FINAL

Compass Report

Wisconsin State Highway
2016
Maintenance, Traffic, and Operations Conditions

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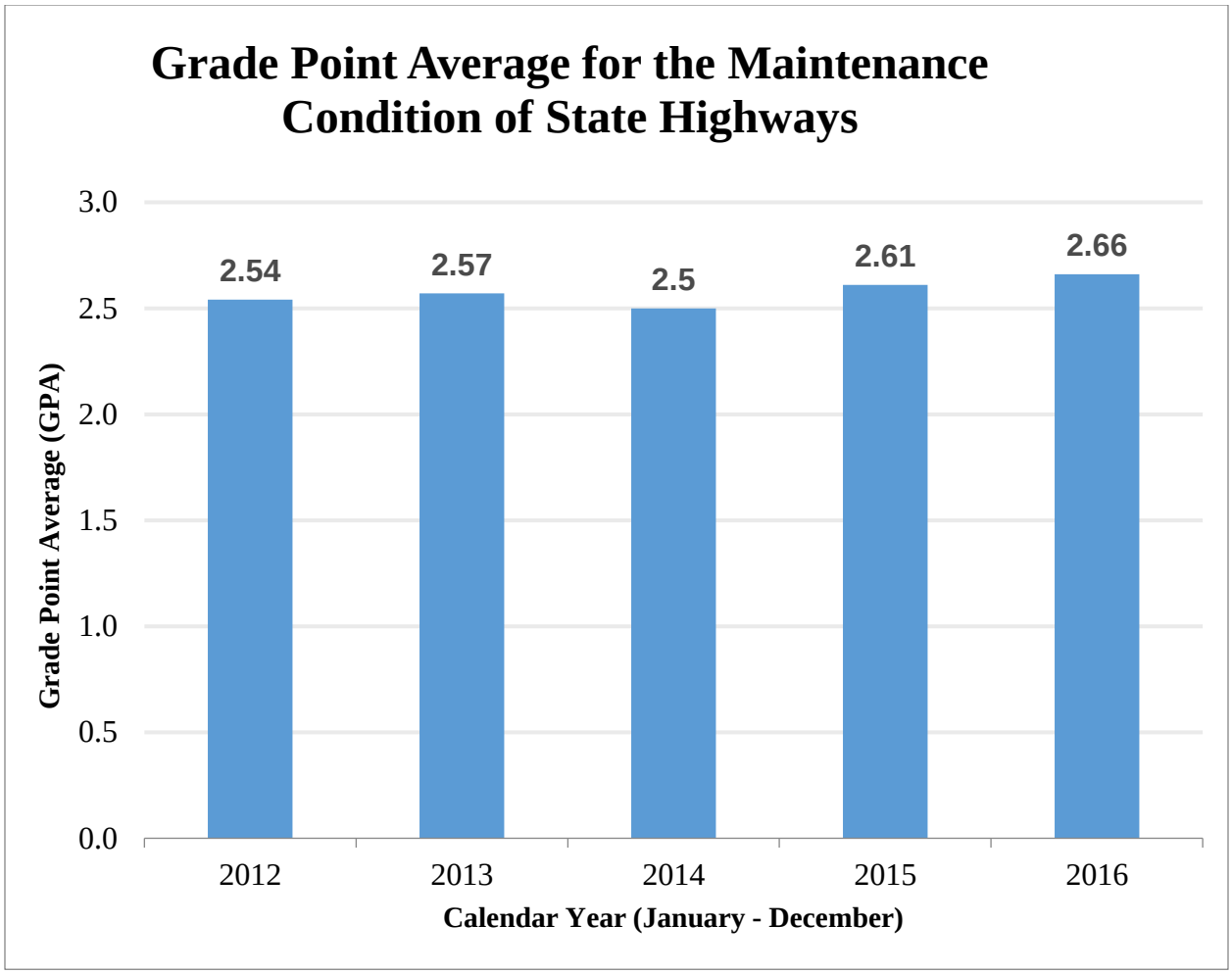
Table of Contents

Executive Summary

The Compass Program collects random road condition data each year to help the Wisconsin Department of Transportation understand current infrastructure conditions, trends and needs. 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 2016 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 maintenance of the state highway system:

- *MAPSS performance data:* MAPSS is the performance management system for WisDOT and stands for the five WisDOT goals – **M**obility, **A**ccountability, **P**reservation, **S**afety and **S**ervice. Condition data obtained by the Compass field review process is used to develop the MAPSS highway maintenance performance measure. A maintenance grade point average is calculated from the individual condition grades for 29 highway features evaluated in the Compass program. The 2016 GPA for state highway maintenance is 2.66, a slight increase over the 2.61 GPA in 2015 (refer to the chart on next page). 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 issue and more funding has been directed to gravel shoulder maintenance. The amount of drop-off on unpaved shoulders decreased from 42% in 2015 to 34% in 2016. There will be a continued focus on improving safety by reducing gravel shoulder drop-off.
- *Removing hazardous debris on shoulders*: For several years the department has emphasized the safety benefits of quickly responding to and removing hazardous debris from roadways and shoulders. The 2016 backlog for hazardous debris was 4%, the lowest level recorded since the program began in 2002.
- *More visible, longer lasting traffic signs*: Over 8,600 new high-intensity signs were installed along the state highway system between 2015 and 2016. More than 94% of the 315,774 signs on the state system have high-intensity face material, providing longer lasting signs and better illumination to drivers during low light conditions and evenings.
- *Targeted replacement of regulatory and warning signs*: The amount of regulatory, warning and school signs older than their useful life remained at 10%. The backlog for other signs on the state system decreased from 26% in 2015 to 23% in 2016. 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)
2.54
2.57
2.5
2.61
2.66
2012
2013
2014
2015
2016
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 WisDOT Operations Managers and Maintenance Supervisors at the Wisconsin Department of Transportation (WisDOT) and the partner organizations with the 72 county highway departments. Compass reports help 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 costs to reduce maintenance backlogs to varying levels of service.

This report includes data on shoulders, drainage features, roadside element, selected traffic control devices, the routine replacement of signs, and specific aspects of winter maintenance activities. The report *does not include* measures for preventive maintenance, operational services (such as traveler information and incident management), or electrified traffic assets (e.g. 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://dotnet/dtid_bho/extranet/compass/reports/index.shtm from within WisDOT or https://trust.dot.state.wi.us/extntgtwy/dtid_bho/extranet/compass/reports/index.shtm from outside WisDOT.

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

The Compass Program was implemented statewide in 2002 as WisDOT's maintenance quality assurance and asset management program for highway maintenance. 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 information from other 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 each spring to the WisDOT Operations Managers, the WisDOT Maintenance Supervisors, and to the Compass Advisory Team. The report is revised based on feedback from these meetings. The report is then finalized and officially published in the summer.

This report uses inventory data for the routine maintenance of signs and winter storm reports. It uses sample data for highway maintenance features. The project team collected data from the WisDOT business areas between December 2015 and May 2016.

The highway maintenance data includes data sampled from the field. A total of 1,200 one-tenth mile segments are randomly selected in the five WisDOT regions. 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 attributes, pavement markings and signs.

Winter maintenance data is gathered from the winter season 2015-16 and includes Time to Bare Wet, Winter Severity Index, Winter VMT, and crash data. Some figures and tables are taken directly from the 2015-16 *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.

The routine sign replacement needs come from the WisDOT Sign Inventory Management System (SIMS).

Compass identifies backlog percentages for each feature at the region and statewide level. Backlog percentages indicate the percent of the feature requiring maintenance, 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. Traffic signs are considered backlogged for maintenance if they are in use past their expected service life.

WisDOT Operations Managers and Maintenance Supervisors 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 2016.

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. There are five contribution categories: Critical Safety, Safety/Mobility, Stewardship, Ride/Comfort, and Aesthetics. Each contribution category has a unique grading curve. 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 2016 condition grades for the 29 features that are evaluated in the field each year for the Compass program. The individual grades for the 29 features translate to an overall system condition grade point average of 2.66. The department goal is a 3.00 GPA.

- A grade: 12 features (41%)
- B grade: 6 features (21%)
- C grade: 3 features (10%)

- D grade: 5 features (17%)
- F grade: 3 features (10%)

The condition grade for most features stayed constant between 2015 and 2016.The condition grade remained unchanged in 2016 for 20 of the 29 features surveyed. Seven features changed one grade level based on minor backlog reductions (Hazardous Debris, Protective Barriers, Centerline Markings, Edgeline Markings, Storm Sewer Systems, Drop-off on Paved Shoulders, and Delineators). Two features had significant backlog increases and a service grade reduction - Drains went from a "C" to a "D" in 2016 while Flumes dropped from a "C" to an "F". Three features received a failing grade in 2016 - Cracking on Paved Shoulders, Drop-off/Build-up on Unpaved Shoulders, and Flumes. Conditions improved for unpaved shoulders and cracking, maintenance activities targeted with additional funding provided through the Performance Based Maintenance Initiative.

A highway feature is considered to have met its target condition if it is within five percentage points of the target level. Twenty features met the target condition in 2016. Seven features exceeded their targeted condition level (Culverts, Storm Sewer Systems, Delineators, Curb and Gutter, Routine Replacement of Other Signs and Mowing). Two features were below the targeted maintenance condition - Drop-off/Build-up on Unpaved Shoulders and Flumes. Two features (Urban Fence and Rural Fence) were added to the Compass Program in 2016 and didn't have targets until baseline conditions are documented.

The following tables identify the five-year trend in Compass feature grades by contribution category (priority). Key observations are also provided for each contribution category.

Critical Safety Features

The roadway features considered critical for safety are those that would require immediate remediation action if they are malfunctioning.

Feature	2016	2015	2014	2013	2012	Element
Reg./Warning Signs (emergency repair)	A	A	A	A	A	Traffic and Safety
Hazardous Debris	**B**	C	C	C	C	Shoulders
Protective Barriers	**A**	B	B	A	B	Traffic and Safety
Centerline Markings	**B**	C	C	C	B	Traffic and Safety
Edgeline Markings	**B**	C	C	C	B	Traffic and Safety
Drop-off/Build-up (unpaved shoulders)	F	F	F	F	F	Shoulders
Drop-off/Build-up (paved shoulders)	**B**	A	B	B	A	Shoulders

- Based on minor backlog reductions of one to three percentage points, the grade level improved for four Critical Safety features: Hazardous Debris, Protective Barriers, Centerline Markings and Edgeline Markings.
- A minor backlog increase of one percentage point pushed Drop-off/Build-up on Paved Shoulders from an A grade in 2015 to a "B" condition level in 2016.
- While Drop-off/Build-up on Unpaved Shoulders continued to receive an F grade, the backlog decreased from 42% in 2015 to 34% in 2016. Actual conditions were six percentage points worse than the maintenance target of 28%.

- The emergency repair of Regulatory/Warning Signs received an A grade for the eighth consecutive year. The backlog percentage has remained constant over the last three years.

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	2016	2015	2014	2013	2012	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	B	Traffic and Safety
Woody Vegetation	A	A	A	A	A	Roadside
Culverts	D	D	D	D	D	Drainage
Storm Sewer Systems	**B**	C	C	C	C	Drainage
Cross-Slope (unpaved shoulders)	D	D	D	D	D	Shoulders
Delineators	**D**	C	D	D	D	Traffic and Safety
Regulatory/Warning Signs (routine replacement)	C	C	B	B	C	Traffic and Safety
Urban Fences[1]	A	N/A	N/A	N/A	N/A	Roadside

- Grades changed for two Safety/Mobility features based on minor backlog changes of one and two percentage points. Storm Sewer Systems improved from a "C" to a "B" grade while Delineators dropped from a "C" grade to a "D".
- All Safety/Mobility features met or exceeded their maintenance target. Culverts, Storm Sewer Systems and Delineators were in better condition than their maintenance target.
- Woody Vegetation Control, Woody Vegetation Control for Vision, Fences, and Mowing for Vision all maintained "A" grades for the fifth year in a row.
- Urban Fences, a new feature added to the field review in 2016, had no observed backlogs.

Stewardship Features

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

Feature	2016	2015	2014	2013	2012	Element
Ditches	A	A	A	A	A	Drainage
Curb & Gutter	A	A	A	A	A	Drainage
Flumes	**F**	C	D	D	D	Drainage
Cracking (paved shoulders)	F	F	F	F	F	Shoulders
Erosion (unpaved shoulders)	A	A	A	A	A	Shoulders
Under-drains/Edge-drains	**D**	C	C	C	D	Drainage

[1]Urban Fences and Rural Fences were considered a single feature until 2016.

- Ditches, Curb and Gutter, and Erosion on Unpaved Shoulders all continued to receive feature grades of A.
- The maintenance backlog for Flumes and Drains increased significantly during the past year. Flumes dropped two grades, from a "C" grade to an "F". Backlog levels have varied significantly during the last years, in part due to a smaller sample size. Under-drains/Edge-drains dropped one grade level from a "C" to a "D" grade. The backlog percentage of 34% was the highest level in 8 years.
- Cracking on Paved Shoulders continued to have an "F" grade for the seventh consecutive year, but the backlog improved for second year in a row, declining from a 67% backlog down to 60% in 2016.
- All Stewardship features met their fiscally-constrained maintenance target, with the exception of Flumes.

Driver Comfort Features

The Driver Comfort features provide a state of ease and quiet enjoyment for highway users. These features include proper fencing and signing, along with a lack of pavement obstructions.

Feature	2015	2014	2013	2012	2011	Element
Rural fences[1]	A	N/A	N/A	N/A	N/A	Roadside
Potholes/Raveling (paved shoulders)	A	A	B	A	A	Shoulders
Other Signs (emergency repair)	A	A	A	A	A	Traffic and Safety
Other Signs (routine replacement)	C	C	C	C	D	Traffic and Safety

- Potholes/Raveling and Other Signs (emergency repair) maintained an "A" grade.
- A new feature, Rural Fences, received an "A" grade in its first year in the field review.
- All Ride/Comfort features met their condition targets.

Aesthetics Feature

Aesthetics concerns the display of natural beauty located along a highway corridor. It focuses on maintaining grass along roadway shoulders and removing litter, which detracts from the visual aesthetics of the roadway.

Feature	2016	2015	2014	2013	2012	Element
Mowing	C	C	C	C	C	Roadside
Litter	D	D	D	D	D	Roadside

- Mowing and Litter conditions have remained the same over the five-year period, with Mowing receiving a "C" grade and Litter maintaining a "D" grade level.
- Mowing and Litter were in better condition than their maintenance backlog target, by 6 percentage points and one percentage point respectively.

[1]Urban Fences and Rural Fences used to be both considered as single feature until 2016.

Routine Replacement of Signs

- The backlog for the routine replacement of regulatory/warning signs remained at 10% between 2015 and 2016, though the number of deficient signs increased by 1,704 signs statewide. The backlog increase was mostly due to an additional 2,141 deficient signs in the Southwest Region.
- The backlog for the routine replacement of other signs decreased from 26% in 2015 to 23% in 2016. The backlog reduction amounted to over 3,000 signs statewide.
- Regulatory/warning signs were in service for an average 4.5 years beyond their recommended service life, down from 4.9 years in 2015. Other signs were in service for an average 9.2 years beyond their useful life, down slightly from 9.3 years in 2015. There were 6,453 regulatory/warning signs and 18,952 other signs in service for five years or more beyond their recommended useful life.
- Over 8,600 high intensity signs were added to the state highway system in 2016. The percentage of high intensity signs on the state system increased from 92% in 2015 to 94% in 2016. As of 2016, 98% of regulatory/warning signs and 87% of other signs were made with high intensity face material.

Winter

- The 2015-16 statewide winter maintenance cost was $71.9 million, 3% less than the $74.2 million expense during the previous winter, and 16% less than the 5-year average of $86 million.
- The Winter Severity Index was 9 percentage points lower than the previous winter, but salt use increased by 3%. There were more frost events during the 2015-2016 winter, though, with a statewide average of 4.9 events, 1.8 points higher than the previous season.
- The average statewide snowfall was approximately 58 inches in 2015-16, 2 inches less than average from the previous year. Snowfall varied significantly across the state; the highest snowfall recorded was 212 inches in Iron County; the lowest snowfall was 23 inches in Kenosha County.
- The number of storms has a greater impact on resources than snowfall totals, since staff and equipment might be mobilized for as little as 0.1 inches of snow or freezing rain. The percentage of roadways cleared to bare/wet pavement targets in 2015-2016 was 74%, 4% higher than the previous winter season.
- There were 5,089 crashes on pavements covered with snow, slush or ice during the 2015-2016 winter season. The crash rate was 18 crashes per 100 million vehicle miles traveled, a 28% reduction from the previous season.

Wisconsin 2016: Compass Report on Highway Maintenance Conditions

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)[2]						Condition change: 2015 to 2016[3]	% of system backlogged					2016 Feature grades				
	FY 12	FY 13	FY 14	FY 15	FY 16			2012	2013	2014	2015	2016	A	B	C	D	F
Shoulders	11.08 11.58 0.33 0.34	8.16 8.41 0.24 0.25	7.79 7.90 0.23 0.23	12.50 12.66 0.36 0.37	18.87 18.87 0.55 0.55	Hazardous Debris	↑	7	7	7	6	4		B			
						Drop-off/Build-up (paved)	↓	1	4	4	2	3		B			
						Cracking (paved)	↑	55	54	69	67	60					F
						Potholes/Raveling (paved)	↓	6	7	8	6	7	A				
						Drop-off/Build-up (unpaved)	↑↑	36	36	41	42	34					F
						Cross-Slope (unpaved)	↑	26	22	27	25	20				D	
						Erosion (unpaved)	↑	1	1	3	2	1	A				
Drainage	7.90 8.25 0.23 0.24	7.10 7.32 0.21 0.21	7.04 7.13 0.20 0.21	7.58 7.68 0.22 0.22	9.35 9.35 0.27 0.27	Ditches	-	1	1	1	1	1	A				
						Culverts	↓	25	25	21	20	21				D	
						Under-drains/Edge-drains	↓↓	30	29	26	23	34				D	
						Flumes	↓↓	45	47	42	23	51					F
						Curb & Gutter	↑	5	4	5	6	4	A				
						Storm Sewer System	↑	13	14	15	11	9		B			

[2]The dollar values listed in each column show the nominal dollars, constant dollars (base year 2016), nominal dollars per thousand lane miles, and constant dollars per thousand lane miles, respectively.

