CFIRE

Compass 2011 Data Analysis and Reporting

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16. Abstract Past efforts include data analysis and reporting performance and outcomes for signs, pavement, shoulders, roadsides, drainage, traffic, and bridges. In the 2005 Compass report, measures for bridge inspection and maintenance were added, and historic data was transformed from District to Region-levels. In 2006, Compass reports began presenting trends for pavement condition associated with the agency's biennial inspection cycle. In addition, starting from 2006 the Compass report took on a slightly more customer-focus by presenting overall results as a report card and by organizing the measures according to their maintenance objectives such as safety, stewardship, and aesthetics. Starting from 2008, pavement condition is presented based on the PMMS (Pavement Maintenance Management System) data.			
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FINAL

Compass Report

Wisconsin State Highway
2011
Maintenance, Traffic, and Operations Conditions

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Table of Contents

Executive Summary

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

The 2011 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 Bureau of Highway Operations uses the information to manage the system:

- *Continued focus on reducing shoulder drop-off*: There has been continued emphasis on fixing drop-off along unpaved shoulders so that drivers who veer off the traveled way can safety get back onto the paved surface. More aggressive maintenance targets have been set over the last five years to deal with this problem. The actual amount of drop-off for unpaved shoulders stay consistent between 2010 and 2011 after a three percent increase last year. There will be a continued focus on improving safety by reducing shoulder drop-off. Drop-off on paved shoulders is a feature that was added back to the program in 2009. This feature has the same contribution category and deficiency threshold as drop-off on unpaved shoulders.
- *Removing hazardous debris on shoulders*: For several years the department has emphasized the safety benefits of removing hazardous debris from roadways. This year the backlog for hazardous debris is 7%, the lowest level recorded during the previous five-year period. This is a one percent improvement compared to the backlog level in 2010.
- *More visible, longer lasting traffic signs*: Almost 13,000 new high-intensity signs were installed along the state highway system between 2010 and 2011. More than seventy seven percent of the 290,000 signs on the state system now have high-intensity face material, providing better illumination to drivers during low light conditions and evenings.
- *Targeted replacement of regulatory and warning signs*: More than 73,000 signs around the state are older than their suggested useful life. This is a reduction of almost 10,000 signs from the 2010 backlog level. With limited sign replacement funds, the routine replacement of regulatory and warning signs (such as stop signs and speed limit signs) has been prioritized over the replacement of other types of signs. Based on this policy, 15% of the regulatory and warning signs are beyond their recommended service life, a two percent improvement from the 2010 level. Thirty-nine percent of detour/object marker/ recreation/guide signs are older than their suggested useful life. This is a five percentage point drop from last year.

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 Maintenance Supervisors and Operations Managers at the Wisconsin Department of Transportation (WisDOT) and partner organizations including the 72 counties. Compass reports are used to understand trends and conditions, prioritize resources, and set future target condition levels for the state highway system. The condition data is also used to estimate the costs to reduce maintenance backlogs to varying levels of service.

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

The first section of this report provides a program overview and scorecard based on current conditions. Subsequent sections of the report provide detailed information on each roadway feature. The document is available on the Compass website (http://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

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

Process

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

This report uses inventory data for bridges, pavement, routine maintenance of signs, and winter storms. It uses sample data for highway maintenance features. The project team collected data from the WisDOT business areas between December 2011 and May 2012.

The highway maintenance data includes data sampled from the field. Two hundred and forty 1/10-mile segments are randomly selected in each of 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 2010-11 and includes Time to Bare Wet, Winter Severity Index, Winter VMT, and crash data. Figures and tables are taken directly from the 2010-11 WisDOT *Annual Winter Maintenance Report* prepared by WisDOT's Winter Operations unit, including the "Winter by the Numbers" table and the statewide snowfalls and Winter Severity Index figures.

Starting with the 2009 Compas Annual Report, pavement data was obtained directly from WisDOT's Pavement Maintenance Management System (PMMS). This completes the transition from the previous method. The transition started with the 2008 Compas Annual Report by reporting condition based on the deficiency thresholds and condition categories in the PMMS while still getting the pavement data from the Program Information Files (PIF). Pavement is not reported in the 2010 Compass Annual Report because of the unavailability of 2010 pavement data due to the reprogramming of PMMS.

