FINAL

Compass Report

Wisconsin State Highway
2015
Maintenance, Traffic, and Operations Conditions

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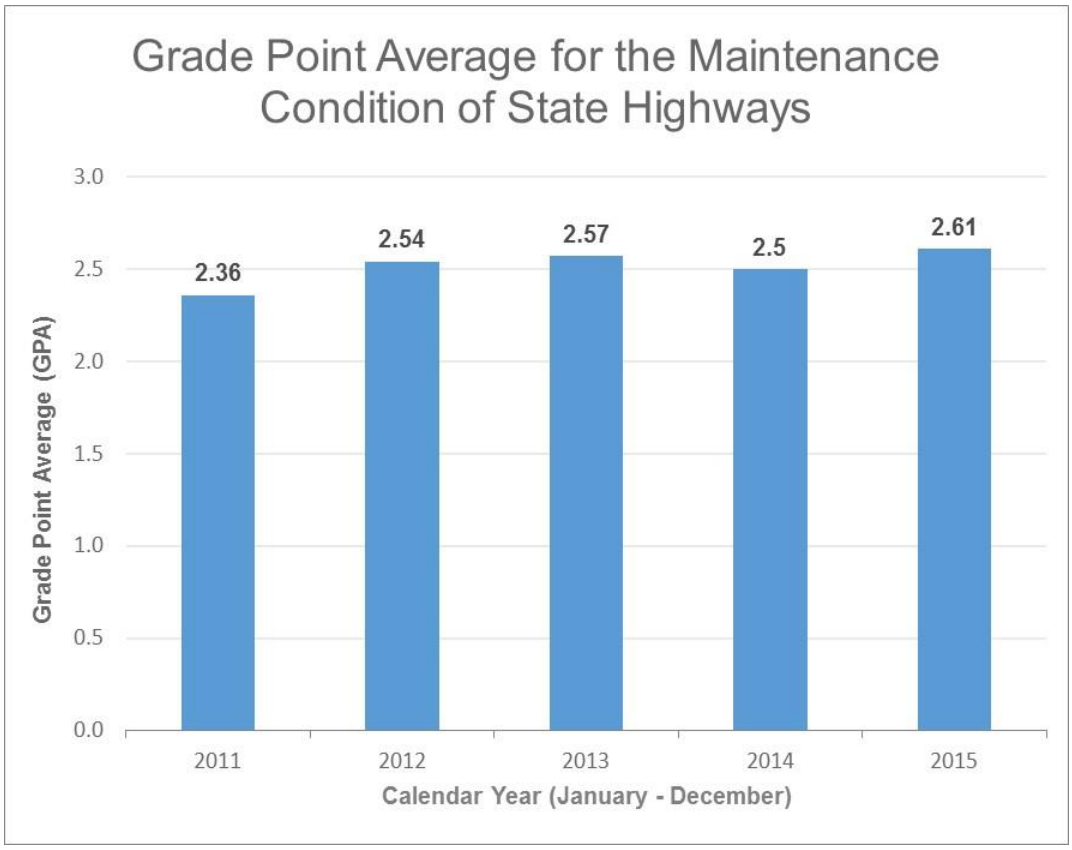
Executive Summary

The "Compass" program collects rating data each year to help the Wisconsin Department of Transportation (WisDOT) understand current infrastructure conditions and trends. The data also helps WisDOT managers set reasonable maintenance targets that reflect department priorities and respond to limited resources. To ensure that maintenance targets are consistently reflected in work programs around the state, these priorities are shared with the WisDOT regions to help structure the Routine Maintenance Agreements with counties. And to evaluate the maintenance target setting process, existing conditions are compared to their target levels to see if the annual goals were met or exceeded.

The 2015 Compass Annual Report has been completed based on the yearly field review process and current data from the WisDOT Sign Inventory Management System, WisDOT Annual Winter Maintenance Report and Highway Structures Information System. Below are the significant messages on the current condition of the state highway system and specific examples of how the WisDOT Bureau of Highway Maintenance uses the information to manage the system:

- *MAPSS performance data:* The 2015 grade point average (GPA) for state highway maintenance is 2.61 (on a 0 to 4.00 scale). This is a slight increase over the 2.50 grade point average received in 2014 (refer to the chart on the next page). The Compass grade point average is the highway maintenance performance measure for the MAPSS (Mobility, Accountability, Preservation, Safety, and Service) performance monitoring system. The department's maintenance goal is a 3.00 GPA
- *Continued focus on reducing shoulder drop-off*: There has been continued emphasis on fixing drop-off along unpaved shoulders so drivers who veer off the traveled way can safety get back onto the paved surface. More aggressive maintenance targets have been set over the past several years to deal with this problem. The actual amount of drop-off for unpaved shoulders in 2015 increased slightly from 41% to 42%. There will be a continued focus on improving safety by reducing shoulder drop-off.
- *Removing hazardous debris on shoulders*: For several years the department has emphasized the safety benefits of removing hazardous debris from roadways. This year the backlog for hazardous debris is 6%, slightly smaller than the backlog level in 2014 (7%), the lowest level recorded during the previous seven-year period.
- *More visible, longer lasting traffic signs*: About 15,000 new high-intensity signs were installed along the state highway system between 2014 and 2015. More than 92% of the 313,337 signs on the state system now have high-intensity face material, providing better illumination to drivers during low light conditions and evenings.
- *Targeted replacement of regulatory and warning signs*: About 49,400 signs around the state are older than their suggested useful life. This is a reduction of about 1,700 signs from the 2014 backlog level. To maximize installation efficiencies, WisDOT prioritizes routine replacement of signs by identifying corridor segments where the majority of signs qualify for replacement. All of the signs on the given segment are then replaced.


Grade Point Average for the Maintenance Condition of State Highways
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Grade Point Average (GPA)
2.36
2.54
2.57
2.5
2.61
2011
2012
2013
2014
2015
Calendar Year (January - December)

Compass Annual Report

About this report

The *Compass Annual Report* is issued each year to communicate the condition of Wisconsin's state highway network and to demonstrate accountability for maintenance expenditures. The primary audience for this report includes Operations Managers and Maintenance Supervisors at the Wisconsin Department of Transportation (WisDOT) and partner organizations including the 72 counties. Compass reports are used to understand trends and conditions, prioritize resources, and set future target condition levels for the state highway system. The condition data is also used to estimate the costs to reduce maintenance backlogs to varying levels of service.

This report *includes* data on traveled ways (paved traffic lanes), shoulders, drainage, roadsides, selected traffic devices, specific aspects of winter maintenance activities, and bridges. The report *does not include* measures for preventive maintenance, operational services (like traveler information and incident management), or electrified traffic assets (like signals and lighting). It is important to consider what is not in the report when using this information to discuss comprehensive investment choices and needs.

The first section of this report provides a program overview and scorecard based on current conditions. Subsequent sections of the report provide detailed information on each roadway feature. The document is available on the Compass website http://wisconsindot.gov/Pages/doing-bus/local-gov/hwy-mnt/compass/default.aspx. Feedback on format, content, and other aspects of the report is welcome and should be sent to Scott Bush, Compass Program Manager, at Scott.Bush@dot.wi.gov or (608) 266-8666.

Background

Compass was implemented statewide in 2002 as WisDOT's maintenance quality assurance and asset management program for highway maintenance and operations. The Compass report is intended to provide a comprehensive overview of highway maintenance and operations by integrating information from field reviews with inventory data and other information sources.

Process

The Compass report is issued annually in cooperation with the research team from the Wisconsin Transportation Center (WisTrans) at University of Wisconsin – Madison. Starting in January of each year, WisTrans and the Compass Program Manager work on the analysis of each element. The project team presents the draft report at the WisDOT Operations Managers meeting, the WisDOT Maintenance Supervisors meeting, and the Compass Advisory Team meeting in the spring. The report is revised based on feedback from these meetings. The report is then finalized and officially published by the end of each year.

This report uses inventory data for bridges, pavement, routine maintenance of signs, and winter storms. It uses sample data for highway maintenance features. The project team collected data from these information systems between December 2015 and April 2016.

The highway maintenance data includes data sampled from the field. One thousand two hundred (1,200) 1/10-mile segments are randomly selected around the state. Each county rates a proportional share of the sample based on their percentage of state centerline mileage. A WisDOT Maintenance Coordinator and a County Patrol Superintendent collect the field data in each county between August 15 and October 15 every year. The field survey includes a condition analysis of shoulders, drainage features, roadside elements, and traffic control and safety devices.

Winter maintenance data is gathered from the winter season 2014-15 and includes Time to Bare Wet Pavement, Winter Severity Index, Winter Vehicle Miles Traveled (VMT), and crash data. Figures and tables are taken directly from the 2014-15 WisDOT *Annual Winter Maintenance Report* prepared by WisDOT's Winter Operations unit, including the "Winter by the Numbers" table and the statewide snowfalls and Winter Severity Index figures.

Starting with the 2009 Compass Annual Report, pavement data was obtained directly from WisDOT's Pavement Maintenance Management System (PMMS). This completes the transition from the previous method. The transition started with the 2008 Compass Annual Report by reporting condition based on the deficiency thresholds and condition categories in the PMMS while still getting the pavement data from the Pavement Information Files (PIF). The routine replacement needs for signs comes from the Sign Inventory Management System (SIMS) and the bridge data comes from the Highway Structure Information System (HSIS).

Compass identifies backlog percentages for each feature at the region and statewide level. Backlog percentages indicate what percent of that feature is in a condition where maintenance work is required, assuming available budget. Therefore, an increasing backlog percentage reflects fiscal constraints rather than inadequate work in the field.

Appendix C identifies when assets are considered backlogged for highway maintenance features. For pavement features, the backlog is determined based on logic in the PMMS. In the PMMS, each segment of road receives a rating for each distress type. The ratings include "excellent", "fair", "moderate", or "bad", depending on the extent and severity of distress. For the Compass report, a pavement segment that receives a rating other than "excellent" requires maintenance and is considered backlogged. Traffic signs are considered backlogged for maintenance if it is in use past its expected service life.

WisDOT Maintenance Supervisors and Operations Managers annually set the targets for backlog percentage levels for each feature. These targets are intended to reflect priorities and goals for the year in light of fiscal constraints. Appendix E provides the maintenance targets for 2015.

Maintenance Report Card

Compass uses predefined backlog percentage thresholds to assign a letter grade to the overall maintenance condition of each feature (from "A" to "F"). A feature grade declines as more of a feature is backlogged. These grading scales vary to account for the importance of the feature to the motorist and roadway system. For example, a feature that contributes to critical safety would see its grade decline more rapidly than a feature that is primarily aesthetic in nature. The contribution categories include "Critical Safety", "Safety/Mobility", "Stewardship", "Ride/Comfort", and "Aesthetics". A feature grade of "A" means that all basic routine maintenance needs have been met within the maintenance season and there is not a significant backlog. Appendix B lists the grading curve for each Compass feature and Appendix C identifies the contribution category for each feature. The features are listed in the report card in order of priority within their contribution category.

System Overview

Below is a summary of the 2015 condition grades for the 28 features that are evaluated in the field each year for the Compass program. The individual grades for the 28 features translate to an overall system condition grade point average of 2.61.

- A grade: 11 features (39%)
- B grade: 2 features (7%)
- C grade: 10 features (36%)
- D grade: 3 features (11%)
- F grade: 2 features (7%)

The two features which received a failing grade last year, Drop-off/Build-up on Unpaved Shoulders and Cracking on Paved Shoulders, were again the only two features to receive an F in 2015. The condition grade for most features stayed constant between 2014 and 2015. Out of 28 features surveyed, the condition grade remained unchanged for 23 roadway components (82%).

Four out of the five features with grade changes between 2014 and 2015 received an improved grade. Two Paved Shoulder features, Drop-off/Build-up and Potholes/Raveling, went from a B grade in 2014 to an A level in 2015. Both Delineators and Flumes also improved during the last year, moving from a D grade in 2014 to a C level in 2015. Conversely, the backlog of Routine Replacement of Regulatory/Warning Signs increased one percent over the last year, pushing the B grade in 2014 down to a C level in 2015.

A feature is considered to have met its target condition if it is within plus or minus five percentage points of the target level. Nineteen features (68%) met the target condition level in 2015. Six features (21%) exceeded their maintenance target (Culverts, Delineators, Fences,

Flumes, Under-drains/Edge and Routine Replacement of Other Signs), while three features (Drop-off/Build-up on Unpaved Shoulders, Cross-Slope on Unpaved Shoulders and Cracking on Paved Shoulders) did not meet their maintenance targets. The following tables identify the five-year trend in Compass feature grades by contribution category. Key observations are also provided for each contribution category.

Critical Safety Features

The roadway features considered critical for safety are those which would necessitate immediate action to remedy if not properly functioning.

Feature	2015	2014	2013	2012	2011	Element
Reg./Warning Signs (emerg.)	A	A	A	A	B	Traffic and Safety
Hazardous Debris	C	C	C	C	C	Shoulders
Protective Barriers	B	B	A	B	B	Traffic and Safety
Centerline Markings	C	C	C	B	C	Traffic and Safety
Edgeline Markings	C	C	C	B	C	Traffic and Safety
Drop-off/Build-up (unpaved)	F	F	F	F	F	Shoulders
Drop-off/Build-up (paved)	**A**	B	B	A	B	Shoulders

- One Critical Safety feature, Drop-off/Build-up on Paved Shoulders, improved one grade level.
- No grades declined in 2015 for any of the Critical Safety features.
- Regulatory/Warning Signs (emergency repair), Hazardous Debris, Protective Barriers, Centerline Markings, Edgeline Markings and Drop-off/Build-up on Unpaved Shoulders all received the same grade as the previous year.
- All Critical Safety features except Drop-off/Build-up on Unpaved Shoulders met their condition target. This feature missed the target backlog rate by 14%, 4% worse than last year and marking the fifth consecutive year in which the target has not been met.

Safety/Mobility Features

Safety/Mobility features are highway features and characteristics that protect users against - and provide them with a clear sense of freedom from - danger, injury or damage.

Feature	2015	2014	2013	2012	2011	Element
Woody Veg. Control for Vision	A	A	A	A	A	Roadside
Mowing for Vision	A	A	A	A	A	Roadside
Special Pavement Markings	B	B	B	B	C	Traffic and Safety
Woody Vegetation	A	A	A	A	A	Roadside
Culverts	D	D	D	D	D	Drainage
Storm Sewer System	C	C	C	C	C	Drainage
Cross-Slope (unpaved)	D	D	D	D	D	Shoulders
Delineators	**C**	D	D	D	D	Traffic and Safety
Reg./Warning Signs (routine)	**C**	B	B	C	C	Traffic and Safety
Fences	A	A	A	A	A	Roadside

- One Safety/Mobility feature, Delineators, improved from a D condition grade in 2014 to a C level in 2015.
- One Safety/Mobility feature, Routine Replacement Regulatory/Warning signs, declined from a B condition grade in 2014 to a C level in 2015.
- Woody Vegetation Control for Vision, Mowing for Vision, Woody Vegetation Control, and Fences all maintained A grades. Woody Vegetation Control for Vision had the lowest backlog rate of all features at just under 1%.
- Culverts, Fences, Cross-Slope on Unpaved Shoulders, and Delineators did not met their condition targets. Fences and Culverts performed much better than their target for a second year in a row. Delineators also performed better than their targets. On the other hand, Cross-Slope on Unpaved Shoulders missed the target backlog rate by seven percentage points, similar to 2014.

Stewardship Features

Stewardship captures performance on routine and preventive maintenance actions taken to help a highway element obtain its full potential service life.

Feature	2015	2014	2013	2012	2011	Element
Ditches	A	A	A	A	A	Drainage
Curb & Gutter	A	A	A	A	A	Drainage
Flumes	**C**	D	D	D	D	Drainage
Cracking (paved)	F	F	F	F	F	Shoulders
Erosion (unpaved)	A	A	A	A	A	Shoulders
Under-drains/Edge-drains	C	C	C	D	D	Drainage

- One Stewardship feature, Flumes, improved from a D condition grade in 2014 to a C level in 2015.

- Ditches, Curb and Gutter, and Erosion on Unpaved Shoulders all continued to receive an A feature grade.
- The backlog level for Flumes dropped 19 percentage points from the 2014 level.
- Cracking on Paved Shoulders continued to receive an F grade, but the backlog declined from 69% in 2014 to a 67% level in 2015.
- Half of the Stewardship features achieved their target maintenance backlog levels (Ditches, Curb & Gutter and Erosion on Unpaved Shoulders).
- The three other Stewardship features did not meet target levels in 2015. Flumes and Under-drains/Edge-drains exceeded their targets and Cracking on Paved Shoulders had backlog rates above (or worse than) their target.

Ride/Comfort Features

The ride quality and comfort features provide a state of ease and quiet enjoyment for highway users. These features include proper signing and lack of pavement obstructions.

Feature	2015	2014	2013	2012	2011	Element
Potholes/Raveling (paved)	**A**	B	A	A	A	Shoulders
Other Signs (emerg. repair)	A	A	A	A	A	Traffic and Safety
Other Signs (routine repair)	C	C	C	D	D	Traffic and Safety

- Potholes/Raveling improved from a B condition grade in 2014 to an A level in 2015.
- Conditions for Other Signs (emergency repair) and Other Signs (routine repair) were maintained at their respective A and C condition levels.
- All three Ride/Comfort features met their condition targets in 2015.

Aesthetics Feature

Aesthetics concerns the display of natural beauty, such as landscaping, located along a highway corridor. Aesthetics also involves the absence of things like litter, which detracts from the sightlines of a roadway.

Feature	2015	2014	2013	2012	2011	Element
Mowing	C	C	C	C	C	Roadside
Litter	D	D	D	D	D	Roadside

- Grades held constant between 2014 and 2015 for both Aesthetics features.
- Both features met their maintenance backlog targets in 2015.

Winter Operations:

- The 2014-15 winter season featured a return to more "normal" conditions following two harsh winters. Snowfall returned to more average levels, and temperatures averaged about 7 degrees warmer than in 2013-14.
- Statewide, the average snowfall was approximately 60 inches. This amount is half of the snowfall total of the previous winter season but close to the 30-year average of 52.4 inches. Snowfall varied significantly across the state; the highest snowfall recorded was in Iron County (235 inches) and the lowest amount was in Marquette County (27 inches).
- The statewide average number of winter storms was 33 in 2014-2015, 10 less than previous winter. Ashland County experienced the most storms (63), while Fond Du Lac County had the least number of storms (18). The number of storms had a greater impact on resources used than snowfall total, since staff and equipment may be mobilized for 0.1 inches of snow or during freezing rain events.
- The 2014-15 statewide winter maintenance cost was $74.2 million, 35% less than the 2013-14 winter season, which was by far the costliest winter in Wisconsin history ($113 million). However, the 2014-15 total cost was just 9% below the 10-year average total cost ($81M) and 17% below the five-year average total cost ($89M).
- Salt was the largest expenditure in the state highway maintenance, management and operations budget. Salt expenditures decreased 34%, from $40.4M in 2013-14 to $26.9M in 2014-15.
- The percentage of roads to bare/wet pavement within WisDOT target times was 70%, higher than the 63% rate during the previous winter. From storm to storm, most of the variability in a county's ability to achieve bare/wet pavement within the target times is due to weather effects (type, duration and severity of storms throughout the winter season).

State Bridge Deck Conditions:

- Statewide, 31% of decks are in Fair condition and need reactive maintenance, receiving an NBI rating of 5 or 6 (25% of concrete bridges and 43% of steel bridges).
- The NW Region (1,072 bridges) had the lowest bridge conditions in the state, with the highest percentage of decks in Fair condition (44%) and Poor condition (3%).
- The NE Region (875 bridges) had the best bridge ratings in Wisconsin, with 83% of decks in Good condition and no bridges in either the Poor or Critical condition categories.

Wisconsin 2015: Compass Report on Highway Maintenance Conditions

Element	What are we spending? Dollars spent (in millions)[1] FY 11	FY 12	FY 13	FY 14	FY 15	Feature	How much of the system still needs work at the end of the maintenance season? Condition change: 2014 to 2015[2]	% of system backlogged 2011	2012	2013	2014	2015	How well maintained is the system? 2015 Feature grades A	B	C	D	F
Shoulders	11.05 11.64 0.33 0.34	11.08 11.44 0.33 0.34	8.16 8.31 0.24 0.24	7.79 7.80 0.23 0.23	8.91 8.91 0.26 0.26	Hazardous Debris	↑	7	7	7	7	6			C		
						Drop-off/Build-up (paved)	↑	3	1	4	4	2	A				
						Cracking (paved)	↑	60	55	54	69	67					F
						Potholes/Raveling (paved)	↑	6	6	7	8	6	A				
						Drop-off/Build-up (unpaved)	↓	37	36	36	41	42					F
						Cross-Slope (unpaved)	↑	27	26	22	27	25				D	
						Erosion (unpaved)	↑	2	1	1	3	2	A				
Drainage	8.54 9.00 0.25 0.27	7.90 8.15 0.23 0.24	7.10 7.22 0.21 0.21	7.04 7.04 0.20 0.21	7.58 7.58 0.22 0.22	Ditches	-	3	1	1	1	1	A				
						Culverts	↑	22	25	25	21	20				D	
						Under-drains/Edge-drains	↑	33	30	29	26	23			C		
						Flumes	↑↑	39	45	47	42	23			C		
						Curb & Gutter	↓	4	5	4	5	6	A				
						Storm Sewer System	↑	17	13	14	15	11			C		
Roadsides	16.60 17.49 0.49 0.52	23.10 23.85 0.68 0.70	18.65 18.98 0.55 0.55	15.03 15.05 0.44 0.44	19.27 19.27 0.56 0.56	Litter	↓	63	62	64	61	63				D	
						Mowing	↓	38	39	41	34	35			C		
						Mowing for Vision	↓	1	1	0.3	2	3	A				
						Woody Vegetation	-	2	3	3	2	2	A				
						Woody Veg. Control for Vision	-	1	1	1	1	1	A				
						Fences	↓	1	3	2	1	2	A				

[1] The dollar values listed in each column show the nominal dollars, constant dollars (base year 2015), nominal dollars per thousand lane miles, and constant dollars per thousand lane miles, respectively.