[3]Arrows indicate a condition change from 2015 to 2016 (↑= 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)[2]						Condition change: 2015 to 2016[3]	% of system backlogged					2016 Feature grades				
	FY 12	FY 13	FY 14	FY 15	FY 16			**2012**	**2013**	**2014**	**2015**	**2016**	A	B	C	D	F
Roadsides	23.10 24.15 0.68 0.71	18.65 19.22 0.55 0.56	15.03 15.24 0.44 0.44	19.27 19.52 0.56 0.57	21.32 21.32 0.62 0.62	Litter	↑	62	64	61	63	62				D	
						Mowing	↑	39	41	34	35	34			C		
						Mowing for Vision	↑	1	0.3	2	3	2	A				
						Woody Vegetation	-	3	3	2	2	2	A				
						Woody Veg. Control for Vision	-	1	1	1	1	1	A				
						Urban Fences	N/A	N/A	N/A	N/A	N/A	0	A				
						Rural Fences	N/A	N/A	N/A	N/A	N/A	2	A				
Traffic & safety (selected)	18.20 19.03 0.54 0.56	17.89 18.43 0.52 0.54	17.22 17.46 0.50 0.51	16.33 16.54 0.47 0.48	19.36 19.36 0.56 0.56	Centerline Markings	↑	4	6	8	6	4		B			
						Edgeline Markings	↑	3	7	9	6	5		B			
						Special Pavement Markings	-	6	9	6	8	8		B			
						Reg./Warning Signs (emerg. repair)	-	1	2	1	1	1	A				
						Reg./Warning Signs (routine replacement)	-	12	9	9	10	10			C		
						Other Signs (emerg. repair)	-	3	2	3	1	1	A				
						Other Signs (routine replacement)	↑	37	33	30	26	23			C		
						Delineators	↓	21	22	22	18	19				D	
						Protective Barriers	↑	3	1	3	5	2	A				

Wisconsin 2016: Targets for Highway Maintenance Conditions

Targets are set annually and reflect priorities for that year, given fiscal constraints. They measure management effectiveness, not system condition.

			Statewide										Regions		
Contribution Category	**Feature**	**Element**	**Actual % backlog 2016**	**Target % backlog 2016**	**On target[5]**	**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	4	5	◎								SE	NC, NE, NW, SW	
	Protective Barriers	Traffic and Safety Devices	2	3	◎									ALL	
	Centerline Markings	Traffic and Safety Devices	4	5	◎									ALL	
	Edgeline Markings	Traffic and Safety Devices	5	8	◎									NC, NE, NW, SW	SE
	Drop-off/Build-up (unpaved)	Shoulders	34	28				**6**					NE, SE, SW	NC, NW	
	Drop-off/Build-up (paved)	Shoulders	3	4	◎									ALL	
Safety/ Mobility	Woody Veg. Control for Vision	Roadsides	1	2	◎									ALL	
	Mowing for Vision	Roadsides	2	5	◎									ALL	
	Special Pavement Markings	Traffic and Safety Devices	8	10	◎									NC, NE, SE, SW	NW
	Woody Vegetation	Roadsides	2	5	◎									ALL	
	Culverts	Drainage	21	30					**9**				NE	NC, NW	SE, SW
	Storm Sewer System	Drainage	9	15					**6**					NC, NE, NW	SE, SW
	Cross-Slope (unpaved)	Shoulders	20	18	◎								NC, NE	NW, SW	SE

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

Contribution Category	Feature	Element	Statewide									Regions		
			Actual % backlog 2016	Target % backlog 2016	On target[5]	Gap if target missed						Worse condition	On Target	Better condition
						Worse condition			Better condition					
						20	10	0	0	10	20			
	Delineators	Traffic and Safety Devices	19	25					6				NE, SE, SW	NC, NW
	Reg./Warning Signs (routine)	Traffic and Safety Devices	10	9	◎								ALL	
	Urban Fences	Roadsides	0	N/A	N/A									
Stewardship	Ditches	Drainage	1	5	◎								ALL	
	Curb & Gutter	Drainage	4	10					6				NE, NW, SW	NC, SE
	Flumes	Drainage	51	44				7				NC, SW	NE, SE	NW
	Cracking (paved)	Shoulders	60	58	◎							NE	NC, SE, SW	NW
	Erosion (unpaved)	Shoulders	1	5	◎							NC	NE, NW, SE, SW	
	Under-drains/Edge-drains	Drainage	34	30	◎							NE	NW	NC, SE, SW
Ride/Comfort	Potholes/Raveling (paved)	Shoulders	7	10	◎							SE	NW, SW	NC, NE
	Other Signs (emerg. repair)	Traffic and Safety Devices	1	1	◎								ALL	
	Other Signs (routine replacement)	Traffic and Safety Devices	23	33					10				SE	NC, NE, NW, SW
	Rural Fences	Roadsides	2	N/A	N/A									
Aesthetics	Mowing	Roadsides	34	40					6			NE	SE, SW	NC, NW
	Litter	Roadsides	62	63	◎							NE, SE	SW	NC, NW

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. Data is statistically valid at the region and statewide levels. No statistical analysis has been completed on county level data in Appendix G. Extreme caution should be used when analyzing the county level data, due to sample size limitations, as many features have fewer than 30 observations.

Below is a summary of backlog condition changes between 2015 and 2016. Refer to the "Maintenance Report Card" in the front part of the report for a complete summary of grade level changes between 2015 and 2016.

- Backlog levels declined for 14 features (i.e. in better condition).
- The backlog level increased for six features (i.e. in worse condition).
- Seven features did not see a change in their backlog level.
- Beginning in 2016, the Fence feature was split into two new features: Urban Fence and Rural Fence. The features are now evaluated separately based on different functions, maintenance priorities, material and cost.

Shoulders

- The individual grades for the seven Shoulder features translate to an overall condition grade point average of 2.14, or a "C" grade.
- Five of the seven Shoulder features had a decrease in their backlog levels over the previous year. The backlog for Drop-off/Build-up on Unpaved Shoulders dropped eight percentage points to a 34% backlog, achieving its best condition since 2009. Cracking on Paved Shoulders and Cross-Slope on Unpaved Shoulders had backlog decreases of eight percentage points and five percentage points respectively.
- Drop-off/Buildup on Paved Shoulders and Potholes/Raveling on Paved Shoulders each had a backlog increase of one percentage point.

Drainage

- The individual grades for the six Drainage features translate to an overall condition grade point average of 2.17, or a "C" grade.
- Flumes had the largest backlog increase of all Compass features, growing 28 percentage points over 2015. The associated level of service grade changed from a "C" grade in 2015 to an "F". The 2016 condition level better matches the historical trend than 2015 data, though, which was inconsistent with past findings.
- Under-drain/Edge-drains had the second largest backlog increase of all Compass features, expanding 11 percentage points over the previous year.

Roadsides

- The individual grades for the seven Roadside features translate to an overall condition grade point average of 3.29 or a "B" grade.
- Three features decreased their backlog by one percentage point: Litter, Mowing and Mowing for Vision.

- The backlog level remained the same for Woody Vegetation and Woody Vegetation Control for Vision.
- Urban Fence and Rural Fence were new features added to the program in 2016. Previously there was one general Fence category.

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 2.89 or a "C" grade.
- Four features had a reduced backlog level, improving their condition: Centerline Markings, Edgeline Markings, Routine Replacement of Other Signs, and Protective Barriers.
- The backlog level did not change for four features: Special Pavement Markings, Emergency Repair of Regulatory/Warning Signs, Routine Replacement of Regulatory/Warning Signs, and the Emergency Repair of Other Signs.

Regions 2016: Compass Report on Highway Maintenance Conditions

Shoulders

- Hazardous Debris: Three regions had backlog levels of 2% (North Central Region and Northwest Region) and 3% (Southwest Region), while the Northeast Region (7%) and the Southeast Region (18%) had much higher backlog rates for Hazardous Debris.
- Paved Shoulders: Cracking backlogs varied from a low of 52% in the Northwest Region to a high of 68% in the Northeast Region. Low Drop-off/Build-up backlog levels are found around the state, from 1% in the North Central Region to a 4% rate in the Northeast Region, Southeast Region and Southwest Region. Different backlog rates for Potholes/Raveling are located in the state, from a 0% level in the North Central Region up to a 16% rate in the Southeast Region.
- Unpaved Shoulders: High backlog levels continue for Drop-off/Build-up on Unpaved Shoulders, though rates declined since 2015. The North Central Region had the lowest backlog rate at 24%, while the Northeast Region has the highest amount at 48%. Cross-slope backlogs also decreased over the past year, with the lowest rate located in the Southeast Region (9%) and the highest maintenance backlog in the Northeast Region (28%). Erosion continued having very low backlog rates across the state, except the 32% rate in the North Central Region.

Drainage

- Ditches: Low region backlog levels of 1% and 2% were located throughout the five regions.
- Culverts: Culvert conditions varied widely around the state, with a low of 7% in the Southwest Region and a high of 43% in the Northeast Region.
- Drains: Drain backlogs were highly variable across Wisconsin, from an 8% backlog in the North Central Region up to an 82% backlog in the Northeast Region.
- Flumes: Flume conditions returned to historical norms after unusually low backlog rates were recorded in 2015. Region conditions varied from a 27% backlog in the Northwest Region to a 66% backlog level in the Southwest Region.
- Curb and Gutter: Three regions had backlog levels at 5% or below, while the Southwest Region (8%) and the Northwest Region (14%) had higher maintenance backlogs.
- Storm Sewer Systems: Region condition trends continued, with the lowest rates located in the Southeast Region and Southwest Region, and levels between 16% and 19% recorded in the other three regions.

Roadsides

- Litter: High litter rates continued, from a 47% rate in the North Central Region to an 82% level in the Northeast Region.
- Mowing and Mowing for Vision: Mowing rates were similar to previous years, with a low backlog of 23% in the Northwest Region and a high rate of 49% in the Northeast Region. There were low Mowing for Vision backlogs identified across the state, with a high rate of 4% located in the Northwest Region.
- Woody Vegetation and Woody Vegetation for Vision: Low backlog levels were recorded for both features, with no region recording a backlog larger than 4%.

- Urban Fences and Rural Fences: No maintenance backlogs were identified for Urban Fences prohibiting pedestrian access to highways. Very low backlog levels were found across the state for Rural Fences that identify right-of-way limits, with only the Northwest Region (9%) recording a backlog level above 1%.

Traffic Control and Safety Devices

- Pavement Markings: Centerline Marking and Edgeline Marking conditions were similar across the regions, ranging from 1% to 6% backlog rates. Special Pavement Markings had higher backlog levels, with double-digit rates in the North Central Region (10%), Northeast Region (11%) and the Southwest Region (12%).
- Emergency Repair of Signs: Low backlog levels were recorded across the state, varying from 0% to 3% in each region.
- Routine Replacement of Signs: Backlogs for Regulatory/Warning Signs were similar across regions, varying from 8% to 14%. Backlog levels for Other Signs were higher, ranging from 14% in the Northeast Region to 29% in the Southeast Region.
- Delineators: The condition of delineators varied widely across the regions, ranging from 10% in the North Central Region to 26% in the Northeast Region.
- Protective Barriers: Low backlog rates for Protective Barriers were recorded around the state, with two regions at 0% (the North Central Region and the Southeast Region) and a high of 4% in the Southwest Region.

Regions 2016: 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	2%	7%	2%	18%	3%	4%
	Drop-off/Build-up (paved)	1%	4%	2%	4%	4%	3%
	Cracking (paved)	63%	68%	52%	62%	60%	60%
	Potholes/Raveling (paved)	0.1%	3%	6%	16%	11%	7%
	Drop-off/Build-up (unpaved)	24%	48%	31%	37%	36%	34%
	Cross-Slope (unpaved)	24%	28%	15%	9%	19%	20%
	Erosion (unpaved)	32%	1%	0%	5%	2%	1%
	Shoulder Expenditures (Millions)	$3.14M	$1.59M	$5.11M	$3.71M	$5.31M	$18.87M
Drainage	Ditches	1%	1%	1%	2%	1%	1%
	Culverts	31%	43%	28%	14%	7%	21%
	Under-drains/Edge-drains	8%	82%	29%	19%	17%	34%
	Flumes	56%	43%	27%	47%	66%	51%
	Curb & Gutter	4%	5%	14%	0%	8%	4%
	Storm Sewer Systems	18%	19%	16%	5%	4%	9%
	Drainage Expenditures (Millions)	$1.11M	$1.15M	$2.27M	$2.89M	$1.92M	$9.35M
Roadsides	Litter	47%	82%	56%	81%	62%	62%
	Mowing	33%	49%	23%	35%	39%	34%
	Mowing for Vision	0%	2%	4%	0%	2%	2%
	Woody Vegetation Control	2%	1%	4%	4%	2%	2%
	Woody Veg. Control for Vision	1%	1%	1%	1%	0.4%	1%
	Urban Fences	0%	0%	0%	0%	0%	0%
	Rural Fences	6%	0%	9%	0%	1%	2%
	Roadside Expenditures (Millions)	$3.08M	$2.67M	$5.31M	$5.13M	$5.13M	$21.32M
Traffic Control & Safety Devices	Centerline Markings	5%	5%	5%	1%	3%	4%
	Edgeline Markings	4%	5%	5%	2%	6%	5%
	Special Pavement Markings	10%	11%	4%	5%	12%	8%
	Reg./Warning Signs (emerg.)	1%	1%	1%	2%	0.3%	1%
	Reg./Warning Signs (routine)	9%	8%	8%	11%	14%	10%
	Other Signs (emerg. repair)	0.4%	3%	1%	1%	0.4%	1%
	Other Signs (routine)	17%	14%	25%	29%	24%	23%
	Delineators	10%	26%	17%	20%	21%	19%
	Protective Barriers	0%	2%	2%	0.2%	4%	2%
	Traffic Control & Safety Device Expenditures (Millions)	$3.18M	$2.71M	$3.93M	$4.64M	$4.90M	$19.36M

Condition Grade	A	B	C	D	F

Regions 2016: Regional Trend

Element	Feature	Region	Year				
			2012	2013	2014	2015	2016
Shoulders	Hazardous Debris	NC	7%	5%	2%	4%	2%
		NE	10%	9%	11%	6%	7%
		NW	2%	3%	3%	2%	2%
		SE	17%	12%	9%	16%	18%
		SW	7%	11%	13%	9%	3%
	Drop-off/Build-up (paved)	NC	1%	1%	2%	2%	1%
		NE	1%	6%	6%	3%	4%
		NW	1%	3%	3%	1%	2%
		SE	3%	10%	11%	4%	4%
		SW	2%	3%	2%	2%	4%
	Cracking (paved)	NC	48%	48%	62%	69%	63%
		NE	70%	65%	80%	74%	68%
		NW	47%	51%	66%	62%	52%
		SE	70%	67%	68%	51%	62%
		SW	54%	53%	71%	74%	60%
	Potholes/Raveling (paved)	NC	8%	3%	1%	2%	0.4%
		NE	5%	5%	2%	1%	3%
		NW	4%	8%	9%	7%	6%
		SE	11%	10%	14%	8%	16%
		SW	4%	10%	12%	11%	11%
	Drop-off/Build-up (unpaved)	NC	37%	29%	27%	30%	24%
		NE	53%	44%	49%	49%	48%
		NW	26%	28%	40%	33%	31%
		SE	43%	48%	48%	40%	37%
		SW	35%	44%	48%	58%	36%
	Cross-slope (unpaved)	NC	35%	24%	23%	27%	24%
		NE	42%	28%	25%	22%	28%
		NW	15%	9%	15%	17%	15%
		SE	28%	29%	44%	31%	9%
		SW	21%	27%	39%	31%	19%
	Erosion (unpaved)	NC	0.4%	0%	2%	1%	32%
		NE	2%	1%	1%	0%	1%
		NW	0.3%	0.3%	3%	2%	0.1%
		SE	1%	2%	5%	1%	5%
		SW	1%	2%	4%	4%	2%
	Ditches	NC	2%	1%	0.4%	0.2%	1%

Element	Feature	Region	Year				
			2012	2013	2014	2015	2016
Drainage		NE	0.4%	0.4%	1%	1%	1%
		NW	1%	0.4%	3%	2%	1%
		SE	1%	3%	5%	3%	2%
		SW	0.2%	0.4%	1%	1%	1%
	Culverts	NC	25%	17%	12%	14%	31%
		NE	26%	19%	32%	24%	43%
		NW	28%	23%	23%	24%	28%
		SE	5%	29%	18%	12%	14%
		SW	26%	33%	20%	19%	7%
	Under-drains/Edge-drains	NC	13%	21%	20%	13%	8%
		NE	19%	25%	14%	41%	82%
		NW	58%	53%	57%	29%	29%
		SE	13%	11%	20%	24%	19%
		SW	50%	39%	31%	35%	17%
	Flumes	NC	46%	29%	29%	32%	56%
		NE	34%	26%	46%	2%	43%
		NW	31%	36%	56%	46%	27%
		SE	35%	56%	36%	8%	47%
		SW	65%	73%	44%	35%	66%
	Curb & Gutter	NC	4%	2%	3%	5%	4%
		NE	5%	3%	4%	2%	5%
		NW	14%	16%	13%	12%	14%
		SE	1%	0.3%	3%	1%	0.5%
		SW	9%	5%	9%	10%	8%
	Storm Sewer System	NC	19%	3%	8%	10%	18%
		NE	5%	10%	11%	16%	19%
		NW	3%	24%	12%	0%	16%
		SE	11%	12%	14%	7%	5%
		SW	28%	21%	26%	24%	4%
Roadsides	Litter	NC	52%	54%	38%	44%	47%
		NE	72%	75%	74%	80%	82%
		NW	56%	60%	54%	61%	56%
		SE	74%	74%	78%	78%	81%
		SW	65%	67%	72%	67%	62%
	Mowing	NC	34%	35%	29%	34%	33%
		NE	49%	54%	41%	46%	49%
		NW	34%	29%	22%	29%	23%
		SE	43%	55%	54%	39%	35%
		SW	42%	46%	39%	35%	39%

Element	Feature	Region	Year				
			2012	2013	2014	2015	2016
	Mowing for Vision	NC	2%	0%	0%	4%	0%
		NE	0%	0%	4%	4%	2%
		NW	1%	0%	2%	2%	4%
		SE	3%	0%	0%	5%	0.1%
		SW	1%	1%	2%	1%	2%
	Woody Vegetation Control	NC	4%	3%	2%	2%	2%
		NE	1%	2%	1%	1%	1%
		NW	1%	3%	2%	5%	4%
		SE	2%	1%	5%	1%	4%
		SW	7%	4%	3%	2%	2%
	Woody vegetation control for vision	NC	0%	1%	1%	0%	1%
		NE	1%	2%	1%	0%	1%
		NW	0.3%	0%	0.3%	0.3%	1%
		SE	3%	0%	3%	1%	1%
		SW	0.3%	2%	1%	1%	0%
	Fences[6]	NC	3%	0%	0.3%	2%	N/A
		NE	0%	0.1%	0%	1%	N/A
		NW	12%	12%	6%	6%	N/A
		SE	0.04%	0%	0.05%	0%	N/A
		SW	3%	0.04%	0.1%	1%	N/A
	Urban Fences[6]	NC	N/A	N/A	N/A	N/A	0%
		NE	N/A	N/A	N/A	N/A	0%
		NW	N/A	N/A	N/A	N/A	0%
		SE	N/A	N/A	N/A	N/A	0%
		SW	N/A	N/A	N/A	N/A	0%
	Rural Fences[6]	NC	N/A	N/A	N/A	N/A	6%
		NE	N/A	N/A	N/A	N/A	0.4%
		NW	N/A	N/A	N/A	N/A	9%
		SE	N/A	N/A	N/A	N/A	0%
		SW	N/A	N/A	N/A	N/A	1%
Traffic and safety (selected devices)	Centerline Markings	NC	3%	5%	9%	4%	5%
		NE	6%	7%	8%	2%	5%
		NW	8%	8%	6%	6%	5%
		SE	6%	4%	7%	1%	1%
		SW	1%	4%	8%	10%	3%
	Edgeline Markings	NC	4%	4%	7%	5%	4%

[6]Urban Fences and Rural Fences used to be both considered as a single feature (Fences) until 2016.