The routine replacement needs for signs comes from the Sign Inventory Management System (SIMS) and the bridge data comes from the Highway Structure Information System (HSIS).

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

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

WisDOT Maintenance Supervisors and Operations Managers annually set the targets for backlog percentage levels for each feature. These targets are intended to reflect priorities and goals for the year in light of fiscal constraints. Appendix E provides the maintenance targets for 2011.

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 are weighted to account for the importance of the feature to the motorist and roadway system. The contribution categories include "Critical Safety", "Safety", "Ride/Comfort", "Stewardship", and "Aesthetics". 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. 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.

System Overview

Below is a summary of the 2011 condition grades for the 28 features that are evaluated in the field each year for the Compass program. The individual grades for the 28 features translate to an overall system condition grade point average of 2.61 or grade level C. The single failing grade is for drop-off/build-up on unpaved shoulders, which is targeted this way.

- A grade: 9 features (32%)
- B grade: 6 features (21%)
- C grade: 7 features (25%)
- D grade: 5 features (18%)
- F grade: 1 features (4%)

The condition grade for most features stayed constant between 2010 and 2011. Out of 28 features surveyed, the condition grade remained unchanged for 22 roadway components (79%). Six roadway feature grades (21%) declined during the past year *(highlighted below)*.

Eighteen features (64%) met the target condition in 2011, which is defined as within five percentage points of the actual target level. Eight features (29%) exceeded the maintenance target, including three Safety features (fences, routine replacement of regulatory/warning signs and special pavement markings). The following tables identify the five-year trend in Compass feature grades by contribution category. Key observations are also provided for each contribution category.

Critical Safety Features

The roadway featurers considered critical for safety are those that require immediate action, with overtime pay if necessary, to remedy a problem situation.

Feature	2011	2010	2009	2008	2007	Element
Centerline markings	**C**	C	C	B	B	Traffic and safety devices
Drop-off/build-up (paved)	**B**	A	B	N/A	N/A	Shoulders
Drop-off/build-up (unpaved)	**F**	F	F	F	F	Shoulders
Hazardous debris	**C**	C	C	C	C	Shoulders
Regulatory/warning signs (emergency repair)	**B**	A	A	A	A	Traffic and safety devices

- There are two Critical Safety features with a new condition grade during the past year. Both Drop-off/build-up on paved shoulders and Emergency Repair of Regulatory/warning Signs dropped from an A grade last year to a B grade this year.
- All Critical Safety features met their condition target, except for Drop-off/build-up on unpaved shoulders. This feature missed the target backlog percentage by 2% of the acceptable range. It has a backlog percentage of 37%, while the acceptable targeted range is from 25%-35%.

- Drop-off/build-up of unpaved shoulders also continued to receive a grade of F, consistent with the targeted condition level.
- Removal of hazardous debris on roadway shoulders and Centerline Markings both received grades of C, the same as last year.

Safety Features

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

Feature	2011	2010	2009	2008	2007	Element
Delineators	**D**	C	C	D	C	Traffic and safety devices
Edgeline markings	**B**	B	C	A	A	Traffic and safety devices
Fences	**A**	A	A	A	A	Roadsides
Mowing	**C**	C	C	C	C	Roadsides
Mowing for vision	**A**	A	B	A	A	Roadsides
Protective barriers	**B**	A	A	A	B	Traffic and safety devices
Regulatory/warning signs (routine replacement)	**C**	C	C	C	D	Traffic and safety devices
Special pavement markings	**B**	B	B	B	B	Traffic and safety devices
Woody vegetation control	**A**	A	A	A	A	Roadsides
Woody vegetation control for vision	**A**	A	A	A	A	Roadsides

- For the fourth straight year, the 2011 condition grades for all safety features met or exceeded their targets.
- Edgeline markings and mowing for vision maintained the respective grades of B and A that they received last year.
- Fences, woody vegetation control, and control of woody vegetation for vision all maintained the A grades they received in the past three years (2008-2010). The targets for these features are C, B, and A, respectively.
- Protective Barriers declined from an A grade last year to a B grade this year. However, it is still within the acceptable targeted range of 0%-8% backlog.
- Delineators declined to a grade D from the grade C it received in 2010, while meeting the targeted backlog percentage and grade.
- Special pavement markings maintained a B grade, exceeding the target of C.
- Routine replacement of Regulatory/warning signs maintained a C grade received during the previous three years.