[2] Arrows indicate a condition change from 2014 to 2015 (↑= improved condition/lower backlog, ↓ = worse condition/higher backlog). Double arrows indicate the backlog changed 8 or more percentage points.

Element	What are we spending?					Feature	How much of the system still needs work at the end of the maintenance season?						How well maintained is the system?				
	Dollars spent (in millions)[1]						Condition change: 2014 to 2015[2]	% of system backlogged					2015 Feature grades				
	FY 11	FY 12	FY 13	FY 14	FY 15			**2011**	**2012**	**2013**	**2014**	**2015**	A	B	C	D	F
Traffic & safety (selected)	20.13 21.21 0.60 0.63	21.93 22.64 0.65 0.67	21.81 22.18 0.64 0.65	22.45 22.48 0.65 0.65	21.45 21.45 0.62 0.62	Centerline Markings	↑	6	4	6	8	6			C		
						Edgeline Markings	↑	7	3	7	9	6			C		
						Special Pavement Markings	↓	10	6	9	6	8		B			
						Reg./Warning Signs (emerg.)	-	3	1	2	1	1	A				
						Reg./Warning Signs (routine)	↓	15	12	9	9	10			C		
						Other Signs (emerg. repair)	↑	4	3	2	3	1	A				
						Other Signs (routine replacement)	↑	39	37	33	30	26			C		
						Delineators	↑	25	21	22	22	18			C		
						Protective Barriers	↓	5	3	1	3	5		B			

Wisconsin 2015: Targets for Highway Maintenance Conditions

Targets are set annually, and are intended to reflect priorities for that year, given fiscal constraints. They are a measure of effective management, not system condition.

			Statewide									Regions		
Contribution Category	Feature	Element	Actual % backlog 2015	Target % backlog 2015	On target[3]	Gap if target missed						Worse condition	On Target	Better condition
						Worse condition			Better condition					
						20	10	0	0	10	20			
Critical Safety	Reg./Warning Signs (emerg.)	Traffic and Safety Devices	1	0	◎								ALL	
	Hazardous Debris	Shoulders	6	5	◎							SE	NC, NE, NW, SW	
	Protective Barriers	Traffic and Safety Devices	5	3	◎							NW	NC, NE, SE, SW	
	Centerline Markings	Traffic and Safety Devices	6	5	◎								ALL	
	Edgeline Markings	Traffic and Safety Devices	6	8	◎								NC, NW, SW	NE, SE
	Drop-off/Build-up (unpaved)	Shoulders	42	28			**14**					NE, SE, SW	NC, NW	
	Drop-off/Build-up (paved)	Shoulders	2	4	◎								ALL	
Safety/ Mobility	Woody Veg. Control for Vision	Roadsides	1	2	◎								ALL	
	Mowing for Vision	Roadsides	3	5	◎								ALL	

[3] ◎ This symbol indicates that the percent backlogged for that feature is the same as the target, or within 5 percentage points.

			Statewide										Regions		
Contribution Category	**Feature**	**Element**	**Actual % backlog 2015**	**Target % backlog 2015**	**On target[3]**	**Gap if target missed**							**Worse condition**	**On Target**	**Better condition**
						Worse condition			**Better condition**						
						20	**10**	**0**	**0**	**10**	**20**				
	Special Pavement Markings	Traffic and Safety Devices	8	10	◎								NW	SE, SW	NC, NE
	Woody Vegetation	Roadsides	2	5	◎									ALL	
	Culverts	Drainage	20	30						**10**					ALL
	Storm Sewer System	Drainage	11	15	◎								SW	NC, NE	NW, SE
	Cross-Slope (unpaved)	Shoulders	25	18				**7**					NC, SE, SW	NE, NW	
	Delineators	Traffic and Safety Devices	18	25					**7**					NW, SW	NC, NE, SE
	Reg./Warning Signs (routine)	Traffic and Safety Devices	10	9	◎									ALL	
	Fences	Roadsides	2	14						**12**					ALL
Stewardship	Ditches	Drainage	1	5	◎									ALL	
	Curb & Gutter	Drainage	6	10	◎									NC, NW, SW	NE, SE
	Flumes	Drainage	23	44							**21**			NW	NC, NE, SE, SW
	Cracking (paved)	Shoulders	67	58				**9**					NC, NE, SW	NW	SE
	Erosion (unpaved)	Shoulders	2	5	◎									ALL	
	Under-drains/Edge-drains	Drainage	23	30					**7**				NE	NW, SW	NC, SE
	Potholes/Raveling (paved)	Shoulders	6	10	◎									NW, SE, SW	NC, NE

			Statewide										Regions		
Contribution Category	**Feature**	**Element**	**Actual % backlog 2015**	**Target % backlog 2015**	**On target[3]**	**Gap if target missed**							**Worse condition**	**On Target**	**Better condition**
						Worse condition			**Better condition**						
						20	**10**	**0**	**0**	**10**	**20**				
Ride/Comfort	Other Signs (emerg. repair)	Traffic and Safety Devices	1	1	◎									ALL	
	Other Signs (routine replacement)	Traffic and Safety Devices	26	33						**7**				NW, SE	NE, NE, SW
Aesthetics	Mowing	Roadsides	35	40	◎								NE	SE, SW	NC, NW
	Litter	Roadsides	63	63	◎								NE, SE	NW, SW	NC

2015 Highway Maintenance Conditions: Report on Shoulders, Drainage, Roadsides, and Traffic Control Devices

Data in this section comes from the field review of random road segments performed by WisDOT region Maintenance Coordinators and county Patrol Superintendents. The Compass field data is statistically valid at the statewide and region levels, but not at the county level. No statistical analysis has been completed on the county level data in Appendix G. Readers should take the number of observations into account when reviewing the information. Extreme caution should be exercised when analyzing data with fewer than 30 observations.

Below is a summary of the backlog change between 2014 and 2015. These changes don't necessarily result in a new level of service grade. Refer to the "Maintenance Report Card" in the front part of the report for a complete summary of condition grade level changes between 2014 and 2015.

- Fifteen features (54%) had a reduction in the percentage of roadways backlogged for maintenance (i.e. better conditions).
- Nine features (32%) had an increase in the percentage of roadways backlogged for maintenance (i.e. worst conditions).
- The amount of roadways backlogged for maintenance remained unchanged for four features (14%).
- Changes in backlog levels varied from one to 19 percentage points.

Shoulders:

- The individual grades for the seven Shoulder features translate to an overall condition grade point average of 2.14 or grade level C.
- The maintenance backlog declined for six of the seven Shoulder features. Hazardous Debris and Erosion on unpaved shoulders each had a one percent reduction. The backlog declined two percent for Drop-off on paved shoulders, Cracking on paved shoulders, Potholes/Raveling on paved shoulders, and Cross-slope on unpaved shoulders.
- Drop-off/buildup on unpaved shoulders received a feature grade of F for the tenth consecutive year. The maintenance backlog increased a modest one percent from the previous year.

Drainage:

- The individual grades for the six Drainage features translate to an overall condition grade point average of 2.50 or grade level C.
- The maintenance backlog declined for four of the six Drainage features, including Culverts (-1), Under-drains/Edge-drains (-3), and Storm sewer systems (-4). Flumes had the most significant backlog decrease (-19), and the Flume level of service grade changed from D to C.
- Only one Drainage feature – Curb and Gutter (+1) – had an increase in the backlog percentage.
- Ditches received a feature grade of A for the tenth consecutive year. The backlog percentage has been 1% from 2012 through 2015.

Roadsides:

- The individual grades for the six Roadside features translate to an overall condition grade point average of 3.17 or grade level B.
- The maintenance backlog increased for four of the six Roadsides features, including Mowing (+1), Mowing for Vision (+1), Fences (+1), and Litter (+2).
- The backlog level remained the same for the other two Roadside features (Woody Vegetation Control and Woody Vegetation Control for Vision).
- None of the backlog changes from 2014 were significant enough to change the level of service grade for any Roadside feature.

Traffic Control and Safety Devices:

- The individual grades for the nine Traffic Control and Safety Devices translate to an overall condition grade point average of 2.67 or grade level C.
- The maintenance backlog decreased for five of the nine Traffic Control and Safety Devices, including Centerline markings (-2), Emergency replacement of other signs (-2), Edgeline markings (-3), Delineators (-4), and Routine replacement of other signs (-4).
- The maintenance backlog increased for three of the other Traffic Control and Safety Devices, including the Routine replacement of regulatory/warning signs (+1), Special Pavement Markings (+2), and Protective Barriers (+2).
- There was no change in the backlog level for the Emergency replacement of regulatory/warning signs.

Shoulders

- Hazardous Debris: The backlog rates for hazardous debris found along state roadways varied from a low 2% in the Northwest Region to a high of 16% in the Southeast.
- Paved Shoulders: Large backlog rates were recorded around the state for Cracking on Paved Shoulders. Cracking backlogs varied from 51% of paved shoulders in the Southeast Region to 74% rates in both the Northeast Region and Southwest Region. Drop-off/Build-up backlog levels varied from 1% to 4% across the five regions. The Northeast Region (1%) and the North Central Region (2%) had the lowest level of Potholes/Raveling, while backlog levels varied from 7% to 11% in the other three regions.
- Unpaved Shoulders: Large backlog levels were found around the state for Drop-off/Build-up. The North Central Region (30%), Northwest Region (33%), and the Southeast Region (40%) had lower backlog levels than the Northeast Region (49%) and the Southwest Region (58%). Cross slope backlog levels varied from 17% in the Northwest Region to a high of 31% in both the Southeast Region and Southwest Region. Backlog levels for Erosion were relatively low around the state, varying from 0% in the Northeast Region to 4% in the Southwest Region.

Drainage

- Ditches: There were minimal backlog levels found across the state, with the highest rate of 3% in the Southeast Region.
- Culverts: Backlog levels varied from a low of 12% in the Southeast Region to a high of 24% in the Northeast Region and the Northwest Region.
- Drains: The Northeast Region had the highest backlog level (41%) and the North Central Region had the lowest backlog level (13%).
- Flumes: Flume conditions varied widely across the state, with the Northeast Region (2%) and the Southeast Region (8%) having a much smaller backlog than the other three regions (from 32% to 46%).
- Curb and Gutter: The Northwest Region (12%) and the Southwest Region had much larger maintenance backlog rates, while the other three regions had rates of 5% or less.
- Storm Sewer Systems: The Northwest Region didn't record any deficiencies in 2015, while other regions varied from 7% (Southeast Region) to 24% (Southwest Region).

Roadsides

- Litter: High backlog levels for Litter were found across the state, with the North Central Region having the low rate of 44%. Other regions varied from 61% in the Northwest Region to 80% in the Northeast Region.
- Mowing: Backlog rates varied between 29% in the Northwest Region to a high of 46% in the Northeast Region.
- Mowing for Vision: The Southwest Region had the lowest backlog level (1%) while the Southeast Region had the highest backlog (5%).
- Woody Vegetation: Low backlog levels were recorded around the state, with the Northeast Region and the Southeast Region having low backlog levels of 1% each and the Northwest Region registering the highest backlog at 5%.
- Woody Vegetation for Vision: Very low backlog levels were found across the state, with a high of 1% recorded in the Southeast Region and Southwest Region.
- Fences: The Northwest Region had a 6% backlog rate, while the other four regions varied between 0% and 2%.

Traffic Control and Safety Devices

- Pavement Markings: Regions recorded similar ratings for Centerline Markings and Edgeline Markings, ranging from a low of 1% for each feature in the Southeast Region to a high backlog level of 10% for both markings in the Southwest Region. The Northwest Region (18%) and the Southwest Region (15%) recorded the highest backlogs for Special Pavement Markings, with the other region backlogs varying from 2% to 5%.
- Emergency Repair of Regulatory/Warning Signs and Other Signs: The backlog levels for both types of signs were very low, with the Northwest Region having the highest backlog level for each type of sign.
- Routine Replacement of Regulatory/Warning Signs and Other Signs: The amount of Regulatory/Warning signs in service beyond their useful life ranged from 8% in the Northwest Region to 11% of signs in the Northeast Region and the Southeast Region. Higher backlogs were recorded in the "Other Sign" category, ranging from 17% in the North Central Region to 31% in the Southeast Region.
- Delineators: The condition of delineators varied widely across the regions, ranging from 8% in the Northeast Region to 25% in the Southwest Region.
- Protective Barriers: Backlog levels varied widely across the state, with high figures recorded in the Northwest Region (10%) and Southwest Region (6%). Lower levels were found in the Southeast Region (2%), North Central Region (0.2%) and the Northeast Region (0.01%).

Regions 2015: Compass Report on Highway Maintenance Conditions

Element	Feature	**How much of the system needs work at the end of the season?** *What did it cost to achieve this condition?* Region Percent of System Backlogged					
		NC	**NE**	**NW**	**SE**	**SW**	**Statewide**
Shoulders	Hazardous Debris	4%	6%	2%	16%	9%	6%
	Drop-off/Build-up (paved)	2%	3%	1%	4%	2%	2%
	Cracking (paved)	69%	74%	62%	51%	74%	67%
	Potholes/Raveling (paved)	2%	1%	7%	8%	11%	6%
	Drop-off/Build-up (unpaved)	30%	49%	33%	40%	58%	42%
	Cross-Slope (unpaved)	27%	22%	17%	31%	31%	25%
	Erosion (unpaved)	1%	0%	2%	1%	4%	2%
	Dollars spent on shoulders (millions)	2.29	1.30	2.77	1.91	4.22	12.50
Drainage	Ditches	0.2%	1%	2%	3%	1%	1%
	Culverts	14%	24%	24%	12%	19%	20%
	Under-drains/Edge-drains	13%	41%	29%	24%	35%	23%
	Flumes	32%	2%	46%	8%	35%	23%
	Curb & Gutter	5%	2%	12%	1%	10%	6%
	Storm Sewer System	10%	16%	0%	7%	24%	11%
	Dollars spent on drainage (millions)	0.88	0.66	1.59	2.90	1.55	7.58
Roadsides	Litter	44%	80%	61%	78%	67%	63%
	Mowing	34%	46%	29%	39%	35%	35%
	Mowing for Vision	4%	4%	2%	5%	1%	3%
	Woody Vegetation	2%	1%	5%	1%	2%	2%
	Woody Veg. Control for Vision	0%	0%	0.3%	1%	1%	1%
	Fences	2%	1%	6%	0%	1%	2%
	Dollars spent on roadsides (millions)	2.39	2.74	4.14	4.99	5.01	19.27
Traffic and safety (selected devices)	Centerline Markings	4%	2%	6%	1%	10%	6%
	Edgeline Markings	5%	2%	5%	1%	10%	6%
	Special Pavement Markings	2%	3%	18%	5%	15%	8%
	Reg./Warning Signs (emerg.)	1%	1%	2%	1%	1%	1%
	Reg./Warning Signs (routine)	9%	11%	8%	11%	10%	10%
	Other Signs (emerg. repair)	1%	1%	4%	2%	0.3%	1%
	Other Signs (routine replacement)	17%	20%	30%	31%	25%	26%
	Delineators	8%	13%	22%	12%	25%	18%
	Protective Barriers	0.2%	0.01%	10%	2%	6%	5%
	Dollars spent on traffic and safety (selected devices) (millions)	2.21	2.55	2.92	4.22	4.42	16.33

Regions 2015: Regional Trend

Element	Feature	Region	Year				
			2011	2012	2013	2014	2015
Shoulders	Hazardous Debris	NC	5%	7%	5%	2%	4%
		NE	12%	10%	9%	11%	6%
		NW	1%	2%	3%	3%	2%
		SE	18%	17%	12%	9%	16%
		SW	9%	7%	11%	13%	9%
	Drop-off/Build-up (paved)	NC	4%	1%	1%	2%	2%
		NE	3%	1%	6%	6%	3%
		NW	1%	1%	3%	3%	1%
		SE	7%	3%	10%	11%	4%
		SW	4%	2%	3%	2%	2%
	Cracking (paved)	NC	55%	48%	48%	62%	69%
		NE	68%	70%	65%	80%	74%
		NW	59%	47%	51%	66%	62%
		SE	64%	70%	67%	68%	51%
		SW	60%	54%	53%	71%	74%
	Potholes/Raveling (paved)	NC	6%	8%	3%	1%	2%
		NE	6%	5%	5%	2%	1%
		NW	8%	4%	8%	9%	7%
		SE	6%	11%	10%	14%	8%
		SW	5%	4%	10%	12%	11%
	Drop-off/Build-up (unpaved)	NC	43%	37%	29%	27%	30%
		NE	37%	53%	44%	49%	49%
		NW	35%	26%	28%	40%	33%
		SE	48%	43%	48%	48%	40%
		SW	31%	35%	44%	48%	58%
	Cross-slope (unpaved)	NC	39%	35%	24%	23%	27%
		NE	34%	42%	28%	25%	22%
		NW	19%	15%	9%	15%	17%
		SE	34%	28%	29%	44%	31%
		SW	21%	21%	27%	39%	31%
	Erosion (unpaved)	NC	2%	0.4%	0%	2%	1%
		NE	1%	2%	1%	1%	0%
		NW	1%	0.3%	0.3%	3%	2%
		SE	6%	1%	2%	5%	1%
		SW	1%	1%	2%	4%	4%
Drainage	Ditches	NC	7%	2%	1%	0.4%	0.2%
		NE	1%	0.4%	0.4%	1%	1%

		NW	1%	1%	0.4%	3%	2%
		SE	6%	1%	3%	5%	3%
		SW	1%	0.2%	0.4%	1%	1%
	Culverts	NC	23%	25%	17%	12%	14%
		NE	11%	26%	19%	32%	24%
		NW	19%	28%	23%	23%	24%
		SE	39%	5%	29%	18%	12%
		SW	26%	26%	33%	20%	19%
	Under-drains/Edge-drains	NC	27%	13%	21%	20%	13%
		NE	5%	19%	25%	14%	41%
		NW	37%	58%	53%	57%	29%
		SE	42%	13%	11%	20%	24%
		SW	49%	50%	39%	31%	35%
	Flumes	NC	42%	46%	29%	29%	32%
		NE	28%	34%	26%	46%	2%
		NW	44%	31%	36%	56%	46%
		SE	37%	35%	56%	36%	8%
		SW	46%	65%	73%	44%	35%
	Curb & Gutter	NC	3%	4%	2%	3%	5%
		NE	1%	5%	3%	4%	2%
		NW	11%	14%	16%	13%	12%
		SE	0.4%	1%	0.3%	3%	1%
		SW	8%	9%	5%	9%	10%
	Storm Sewer System	NC	10%	19%	3%	8%	10%
		NE	10%	5%	10%	11%	16%
		NW	6%	3%	24%	12%	0%
		SE	21%	11%	12%	14%	7%
		SW	30%	28%	21%	26%	24%
Roadsides	Litter	NC	54%	52%	54%	38%	44%
		NE	78%	72%	75%	74%	80%
		NW	50%	56%	60%	54%	61%
		SE	83%	74%	74%	78%	78%
		SW	66%	65%	67%	72%	67%
	Mowing	NC	31%	34%	35%	29%	34%
		NE	51%	49%	54%	41%	46%
		NW	31%	34%	29%	22%	29%
		SE	47%	43%	55%	54%	39%
		SW	41%	42%	46%	39%	35%
	Mowing for Vision	NC	0%	2%	0%	0%	4%
		NE	0%	0%	0%	4%	4%
		NW	0%	1%	0%	2%	2%

		SE	5%	3%	0%	0%	5%
		SW	0%	1%	1%	2%	1%
	Woody Vegetation Control	NC	2%	4%	3%	2%	2%
		NE	3%	1%	2%	1%	1%
		NW	2%	1%	3%	2%	5%
		SE	2%	2%	1%	5%	1%
		SW	3%	7%	4%	3%	2%
	Woody vegetation control for vision	NC	1%	0%	1%	1%	0%
		NE	2%	1%	2%	1%	0%
		NW	0%	0.3%	0%	0.3%	0.3%
		SE	1%	3%	0%	3%	1%
		SW	1%	0.3%	2%	1%	1%
	Fences	NC	5%	3%	0%	0.3%	2%
		NE	0%	0%	0.1%	0%	1%
		NW	5%	12%	12%	6%	6%
		SE	0.4%	0.04%	0%	0.05%	0%
		SW	0.2%	3%	0.04%	0.1%	1%
Traffic and safety (selected devices)	Centerline Markings	NC	7%	3%	5%	9%	4%
		NE	2%	6%	7%	8%	2%
		NW	7%	8%	8%	6%	6%
		SE	6%	6%	4%	7%	1%
		SW	6%	1%	4%	8%	10%
	Edgeline Markings	NC	7%	4%	4%	7%	5%
		NE	1%	6%	6%	3%	2%
		NW	5%	3%	5%	2%	5%
		SE	11%	4%	4%	8%	1%
		SW	11%	1%	12%	20%	10%
	Special Pavement Markings	NC	2%	11%	16%	2%	2%
		NE	7%	3%	0%	0%	3%
		NW	12%	8%	6%	3%	18%
		SE	15%	3%	4%	5%	5%
		SW	8%	7%	18%	11%	15%
	Regulatory/warning signs (emergency repair)	NC	3%	2%	1%	1%	1%
		NE	1%	0.3%	0%	1%	1%
		NW	1%	2%	4%	1%	2%
		SE	1%	1%	1%	1%	1%
		SW	7%	2%	2%	2%	1%
	Regulatory/Warning Signs (routine replacement)	NC	15%	7%	6%	4%	8.7%
		NE	23%	20%	13%	11%	10.5%
		NW	11%	8%	8%	8%	7.7%
		SE	20%	16%	14%	12%	11.5%

		SW	9%	8%	6%	7%	9.8%
	Detour/Object Marker/Recreation/Guide Signs (emergency repair)	NC	3%	7%	1%	1%	1%
		NE	0%	0%	1%	4%	1%
		NW	2%	3%	3%	6%	4%
		SE	3%	0%	2%	2%	2%
		SW	7%	5%	2%	2%	0.3%
	Detour/Object Marker/Recreation/Guide Signs (routine replacement)	NC	34%	29%	20%	14%	17%
		NE	39%	34%	28%	26%	20%
		NW	38%	40%	38%	33%	30%
		SE	45%	45%	44%	40%	31%
		SW	39%	35%	30%	29%	25%
	Delineators	NC	12%	5%	19%	6%	8%
		NE	13%	10%	6%	11%	13%
		NW	21%	22%	25%	22%	22%
		SE	46%	27%	40%	26%	12%
		SW	26%	30%	23%	32%	25%
	Protective Barriers	NC	15%	7%	2%	0%	0.2%
		NE	1%	0.02%	1%	7%	0.01%
		NW	8%	1%	2%	4%	10%
		SE	6%	10%	1%	1%	2%
		SW	3%	1%	2%	4%	6%

Mowing

The table below identifies the number of highway segments backlogged for Mowing, along with an itemization of the reasons for the deficiencies: *'how'* (shown as columns) and *'why'* (shown as rows). All segments shown are considered backlogged and contributed to the backlog percentage reported for Mowing. Note that multiple reasons for mowing deficiency are allowed; therefore the sum of percentages for each deficiency type can be more than 100%.