Element	Feature	Region	Year				
			2012	2013	2014	2015	2016
		NE	6%	6%	3%	2%	5%
		NW	3%	5%	2%	5%	5%
		SE	4%	4%	8%	1%	2%
		SW	1%	12%	20%	10%	6%
	Special Pavement Markings	NC	11%	16%	2%	2%	10%
		NE	3%	0%	0%	3%	11%
		NW	8%	6%	3%	18%	4%
		SE	3%	4%	5%	5%	5%
		SW	7%	18%	11%	15%	12%
	Regulatory/warning signs (emergency repair)	NC	2%	1%	1%	1%	1%
		NE	0.3%	0%	1%	1%	1%
		NW	2%	4%	1%	2%	1%
		SE	1%	1%	1%	1%	2%
		SW	2%	2%	2%	1%	0.3%
	Regulatory/Warning Signs (routine replacement)	NC	7%	6%	4%	8.7%	9%
		NE	20%	13%	11%	10.5%	8%
		NW	8%	8%	8%	7.7%	8%
		SE	16%	14%	12%	11.5%	11%
		SW	8%	6%	7%	9.8%	14%
	Detour/Object Marker/Recreation/Guide Signs (emergency repair)	NC	7%	1%	1%	1%	0%
		NE	0%	1%	4%	1%	3%
		NW	3%	3%	6%	4%	1%
		SE	0%	2%	2%	2%	1%
		SW	5%	2%	2%	0.3%	0.3
	Detour/Object Marker/Recreation/Guide Signs (routine replacement)	NC	29%	20%	14%	17%	17%
		NE	34%	28%	26%	20%	14%
		NW	40%	38%	33%	30%	25%
		SE	45%	44%	40%	31%	29%
		SW	35%	30%	29%	25%	24%
	Delineators	NC	5%	19%	6%	8%	10%
		NE	10%	6%	11%	13%	26%
		NW	22%	25%	22%	22%	17%
		SE	27%	40%	26%	12%	20%
		SW	30%	23%	32%	25%	21%
	Protective Barriers	NC	7%	2%	0%	0.2%	0%
		NE	0.02%	1%	7%	0.01%	2%
		NW	1%	2%	4%	10%	2%
		SE	10%	1%	1%	2%	0.1%
		SW	1%	2%	4%	6%	4%

Mowing

The table below illustrates how many segments are backlogged for Mowing on the statewide level. Columns identify *how* the segment was deficient and rows indicate *why* the segment was deficient. Each question has two answers: the number of deficient segments and the percentage of segments over the row total.

Note that multiple reasons are allowed for how and why segments are deficient; therefore, the sum of percentages for each deficiency type (e.g. Safety/Equipment) 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	0	0	0
		0%	0%	0%	0%
	Mowed by Property Owner	158	381	146	0
		75%	71%	21%	0%
	Woody Vegetation Control	0	0	0	0
		0%	0%	0%	0%
	Maintenance Decision	53	158	542	0
		25%	29%	79%	0%
	Total	211	539	688	0

2016 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. 2017). The green counties highlight the North Central Region, Northeast Region, and Southeast Region, with highways evaluated in the even-numbered years (e.g. 2016).

Wisconsin 2016: Traveled Way Condition Distribution

Statewide Pavement Conditions – Asphalt Traveled Ways		
Pavement Condition	Lane Miles	Percentage
Excellent	2,198.37	11%
Good	9,628.28	47%
Moderate	4,156.63	20%
Bad	4,345.27	21%

Source: WisDOT Pavement Maintenance Management System (2017).

Statewide Pavement Conditions – Concrete Traveled Ways		
Pavement Condition	Lane Miles	Percentage
Excellent	1,408.35	22%
Good	2,687.44	42%
Moderate	1,155.41	18%
Bad	1,177.18	18%

Source: WisDOT Pavement Maintenance Management System (2017).

Regions 2016: Traveled Way Condition Distribution

Asphalt Traveled Ways: ***Percentage of Highway Mileage***					
Pavement Condition	North Central	Northeast	Northwest	Southeast	Southwest
Excellent	7%	11%	19%	6%	8%
Good	55%	54%	48%	49%	37%
Moderate	23%	20%	18%	20%	21%
Bad	15%	15%	15%	25%	33%

Source: WisDOT Pavement Maintenance Management System (2017).

Concrete Traveled Ways: ***Percentage of Highway Mileage***					
Pavement Condition	North Central	Northeast	Northwest	Southeast	Southwest
Excellent	9%	17%	19%	7%	40%
Good	45%	50%	40%	55%	29%
Moderate	26%	21%	24%	17%	10%
Bad	19%	12%	16%	21%	21%

Source: WisDOT Pavement Maintenance Management System (2017).

2016 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 based on the sign manufacture date, rather than the date the sign is installed. Information on the emergency repair of damaged and knocked-down signs can be found in the Compass Field Review report.

Compass groups signs into two categories:

- Regulatory/Warning Signs (including regulatory, warning and school signs)
- Other Signs (including detour, object marker, recreation and guide 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.

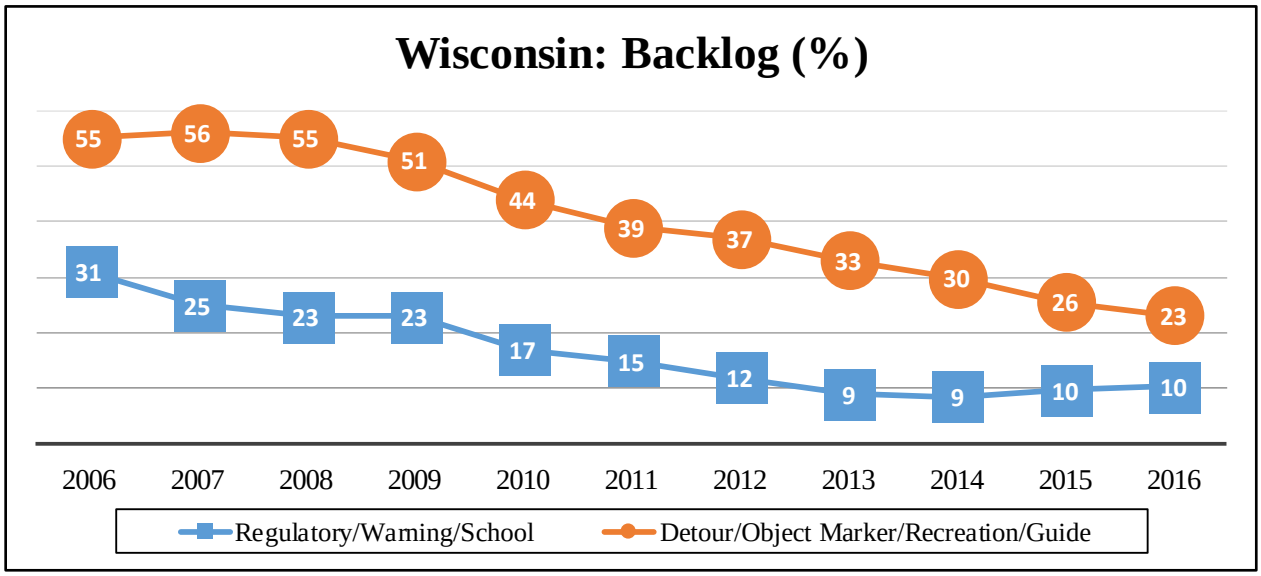
In addition, WisDOT is migrating from engineering grade sign face material (Grade 1) to more visible, longer lasting high intensity sign face material (Grade 2). The trend analysis looks at the progress of this migration.

Key Observations in 2016:

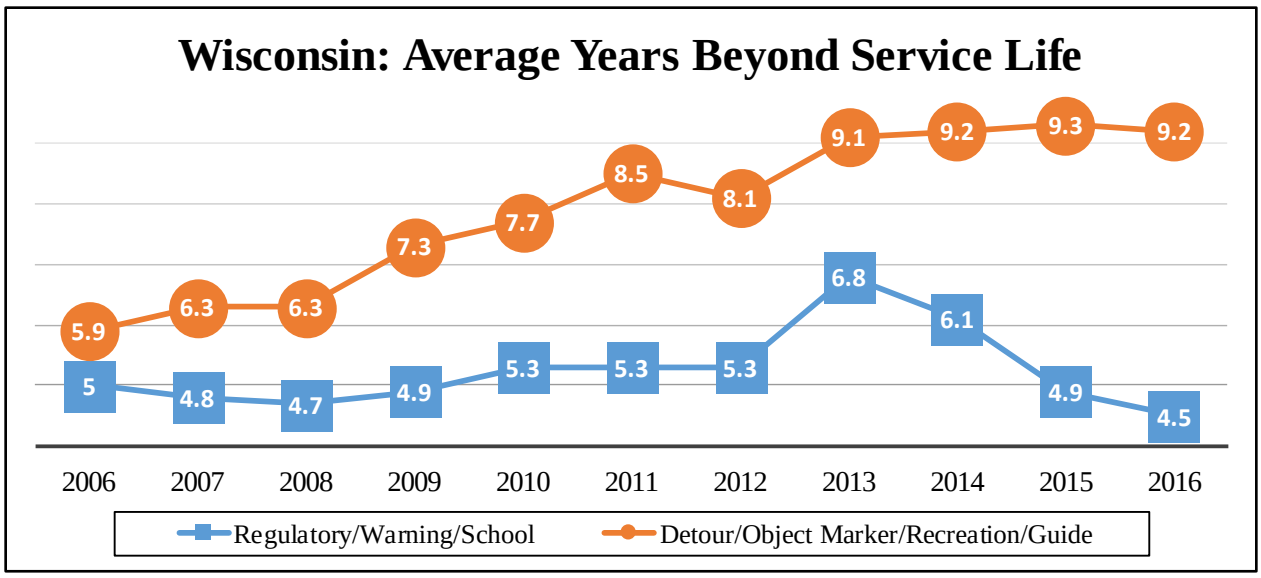
- The backlog for the routine replacement of regulatory/warning signs remained at 10% between 2015 and 2016, though the number of deficient signs increased by 1,704 signs statewide. The backlog increase was mostly due to an additional 2,141 deficient signs in the Southwest Region. By region, the percentage of regulatory/warning signs backlogged for routine replacement varied from 8% in the Northeast Region and the Northwest Region to 14% in the Southwest Region.
- The backlog for the routine replacement of other signs decreased from 26% in 2015 to 23% in 2016. The backlog reduction amounted to over 3,000 signs statewide. By region, the percentage of other signs backlogged for routine replacement varied from 14% in the Northeast Region to 29% in the Southeast Region.
- Regulatory/warning signs were in service for an average 4.5 years beyond their recommended service life, down from 4.9 years in 2015. Other signs were in service for an average 9.2 years beyond their useful life, down slightly from 9.3 years in 2015. There were 6,453 regulatory/warning signs and 18,952 other signs in service for five years or more beyond their recommended useful life.
- Over 8,600 high intensity signs were added to the state highway system in 2016. The percentage of high intensity signs on the state system increased from 92% in 2015 to 94% in 2016. As of 2016, 98% of regulatory/warning signs and 87% of other signs were made with high intensity 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[6]**	**Total Signs**	**Backlog**	**Deficient Signs**	**Average Years Beyond Service Life[7]**
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	9%	16,169	6.1	117,346	30%	35,053	9.2
2015	194,356	10%	18,992	4.9	118,981	26%	30,451	9.3
2016	**197,815**	**10%**	**20,696**	**4.5**	**117,959**	**23%**	**27,373**	**9.2**



[7]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.



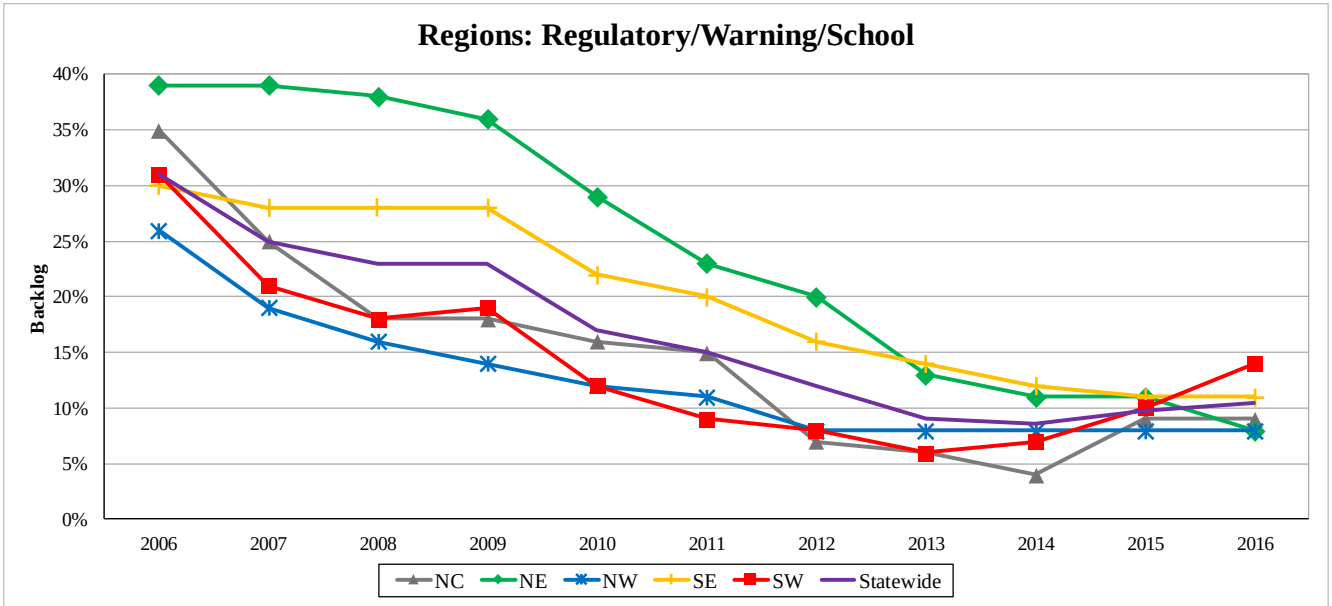
Regions 2016: Condition of Signs by Category

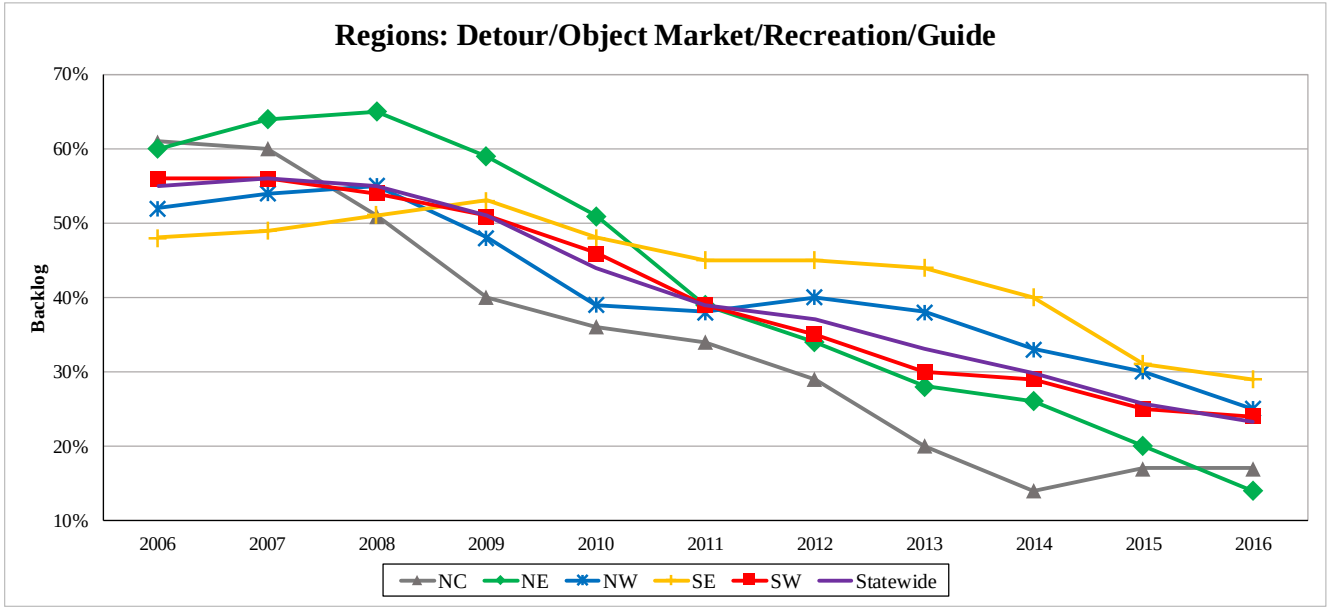
	Regulatory/Warning/School				Detour/Object Marker/Recreation/Guide			
Region	**Total Signs**	**Backlog**	**Deficient Signs**	**Average Years Beyond Service Life[6]**	**Total Signs**	**Backlog**	**Deficient Signs**	**Average Years Beyond Service Life[6]**
NC	30,246	9%	2,658	2.7	17,120	17%	2,963	5.6
NE	27,972	8%	2,123	4.9	15,426	14%	2,083	8.3
NW	37,342	8%	2,946	3.8	22,678	25%	5,619	8.7
SE	54,566	11%	6,184	6.6	31,533	29%	9,209	10.2
SW	47,689	14%	6,785	3.5	31,202	24%	7,499	10.0

Regions 2016: 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
	2016	**30,246**	**9%**	**2,658**	**2.7**	**17,120**	**17%**	**2,963**	**5.6**
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
	2016	**27,972**	**8%**	**2,123**	**4.9**	**15,426**	**14%**	**2,083**	**8.3**
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

	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**
	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
	2016	**37,342**	**8%**	**2,946**	**3.8**	**22,678**	**25%**	**5,619**	**8.7**
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
	2016	**54,566**	**11%**	**6,184**	**6.6**	**31,533**	**29%**	**9,209**	**10.2**
SW	2006	40,792	31%	12,588	5.1	25,832	56%	14,377	6.9
	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
	2016	**47,689**	**14%**	**6,785**	**3.5**	**31,202**	**24%**	**7,499**	**10.0**