Ride/Comfort Features

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

Feature	2011	2010	2009	2008	2007	Element
Cross-slope (unpaved)	**C**	**B**	**C**	B	B	Shoulders
Detour/object marker/recreation/guide signs (routine replacement)	**D**	D	D	D	D	Traffic and safety devices

Feature	2011	2010	2009	2008	2007	Element
Detour/object markers/ recreation/ guide/signs (emergency repair)	**A**	A	A	A	A	Traffic and safety devices
Potholes/raveling (paved)	**A**	A	A	A	A	Shoulders

- Cross-slope of unpaved shoulders declined to a C from the B grade it received in 2010, meeting the target condition level.
- Both emergency repair of 'other signs' and potholes/raveling on paved shoulders maintained the A grades they have been receiving for the past five years.
- Routine replacement of 'other signs' maintained a D grade received during the previous four years.

Stewardship Features

Stewardship captures performance on routine and preventive maintenance activities that preserve investments and ensure facilities function for their full expected service life or longer.

Feature	2011	2010	2009	2008	2007	Element
Cracking (paved)	**D**	**D**	**F**	D	D	Shoulders
Culverts	**C**	C	C	C	C	Drainage
Curb & gutter	**A**	A	A	A	A	Drainage
Ditches	**A**	A	A	A	A	Drainage
Erosion (unpaved)	**A**	A	A	A	A	Shoulders
Flumes	**D**	D	D	D	C	Drainage
Storm sewer systems	**B**	**B**	**C**	B	B	Drainage
Under-drains/edge-drains	**C**	**B**	**C**	C	B	Drainage

- Seven of eight Stewardship features maintained the grades they received last year. The only exception is Under-drains/edge-drains, which declined to a C grade from a B grade it received last year. This grade meets the current target.
- Culverts, flumes, and storm sewer systems maintained the respective C, D, and B grades they received last year, all of them meeting the target.
- Cracking on paved shoulders maintained the D grade it received last year, exceeding the target condition level.
- Curb & gutter, ditches, and erosion all continued to receive feature grades of A. These grades met or exceeded their target levels.

Aesthetics Feature

Aesthetics concerns the display of natural or fabricated beauty along highway corridors including landscaping and architectural features.

Feature	2011	2010	2009	2008	2007	Element
Litter	D	D	D	D	D	Roadsides

- Compass measures the presence of litter, which detracts from roadway sightlines. The grade for litter in 2011 is a D, consistent over the past five years and better than the targeted F grade level.

Winter:

- The winter of 2010-11 was much harsher than the previous several winters. Unlike the previous two winter seasons, it did not let up from December through March. Numerous large storms dropped six or more inches of snow across various portions of the state. The statewide average snowfall was 100 inches, which is almost twice the average of 52 inches. This was well above the winter of 2009-10, but in line with the two winters previous to that.
- Snowfall varied quite a bit across the state this winter (see Figure 1). The highest snowfall recorded was in Iron County, at 273 inches; the lowest was in Rock County, at 57 inches. Both figures were well above those of the previous winter. Statewide, this winter's total snowfall was well above average. On average, temperatures were below normal statewide this winter.
- The average time to bare/wet pavement during winter 2010-11 was 1 hour and 30 minutes, which is 19 minutes more than the previous winter. From storm to storm, most of the variability in this time is due to weather effects (type, duration and severity of storms throughout the winter season).
- A total of 573,253 tons of salt (17 tons per mile) was used on state highways this winter, compared to 408,523 tons (12.2 tons per mile) last year. This year's total salt use was comparable to most other years with a similar severity index. Last year's salt use was higher than average relative to the severity index, which may have been partly due to the timing of storms (multiple storms in quick succession) as well as extended bouts of lower temperatures.

