended for immediate sale into a hold category. The hold category is intended for future use parcels and single abutter parcels not wanted by the abutting property owner at this time.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Preservation: Program Effectiveness

**Report Date:** April 2017

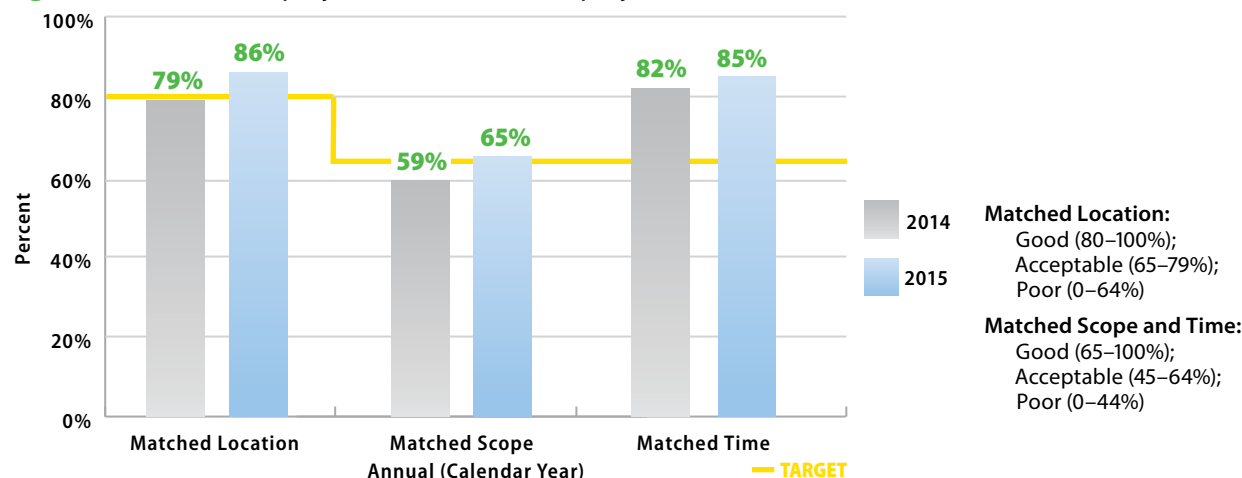
**Data Frequency:** Annual (Calendar Year)

**Division:** Transportation Investment Management

**Why is it important?** Over the past decade, highway infrastructure funding has not kept pace with inflation. Therefore, while the needs of an aging transportation system have increased, purchasing power has decreased. This trend has amplified the importance of making prudent, data-driven highway improvement decisions. Wisconsin DOT implemented this corporate performance measure to assess how individual region improvement programs align with improvements suggested by the department's asset management model. The goal is to improve consistency in the use of asset management data and techniques. This measure will guide project programming and also help to illustrate system needs and investments to legislators, citizens and industry stakeholders.

**Performance measure target:** To have 3R network (resurfacing, restoration and rehabilitation) scheduled projects align with the 3R asset management model at a level of "good" or above at both the statewide and regional levels (matched location 80 percent, matched scope 65 percent and matched time 65 percent).

**Figure:** 3R scheduled projects vs. 3R modeled projects



**How do we measure it?** Roadway segments for the first four years of a region's scheduled projects documented in the 3R improvement program are compared to a set of "need-based modeled" projects. "Need" is based on safety (rate and severity) and pavement condition (when and how the Pavement Management Decision Support System recommends a treatment). "Modeled" project locations coincide with the termini of improvement program projects where possible. This coincidence allows for a one-to-one comparison of "programmed" versus "modeled" project location, scope (level of improvement) and timing (priority).

**How are we doing?** All regions remain in the "good" or "acceptable" category for all measures and will likely improve as refinements to a statewide scoping theme and prioritization mechanism are completed and implemented, thereby enabling increased compliance with the performance measures.

**What factors affect results?** Perfect conformity with the asset management model is not the desired outcome of this measure. Due to data limitations at the "planning level," targets have been set at 80 percent for Location and 65 percent for Scope and Timing. Accepting less than 100 percent conformity recognizes that existing data and models cannot capture all the variables that are essential for determining project location, scope and timing. This measure facilitates improved investment decisions through effective use of data-driven asset management tools and techniques. The model provides "planning level" information that serves as a starting point for program planning. The department's planners and engineers then use this data to streamline the process of formulating "project level" decisions. The measure is a guide to ensure general conformity with the asset management principals embodied in the scoping and prioritization themes. Variation in performance across regions is expected.

**What are we doing to improve?** The department is revisiting the current prioritization and scoping themes developed by staff technical experts in the early 2000s. The asset management investment methodology will be updated to address current realities and challenges related to limited funding, aging pavements, traffic volumes, and other issues that have emerged since the theme was originally developed. A more robust prioritization and scoping theme will enable the department to more consistently program projects in a way that facilitates system service at the lowest lifecycle cost and will also enable exacting performance measures. Leaders across the department are providing input into the formulation of this updated prioritization and scoping theme.

# Wisconsin Department of Transportation

## MAPSS Performance Improvement



### Preservation: State Highway Pavement Condition (backbone)

**Report Date:** April 2017

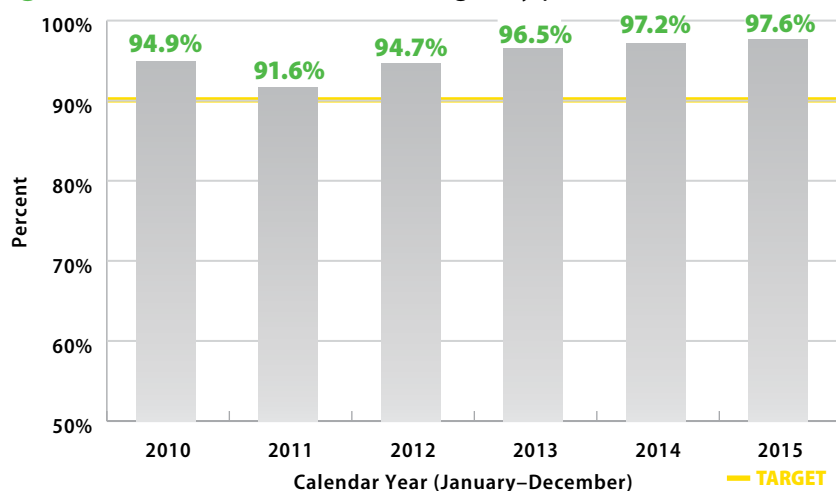
**Data Frequency:** Annual (Calendar Year)

**Division:** Transportation Investment Management

**Why is it important?** Backbone highways are multi-lane highways connecting all major population and economic regions of the state. This 1,588-mile network provides economic links to national and international markets (e.g., Interstates 39, 41, 43, 90 and 94; US Highways 10, 41, 51, 53 and 151; and State Highway 29). Good condition pavement promotes the safe, efficient movement of people and products throughout Wisconsin. Comprehensive pavement condition data is necessary to determine cost-effective maintenance and improvement strategies that extend the life and serviceability of the state trunk highway system.

**Performance measure target:** The goal is to have 90 percent of backbone highway pavement rated fair or above using the most cost-effective pavement improvement methods available.

**Figure:** Percent of state backbone highway pavement rated fair or above



**How do we measure it?** The Pavement Condition Index (PCI) method is used for rating pavement condition based on visual signs of pavement distress, such as cracks, ruts and potholes. PCI is a numerical rating that ranges from 0 to 100—where 100 represents pavement in excellent condition and 55 represents a minimum rating for pavement in fair condition. Specialized pavement data collection vehicles gather data on the state trunk highway system on a two-year statewide collection cycle.

**How are we doing?** The 2015 data shows 97.6 percent of the backbone system in fair or above condition. Backbone highways typically rate higher than non-backbone highways. This is expected since backbone pavement needs are prioritized due to their importance to overall system function. While backbone highways represent only 13.5 percent of state trunk highway miles, they carry 49 percent of state trunk highway traffic and approximately 70 percent of the freight tonnage and value traversing Wisconsin's state trunk highways.

**What factors affect results?** In 2015, the percentage of backbone pavement in fair or above condition improved slightly. Generally, backbone pavement needs are prioritized above non-backbone pavement needs due to their importance to overall system function. Pavement condition is also affected by material quality, adequacy of pavement design, traffic loading, improvement and maintenance history, age, and environmental factors such as temperature and moisture. The department considers all of these factors when using asset management tools and strategies to determine investment levels and steward highway improvement funding provided through the state budget.

**What are we doing to improve?** The department continues to research, develop, and implement pavement rehabilitation and maintenance processes that maximize the long-term health of the highway system. This includes researching and testing new materials, as well as enhancing asset management strategies with improved data, analysis tools, and prioritization to make sound investment decisions. The improved collection methodology enhances the effectiveness of the Pavement Management Decision Support System (PMDSS). PMDSS uses pavement data to assist engineers, planners, and analysts in determining which segments of roadway to include in the six-year improvement program.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Preservation: State Highway Pavement Condition (non-backbone)

**Report Date:** April 2017

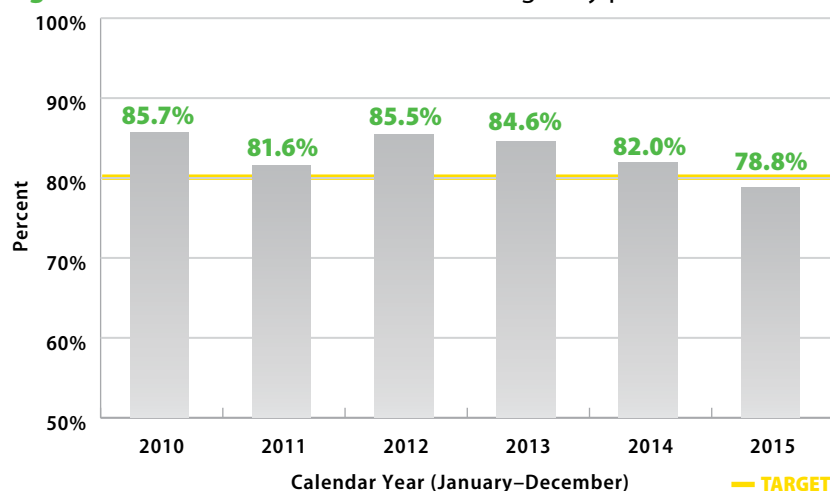
**Data Frequency:** Annual (Calendar Year)

**Division:** Transportation Investment Management

**Why is it important?** The majority of the state's trunk highway system is on non-backbone highways. Known internally to WisDOT as the 3R (resurfacing, restoration and rehabilitation) system, these highways comprise 10,167 of the nearly 12,000 total centerline miles in the entire system. Keeping these highways in good condition helps to promote the safe, efficient movement of people and products throughout Wisconsin. Comprehensive pavement condition data is used to determine cost-effective maintenance and improvement strategies that extend the life of the state highway system.

**Performance measure target:** The goal is to have 80 percent of non-backbone highway pavements rated fair or above using the most cost-effective pavement improvement methods available.

**Figure:** Percent of state non-backbone highway pavement rated fair or above



**How do we measure it?** The Pavement Condition Index (PCI) method is used for rating pavement condition based on visual signs of pavement distress, such as cracks, ruts and potholes. PCI is a numerical rating that ranges from 0 to 100—where 100 represents pavement in excellent condition and 55 represents a minimum rating for pavement in fair condition. Specialized pavement data collection vehicles gather data on the state trunk highway on a two-year statewide collection cycle.

**How are we doing?** The 2015 data shows 78.8 percent of the non-backbone system in fair or above condition. Non-backbone highways carry about 51 percent of all state trunk highway traffic and approximately 30 percent of the freight tonnage and value traversing Wisconsin's state trunk highways. Without increased investments, Wisconsin's pavement will continue to deteriorate as more costly improvements associated with an aging system consume financial resources and delay other needed rehabilitation projects.