Regions: Regulatory/Warning/School
Backlog
40%
35%
30%
25%
20%
15%
10%
5%
0%
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
NC
NE
NW
SE
SW
Statewide


Regions: Detour/Object Market/Recreation/Guide
Backlog
70%
60%
50%
40%
30%
20%
10%
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
NC
NE
NW
SE
SW
Statewide

Wisconsin and Regions 2016: Distribution of Signs by Grade and Face Material Type

Face		Region					Statewide	
Grade	**Type**	**NC**	**NE**	**NW**	**SE**	**SW**	**Total**	**Percentage**
1	Non-Reflective	12	0	106	24	19	161	0.1%
	Other or Varies	30	0	102	9	235	376	0.1%
	Reflective - Engineering Grade	1,577	1,296	3,904	7,317	5,490	19,584	6.2%
2	Type D - Diamond Grade	-	-	-	-	-	-	-
	Type F - Fluorescent	8,609	7,783	11,897	9,506	10,785	48,580	15.4%
	Type H - High Intensity	3,305	2,449	5,631	4,935	12,341	28,661	9.1%
	Type HP - Prismatic High Intensity	33,408	30,805	37,995	61,747	49,091	213,046	67.5%
	Type SH - Super High Intensity	425	1,065	385	2,561	930	5,366	1.7%
Total		47,366	43,398	60,020	86,099	78,891	315,774	100%

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

	2013		2014		2015		2016	
Region	**Engineering Grade**	**High Intensity**	**Engineering Grade**	**High Intensity**	**Engineering Grade**	**High Intensity**	**Engineering Grade**	**High Intensity**
NC	5,050	41,500	3,496	43,709	2,548	44,805	1,619	45,747
NE	4,740	37,673	3,465	39,516	2,324	40,873	1,296	42,102
NW	10,200	49,941	7,623	53,013	5,923	55,305	4,112	55,908
SE	13,416	60,018	11,077	67,154	8,957	73,460	7,350	78,749
SW	11,209	65,671	8,883	68,282	6,587	72,555	5,744	73,147
Statewide	44,615	254,803	34,544	271,674	26,339	286,998	20,121	295,653
	14.9%	**85.1%**	**11.3%**	**88.7%**	**8.4%**	**91.6%**	**6.4%**	**93.6%**

Regions 2016: Distribution of Signs by Face Material Grade and Category

	Region	Engineering Grade	High Intensity	Total
Regulatory/ Warning Signs	NC	490	29,756	30,246
	NE	369	27,603	27,972
	NW	660	36,682	37,342
	SE	1,919	52,647	54,566
	SW	898	46,791	47,689
	Statewide	4,336	193,479	197,815
		2%	**98%**	
Other Signs	NC	1,129	15,991	17,120
	NE	927	14,499	15,426
	NW	3,452	19,226	22,678
	SE	5,431	26,102	31,533
	SW	4,846	26,356	31,202
	Statewide	15,785	102,174	117,959
		13%	**87%**	

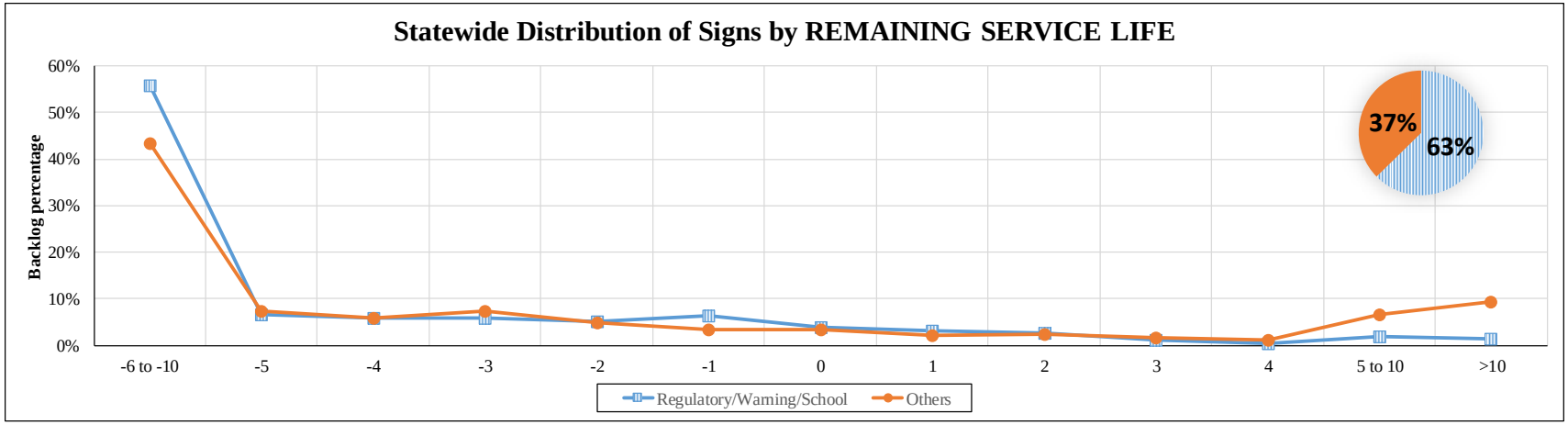
Wisconsin and Regions 2016: Distribution of Signs by Remaining Service Life and Category

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	17,404	1,843	950	2,230	2,087	2,069	999	835	1,160	95	62	302	204	30,246
	58%	6%	3%	7%	7%	7%	3%	3%	4%	0%	0%	1%	1%	100%
NE	17,128	2,074	2,079	896	1,517	1,533	622	168	822	256	182	405	290	27,972
	61%	7%	7%	3%	5%	5%	2%	1%	3%	1%	1%	1%	1%	100%
NW	25,025	1,902	1,283	1,441	1,310	2,299	1,132	966	704	380	140	522	234	37,342
	67%	5%	3%	4%	4%	6%	3%	3%	2%	1%	0%	1%	1%	100%
SE	27,715	4,194	4,534	4,957	2,519	2,552	1,768	1,075	998	663	318	1,716	1,414	54,566
	51%	8%	8%	9%	5%	5%	3%	2%	2%	1%	1%	3%	3%	100%
SW	23,064	3,042	2,514	2,254	2,770	4,234	2,911	3,122	1,401	630	266	798	568	47,689
	48%	6%	5%	5%	6%	9%	6%	7%	3%	1%	1%	2%	1%	100%
State	110,336	13,055	11,360	11,778	10,203	12,687	7,432	6,166	5,085	2,024	968	3,743	2,710	197,815
	56%	7%	6%	6%	5%	6%	4%	3%	3%	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	7,720	956	807	2,345	1,193	486	603	388	617	87	84	959	828	17,120
	45%	6%	5%	14%	7%	3%	4%	2%	4%	1%	0%	6%	5%	100%
NE	7,936	1,533	1,502	561	970	548	289	130	290	167	107	703	686	15,426
	51%	10%	10%	4%	6%	4%	2%	1%	2%	1%	1%	5%	4%	100%
NW	9,411	1,911	1,433	1,217	936	1,075	1,071	586	410	368	145	2,057	2,053	22,678
	41%	8%	6%	5%	4%	5%	5%	3%	2%	2%	1%	9%	9%	100%
SE	13,505	1,758	1,573	2,255	1,289	905	969	543	727	466	712	2,584	4,177	31,533
	43%	6%	5%	7%	4%	3%	3%	2%	2%	1%	2%	8%	13%	100%
SW	12,657	2,547	1,475	2,180	1,474	1,097	960	797	719	815	263	1,611	3,294	31,202
	41%	8%	5%	7%	5%	4%	3%	3%	2%	3%	1%	5%	11%	100%
State	51,229	8,705	6,790	8,558	5,862	4,111	3,892	2,444	2,763	1,903	1,311	7,914	11,038	117,959
	43%	7%	6%	7%	5%	3%	3%	2%	2%	2%	1%	7%	9%	100%



The slices of the pie chart compare the contribution of each type of sign to the total number of signs

Wisconsin and Regions 2016: 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	7,896	159	24	126	84	97	51	47	69	4	13	13	26	8,609
	92%	2%	0%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	100%
NE	7,462	120	72	7	50	8	7	2	9	22	2	22	0	7,783
	96%	2%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	100%
NW	11,524	125	20	39	40	41	34	23	18	11	5	15	0	11,897
	97%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
SE	7,289	570	269	388	147	178	204	64	85	43	29	170	56	9,506
	77%	6%	3%	4%	2%	2%	2%	1%	1%	0%	0%	2%	1%	100%
SW	9,366	312	228	90	88	154	116	143	72	33	18	128	22	10,785
	87%	3%	2%	1%	1%	1%	1%	1%	1%	0%	0%	1%	0%	100%
State	43,537	1,286	613	650	409	478	412	279	253	113	67	348	104	48,580
	90%	3%	1%	1%	1%	1%	1%	1%	1%	0%	0%	1%	0%	100%

Type H - High Intensity

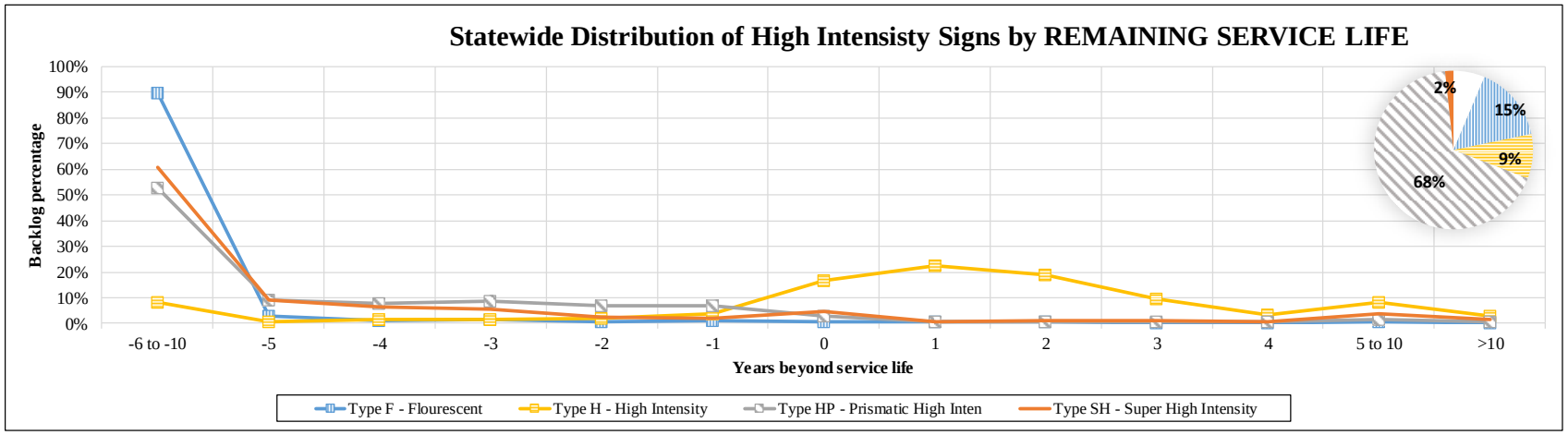
	Years prior to the end of service life							Years beyond service life						
	6-10	**5**	**4**	**3**	**2**	**1**	**0**	**1**	**2**	**3**	**4**	**5-10**	**>10**	**Total**
NC	249	33	44	191	67	202	465	774	942	74	64	128	59	3,305
	8%	1%	1%	6%	2%	6%	14%	23%	29%	2%	2%	4%	2%	100%
NE	67	18	102	60	97	284	244	180	719	258	85	252	83	2,449
	3%	1%	4%	2%	4%	12%	10%	7%	29%	11%	3%	10%	3%	100%
NW	289	71	86	95	293	366	896	1,242	891	587	144	612	59	5,631
	5%	1%	2%	2%	5%	6%	16%	22%	16%	10%	3%	11%	1%	100%
SE	179	19	33	53	64	70	495	805	1,144	705	345	788	220	4,935
	4%	0%	1%	1%	1%	1%	10%	16%	23%	14%	7%	16%	4%	100%
SW	1,578	77	113	49	66	166	2,620	3,402	1,777	1,088	278	576	340	12,341
	13%	1%	1%	0%	1%	1%	21%	28%	14%	9%	2%	5%	3%	100%
State	2,362	218	378	448	587	1,088	4,720	6,403	5,473	2,712	916	2,356	761	28,661
	8%	1%	1%	2%	2%	4%	16%	22%	19%	9%	3%	8%	3%	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	16,843	2,560	1,586	4,220	3,065	2,222	951	341	386	70	42	586	514	33,408
	50%	8%	5%	13%	9%	7%	3%	1%	1%	0%	0%	2%	2%	100%
NE	16,815	3,372	3,288	1,359	2,287	1,776	642	97	367	103	123	353	221	30,805
	55%	11%	11%	4%	7%	6%	2%	0%	1%	0%	0%	1%	1%	100%
NW	22,435	3,581	2,570	2,466	1,850	2,810	1,127	230	150	92	81	537	64	37,995
	59%	9%	7%	6%	5%	7%	3%	1%	0%	0%	0%	1%	0%	100%
SE	31,898	5,173	5,647	6,574	3,558	3,178	1,923	734	487	339	644	960	458	61,747
	52%	8%	9%	11%	6%	5%	3%	1%	1%	1%	1%	2%	1%	100%
SW	24,360	4,999	3,570	4,123	3,935	4,942	1,085	325	222	294	216	505	201	49,091
	50%	10%	7%	8%	8%	10%	2%	1%	0%	1%	0%	1%	0%	100%
State	112,351	19,685	16,661	18,742	14,695	14,928	5,728	1,727	1,612	898	1,106	2,941	1,458	213,046
	53%	9%	8%	9%	7%	7%	3%	1%	1%	0%	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	134	39	48	25	18	5	53	6	30	3	7	37	20	425
	32%	9%	11%	6%	4%	1%	12%	1%	7%	1%	2%	9%	5%	100%
NE	711	91	116	30	53	13	13	3	15	3	6	7	4	1,065
	67%	9%	11%	3%	5%	1%	1%	0%	1%	0%	1%	1%	0%	100%
NW	178	4	17	26	13	65	61	2	0	0	3	10	4	385
	46%	1%	4%	7%	3%	17%	16%	1%	0%	0%	1%	3%	1%	100%
SE	1,852	185	126	138	32	29	103	2	4	38	9	39	0	2,561
	72%	7%	5%	5%	1%	1%	4%	0%	0%	1%	0%	2%	0%	100%
SW	391	160	46	80	11	4	29	9	5	6	1	104	55	930
	42%	17%	5%	9%	1%	0%	3%	1%	1%	1%	0%	11%	6%	100%
State	3,266	479	353	299	127	116	259	22	54	50	26	197	83	5,366
	61%	9%	7%	6%	2%	2%	5%	0%	1%	1%	0%	4%	2%	100%



The slices of the pie chart compare the contribution of each type of sign to the total number of signs.

2016 Winter: Compass Report on Winter Operations

This section of the report looks at winter operations on state highways from November 1, 2015 to April 30, 2016.

The WisDOT Bureau of Highway Maintenance issues two reports on winter operations each year. The Annual Winter Maintenance Report focuses on operational measures and analysis; and is directed toward front-line operations managers. The Annual Compass Report presents winter operations outcomes critical to drivers and taxpayers; and is directed toward a more general audience.

The 2015-2016 winter season was an unusually warm winter compared to the more "normal" Wisconsin winter of 2014-2015. The 2015-2016 winter was affected by strong El Niño conditions. The season started with a relatively calm November, but a major snow event hit southern regions on November 20 and 21. December recorded below-average snowfall and well above average temperatures for most of the month. A storm across most of the state, and particularly central sections, ended with the warm-dry conditions on December 28. January saw a return to more "normal" winter conditions. Both temperatures and snowfall were much closer to average records. The snowfall came from multiple light events, with no "major" storms being recorded. Above-average temperatures returned in February, along with increased snowfall over the northern two thirds of the state. The southern half of the state was hit with blizzard conditions on February 2. March ended the season with a mild climate, though the southern half of the state experienced two major snow events on the 1st and 24th. Statewide, above average temperatures were common. The total snowfall was 58 inches, slightly below the 10-year average of 64 inches.

In order to compare maintenance performance from one winter to the next, as well as between counties within the same season, WisDOT uses several metrics. The Winter Severity Index (WSI) is a compound measure that considers number of snow and freezing rain events, snow amounts, storm durations, and number of incidents. The WSI is scaled such that 100 is the 5-year statewide average. Thus, a number above 100 indicates higher-than-average severity and a number below 100 indicates lower-than-average severity.

Because such information is crucial to understanding operations outcomes, many tables throughout this report include relevant WSI values. The statewide average WSI in 2015-2016 was 90.4, which was 9.6 percent lower than the 5-year average and 11.1 percent lower than the average of the previous ten winters. By region, the average WSI varied from 69.5 in the Southeast Region to 107.7 in the North Central Region.