Bridges:

- 32% of decks statewide are in Fair condition and need reactive maintenance, based on their NBI ratings of 5 or 6. These include 26% of concrete bridges and 44% of steel bridges.
- The NW region has the lowest percent of decks in good condition, only 51% of decks in good condition. The SE region has the highest percentage of decks in poor condition at 3%. The SE region has the largest deck area to maintain (14,741,435 ft^2).
- The NE region (884 bridges) has the best bridge ratings in the state with 85% of decks in Good condition and an impressive 0% in Poor and Critical condition.

Wisconsin 2011: Compass Report on Highway Maintenance Conditions

Element	What are we spending? Dollars spent (in millions)[1]					Feature	How much of the system still needs work at the end of the maintenance season? Condition change: 2010 to 2011[2]	% of system backlogged					How well maintained is the system? 2011 Feature grades				
	FY 07	FY 08	FY 09	FY 10	FY 11			2007	2008	2009	2010	2011	A	B	C	D	F
Shoulders	9.80 10.16 0.31 0.32	8.20 8.18 0.26 0.26	8.99 9.00 0.28 0.28	13.28 13.09 0.41 0.41	11.05 11.05 0.34 0.34	Hazardous debris	↑	9	9	8	8	**7**					
						Drop-off/build-up (paved)	↓	N/A	N/A	4	2	**3**					
						Cracking (paved)	-	53	53	62	60	**60**					
						Potholes/raveling (paved)	↓	6	6	6	5	**6**					
						Drop-off/build-up (unpaved)	-	40	44	34	37	**37**					
						Cross-slope (unpaved)	↓↓	18	18	22	18	**27**					
						Erosion (unpaved)	↓	1	2	3	1	**2**					
Drainage	7.20 7.46 0.23 0.24	8.00 7.98 0.25 0.25	9.84 9.86 0.31 0.31	9.13 9.27 0.28 0.29	8.54 8.54 0.26 0.26	Ditches	↓	2	2	2	2	**3**					
						Culverts	↑	20	28	23	28	**22**					
						Under-drains/edge-drains	↓↓	20	30	24	21	**33**					
						Flumes	↓	25	39	36	36	**39**					
						Curb & gutter	↑	8	5	5	6	**4**					
						Storm sewer system	-	11	16	19	17	**17**					
Roadsides	24.00 25.24 0.76 0.80	19.40 19.65 0.61 0.62	20.29 20.62 0.63 0.64	16.48 16.48 0.51 0.51	16.60 16.60 0.51 0.51	Litter	↓	60	61	66	62	**63**					
						Mowing	↓	36	42	35	36	**38**					
						Mowing for vision	↑	2	3	5	3	**1**					
						Woody vegetation	↑	3	2	4	4	**2**					
						Woody veg. control for vision	-	2	1	0.4	1	**1**					
						Fences	↑	2	1	3	2	**1**					

[1] The dollar values listed in each column show the nominal dollars, constant dollars (base year 2011), nominal dollars per thousand lane miles, and constant dollars per thousand lane miles, respectively.

[2] Arrows indicate a condition change from 2010 to 2011 (↑= improved condition/lower backlog, ↓ = worse condition/higher backlog). Double arrows indicate the backlog changed 8 or more percentage points.

Element	What are we spending?					Feature	How much of the system still needs work at the end of the maintenance season?						How well maintained is the system?				
	Dollars spent (in millions)[1]						Condition change: 2010 to 2011[2]	% of system backlogged					2011 Feature grades				
	FY 07	FY 08	FY 09	FY 10	FY 11			**2007**	**2008**	**2009**	**2010**	**2011**	A	B	C	D	F
Traffic & safety (selected)	20.47 21.21 0.65 0.67	20.70 20.66 0.65 0.65	21.63 21.66 0.68 0.68	17.61 17.35 0.55 0.54	20.12 20.12 0.62 0.62	Centerline markings	↑	3	3	7	7	**6**					
						Edgeline markings	↑	4	4	12	8	**7**					
						Special pavement markings	↑	10	7	10	11	**10**					
						Reg./warning signs (emergency repair)	↓	1	1	1	1	**3**					
						Reg./warning signs (routine replacement)	↑	25	23	23	17	**15**					
						Detour/object marker/recreation/guide signs (emergency repair)	↓	0.3	0.4	0.3	1	**4**					
						Detour/object marker/recreation/guide signs (routine replacement)	↑	56	55	51	44	**39**					
						Delineators	↓↓	21	26	20	14	**25**					
						Protective barriers	↓	5	3	3	1	**5**					