How roadway segments are backlogged for Mowing is based on WisDOT policy for grass height and width. The following are the general components of the WisDOT mowing policy:

- Height: Grass should be between six inches and twelve inches.
- Outside shoulder width: Grass should be cut a maximum of fifteen feet in width or to the bottom of the ditch, whichever is less.
- Inside shoulder width (medians): Grass should be cut a maximum of five feet in width or one pass with a single unit mower. If the remaining vegetation width is ten feet or less, the entire median should be mowed.
- No-Mow Zones: Grass should not be cut in areas that have been designated and signed as "No-Mow" zones.

		How is it deficient?			
		# of segments with observed deficiency			
		% of segments			
		Too Wide	Too Short	Too High	In the No Mow Zone
Why is it deficient?	Safety/Equipment	0	1	0	0
		0%	0.2%	0%	0%
	Mowed by Property Owner	163	394	149	1
		71%	71%	21%	33%
	Woody Vegetation Control	1	0	0	0
		0.4%	0%	0%	0%
	Maintenance Decision	64	161	554	2
		28%	29%	79%	67%
	Total	228	556	703	3

2015 Traveled Way: Compass Report on Maintenance Conditions

Data for this section comes from the WisDOT Pavement Maintenance Management System (PMMS). The PMMS data is collected by a pavement inspection van, which measures the severity and extent of pavement distresses on state highways.

Pavement Inspection Schedule Map

The map below shows the pavement evaluation schedule in Wisconsin. Pavement inventory data is collected every two years with the data from half the state collected in one year and the other half of the state in the other year. The yellow counties illustrate the Northwest Region and Southwest Region, with highways evaluated in the odd-numbered years (e.g. 2015). The green counties highlight the North Central Region, Northeast Region, and Southeast Region, with highways evaluated in the even-numbered years (e.g. 2014).

Wisconsin 2015: Traveled Way Condition Distribution

Statewide Pavement Conditions – Asphalt Traveled Ways		
Pavement Condition	Lane Miles	Percentage
Excellent	2,184.44	10%
Good	9,714.33	47%
Moderate	4,450.95	21%
Bad	4,528.06	22%

Source: WisDOT Pavement Maintenance Management System.

Statewide Pavement Conditions – Concrete Traveled Ways		
Pavement Condition	Lane Miles	Percentage
Excellent	641.85	10%
Good	3,107.31	49%
Moderate	1,361.58	22%
Bad	1,209.36	19%

Source: WisDOT Pavement Maintenance Management System.

Regions 2015: Traveled Way Condition Distribution

Asphalt Traveled Ways: *Percentage of Highway Mileage*					
Pavement Condition	North Central	Northeast	Northwest	Southeast	Southwest
Excellent	11%	11%	12%	17%	6%
Good	53%	55%	52%	39%	36%
Moderate	22%	21%	19%	24%	21%
Bad	14%	13%	18%	20%	36%

Source: WisDOT Pavement Maintenance Management System.

Concrete Traveled Ways: *Percentage of Highway Mileage*					
Pavement Condition	North Central	Northeast	Northwest	Southeast	Southwest
Excellent	5%	6%	12%	10%	14%
Good	54%	53%	44%	52%	46%
Moderate	24%	29%	26%	14%	18%
Bad	17%	12%	18%	24%	22%

Source: WisDOT Pavement Maintenance Management System.

2015 Signs: Compass Report on Routine Replacement and Age Distribution

Data in this section comes from the WisDOT Sign Inventory Management System (SIMS). This section covers only the routine replacement of signs based on their age and replacement standards. The analysis looks at the age distribution and service life of highway signs. The expected service life is determined relative to the date signs are manufactured, not the date they are installed. Information on the emergency repair of damaged and knocked-down signs can be found in the Compass Field Review section of this report.

Compass groups signs into two categories:

- Regulatory/Warning/School Signs (also referred to as "Regulatory/Warning Signs")
- Detour/Object Marker/Recreation/Guide Signs (also referred to as "Other Signs")

Regulatory/Warning Signs on Wisconsin highways are critically important for the safety of Wisconsin's motorists. To maximize installation efficiencies, WisDOT prioritizes routine replacement of signs by identifying corridor segments where the majority of signs qualify for replacement. All of the signs on the given segment are then replaced. The analysis assesses the progress on replacing both categories of signs.

In addition, WisDOT is migrating from engineering grade sign face material (grade 1) to more visible high intensity sign face material (grade 2). The trend analysis looks at the progress of this migration.

Key Observations in 2015:

- The backlog for routine replacement of Regulatory/Warning signs increased from 9 percent in 2014 to 10 percent in 2015. At closer look, the statewide increase in backlog is mainly attributed to the backlog increase in the North Central Region, which expanded from 4 percent in 2014 to 9 percent in 2015.
- The backlog for routine replacement of Other Signs decreased from 30 percent in 2014 to 26 percent in 2015. By region, the percentage of Other Signs backlogged for routine replacement varied from 17 percent in the North Central Region to 31 percent in the Southeast Region.
- Regulatory/Warning Signs were in service an average 4.9 years beyond their recommended service life, down from the 6.1 years level recorded in 2014. Other Signs were in service an average of 9.3 years beyond their useful life.
- There were 7,171 Regulatory/Warning Signs and 20,980 Other Signs in service five years or more beyond their recommended service life. This represents 4 percent and 18 percent respectively of the state highway signs in each category.
- Over 15,000 high intensity signs were added to the state system between 2014 and 2015. The percentage of high intensity signs on the state trunk highway system increased from 89 percent in 2014 to 92 percent in 2015. About 97 percent of Regulatory/Warning Signs are high intensity signs, while 83 percent of Other Signs have high intensity face material.

- There are 39,198 Type – F Fluorescent signs in service, up from 30,044 last year. Among the Type-F signs, 888 (2%) are beyond their service life, including 257 signs (1%) 5 years or more beyond their service life.
- Of the 49,443 signs beyond their recommended service life, 48% are engineering grade signs, while 79% of the 28,151 signs at least five years beyond their recommended service life have engineering grade face material.

Wisconsin: Annual Condition of Signs by Category

	Regulatory/Warning/School				Detour/Object Marker/ Recreation/Guide			
	Total Signs	**Backlog**	**Deficient Signs**	**Average Years Beyond Service Life[4]**	**Total Signs**	**Backlog**	**Deficient Signs**	**Average Years Beyond Service Life[4]**
2006	157,742	31%	49,457	5.0	126,362	55%	69,051	5.9
2007	160,206	25%	40,548	4.8	125,891	56%	70,099	6.3
2008	163,215	23%	37,060	4.7	124,333	55%	68,430	6.3
2009	166,741	23%	37,839	4.9	128,953	51%	65,350	7.3
2010	168,653	17%	29,313	5.3	121,743	44%	53,561	7.7
2011	171,202	15%	25,930	5.3	120,486	39%	47,568	8.5
2012	176,712	12%	20,399	5.3	118,509	37%	44,225	8.1
2013	181,763	9%	17,237	6.8	117,655	33%	39,041	9.1
2014	188,872	8.56%	16,169	6.1	117,346	29.87%	35,053	9.2
2015	**194,356**	**9.77%**	**18,992**	**4.9**	**118,981**	**25.59%**	**30,451**	**9.3**

Regions 2015: Condition of Signs by Category

	Regulatory/Warning/School				Detour/Object Marker/Recreation/Guide			
Region	**Total Signs**	**Backlog**	**Deficient Signs**	**Average Years Beyond Service Life[4]**	**Total Signs**	**Backlog**	**Deficient Signs**	**Average Years Beyond Service Life[4]**
NC	30,109	9%	2,628	2.5	17,244	17%	2,992	5.5
NE	27,668	11%	2,918	4.9	15,529	20%	3,051	8.7
NW	37,156	8%	2,853	4.2	24,072	30%	7,136	8.9
SE	51,893	11%	5,949	6.9	30,524	31%	9,454	10.0
SW	47,530	10%	4,644	4.1	31,612	25%	7,818	10.3

[1] When comparing the 'Average years beyond service life column, please note that in 2006 the useful life standard for signs with high intensity face material changed from 10 years to 12 years. Useful life standard for engineer-grade signs remained at 7 years.

Regions 2015: Annual Condition of Signs by Category

	Regulatory/Warning/School					Detour/Object Marker/Recreation/Guide			
Region	**Year**	**Total Signs**	**Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**	**Total Signs**	**Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**
NC	2006	26,117	35%	9,097	5.4	20,152	61%	12,342	6.5
	2007	26,663	25%	6,660	4.5	19,226	60%	11,494	6.5
	2008	28,917	18%	5,272	4.5	18,477	51%	9,456	6.7
	2009	28,531	18%	5,243	4.5	19,733	40%	7,843	7.0
	2010	28,851	16%	4,506	4.4	18,802	36%	6,746	6.5
	2011	28,938	15%	4,485	3.8	18,679	34%	6,379	7.0
	2012	29,179	7%	2,007	3.5	17,654	29%	5,066	4.9
	2013	29,353	6%	1,678	4.7	17,197	20%	3,469	6.9
	2014	29,941	4%	1,203	4.5	17,264	14%	2,464	6.7
	2015	**30,109**	**9%**	**2,628**	**2.5**	**17,244**	**17%**	**2,992**	**5.5**
NE	2006	21,520	39%	8,463	5	21,517	60%	12,953	5.5
	2007	21,887	39%	8,459	5.3	21,776	64%	13,831	6.1
	2008	22,375	38%	8,426	5.4	22,138	65%	14,314	6.5
	2009	24,932	36%	8,939	6.8	23,959	59%	14,244	8.8
	2010	25,191	29%	7,217	7.3	20,063	51%	10,185	8.9
	2011	25,629	23%	5,821	7.8	18,055	39%	7,105	9.6
	2012	26,294	20%	5,221	7.3	16,328	34%	5,580	9.3
	2013	26,597	13%	3,548	7.2	15,816	28%	4,424	9.1
	2014	27,181	11%	3,050	6.3	15,800	26%	4,049	8.7
	2015	**27,668**	**11%**	**2,918**	**4.9**	**15,529**	**20%**	**3,051**	**8.7**
NW	2006	34,087	26%	8,883	4.7	31,874	52%	16,544	5.1
	2007	33,786	19%	6,372	4.4	31,566	54%	16,962	5.3
	2008	32,837	16%	5,321	4.3	29,798	55%	16,337	5.2
	2009	33,400	14%	4,795	4.6	28,522	48%	13,786	6.3
	2010	33,988	12%	4,046	5.0	27,007	39%	10,637	6.9
	2011	33,909	11%	3,648	4.8	26,867	38%	10,117	7.6
	2012	33,958	8%	2,560	5.1	26,293	40%	10,502	7.7
	2013	34,492	8%	2,683	5.4	25,649	38%	9,711	8.4
	2014	36,264	8%	2,722	4.7	24,372	33%	8,133	8.6
	2015	**37,156**	**8%**	**2,853**	**4.2**	**24,072**	**30%**	**7,136**	**8.9**
SE	2006	35,226	30%	10,426	4.7	26,987	48%	12,835	5.7
	2007	36,390	28%	10,234	5	27,341	49%	13,386	6.2
	2008	37,249	28%	10,461	4.7	27,477	51%	14,133	6.2
	2009	38,563	28%	10,807	5.3	27,203	53%	14,341	6.9
	2010	39,451	22%	8,510	6.0	26,287	48%	12,491	7.6
	2011	40,870	20%	8,244	6.7	26,875	45%	12,205	8.3
	2012	43,216	16%	7,085	7.4	27,567	45%	12,286	8.6
	2013	45,174	14%	6,390	8.0	28,260	44%	12,327	8.7
	2014	49,019	12%	5,976	7.5	29,212	40%	11,549	9.0
	2015	**51,893**	**11%**	**5,949**	**6.9**	**30,524**	**31%**	**9,454**	**10.0**
SW	2006	40,792	31%	12,588	5.1	25,832	56%	14,377	6.9

	Regulatory/Warning/School					Detour/Object Marker/Recreation/Guide			
Region	**Year**	**Total Signs**	**Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**	**Total Signs**	**Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**
	2007	41,480	21%	8,823	4.7	25,982	56%	14,426	7.4
	2008	41,837	18%	7,580	3.9	26,443	54%	14,190	7.4
	2009	41,315	19%	8,055	4.4	29,536	51%	15,136	8.2
	2010	41,172	12%	5,034	5.1	29,584	46%	13,502	9.5
	2011	41,856	9%	3,732	5.2	30,010	39%	11,762	10.5
	2012	44,065	8%	3,526	5.4	30,667	35%	10,791	11.1
	2013	46,147	6%	2,938	6.6	30,733	30%	9,110	11.3
	2014	46,467	7%	3,218	5.1	30,698	29%	8,858	10.9
	2015	**47,530**	**10%**	**4,644**	**4.1**	**31,612**	**25%**	**7,818**	**10.3**

Wisconsin and Regions 2015: Distribution of Signs by Grade and Face Material Type

Face		Region					Statewide	
Grade	**Type**	**NC**	**NE**	**NW**	**SE**	**SW**	**Total**	**Percentage**
1	Non-Reflective	9	0	272	31	19	331	0.1%
	Other or Varies	54	0	132	12	271	469	0.1%
	Reflective - Engineering Grade	2,485	2,324	5,519	8,914	6,297	25,539	8.2%
2	Type D - Diamond Grade	-	-	-	-	-	-	-
	Type F - Fluorescent	6,266	7,550	10,266	6,758	8,358	39,198	12.5%
	Type H - High Intensity	5,592	3,562	8,144	7,715	15,413	40,426	12.9%
	Type HP - Prismatic High Intensity	32,606	28,820	36,579	56,754	47,924	202,683	64.7%
	Type SH - Super High Intensity	341	941	316	2,233	860	4,691	1.5%
Total		47,353	43,197	61,228	82,417	79,142	313,337	100%

Wisconsin and Regions: Annual Trend of Signs by Face Material Grade

	2012		2013		2014		2015	
Region	**Engineering Grade**	**High Intensity**	**Engineering Grade**	**High Intensity**	**Engineering Grade**	**High Intensity**	**Engineering Grade**	**High Intensity**
NC	6,966	39,867	5,050	41,500	3,496	43,709	2,548	44,805
NE	7,460	35,162	4,740	37,673	3,465	39,516	2,324	40,873
NW	11,677	48,574	10,200	49,941	7,623	53,013	5,923	55,305
SE	15,400	55,383	13,416	60,018	11,077	67,154	8,957	73,460
SW	13,856	60,876	11,209	65,671	8,883	68,282	6,587	72,555
Statewide	55,359	239,862	44,615	254,803	34,544	271,674	26,339	286,998
	19%	**81%**	**14.9%**	**85.1%**	**11.3%**	**88.7%**	**8.4%**	**91.6%**

Regions 2015: Distribution of Signs by Face Material Grade and Category

	Region	Engineering Grade	High Intensity	Total
Regulatory/ Warning Signs	NC	833	29,276	30,109
	NE	681	26,987	27,668
	NW	955	36,201	37,156
	SE	2,509	49,384	51,893
	SW	949	46,581	47,530
	Statewide	5,927	188,429	194,356
		3%	**97%**	
Other Signs	NC	1,715	15,529	17,244
	NE	1,643	13,886	15,529
	NW	4,968	19,104	24,072
	SE	6,448	24,076	30,524
	SW	5,638	25,974	31,612
	Statewide	20,412	98,569	118,981
		17%	**83%**	

Wisconsin and Regions 2015: Distribution of Signs by Remaining Service Life and Category

Regulatory/Warning/School Signs

	Years prior to the end of service life							Years beyond service life						
	6-10	**5**	**4**	**3**	**2**	**1**	**0**	**1**	**2**	**3**	**4**	**5-10**	**>10**	**Total**
NC	14,591	1,184	2,839	2,710	3,073	1,656	1,421	1,748	123	79	107	340	231	30,109
	48%	4%	9%	9%	10%	6%	5%	6%	0%	0%	0%	1%	1%	100%
NE	16,697	2,224	1,125	1,638	1,945	786	333	1,024	374	267	166	685	402	27,668
	60%	8%	4%	6%	7%	3%	1%	4%	1%	1%	1%	2%	1%	100%
NW	22,355	1,491	1,865	1,973	3,379	1,804	1,422	994	577	197	195	612	278	37,156
	60%	4%	5%	5%	9%	5%	4%	3%	2%	1%	1%	2%	1%	100%
SE	26,718	4,547	5,167	2,804	2,728	2,019	1,436	1,305	687	322	251	2,019	1,365	51,893
	51%	9%	10%	5%	5%	4%	3%	3%	1%	1%	0%	4%	3%	100%
SW	20,744	2,485	2,681	3,270	5,377	3,736	4,337	2,108	819	237	241	744	495	47,530
	44%	5%	6%	7%	11%	8%	9%	4%	2%	0%	1%	2%	1%	100%
State	101,105	11,931	13,677	12,395	16,502	10,001	8,949	7,179	2,580	1,102	960	4,400	2,771	194,356
	52%	6%	7%	6%	8%	5%	5%	4%	1%	1%	0%	2%	1%	100%

Detour/Object Marker/Recreation/Guide Signs

	Years prior to the end of service life							Years beyond service life						
	6-10	**5**	**4**	**3**	**2**	**1**	**0**	**1**	**2**	**3**	**4**	**5-10**	**>10**	**Total**
NC	7,001	929	2,746	1,523	620	825	538	849	119	84	560	716	664	17,244
	41%	5%	16%	9%	4%	5%	3%	5%	1%	0%	3%	4%	4%	100%
NE	7,757	1,725	670	1,064	684	364	210	366	231	155	197	1,002	1,100	15,529
	50%	11%	4%	7%	4%	2%	1%	2%	1%	1%	1%	6%	7%	100%
NW	8,738	1,691	1,549	1,348	1,353	1,499	744	614	490	175	841	2,542	2,474	24,072
	36%	7%	6%	6%	6%	6%	3%	3%	2%	1%	3%	11%	10%	100%
SE	12,533	1,552	2,295	1,356	942	1,084	591	813	373	694	464	2,919	4,191	30,524
	41%	5%	8%	4%	3%	4%	2%	3%	1%	2%	2%	10%	14%	100%
SW	13,395	1,479	2,435	1,640	1,161	1,108	935	979	793	282	392	1,775	3,597	31,612
	42%	5%	8%	5%	4%	4%	3%	3%	3%	1%	1%	6%	11%	100%
State	49,424	7,376	9,695	6,931	4,760	4,880	3,018	3,621	2,006	1,390	2,454	8,954	12,026	118,981
	42%	6%	8%	6%	4%	4%	3%	3%	2%	1%	2%	8%	10%	100%