**What factors affect results?** The decrease in 2015 pavement condition is attributable to funding constraints. Insufficient funding from federal and state sources negatively affects pavement condition. Pavement condition is also affected by material quality, adequacy of pavement design, traffic loading, improvement and maintenance history, age, and environmental factors such as temperature and moisture. The department considers all of these factors when using asset management tools and strategies to determine investment levels and steward highway improvement funding provided through the state budget.

**What are we doing to improve?** The department continues to research, develop, and implement pavement rehabilitation and maintenance processes that maximize the long-term health of the highway system. This includes researching and testing new materials, as well as enhancing asset management strategies with improved data, analysis tools, and prioritization to make sound investment decisions. The improved collection methodology enhances the effectiveness of the Pavement Management Decision Support System (PMDSS). PMDSS uses pavement data to assist engineers, planners, and analysts in determining which segments of roadway to include in the six-year improvement program.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Preservation: State Bridge Condition

**Report Date:** April 2017

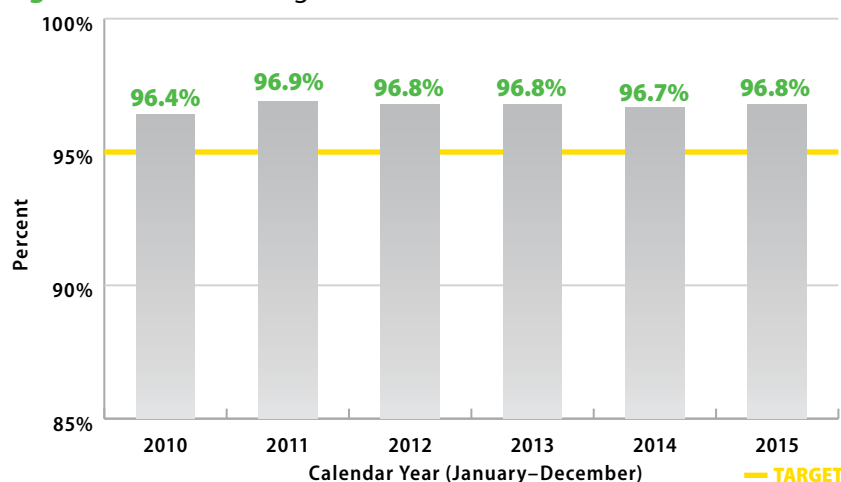
**Data Frequency:** Annual (Calendar Year)

**Division:** Transportation System Development

**Why is it important?** Wisconsin bridges are critical infrastructure assets of the highway transportation network. Ensuring safety for the traveling public is a top priority for the department. Inspecting and evaluating bridges is a key component of meeting this objective. Bridges with a condition rating of poor are considered deficient and may need corrective action to ensure current and future operation of the transportation system. An accurate understanding of the condition of the inventory of bridges allows for planning and prioritizing limited resources to address operational needs.

**Performance measure target:** The department's goal is to have 95 percent of Wisconsin's state-owned or maintained bridges rated fair or above.

**Figure:** Percent of bridges rated fair or above



**How do we measure it?** The department performs bi-yearly safety inspections and condition assessments of bridges. This is the designated frequency in National Bridge Inspection Standards (NBIS). Through these inspections, condition rating data is collected for the deck, superstructure and substructure with an overall rating of good, fair or poor condition assigned each calendar year. Bridges with a poor condition rating and open to traffic are safe; however, these structures may need corrective action to ensure continued operation.

**How are we doing?** The department works to allocate available resources to meet the safety and mobility needs of the state. Currently, 96.8 percent of Wisconsin's 5,267 state-owned or maintained bridges have a good rating or fair rating, while 3.2 percent of state bridges have a poor condition rating. There are 47 state-owned bridges with weight restrictions, an improvement from 49 state-owned weight restricted bridges in 2014. The above yearly data shows that Wisconsin has been exceeding the goal of 95 percent in good/fair condition over the past five years. When including Wisconsin's 8,849 local bridges, the good/fair bridge condition rating drops to 91.8 percent, which is better than the national average of approximately 89.5 percent. The state highway system network accounts for 10 percent of the total mileage in Wisconsin, yet handles 60 percent of the total vehicle miles traveled.

**What factors affect results?** The increasing average age of the state bridge inventory is a significant factor. The average age of state system bridges is more than 34 years. Wisconsin puts a high emphasis on maintaining and improving its bridges through its rehabilitation and replacement improvement programming. Bridges receive the highest priority in the project selection process. Wisconsin spends additional state money above the federal dollars it receives from the bridge program to maintain its bridges.

**What are we doing to improve?** The department continues to improve the bridge inspection and bridge management programs by utilizing new technology and innovative management practices. In 2015, the department deployed mobile device technology for structure inspections and incorporated Highway Structure Information System (HSIS) asset management upgrades to improve the timeliness and accuracy of our structural data. Additionally, the department introduced a bridge preservation policy that programs lower level treatments and action to extend the long-term performance of the bridges on our state highways.

# Wisconsin Department of Transportation

## MAPSS Performance Improvement



### Preservation: State-owned Rail Line Condition

**Report Date:** April 2017

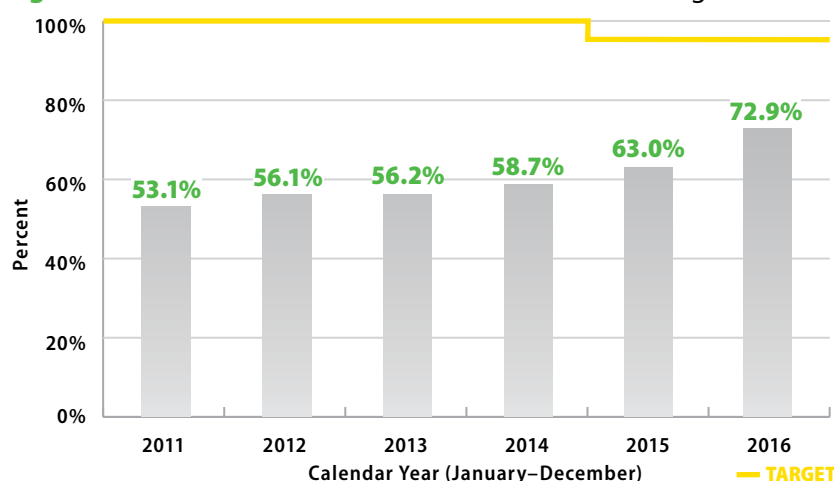
**Data Frequency:** Annual (Calendar Year)

**Division:** Transportation Investment Management

**Why is it important?** The efficient movement of freight throughout the state enhances Wisconsin's economic productivity and competitiveness. It is critical to maintain train operating speeds as high as possible to optimize the daily movement of freight in the state.

**Performance measure target:** The department's goal is to have 95 percent of state-owned rail line miles functioning at Federal Rail Administration (FRA) Class 2 operating speed standards. The FRA Class 2 standards include tracks capable of operating loaded 286,000 pound rail cars above 10 miles per hour and not exceeding 25 miles per hour.

**Figure:** Percent of miles of state-owned rail line meeting FRA Class 2 standard (10–25 mph)



**How do we measure it?** The track is evaluated based on the percent of track miles operating at speeds allowed by the FRA's Class 2 Track Safety Standards. The percent of miles of rail line meeting the standard is calculated by dividing the amount of track meeting or exceeding FRA Class 2 standards by the total amount of state-owned rail lines.

**How are we doing?** There are approximately 718 miles of rail line owned by WisDOT. In 2016, an additional 70.6 miles were improved to meet FRA Class 2 standards through WisDOT funded projects and zero miles of rail line deteriorated to below FRA Class 2 standards. A total of 523.36 of the 718.22 miles of track (72.9 percent) met the FRA standards. This is a 9.9 percentage point increase from 2015 to 2016 in the number of miles that meet the standards. However, the relatively large increase in 2016 is somewhat anomalous and is not anticipated to occur every year. Several multi-year improvement projects were completed in 2016 and contributed to this measure.

**What factors affect results?** Variability in railroad infrastructure program funding levels affects the amount of track improvement projects that can be initiated in a particular program cycle. In addition, rail projects sometimes require more than one year to complete, creating the appearance of little progress in one year and substantial progress in the next. Another factor is that railroad project funds can be spent on rail bridge projects that do not affect this measure, but do improve overall rail system safety, speed, efficiency, and reliability. Funds may also be used for the acquisition of new rail lines to the system. Acquisition of new rail lines is focused on the continued preservation of short-line rail service needs statewide. While this supports economic development, it increases the total miles system-wide and reduces the proportion of available rail improvement project funding. Last, the overall state of the economy impacts the volume of goods transported by the railroads, the revenue it produces, and the reinvestment in railroad structures by the railroad companies.

**What are we doing to improve?** The department reviews the annual maintenance plans of companies operating on state-owned railroad track and discusses opportunities to upgrade rail track and structure conditions. The department's rail grant and loan program funds railroad infrastructure rehabilitation projects to improve track structure and increase operating speeds each year. Annual compliance inspections are done to ensure that railroads are properly maintaining state-owned rail lines. Due to ongoing investment in rail lines and enforcement of maintenance standards, the department expects this upward trend in the percent of miles meeting FRA's Class 2 operating standards to continue.



# Wisconsin Department of Transportation MAPSS Performance Improvement



## Preservation: Airport Pavement Condition

**Report Date:** April 2017

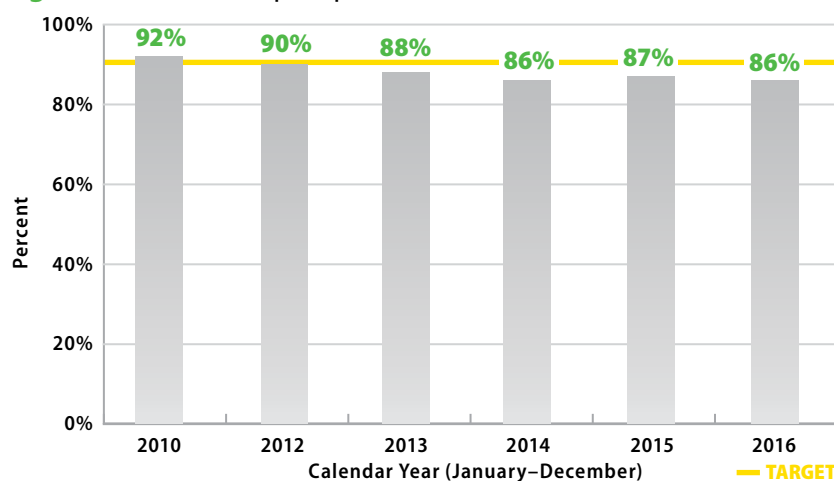
**Data Frequency:** Annual (Calendar Year)

**Division:** Transportation Investment Management

**Why is it important?** Pavement condition ratings are a primary indicator of the long-term structural health of the state's airport system. The department evaluates pavement conditions at 98 publicly-owned airports identified in the State's Airport System Plan (SASP). This encompasses airports of all sizes including the state's largest, General Mitchell International Airport.

**Performance measure target:** The department's goal is to have 90 percent of airport pavement with a rating of fair or above as determined by airport classification and pavement function.

**Figure:** Percent of airport pavement rated fair or above



**How do we measure it?** The Pavement Condition Index (PCI) method is used for rating pavement condition based on visual signs of pavement distress, such as cracks, ruts and potholes. The PCI is a numerical rating that ranges from 0 to 100, with 100 being a pavement in excellent condition. Approximately one-third of the 98 SASP airports are inspected each year. The average pavement condition among the three functional pavement types (runways, taxiways and aprons) is calculated and compiled for each calendar year and includes an assessment of the 98 SASP airports.

**How are we doing?** The one point reduction from 2015 is relatively minor. Analysis of the data indicates the percentage of statewide runways rated fair or above is at 90, which meets the overall target. Percentage of runways rated fair or above at commercial service airports and general aviation (GA) airports are at 93 and 91, respectively. Taxiways and apron pavements are below the 90 percent target at 85 and 77, respectively, which results in the overall statewide percentage of 86, which is below our target of 90. Further analysis by airport type indicates the GA airports remained the same or increased in all pavement conditions, while commercial service airports saw a decline in PCI in all three functional pavement types. The largest drop at commercial service airports was associated with taxiway and apron pavements, which have the lowest priority of the three pavement types in the state and federal priority system.