Wisconsin 2011: Targets for Highway Maintenance Conditions

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

			Statewide									Regions		
						Gap if target missed								
						Worse condition			Better condition					
Contribution Category	Feature	Element	Actual % backlog 2011	Target % backlog 2011	On target[3]	20	10	0	0	10	20	Worse condition	On Target	Better condition
Critical Safety	Centerline markings	Traffic and safety devices	6	5	◎								All	
	Drop-off/build-up (paved)	Shoulders	3	4	◎								All	
	Drop-off/build-up (unpaved)	Shoulders	37	30				7				NC, NE, SE	NW, SW	
	Hazardous debris	Shoulders	7	6	◎							NE, SE	NC, NW, SW	
	Regulatory/warning signs (emergency repair)	Traffic and safety devices	3	0	◎							SW	NC, NE, NW, SE	
Safety	Delineators	Traffic and safety devices	25	25	◎							SE	NW, SW	NC, NE
	Edgeline markings	Traffic and safety devices	7	8	◎								NC, NW, SE, SW	NE
	Fences	Roadsides	1	14						13				All
	Mowing	Roadsides	38	40	◎							NE, SE	SW	NC, NW
	Mowing for vision	Roadsides	1	5	◎								All	
	Protective barriers	Traffic and safety devices	5	3	◎							NC	NE, NW, SE, SW	
	Regulatory/warning signs (routine replacement)	Traffic and safety devices	15	25						10			NE, SE	NC, NW, SW
	Special pavement markings	Traffic and safety devices	10	23						13				All

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

			Statewide									Regions		
						Gap if target missed								
						Worse condition			Better condition					
Contribution Category	Feature	Element	Actual % backlog 2011	Target % backlog 2011	On target[3]	20	10	0	0	10	20	Worse condition	On Target	Better condition
	Woody vegetation control	Roadsides	2	5	◎								All	
	Woody vegetation control for vision	Roadsides	1	2	◎								All	
Ride/Comfort	Cross-slope (unpaved)	Shoulders	27	20				7				NC, NE, SE	NW, SW	
	Detour/object markers/recreation/guide signs (emergency repair)	Traffic and safety devices	4	1	◎							SW	NC, NE, NW, SE	
	Detour/object marker/recreation/guide signs (routine replacement)	Traffic and safety devices	39	59							20			All
	Potholes/raveling (paved)	Shoulders	6	10	◎								All	
Stewardship	Cracking (paved)	Shoulders	60	70						10			NE	NC, NW, SE, SW
	Culverts	Drainage	22	30					8			SE	SW	NC, NE, NW
	Curb & gutter	Drainage	4	10					6				NW, SW	NC, NE, SE
	Ditches	Drainage	3	5	◎								All	
	Erosion	Shoulders	2	5	◎								All	
	Flumes	Drainage	39	35	◎							NC, NW, SW	SE	NE
	Storm sewer system	Drainage	17	15	◎							SE, SW	NC, NE	NW
	Under-drains/edge-drains	Drainage	33	30	◎							NW, SE, SW	NC	NE
Aesthetics	Litter	Roadsides	63	81						18			NE, SE	NC, NW, SW

2011 Highway Maintenance Conditions: Report on Traffic, Shoulders, Drainage, Roadsides

Data in this section comes from the field review of random road segments performed by WisDOT region Maintenance Coordinators and county Patrol Superintendents. No statistical analysis has been completed on the county level data in Appendix F. Readers should take the number of observations into account when reviewing the information. Extreme caution should be exercised when analyzing data that has less than 30 observations.

Below is a summary of the change between 2010 and 2011 in the percentage of roadways that are backlogged for maintenance. These changes didn't necessarily result in a new level of service grade. Refer to the "Maintenance Report Card" in the front part of the report for a complete summary of condition grade level changes between 2010 and 2011.

- Eleven features (39.3%) had a reduction in the percentage of roadways that are backlogged for maintenance.
- Four features (14.3%) did not have a change in the amount of roadways that are backlogged for maintenance.
- Thirteen features (46.4%) had an increase in the percentage of roadways that are backlogged for maintenance.
- All of the changes in backlog levels were twelve percentage points or less.