Wisconsin and Regions 2015: Distribution of Signs by Remaining Service Life of High Intensity Face Type

Type F - Fluorescent

	Years prior to the end of service life							Years beyond service life						
	6-10	**5**	**4**	**3**	**2**	**1**	**0**	**1**	**2**	**3**	**4**	**5-10**	**>10**	**Total**
NC	5,339	34	113	117	224	103	136	126	10	13	9	7	35	6,266
	85%	1%	2%	2%	4%	2%	2%	2%	0%	0%	0%	0%	1%	100%
NE	7,339	73	8	39	8	6	2	6	14	2	39	13	1	7,550
	97%	1%	0%	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	100%
NW	9,878	28	44	43	107	52	30	28	18	11	9	11	0	10,266
	96%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	100%
SE	6,081	65	87	30	38	81	24	64	30	22	54	55	34	6,758
	90%	1%	1%	0%	1%	1%	0%	1%	0%	0%	1%	1%	1%	100%
SW	7,422	167	75	68	72	92	115	76	33	10	57	91	10	8,358
	89%	2%	1%	1%	1%	1%	1%	1%	0%	0%	1%	1%	0%	100%
State	36,059	367	327	297	449	334	307	300	105	58	168	177	80	39,198
	92%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	100%

Type H - High Intensity

	Years prior to the end of service life							Years beyond service life						
	6-10	**5**	**4**	**3**	**2**	**1**	**0**	**1**	**2**	**3**	**4**	**5-10**	**>10**	**Total**
NC	352	57	367	125	400	1,029	1,306	1,511	117	69	70	103	67	5,592
	6%	1%	7%	2%	7%	18%	23%	27%	2%	1%	1%	2%	1%	100%
NE	205	91	55	96	388	292	357	996	364	144	159	276	139	3,562
	6%	3%	2%	3%	11%	8%	10%	28%	10%	4%	4%	8%	4%	100%
NW	399	100	124	383	587	1,475	1,769	1,313	865	191	606	259	72	8,144
	5%	1%	2%	5%	7%	18%	22%	16%	11%	2%	7%	3%	1%	100%
SE	178	32	101	96	123	852	1,787	1,895	871	432	307	777	245	7,715
	2%	0%	1%	1%	2%	11%	23%	25%	11%	6%	4%	10%	3%	100%
SW	821	66	34	47	227	3,573	4,886	2,779	1,391	323	284	402	356	15,413
	5%	0%	0%	0%	1%	23%	32%	18%	9%	2%	2%	3%	2%	100%
State	1,955	346	681	747	1,725	7,221	10,105	8,494	3,608	1,159	1,426	1,817	879	40,426
	5%	1%	2%	2%	4%	18%	25%	21%	9%	3%	4%	4%	2%	100%

Type HP - Prismatic High Intensity

	Years prior to the end of service life							Years beyond service life						
	6-10	**5**	**4**	**3**	**2**	**1**	**0**	**1**	**2**	**3**	**4**	**5-10**	**>10**	**Total**
NC	15,738	1,915	4,984	3,920	3,037	1,234	456	355	69	49	293	248	282	32,606
	48%	6%	15%	12%	9%	4%	1%	1%	0%	0%	1%	1%	1%	100%
NE	16,276	3,656	1,697	2,511	2,211	823	144	363	165	174	129	430	237	28,820
	56%	13%	6%	9%	8%	3%	0%	1%	1%	1%	0%	1%	1%	100%
NW	20,705	3,016	3,185	2,816	3,834	1,605	299	197	111	105	300	309	83	36,579
	57%	8%	9%	8%	10%	4%	1%	1%	0%	0%	1%	1%	0%	100%
SE	31,627	5,851	7,189	4,014	3,500	2,038	206	154	154	557	151	403	279	56,754
	56%	10%	13%	7%	6%	4%	0%	0%	0%	1%	0%	1%	0%	100%
SW	25,376	3,660	4,852	4,643	6,190	1,135	247	191	170	176	255	280	194	47,924
	53%	8%	10%	10%	13%	2%	1%	0%	0%	0%	1%	1%	0%	100%
State	109,722	18,098	21,907	17,904	18,772	6,835	1,352	1,260	669	1,061	1,128	1,670	1,075	202,683
	54%	9%	11%	9%	9%	3%	1%	1%	0%	1%	1%	1%	1%	100%

Type SH - Super High Intensity

	Years prior to the end of service life							Years beyond service life						
	6-10	**5**	**4**	**3**	**2**	**1**	**0**	**1**	**2**	**3**	**4**	**5-10**	**>10**	**Total**
NC	157	51	23	11	1	2	5	27	3	7	16	15	23	341
	46%	15%	7%	3%	0%	1%	1%	8%	1%	2%	5%	4%	7%	100%
NE	631	119	33	52	16	17	3	19	5	9	8	11	18	941
	67%	13%	4%	6%	2%	2%	0%	2%	1%	1%	1%	1%	2%	100%
NW	95	17	25	16	75	67	2	0	1	2	8	8	0	316
	30%	5%	8%	5%	24%	21%	1%	0%	0%	1%	3%	3%	0%	100%
SE	1,359	115	84	14	8	121	0	2	2	3	30	2	0	2,233
	61%	5%	4%	1%	0%	5%	0%	0%	0%	0%	1%	0%	0%	100%
SW	517	50	78	11	3	25	9	3	5	0	35	54	41	860
	60%	6%	9%	1%	0%	3%	1%	0%	1%	0%	4%	6%	5%	100%
State	2,759	352	243	104	103	232	19	51	16	21	97	90	82	4,691
	59%	8%	5%	2%	2%	5%	0%	1%	0%	0%	2%	2%	2%	100%

2015 Winter: Compass Report on Winter Operations

This section of the report looks at winter operations on state highways from November 1, 2014 to April 30, 2015.

The Bureau of Highway Maintenance issues two reports on winter. This Compass report, directed toward a general audience, presents winter operations outcomes critical to drivers and taxpayers. Another report, the *Annual Winter Maintenance Report*, focuses on operational measures and detailed analysis directed toward front-line operations managers.

The 2014-15 winter season featured a return to more "normal" conditions following two harsh winters. Snowfall returned to more average levels, and temperatures averaged about 7 degrees warmer than in 2013-14. The season started with November snow events in the northern half of the state. Both December and January were mild months with temperatures and snowfall above average. Extremely cold temperatures in February were 10 to 15 degrees below the 30-year average. However, unlike the previous two winters, the cold did not bring heavy snowfall. March ended the season with a split pattern. Northern Wisconsin experienced above-average temperatures and below-average snowfall; the reverse was true in the south.

In order to facilitate comparisons from one winter to the next, as well as between counties within the same season, WisDOT uses several tools and methodologies to analyze individual storms and the winter as a whole. The Winter Severity Index (WSI) is one such tool. WSI is a compound measure that considers number of snow and freezing rain events, snow amounts, storm durations, and number of incidents. Because such information is crucial to understanding operational outcomes, many tables throughout this report include relevant WSI values.

The WSI values are scaled such that 100 is the statewide average for 5 winters prior to the preceding 2 years. For 2014-15, WSI is scaled to the average 5-years including 2008-09 to 2012-13. Thus, a number above 100 indicates higher-than-average severity and a number below 100 indicates lower-than-average severity.

The statewide average WSI in 2014-15 was 99.3, which is 0.7 lower than the 5-year average and 4.1 percent lower than the average of the previous ten winters. By region the average WSI varies from 78 in the South-East to 114.2 in the North-Central region.

Statewide Measures for Winter

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Roads to bare/wet pavement within WisDOT target	58%	67%	79%	79%	73%	63%	70%
Cost per lane mile	$2,591	$2,222	$2,696	$1,656	$2,778	$3,304	$2,155
Winter Severity Index (WSI)	112.2	82.4	119.2	75.4	115.2	133.6	99.28
Cost per lane mile / WSI	$23.1	$26.97	$22.62	$21.96	$24.11	$24.73	$21.71
Winter weather crashes per 100 million vehicle miles traveled	40	22	35	20	29	44	25

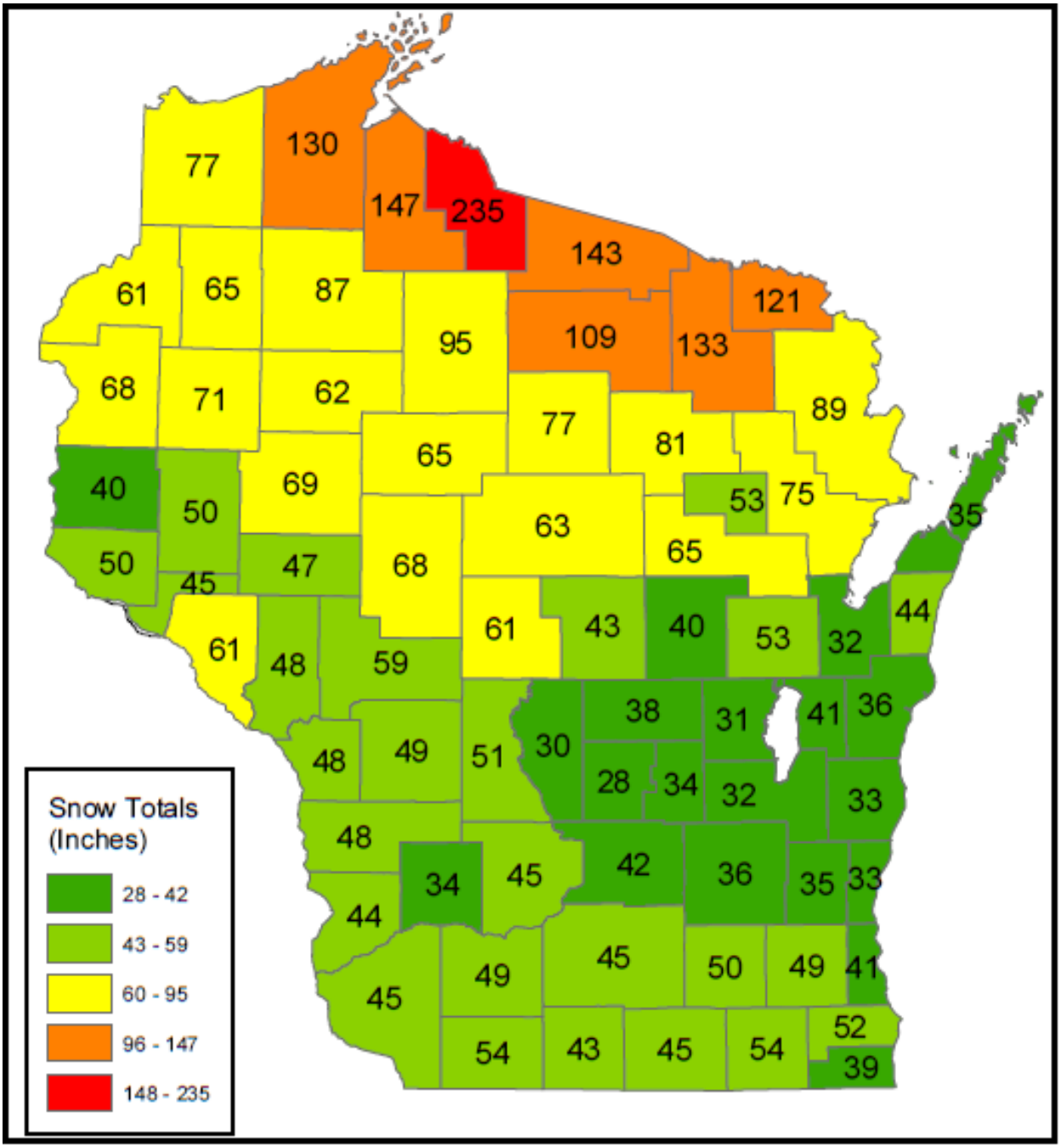
Key Observations:

- The 2014-15 statewide winter maintenance cost was $74.2 million, 35% less than the 2013-14 season, which was by far the costliest winter in Wisconsin history ($113 million). However, the 2014-15 total cost was just 9% below the 10-year average total cost ($81M) and 17% below the 5-year average total cost ($89M).
- Salt was the largest expenditure in the state highway maintenance, management and operations budget. When compared to 2013-14, salt expenditures decreased 34%, from $40.4M to $26.9M in 2014-15. However, when compared to the average from the previous five winters ($31.9M), salt expenditures decreased only 17%.
- Equipment expenditures decreased 38% from the prior winter season, labor expenditures dropped 34%, and expenditures for materials other than salt decreased 22%.
- Statewide, the average snowfall was approximately 60 inches. This amount is half of the snowfall total of the previous winter season but close to the 30-year average of 52.4 inches. Snowfall varied significantly across the state; the highest snowfall recorded was in Iron County (235 inches) and the lowest amount was in Marquette County (27 inches).
- The statewide average number of winter storms was 33 in 2014-2015, 10 less than previous winter. Ashland County experienced the most storms (63), while Fond Du Lac County had the least number of storms (18). The number of storms had a greater impact on resources used than snowfall total, since staff and equipment may be mobilized for 0.1 inches of snow or during freezing rain events.
- The percentage of roads to bare/wet pavement within WisDOT target times was 70%, higher than the 63% rate during the previous winter. From storm to storm, most of the variability in a county's ability to achieve bare/wet pavement within the target times is due to weather effects (type, duration and severity of storms throughout the winter season).
- In the winter of 2014-2015, there were 6,773 reported winter weather crashes (those that occurred on pavements covered with snow, slush or ice). The crash rate (number of crashes per 100 million vehicle miles traveled) decreased considerably (63%) during the 2014-15 winter season to a statewide average of 25, down from last winter's crash rate of 44.

2014-2015 Winter Season Snowfall for Wisconsin

Note: The below map is in color. If you are not viewing a color copy, please contact the Compass Program Manager at the Bureau of Highway Operations for a color version to be mailed or emailed to you.

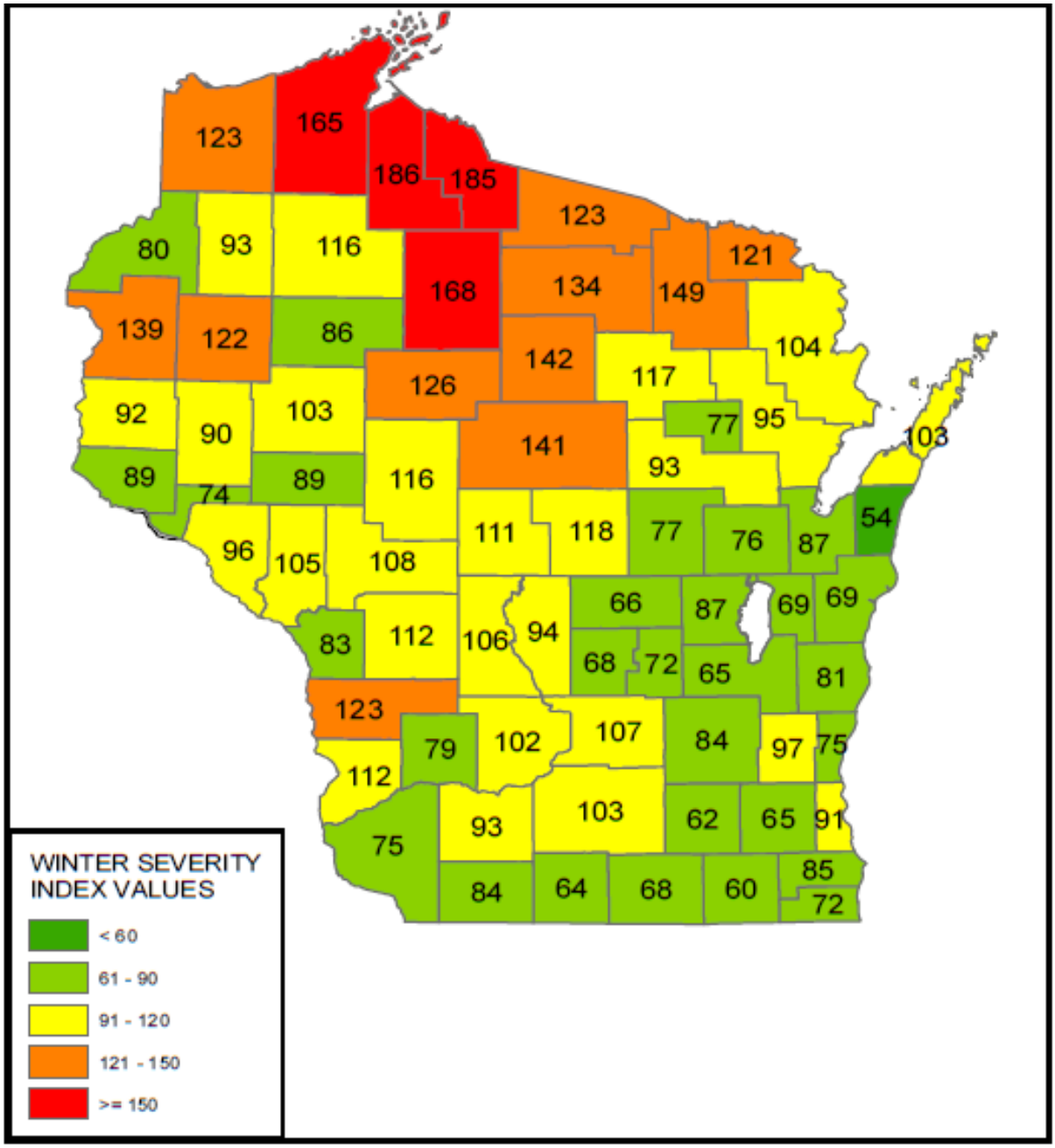
The National Weather Service (NWS) map below shows the snowfall for Wisconsin during the period July 1, 2014 to June 30, 2015.



2014-2015 Wisconsin Winter Severity Index

Note: The below map is in color. If you are not viewing a color copy, please contact the Compass Program Manager at the Bureau of Highway Maintenance for a color version to be mailed or emailed to you.

Data from weekly storm reports are used to calculate the Winter Severity Index for each county according to a weighted formula. Results are scaled such that 100 is the 5-year statewide average measured from 2 years ago so from 2008-09 to 2012-13. The average for the 2014-2015 winter was 99.3.



Winter by the Numbers

		2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Infrastructure	Lane miles	33,531	33,532	33,776	33,944	34,192	34,339	34,435
	RWIS[5] stations	58	58	60	60	60	58	65
Material usage[4]	Tons Salt (per lane mile)	569,985 (17.0 tons)	408,523 (12.2 tons)	573,253 (17.0 tons)	355,519 (10.5 tons)	621,207 (18.1 tons)	669,807 (19.5 tons)	388,797 (11.3 tons)
	Average cost of salt	$47.19/ton	$60.92/ton	$58.55/ton	$59.18/ton	$58.34/ton	$60.40/ton	$69.01/ton
	Gallons pre-wetting liquid	1,321,290	1,099,971	1,529,230	1,082,163	2,124,834	2,970,166	2,009,139
	Gallons anti-icing agent	500,673	683,144	714,860	1,164,394	1,110,886	887,415	1,531,787
	Cubic yards Sand	44,179	19,081	18,941	7,513	18,589	58,870	22,301
Services	Regular county hours on winter[6]	148,655	133,715	176,842	103,332	212,090	244,602	160,453
	Overtime county hours on winter	176,636	106,578	175,373	82,657	137,225	182,311	91,691
	Public service announcements aired	5,948 total 5,340 radio 608 TV	6,754 total 6,122 radio 632 TV	6,597 total 6,010 radio 587 TV	6,668 total 6,016 radio 652 TV	7,154 total 5,919 radio 1,235 TV	3,184 total 2,704 radio 480 TV	6,080 total 5,085 radio 995 TV
	Cost of announcements (market value)	$46,500 ($288,895)	$36,000 ($259,062)	$36,000 ($209,144)	$36,000 ($268,399)	$36,000 ($241,380)	$36,000 ($109,140)	$36,000 ($235,659)
Management and Technology	Patrol sections	762	767	759	770	769	753.5	755.0
	Average patrol section length in miles	45.54	43.72	44.03	44.08	44.46	45.57	45.61
	Counties w/salt spreaders equipped with on-board pre-wetting unit	55 of 72 (76%)	55 of 72 (76%)	58 of 72 (80%)	58 of 72 (80%)	58 of 72 (80%)	58 of 72 (80%)	68 of 72 (94%)
	Counties w/salt spreaders equipped with ground-speed controller unit	67 of 72 (93%)	67 of 72 (93%)	65 of 72 (90%)	68 of 72 (94%)	67 of 72 (93%)	69 of 72 (96%)	68 of 72 (94%)
	Underbody plows	572	572	589	619	658	658	355
	Counties w/underbody plows	55 of 72 (76%)	55 of 72 (76%)	55 of 72 (76%)	57 of 72 (79%)	55 of 72 (76%)	56 of 72 (78%)	54 of 72 (75%)
	Counties equipped to use anti-icing agents	65 of 72 (90%)	65 of 72 (90%)	65 of 72 (90%)	66 of 72 (92%)	66 of 72 (92%)	66 of 72 (92%)	66 of 72 (92%)
	Counties that used anti-icing agents during the winter season	54 of 72 (75%)	62 of 72 (86%)	61 of 72 (85%)	60 of 72 (83%)	65 of 72 (90%)	63 of 72 (88%)	63 of 72 (88%)

[5] Road Weather Information System

[6] Costs and hours come from county storm reports, and reflect sanding, salting, plowing and anti-icing efforts.