**What factors affect results?** Airports are locally-owned and decisions regarding improvements are handled at the local level. Challenges occur when a pavement is in need of rehabilitation but the airport owner has prioritized other projects. As high priority safety projects are completed, airports are expected to begin shifting their focus to pavement rehabilitation priorities. In addition, as runway pavement needs are met, WisDOT anticipates that taxiway and apron pavement rehabilitation will become a higher priority that will result in a rebound in the overall rating at or near the target level in the coming years. The level of state funding has remained relatively flat for more than 10 years. Inflationary effects have resulted in less buying power over time.

**What are we doing to improve?** The department established minimum PCI levels to provide a threshold value for pavements according to use and airport classification. These thresholds provide the department and local authorities with the ability to prioritize projects and to program future pavement rehabilitation projects. The goal is to keep these pavements at or slightly above their minimum values when construction work actually occurs.

In order to encourage the local authorities to preserve proper pavement conditions, the airport must have pavements above the minimum PCI value before airports can receive federal or state aid for any other airport improvement project.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Preservation: State Highway Roadside Maintenance

**Report Date:** April 2017

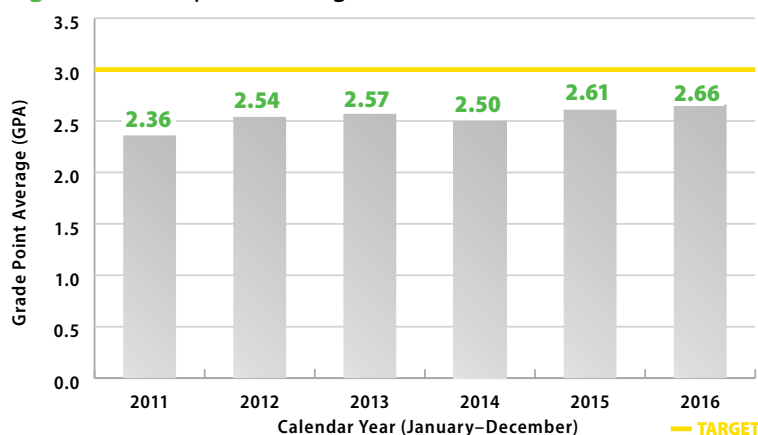
**Data Frequency:** Annual (Calendar Year)

**Division:** Transportation System Development

**Why is this important?** Many factors affect the safety, efficient operation and longevity of our highway system. Effective and consistent maintenance efforts preserve our investment in the highway system, enhance safety and economic productivity, and minimize the impact to the natural environment.

**Performance measure target:** The department's goal is to reach and maintain a 3.0 out of 4.0 grade point average (GPA) for 29 features evaluated each year.

**Figure:** Grade point average for the maintenance condition of state highway roadsides



**How do we measure it?** Twenty-nine features are evaluated under five contributing categories: Critical Safety, Safety/Mobility, Stewardship, Driver Comfort and Aesthetics. Condition data is collected each fall as part of a field review process. Rating teams composed of WisDOT region maintenance coordinators and county patrol superintendents evaluate a random sample of 1,200 one-tenth mile segments around the state. Conditions of the features are assessed, documented and used in creating grading curves. Pre-established grading curves help identify areas for improvement.

**How are we doing?** The statewide GPA increased 0.05 points in 2016, to its highest level in the last seven years. Overall conditions stayed the same between 2015 and 2016, with a slight improvement in the statewide grade point average due to the addition of a new highway feature that received an "A" grade. Seven features changed one grade level based on minor backlog changes of one to three percentage points. Conditions improved for gravel shoulders and cracking—two features with supplemental funding provided by the WisDOT Performance-Based Maintenance Initiative. The backlog for gravel shoulder drop-off and cross slope declined eight and five percentage points, respectively. The maintenance backlog for cracking on paved shoulders also fell seven percentage points. Backlogs increased measurably for flumes and drains with flumes dropping from a level of service grade of "C" to "F" and drains from "C" to "D".

**What factors affect results?** The annual GPA is affected by baseline conditions, maintenance budget levels and policies, winter maintenance costs and improvement program investments. The department's first maintenance priority is snow and ice removal, while the balance is spent on non-winter activities. Historically, about three-quarters of each maintenance dollar is programmed to winter, pavement and structure maintenance activities, with the balance used on system needs associated with the 29 Compass features. The highway maintenance condition largely depends on the balance of routine maintenance agreement funding remaining after winter operations, as well as improvement project programming levels.

**What are we doing to improve?** The department employs innovative strategies to address the backlog of maintenance needs created by the previous shortfall in funding. These approaches include leveraging the improvement program, focusing on cost efficient delivery of winter maintenance services, improved reporting of Compass results to the regions, and linking targets to county routine maintenance agreement activities. The department strives to respond to annual variability in winter maintenance cost demands while sustaining a stable annual level of financial commitment to non-winter routine maintenance needs. Alternate contracting methods and broader-based delivery options are being piloted to test enhancements to the long standing county-based routine maintenance delivery model. Efficiency gains from these pilot efforts along with additional funding over time will help meet the 3.0 target GPA. The 2016 condition data represents the third year at the \$170 million routine maintenance program funding level.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Preservation: Material Recycling

**Report Date:** April 2017

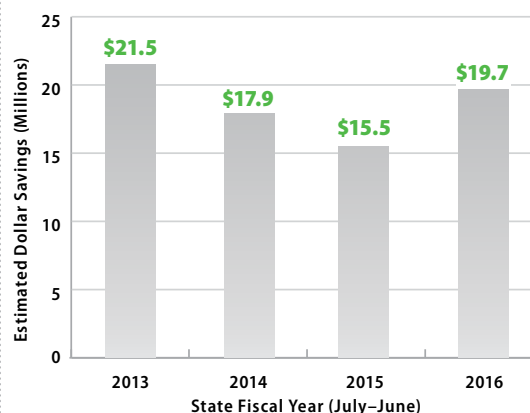
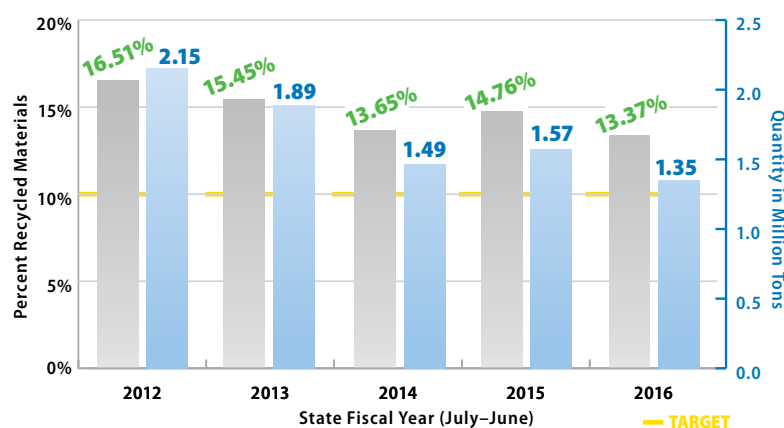
**Data Frequency:** Annual (State Fiscal Year)

**Division:** Transportation System Development

**Why is it important?** The department strives to incorporate environmental sustainability or green initiatives in its vision for providing a safe and efficient transportation system. This includes incorporating the use of recycled materials in improvement projects to lessen the impact on Wisconsin's environment and to preserve resources for future generations.

**Performance measure target:** The department's goal is to make sure recycled materials are incorporated into projects. The goal based on the new measuring methodology is to have 10 percent of virgin materials replaced with recycled materials in construction projects.

**Figures:** Recycled materials used in pavement and bridge construction



**How do we measure it?** Recycled material quantities are calculated based on total tonnage of construction bid items for the fiscal year where recycled material are commonly used. Steel that is extracted and recycled by the construction contractor is also included in the total tonnage. The use of recycled materials is measured by the percentage of virgin material replacement in some key construction materials. By reporting the use of recycled materials by percentage of the product being placed, we will be able to better track usage based on design and material policies.

**How are we doing?** The department remains committed to conserving resources, minimizing waste, keeping materials out of landfills and avoiding Greenhouse Gas emissions. Each year the size and types of projects in the Improvement Program dictate the amount of recycled materials eligible to be used in projects. In 2011, the department achieved an unusually high level of recycled materials use due to the number and type of projects that year. Almost all projects incorporate recycled materials, the largest type being recycled concrete followed by reclaimed asphaltic pavement in hot mix asphalt and base course. For every ton of fly ash that has been used to replace a ton of Portland cement, the department saves one ton of CO<sub>2</sub> and one million British thermal units (BTUs) of energy. The department leverages opportunities, when possible, to utilize recycled materials. An example was the use of bottom ash from nearby, previously landfilled ash waste for the I-94 project in 2015.

**What factors affect results?** The department wants to encourage the use of recycled materials and has written project specifications to allow recycled materials. Ultimately, the contractor makes the decision on the materials to use based on market conditions. The economy, fuel costs and landfill tipping fees affect the cost effectiveness and attractiveness of recycling.

**What are we doing to improve?** The department continues to work with other states at a national level and with universities to develop new technologies and methods to incorporate not only greater amounts of recycled material but also new recycled materials. These efforts have yielded significant results in the past in the form of new materials being recycled and greater amounts of the material currently being used. Cold in-place recycling of existing asphalt pavements provides both recycling and pavement performance benefits and will be used more in coming years. The department has partnered with UW-Madison's Recycled Materials Resource Center on their web-based tool that identifies waste material supplies that are available and can be used by contractors.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Safety: Traffic Fatalities

**Report Date:** April 2017

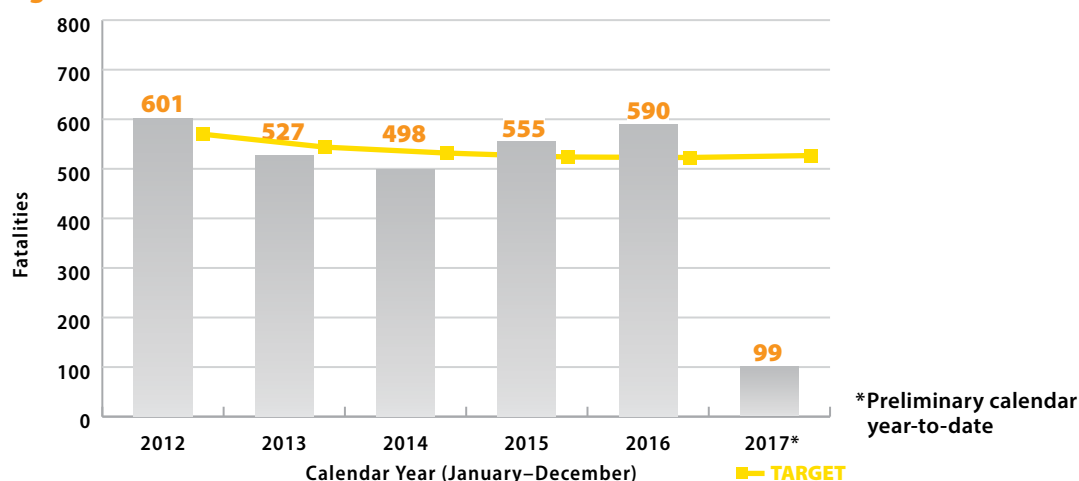
**Data Frequency:** Quarterly (Calendar Year)

**Division:** State Patrol

**Why is this important?** Any preventable traffic death on Wisconsin's roadways is one too many. Each fatality is a tragedy—a person who will not be returning home.

**Performance measure target:** For each calendar year, the department seeks to reduce traffic fatalities by five percent from the prior five-year rolling average. This supports the department's over-arching safety goal of zero deaths on Wisconsin roads (Zero in Wisconsin).

**Figure:** Number of traffic fatalities



**How do we measure it?** The measure uses traffic fatality data collected through the national Fatality Analysis Reporting System (FARS). The information is not considered final until approximately June of the following year as data is reported late or needs verification.