Statewide Measures for Winter Operations

Measure	Winter Maintenance Season						
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**2015-16**
Roads to bare/wet pavement within WisDOT target	67%	79%	79%	73%	63%	70%	74%
Cost per lane mile	$2,222	$2,696	$1,656	$2,778	$3,304	$2,155	$2,087
Winter Severity Index (WSI)	82.4	119.2	75.4	115.2	133.6	99.28	90.35
Cost per lane mile per WSI point	26.97	22.62	21.96	24.11	24.73	21.71	23.09
Weather-related crashes per 100 million vehicle miles traveled	22	35	20	29	44	25	18

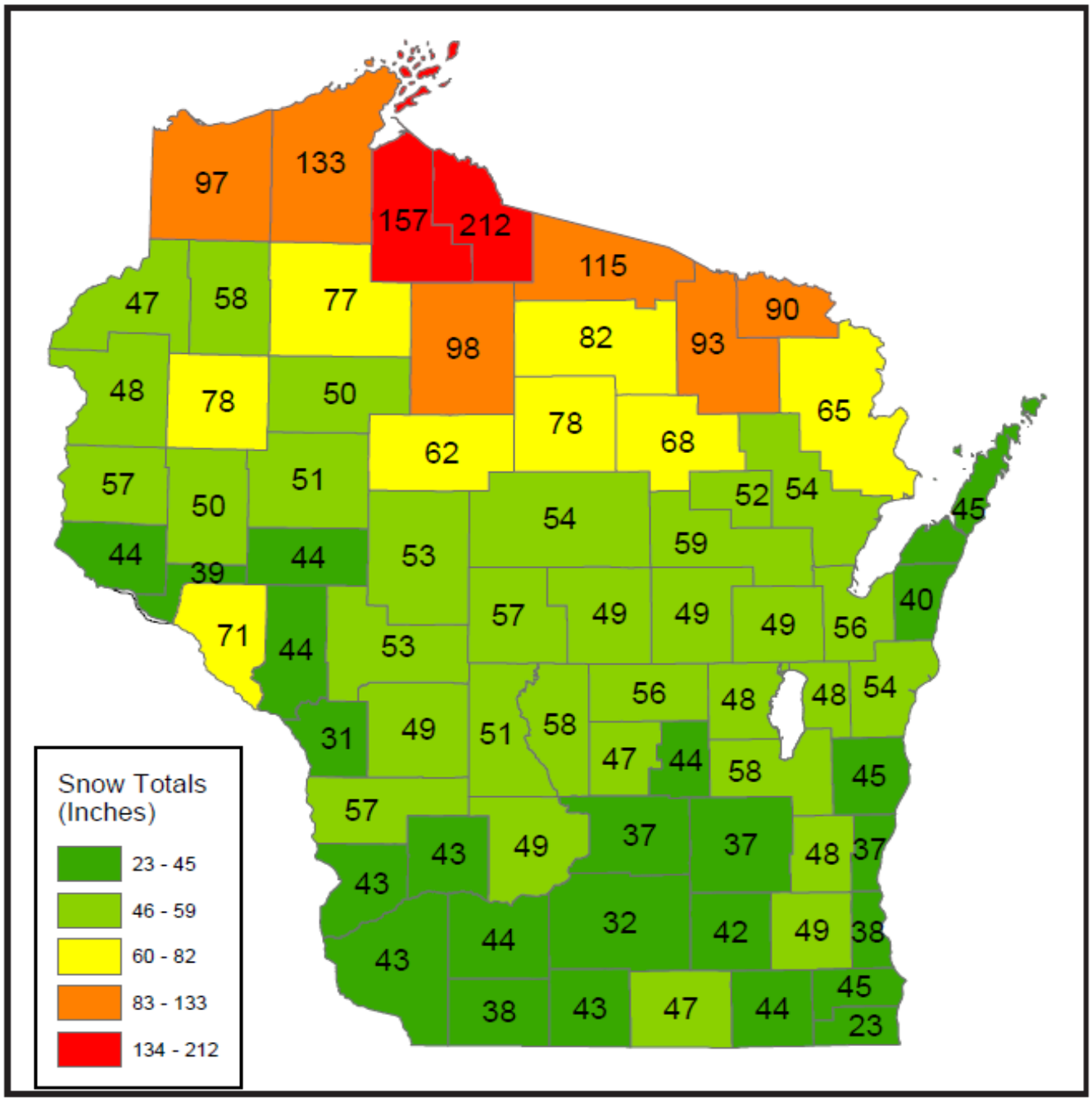
Key Observations

- The 2015-16 statewide winter maintenance cost was $71.9 million, 3% less than the $74.2 million expense during the previous winter, and 16% less than the 5-year average of $86 million.
- The Winter Severity Index was 9 percentage points lower than the previous winter, but salt use increased by 3%. There were more frost events during the 2015-2016 winter, though, with a statewide average of 4.9 events, 1.8 points higher than the previous season.
- The average statewide snowfall was approximately 58 inches in 2015-16, 2 inches less than average from the previous year. Snowfall varied significantly across the state; the highest snowfall recorded was 212 inches in Iron County; the lowest snowfall was 23 inches in Kenosha County.
- Equipment costs decreased by 13% to $20.7 million while labor costs decreased by 6% to $17.7 million. However, the cost for county-furnished materials increased by 35% to $2.9 million. Salt represents 39% of the total winter maintenance cost.
- The number of storms has a greater impact on resources than snowfall totals, since staff and equipment might be mobilized for as little as 0.1 inches of snow or freezing rain. The percentage of roadways cleared to bare/wet pavement targets in 2015-2016 was 74%, 4% higher than the previous winter season.
- There were 5,089 crashes on pavements covered with snow, slush or ice during the 2015-2016 winter season. The crash rate was 18 crashes per 100 million vehicle miles traveled, a 28% reduction from the previous season.

2015-2016 Winter Season Snowfall for Wisconsin

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

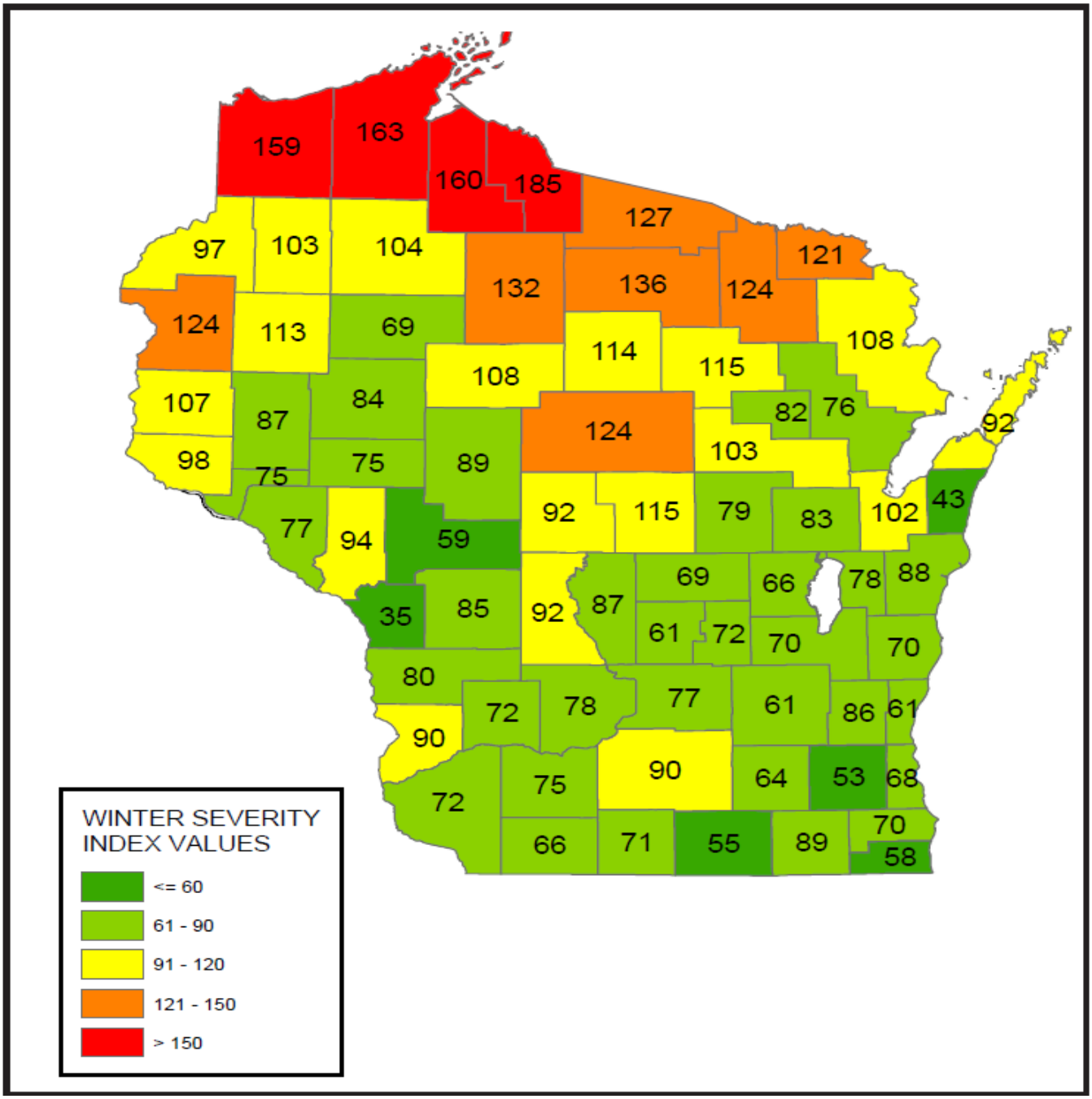
The National Weather Service (NWS) map below shows the snowfall in Wisconsin during the period July 1, 2015 to June 30, 2016.



2015-2016 Wisconsin Winter Severity Index

Note: If the following map is not a color copy, please contact the Compass Program Manager at the WisDOT 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. The average WSI for the 2015-16 winter was 90.4, 11% lower than the 10-year average of 100.4.



Winter by the Numbers

Measure		Winter Maintenance Season						
		2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**2015-16**
Infrastructure	Lane miles	33,532	33,776	33,944	34,192	34,339	34,435	34,486
	Road Weather Information System (RWIS) stations	58	60	60	60	58	65	65
Material usage[8]	Tons Salt (per lane mile)	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)	399,046 (11.6 tons)
	Average cost of salt	$60.92/ton	$58.55/ton	$59.18/ton	$58.34/ton	$60.40/ton	$69.01/ton	$71.35/ton
	Gallons pre-wetting liquid	1,099,971	1,529,230	1,082,163	2,124,834	2,970,166	2,009,139	5,092,241
	Gallons anti-icing agent	683,144	714,860	1,164,394	1,110,886	887,415	1,531,787	1,909,207
	Cubic yards Sand	19,081	18,941	7,513	18,589	58,870	22,301	9,255
Services	Regular county hours on winter[7]	133,715	176,842	103,332	212,090	244,602	160,453	142,983
	Overtime county hours on winter	106,578	175,373	82,657	137,225	182,311	91,691	82,630
	Public service announcements aired	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	4,971 total 4,311 radio 660 TV
	Cost of public service announcements (market value)	$36,000 ($259,062)	$36,000 ($209,144)	$36,000 ($268,399)	$36,000 ($241,380)	$36,000 ($109,140)	$36,000 ($235,659)	$36,000 ($195,381)
Management and Technology	Patrol sections	767	759	770	769	753.5	755.0	754.0
	Average patrol section length	43.72 miles	44.03 miles	44.08 miles	44.46 miles	45.57 miles	45.61 miles	45.73 miles
	Counties with salt spreaders equipped with on-board pre-wetting unit	55 of 72 (76%)	58 of 72 (80%)	58 of 72 (80%)	58 of 72 (80%)	58 of 72 (80%)	68 of 72 (94%)	68 of 72 (94%)

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

Measure	Winter Maintenance Season						
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**2015-16**
Counties with salt spreaders equipped with ground-speed controller unit	67 of 72 (93%)	65 of 72 (90%)	68 of 72 (94%)	67 of 72 (93%)	69 of 72 (96%)	68 of 72 (94%)	68 of 72 (94%)
Underbody plows	572	589	619	658	658	355	355
Counties with underbody plows	55 of 72 (76%)	55 of 72 (76%)	57 of 72 (79%)	55 of 72 (76%)	56 of 72 (78%)	54 of 72 (75%)	54 of 72 (75%)
Counties equipped to use anti-icing agents	65 of 72 (90%)	65 of 72 (90%)	66 of 72 (92%)	66 of 72 (92%)	66 of 72 (92%)	66 of 72 (92%)	66 of 72 (92%)
Counties using anti-icing agents	62 of 72 (86%)	61 of 72 (85%)	60 of 72 (83%)	65 of 72 (90%)	63 of 72 (88%)	63 of 72 (88%)	63 of 72 (88%)

Compass Winter Operations Measures

Time to Bare/wet Pavement

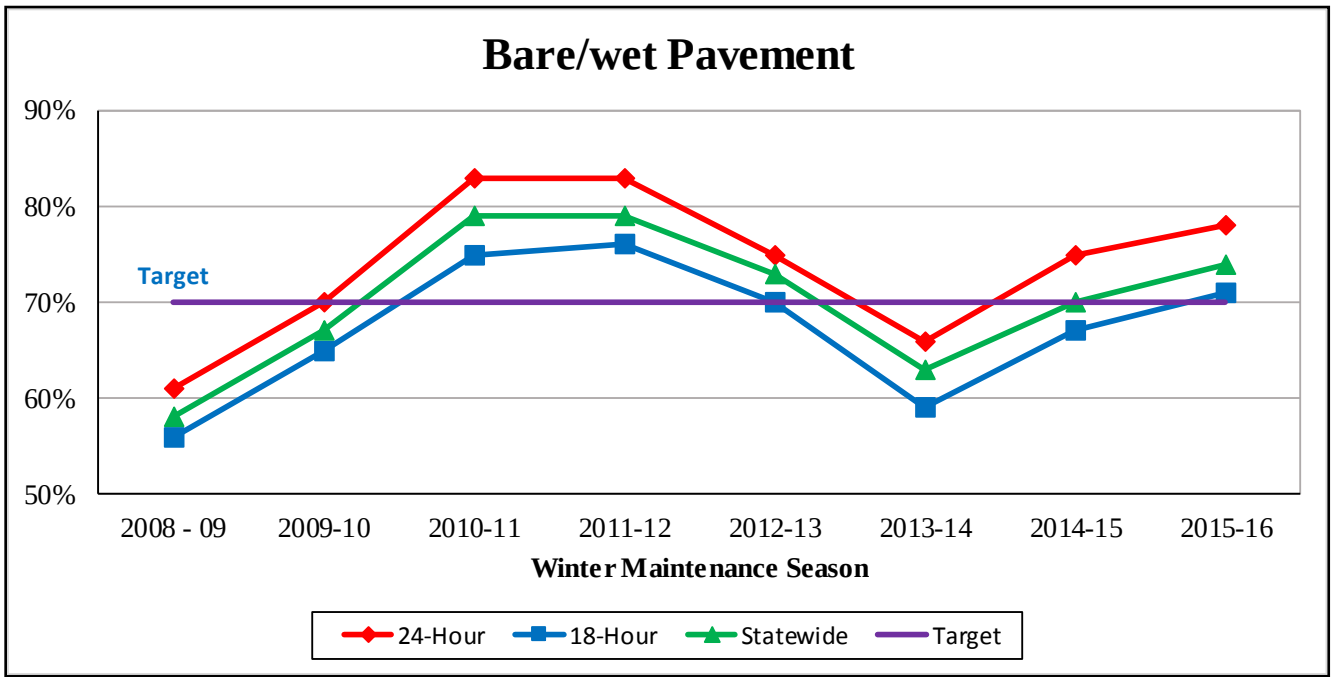
Counties provide winter maintenance service on state highways according to the amount of daily traffic. This is one way WisDOT uses its limited resources to achieve the greatest benefit. High-volume roads receive 24-hour coverage, while lower-volume roads receive 18-hour coverage. The *Winter Highway Classifications* table included at the end of this report shows the guidelines for determining coverage type.

For each storm, counties report the "Time to Bare/wet Pavement" measure for all of its 24-hour coverage roads or for all of its 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. A county reports "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 each coverage type. The target is 4 hours for roads with 24-hour coverage while the target is 6 hours for roads with 18-hour coverage. After a storm event, a county either meets the goal or does not. The following table shows the percent of reported events for which the counties met these targets, organized by the coverage type. In 2015-16, the statewide target was met for 74% of the reported storm events.

Highway Coverage Category	Annual Target and Performance on Roads to Bare/wet Pavement							
	2008-09	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**2015-16**
Target	70%	70%	70%	70%	70%	70%	70%	70%
24-Hour	61%	70%	83%	83%	75%	66%	75%	78%
18-Hour	56%	65%	75%	76%	70%	59%	67%	71%
Statewide	58%	67%	79%	79%	73%	63%	70%	74%

The variability of time to bare/wet pavement within a category was 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.



Relative Cost per Lane Mile

The "Relative Cost per Lane Mile" measure tracks expenditures normalized by the average Winter Severity Index. The total cost per lane mile includes material, labor, equipment, and administrative costs. The costs were obtained from the WisDOT Financial Operating System.

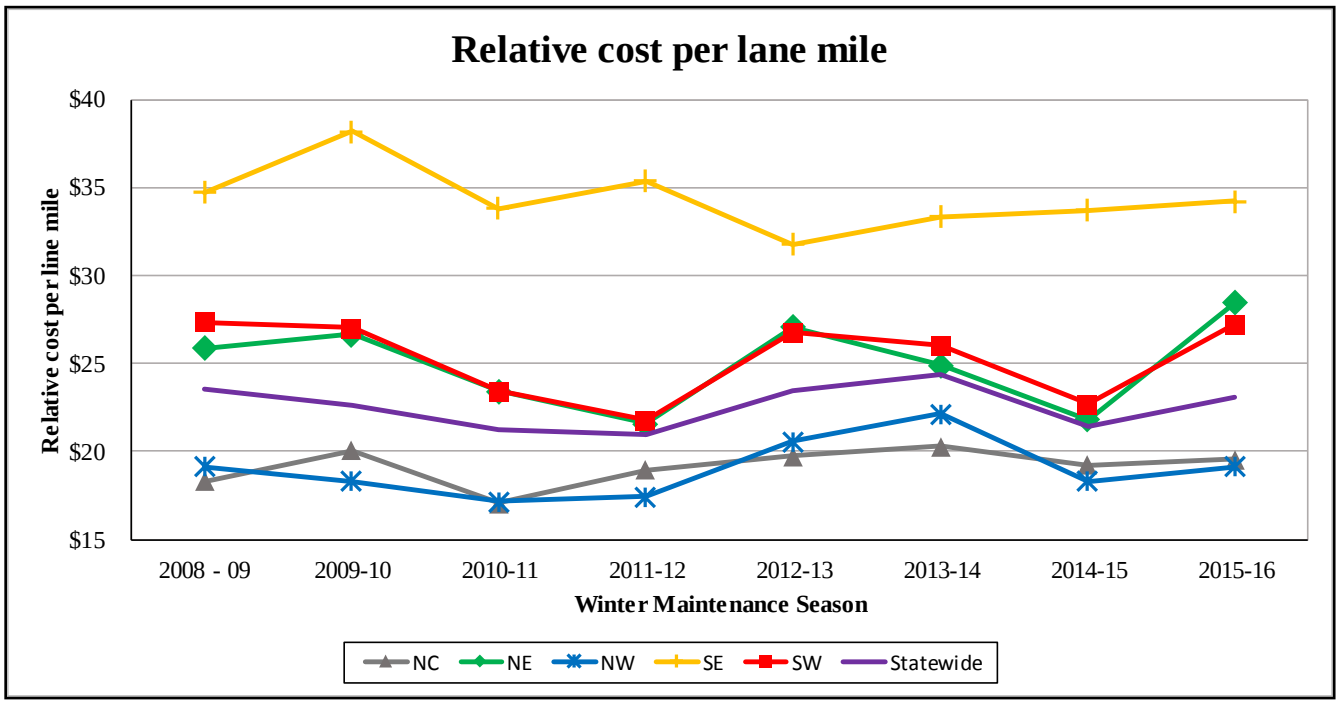
$$Relative\ cost\ per\ lane\ mile = \frac{\$/LM}{WSI}$$

The statewide average cost per lane mile was $2,087, with an average WSI of 90.35. The statewide cost per lane mile was $23.10.

$$Statewide\ relative\ cost\ per\ lane\ mile = \frac{\$/LM}{WSI} = \frac{\$2{,}087}{90.35} = \$23.10$$

The following table shows the relative cost per lane mile for each region over 4 years. The relative costs are fairly stable over time and appear to converge to a unique value for each region.