Shoulders:

- The individual grades for the seven Shoulder features translate to an overall condition grade point average of 2.3 or grade level C+.
- One Shoulder feature (hazardous debris, -1%) had a reduction in the percentage of roadways that are backlogged for maintenance.
- Two of the seven features (cracking on paved shoulders, drop-off on unpaved shoulders) did not have a change in the amount of roadways that are backlogged for maintenance.
- Four features had an increase in the percentage of roadways that are backlogged for maintenance. They are drop-off on paved shoulders (+1%), potholes on paved shoulders (+1%), cross-slope on unpaved shoulders (+9%), and erosion on unpaved shoulders (+1%)
- Drop-off /buildup on unpaved shoulders received a feature grade of F for the seventh consecutive year. The percentage of roadways that are backlogged for maintenance is 37%, the same as in 2010.

Drainage:

- The individual grades for the six Drainage features translate to an overall condition grade point average of 2.7 or grade level C+.
- Two of the six Drainage features had a reduction in the percentage of roadways that are backlogged for maintenance. These features include culverts (-6%) and curb and gutter (-2%)
- One feature, storm sewer system, did not have a change in the amount of roadways that are backlogged for maintenance.

- Ditches (+1%), under-drains/edge-drains (+12%), and flumes (+3%) were the three features that had an increase in the percentage of roadways that are backlogged for maintenance. These changes were not significant enough to change the level of service grades, with the exception of under-drains/edge-drains that received a grade of C after the B it received last year.

Roadsides:

- The individual grades for the seven Roadside features translate to an overall condition grade point average of 3.2 or grade level B+.
- Three of the seven Roadside features had a reduction in the percentage of roadways that are backlogged for maintenance. These features include mowing for vision (-2%), woody vegetation (-2%), and fences (-1%).
- Two features had an increase in the percentage of roadways that are backlogged for maintenance. These features include litter (+1%), and mowing (+2%).
- Woody vegetation control for vision is the only feature that did not have a change in the amount of roadways that are backlogged for maintenance.
- None of the change was significant enough to change the level of service grade.

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 2.4 or grade level C+.
- Five of the nine Traffic Control and Safety Devices features had a reduction in the percentage of roadways that are backlogged for maintenance. These features include centerline markings (-1%), edgeline markings (-1%), special pavement markings (-1%), routine replacement of regulatory/warning signs (-2%), and routine replacement of detour/object marker/recreation/guide signs (-5%).
- Four features had an increase in the percentage of roadways that are backlogged for maintenance. These features include emergency repair of regulatory/warning signs (+2%), emergency repair of detour/object marker/recreation/guide signs (+3%), delineators (+11%), and protective barriers (+4%).
- Three of the changes were significant enough to change the level of service grades of the features. They are delineators (D, from C), protective barriers (B, from A) and emergency repair of regulatory/warning signs (B, from A).

Regions 2011: Summary of Highway Maintenance Conditions

Shoulders

- Hazardous Debris: The Southeast Region (18%) and the Northeast Region (12%) had a significantly higher backlog level than the other three regions (1% to 9%).
- Paved Shoulders: The maintenance backlog for drop-off/build-up was low (1% to 4%) and evenly distributed between four of the five regions. The exception is the Southeast Region, which had the most cracking at 7%.
- Unpaved Shoulders: The North Central Region had the most cross-slope problems (39%) and the second highest backlog level of drop-off/build-up (43%) in the state. The Southeast Region had the largest amount of drop-off/build-up in the state at 48% (37% statewide average). There was a low level of erosion problems around the state (1% to 2%, except for Southeast Region at 6%).

Drainage

- Ditches: The North Central Region (7%) and the Southeast Region (6%) had much higher backlog levels than the rest of the regions (1%).
- Culverts: The Southeast Region (39%) had the highest amount of deficient culverts while the Northeast Region had the fewest deficient culverts (11%).
- Drains: There was a wide disparity in conditions, with the Northeast Region (5%) having the fewest deficient drains and the Southwest Region (49%) having the largest backlog.
- Flumes: While not as dramatic as Drains, there also was a wide disparity in flume conditions, with the Southwest Region (46%) having the highest backlog and the Northeast Region (28%) having the lowest backlog level.
- Curb and Gutter: The Northwest Region (11%) and the Southwest Region (8%) had the highest deficiency levels while the other regions varied between 0% and 3%.
- Storm Sewer Systems: The Southwest Region (30%) and the Southeast Region (21%) had the highest deficiency levels while the other regions varied between 6% and 10%.