Compass Winter Operations Measures

Time to Bare/wet Pavement

In order to gain the most benefit from limited resources, counties provide different levels of service on highways according to the amount of daily traffic they receive. High-volume roads typically receive 24-hour coverage, while lower-volume roads receive 18-hour coverage. The Winter Highway Classifications table included at the end of this report shows guidelines for determining coverage type.

After a county experiences a storm event, it reports the time to bare/wet pavement for either all 24-hour coverage roads or all 18-hour coverage roads, depending on which is predominant in the county. In some cases, "Never bare/wet" is reported, meaning that it took more than 24 hours to achieve bare/wet condition, or the next storm began before the bare/wet condition was achieved. Counties report "Always Bare/wet" if the roadways were bare/wet the entire time crews were out.

WisDOT has set targets for "Time to Bare/wet Pavement" for the different coverage types. The target is four hours for roads that receive 24-hour coverage; the target is six hours for roads with 18-hour coverage. A county either meets this goal or does not after each storm event. The following table shows the percent of reported events for which the counties met these targets, organized by the coverage type. In 2014-2015, targets were met statewide for 70 percent of the reported storm events, up from 63 percent in the previous year.

Further analysis suggests that variability of time to bare/wet pavement within a category is due more to weather effects (type, duration and severity of storms throughout the winter season) than to differences in the level of effort or relative resources.

Highway Coverage Category	Roads to Bare/wet Pavement within WisDOT Targets						
	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
24-Hour	61%	70%	83%	83%	75%	66%	75%
18-Hour	56%	65%	75%	76%	70%	59%	67%
Statewide	58%	67%	79%	79%	73%	63%	70%
Target	70%	70%	70%	70%	70%	70%	70%

Costs per Lane Mile versus Winter Severity Index

The following table lists the WSI and total cost per lane mile for winter operations in each Region. The costs were obtained from the WisDOT's FOS (Financial Operating System). The statewide average cost per lane mile was $2,155. The average severity index was 99.3, thus average cost per mile and severity index point was $21.71. Total costs include material, labor, equipment, and administrative costs.

Region	Cost/LM				Relative cost per WSI point			
	2011-12	2012-13	2013-14	2014-15	2011-12	2012-13	2013-14	2014-15
NC	$1,755	$2,688	$3,067	$2,225	$20	$20	$20.59	$19.48.
NE	$1,548	$2,788	$3,050	$1,789	$23	$28	$25.25	$22.11
NW	$1,446	$2,714	$3,139	$2,040	$18	$21	$22.63	$18.55
SE	$2,055	$2,816	$4,033	$2,664	$37	$33	$33.81	$34.15
SW	$1,572	$2,865	$3,274	$2,070	$23	$28	$26.40	$22.74
Statewide	$1,656	$2,778	$3,304	$2,155	$22	$24	$24.72	$21.71

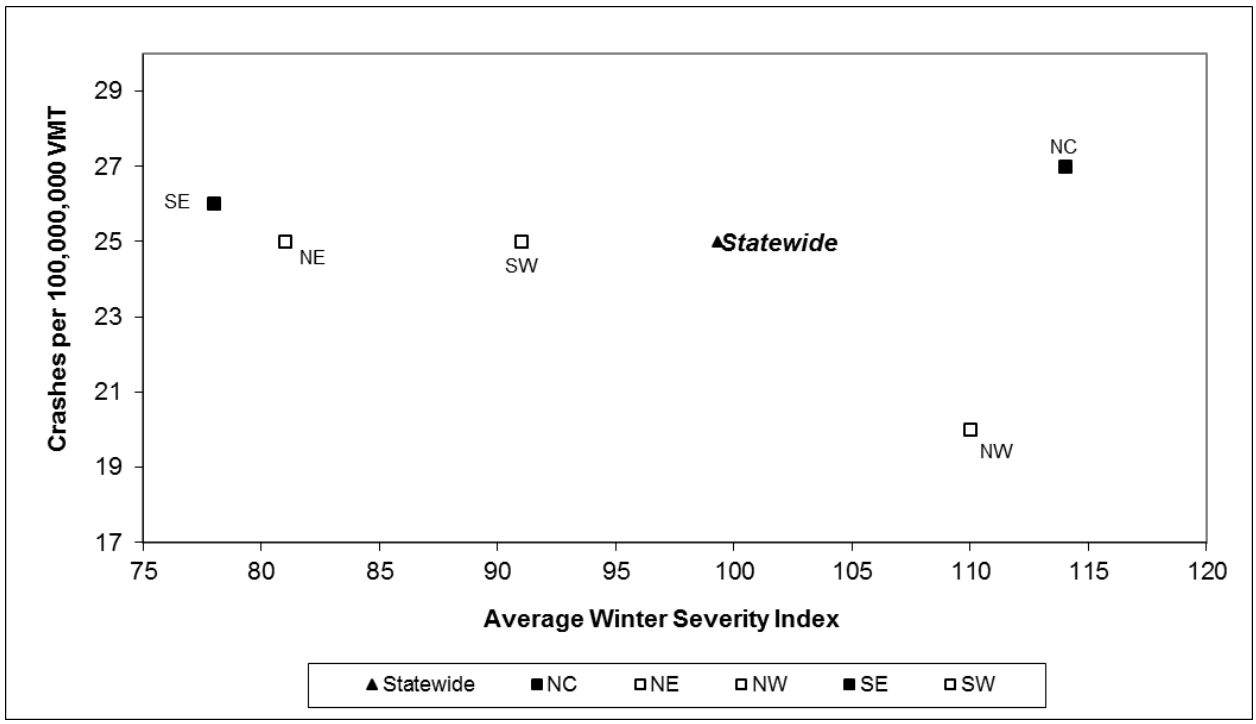
Winter Weather Crashes per Vehicle Miles Traveled (VMT)

The following table shows the five-year trend of crashes per 100 million VMT statewide and in each particular WisDOT region. The state average was 25 winter crashes per 100 million VMT; 43 percent lower than the previous value (44 crashes) and 18 percent lower than the 5-year average (31 crashes). By region the number of winter crashes is quite steady; it reached the largest number of crashes in the North Central Region with 27 crashes, and the lowest rate was in the Northwest Region with 20 crashes per 100 million VMT.

Scope	VMT* (100 million)	Crashes	Crashes per 100 million VMT					Average Winter Severity Index				
			2010-11	2011-12	2012-13	2013-14	2014-15	2010-11	2011-12	2012-13	2013-14	2014-15
NC	36.05	973	39	23	34	53	27	134	88	132	149	114
NE	47.45	958	38	23	34	55	25	104	69	100	121	81
NW	47.59	1,190	39	22	37	44	20	131	79	128	140	110
SE	73.63	1,894	27	16	19	36	26	95	56	86	119	78
SW	69.93	1,758	37	22	32	44	25	109	69	104	124	91
Statewide	274.66	6,773	35	20	29	44	25	119	75	115	134	99.3

*100 million vehicle miles traveled (VMT) for November 1, 2014 through April 30, 2015 determined from annual average daily traffic (AADT) counts, gallons of gas sold, fuel tax collected, and average vehicle miles per gallon.

Based on the information from the table above, the following figure shows the relationship between the severity of the winter and the number of crashes per VMT in the regions and statewide.


Crashes per 100,000,000 VMT
29
27
25
23
21
19
17
75
80
85
90
95
100
105
110
115
120
Average Winter Severity Index
NC
SE
NE
SW
Statewide
NW
Statewide
NC
NE
NW
SE
SW

Winter Data, Definitions, and Categories

Data

Unless otherwise noted, all material and labor figures come from the winter storm reports that are submitted by each county for every storm event or anti-icing procedure throughout the winter season. The data quality is unknown. Weather, road conditions, and materials usages are based upon the observations of county patrol superintendents and sometimes on their expert judgment and, as such, contain more variability than direct measurements.

Definitions

Dollars: Cost data are from the fiscal year, July 1, 2014 to June 30, 2015.

Winter: November 1 through April 30, unless otherwise noted.

Winter Activities: Actual cost data incorporates all winter activities, including putting up snow fence, transporting salt, filling salt sheds, thawing out frozen culverts, calibrating salt spreaders, producing and storing salt brine, and anti-icing applications, as well as plowing and salting. Costs from storm reports, however, cover only plowing, sanding, salting, and anti-icing.

Roads: The roads referred to in this report are state maintained highways, including Interstate and US highways. See the following tables for groupings.

Categories & Groupings

Winter Service Group Assignments

Winter Service Group	Definition	County Names	Number of Counties	% of Counties
A	• 1,000 or more lane miles and all counties have some roads with six or more lanes • 900,000 or more square feet of bridge deck • 20 or more plow routes; most routes are 24 hour routes	Dane, Milwaukee, Waukesha	3	4%
B	• 600 to 1,000 lane miles; some counties have roads with six or more lanes; all counties have high mileage on four-lane roads • 400,000 to 900,000 square feet of bridge deck • 14 to 20 plow routes; most routes are 24 hour routes	Brown, Chippewa, Columbia, Dodge, Eau Claire, Fond du Lac, Grant, Jefferson, Kenosha, Marathon, Monroe, Outagamie, Portage, Racine, Rock, Sauk, St. Croix, Walworth, Washington, Waupaca, Winnebago	21	29%

Winter Service Group	Definition	County Names	Number of Counties	% of Counties
C	• 450 to 600 lane miles; some counties have roads with six or more lanes; all counties medium mileage on four-lane roads • 170,000 to 450,000 square feet of bridge deck • 7 to 14 plow routes; mix of 18 and 24 hour routes	Barron, Clark, Crawford, Douglas, Dunn, Iowa, Jackson, Juneau, La Crosse, Lincoln, Manitowoc, Oconto, Pierce, Shawano, Sheboygan, Vernon, Wood	17	24%
D	• 325 to 450 lane miles; no counties have roads with six or more lanes; all counties have low to medium mileage on four-lane roads; highest mileage is in two-lane roads • 140,000 to 170,000 square feet of bridge deck • 4 to 7 plow routes; mix of 18 and 24 hour routes	Bayfield, Buffalo, Door, Green, Green Lake, Lafayette, Marinette, Marquette, Oneida, Ozaukee, Polk, Richland, Trempealeau, Washburn, Waushara	15	21%
E	• 175 to 325 lane miles; no counties have roads with six or more lanes; few counties have four-lane roads; medium to high mileage on two-lane roads • 50,000 to 140,000 square feet of bridge deck • 2 to 4 plow routes; nearly all with 18 hour routes	Ashland, Burnett, Calumet, Forest, Iron, Langlade, Pepin, Price, Rusk, Sawyer, Taylor, Vilas	12	17%
F	• 90 to 175 lane miles; no counties have roads with six or more lanes; counties have 0 to 5 lane miles of four-lane roads; two-lane roads have low to medium mileage • Less than 50,000 square feet of bridge deck • Fewer than 2 plow routes; all 18 hour routes	Adams, Florence, Kewaunee, Menominee	4	6%

Passable Roadway Expectation Categories

Category	Definition	Lane miles	% of total
1	Major urban freeways and most highways with six lanes and greater	3,170	9%
2	High volume four-lane highways (ADT ≥ 25,000) and some four-lane highways (ADT < 25,000), and some 6-lane highways.	3,283	10%
3	All other four-lane highways (ADT < 25,000)	8,893	26%
4	Most high volume two-lane highways (ADT ≥ 5,000) and some 2-lanes (ADT <5000)	4,639	13%
5	All other two-lane highways	14,451	42%
Total		34,435	

Winter Highway Classification Table

Typical Types of Highways	Winter Highway Class	Coverage Type
• Major Urban Freeways • Most 6 Lanes and Greater	High Volume	24-hr service as conditions require
• Some 6-Lanes • High Volume 4 Lanes with AADT >25,000 and Some 4- Lanes with AADT <25,000 • Most 2-lane with AADT >5000 and Some 2-Lanes with AADT <5000 • Includes Interstates	High Volume	24-hr service as conditions require
• Some 4 Lanes with ADT <25,000 • Most 2-Lanes With AADT <5000 and Some 2-Lanes with AADT >5000	All Other	18-hr coverage as conditions require Some minimal ability to respond to emergencies should be provided during hours that full coverage is not provided

*The above highway classifications and coverage times are intended as a guide in winter maintenance operations and changes may be deemed appropriate based on local conditions..

2015 Bridges: Compass Report on Condition, Maintenance, and Inspection Backlog

The Compass bridge report uses data from the Highway Structures Information System (HSI) online report. Data was taken during the period of April 1st to April 16th, 2016.

Key observations:

State Bridge Deck Conditions

- Statewide, 31% of decks are in Fair condition and need reactive maintenance, receiving an NBI rating of 5 or 6 (25% of concrete bridges and 43% of steel bridges.
- The NW Region (1,072 bridges) had the lowest bridge conditions in the state, with the highest percentage of decks in Fair condition (44%) and Poor condition (3%).
- The NE Region (875 bridges) had the best bridge ratings in Wisconsin, with 83% of decks in Good condition and no bridges in either the Poor or Critical condition categories.

Bridge Maintenance Needs

- Maintenance actions are those needs recommended by Bridge Inspectors for each bridge at the time of inspection.
- The following maintenance actions are recommended as needed. As approaches settle, brush continually grows, decks eventually crack and drainage issues arise at wings, these actions become necessary:
  - Decks - Seal Surface Cracks
  - Approaches - Seal Approach to Paving Block
  - Expansion Joints – Clean
  - IMP - Concrete Overlay
  - Miscellaneous - Cut Brush
  - Decks – Clean and Sweep Deck/Drains
  - Drainage - Repair Washouts / Erosion
  - Expansion Joints – Seal
  - Deck-Patching

The WisDOT Bureau of Structures revised the maintenance data format in 2013. The 2015 Compass Bridge Report has been modified to be consistent with the WisDOT *Annual Bridge Report*. Beginning in 2013, the data reflects all reported maintenance requests. Thus, the list included work items that were already completed, work items that were requested and had not been completed, and items that were requested but rejected by the maintaining authority. Since 2013 the report only shows work items actually needing to be done. Completed and rejected work items are no longer considered and included in the report.

Wisconsin 2015: Bridge Condition Distribution

	Bridges	Deck Area (ft^2)	Component	% of bridges in condition			
				Good[1]	Fair[2]	Poor[4]	Critical[4]
All	5,243	53,965,527	Decks	67%	31%	2%	0%
			Superstructures	72%	27%	1%	0%
			Substructures	70%	29%	1%	0%
Concrete	3,817	31,594,202	Decks	71%	27%	1%	0%
			Superstructures	79%	20%	1%	0%
			Substructures	79%	20%	1%	0%
Steel	1,426	22,371,325	Decks	57%	41%	2%	0%
			Superstructures	55%	43%	2%	0%
			Substructures	49%	48%	2%	0%

Region 2015: Bridge Condition Distribution

Region	Bridges	Deck Area (ft^2)	Component	% of bridges in condition			
				Good[2]	Fair[3]	Poor[3]	Critical[3]
NC	677	5,422,678	Decks	69%	30%	1%	0%
			Superstructures	79%	20%	1%	0%
			Substructures	74%	25%	2%	0%
NE	875	10,434,169	Decks	83%	17%	0%	0%
			Superstructures	84%	16%	0%	0%
			Substructures	82%	18%	0%	0%
NW	1,072	9,618,594	Decks	53%	44%	3%	0%
			Superstructures	64%	33%	3%	0%
			Substructures	68%	30%	3%	0%
SE	1,055	15,208,662	Decks	66%	32%	2%	0%
			Superstructures	64%	35%	1%	0%
			Substructures	65%	35%	0%	0%
SW	1,564	13,281,424	Decks	67%	31%	2%	0%
			Superstructures	71%	27%	1%	0%
			Substructures	68%	31%	1%	0%

[1]Good: Bridges with NBI rating 7-9 should receive Preventive Maintenance
[2]Fair: Bridges with NBI 5-6 should receive Reactive Maintenance. These bridges are considered backlogged for maintenance
[3]Poor and Critical: Bridges with NBI 0-4 should receive Rehabilitation or Replacement

Wisconsin and Regions 2015: Bridge Condition

Region	Year	Percent of Bridges Feature in Fair condition			Number of state-maintained bridges	Dollar spent on bridges (in millions)
		Decks	Superstructures	Substructures		
NC	2009	22%	16%	18%	650	
	2010	26%	17%	20%	653	
	2011	27%	17%	21%	663	
	2012	27%	17%	21%	663	
	2013[4]	28%	16%	19%	665	
	2014	30%	19%	24%	673	
	2015	30%	20%	25%	677	
NE	2009	19%	19%	22%	874	
	2010	17%	18%	22%	878	
	2011	15%	16%	20%	884	
	2012	13%	14%	18%	893	
	2013[4]	11%	13%	17%	875	
	2014	12%	12%	17%	880	
	2015	17%	16%	18%	875	
NW	2009	47%	33%	29%	1072	
	2010	46%	32%	29%	1061	
	2011	47%	33%	30%	1062	
	2012	46%	33%	29%	1063	
	2013[4]	46%	33%	28%	1067	
	2014	47%	33%	28%	1067	
	2015	44%	33%	30%	1072	
SE	2009	41%	45%	45%	1052	
	2010	41%	45%	43%	1063	
	2011	41%	46%	44%	1068	
	2012	38%	42%	41%	1068	
	2013[4]	38%	41%	38%	1056	
	2014	34%	39%	36%	1059	
	2015	32%	35%	35%	1055	
SW	2009	24%	23%	23%	1470	
	2010	27%	23%	24%	1507	
	2011	27%	23%	25%	1521	
	2012	28%	23%	25%	1534	
	2013[4]	27%	24%	26%	1554	
	2014	29%	26%	30%	1562	
	2015	31%	27%	31%	1564	
Statewide	2009	31%	28%	28%	5118	$11.87
	2010	32%	28%	28%	5162	$12.17
	2011	32%	28%	28%	5198	$11.62
	2012	31%	27%	27%	5221	$13.25
	2013[4]	31%	27%	26%	5217	$11.69
	2014	31%	27%	28%	5241	$11.11
	2015	31%	27%	29%	5243	$11.18

[4]Beginning in the 2013 report, pedestrian bridges were excluded in all bridge counts and statistics

Wisconsin and Regions: Trend of Bridge Maintenance Needs[5]

Region	Year	Percent of Bridges needing maintenance								# of Bridges needing maintenance					
		Maintenance Action													
		Deck – Seal Surface Cracks		Expansion Joints – Seal		Misc. – Cut Brush		Approach – Seal Approach to Paving Block		Deck – Patching		Drainage - Repair Washouts / Erosion		Approach - Wedge Approach	
NC	**2010**	63%	413	42%	277	14%	93	3%	20	18%	120	14%	89	6%	39
	2011	72%	476	42%	281	16%	109	10%	65	19%	128	14%	92	10%	64
	2012	48%	320	29%	193	15%	97	24%	159	12%	82	11%	76	9%	60
	2013[4]	50%	334	29%	196	15%	103	28%	189	13%	84	12%	82	10%	64
	2014	53%	357	35%	236	18%	119	34%	228	14%	96	19%	131	11%	74
	2015	34%	227	19%	129	13%	89	32%	217	8%	52	13%	88	7%	45
NE	**2010**	34%	300	33%	293	9%	79	24%	214	17%	150	16%	143	2%	19
	2011	37%	323	35%	306	9%	83	29%	260	19%	164	16%	144	2%	18
	2012	35%	317	28%	253	8%	74	25%	221	14%	122	13%	115	2%	16
	2013[4]	42%	366	29%	257	9%	77	26%	225	14%	120	13%	117	2%	16
	2014	51%	448	31%	273	9%	79	34%	297	14%	124	13%	118	2%	14
	2015	29%	250	9%	77	3%	24	22%	194	4%	32	2%	19	1%	5
NW	**2010**	4%	41	3%	37	4%	43	11%	121	7%	74	9%	93	3%	35
	2011	4%	45	4%	43	5%	56	14%	153	9%	95	13%	135	4%	38
	2012	4%	43	3%	36	5%	58	14%	150	8%	81	12%	130	4%	39
	2013[4]	4%	44	5%	50	6%	67	16%	170	8%	87	15%	157	5%	51
	2014	5%	54	5%	55	7%	80	18%	190	11%	116	17%	186	6%	63
	2015	1%	11	1%	13	7%	72	4%	46	5%	51	7%	72	2%	18
SE	**2010**	18%	192	22%	233	25%	268	21%	226	15%	155	19%	201	17%	176
	2011	21%	228	22%	240	26%	277	25%	269	16%	174	22%	230	17%	178
	2012	16%	172	16%	166	17%	183	21%	225	11%	122	15%	162	13%	140
	2013[4]	17%	183	15%	159	17%	180	24%	249	12%	122	17%	181	14%	143
	2014	18%	186	16%	166	18%	192	28%	298	13%	140	19%	202	14%	149
	2015	5%	49	2%	26	6%	64	16%	169	6%	59	13%	137	4%	43
SW	**2010**	23%	354	5%	69	29%	443	27%	400	9%	134	15%	229	13%	196
	2011	28%	424	5%	71	34%	515	33%	504	10%	150	18%	277	14%	214
	2012	27%	420	4%	69	26%	393	29%	449	8%	127	16%	244	11%	167
	2013[4]	29%	456	4%	68	26%	406	32%	499	9%	136	17%	262	11%	171
	2014	35%	548	5%	75	29%	451	37%	579	10%	156	18%	284	12%	192
	2015	20%	319	2%	27	12%	195	21%	331	4%	64	6%	93	5%	75
Statewide	**2010**	25%	1300	18%	909	18%	926	19%	981	12%	633	15%	755	9%	465
	2011	29%	1496	18%	941	20%	1040	24%	1251	14%	711	17%	878	10%	512
	2012	24%	1272	14%	717	15%	805	23%	1204	10%	534	14%	727	8%	422
	2013[4]	27%	1383	14%	730	16%	833	26%	1332	11%	549	15%	799	9%	445
	2014	30%	1593	15%	805	18%	921	30%	1592	12%	632	18%	921	9%	492
	2015	16%	856	5%	272	8%	444	18%	957	5%	258	8%	409	4%	186

[4] Beginning in the 2013 report, pedestrian bridges were excluded in all bridge counts and statistics

[5] When comparing the maintenance action percentages, please note that starting in 2015 the way to look at maintenance needs changed.