**How are we doing?** Wisconsin is again experiencing a reduction in traffic fatalities on its roads even though a rise occurred in 2015 and 2016. As of March 31, 2017, Wisconsin has had 99 fatalities, which is 18.9 percent less than 2016 and 5.7 percent less than the five-year rolling average. Even though Wisconsin has had 31 fatality-free days in 2017 (the five-year average is 33), there are still far too many needless and preventable deaths on our roadways. In many instances, drivers and passengers have been ejected from the vehicle because they were not wearing safety belts. Wearing a safety belt is the single most effective way to prevent ejection or being violently thrown around inside the vehicle during a crash. Wisconsin's fatality rate for 2015 was 0.89 per 100 million vehicle miles traveled (VMT), which is the second lowest recorded.

**What factors affect results?** Traffic crashes are avoidable events caused by such factors as human behavior, vehicle condition and environmental surroundings. Weather can also have a seasonal impact, especially on motorcycle or bicycle-related fatalities. The largest factor and most difficult to change is the risk-taking behavior of drivers and tolerance of the public toward risky behavior.

**What are we doing to improve?** The department uses a combined strategy of engineering, education, enforcement and emergency response to prevent traffic fatalities, including designing safer roads and maintaining the highway infrastructure. The department has expanded the use of multi-jurisdictional High Visibility Enforcement task forces around the state to address impaired driving, speed, pedestrian safety and safety belt use. Speed and aggressive driving are targeted through increased use of aerial enforcement in partnership with agencies across the state. The department provides ongoing educational outreach to high school students to promote safe driving, use of safety belts and eliminating driving distractions. Centerline and shoulder rumble strips have been installed along with other roadway improvements in corridors with safety concerns.

# Wisconsin Department of Transportation

## MAPSS Performance Improvement



### Safety: Serious Traffic Injuries

**Report Date:** April 2017

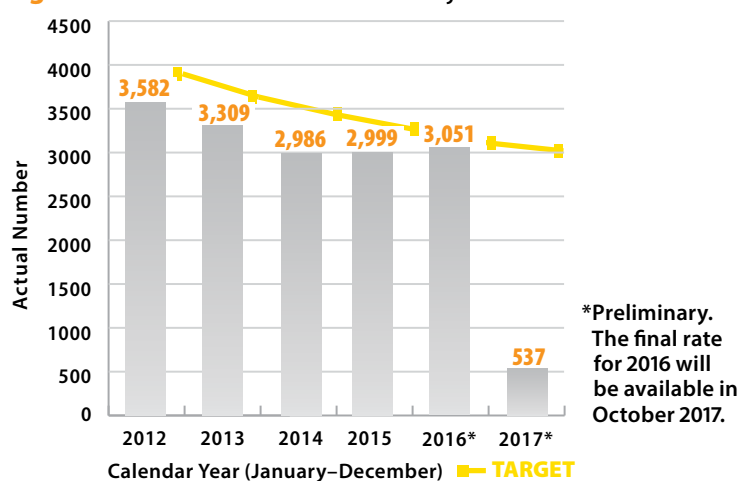
**Data Frequency:** Annual (Calendar Year)

**Division:** State Patrol

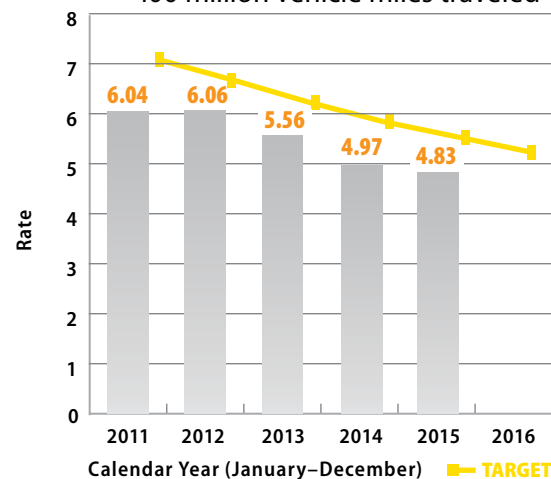
**Why is this important?** Each traffic crash potentially creates loss of life, debilitating injuries or lost income and productivity for crash victims. Any preventable traffic death or serious injury is one too many.

**Performance measure target:** The goal of this measure is to reduce the number of serious injuries from traffic crashes by five percent from the prior five-year rolling average.

**Figure 1:** Total number of serious injuries



**Figure 2:** Serious injury rate per 100 million vehicle miles traveled



**How do we measure it?** The measure uses serious injury data compiled from all traffic crash reports submitted by Wisconsin law enforcement agencies. Injuries related to vehicle crashes are calculated against vehicle miles traveled each calendar year to generate an injury rate per 100 million vehicle miles traveled. Prior year volume data used to calculate this rate is available by September of the subsequent year.

**How are we doing?** The number of serious injuries in 2017 is 537, 1.6 percent less than last year and 9.7 percent below the five-year average. When calculated against vehicle miles traveled, the serious injury rate in Wisconsin in 2015 was 4.83 serious injuries per 100 million vehicle miles traveled. This is 17.0 percent below the prior five-year rolling average of 5.82. Serious injury crashes (those that result in serious injuries) have declined from 3,990 in 2007 to 2,499 in 2015. There have been 456 serious injury crashes on Wisconsin roads in 2017 as of March 31, 2017 (preliminary), which is up from 433 (5.3 percent) in 2016.

**What factors affect results?** Traffic crashes are avoidable events caused by such factors as human behavior, vehicle condition and environmental surroundings. Weather can also have a seasonal impact, especially on motorcycle or bicycle-related crashes. For motorcyclists and bicyclists, the use of proper safety gear can reduce severity of personal injuries. Wearing a seat belt while in a car or truck is the single most effective way to reduce or eliminate injury in a crash. Safety and road design improvements and tougher laws can have a positive impact on crash frequency. In addition, the severity of injuries in crashes can be lessened through rapid and high-quality emergency medical response.

**What are we doing to improve?** The department uses a combined strategy of engineering, education, enforcement and emergency response to prevent traffic crashes and injuries, including designing safer roads and maintaining the highway infrastructure. In addition, the department has expanded the number of multi-jurisdictional High Visibility Enforcement task forces to address impaired driving, speed, pedestrian safety and safety belt use. The department is targeting speed and aggressive driving through increased use of aerial enforcement and in partnership with agencies across the state. The department provides ongoing educational outreach to high school students to promote safe driving, use of safety belts and eliminating driving distractions, such as texting. The department has installed center line and shoulder rumble strips and other roadway improvements in corridors with safety concerns.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Safety: Traffic Crashes

**Report Date:** April 2017

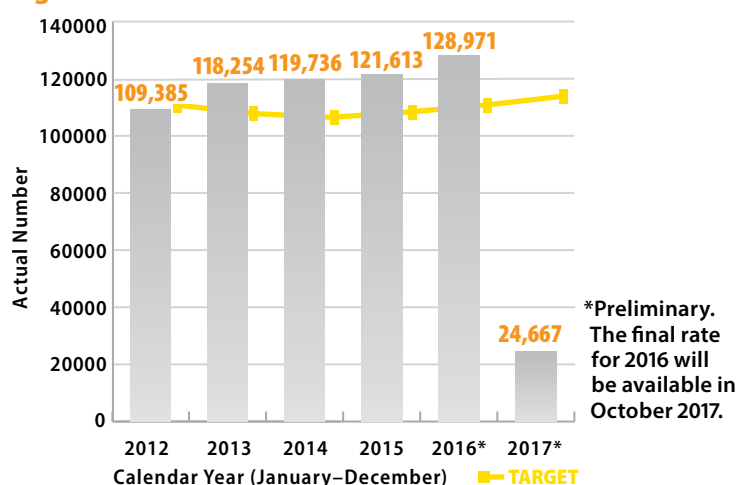
**Data Frequency:** Annual (Calendar Year)

**Division:** State Patrol

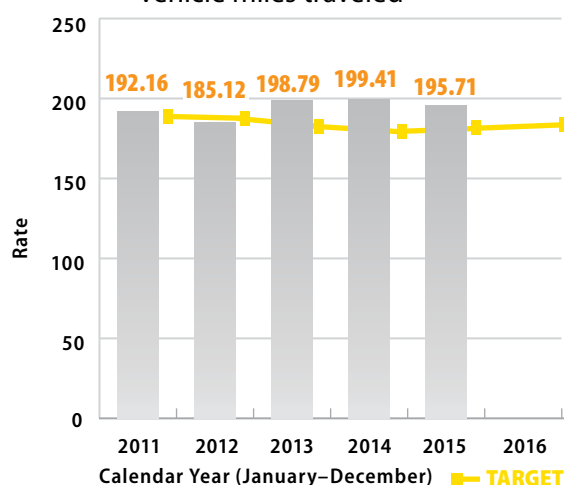
**Why is this important?** Each crash potentially creates loss of life, debilitating injuries or lost income and productivity for crash victims. Crashes on the road system also impact traffic flow and the timely movement of goods and people to their destinations.

**Performance measure target:** The goal of this measure is to reduce traffic crashes on Wisconsin roads by five percent from the prior five-year rolling average.

**Figure 1:** Total number of crashes



**Figure 2:** Crash rate per 100 million vehicle miles traveled



**How do we measure it?** The measure uses traffic crash data compiled from all traffic crash reports submitted by Wisconsin law enforcement agencies. In order to calculate the annual crash rate, the total number of crashes is divided by the number of vehicle miles traveled (in hundreds of millions). Prior year volume data used to calculate this rate is available by September of the subsequent year.

**How are we doing?** As of March 31, 2017, the number of traffic crashes on Wisconsin roads was 24,667. This is 20.3 percent below last year and 19.1 percent below the five-year average. The crash rate in 2015 decreased from the rate in 2014 by 1.9 percent. The crash rate of 183.12 in 2010 was the lowest rate recorded since 1944. In calendar year 2015, there were 121,613 total crashes (fatal crashes, injury crashes and property damage crashes) on Wisconsin roads. When calculated against vehicle miles traveled in 2015, the crash rate was 195.71 crashes per 100 million vehicle miles traveled. This is 2.1 percent above the prior five-year rolling average of 191.72.

**What factors affect results?** Traffic crashes are avoidable events caused by such factors as human behavior, vehicle condition and environmental surroundings. Weather can also have a seasonal impact, especially on motorcycle or bicycle-related crashes.

**What are we doing to improve?** The department uses a combined strategy of engineering, education, enforcement and emergency response to prevent traffic crashes and injuries. This includes designing safer roads, maintaining the highway infrastructure, educational efforts targeted on prevention, and expanding enforcement campaigns in partnership with law enforcement agencies across the state. The department works to encourage drivers to stay within the speed limit, drive sober, buckle their safety belts and eliminate driving distractions.



# Wisconsin Department of Transportation MAPSS Performance Improvement



## Safety: Safety Belt Use

**Report Date:** April 2017

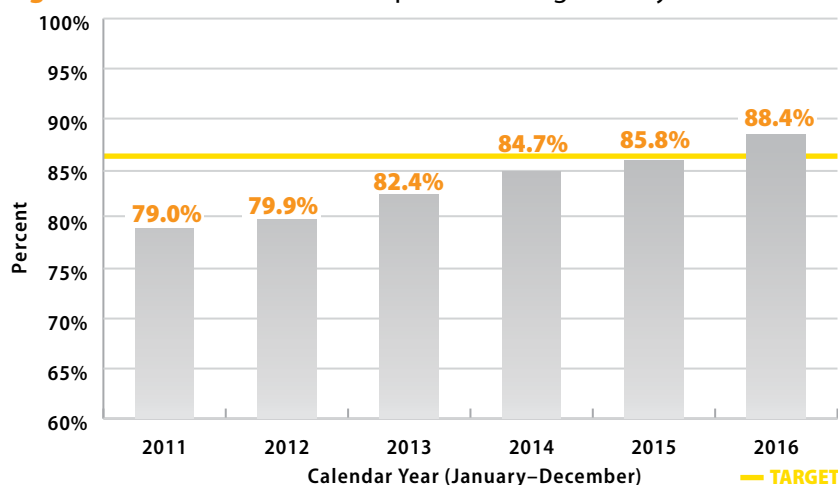
**Data Frequency:** Annual (Calendar Year)

**Division:** State Patrol

**Why is this important?** Wearing safety belts saves lives. Buckling a safety belt every time, on every trip, decreases the risk of being ejected or thrown about the vehicle in the event of a crash. In Wisconsin, a 10 percent increase in safety belt use would save about 44 lives and prevent 650 injuries each year. More than 50 percent of all passenger vehicle occupant fatalities in Wisconsin are unbelted. Motorists who do not use safety equipment are 12.3 times more likely to be killed than someone wearing a shoulder and lap belt at the time of a crash. The likelihood of surviving a crash, and possibly avoiding debilitating injuries, can be increased by the simple task of buckling a safety belt.