Region	Average WSI				Cost/LM[8]				Relative cost per WSI point[9]			
	2012-13	2013-14	2014-15	2015-16	2012-13	2013-14	2014-15	2015-16	2012-13	2013-14	2014-15	2015-16
NC	132	148.9	114.2	102.2	$2,609	$3,025	$2,197	$2,000	$19.76	$20.32	$19.23	$19.57
NE	100	120.8	81.0	79.47	$2,706	$3,008	$1,766	$2,261	$27.06	$24.90	$21.81	$28.45
NW	128	139.7	110.0	102.2	$2,634	$3,096	$2,014	$1,958	$20.58	$22.16	$18.32	$19.16
SE	86	119.3	78.0	69.46	$2,733	$3,977	$2,630	$2,378	$31.78	$33.34	$33.72	$34.24
SW	104	124.0	90.0	72.64	$2,781	$3,229	$2,044	$1,977	$26.74	$26.04	$22.71	$27.22
Statewide	115	133.6	99.3	90.35	$2,696	$3,259	$2,128	$2,087	$23.45	$24.39	$21.43	$23.10



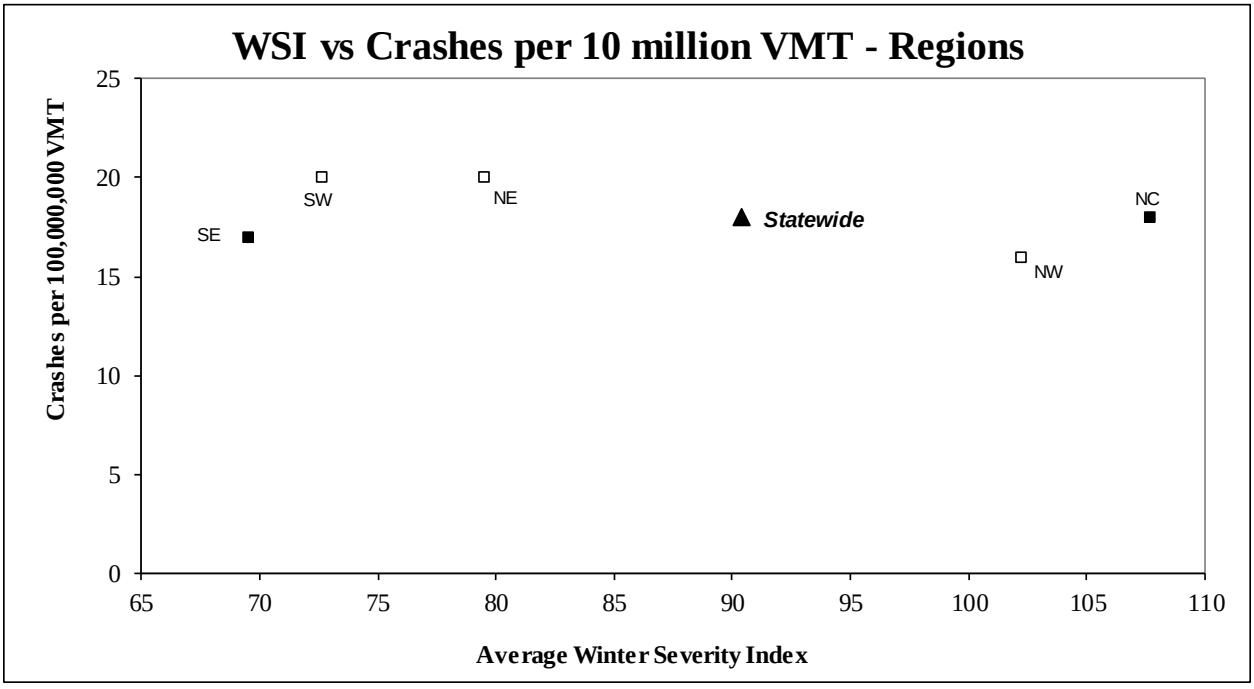
Winter Weather Crashes per Vehicle Miles Traveled (VMT)

The following table illustrates the five-year trend of crashes per 100 million vehicle miles traveled, for each region and statewide. The state average is 18 winter crashes per 100 million miles traveled; 28% lower than the 25 crash rate in the previous year, and 39% lower than the 4-year average (29.5 crashes). By region, the number of winter crashes varied from 16 crashes per 100 million miles traveled in the Northwest Region to 20 crashes per 100 million miles traveled in the Southwest Region.

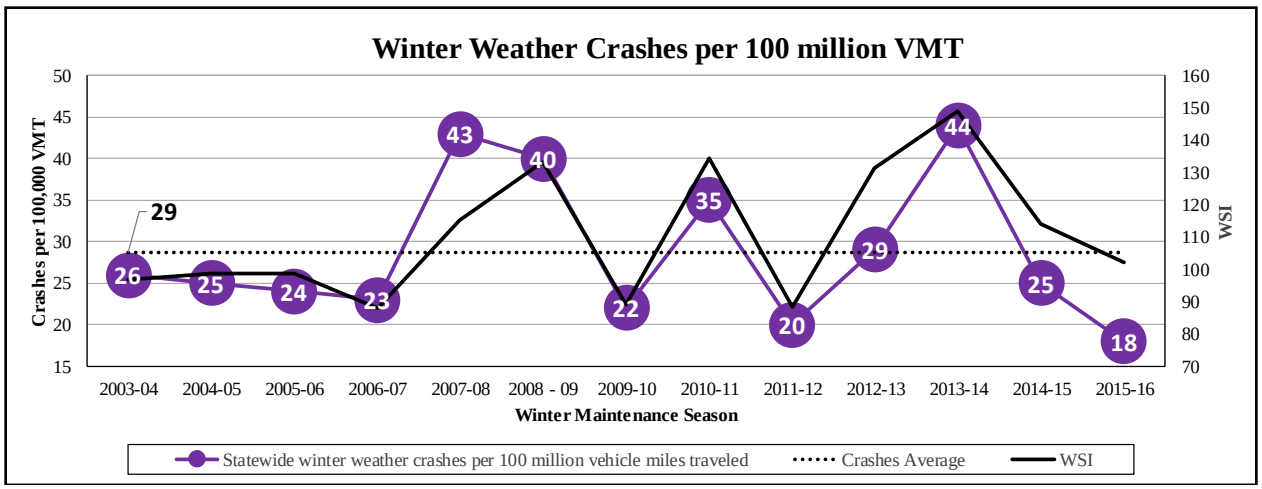
[9]The dollar values listed show constant dollars (base year 2016).

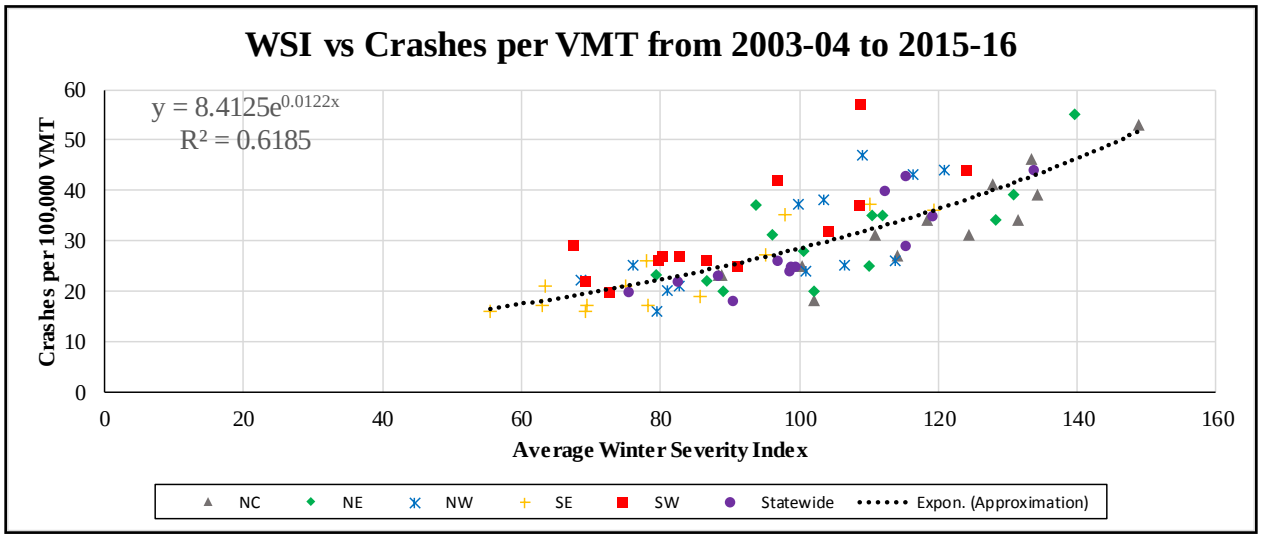
Scope	VMT[10] (100 million)	Crashes	Crashes per 100 million VMT					Average Winter Severity Index				
			2011-12	2012-13	2013-14	2014-15	2015-16	2011-12	2012-13	2013-14	2014-15	2015-16
NC	35.24	623	23	34	53	27	18	88	132	149	114	107.7
NW	51.70	819	22	37	44	20	16	79	128	140	110	102.2
NE	48.57	974	23	34	55	25	20	69	100	121	81	79.5
SE	75.79	1,252	16	19	36	26	17	56	86	119	78	69.5
SW	70.89	1,421	22	32	44	25	20	69	104	124	91	72.6
Statewide	282.18	5,089	20	29	44	25	18	75	115	134	99.3	90.4

The following figures illustrate the relationship between the severity of the winter and the number of crashes per VMT. The first graph displays the current year results. The other two graphs visualize the correlation between the Winter Severity Index and the number of accidents for the last 13 years, from 2003-04 to 2015-16.



[10]100 million vehicle miles traveled (VMT) for November 1, 2015 through April 30, 2016 determined from annual average daily traffic (AADT) counts, gallons of gas sold, fuel tax collected, and average vehicle miles per gallon.


Winter Weather Crashes per 100 million VMT
Crashes per 100,000 VMT
WSI
Winter Maintenance Season
2003-04
2004-05
2005-06
2006-07
2007-08
2008 - 09
2009-10
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
29
26
25
24
23
43
40
22
35
20
29
44
25
18
Statewide winter weather crashes per 100 million vehicle miles traveled
Crashes Average
WSI


WSI vs Crashes per VMT from 2003-04 to 2015-16
y = 8.4125e0.0122x
R² = 0.6185
Crashes per 100,000 VMT
Average Winter Severity Index
NC
NE
NW
SE
SW
Statewide
Expon. (Approximation)

Winter Data Quality, Definitions, and Categories

Data Quality

Unless otherwise noted, all material and labor figures come from the winter storm reports that are submitted by each county for every event or anti-icing procedure throughout the winter season. The data quality within a county and the data variability between counties are unknown. Weather, road conditions and materials usages are based either upon the observations of county patrol superintendents or on their expert judgement. In the second case, there is more variability than direct measurements.

Definitions

Dollars: Cost data are from the fiscal year, July 1, 2015 to June 30, 2016.

Roads: The roads referred to in this report are state maintained highways, including Interstate highways, U.S. Highways, and State Trunk Highways. See the following tables for groupings.
Winter: November 1 through April 30 each season, unless otherwise noted.
Winter Activities: Actual cost data incorporates all winter activities, including installing 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.

Categories & Groupings

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 Service hours are adjusted based on timing of the storms 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.

Appendices

A. **Program Contributors**
B. **Feature Contribution Categories**
C. **Feature Thresholds and Grade Ranges**
D. **2016 Highway Maintenance Target Service Levels Memo**
E. **2016 Maintenance Targets**
F. **2016 Highway Maintenance Conditions Visualizations**
G. **2016 Compass Rating Sheet**
H. **County Data:**
    1. **Field Review: Shoulders, Drainage, Roadside and Traffic**
    2. **Signs (routine replacement 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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James Smetana, Jackson County
Charles Smith, WisDOT NW Region
Pete Strachan, WisDOT SW Region
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William Tackes, Ozaukee County
Jason Thom, Langlade County
Alan Thoner, Pierce County
Jeff Trentadue, Racine County
Bonnie Tripoli, WisDOT SW Region
Jarrod Turk, WisDOT SW Region
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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	Urban Fence		✓			
	Rural Fence				✓	
	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%

Element	Feature	Threshold	Ranges for System Grades *Grade determined by percent backlogged* shown: top of range				
			A	B	C	D	F
	Flumes	Not functioning as intended OR deteriorated to the point that they are causing erosion (by flume)	6%	15%	29%	50%	>50%
	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	Urban Fence	Fence missing OR not functioning as intended (by LF of fence)	4%	9%	18%	30%	>30%
	Rural Fence	Fence missing OR not functioning as intended (by LF of fence)	7%	18%	35%	60%	>60%
	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%

Element	Feature	Threshold	Ranges for System Grades *Grade determined by percent backlogged* shown: top of range				
			A	B	C	D	F
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 posted speed OR damaged (by delineator)	4%	9%	18%	30%	>30%
	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. 2016 Target Service Levels Memo

WisDOT Highway Maintenance
2016 Target Service Levels

Issued by Rose Phetteplace, Director, Bureau of Highway Maintenance
September 4, 2015

Attached are the 2016 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 2016 maintenance targets are critical for structuring the 2016 Routine Maintenance Agreements (RMA). **The targets are consistent with the 2016 RMA guidance that Tom Goodwyn sent to regions on August 10, 2015.**

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 2014. 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. 2016 Highway Maintenance Targets

Contribution Category and Element	Feature	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	**2016 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	5=B	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	30=F	30=F	30=F	30=F	28=F	28=F
Shoulders (paved)	Drop-off/Build-up	4=B	4=B	4=B	4=B	4=B	4=B
Safety/Mobility:							
Roadside	Woody Veg. Control for Vision	2=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	10=C	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	30=D	20=D	20=D	20=D	18=C	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	15=C	15=C	9=B	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	44=D	44=D
Shoulders (paved)	Cracking	70=F	60=F	60=F	60=F	58=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	39=D	39=D	33=C	33=C
Aesthetics:							
Roadside	Mowing	40=C	40=C	40=C	40=C	40=C	40=C
Roadside	Litter	81=F	81=F	63=D	63=D	63=D	63=D

F. 2016 Highway Maintenance Conditions Visualizations

2016 Shoulder Conditions (% backlog and grade)						
Feature	***Better←***					***→Worse***
Hazardous Debris	NC: 2% (A) NW: 2% (A)	SW: 3%(B) ***WI: 4% (B)***	◎5% (B) NE: 7% (C)			SE: 18% (F)
Drop-off/Build-up(paved)	NC: 1% (A)	NW: 2% (A)	***WI: 3% (B)***	NE: 4% (B) SE: 4% (B) SW: 4% (B) ◎4% (B)		
Cracking (paved)	NW: 52% (F)		◎58% (F) SW: 60% (F) ***WI: 60% (F)***	SE: 62% (F) NC: 63% (F)	NE: 68% (F)	
Potholes/Raveling (paved)	NC: 0% (A)	NE: 3% (A)	NW: 6% (A) ***WI: 7% (A)***	◎10% (B) SW: 11% (B)		SE: 16% (B)
Drop-off/Build-up (unpaved)	NC: 24% (F)	◎28% (F)	NW: 31% (F)	***WI: 34% (F)*** SW: 36% (F) SE: 37% (F)		NE: 48% (F)
Cross-slope (unpaved)	SE: 9% (B)		NW: 15%(C)	◎18% (C) SW: 19%(D) ***WI: 20% (D)***	NC: 24% (D)	NE: 28% (D)
Erosion (unpaved)	NW: 0% (A)	NE: 1% (A) ***WI: 1% (A)*** SW: 2% (A)	SE: 5% (A) ◎5% (A)			NC: 32% (D)

Note: NC, NE, NW, SE and SW identify region conditions, WI illustrates the statewide condition, % is the percent of deficient highways, A-F identifies the level of service based on the backlog percentage and the feature's individual grading curve, ◎ is the annual, fiscally-constrained statewide maintenance target.

2016 Drainage Conditions (% backlog and grade)						
Feature	***Better←*** ---------- ***→Worse***					
Ditches	NC: 1% (A) NE: 1% (A) NW: 1% (A) SW: 1% (A) ***WI: 1% (A)***	SE: 2% (A)			◎5% (A)	
Culverts	SW: 7% (B)	SE: 14% (C)	***WI: 21% (D)***	NW: 28% (D) ◎30% (D) NC: 31% (F)		NE: 43% (F)
Drains	NC: 8% (B)	SW: 17% (C) SE: 19% (C)	NW: 29% (C) ◎30% (D) ***WI: 34% (D)***			NE: 82% (F)
Flumes	NW: 27% (C)		NE: 43% (D) ◎44% (D) SE: 47% (D)	***WI: 51% (F)***	NC: 56% (F)	SW: 66% (F)
Curb & Gutter	SE: 0% (A)	NC: 4% (A) ***WI: 4% (A)*** NE: 5% (A)	SW: 8% (B)	◎10% (B)	NW: 14% (B)	
Storm Sewer Systems	SW: 4% (A) SE: 5% (B)	***WI: 9% (B)***	◎15% (C) NW: 16% (C)	NC: 18% (C) NE: 19% (D)		

Note: NC, NE, NW, SE and SW identify region conditions, WI illustrates the statewide condition, % is the percent of deficient highways, A-F identifies the level of service based on the backlog percentage and the feature's individual grading curve, ◎ is the annual, fiscally-constrained statewide maintenance target.

2016 Roadside Conditions (% backlog and grade)						
Feature	***Better←***					***→Worse***
Litter	NC: 47% (C)	NW: 56% (D)	SW: 62% (D) ***WI: 62% (D)*** ◎63% (D)		SE: 81% (F) NE: 82% (F)	
Mowing	NW: 23% (B)		NC: 33% (C) ***WI: 34% (C)*** SE: 35% (C)	SW: 39% (C) ◎40% (C)		NE: 49% (D)
Mowing for Vision	NC: 0% (A) SE: 0% (A)	NE: 2% (A) SW: 2% (A) ***WI: 2% (A)***	NW: 4% (A)	◎5% (B)		
Woody Vegetation Control	NE: 1% (A)	NC: 2% (A) SW: 2% (A) ***WI: 2% (A)***		NW: 4% (A) SE: 4% (A)	◎5% (B)	
Woody Vegetation Control for Vision	SW: 0% (A)	NC: 1% (A) NE: 1% (A) NW: 1% (A) SE: 1% (A) ***WI: 1% (A)***	◎2% (A)			
Urban Fences	NC: 0% (A) NE: 0% (A) NW: 0% (A) SE: 0% (A) SW: 0% (A) ***WI: 0% (A)***	*(no target – new feature in 2016)*				
Rural Fences	NE: 0% (A) SE: 0% (A)	SW: 1% (A) ***WI: 2% (A)***	*(no target – new feature in 2016)*	NC: 6% (A)		NW: 9% (B)

Note: NC, NE, NW, SE and SW identify region conditions, WI illustrates the statewide condition, % is the percent of deficient highways, A-F identifies the level of service based on the backlog percentage and the feature's individual grading curve, ◎ is the annual, fiscally-constrained statewide maintenance target.