Appendices

A. **Program Contributors**
B. **Feature Contribution Categories**
C. **Feature Thresholds and Grade Ranges**
D. **2015 Highway Maintenance Target Service Levels Memo**
E. **2015 Maintenance Targets**
F. **2015 Compass Rating Sheet**
G. **County Data:**
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    2. **Signs (routine replacement needs)**
    3. **Bridge Maintenance Needs**

A. Program Contributors

The Wisconsin Department of Transportation appreciates the significant contributions to the Compass program that were made by the following people:

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Matt Rauch, WisDOT Central Office (signs)
Mike Sproul, WisDOT Central Office (winter)
Frank Wessely, WisDOT Central Office (segment data)

B. Feature Contribution Categories

		This Feature Contributes Primarily To:				
Element	**Feature**	**Critical Safety**	**Safety/ Mobility**	**Stewardship**	**Ride/ Comfort**	**Aesthetics**
Shoulders	Hazardous Debris	✓				
	Cracking (paved)			✓		
	Drop-off/Build-up (paved)	✓				
	Potholes/Raveling (paved)				✓	
	Cross-Slope (unpaved)		✓			
	Drop-off/Build-up (unpaved)	✓				
	Erosion (unpaved)			✓		
Drainage	Culverts		✓			
	Curb & Gutter			✓		
	Ditches			✓		
	Flumes			✓		
	Storm Sewer System		✓			
	Under-drains/Edge-drains			✓		
Roadside	Fences		✓			
	Litter					✓
	Mowing					✓
	Mowing for Vision		✓			
	Woody Vegetation		✓			
	Woody Veg. Control for Vision		✓			
Traffic and Safety	Centerline Markings	✓				
	Delineators		✓			
	Edgeline Markings	✓				
	Detour/object marker/recreation/guide signs (emerg. repair)				✓	
	Detour/object marker/recreation/guide signs (routine repair)				✓	
	Protective Barriers	✓				
	Reg./Warning Signs (emerg.)	✓				
	Reg./Warning Signs (routine)		✓			
	Special Pavement Markings		✓			

Category Definitions:

Critical safety: Critical safety features that would necessitate immediate action to remedy if not properly functioning.

Safety: Highway features and characteristics that protect users against – and provide them with a clear sense of freedom from – danger, injury or damage.

Ride/comfort: Highway features and characteristics, such as ride quality, proper signing, or lack of obstructions, that provide a state of ease and quiet enjoyment for highway users.

Stewardship: Actions taken to help a highway element obtain its full potential service life.

Aesthetics: The display of natural or fabricated beauty items, such as landscaping located along a highway corridor. Also, the absence of things like litter that detract from the sightlines of the road.

C. Compass Feature Thresholds and Grade Ranges

Element	Feature	Threshold	Ranges for System Grades *Grade determined by percent backlogged* shown: top of range				
			A	**B**	**C**	**D**	**F**
Shoulders	Hazardous debris	Any items large enough to cause a safety hazard (by mile)	2%	5%	9%	15%	>15%
	Cracking on paved shoulder	200 linear feet or more of unsealed cracks > ¼ inch (by mile)	6%	15%	29%	50%	>50%
	Drop-off/build-up on paved shoulder	200 linear feet or more with drop-off or build-up > 1.5 inches (by mile)	2%	5%	9%	15%	>15%
	Potholes/raveling on paved shoulder	Any potholes OR raveling > 1 square foot by 1 inch deep (by mile)	7%	18%	35%	60%	>60%
	Cross-slope on unpaved shoulder	200 linear feet or more of cross-slope at least 2x planned slope with the maximum cross slope of 8% (by mile)	4%	9%	18%	30%	>30%
	Drop-off/build-up on unpaved shoulder	200 linear feet or more with drop-off or build-up > 1.5 inches (by mile)	2%	5%	9%	15%	>15%
	Erosion on unpaved shoulder	200 linear feet or more with erosion >2 inches deep (by mile)	6%	15%	29%	50%	>50%
Drainage	Culverts	Culverts that are >25% obstructed OR where a sharp object - e.g., a shovel-can be pushed through the bottom of the pipe OR pipe is collapsed or separated (by culvert)	4%	9%	18%	30%	>30%
	Curb & gutter	Curb & gutter with severe structural distress OR >1 inch structural misalignment OR >1 inch of debris build-up in the curb line (by linear feet of curb & gutter)	6%	15%	29%	50%	>50%
	Ditches	Ditch with greater than minimal erosion of ditch line OR obstructions to flow of water requiring action (by linear feet of ditch)	6%	15%	29%	50%	>50%
	Flumes	Not functioning as intended	6%	15%	29%	50%	>50%

Element	Feature	Threshold	Ranges for System Grades *Grade determined by percent backlogged* shown: top of range				
			A	B	C	D	F
		OR deteriorated to the point that they are causing erosion (by flume)					
	Storm sewer system	Inlets, catch basins, and outlet pipes with >=50% capacity obstructed OR <80% structurally sound OR >1 inch vertical displacement or heaving OR not functioning as intended (by inlet, catch basin & outlet pipes)	4%	9%	18%	30%	>30%
	Under-drains/edge-drains	Under- and edge-drains with outlets, endwalls or end protection closed or crushed OR water flow or end protection is obstructed (by drain)	6%	15%	29%	50%	>50%
Roadsides	Fences	Fence missing OR not functioning as intended (by LF of fence)	4%	9%	18%	30%	>30%
	Litter	Any pieces of litter on shoulders and roadside visible at posted speed, but not causing a safety threat. (by mile)	10%	25%	47%	80%	>80%
	Mowing	Any roadside has mowed grass that is too short, too wide or is mowed in a no-mow zone (by mile)	10%	25%	47%	80%	>80%
	Mowing for vision	Any instances in which grass is too high or blocks a vision triangle (by mile)	4%	9%	18%	30%	>30%
	Woody vegetation control	Any instances in which a tree is present in the clear zone OR trees and/or branches overhang the roadway or shoulder creating a clearance problem (by mile)	4%	9%	18%	30%	>30%
	Woody vegetation control for vision	Any instances in which woody vegetation blocks a vision triangle (by mile)	4%	9%	18%	30%	>30%
Traffic control & safety devices (selected)	Centerline markings	Line with > 20% paint missing (by mile)	2%	5%	9%	15%	>15%
	Edgeline markings	Line with > 20% paint missing (by mile)	2%	5%	9%	15%	>15%
	Delineators	Missing OR not visible at	4%	9%	18%	30%	>30%

Element	Feature	Threshold	Ranges for System Grades *Grade determined by percent backlogged* shown: top of range				
			A	B	C	D	F
		posted speed OR damaged (by delineator)					
	Detour/object marker/recreation/guide signs (emergency repair)	Missing OR not visible at posted speed (by sign)	7%	18%	35%	60%	>60%
	Detour/object marker/recreation/guide signs (routine)	Beyond recommended service life (by sign)	7%	18%	35%	60%	>60%
	Protective barriers	Not functioning as intended (linear feet of barrier)	2%	5%	9%	15%	>15%
	Regulatory/warning signs (emergency repair)	Missing OR not visible at posted speed (by sign)	2%	5%	9%	15%	>15%
	Regulatory/warning signs (routine)	Beyond recommended service life (by sign)	4%	9%	18%	30%	>30%
	Special pavement markings	Missing OR not functioning as intended (by marking)	4%	9%	18%	30%	>30%

D. 2015 Target Service Levels Memo

WisDOT Highway Maintenance
2015 Target Service Levels

Issued by Rose Phetteplace, Director, Bureau of Highway Maintenance
September 4, 2014

Attached are the 2015 target service levels for highway maintenance and operations. Highway maintenance managers set these targets to provide guidance to central office and regional highway maintenance staff in prioritizing activities and expending resources. The 2015 maintenance targets are critical for structuring the 2015 Routine Maintenance Agreements (RMA). **The targets are consistent with the 2015 RMA guidance that Tom Goodwyn sent to regions on August 4, 2014.**

Targets are the conditions expected on state highways at the end of the summer maintenance season. They were selected by highway maintenance managers in the regions and BHM to set priorities within the budget and to increase consistency across region and county lines. The condition measure used is the percent of inventory with backlogged maintenance work. A measure greater than 0% backlogged reflects work left undone at the end of the summer season. Under full funding of maintenance needs, we would expect to see features at or close to 0%. The following chart provides historical service levels statewide and by region for 2013. Targets aren't set for a portion of highway maintenance expenditures including winter operations, certain traffic control devices, and electrical operations.

Targets do not reflect an optimal maintenance condition for the highways, but instead reflect a continued commitment to fully fund winter operations, other organizational priorities, existing highway conditions, and most importantly, dollars available. Given constrained resources, priorities include:

- Focusing our resources on keeping the system safe and operating from day to day. Highway maintenance priorities will:
    - Decrease drop-off on unpaved shoulders.
    - Decrease the amount of hazardous debris on shoulders.
    - Repair damaged safety appurtenances and signs.
    - Repair damaged regulatory and warning signs, and continue to routinely replace old regulatory and warning signs.
- Expending far fewer resources, directing more funding to asset preservation activities:
    - Mowing is limited to one shoulder cut per season. The exception is for spot locations where vision is a safety issue for that specific area.
    - No maintenance of lane-line raised pavement markers and other wet reflective markings. Special pavement markings will only be addressed for the most critical safety needs.
    - Litter control is limited to once in the spring and Adopt-A-Highway efforts continue to be encouraged.

- Leveraging improvement funding and better coordinating improvement work to decrease maintenance workload and funding demands.
    - Now and going forward, maintenance supervisors and engineers will put greater emphasis on working with the improvement program to reduce the amount of drop-off/build-up on unpaved shoulders, decrease pavement rutting, reduce cracking on paved shoulders, and improve the condition of culverts.

Thank you to the Compass program for coordinating this effort and preparing this report.

E. 2015 Highway Maintenance Targets

Contribution Category and Element	Feature	2010 Target Percent Backlogged and Feature Grade - Statewide	2011 Target Percent Backlogged and Feature Grade - Statewide	2012 Target Percent Backlogged and Feature Grade - Statewide	2013 Target Percent Backlogged and Feature Grade - Statewide	2014 Target Percent Backlogged and Feature Grade - Statewide	**2015 Target Percent Backlogged and Feature Grade - Statewide**
Critical Safety:							
Traffic and Safety	Reg./Warning Signs - Emergency Repair	0=A	0=A	0=A	0=A	0=A	0=A
Shoulders	Hazardous Debris	6=C	6=C	6=C	5=B	5=B	5=B
Traffic and Safety	Protective Barriers	3=B	3=B	3=B	3=B	3=B	3=B
Traffic and Safety	Centerline Markings	5=B	5=B	5=B	5=B	5=B	5=B
Traffic and Safety	Edgeline Markings	8=C	8=C	8=C	8=C	8=C	8=C
Shoulders (unpaved)	Drop-off/Build-up	35=F	30=F	30=F	30=F	30=F	28=F
Shoulders (paved)	Drop-off/Build-up	NA	4=B	4=B	4=B	4=B	4=B
Safety/Mobility:							
Roadside	Woody Veg. Control for Vision	3=A	2=A	2=A	2=A	2=A	2=A
Roadside	Mowing for Vision	5=B	5=B	5=B	5=B	5=B	5=B
Traffic and Safety	Special Pavement Markings	23=D	23=D	23=D	10=C	10=C	10=C
Roadside	Woody Vegetation	5=B	5=B	5=B	5=B	5=B	5=B
Drainage	Culverts	30=D	30=D	30=D	30=D	30=D	30=D
Drainage	Storm Sewer System	15=C	15=C	15=C	15=C	15=C	15=C
Shoulders (unpaved)	Cross-Slope	20=D	30=D	20=D	20=D	20=D	18=C
Traffic and Safety	Delineators	25=D	25=D	25=D	25=D	25=D	25=D
Traffic and Safety	Reg./Warning Signs -Routine Replacement	25=D	25=D	25=D	15=C	15=C	9=B
Roadside	Fences	14=C	14=C	14=C	14=C	14=C	14=C
Stewardship:							
Drainage	Ditches	5=A	5=A	5=A	5=A	5=A	5=A
Drainage	Curb & Gutter	10=B	10=B	10=B	10=B	10=B	10=B
Drainage	Flumes	35=D	35=D	35=D	35=D	35=D	44=D
Shoulders (paved)	Cracking	70=F	70=F	60=F	60=F	60=F	58=F
Shoulders (unpaved)	Erosion	5=A	5=A	5=A	5=A	5=A	5=A
Drainage	Under-drains/Edge-drains	30=D	30=D	30=D	30=D	30=D	30=D
Ride/Comfort:							
Shoulders (paved)	Potholes/Raveling	10=B	10=B	10=B	10=B	10=B	10=B
Traffic and Safety	Other Signs - Emergency Repair	1=A	1=A	1=A	1=A	1=A	1=A
Traffic and Safety	Other Signs - Routine Replacement	59=D	59=D	59=D	39=D	39=D	33=C
Aesthetics:							
Roadside	Mowing	40=C	40=C	40=C	40=C	40=C	40=C
Roadside	Litter	81=F	81=F	81=F	63=D	63=D	63=D

F. 2015 Compass Rating Sheet

2015 Compass Rating Sheet
Wisconsin Department of Transportation

Date Survey Taken:
Start Time:
Stop Time:
Reviewed by:

«MySegment», «MyRoute», «RegionAbbr», «MyCounty», «MyRegion», «DS»
Directions: «PrimaryDir»
«PrimaryPost»
Alternate Directions: «AltDir»
«AltPost»

If a segment is discarded for one of the reasons below, please check the appropriate box and add the next highest numbered "spare" segment for a similar roadway (divided or undivided) to your list of segments to be rated. Please enter the reject reason in the database.

☐ A piece or the entire segment falls on a bridge.
☐ A piece or the entire segment is currently under construction.
☐ We believe it would be unsafe to rate this segment.
☐ We cannot locate this segment.
☐ An organization other than WisDOT is responsible for the maintenance of ANY of the four elements within this section.

Shoulders	Standard	Value	Comments
Hazardous Debris (S-1)	Number of items large enough to cause a safety hazard		
Paved Shoulder	☐None (If none, skip to Unpaved Shoulder)		
	Paved shoulder width (typical width in whole feet)		
	Paved shoulder length (total linear feet)		
Drop off/ build-up (S-2)	Linear feet of paved-to-paved drop-off/build-up greater than 1.5"		
Cracking (S-3)	Linear feet of unsealed cracks greater than ¼" (up to 150' on undivided highways or 300' on divided highways)		
Potholes/ Raveling (S-4)	Total sq. ft. of BOTH potholes AND raveling greater than 1 ft^2 x 1" deep		
Unpaved Shoulder	☐ None (If none, skip to Drainage)		
	Unpaved shoulder width (typical width in whole feet)		
	Unpaved shoulder length (total linear feet)		
Drop off/ build-up (S-5)	Linear feet of paved-to-unpaved drop-off/build-up greater than 1.5" (up to 150' on undivided highways or 300' on divided highways)		
Cross Slope (S-6)	Linear feet with unpaved cross slope greater than twice the designed slope (up to 150' on undivided highways or 300' on divided highways)		
Erosion (S-7)	Square feet with ruts deeper than 2 inches		

Drainage			Value & Repair/Clean	Comments
Ditches (D-1)	☐ None	Total linear feet of ditch Linear ft. with more than minimal erosion of ditch line OR obstructions to the flow of water requiring action	☐ Repair ☐ Clean	
Culverts (D-2)	☐ None	Total number of culverts Number with more than 25% obstructed OR where a sharp object (a shovel) can be pushed thru bottom of pipe OR pipe is collapsing Size and type of deficient culvert *(select check box in "Comments" column)*	☐ Repair ☐ Clean	Deficient Culvert: Size:_____ Type: ☐ Concrete ☐ Steel ☐ Lined ☐ Unknown
Under/ Edge Drain (D-3)	☐ None	Total number of drains Number with outlets, endwalls or end protection closed or crushed OR where water flow or end protection is obstructed	☐ Repair ☐ Clean	
Flumes (D-4)	☐ None	Total number of flumes Number not functioning as intended OR deteriorated to the point that they are causing erosion	☐ Repair ☐ Clean	

Curb & Gutter (D-5)	☐ None	Total linear feet of curb and gutter Linear feet with severe structural distress OR more than 1" structural misalignment OR more than 1" of debris build up in the curb line	 ☐ Repair ☐ Clean	
Storm Sewer (D-6)	☐ None	Total number of inlets, catch basins and outlet pipes Number more than 50% capacity obstructed OR less than 80% structurally sound OR more than 1" vertical displacement OR not functioning as intended	 ☐ Repair ☐ Clean	

Roadsides			**Value**	**Comments**
🚘 **Litter** (R-1)	Number of pieces (up to 15) of litter and non-natural encroachments on shoulders and roadside visible at posted speed, but not causing a safety threat			
Mowing (R-2)	☐ Urban Section	Mowing meets standard If NO, grass is mowed: ☐ too wide ☐ too short ☐ too tall ☐ in a no mow zone If NO, why: ☐ safety/equipment ☐ mowed by property owner ☐ woody vegetation control ☐ maintenance decision	☐yes ☐no	
🚘 **Mowing Vision** (R-2)	☐ None	Grass blocks a vision triangle or sightlines	☐yes ☐no	
Woody Vegetation (R-3)	Number of instances in which a tree > 4" in diameter is present in the clear zone OR trees and/or branches overhang the roadway or shoulder creating a clearance problem			
🚘 **Woody Vegetation Vision** (R-3)	Woody vegetation causes a vision problem		☐yes ☐no	
Fences (R-4)	☐ None	Total linear feet of right-of-way fence Linear feet missing OR not functioning as intended	 	

Traffic Control and Safety			**Value**	**Comments**
Centerline Markings (T-1)	☐ None	Over total segment, more than 20% of centerline material is missing	☐yes ☐no	
Edgeline Markings (T-1)	☐ None	Over total segment, more than 20% of edgeline material is missing	☐yes ☐no	
Special Pavement Markings (T-2)	☐ None	Total number of special pavement markings Number missing OR not functioning as intended	 	
Regulatory/ Warning Signs (T-3)	☐ None	Total number of regulatory/warning signs Number missing OR damaged	 	
Other Signs (T-4)	☐ None	Total number of other signs Number missing OR damaged	 	
Delineators (T-5)	☐ None	Total number of delineators Number missing OR damaged	 	
Protective Barriers (T-6)	☐ None	Total linear feet of beam guard, concrete barrier, and cable guard Linear feet of protective barriers not functioning as intended and type(s) of deficient protective barrier	 ☐ Beam Guard ☐ Damaged Terminal ☐ Concrete Barrier ☐ Cable Guard	

🚘 Rating the feature must be completed in vehicle driving at posted speed.