**Performance measure target:** The goal of this measure is to increase safety belt use to 86 percent for all passenger vehicle occupants by 2016.

**Figure:** Percent of vehicle occupants wearing a safety belt



**How do we measure it?** Using guidelines developed by the National Highway Traffic Safety Administration (NHTSA), the department conducts an annual seat belt use survey in conjunction with the annual Click It or Ticket seat belt enforcement mobilization conducted each spring. The survey data presents a statistically representative sample of the percentage of safety belt use in Wisconsin.

**How are we doing?** Safety belt use reached 88.4 percent in 2016, an all-time high for safety belt usage in Wisconsin. That means that approximately one in eight motorists is still not buckling up—putting themselves and others at risk of serious injury or death in the event of a crash. Wisconsin is approaching the 88.5 percent national average for safety belt use but still lags behind the safety belt use of neighboring states like Illinois and Michigan, which estimate safety belt use rates of more than 90 percent.

**What factors affect results?** Human behavior is the most important factor that affects safety belt use results. Consistent safety belt use saves lives and motorists need to be proactive in buckling their safety belts every time, on every trip, to promote their safety and the safety of others. Safety belt use is a law in the state of Wisconsin. Since 2009, it is a primary enforcement law, which means law enforcement officers can pull over and cite a motorist for not wearing a safety belt.

**What are we doing to improve?** The department promotes safety belt use through education and enforcement. The nationwide Click It or Ticket effort, in conjunction with NHTSA, utilizes paid advertising and enforcement to promote public awareness. Much of the educational efforts are targeted at younger drivers whose safety belt use is much lower than other age groups. The department also supports car seat fitting stations to ensure that parents and providers are instructed on how to properly install child car seats and booster seats to keep small children safe in vehicles and training instructors on safety seat installment. By buckling their safety belt every time they get in a vehicle, motorists ensure their own personal safety, as well as the safety of passengers. A NHTSA study estimates that safety belt compliance increases three percent when the penalty for not wearing a safety belt is raised from \$5 to \$25. By increasing the forfeiture from \$10 to \$25 as DOT has requested for the 2017 biennial budget, Wisconsin would expect a similar increase in compliance.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Service: DMV Wait Times

**Report Date:** April 2017

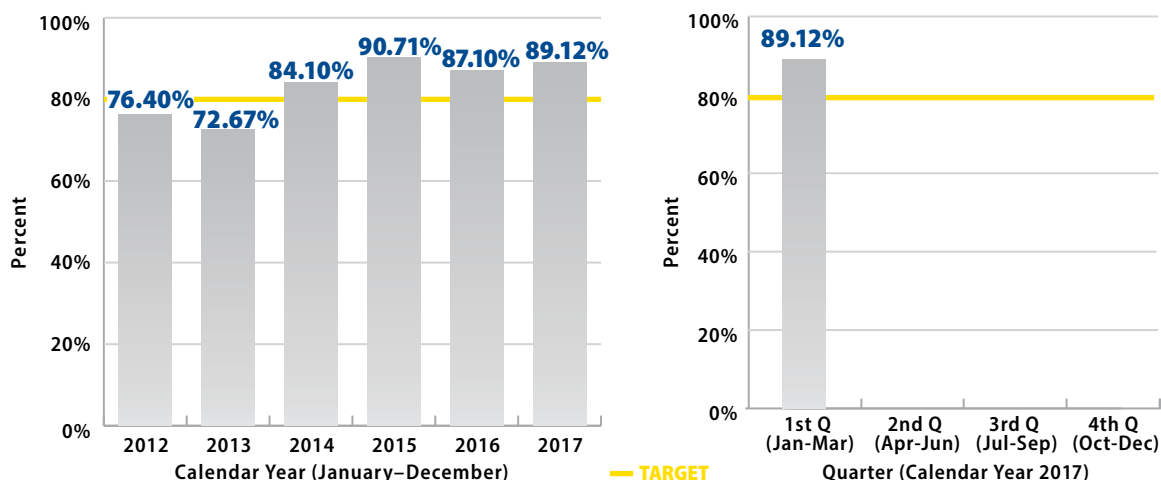
**Data Frequency:** Quarterly (Calendar Year)

**Division:** Motor Vehicles

**Why is it important?** For many customers, their primary contact with the department is through the Division of Motor Vehicles (DMV). While most DMV services do not require an in-person visit to a customer service center, the DMV service centers still experience large volumes of customers (more than two million transactions occur at offices each year). The DMV's goal is that customers receive quality service within a reasonable amount of time.

**Performance measure target:** The goal of this measure is to serve 80 percent of customers within 20 minutes of their arrival at a DMV customer service center.

**Figure:** Percent of DMV service center customers served within 20 minutes



**How do we measure it?** The measure counts all recorded wait times at the 92 Customer Service Centers and calculates the percent of customers who waited 20 minutes or less. This includes all customers who visit the 30 five-day stations and any customer seeking a product that requires a photo at the remaining 62 locations. The DMV's 30 five-day offices serve approximately 90 percent of customers.

**How are we doing?** The DMV has maintained a three-year trend of service levels over 80 percent. We continue to use projection models to balance customer service with work share completed in customer service centers. This allows us to improve internal processing metrics in conjunction with maintaining these high levels of service.

**What factors affect results?** Factors affecting this measure are staff vacancies and absences, computer system reliability and the day of the week/month (demand for services varies). The availability of self-service options, by phone and on-line, also affect the demand for counter service.

**What are we doing to improve?** DMV expanded vehicle services to 20-hour locations and has begun offering additional Saturday hours around the state. Expanding our service hours for our customers should improve this measure by spreading customer demand and reducing peak demand. Additionally, DMV has implemented an online scheduling system that provides customers the ability to make appointments as well as complete and submit applications electronically prior to arriving at a service center. This will allow DMV to better allocate resources to meet demand and decrease transaction time.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Service: DMV Electronic Services

**Report Date:** April 2017

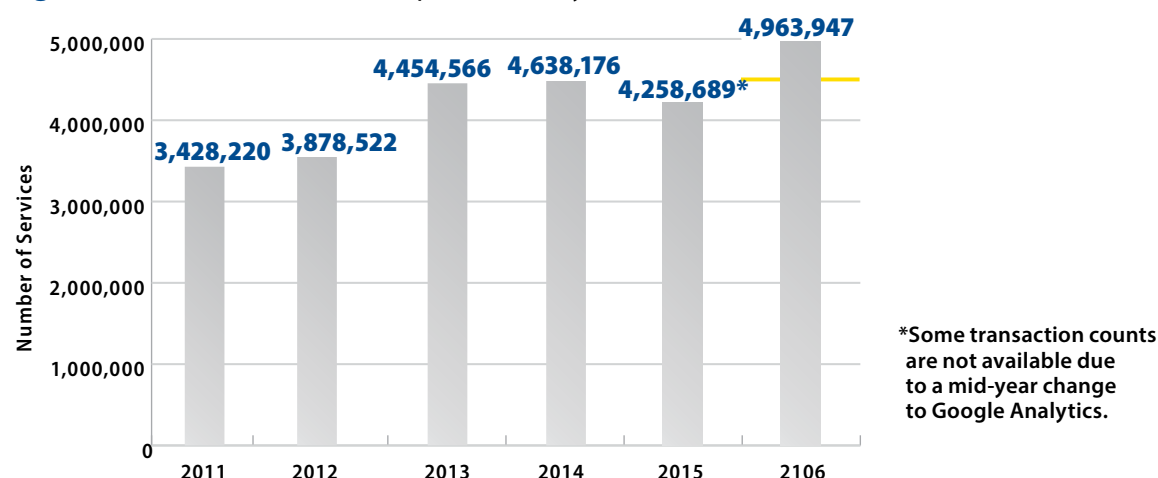
**Data Frequency:** Annual (Calendar Year)

**Division:** Motor Vehicles

**Why is it important?** The goal of this measure is to increase the number of customer performed electronic transactions by two percent each calendar year. This will further DMV's efforts of shifting from manual work by DMV staff to providing customer self-service options through automation. Using technology to improve the quality and decrease the cost of services has and will continue to be a priority for DMV.

**Performance measure target:** The goal of this measure is to increase the number of transactions performed electronically by two percent each calendar year (4.34 million in 2016). Our goal is also to represent a shift from manual work by DMV staff to self-serve through automation.

**Figure:** Total electronic services performed by customers



**How do we measure it?** The measure is a count of all electronic customer transactions performed annually.

**How are we doing?** Electronic services usage is trending in line with the two percent increase goal, with an 18 percent increase in online plate renewals.

**What factors affect results?** The total number of DMV interactions with customers varies from year to year for a variety of reasons: changes to the economy, the length of specific products (e.g., some registrations are biennial rather than annual), and changes in laws that can alter demand for particular services. Typically, DMV responds to more than 6.5 million requests for service in-person and electronically annually.

**What are we doing to improve?** The department continues to create new electronic services and encourages users to complete transactions online. Public awareness campaigns and expanded use of social media have helped to publicize the availability of DMV's electronic service options.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Service: DMV Driver License Road Test Scheduling

**Report Date:** April 2017

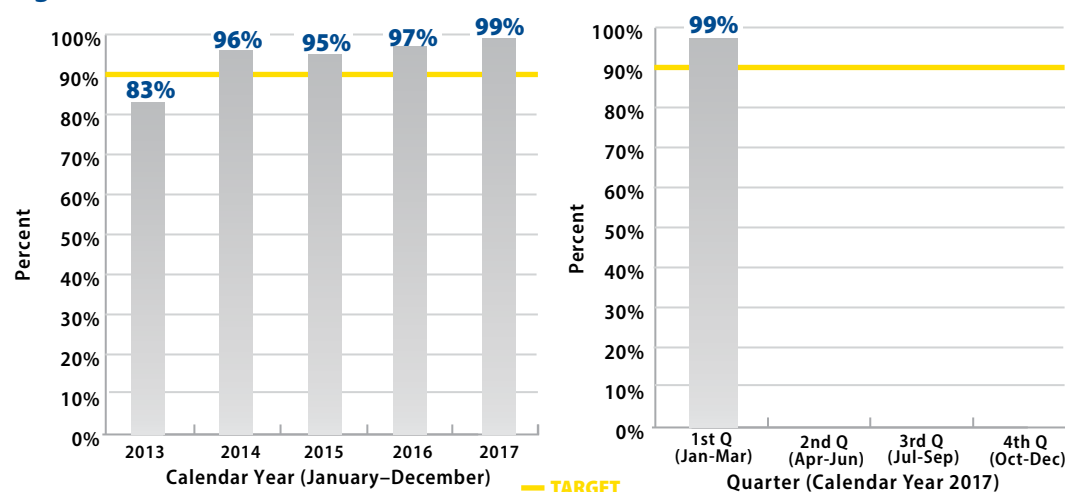
**Data Frequency:** Quarterly (Calendar Year)

**Division:** Motor Vehicles

**Why is it important?** Customers who are eligible to schedule a Class D skills test should be able to find adequate appointment slots available at the same location the instruction permit was processed. A lack of local availability upon eligibility creates an inconvenience for customers who must travel great distances to take a road test or delay scheduling.

**Performance measure target:** To have enough Class D skills tests available to meet 90 percent of the estimated demand four weeks before the customer's eligibility date.