2016 Traffic Control & Safety Conditions (% backlog and grade)						
Feature	***Better←*** ---------- ***→Worse***					
Centerline	SE: 1% (A)		SW: 3% (B)	***WI: 4% (B)***	NC: 5% (B) NE: 5% (B) NW: 5% (B) ◎5% (B)	
Edgeline	SE: 2% (A)	NC: 4% (B)	NE: 5% (B) NW: 5% (B) ***WI: 5% (B)***	SW: 6% (C)	◎8% (C)	
Special Pavement Markings	NW: 4% (A) SE: 5% (B)		***WI: 8% (B)***	NC: 10% (C) ◎10% (C)	NE: 11% (C) SW: 12% (C)	
Regulatory/Warning Signs – Emergency Repair	SW: 0% (A) ◎0% (A)	NC: 1% (A) NE: 1% (A) NW: 1% (A) ***WI: 1% (A)***	SE: 2% (A)			
Regulatory/Warning Signs – Routine Replacement	NE: 8% (B) NW: 8% (B)	NC: 9% (B) ◎9% (B)	***WI: 10% (C)***	SE: 11% (C)		SW: 14% (C)
Other Signs – Emergency Repair	NC: 0% (A) SW: 0% (A)	NW: 1% (A) SE: 1% (A) ***WI: 1% (A)*** ◎1% (A)		NE: 3% (A)		
Other Signs – Routine Replacement	NE: 14% (B)	NC: 17% (B)		***WI: 23% (C)*** SW: 24% (C) NW: 25% (C)		SE: 29% (C) ◎33% (C)
Delineators	NC: 10% (C)	NW: 17%(C) ***WI: 19% (D)***	SE: 20% (D) SW: 21% (D)	◎25% (D) NE: 26% (D)		
Protective Barriers	NC: 0% (A) SE: 0% (A)		NE: 2% (A) NW: 2% (A) ***WI: 2% (A)***	◎3% (B)	SW: 4% (B)	

Note: NC, NE, NW, SE and SW identify region conditions, WI illustrates the statewide condition, % is the percent of deficient highways, A-F identifies the level of service based on the backlog percentage and the feature's individual grading curve, ◎ is the annual, fiscally-constrained statewide maintenance target.

G. 2016 Compass Rating Sheet

2016 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.
☐ Apiece 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) ☐ Safety Edge		
	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	☐ Urban ☐ Rural Total linear feet of right-of-way fence..... Linear feet missing OR not functioning as intended...	 	

Traffic Control and Safety ☐ Round-A-Bout			**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 ☐ Concrete Barrier ☐ Cable Guard ☐ Damaged Terminal ☐ Needs Herbicide	

🚘 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, 2016.** 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

H. County Data

Counties 2016: Shoulders and Drainage

		Condition % backlogged # of samples that contains the feature												
		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		0%	10%	0%	0%	60%	70%	0%	0%	11%	0%	100%	0%	0%
	ADAMS	10	10	10	10	10	10	10	0	1	10	1	0	0
		0%	43%	0%	0%	86%	29%	0%	100%	0%	0%	0%	0%	0%
	FLORENCE	7	7	7	7	7	7	7	1	0	6	0	0	0
		6%	79%	0%	0%	20%	13%	0%	75%	6%	0%	0%	100%	0%
	FOREST	17	14	14	14	15	15	15	3	3	15	0	2	0
		0%	43%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%
	GREEN LAKE	7	7	7	7	5	5	5	1	3	6	0	2	0
		0%	78%	0%	0%	0%	8%	0%	75%	0%	1%	0%	0%	0%
	IRON	12	9	9	9	12	12	12	4	0	12	0	0	0
		0%	58%	0%	0%	8%	31%	0%	0%	4%	0%	0%	33%	0%
	LANGLADE	15	12	12	12	13	13	13	2	2	13	0	2	0
		6%	69%	0%	0%	56%	31%	0%	0%	65%	0%	100%	0%	23%
	LINCOLN	16	16	16	16	16	16	16	2	2	16	1	3	3
	MARATHON	4%	58%	0%	0%	15%	15%	0%	0%	0%	0%	0%	0%	0%

		Condition % backlogged # of samples that contains the feature												
		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
		28	26	26	26	26	26	26	3	1	27	0	2	2
		11%	44%	0%	0%	0%	11%	0%	0%	0%	0%	0%	0%	0%
	MARQUETTE	9	9	9	9	9	9	9	0	0	8	0	0	2
		0%	100%	0%	0%	0%	25%	0%	100%	0%	0%	0%	0%	0%
	MENOMINEE	4	1	1	1	4	4	4	3	0	4	0	0	0
		0%	38%	0%	0%	14%	21%	0%	33%	2%	0%	33%	0%	0%
	ONEIDA	17	16	16	16	14	14	14	6	4	13	2	3	0
		0%	79%	0%	0%	13%	7%	0%	25%	2%	0%	0%	14%	0%
	PORTAGE	16	14	14	14	15	15	15	4	2	15	1	2	2
		0%	93%	0%	0%	0%	0%	0%	25%	6%	0%	0%	0%	0%
	PRICE	17	14	14	14	16	16	16	4	1	15	0	1	0
		0%	93%	7%	0%	50%	44%	0%	11%	3%	5%	50%	0%	9%
	SHAWANO	19	15	15	15	18	18	18	7	2	19	2	3	6
		7%	53%	7%	7%	80%	40%	0%	0%	0%	0%	0%	0%	0%
	VILAS	15	15	15	15	15	15	15	2	2	15	1	0	0
		5%	83%	0%	0%	16%	26%	0%	33%	0%	1%	0%	0%	0%
	WAUPACA	20	18	18	18	19	19	19	3	3	18	1	1	0
		0%	46%	0%	0%	0%	29%	0%	0%	0%	0%	100%	0%	0%
	WAUSHARA	14	13	13	13	14	14	14	4	1	14	1	0	0

		Condition % backlogged # of samples that contains the feature												
		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%	69%	0%	0%	13%	25%	0%	33%	8%	1%	100%	63%	0%
	WOOD	18	13	13	13	16	16	16	3	3	14	1	2	2
NC TOTAL		2%	63%	1%	0%	24%	25%	0%	28%	6%	0%	27%	12%	2%
		261	229	229	229	244	244	244	52	30	240	11	23	17
NE		0%	76%	0%	12%	41%	47%	0%	89%	19%	0%	100%	50%	100%
	BROWN	17	17	17	17	17	17	17	8	3	17	1	2	3
		0%	70%	0%	10%	20%	50%	0%	40%	3%	2%	40%	0%	0%
	CALUMET	10	10	10	10	10	10	10	5	4	10	2	1	0
		0%	91%	9%	0%	40%	60%	0%	0%	5%	0%	0%	50%	0%
	DOOR	11	11	11	11	10	10	10	0	1	9	0	1	0
		10%	60%	0%	5%	35%	30%	0%	0%	11%	0%	33%	17%	0%
	FOND DU LAC	20	20	20	20	20	20	20	6	5	19	3	2	4
		0%	100%	0%	0%	0%	60%	0%	100%	29%	0%	100%	0%	0%
	KEWAUNEE	6	6	6	6	5	5	5	1	2	6	2	0	0
		13%	38%	0%	0%	7%	60%	0%	100%	2%	1%	0%	0%	0%
	MANITOWOC	16	16	16	16	15	15	15	1	5	16	2	1	0
		19%	44%	0%	0%	13%	31%	0%	60%	0%	0%	100%	0%	0%
	MARINETTE	16	16	16	16	16	16	16	5	1	16	1	2	0
	OCONTO	0%	56%	0%	0%	56%	31%	0%	0%	1%	0%	0%	13%	0%

		Condition % backlogged # of samples that contains the feature												
		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	16	16	16	1	2	15	1	3	1
		11%	76%	0%	6%	21%	37%	0%	25%	2%	5%	0%	0%	100%
	OUTAGAMIE	19	17	17	17	19	19	19	4	5	19	1	4	1
		0%	100%	0%	0%	56%	88%	6%	13%	2%	0%	40%	22%	0%
	SHEBOYGAN	17	16	16	16	16	16	16	8	8	16	5	3	2
		19%	69%	38%	0%	0%	56%	0%	100%	2%	0%	0%	29%	100%
	WINNEBAGO	16	16	16	16	16	16	16	1	1	16	0	5	8
NE TOTAL		6%	71%	4%	3%	26%	50%	1%	48%	7%	1%	38%	16%	27%
		164	161	161	161	160	160	160	40	37	159	18	24	19
		0%	50%	0%	0%	8%	8%	0%	60%	0%	1%	0%	0%	100%
NW	ASHLAND	13	12	12	12	13	13	13	4	0	13	0	0	1
		0%	20%	0%	0%	0%	40%	0%	0%	0%	0%	0%	0%	0%
	BARRON	15	15	15	15	15	15	15	4	1	14	0	0	0
		12%	29%	0%	0%	24%	24%	0%	33%	0%	6%	0%	0%	0%
	BAYFIELD	17	17	17	17	17	17	17	10	1	14	0	1	0
		6%	46%	0%	15%	6%	31%	0%	22%	0%	1%	0%	0%	0%
	BUFFALO	16	13	13	13	16	16	16	9	0	12	0	0	0
		0%	33%	0%	8%	0%	50%	0%	0%	0%	0%	0%	0%	0%
	BURNETT	12	12	12	12	12	12	12	2	0	11	0	0	0

		Condition % backlogged # of samples that contains the feature												
		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%	55%	9%	5%	45%	55%	0%	8%	64%	0%	0%	0%	0%
	CHIPPEWA	22	22	22	22	22	22	22	11	2	21	1	0	1
		0%	82%	18%	24%	35%	71%	0%	100%	73%	1%	0%	100%	100%
	CLARK	17	17	17	17	17	17	17	4	1	17	0	1	2
		0%	67%	0%	20%	0%	33%	0%	25%	0%	0%	0%	0%	0%
	DOUGLAS	15	15	15	15	15	15	15	4	1	15	0	0	1
		0%	50%	0%	0%	0%	14%	0%	14%	0%	0%	0%	0%	0%
	DUNN	21	18	18	18	21	21	21	7	1	21	1	0	0
		0%	56%	0%	0%	8%	15%	0%	25%	0%	0%	0%	0%	0%
	EAU CLAIRE	16	16	16	16	13	13	13	6	7	12	1	3	2
		0%	80%	0%	10%	68%	79%	0%	100%	0%	5%	100%	33%	0%
	JACKSON	20	20	20	20	19	19	19	3	0	20	1	1	0
		0%	80%	0%	20%	0%	0%	0%	0%	12%	0%	0%	0%	0%
	PEPIN	5	5	5	5	3	3	3	2	1	5	0	0	0
		6%	59%	6%	12%	0%	12%	0%	20%	47%	0%	0%	0%	0%
	PIERCE	17	17	17	17	17	17	17	5	2	17	1	1	0
		0%	29%	0%	6%	6%	6%	0%	0%	1%	2%	0%	0%	0%
	POLK	17	17	17	17	17	17	17	4	4	16	2	2	0
	RUSK	0%	50%	0%	0%	0%	9%	0%	0%	17%	0%	0%	0%	0%

		Condition % backlogged # of samples that contains the feature												
		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
		11	8	8	8	11	11	11	0	2	11	0	0	0
		0%	38%	0%	0%	13%	44%	0%	63%	32%	6%	0%	50%	0%
	SAWYER	18	16	16	16	16	16	16	7	3	14	0	2	0
		9%	45%	0%	0%	5%	14%	0%	25%	0%	0%	100%	0%	0%
	ST. CROIX	22	20	20	20	22	22	22	7	1	22	1	4	0
		0%	75%	0%	0%	8%	25%	0%	50%	32%	3%	0%	0%	0%
	TAYLOR	12	12	12	12	12	12	12	2	1	11	0	0	0
		0%	71%	0%	0%	26%	21%	0%	0%	31%	0%	0%	0%	0%
	TREMPEALEAU	19	17	17	17	19	19	19	4	3	19	0	0	0
		0%	27%	0%	0%	0%	27%	0%	13%	17%	0%	0%	0%	0%
	WASHBURN	15	15	15	15	15	15	15	5	3	13	0	1	0
NW TOTAL		2%	52%	2%	6%	13%	29%	0%	28%	16%	1%	10%	9%	10%
		320	304	304	304	312	312	312	100	34	298	8	16	7
		18%	67%	0%	11%	0%	33%	22%	0%	0%	0%	50%	0%	27%
SE	KENOSHA	11	9	9	9	9	9	9	2	2	6	2	5	3
		12%	67%	0%	0%	0%	0%	0%	33%	0%	19%	0%	7%	0%
	MILWAUKEE	17	15	15	15	1	1	1	2	13	10	1	16	0
		25%	57%	14%	14%	0%	57%	0%	0%	0%	0%	100%	19%	0%
	OZAUKEE	8	7	7	7	7	7	7	3	3	7	1	3	2

		Condition % backlogged # of samples that contains the feature												
		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%	57%	7%	29%	23%	46%	0%	60%	2%	0%	43%	6%	24%
	RACINE	15	14	14	14	13	13	13	3	10	14	5	6	6
		38%	76%	5%	33%	5%	29%	10%	0%	0%	1%	100%	0%	0%
	WALWORTH	21	21	21	21	21	21	21	4	1	21	1	2	2
		11%	63%	0%	19%	14%	57%	0%	8%	0%	0%	0%	10%	0%
	WASHINGTON	19	16	16	16	14	14	14	9	7	13	1	9	1
		18%	44%	6%	0%	8%	15%	0%	0%	0%	0%	0%	0%	0%
	WAUKESHA	22	16	16	16	13	13	13	4	11	17	0	11	1
SE TOTAL		17%	61%	5%	15%	7%	34%	5%	15%	0%	3%	42%	6%	7%
		113	98	98	98	78	78	78	27	47	88	11	52	15
SW		0%	79%	7%	21%	52%	69%	3%	0%	4%	0%	100%	0%	0%
	COLUMBIA	29	29	29	29	29	29	29	9	4	28	2	1	0
		5%	46%	0%	8%	20%	40%	0%	0%	2%	0%	0%	0%	0%
	CRAWFORD	19	13	13	13	5	5	5	9	5	16	1	4	0
		0%	36%	3%	8%	13%	21%	3%	0%	13%	0%	50%	0%	0%
	DANE	40	39	39	39	39	39	39	9	6	38	4	7	8
		0%	44%	12%	28%	16%	56%	0%	33%	7%	0%	73%	0%	0%
	DODGE	25	25	25	25	25	25	25	9	7	25	4	5	4
	GRANT	0%	96%	4%	31%	25%	75%	0%	8%	0%	0%	0%	0%	0%

		Condition % backlogged # of samples that contains the feature												
		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
		27	26	26	26	16	16	16	12	2	25	0	1	0
	GREEN	0%	50%	0%	0%	15%	23%	0%	0%	0%	0%	0%	0%	0%
		13	10	10	10	13	13	13	4	1	13	0	1	0
	IOWA	0%	55%	0%	0%	35%	18%	6%	0%	4%	0%	0%	0%	0%
		18	11	11	11	17	17	17	8	1	17	0	1	0
	JEFFERSON	6%	83%	11%	0%	22%	56%	6%	0%	0%	0%	0%	0%	0%
		18	18	18	18	18	18	18	3	3	18	0	2	1
	JUNEAU	5%	78%	6%	6%	0%	21%	0%	10%	0%	0%	0%	0%	0%
		21	18	18	18	14	14	14	6	4	16	2	1	1
	LA CROSSE	0%	69%	0%	23%	0%	9%	0%	14%	3%	3%	33%	0%	0%
		14	13	13	13	11	11	11	5	6	11	2	3	0
	LAFAYETTE	0%	44%	0%	0%	23%	31%	0%	0%	0%	0%	0%	0%	0%
		13	9	9	9	13	13	13	3	0	13	0	0	0
	MONROE	0%	38%	0%	4%	5%	41%	0%	0%	5%	3%	50%	0%	0%
		24	24	24	24	22	22	22	9	1	22	1	0	0
	RICHLAND	7%	62%	0%	15%	38%	46%	0%	0%	0%	0%	0%	0%	0%
		15	13	13	13	13	13	13	6	3	14	0	0	0
	ROCK	0%	59%	5%	0%	26%	22%	0%	0%	11%	0%	0%	0%	40%
		24	22	22	22	23	23	23	5	3	24	1	4	3

		Condition % backlogged # of samples that contains the feature												
		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
		26%	67%	5%	0%	5%	14%	0%	0%	59%	5%	100%	83%	100%
	SAUK	23	21	21	21	22	22	22	3	5	22	4	2	1
		0%	53%	0%	7%	0%	32%	11%	20%	1%	0%	0%	0%	0%
	VERNON	22	15	15	15	19	19	19	9	5	17	0	1	0
SW TOTAL		3%	60%	3%	9%	18%	36%	2%	5%	7%	1%	25%	5%	9%
		345	306	306	306	299	299	299	109	56	319	21	33	18
STATEWIDE		5%	51%	2%	6%	15%	29%	1%	21%	6%	1%	24%	8%	9%
		1203	1098	1098	1098	1093	1093	1093	328	204	1104	69	148	76

Counties 2016: Roadsides and Traffic

		Condition % backlogged # of samples that contains the feature													
		Roadsides							Traffic						
Region	County	Rural Fences	Urban 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	ADAMS	0%	0%	30%	40%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%
		0	0	10	10	2	10	10	10	2	10	4	2	5	1
	FLORENCE	0%	0%	57%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		0	0	7	7	0	7	7	7	0	7	3	0	3	0
	FOREST	0%	0%	41%	18%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%
		0	0	17	17	3	17	17	17	0	15	3	0	8	0
	GREEN LAKE	0%	0%	29%	57%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		0	0	7	7	2	7	7	7	1	7	5	1	4	2
	IRON	0%	0%	83%	0%	0%	0%	0%	25%	0%	33%	0%	0%	0%	0%
		0	0	12	12	11	12	12	12	0	12	5	0	5	0
	LANGLADE	0%	0%	27%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		0	0	15	15	0	15	15	15	0	13	0	0	8	0
	LINCOLN	0%	0%	38%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		3	0	16	16	3	16	16	16	4	16	2	0	7	0
	MARATHON	50%	0%	46%	46%	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%
		2	0	28	28	7	28	28	28	6	28	9	1	14	0
	MARQUETTE	0%	0%	22%	22%	0%	0%	0%	0%	0%	11%	0%	0%	0%	0%
		5	0	9	9	0	9	9	9	5	9	6	2	4	1
	MENOMINEE	0%	0%	25%	50%	0%	50%	0%	50%	0%	0%	0%	0%	0%	0%
		0	0	4	4	0	4	4	4	0	4	1	0	3	0