1/10-mile	X2	X3	X4
528 feet	1,056 feet	1,584 feet	2,112 feet

Ratings should be entered into the database **by October 15, 2015.** Hardcopy Rating Sheets should be sent to Scott Bush at 4802 Sheboygan Avenue, Room 501. Questions? Please call Scott at 608-266-8666 or email to Scott.Bush@dot.wi.gov

G. County Data

Counties 2015: Shoulders and Drainage

		Condition % backlogged # of observations												
		Shoulders							**Drainage**					
Region	County	Hazardous Debris	Cracking (paved)	Drop-off/Build-up (paved)	Potholes/Raveling (paved)	Cross-Slope (unpaved)	Drop-off/Build-up (unpaved)	Erosion (unpaved)	Culverts	Curb & Gutter	Ditches	Flumes	Storm Sewer System	Under-drains/Edge-drains
NC		10%	30%	0%	0%	11%	44%	0%	25%	0%	0%	0%	0%	0%
	ADAMS	10	10	10	10	9	9	9	4	2	10	0	1	1
		0%	100%	0%	0%	43%	29%	0%	0%	0%	0%	0%	0%	0%
	FLORENCE	7	7	7	7	7	7	7	0	0	7	0	0	0
		6%	80%	0%	10%	56%	31%	0%	0%	0%	1%	0%	0%	0%
	FOREST	16	10	10	10	16	16	16	0	1	13	0	0	0
		29%	14%	0%	0%	0%	33%	0%	0%	0%	0%	0%	0%	0%
	GREEN LAKE	7	7	7	7	6	6	6	2	2	7	2	0	0
		0%	67%	0%	0%	0%	20%	10%	0%	0%	0%	0%	20%	0%
	IRON	12	6	6	6	10	10	10	2	3	9	0	2	0
		0%	67%	0%	0%	20%	33%	0%	0%	57%	1%	100%	0%	0%
	LANGLADE	15	12	12	12	15	15	15	4	1	15	1	0	0
		6%	77%	0%	8%	44%	25%	0%	29%	58%	0%	100%	0%	0%
	LINCOLN	16	13	13	13	16	16	16	7	2	16	1	2	2
		4%	61%	13%	0%	23%	23%	0%	0%	3%	0%	0%	5%	7%
	MARATHON	28	23	23	23	26	26	26	4	4	26	2	7	6

		Condition % backlogged # of observations												
		Shoulders							**Drainage**					
Region	County	Hazardous Debris	Cracking (paved)	Drop-off/Build-up (paved)	Potholes/Raveling (paved)	Cross-Slope (unpaved)	Drop-off/Build-up (unpaved)	Erosion (unpaved)	Culverts	Curb & Gutter	Ditches	Flumes	Storm Sewer System	Under-drains/Edge-drains
		0%	88%	0%	0%	22%	0%	0%	50%	0%	0%	0%	0%	0%
	MARQUETTE	9	8	8	8	9	9	9	2	0	8	0	0	0
		0%	50%	0%	0%	100%	0%	33%	0%	0%	0%	0%	0%	0%
	MENOMINEE	4	2	2	2	3	3	3	0	0	3	0	0	0
		6%	59%	0%	0%	6%	35%	0%	20%	0%	0%	0%	0%	0%
	ONEIDA	17	17	17	17	17	17	17	8	4	14	1	2	0
		6%	87%	0%	7%	13%	13%	0%	0%	0%	0%	0%	27%	6%
	PORTAGE	16	15	15	15	15	15	15	2	2	14	0	7	7
		0%	75%	0%	0%	41%	18%	0%	75%	0%	0%	0%	0%	0%
	PRICE	17	16	16	16	17	17	17	4	0	16	0	0	1
		0%	93%	13%	0%	53%	58%	0%	0%	0%	0%	0%	0%	19%
	SHAWANO	19	15	15	15	19	19	19	8	4	19	0	4	12
		0%	60%	0%	0%	13%	20%	0%	0%	55%	0%	0%	0%	0%
	VILAS	15	15	15	15	15	15	15	4	2	14	1	0	0
		10%	84%	0%	0%	50%	65%	0%	0%	0%	0%	67%	6%	0%
	WAUPACA	21	19	19	19	20	20	20	3	5	20	2	4	0
		0%	58%	0%	0%	0%	21%	0%	0%	0%	0%	14%	0%	0%
	WAUSHARA	14	12	12	12	14	14	14	3	1	14	2	0	1
	WOOD	6%	65%	0%	6%	6%	29%	0%	0%	20%	0%	0%	0%	0%

		Condition % backlogged # of observations												
		Shoulders							**Drainage**					
Region	County	Hazardous Debris	Cracking (paved)	Drop-off/Build-up (paved)	Potholes/Raveling (paved)	Cross-Slope (unpaved)	Drop-off/Build-up (unpaved)	Erosion (unpaved)	Culverts	Curb & Gutter	Ditches	Flumes	Storm Sewer System	Under-drains/Edge-drains
		18	17	17	17	17	17	17	3	2	17	0	2	0
NE	BROWN	0%	88%	0%	0%	6%	44%	0%	75%	0%	2%	0%	60%	25%
		16	16	16	16	16	16	16	3	1	16	1	2	1
	CALUMET	0%	67%	0%	0%	0%	33%	0%	0%	0%	4%	25%	0%	0%
		9	9	9	9	9	9	9	4	2	9	1	1	0
	DOOR	9%	82%	0%	0%	0%	27%	0%	100%	0%	0%	0%	40%	0%
		11	11	11	11	11	11	11	1	2	11	0	2	0
	FOND DU LAC	10%	65%	5%	0%	30%	40%	0%	0%	2%	0%	0%	0%	0%
		20	20	20	20	20	20	20	5	1	19	1	3	4
	KEWAUNEE	0%	83%	0%	0%	0%	50%	0%	100%	8%	0%	0%	0%	0%
		6	6	6	6	6	6	6	1	1	6	0	1	0
	MANITOWOC	0%	60%	7%	0%	25%	67%	0%	0%	2%	1%	0%	0%	0%
		15	15	15	15	12	12	12	2	5	15	3	3	0
	MARINETTE	0%	57%	0%	0%	19%	25%	0%	0%	9%	1%	0%	0%	0%
		16	14	14	14	16	16	16	4	3	16	2	0	0
	OCONTO	6%	88%	13%	0%	25%	25%	0%	0%	2%	1%	0%	0%	0%
		16	16	16	16	16	16	16	4	3	16	3	3	2
	OUTAGAMIE	16%	60%	0%	0%	32%	74%	0%	40%	1%	7%	0%	50%	100%
		19	15	15	15	19	19	19	9	3	19	1	1	1

		Condition % backlogged # of observations												
		Shoulders							**Drainage**					
Region	County	Hazardous Debris	Cracking (paved)	Drop-off/Build-up (paved)	Potholes/Raveling (paved)	Cross-Slope (unpaved)	Drop-off/Build-up (unpaved)	Erosion (unpaved)	Culverts	Curb & Gutter	Ditches	Flumes	Storm Sewer System	Under-drains/Edge-drains
		12%	88%	0%	6%	65%	82%	0%	0%	3%	0%	0%	15%	50%
	SHEBOYGAN	17	17	17	17	17	17	17	4	6	17	6	6	1
		0%	75%	6%	0%	0%	56%	0%	40%	0%	0%	0%	33%	100%
	WINNEBAGO	16	16	16	16	16	16	16	4	1	16	0	2	4
		0%	30%	0%	10%	33%	33%	0%	75%	67%	15%	0%	0%	0%
NW	ASHLAND	12	10	10	10	12	12	12	4	2	12	1	0	0
		0%	27%	0%	0%	0%	7%	0%	0%	3%	0%	0%	0%	0%
	BARRON	15	15	15	15	15	15	15	3	2	15	0	2	0
		6%	47%	0%	18%	47%	41%	6%	20%	12%	7%	0%	0%	100%
	BAYFIELD	17	17	17	17	17	17	17	5	2	14	0	0	1
		0%	100%	0%	31%	8%	23%	0%	0%	5%	1%	0%	0%	0%
	BUFFALO	16	13	13	13	13	13	13	9	3	13	1	2	0
		0%	55%	0%	0%	0%	67%	0%	0%	6%	0%	0%	0%	0%
	BURNETT	12	11	11	11	12	12	12	4	3	11	0	0	0
		0%	62%	10%	0%	0%	19%	0%	0%	0%	4%	0%	0%	0%
	CHIPPEWA	21	21	21	21	21	21	21	8	2	21	0	2	2
		0%	76%	6%	6%	41%	71%	0%	100%	61%	1%	100%	0%	67%
	CLARK	17	17	17	17	17	17	17	7	2	17	1	0	2
	DOUGLAS	19%	94%	0%	0%	0%	67%	0%	33%	2%	0%	50%	0%	0%

		Condition % backlogged # of observations												
		Shoulders							**Drainage**					
Region	County	Hazardous Debris	Cracking (paved)	Drop-off/Build-up (paved)	Potholes/Raveling (paved)	Cross-Slope (unpaved)	Drop-off/Build-up (unpaved)	Erosion (unpaved)	Culverts	Curb & Gutter	Ditches	Flumes	Storm Sewer System	Under-drains/Edge-drains
		16	16	16	16	15	15	15	6	3	15	2	2	1
		0%	52%	0%	0%	5%	10%	0%	60%	0%	0%	0%	0%	0%
	DUNN	21	21	21	21	21	21	21	5	1	21	0	1	0
		0%	75%	0%	0%	0%	13%	13%	0%	0%	0%	0%	0%	0%
	EAU CLAIRE	16	16	16	16	16	16	16	6	1	16	1	2	1
		0%	83%	0%	11%	70%	55%	5%	86%	12%	2%	0%	0%	0%
	JACKSON	20	18	18	18	20	20	20	7	1	19	0	1	0
		0%	80%	0%	20%	20%	20%	0%	33%	0%	0%	0%	0%	0%
	PEPIN	5	5	5	5	5	5	5	3	0	4	0	0	0
		0%	59%	0%	18%	11%	28%	6%	13%	0%	0%	0%	0%	0%
	PIERCE	18	17	17	17	18	18	18	7	2	18	0	0	0
		0%	31%	0%	8%	6%	6%	0%	0%	0%	0%	0%	0%	0%
	POLK	17	13	13	13	17	17	17	5	0	17	0	0	0
		0%	63%	0%	0%	9%	18%	0%	0%	0%	0%	0%	0%	0%
	RUSK	11	8	8	8	11	11	11	0	1	10	0	0	0
		6%	41%	0%	12%	41%	47%	0%	33%	0%	1%	0%	0%	0%
	SAWYER	17	17	17	17	17	17	17	3	1	16	0	1	0
		0%	48%	0%	0%	0%	29%	0%	0%	2%	0%	50%	0%	0%
	ST. CROIX	22	21	21	21	21	21	21	3	4	21	1	4	0

		Condition % backlogged # of observations												
		Shoulders							**Drainage**					
Region	County	Hazardous Debris	Cracking (paved)	Drop-off/Build-up (paved)	Potholes/Raveling (paved)	Cross-Slope (unpaved)	Drop-off/Build-up (unpaved)	Erosion (unpaved)	Culverts	Curb & Gutter	Ditches	Flumes	Storm Sewer System	Under-drains/Edge-drains
		0%	83%	0%	0%	25%	17%	0%	50%	67%	1%	0%	0%	0%
	TAYLOR	12	12	12	12	12	12	12	2	1	12	0	0	0
		0%	56%	0%	13%	11%	16%	0%	0%	0%	1%	100%	0%	0%
	TREMPEALEAU	19	16	16	16	19	19	19	8	1	19	1	0	0
		7%	87%	0%	0%	0%	79%	7%	0%	85%	0%	100%	0%	0%
	WASHBURN	15	15	15	15	14	14	14	6	2	13	1	1	0
		18%	44%	11%	11%	38%	63%	0%	0%	0%	10%	0%	2%	75%
SE	KENOSHA	11	9	9	9	8	8	8	4	3	9	0	6	1
		24%	56%	0%	13%	0%	0%	0%	0%	0%	5%	0%	10%	0%
	MILWAUKEE	17	16	16	16	0	0	0	1	13	9	0	16	0
		43%	43%	29%	0%	57%	71%	0%	0%	0%	0%	0%	18%	20%
	OZAUKEE	7	7	7	7	7	7	7	0	0	7	0	3	2
		7%	43%	0%	0%	36%	29%	0%	25%	0%	5%	0%	0%	18%
	RACINE	15	14	14	14	14	14	14	4	4	14	0	5	4
		38%	67%	0%	19%	43%	67%	5%	13%	19%	2%	0%	0%	100%
	WALWORTH	21	21	21	21	21	21	21	8	4	21	0	1	1
		0%	56%	0%	11%	12%	18%	0%	20%	0%	1%	0%	0%	0%
	WASHINGTON	18	18	18	18	17	17	17	4	3	15	1	4	2
	WAUKESHA	0%	38%	5%	0%	21%	16%	0%	0%	0%	0%	8%	5%	0%

		Condition % backlogged # of observations												
		Shoulders							**Drainage**					
Region	County	Hazardous Debris	Cracking (paved)	Drop-off/Build-up (paved)	Potholes/Raveling (paved)	Cross-Slope (unpaved)	Drop-off/Build-up (unpaved)	Erosion (unpaved)	Culverts	Curb & Gutter	Ditches	Flumes	Storm Sewer System	Under-drains/Edge-drains
		23	21	21	21	19	19	19	2	12	22	4	12	4
SW		4%	89%	0%	36%	86%	71%	4%	0%	12%	0%	57%	0%	0%
	COLUMBIA	28	28	28	28	28	28	28	11	4	26	3	1	0
		0%	67%	0%	33%	67%	83%	8%	33%	31%	2%	20%	17%	0%
	CRAWFORD	20	15	15	15	12	12	12	9	6	18	4	4	0
		33%	75%	3%	8%	38%	76%	0%	22%	4%	0%	56%	54%	61%
	DANE	40	36	36	36	37	37	37	9	10	37	6	10	3
		4%	70%	4%	4%	46%	54%	4%	8%	4%	0%	33%	0%	0%
	DODGE	24	23	23	23	24	24	24	10	3	24	1	1	0
		7%	79%	0%	4%	6%	88%	0%	8%	5%	0%	100%	43%	0%
	GRANT	27	24	24	24	17	17	17	9	4	25	2	2	0
		0%	60%	0%	0%	18%	27%	0%	0%	0%	3%	0%	0%	0%
	GREEN	12	10	10	10	11	11	11	2	2	11	0	1	0
		0%	73%	0%	0%	33%	50%	6%	33%	0%	0%	0%	0%	0%
	IOWA	18	11	11	11	18	18	18	3	0	18	0	0	0
		11%	78%	0%	6%	35%	71%	29%	25%	8%	2%	0%	0%	0%
	JEFFERSON	19	18	18	18	17	17	17	4	4	17	3	2	0
		0%	78%	11%	0%	6%	39%	6%	0%	9%	0%	0%	0%	0%
	JUNEAU	20	18	18	18	18	18	18	4	4	18	2	2	1

		Condition % backlogged # of observations												
		Shoulders							**Drainage**					
Region	County	Hazardous Debris	Cracking (paved)	Drop-off/Build-up (paved)	Potholes/Raveling (paved)	Cross-Slope (unpaved)	Drop-off/Build-up (unpaved)	Erosion (unpaved)	Culverts	Curb & Gutter	Ditches	Flumes	Storm Sewer System	Under-drains/Edge-drains
		0%	67%	0%	0%	0%	60%	10%	50%	9%	0%	0%	9%	0%
	LA CROSSE	14	6	6	6	10	10	10	5	3	13	1	3	0
		0%	50%	0%	0%	38%	69%	8%	33%	7%	1%	0%	0%	0%
	LAFAYETTE	14	8	8	8	13	13	13	5	3	12	0	0	1
		0%	63%	0%	0%	17%	39%	0%	17%	0%	0%	0%	0%	0%
	MONROE	25	24	24	24	23	23	23	9	7	16	5	3	0
		25%	55%	0%	9%	0%	67%	0%	22%	22%	0%	57%	50%	0%
	RICHLAND	16	11	11	11	12	12	12	7	5	15	5	2	0
		4%	73%	0%	18%	33%	42%	4%	33%	1%	0%	0%	0%	0%
	ROCK	24	22	22	22	24	24	24	5	5	23	1	2	1
		30%	79%	0%	0%	17%	30%	0%	0%	100%	2%	0%	33%	27%
	SAUK	23	19	19	19	23	23	23	8	1	22	2	3	5
		0%	83%	6%	33%	10%	60%	0%	38%	54%	0%	33%	0%	0%
	VERNON	22	18	18	18	20	20	20	8	3	22	2	0	0

Counties 2015: Roadsides and Traffic

		Condition % backlogged # of observations												
		Roadsides						Traffic						
Region	County	Fences	Litter	Mowing	Mowing for Vision	Woody Vegetation	Woody Veg. Control for Vision	Centerline Markings	Delineators	Edgeline Markings	Other Signs (emerg. repair)	Protective Barriers	Reg./Warning Signs (emerg.)	Special Pavement Markings
NC		0%	60%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	ADAMS	0	10	10	0	10	10	10	1	10	3	2	1	2
		0%	43%	29%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	FLORENCE	0	7	7	1	7	7	7	0	7	2	0	1	0
		0%	44%	31%	0%	0%	0%	0%	0%	6%	0%	0%	0%	0%
	FOREST	0	16	16	3	16	16	16	1	16	0	2	7	0
		0%	43%	43%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	GREEN LAKE	0	7	7	2	7	7	7	0	7	2	0	3	2
		0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	IRON	0	12	12	7	12	12	12	0	10	5	0	7	0
		0%	0%	40%	0%	0%	0%	7%	14%	0%	0%	0%	0%	10%
	LANGLADE	0	15	15	2	15	15	15	1	15	2	1	2	1
		0%	56%	50%	0%	0%	0%	6%	1%	0%	8%	0%	0%	0%
	LINCOLN	2	16	16	5	16	16	16	3	16	5	2	7	0
		0%	68%	43%	0%	0%	0%	0%	4%	7%	0%	0%	0%	0%
	MARATHON	3	28	28	13	28	28	28	8	28	10	2	14	4
		0%	11%	44%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	MARQUETTE	0	9	9	2	9	9	9	0	9	2	0	5	1
	MENOMINEE	0%	25%	25%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%

		Condition % backlogged # of observations												
		Roadsides						Traffic						
Region	County	Fences	Litter	Mowing	Mowing for Vision	Woody Vegetation	Woody Veg. Control for Vision	Centerline Markings	Delineators	Edgeline Markings	Other Signs (emerg. repair)	Protective Barriers	Reg./Warning Signs (emerg.)	Special Pavement Markings
		0	4	4	3	4	4	4	0	4	3	0	2	0
		100%	71%	0%	0%	18%	0%	0%	0%	0%	0%	0%	0%	0%
	ONEIDA	1	17	17	7	17	17	17	1	17	3	0	11	0
		0%	88%	38%	0%	0%	0%	0%	16%	0%	0%	8%	0%	0%
	PORTAGE	7	16	16	3	16	16	16	8	16	5	1	5	1
		0%	53%	0%	10%	0%	0%	6%	47%	12%	0%	0%	0%	0%
	PRICE	0	17	17	10	17	17	17	3	17	2	0	6	0
		0%	21%	26%	50%	0%	0%	0%	4%	5%	0%	0%	0%	0%
	SHAWANO	0	19	19	2	19	19	19	11	19	8	1	3	2
		0%	53%	7%	33%	0%	0%	47%	0%	40%	0%	0%	0%	0%
	VILAS	0	15	15	3	15	15	15	1	15	4	1	10	0
		0%	10%	57%	0%	0%	0%	5%	15%	0%	0%	0%	0%	2%
	WAUPACA	0	21	21	6	21	21	21	1	21	7	2	11	7
		0%	14%	50%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%
	WAUSHARA	1	14	14	4	14	14	14	1	14	7	0	5	1
		0%	50%	61%	0%	0%	0%	0%	0%	0%	0%	0%	11%	0%
	WOOD	0	18	18	5	18	18	18	1	18	5	0	10	2
		2%	88%	31%	0%	0%	0%	0%	26%	0%	0%	0%	4%	0%
NE	BROWN	5	16	16	2	16	16	16	7	16	6	3	8	1
		0%	100%	56%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	CALUMET	0	9	9	3	9	9	9	0	9	3	0	6	3

		Condition % backlogged # of observations												
		Roadsides						**Traffic**						
Region	County	Fences	Litter	Mowing	Mowing for Vision	Woody Vegetation	Woody Veg. Control for Vision	Centerline Markings	Delineators	Edgeline Markings	Other Signs (emerg. repair)	Protective Barriers	Reg./Warning Signs (emerg.)	Special Pavement Markings
		0%	100%	64%	0%	0%	0%	0%	33%	0%	0%	0%	0%	0%
	DOOR	2	11	11	0	11	11	11	2	11	5	0	5	2
		0%	75%	55%	14%	0%	0%	5%	5%	0%	0%	0%	0%	40%
	FOND DU LAC	2	20	20	7	20	20	20	3	20	4	2	8	5
		0%	50%	50%	0%	0%	0%	0%	0%	0%	0%	0%	13%	25%
	KEWAUNEE	1	6	6	0	6	6	6	1	6	2	1	3	2
		0%	60%	53%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%
	MANITOWOC	3	15	15	6	15	15	15	4	15	7	2	9	4
		0%	81%	44%	0%	0%	0%	6%	0%	0%	0%	0%	0%	0%
	MARINETTE	1	16	16	10	16	16	16	2	16	8	2	8	2
		0%	88%	31%	33%	0%	0%	0%	28%	6%	0%	0%	0%	0%
	OCONTO	4	16	16	3	16	16	16	7	16	6	2	9	2
		0%	68%	58%	0%	0%	0%	0%	2%	5%	0%	0%	0%	0%
	OUTAGAMIE	4	19	19	10	19	19	19	5	19	7	4	12	3
		4%	82%	35%	0%	0%	0%	12%	4%	6%	0%	0%	0%	0%
	SHEBOYGAN	6	17	17	6	17	17	17	7	17	14	1	13	9
		0%	88%	38%	0%	6%	0%	0%	4%	0%	13%	0%	0%	0%
	WINNEBAGO	6	16	16	0	16	16	16	6	16	6	0	4	4
		0%	92%	58%	100%	33%	0%	0%	0%	0%	0%	0%	0%	0%
NW	ASHLAND	0	12	12	1	12	12	12	0	12	4	1	4	1
	BARRON	0%	80%	27%	0%	0%	0%	0%	53%	0%	0%	0%	0%	0%