**Figure:** Percent of DMV road test demand met four weeks in advance



**How do we measure it?** Applicants under the age of 18 must hold their instruction permit for six months before they are eligible to take a road skills test. By looking at the number of Class D Instruction Permits issued to customers under the age of 18 each week at each DMV office, and applying a multiplier to account for adult permits as well as a statewide fail rate, the DMV is able to estimate the demand for road skills tests needed at each office six months into the future. Four weeks before the actual testing week, the DMV compares the number of scheduled and available tests to the estimated demand, and calculates the demand that is not served at each DMV office and the total statewide demand not being met. The weekly data is then combined for the monthly report. If a DMV office offers more tests than the estimated demand, this is not counted toward meeting another office's demand.

**How are we doing?** The DMV has maintained the annual trend of achieving 90 percent or higher service levels. This is largely due to using improved projection models to better estimate our customers' needs.

**What factors affect results?** While there are prerequisites for scheduling a Class D skills test, it is ultimately up to the customer to schedule their test at the location and date that best meet their needs. Some customers hold a permit beyond the minimum requirement, and some customers feel more comfortable taking a test in one location over another. These personal preferences cannot be accounted for in the established goals.

**What are we doing to improve?** Used as a leading indicator to allocate staff resources, DMV continues to explore ways to use this measure to make informed resourcing decisions. With projections available six months in advance, DMV ties this information to the availability of time off and adjusts resources as needed (temporarily or permanently) to respond to weekly fluctuations in estimated demand levels. Management follows up with offices not meeting the goals to ensure the estimated demand levels are understood and to identify circumstances that influence performance.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Service: DMV Phone Service

**Report Date:** April 2017

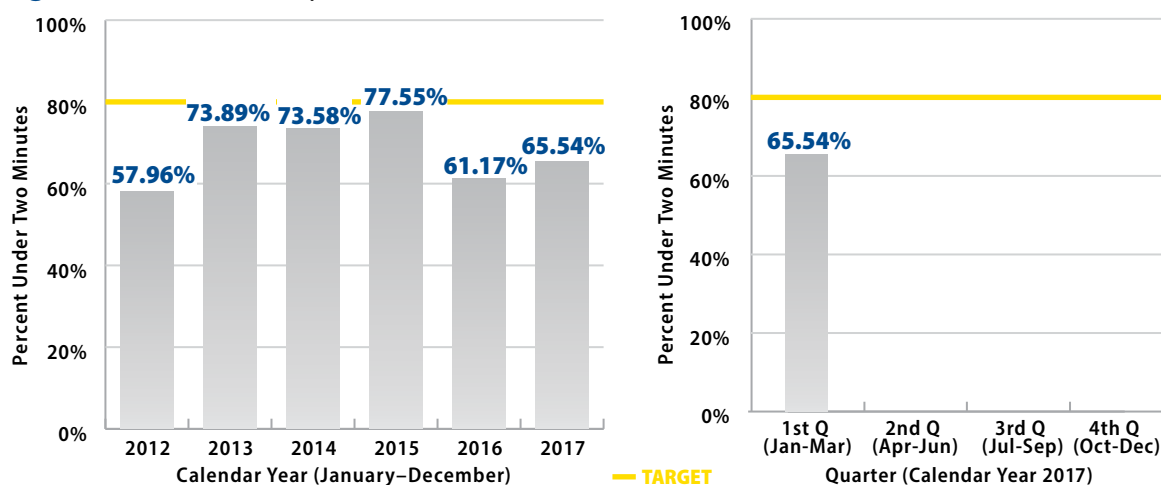
**Data Frequency:** Quarterly (Calendar Year)

**Division:** Motor Vehicles

**Why is it important?** In addition to approximately two million customers served in person each year at our service centers, the department's Division of Motor Vehicles (DMV) also receives an average of 1.11 million phone calls each year from individuals, business partners and other governmental entities. These calls range in complexity from a simple request for a service center location to questions about Commercial Driver License (CDL) eligibility requirements. Although phone customers are not physically waiting in line, they deserve timely service.

**Performance measure target:** The DMV's performance target is to answer 80 percent of all the calls offered within two minutes wait time.

**Figure:** Percent of DMV phone wait times within two minutes



**How do we measure it?** Each week, the DMV counts the total number of calls offered to representatives and calculate the percent that waited two minutes or less before speaking with a representative. Calls abandoned or blocked due to a busy signal are considered to have waited longer than two minutes.

**How are we doing?** Calendar year 2017 has begun four percentage points higher than the final closing figure of 2016.

**What factors affect results?** These include the number of representatives answering phones, the number of calls, the length of time a representative is on the phone with a customer (a product of the complexity of the call), and the representative's knowledge and skills.

**What are we doing to improve?** By expanding online services and improving the information available on the department's website, DMV can reduce the number of calls. The DMV continues to evaluate data to help identify best practices across the division's phone units and make informed decisions regarding staffing, performance management and unit structures. In addition, DMV expanded basic phone training to include more complex topics to reduce the number of calls needed to be escalated to more seasoned staff.



# Wisconsin Department of Transportation

## MAPSS Performance Improvement

### Appendix A:

#### Additional performance measures

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##### Service

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# Wisconsin Department of Transportation MAPSS Performance Improvement



## Accountability: Damage Claims Collections

**Report Date:** April 2017

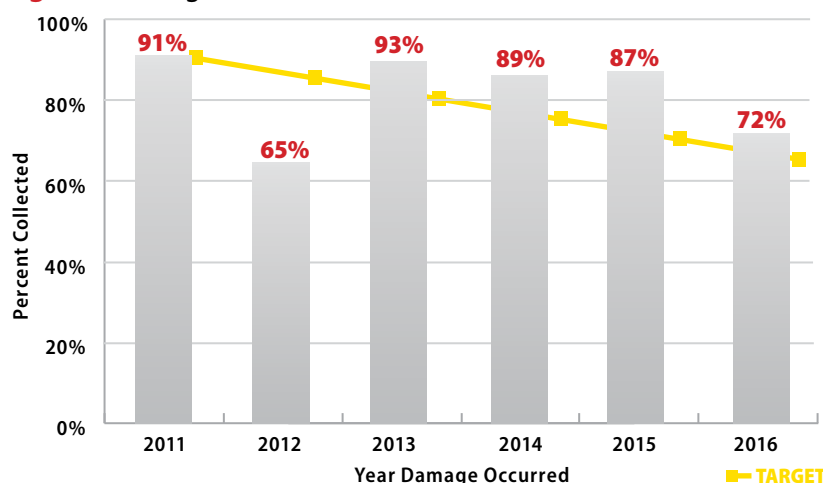
**Data Frequency:** Annual (Calendar Year)

**Division:** Business Management

**Why is it important?** The damage claims area provides reimbursement to the state highway maintenance fund by pursuing negligent drivers who cause damage to state highway property. On average, the department collects nearly \$3 million a year.

**Performance measure target:** The department's goal is for 90 percent of original invoice amount to be collected after six years, 85 percent after five years, 80 percent after four years, 75 percent after three years, 70 percent after two years and 65 percent after one year.

**Figure:** Damage claims collections



**How do we measure it?** Dollars collected are divided by the amount invoiced to calculate the percentage collected. Yearly amounts are updated annually to reflect collections on new and aged claims.

**How are we doing?** We are over our targeted goal in each year except 2012. A damage claim established in 2014 for a 2012 incident that caused damages in excess of one million dollars is still waiting to be collected. Once this is collected, we will meet or exceed our targeted goal for each year.

**What factors affect results?** Actual results are affected by the number of staff assigned to work on collections. The economy also has an impact on collections, because the department allows individuals to make installment payments on their debt. During difficult economic times, the department tends to collect lower amounts, and there are more bankruptcies filed. Results are dependent on timely reporting of claims. The sooner claims are reported, the sooner staff can initiate the collection process.

**What are we doing to improve?** The department has implemented several process improvements over the years to streamline collections. We have partnered with the Department of Revenue (DOR) to pursue "uncollectible" claims, because they have the ability to garnish wages, intercept tax refunds and levy bank accounts to collect debts owed to other state agencies. We have also partnered with a new collection agency to assist with claims incurred by parties that DOR cannot locate.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Accountability: Design on Time (Local System)

**Report Date:** April 2017

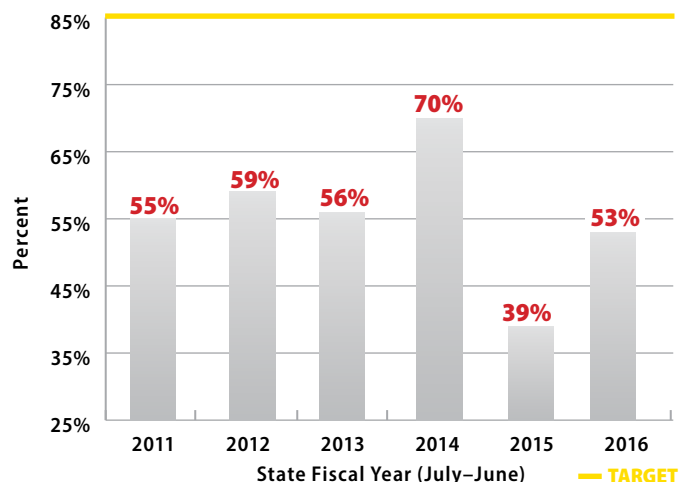
**Data Frequency:** Annual (State Fiscal Year)

**Division:** Transportation Investment Management

**Why is it important?** Local design on time measures the ability of local governments to deliver a project in the fiscal year that it was initially scheduled. This is important because it ensures our local partners meet delivery goals and succeed in effectively using allocated dollars in delivering needed transportation projects. Delivering on time also results in program stability because plans are delivered when anticipated and contingency plans do not need to be implemented.

**Performance measure target:** The department's goal is to have 85 percent of projects be delivered in the fiscal year in which they are initially scheduled.

**Figure:** Percent of projects designed on time



**How do we measure it?** The percent of projects designed on time measures the proportion of state-let local projects (road and bridge) with Plans, Specifications and Estimates (PS&E) documents submitted by the end of the state fiscal year planned at the time of project scoping. This measure does not include locally let projects. For 2016, the department revised the methodology for calculating design on time for the local system to better capture success in the delivery of completed PS&E documents on the schedule set after the scope of a project is determined. This change also better aligns the measure with the Design on Time (state system). Prior year results have been updated to reflect the new methodology..

**How are we doing?** Approximately 53 percent of projects were delivered on time in state fiscal year 2016. The increase from 2015 results reflects a return to the historical range of projects delivered on time. This measure will likely fluctuate as the department continues to work through the backlog of projects that were approved prior to the revised program procedures, which may have been scheduled for unrealistic delivery dates or have experienced delays due to issues that program procedures are now designed to help identify.

**What factors affect results?** These projects are on locally-owned facilities and many factors affect project timeliness, including the amount of resources available internally and externally (local and consultant) to manage and complete the project, cost inflationary periods between project approval and delivery, external agency review processes, environmental issues, the ability to move utilities and purchasing real estate.