		Condition % backlogged # of samples that contains the feature													
		Roadsides							**Traffic**						
Region	County	Rural Fences	Urban 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%	0%	65%	0%	0%	0%	6%	0%	0%	0%	0%	0%	0%	8%
	ONEIDA	0	0	17	17	16	17	17	17	0	17	3	0	8	3
		1%	0%	75%	38%	0%	6%	0%	6%	0%	0%	0%	0%	0%	44%
	PORTAGE	3	1	16	16	10	16	16	16	6	15	4	0	6	3
		0%	0%	82%	0%	0%	0%	0%	41%	0%	12%	0%	0%	8%	0%
	PRICE	0	0	17	17	17	17	17	17	0	17	6	0	7	0
		0%	0%	32%	37%	0%	0%	0%	5%	0%	5%	0%	0%	0%	0%
	SHAWANO	0	0	19	19	3	19	19	19	7	19	8	1	6	2
		0%	0%	73%	47%	0%	0%	0%	0%	69%	0%	0%	0%	0%	0%
	VILAS	0	0	15	15	1	15	15	15	1	15	5	1	6	0
		0%	0%	20%	45%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	WAUPACA	0	0	20	20	4	20	20	20	0	20	7	0	11	5
		0%	0%	0%	43%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	WAUSHARA	2	0	14	14	2	14	14	14	4	14	5	2	6	1
		0%	0%	67%	50%	0%	6%	6%	0%	40%	0%	0%	0%	0%	100%
	WOOD	1	0	18	18	9	18	18	18	2	17	5	1	10	1
NC TOTAL		3%	0%	45%	32%	0%	4%	1%	7%	6%	4%	0%	0%	1%	8%
		16	1	261	261	90	261	261	261	38	255	81	11	121	19
		3%	0%	94%	41%	0%	0%	0%	0%	9%	0%	14%	0%	18%	0%
NE	BROWN	4	0	17	17	4	17	17	17	7	17	8	2	6	3
	CALUMET	0%	0%	60%	70%	0%	0%	0%	10%	15%	10%	0%	0%	0%	0%

		Condition % backlogged # of samples that contains the feature													
		Roadsides							Traffic						
Region	County	Rural Fences	Urban 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	0	10	10	4	10	10	10	2	10	4	1	6	1
	DOOR	0%	0%	55%	55%	0%	9%	0%	0%	10%	0%	0%	0%	0%	0%
		1	0	11	11	1	11	11	11	2	11	6	1	3	2
	FOND DU LAC	0%	0%	80%	45%	0%	5%	5%	0%	41%	0%	0%	1%	0%	31%
		3	1	20	20	5	20	20	20	6	20	7	4	13	6
	KEWAUNEE	0%	0%	100%	67%	0%	0%	0%	0%	79%	0%	0%	0%	0%	0%
		0	0	6	6	1	6	6	6	1	6	3	1	1	0
	MANITOWOC	0%	0%	81%	50%	13%	0%	0%	13%	0%	6%	0%	0%	0%	0%
		2	2	16	16	8	16	16	16	4	16	6	0	7	2
	MARINETTE	0%	0%	94%	19%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		2	0	16	16	5	16	16	16	4	16	5	2	8	0
	OCONTO	0%	0%	75%	38%	0%	0%	0%	0%	36%	6%	0%	0%	0%	0%
		2	0	16	16	4	16	16	16	4	16	1	2	9	1
	OUTAGAMIE	0%	0%	74%	89%	0%	0%	0%	26%	29%	26%	0%	5%	0%	10%
		0	3	19	19	11	19	19	19	3	19	9	3	10	4
	SHEBOYGAN	0%	0%	82%	53%	0%	0%	0%	6%	47%	0%	0%	0%	0%	0%
		4	0	17	17	4	17	17	17	5	17	7	2	13	3
	WINNEBAGO	0%	0%	100%	25%	0%	0%	0%	0%	15%	6%	0%	9%	0%	25%
		9	0	16	16	1	16	16	16	9	16	2	1	9	3
NE TOTAL		0%	0%	81%	50%	1%	1%	0%	5%	26%	5%	1%	1%	2%	6%
		27	6	164	164	48	164	164	164	47	164	58	19	85	25

		Condition % backlogged # of samples that contains the feature													
		Roadsides							**Traffic**						
Region	County	Rural Fences	Urban 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
NW		0%	0%	85%	38%	0%	31%	0%	23%	0%	23%	0%	0%	0%	0%
	ASHLAND	0	0	13	13	3	13	13	13	1	13	5	0	6	1
		2%	0%	80%	33%	0%	0%	0%	7%	39%	0%	0%	3%	0%	0%
	BARRON	3	0	15	15	2	15	15	15	6	15	4	3	6	1
		0%	0%	29%	18%	100%	29%	6%	6%	0%	12%	0%	0%	0%	0%
	BAYFIELD	0	0	17	17	1	17	17	17	0	17	5	2	7	0
		0%	0%	50%	19%	0%	0%	0%	19%	20%	19%	0%	1%	0%	0%
	BUFFALO	0	0	16	16	5	16	16	16	5	16	4	5	4	1
		0%	0%	92%	33%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	BURNETT	0	0	12	12	6	12	12	12	0	12	2	0	5	0
		0%	0%	14%	5%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%
	CHIPPEWA	4	0	22	22	4	22	22	22	7	22	4	1	9	2
		0%	0%	100%	0%	0%	0%	6%	0%	0%	0%	0%	68%	0%	0%
	CLARK	0	0	17	17	17	17	17	17	3	17	9	2	5	0
		0%	0%	93%	33%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	DOUGLAS	0	0	15	15	2	15	15	15	4	15	2	0	8	0
		0%	0%	29%	24%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	DUNN	1	0	21	21	5	21	21	21	2	21	4	3	13	1
		0%	0%	0%	6%	0%	6%	0%	0%	0%	0%	0%	0%	0%	0%
	EAU CLAIRE	1	0	16	16	8	16	16	16	5	16	10	4	8	3
	JACKSON	18%	0%	95%	0%	0%	5%	5%	0%	16%	0%	7%	2%	0%	0%

		Condition % backlogged # of samples that contains the feature													
		Roadsides							**Traffic**						
Region	County	Rural Fences	Urban 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	0	20	20	20	20	20	20	4	20	9	3	2	0
	PEPIN	0%	0%	0%	40%	100%	0%	0%	0%	0%	0%	11%	0%	0%	0%
		0	0	5	5	1	5	5	5	1	5	2	1	4	0
	PIERCE	0%	0%	18%	24%	0%	0%	0%	0%	17%	0%	0%	9%	0%	0%
		0	0	17	17	2	17	17	17	7	17	6	6	11	3
	POLK	0%	0%	88%	47%	0%	0%	0%	0%	0%	12%	0%	0%	0%	0%
		0	0	17	17	8	17	17	17	3	17	6	4	12	2
	RUSK	0%	0%	73%	55%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		0	0	11	11	4	11	11	11	0	11	2	0	4	0
	SAWYER	0%	0%	56%	33%	0%	6%	0%	39%	0%	31%	0%	0%	0%	100%
		0	0	18	18	2	18	18	18	0	16	6	3	9	1
	ST. CROIX	0%	0%	45%	41%	0%	0%	0%	0%	39%	0%	0%	0%	0%	0%
		4	0	22	22	2	22	22	21	8	22	5	6	8	1
	TAYLOR	0%	0%	92%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		0	0	12	12	12	12	12	12	0	12	7	0	2	1
	TREMPEALEAU	100%	0%	21%	21%	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%
		1	0	19	19	4	19	19	19	3	19	5	2	6	2
	WASHBURN	12%	0%	80%	7%	0%	0%	0%	7%	0%	7%	0%	0%	6%	7%
		1	0	15	15	6	15	15	15	6	15	6	2	10	3
NW TOTAL		7%	0%	57%	24%	13%	4%	1%	5%	9%	5%	1%	4%	0%	5%
		18	0	320	320	114	320	320	319	65	318	103	47	139	22

		Condition % backlogged # of samples that contains the feature													
		Roadsides							**Traffic**						
Region	County	Rural Fences	Urban 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
SE		0%	0%	73%	27%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%
	KENOSHA	2	0	11	11	2	11	11	11	4	11	5	4	6	3
		0%	0%	94%	53%	0%	6%	0%	0%	50%	6%	2%	0%	4%	13%
	MILWAUKEE	0	4	17	17	13	17	17	17	3	17	17	5	13	16
		0%	0%	75%	25%	0%	0%	0%	0%	20%	0%	0%	0%	4%	6%
	OZAUKEE	2	0	8	8	6	8	8	8	2	8	3	2	6	5
		0%	0%	87%	47%	0%	0%	7%	0%	0%	0%	0%	0%	2%	0%
	RACINE	0	0	15	15	1	15	15	15	3	15	9	2	12	7
		0%	0%	90%	29%	0%	5%	0%	0%	11%	0%	0%	0%	0%	0%
	WALWORTH	5	0	21	21	3	21	21	21	5	21	8	1	12	1
		0%	0%	100%	33%	0%	0%	0%	0%	9%	0%	2%	0%	0%	0%
	WASHINGTON	6	0	19	19	10	19	19	19	9	19	10	6	15	5
		0%	0%	50%	27%	0%	14%	0%	5%	25%	5%	0%	0%	2%	0%
	WAUKESHA	8	0	22	22	13	22	22	22	5	21	15	1	14	11
SE TOTAL		0%	0%	81%	34%	0%	3%	1%	1%	20%	2%	1%	0%	2%	3%
		23	4	113	113	48	113	113	113	31	112	67	21	78	48
SW		0%	0%	76%	38%	0%	3%	0%	0%	21%	10%	0%	0%	0%	7%
	COLUMBIA	7	0	29	29	10	29	29	29	7	29	9	4	12	6
		0%	0%	37%	63%	0%	0%	0%	0%	15%	0%	0%	2%	0%	0%
	CRAWFORD	0	0	19	19	15	19	19	19	9	19	3	9	11	2
	DANE	0%	0%	60%	30%	0%	0%	0%	5%	24%	10%	0%	0%	3%	0%

		Condition % backlogged # of samples that contains the feature													
		Roadsides							**Traffic**						
Region	County	Rural Fences	Urban 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
		13	4	40	40	4	40	40	40	14	40	16	12	19	11
	DODGE	0%	0%	68%	64%	0%	0%	0%	12%	0%	12%	0%	0%	0%	15%
		4	0	25	25	7	25	25	25	2	25	13	2	13	5
	GRANT	0%	0%	41%	56%	0%	0%	0%	0%	3%	4%	0%	0%	0%	100%
		1	0	27	27	15	27	27	26	6	26	10	5	7	1
	GREEN	0%	0%	92%	31%	0%	0%	0%	15%	0%	31%	0%	0%	0%	67%
		0	0	13	13	3	13	13	13	0	13	3	0	7	2
	IOWA	0%	0%	83%	50%	33%	0%	0%	0%	10%	6%	0%	0%	0%	0%
		4	0	18	18	3	18	18	18	7	18	4	3	3	0
	JEFFERSON	0%	0%	61%	17%	0%	0%	0%	0%	15%	11%	0%	0%	0%	0%
		5	0	18	18	2	18	18	18	5	18	9	2	9	4
	JUNEAU	0%	0%	43%	14%	0%	14%	0%	0%	29%	0%	6%	22%	0%	0%
		1	0	21	21	1	21	21	21	5	20	6	3	8	1
	LA CROSSE	0%	0%	64%	71%	0%	0%	0%	0%	34%	0%	0%	0%	0%	0%
		3	0	14	14	3	14	14	14	8	14	5	7	6	3
	LAFAYETTE	0%	0%	100%	38%	0%	0%	0%	0%	64%	0%	0%	0%	0%	0%
		4	0	13	13	1	13	13	13	4	13	2	3	7	2
	MONROE	6%	0%	38%	4%	0%	4%	0%	0%	17%	4%	0%	0%	0%	0%
		9	0	24	24	0	24	24	24	10	24	8	2	4	1
	RICHLAND	0%	0%	47%	47%	0%	0%	0%	0%	18%	0%	0%	0%	0%	0%
		0	0	15	15	12	15	15	15	5	15	5	4	4	0

		Condition % backlogged # of samples that contains the feature													
		Roadsides							**Traffic**						
Region	County	Rural Fences	Urban 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%	0%	75%	42%	0%	4%	0%	8%	30%	4%	0%	0%	0%	0%
	ROCK	2	3	24	24	1	24	24	24	4	24	8	4	9	2
		0%	0%	100%	30%	0%	0%	0%	4%	8%	5%	0%	19%	0%	25%
	SAUK	3	1	23	23	8	23	23	23	5	22	9	3	7	2
		0%	0%	36%	41%	5%	0%	0%	0%	37%	0%	0%	28%	0%	0%
	VERNON	0	0	22	22	21	22	22	22	5	22	8	5	8	0
SW TOTAL		0%	0%	64%	40%	2%	2%	0%	3%	20%	6%	0%	5%	0%	13%
		56	8	345	345	106	345	345	344	96	342	118	68	134	42
STATEWIDE		2%	0%	55%	30%	3%	2%	0%	3%	13%	4%	1%	2%	1%	6%
		140	19	1203	1203	406	1203	1203	1201	277	1191	427	166	557	156

Counties 2016: 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	1,044	5%	57	2.1	548	14%	75	5.8
	FLORENCE	484	2%	10	2.2	333	11%	37	4.7
	FOREST	1,300	6%	84	3.9	809	21%	169	5.7
	GREEN LAKE	874	13%	111	3.5	598	15%	87	7.3
	IRON	1,139	3%	39	2.9	563	12%	69	3.6
	LANGLADE	1,273	4%	48	2.1	711	8%	57	3.1
	LINCOLN	1,463	3%	44	3.0	923	11%	104	6.9
	MARATHON	4,393	9%	404	3.4	2,700	23%	621	6.9
	MARQUETTE	996	18%	176	1.9	591	18%	105	7.3
	MENOMINEE	664	8%	55	5.7	220	10%	22	5.5
	ONEIDA	2,123	12%	262	2.1	936	18%	172	3.3
	PORTAGE	2,261	14%	313	2.1	1,568	22%	338	6.1
	PRICE	1,184	5%	54	4.3	785	27%	215	4.7
	SHAWANO	1,987	10%	206	3.6	1,336	16%	211	4.0
	VILAS	1,603	6%	101	2.9	811	14%	111	3.5
	WAUPACA	3,145	8%	261	2.2	1,497	21%	311	4.9
	WAUSHARA	1,949	11%	222	2.2	937	15%	137	6.4
	WOOD	2,364	9%	211	2.1	1,254	10%	122	5.7
NE	BROWN	4,324	11%	459	4.6	2,505	13%	315	9.3
	CALUMET	1,443	5%	73	3.1	666	9%	58	8.4
	DOOR	2,090	7%	139	9.1	738	11%	81	11.8
	FOND DU LAC	2,829	9%	255	3.8	1,707	18%	311	5.5
	KEWAUNEE	683	2%	15	8.6	365	3%	12	10.9
	MANITOWOC	2,147	6%	131	4.7	1,417	16%	223	10.5
	MARINETTE	2,016	1%	28	11.4	1,039	5%	48	9.3

		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	2,426	8%	205	5.5	1,183	17%	198	7.7
	OUTAGAMIE	3,489	9%	317	4.6	1,852	13%	239	7.0
	SHEBOYGAN	3,402	3%	119	3.9	1,997	17%	331	10.7
	WINNEBAGO	3,123	12%	382	4.3	1,957	14%	267	5.6
NW	ASHLAND	1,335	6%	85	5.7	693	17%	119	9.9
	BARRON	1,897	8%	144	2.7	1,265	30%	380	8.7
	BAYFIELD	1,551	12%	186	3.3	946	29%	276	9.0
	BUFFALO	1,875	1%	20	4.5	847	14%	118	14.4
	BURNETT	1,259	3%	34	6.6	554	23%	125	11.3
	CHIPPEWA	2,671	6%	163	4.2	1,847	22%	415	8.8
	CLARK	1,700	11%	191	3.8	1,012	30%	303	8.7
	DOUGLAS	2,098	6%	119	4.5	1,211	24%	288	9.7
	DUNN	2,350	7%	176	4.6	1,637	24%	388	9.6
	EAU CLAIRE	2,743	6%	172	4.2	1,811	17%	302	6.5
	JACKSON	1,732	5%	87	2.7	1,179	16%	194	9.1
	PEPIN	587	11%	67	2.8	424	33%	138	6.6
	PIERCE	1,817	14%	251	3.0	1,283	29%	367	9.6
	POLK	2,342	11%	262	3.4	1,273	34%	432	9.1
	RUSK	1,062	15%	158	2.2	674	33%	220	8.0
	SAWYER	1,463	7%	96	2.8	894	35%	317	7.8
	ST. CROIX	3,273	14%	450	4.2	2,021	27%	538	6.9
	TAYLOR	1,204	5%	60	3.7	731	18%	129	6.6
	TREMPEALEAU	2,347	7%	172	4.2	1,338	32%	423	9.2
	WASHBURN	2,036	3%	53	5.7	1,038	14%	147	8.4
SE	KENOSHA	6,657	15%	967	6.9	3,867	37%	1,424	9.6
	MILWAUKEE	17,381	9%	1,642	8.2	10,859	25%	2,731	12.1
	OZAUKEE	2,529	10%	247	4.4	1,501	22%	323	10.1

		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	6,498	11%	721	7.7	3,738	45%	1,672	10.3
	WALWORTH	4,933	9%	433	5.0	2,807	25%	692	9.1
	WASHINGTON	4,804	13%	647	6.0	3,160	26%	827	9.4
	WAUKESHA	11,764	13%	1,527	5.5	5,601	27%	1,540	8.2
SW	COLUMBIA	3,575	15%	534	2.4	2,148	28%	591	6.9
	CRAWFORD	2,477	12%	295	1.9	1,424	25%	352	11.5
	DANE	8,659	22%	1,937	5.9	5,339	29%	1,565	9.1
	DODGE	3,559	14%	508	3.6	2,078	36%	747	11.4
	GRANT	3,195	15%	482	1.6	2,127	23%	479	13.0
	GREEN	1,473	14%	206	2.6	795	19%	153	11.6
	IOWA	2,156	11%	244	2.6	1,337	24%	324	8.2
	JEFFERSON	2,263	12%	275	2.7	1,459	22%	322	7.2
	JUNEAU	1,806	9%	171	1.8	1,555	23%	353	9.6
	LA CROSSE	2,800	12%	349	2.9	2,570	26%	675	11.0
	LAFAYETTE	1,405	12%	164	2.4	770	18%	137	13.2
	MONROE	2,557	11%	276	1.7	2,076	21%	444	10.8
	RICHLAND	1,899	7%	138	1.8	1,385	8%	117	7.8
	ROCK	3,059	12%	355	3.5	2,306	30%	683	10.8
	SAUK	3,669	15%	545	3.1	1,991	16%	323	7.2
	VERNON	3,137	10%	306	1.5	1,842	13%	234	12.2