		Condition % backlogged # of observations												
		Roadsides						**Traffic**						
Region	County	Fences	Litter	Mowing	Mowing for Vision	Woody Vegetation	Woody Veg. Control for Vision	Centerline Markings	Delineators	Edgeline Markings	Other Signs (emerg. repair)	Protective Barriers	Reg./Warning Signs (emerg.)	Special Pavement Markings
		3	15	15	5	15	15	15	3	15	4	0	9	2
		0%	71%	24%	0%	24%	0%	25%	0%	13%	0%	1%	0%	0%
	BAYFIELD	0	17	17	3	17	17	16	3	16	3	2	7	2
		0%	19%	50%	0%	0%	0%	6%	66%	6%	0%	44%	0%	0%
	BUFFALO	0	16	16	5	16	16	16	6	16	1	6	9	1
		0%	83%	50%	0%	0%	8%	0%	0%	0%	0%	0%	0%	0%
	BURNETT	0	12	12	4	12	12	12	0	12	7	0	5	3
		0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	CHIPPEWA	2	21	21	3	21	21	21	5	21	7	2	5	1
		0%	88%	6%	0%	0%	0%	0%	16%	0%	7%	9%	0%	0%
	CLARK	0	17	17	17	17	17	17	4	17	5	1	4	5
		0%	63%	19%	0%	0%	0%	0%	9%	0%	0%	0%	0%	0%
	DOUGLAS	0	16	16	1	16	16	16	6	16	5	2	5	1
		0%	81%	29%	0%	0%	0%	0%	12%	0%	0%	0%	0%	0%
	DUNN	4	21	21	2	21	21	21	6	21	6	4	3	0
		0%	0%	19%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	EAU CLAIRE	2	16	16	3	16	16	16	5	16	4	3	9	0
		15%	90%	0%	5%	10%	0%	0%	19%	0%	9%	2%	21%	0%
	JACKSON	8	20	20	20	20	20	20	9	20	2	6	8	1
		0%	0%	0%	0%	0%	0%	40%	5%	40%	0%	1%	0%	0%
	PEPIN	0	5	5	2	5	5	5	2	5	1	2	1	0

		Condition % backlogged # of observations												
		Roadsides						**Traffic**						
Region	County	Fences	Litter	Mowing	Mowing for Vision	Woody Vegetation	Woody Veg. Control for Vision	Centerline Markings	Delineators	Edgeline Markings	Other Signs (emerg. repair)	Protective Barriers	Reg./Warning Signs (emerg.)	Special Pavement Markings
		0%	67%	28%	0%	0%	0%	6%	47%	0%	13%	0%	11%	100%
	PIERCE	0	18	18	3	18	18	18	6	18	9	6	6	1
		0%	76%	53%	0%	0%	0%	18%	71%	18%	0%	0%	0%	67%
	POLK	0	17	17	2	17	17	17	1	17	5	1	8	2
		0%	45%	55%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	RUSK	0	11	11	3	11	11	11	1	11	2	1	6	0
		0%	82%	24%	0%	29%	0%	41%	0%	35%	0%	0%	0%	100%
	SAWYER	0	17	17	5	17	17	17	0	17	6	0	8	1
		0%	50%	41%	0%	5%	0%	0%	10%	0%	0%	14%	0%	37%
	ST. CROIX	1	22	22	5	22	22	22	4	22	6	3	10	1
		0%	92%	0%	0%	0%	0%	8%	50%	8%	25%	67%	13%	67%
	TAYLOR	0	12	12	12	12	12	12	3	12	2	3	8	2
		0%	32%	58%	0%	0%	0%	5%	8%	5%	25%	0%	0%	0%
	TREMPEALEAU	0	19	19	5	19	19	19	3	19	4	4	10	0
		0%	93%	33%	0%	0%	0%	0%	6%	0%	0%	0%	0%	100%
	WASHBURN	1	15	15	1	15	15	15	7	15	4	2	6	1
		0%	100%	36%	0%	0%	0%	0%	10%	0%	10%	0%	0%	7%
SE	KENOSHA	2	11	11	3	11	11	11	3	11	6	3	4	4
		0%	88%	29%	9%	0%	0%	6%	22%	6%	0%	0%	1%	8%
	MILWAUKEE	7	17	17	11	17	17	17	4	17	15	9	10	17
	OZAUKEE	0%	86%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%

		Condition % backlogged # of observations												
		Roadsides						**Traffic**						
Region	County	Fences	Litter	Mowing	Mowing for Vision	Woody Vegetation	Woody Veg. Control for Vision	Centerline Markings	Delineators	Edgeline Markings	Other Signs (emerg. repair)	Protective Barriers	Reg./Warning Signs (emerg.)	Special Pavement Markings
		7	7	7	0	7	7	7	7	7	3	5	2	1
		0%	60%	27%	0%	0%	0%	0%	4%	0%	0%	35%	0%	0%
	RACINE	1	15	15	8	15	15	15	4	15	3	3	8	4
		0%	95%	62%	0%	5%	0%	0%	19%	0%	10%	0%	2%	13%
	WALWORTH	4	21	21	6	21	21	21	6	21	6	5	11	7
		0%	78%	61%	9%	0%	0%	0%	7%	0%	0%	0%	0%	4%
	WASHINGTON	1	18	18	11	18	18	18	4	18	9	3	14	6
		0%	52%	30%	5%	0%	4%	0%	0%	0%	0%	0%	0%	0%
	WAUKESHA	7	23	23	21	23	23	23	6	23	14	2	14	12
		0%	79%	68%	0%	0%	0%	4%	6%	4%	0%	11%	0%	0%
SW	COLUMBIA	2	28	28	9	28	28	28	4	28	9	3	14	4
		0%	35%	30%	0%	0%	5%	10%	57%	0%	0%	3%	0%	0%
	CRAWFORD	0	20	20	9	20	20	20	9	19	6	8	11	1
		0%	100%	35%	0%	3%	0%	8%	30%	5%	1%	18%	3%	20%
	DANE	9	40	40	16	40	40	40	10	39	25	11	14	13
		24%	63%	58%	0%	0%	0%	0%	43%	0%	0%	0%	5%	75%
	DODGE	2	24	24	4	24	24	24	3	24	6	3	12	3
		0%	48%	41%	0%	0%	0%	0%	9%	4%	0%	14%	0%	0%
	GRANT	0	27	27	14	27	27	27	2	27	7	2	10	0
		0%	75%	58%	0%	0%	0%	17%	0%	0%	0%	0%	0%	0%
	GREEN	1	12	12	2	12	12	12	0	12	2	0	7	0

		Condition % backlogged # of observations												
		Roadsides						**Traffic**						
Region	County	Fences	Litter	Mowing	Mowing for Vision	Woody Vegetation	Woody Veg. Control for Vision	Centerline Markings	Delineators	Edgeline Markings	Other Signs (emerg. repair)	Protective Barriers	Reg./Warning Signs (emerg.)	Special Pavement Markings
		0%	94%	22%	0%	6%	11%	0%	4%	0%	0%	0%	0%	0%
	IOWA	2	18	18	3	18	18	18	4	18	4	3	6	0
		0%	74%	16%	0%	0%	0%	0%	24%	5%	0%	0%	0%	0%
	JEFFERSON	5	19	19	4	19	19	19	4	19	12	3	8	4
		0%	55%	5%	0%	5%	0%	0%	56%	0%	0%	0%	0%	0%
	JUNEAU	3	20	20	0	20	20	20	3	20	7	1	9	2
		0%	64%	14%	7%	0%	0%	0%	22%	0%	0%	2%	21%	0%
	LA CROSSE	2	14	14	14	14	14	14	8	14	6	6	8	1
		0%	79%	36%	0%	0%	0%	29%	56%	38%	0%	0%	0%	0%
	LAFAYETTE	0	14	14	6	14	14	14	4	13	6	3	9	0
		0%	60%	0%	0%	8%	0%	16%	1%	20%	0%	0%	0%	14%
	MONROE	4	25	25	0	25	25	25	8	25	10	5	7	5
		0%	38%	38%	0%	6%	6%	13%	12%	0%	0%	3%	0%	0%
	RICHLAND	0	16	16	8	16	16	16	4	16	4	4	6	0
		0%	50%	50%	0%	0%	0%	38%	17%	46%	0%	0%	0%	0%
	ROCK	2	24	24	8	24	24	24	5	24	12	1	16	2
		0%	100%	22%	0%	0%	0%	13%	41%	22%	0%	0%	0%	0%
	SAUK	8	23	23	5	23	23	23	10	23	19	5	8	1
		0%	32%	55%	0%	0%	0%	18%	31%	14%	0%	1%	0%	0%
	VERNON	0	22	22	22	22	22	22	10	22	11	7	13	0

Counties 2015: Condition of Signs by Category

		Regulatory/Warning/School				Detour/Object Marker/Recreation/Guide			
Region	**County**	**Total Signs**	**Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**	**Total Signs**	**Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**
NC	ADAMS	1,017	5%	55	1.7	522	10%	51	5.6
	FLORENCE	476	2%	11	1.4	336	12%	39	4.2
	FOREST	1,277	9%	115	2.5	825	25%	209	4.2
	GREEN LAKE	872	15%	130	3.3	588	17%	98	8.0
	IRON	1,142	5%	53	3.8	579	14%	83	2.9
	LANGLADE	1,301	3%	44	2.0	721	10%	74	2.1
	LINCOLN	1,480	4%	53	3.2	930	11%	100	6.4
	MARATHON	4,367	9%	384	2.9	2,676	19%	501	8.3
	MARQUETTE	995	15%	154	1.3	587	18%	104	7.7
	MENOMINEE	672	11%	73	4.5	223	14%	32	4.0
	ONEIDA	2,060	8%	170	2.4	1,016	19%	198	3.6
	PORTAGE	2,273	10%	230	1.9	1,537	18%	270	7.7
	PRICE	1,184	5%	54	4.4	812	29%	234	3.7
	SHAWANO	1,968	17%	327	3.8	1,285	24%	302	3.9
	VILAS	1,603	6%	90	2.5	977	17%	170	3.4
	WAUPACA	3,147	7%	229	1.6	1,454	19%	281	4.9
	WAUSHARA	1,929	10%	188	2.0	921	13%	122	5.9
	WOOD	2,346	11%	268	1.4	1,255	10%	124	5.8
NE	BROWN	4,241	15%	625	4.7	2,462	20%	502	9.1
	CALUMET	1,433	5%	73	2.6	668	14%	92	8.8
	DOOR	1,993	11%	216	8.2	755	20%	151	11.2
	FOND DU LAC	2,800	9%	264	3.0	1,727	23%	401	6.0
	KEWAUNEE	680	2%	15	8.9	379	7%	26	9.2
	MANITOWOC	2,196	10%	211	5.6	1,513	31%	462	11.4
	MARINETTE	2,029	6%	114	8.2	1,064	12%	132	11.7

		Regulatory/Warning/School				Detour/Object Marker/Recreation/Guide			
Region	**County**	**Total Signs**	**Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**	**Total Signs**	**Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**
	OCONTO	2,385	17%	417	4.2	1,201	21%	252	6.9
	OUTAGAMIE	3,425	13%	439	5.3	1,962	18%	362	7.3
	SHEBOYGAN	3,366	4%	147	3.8	1,971	18%	364	10.2
	WINNEBAGO	3,120	13%	397	4.1	1,827	17%	307	6.1
NW	ASHLAND	1,343	8%	107	4.5	747	21%	160	8.5
	BARRON	1,927	4%	84	3.1	1,483	37%	554	9.6
	BAYFIELD	1,746	18%	312	3.2	1,075	46%	496	8.4
	BUFFALO	1,892	2%	30	3.8	910	20%	183	12.3
	BURNETT	1,243	5%	67	7.8	680	33%	226	10.3
	CHIPPEWA	2,561	5%	126	4.7	1,849	22%	409	8.6
	CLARK	1,702	9%	155	3.5	1,034	29%	300	7.9
	DOUGLAS	1,957	9%	178	6.0	1,301	38%	499	9.9
	DUNN	2,329	9%	209	4.7	1,724	30%	514	9.3
	EAU CLAIRE	2,731	7%	187	5.2	1,888	18%	331	8.5
	JACKSON	1,709	7%	115	3.9	1,218	22%	268	9.3
	PEPIN	589	13%	75	2.5	447	40%	178	6.6
	PIERCE	1,832	8%	155	3.6	1,285	27%	345	9.9
	POLK	2,304	8%	173	4.0	1,347	38%	507	9.0
	RUSK	1,082	10%	106	2.2	702	37%	258	7.3
	SAWYER	1,453	4%	52	3.8	945	34%	319	7.3
	ST. CROIX	3,219	11%	343	4.9	2,071	26%	538	7.9
	TAYLOR	1,168	6%	66	3.3	741	19%	139	6.9
	TREMPEALEAU	2,322	10%	229	3.0	1,464	41%	597	8.9
	WASHBURN	2,047	4%	84	5.1	1,161	27%	315	9.6
SE	KENOSHA	6,471	14%	893	7.7	3,801	34%	1,287	10.1
	MILWAUKEE	16,078	11%	1,738	8.4	10,376	27%	2,772	11.6
	OZAUKEE	2,501	9%	231	3.8	1,515	25%	373	9.9

		Regulatory/Warning/School				Detour/Object Marker/Recreation/Guide			
Region	**County**	**Total Signs**	**Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**	**Total Signs**	**Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**
	RACINE	6,337	10%	648	8.0	3,717	45%	1,668	9.9
	WALWORTH	4,705	9%	444	4.2	2,716	26%	699	8.6
	WASHINGTON	4,693	15%	712	5.5	2,960	35%	1,041	9.3
	WAUKESHA	11,108	12%	1,283	5.9	5,439	30%	1,614	8.5
SW	COLUMBIA	3,499	7%	258	2.0	2,127	24%	502	7.8
	CRAWFORD	2,414	8%	203	1.5	1,440	25%	361	10.6
	DANE	8,512	19%	1,615	6.8	5,297	29%	1,534	9.2
	DODGE	3,390	12%	395	3.3	2,076	38%	789	11.0
	GRANT	3,192	5%	171	1.8	2,195	19%	424	14.6
	GREEN	1,395	6%	79	2.2	793	25%	198	11.3
	IOWA	2,170	8%	172	2.5	1,338	24%	326	8.1
	JEFFERSON	2,252	7%	159	3.0	1,420	25%	357	9.1
	JUNEAU	1,824	9%	158	1.7	1,588	26%	412	9.4
	LA CROSSE	2,988	9%	258	3.4	2,719	26%	707	11.5
	LAFAYETTE	1,457	6%	81	2.6	784	26%	201	14.4
	MONROE	2,559	7%	182	2.2	2,209	29%	647	10.0
	RICHLAND	1,945	8%	156	1.7	1,435	11%	161	8.4
	ROCK	3,018	8%	239	4.0	2,273	30%	676	11.3
	SAUK	3,723	8%	296	3.9	2,047	13%	272	8.3
	VERNON	3,192	7%	222	1.4	1,871	13%	251	11.1

Counties 2015: Bridge Maintenance Needs

			Number of bridges recommended for maintenance								
Region	**County**	**Number of state bridges**	**Deck - Seal Surface Cracks**	**Expansion Joints - Clean**	**Approach - Seal Approach to Paving Block**	**Misc - Cut Brush**	**IMP-Concrete Overlay**	**Expansion Joints - Seal**	**Deck - Clean and Sweep Deck/Draine**	**Drainage - Repair Washouts / Erosion**	**Deck-Patching**
NC	ADAMS	8	0	0	1	1	0	2	4	1	0
	FLORENCE	8	2	0	0	0	0	0	1	1	0
	FOREST	12	6	1	2	1	0	1	0	1	3
	GREEN LAKE	10	0	1	2	2	0	2	1	1	1
	IRON	19	5	0	1	2	0	1	0	4	2
	LANGLADE	12	2	0	3	0	0	0	0	0	3
	LINCOLN	51	6	6	15	6	0	0	0	5	9
	MARATHON	164	54	23	67	16	1	58	22	11	10
	MARQUETTE	36	6	3	29	2	0	2	4	5	0
	MENOMINEE	3	1	0	0	4	0	0	0	0	1
	ONEIDA	14	6	0	3	0	0	1	0	1	2
	PORTAGE	97	38	22	37	20	0	34	4	12	8
	PRICE	23	7	1	4	3	0	0	0	2	2
	SHAWANO	53	41	3	17	6	0	6	0	27	1
	VILAS	13	14	1	5	3	0	0	0	2	3
	WAUPACA	71	9	2	7	7	0	0	2	2	4
	WAUSHARA	22	9	5	11	4	0	5	1	5	0
	WOOD	59	18	10	13	12	0	17	14	8	3
NE	BROWN	250	63	34	68	9	0	22	4	5	16
	CALUMET	12	6	0	6	0	1	2	0	2	1
	DOOR	20	8	0	2	0	0	0	0	0	0
	FOND DU LAC	78	12	10	28	2	0	13	0	1	0
	KEWAUNEE	17	3	0	3	0	0	0	0	0	1
	MANITOWOC	92	24	4	18	0	0	8	0	2	2

			Number of bridges recommended for maintenance								
Region	**County**	**Number of state bridges**	**Deck - Seal Surface Cracks**	**Expansion Joints - Clean**	**Approach - Seal Approach to Paving Block**	**Misc - Cut Brush**	**IMP-Concrete Overlay**	**Expansion Joints - Seal**	**Deck - Clean and Sweep Deck/Repairs**	**Drainage - Repair Washouts / Erosion**	**Deck-Patching**
	MARINETTE	49	0	1	0	4	0	13	1	3	0
	OCONTO	44	9	0	0	0	0	0	0	0	0
	OUTAGAMIE	73	38	8	24	1	0	15	2	3	0
	SHEBOYGAN	85	42	5	9	8	0	1	0	3	6
	WINNEBAGO	157	48	7	36	0	0	3	2	0	6
NW	ASHLAND	18	1	1	1	2	0	0	0	0	0
	BARRON	68	1	1	0	17	0	0	0	2	14
	BAYFIELD	34	0	0	0	0	0	0	0	3	10
	BUFFALO	71	0	5	3	2	0	0	0	1	1
	BURNETT	15	1	0	1	0	0	0	0	0	1
	CHIPPEWA	135	1	8	0	7	0	0	0	9	3
	CLARK	42	0	0	2	0	0	1	0	1	1
	DOUGLAS	59	0	0	0	1	0	0	0	1	1
	DUNN	92	0	12	6	2	1	1	0	11	12
	EAU CLAIRE	111	3	3	6	6	1	1	2	8	2
	JACKSON	74	0	2	1	6	0	0	0	6	1
	PEPIN	16	1	1	10	1	0	0	1	0	0
	PIERCE	57	0	4	3	4	0	2	1	2	0
	POLK	13	0	0	0	0	0	0	0	0	0
	RUSK	28	0	0	0	0	0	0	0	2	1
	SAWYER	19	2	0	3	5	0	3	1	3	2
	ST. CROIX	104	0	7	4	3	0	4	0	7	1
	TAYLOR	22	0	1	1	3	0	0	1	1	0
	TREMPEALEAU	74	1	5	0	4	0	0	1	10	1
	WASHBURN	20	0	1	5	9	0	1	3	5	0
	KENOSHA	59	2	1	27	2	6	1	2	8	11

			Number of bridges recommended for maintenance								
Region	**County**	**Number of state bridges**	**Deck - Seal Surface Cracks**	**Expansion Joints - Clean**	**Approach - Seal Approach to Paving Block**	**Misc - Cut Brush**	**IMP-Concrete Overlay**	**Expansion Joints - Seal**	**Deck - Clean and Sweep Deck/Repairs**	**Drainage - Repair Washouts / Erosion**	**Deck-Patching**
SE	MILWAUKEE	522	15	81	62	25	83	14	30	36	14
	OZAUKEE	51	5	2	15	2	14	2	0	14	1
	RACINE	61	3	1	9	8	17	1	1	12	12
	WALWORTH	115	9	1	12	8	24	5	1	38	4
	WASHINGTON	74	8	0	8	3	19	0	0	10	5
	WAUKESHA	173	7	13	36	16	36	3	6	19	12
SW	COLUMBIA	97	34	15	23	8	0	5	17	8	4
	CRAWFORD	68	4	0	2	5	0	1	1	4	6
	DANE	299	94	61	119	46	1	3	104	25	10
	DODGE	71	28	5	28	11	1	0	16	11	3
	GRANT	70	12	1	3	18	0	1	0	5	4
	GREEN	28	6	3	4	4	0	1	4	0	0
	IOWA	57	14	3	9	14	0	0	6	0	2
	JEFFERSON	111	35	14	42	12	0	2	14	8	4
	JUNEAU	78	3	0	13	2	2	7	0	5	3
	LA CROSSE	108	0	5	19	4	1	1	2	7	6
	LAFAYETTE	40	12	0	11	11	0	0	16	3	1
	MONROE	154	2	0	2	12	0	0	0	2	7
	RICHLAND	78	14	0	4	11	0	1	2	4	5
	ROCK	136	42	27	27	16	0	2	37	5	3
	SAUK	95	19	4	19	20	0	3	13	6	5
	VERNON	74	0	0	6	1	0	0	0	0	1