**What are we doing to improve?** Timely design and construction of local transportation projects has long been a challenge to the stability of the department's total program. The department has developed a six year program of local road projects and instituted an oversight process to proactively review monthly project delivery and manage project schedules. Included in this oversight process is a method that evaluates and schedules projects in the fiscal years they are most likely to be delivered. WisDOT encourages locals to use project management tools and processes to ensure their project delivery timelines are reasonable and achievable, and has put minimum timeline requirements into effect for new project approvals based on project type. The effects of these changes should become more apparent beginning in later fiscal years as projects initially approved under prior procedures are completed. WisDOT also continues to work with locals to identify on-going process improvement strategies and help identify and incorporate best practices.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Accountability: DMV Efficiency

**Report Date:** April 2017

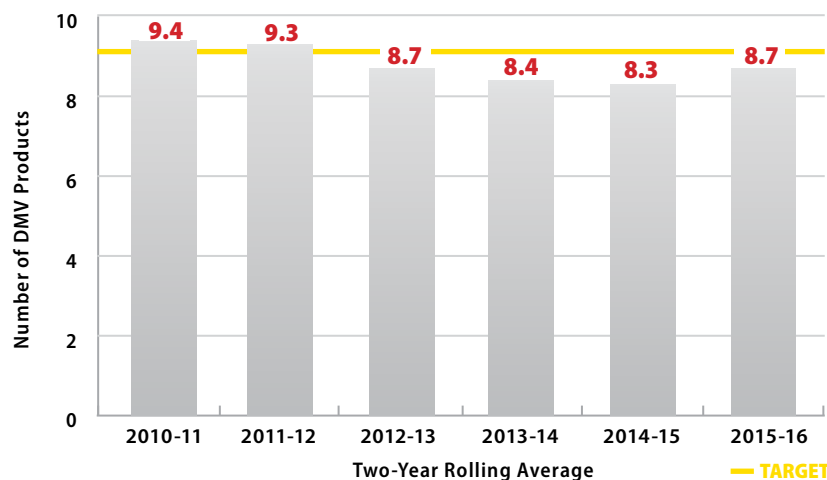
**Data Frequency:** Annual (Rolling Average)

**Division:** Motor Vehicles

**Why is it important?** The Division of Motor Vehicles (DMV) issues many products, including driver licenses, identification cards, license plates, vehicle titles and registration renewal stickers. The number of DMV products issued per hour is a measure of the efficiency and effectiveness of the department's customer service.

**Performance measure target:** The department's goal for this measure is to maintain or improve the number of products issued per hour on a two-year rolling average. A two-year average is used due to the variation in transactions from biennial vehicle registration that typically occurs in even-numbered years.

**Figure:** Number of DMV products per employee hour worked



**How do we measure it?** The number of products per hour has been predictably higher in even-numbered years because of biennial registrations. For this reason, the measure is a rolling two-year average. The calculation for the two year period is the number of products issued divided by the number of DMV employee work hours.

**How are we doing?** As less-complicated transactions move to online applications the products per hour number is expected to stay low in tandem with lower wait times. Additional expansions of station hours to include Saturdays also increases the number of hours DMV is accessible to its customers, further reducing the number of products per hour.

**What factors affect results?** This measure is sensitive to changes in population (number of products applied for), staffing (total hours worked) and automation (total time it takes to issue a product). It trades off against wait times for service. Absent significant new automation, with fewer staff, products per hour may increase but customers wait longer for their products. With automation, products per hour can be maintained or increased with fewer staff.

**What are we doing to improve?** The department is using a number of tools to improve this measure. These include increasing self-service options for customers, making use of new technologies to shorten processing time and increasing partnerships with outside vendors.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Preservation: Local Bridge Condition

**Report Date:** April 2017

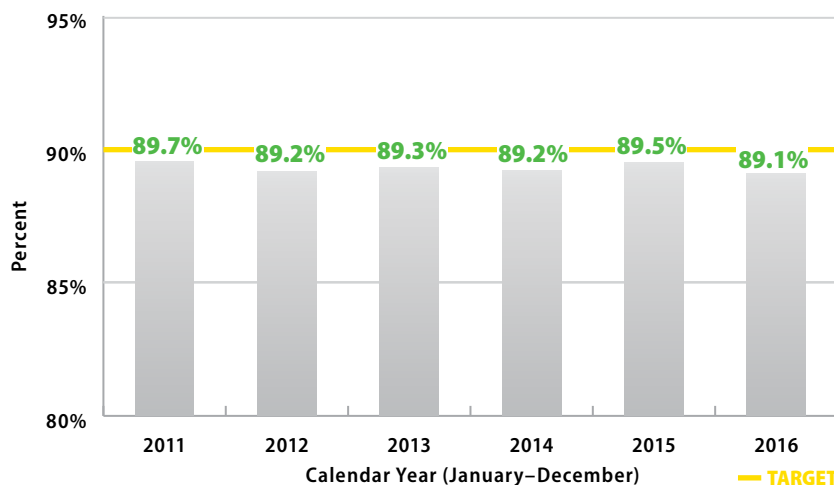
**Data Frequency:** Annual (Calendar Year)

**Division:** Transportation Investment Management

**Why is it important?** Wisconsin bridges are critical infrastructure assets of the transportation network. Ensuring safety for the traveling public is a top priority for the department. Inspecting and evaluating bridges is a key component of meeting this objective. Bridges with a condition rating of poor are considered deficient and may need corrective action to ensure current and future operation of the transportation system. An accurate understanding of the condition of the inventory of bridges allows for planning and prioritizing limited resources to address operational needs. Although local bridges are maintained, repaired or replaced through local direction, there are state programs that provide funding to help offset this expense.

**Performance measure target:** The department's goal is to have 90 percent of Wisconsin's locally-owned or maintained bridges rated fair or above.

**Figure:** Percent of local bridges rated fair or above



**How do we measure it?** Local units of government perform bridge inspections for all local bridges every two years. This is the designated frequency in the National Bridge Inspection Standards (NBIS). Through these inspections, condition rating data is collected and reported to WisDOT for the deck, superstructure and substructure, and an overall rating of good, fair or poor condition is assigned each calendar year. The final bridge rating is based on the lowest rating a bridge received for any of its components.

**How are we doing?** Currently, 89.1 percent of Wisconsin's 8,820 locally-owned or maintained bridges have a good or fair rating, while 10.9 percent of locally-owned or maintained bridges have a poor condition rating. This represents a 0.4 percentage point decline from 2015. Additionally, over the last six years the percentage of good and fair condition bridges has been relatively constant.

**What factors affect results?** Local bridge conditions are affected by the increasing age of bridges, bridge damage caused by corrosion, vehicle collision and other environmental factors, changing traffic counts, completion of bridge rehabilitation and replacement projects, and funding availability on a state and local level. Decisions on rehabilitating or replacing locally-owned bridges are the sole responsibility of the local units of government.

**What are we doing to improve?** The Local Bridge Program was established to rehabilitate and replace, on a cost-shared basis, the most seriously deficient existing local bridges on Wisconsin's local highway and road systems. WisDOT publishes a list of deficient bridges and WisDOT regional staff work with counties and local governments to identify and prioritize rehabilitation projects for consideration of funding under the Local Bridge Program. The department has also worked with various state and local partners to implement a change management system to help keep projects on schedule. In addition, the department is continuing to develop tools to aid local governments in estimating costs and prioritizing eligible projects.

# Wisconsin Department of Transportation

## MAPSS Performance Improvement



### Safety: Air Support Unit Deployments for Traffic Enforcement

**Report Date:** April 2017

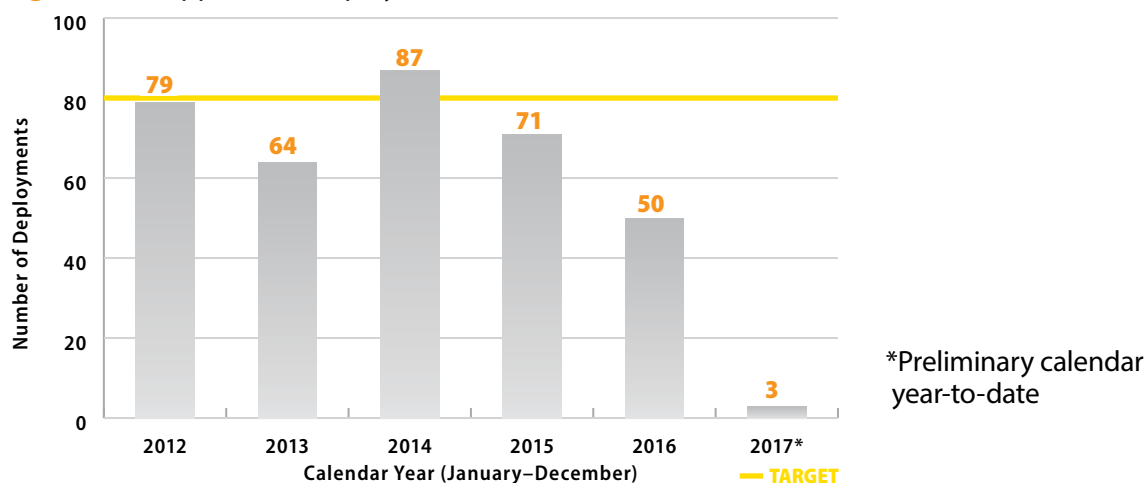
**Data Frequency:** Quarterly (Calendar Year)

**Division:** State Patrol

**Why is this important?** Speed continues to be a contributing factor in approximately 30 percent of traffic fatalities in Wisconsin. Speed is also believed to be under reported in crash reports. Using a consistent air enforcement presence through the Division of State Patrol's (DSP) Air Support Unit (ASU), along with dedicated law enforcement vehicles, is an effective method of enforcing speed and aggressive driving. Ensuring ASU is used periodically on traffic corridors helps law enforcement agencies conduct high visibility enforcement efforts and provides a deterrent effect even when air support is not present. In 2017, WisDOT will evaluate and report out on results of research into the impact of aerial speed enforcement on selected corridors.

**Performance measure target:** The goal of this measure is to increase the number of ASU traffic enforcement deployments to 80 in 2017. DSP anticipates the number of ASU deployments to eventually level off into maintenance of effort mode. Depending upon the number of law enforcement cars participating in deployments, DSP considers six to eight traffic stops per hour as optimal performance. Each traffic stop does not necessarily lead to a citation.

**Figure:** Air support unit deployments for traffic enforcement



**How do we measure it?** The ASU will document the number of deployments to assist law enforcement agencies with enforcing speed and aggressive driving laws. As part of each deployment, law enforcement agencies will also report the number of contacts they have with motorists.

**How are we doing?** There are multiple uses for state planes that impact how often the planes are available for traffic enforcement, including: surveillance for criminal investigations, photo flights to document a scene for evidentiary purposes, search missions, construction work zone enforcement, and use by other agencies such as the Department of Natural Resources (DNR). With the previous limited use of the ASU, the state had lacked an important tool to enforce speed and aggressive driving laws while seeking to change driver behavior through consistent presence offered by the ASU with ground support. There were three ASU deployments in 2017, which resulted in an average of 5.58 stops per hour.

**What factors affect results?** There are multiple mission options in WisDOT and DNR that may limit the number of flights made for traffic enforcement. Funding constraints may also limit the number of aerial enforcement deployments. Weather is an unpredictable factor that can scuttle deployments. Finally, the availability of a trained flight crew can be a limiting factor.

**What are we doing to improve?** Considering how effective aerial enforcement can be as a law enforcement tool, WisDOT has recommitted to planning and funding additional ASU deployments. DSP has dedicated additional federal funds to deployments in cooperation with local law enforcement agencies on high-volume corridors and is looking for ways to attract trained pilots. Consistent deployment of the ASU, along with a highly visible law enforcement presence on the ground, will encourage drivers to stay within speed limits, curb aggressive driving, provide safer work zones and prevent crashes.

# Wisconsin Department of Transportation MAPSS Performance Improvement



## Safety: Annual Worker Compensation Claims

**Report Date:** April 2017

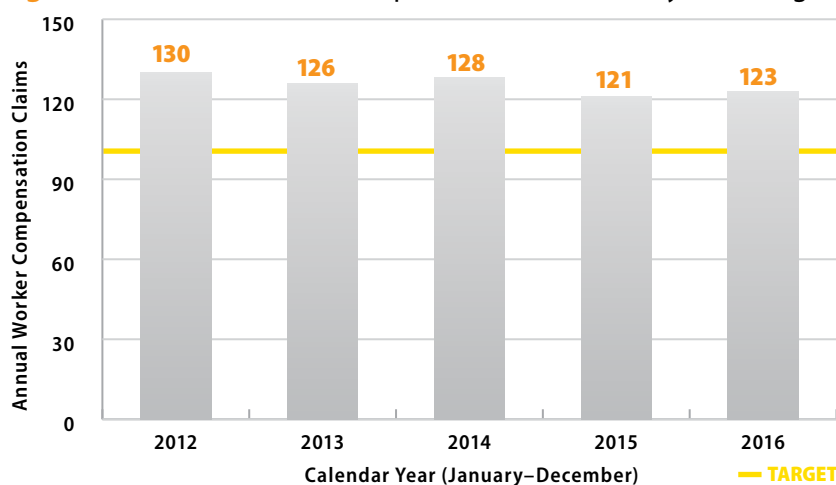
**Data Frequency:** Annual (Calendar Year)

**Division:** Business Management

**Why is this important?** Worker compensation claim costs are directly related to the safety efforts and leadership emphasized by senior management. A reduction in the annual number of claims has a direct impact on annual worker compensation costs. The goal is to reduce the annual number of claims.

**Performance measure target:** Five-year average of less than 100 claims.

**Figure:** Number of worker compensation claims (five-year average)



**How do we measure it?** The annual number of worker compensation claims is tracked in the State Risk Management Information System and provided to management internally in the *Annual Risk and Safety Report*. We use a five-year rolling average because it removes the impact of an outlier year that skews results and allows for a more accurate view of trending.

**How are we doing?** The trend appears to be holding.

**What factors affect results?** Actual results are affected by seasonal severity (summer heat and winter harshness), the age and experience of the workforce, and the workplace safety culture in general. Safety efforts emphasized by senior management help create a better safety culture throughout the agency. Any significant increase or decrease in the total number of employees would impact results.

**What are we doing to improve?** Our Risk and Safety Unit provides various safety training, including annual training for department construction staff keeping current with mandatory Occupational Safety and Health Administration (OSHA) training requirements and safety issues. We also train ergonomic coordinators and continually recruit additional coordinators with the goal of having at least one coordinator in each division region. We encourage supervisors to be proactive by having new employees ergonomically assessed and exposed to safety training options within their first two weeks. Risk and Safety provides monthly emails to safety coordinators with injury/incident reports and discuss or provide information on current safety topics and issues relevant to employees.



# Wisconsin Department of Transportation MAPSS Performance Improvement



## Safety: Annual Worker Compensation Lost Time Claims

**Report Date:** April 2017

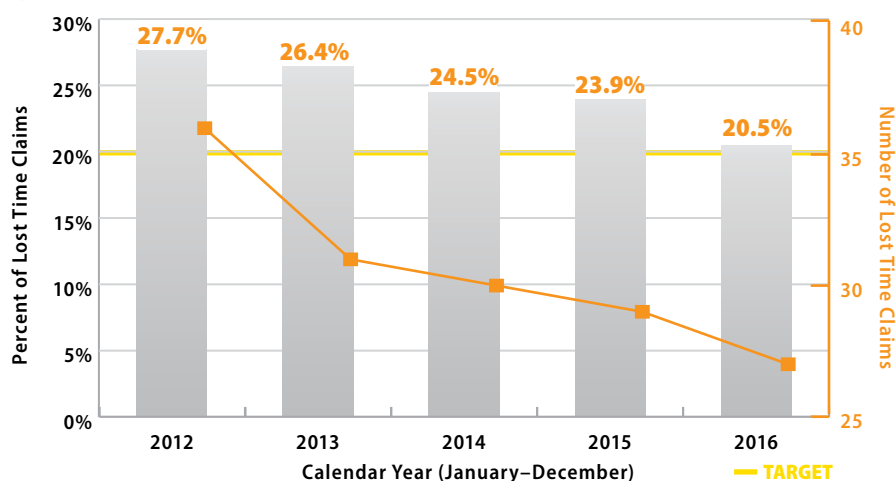
**Data Frequency:** Annual (Calendar Year)

**Division:** Business Management

**Why is this important?** Worker compensation claims are directly related to the safety efforts and leadership emphasized by senior management. Lost time claims are more severe and may indicate safety problems. A reduction in lost time claims has a direct impact on average claim cost. The aim is to reduce the percentage of lost time claims to total claims.

**Performance measure target:** No more than 20 percent lost time claims.

**Figure:** Lost time claims as a percent of total worker compensation claims (all numbers are five-year averages)



**How do we measure it?** Lost time claims are tracked in the State Risk Management Information System as those claims where an employee misses at least four days of work due to a work-related injury, as distinguished from the medical only claims. It is calculated as a percent of the total number of annual worker compensation claims averaged over a five-year period. We use a five-year rolling average because it removes the impact of an outlier year that skews results and allows for a more accurate view of trending.

**How are we doing?** The trend appears to be positive.

**What factors affect results?** Actual results are affected by seasonal severity (summer heat and winter harshness), age and experience of the workforce, and the safety culture in general. Safety efforts emphasized by senior management help create a better safety culture throughout the agency.

**What are we doing to improve?** Our Risk and Safety Unit provides various safety training, including annual training for department construction staff keeping current with mandatory Occupational Safety and Health Administration (OSHA) training requirements and safety issues. We also train ergonomic coordinators and continually recruit additional coordinators with the goal of having at least one coordinator in each division region. We encourage supervisors to be proactive by having new employees ergonomically assessed and exposed to safety training options within their first two weeks. Risk and Safety provides monthly emails to safety coordinators with injury/incident reports and discuss or provide information on current safety topics and issues relevant to employees.

# Wisconsin Department of Transportation

## MAPSS Performance Improvement



### Safety: Safety and Weight Enforcement Facilities (SWEFs)

**Report Date:** April 2017

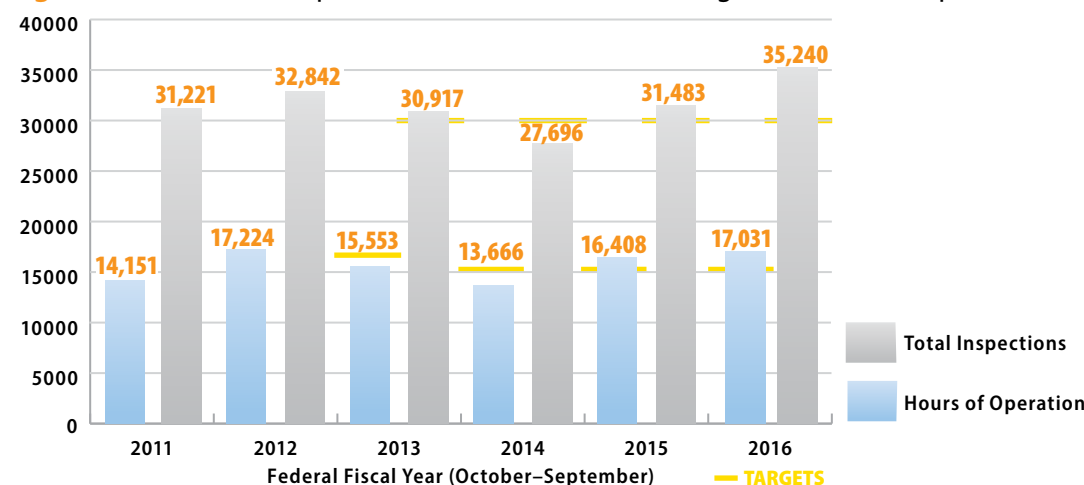
**Data Frequency:** Annual (Federal Fiscal Year)

**Division:** State Patrol

**Why is this important?** Overweight loads increase infrastructure wear, create unfair competition with other over-the-road haulers who abide by size and weight regulations, and cause safety challenges. Wisconsin's Safety and Weight Enforcement Facilities (SWEFs) ensure that commercial vehicles and their drivers are safe and follow regulations to prevent overweight loads that cause infrastructure damage from operating on roadways. Hours of operation indicates the hours a SWEF is open for business. The more hours the facility is open, the larger the number of commercial motor vehicles (CMVs) inspected for violations. The number of vehicles weighed also provides an assessment of the number of vehicles checked for violations when the facility is open. Weigh-in-motion (WIM) technology has improved CMV weighing efficiency; however, WIM can only be used when the SWEF is open and law enforcement is present. The number of CMV inspections increases as a SWEF is open for longer periods of time; on average, one additional hour of operation yields approximately 1.9 additional inspections. Increasing the number of operation hours and inspections improves traffic safety as more unsafe CMVs and drivers are taken off the road.

**Performance measure target:** Division of State Patrol (DSP) safety and enforcement efforts are to ensure SWEFs operate for 15,485 hours and target inspections at a minimum of 30,000 in federal fiscal year (FFY) 2016. No federal targets have been set for hours of operation.

**Figure:** SWEF hours of operation, number of vehicles weighed and total inspections



**How do we measure it?** DSP calculates the number of hours the state's SWEFs are staffed and operational and the number of CMVs weighed. The Motor Carrier Section reports hours of SWEF operations to the Federal Highway Administration (FHWA). The number of inspections is reported quarterly and annually to the Federal Motor Carrier Safety Administration (FMCSA).

**How are we doing?** In 2016, total operation hours were 17,031 compared to 16,408 in 2015, an increase of 3.80 percent. Inspections also increased 11.93 percent from 31,483 in 2015 to 35,240 in 2016. The number of vehicles placed out of service was 6,610 in 2016 for an increase of 3.70 percent over the previous year. Also, the number of drivers placed out of service was 2,507 in 2016 for an increase of 0.28 percent over the previous year. While an increase in the number of drivers or vehicles placed out-of-service can be viewed positively because more unsafe drivers and vehicles are taken off the road, a decrease can also be viewed as good because more drivers and vehicles are in compliance with regulations. For this reason, no performance standards have been developed for out-of-service drivers or vehicles.

**What factors affect results?** Some older SWEFs do not have WIM technology and do not have indoor inspection bays for safety inspections regardless of weather. Modern facilities such as Beloit, Madison, Superior and Kenosha, are often underutilized due to staffing constraints, namely a shortage of inspectors. Ensuring a proper level of resources is a primary factor in achieving safety and weight enforcement performance targets. Modernizing older facilities can also help inspectors do their jobs more effectively and efficiently.

**What are we doing to improve?** WisDOT continues to make investments in SWEF infrastructure to ensure facilities have the technology and resources for year-round operations. WisDOT is assessing its options on how best to secure additional inspector positions to add staff hours to SWEFs to improve safety, ensure optimal mobility and provide for system preservation. A new SWEF in Superior was added in 2016 and a new modern facility, including training facilities, is being built in 2017 near Sparta.

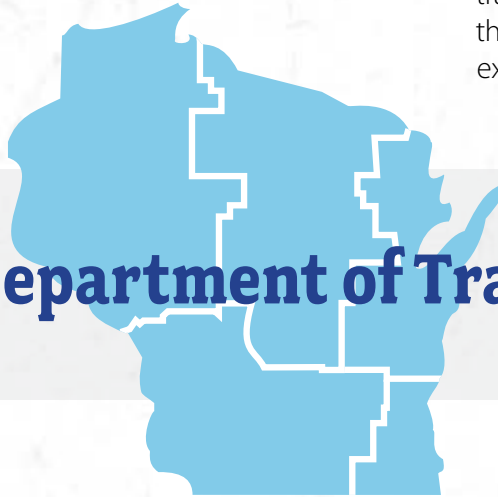
## Mission

Provide leadership in the development and operation of a safe and efficient transportation system.

## Vision

Dedicated people creating transportation solutions through innovation and exceptional service.

# Wisconsin Department of Transportation



## Values

### Accountability

Being individually and collectively responsible for the impact of our actions on resources, the people we serve, and each other.

### Attitude

Being positive, supportive and proactive in our words and actions.

### Communication

Creating a culture in which people listen and information is shared openly, clearly, and timely—both internally and externally.

### Excellence

Providing quality products and services that exceed our customers' expectations by being professional and the best in all we do.

### Improvement

Finding innovative and visionary ways to provide better products and services and measure our success.

### Integrity

Building trust and confidence in all our relationships through honesty, commitment and the courage to do what is right.

### Respect

Creating a culture where we recognize and value the uniqueness of all our customers and each member of our diverse organization through tolerance, compassion, care and courtesy to all.

### Teamwork

Creating lasting partnerships and working together to achieve mutual goals.

**MAPSS**  
Performance  
Improvement



**Mobility**  
**Accountability**  
**Preservation**  
**Safety**  
**Service**



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