Roadsides

- Litter: The Southeast Region (83%) and the Northeast Region (78%) had more problems with litter than the other three regions (50% to 66%).
- Mowing: The Northeast Region (51%) and the Southeast Region (47%) had the highest backlog levels while the North Central and Northwest Region (31%) had the lowest backlog levels.
- Mowing for Vision: The Southeast Region recorded a backlog level of 5%, while the other regions had no backlog (0%).
- Woody Vegetation: The regions have evenly distributed backlog levels between 2% and 3%.
- Woody Vegetation for Vision: The regions have evenly distributed backlog levels between 0% and 2%.
- Fences: The North Central Region and Northwest Region both had backlog levels at 5%, while other regions had no backlog (between 0% and 0.4%).

Traffic Control and Safety Devices

- Pavement Markings: The Southeast Region had the highest backlog levels of deficient edgeline markings (11%) and special pavement markings (15%).
- Regulatory/Warning Signs and 'Other' Signs (emergency): The Southwest Region had significantly higher backlog levels (both at 7%) compared to the other regions (1%-3% for regulatory/warning signs and 0%-3% for 'other' signs).
- Protective Barriers: The North Central Region (15%) had significantly higher backlog level compared to the other regions (1%-8%).

Regions 2011: 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	5%	12%	1%	18%	9%	7%
	Drop-off/build-up (paved)	4%	3%	1%	7%	4%	3%
	Cracking (paved)	55%	68%	59%	64%	60%	60%
	Potholes/raveling (paved)	6%	6%	8%	6%	5%	6%
	Drop-off/build-up (unpaved)	43%	37%	35%	48%	31%	37%
	Cross-slope (unpaved)	39%	34%	19%	34%	21%	27%
	Erosion (unpaved)	2%	1%	1%	6%	1%	2%
	Dollars spent on shoulders (millions)	3.13	1.30	2.88	1.13	2.61	11.05
Drainage	Ditches	7%	1%	1%	6%	1%	3%
	Culverts	23%	11%	19%	39%	26%	22%
	Under-drains/edge-drains	27%	5%	37%	42%	49%	33%
	Flumes	42%	28%	44%	37%	46%	39%
	Curb & gutter	3%	1%	11%	0%	8%	4%
	Storm sewer system	10%	10%	6%	21%	30%	17%
	Dollars spent on drainage (millions)	0.80	0.83	1.80	2.61	2.51	8.54
Roadsides	Litter	54%	78%	50%	83%	66%	63%
	Mowing	31%	51%	31%	47%	41%	38%
	Mowing for vision	0%	0%	0%	5%	0%	1%
	Woody vegetation control	2%	3%	2%	2%	3%	2%
	Woody vegetation control for vision	1%	2%	0%	1%	1%	1%
	Fences	5%	0%	5%	0%	0%	1%
	Dollars spent on roadsides (millions)	3.08	2.67	3.33	3.56	3.96	16.60
Traffic and safety (selected devices)	Centerline markings	7%	2%	7%	6%	6%	6%
	Edgeline markings	7%	1%	5%	11%	11%	7%
	Special pavement markings	2%	7%	12%	15%	8%	10%
	Regulatory/warning signs (emergency repair)	3%	1%	1%	1%	7%	3%
	Regulatory/warning signs (routine replacement)	15%	23%	11%	20%	9%	15%
	Detour/object marker/recreation/guide signs (emergency repair)	3%	0%	2%	3%	7%	4%
	Detour/object marker/recreation/guide signs (routine replacement)	34%	39%	38%	45%	39%	39%
	Delineators	12%	13%	21%	46%	26%	25%
	Protective barriers	15%	1%	8%	6%	3%	5%
	Dollars spent on traffic and safety (selected devices) (millions)	3.48	2.70	3.84	4.54	5.56	20.12

Regions 2011: Regional Trend

Element	Feature	Region		Year			
			2007	2008	2009	2010	2011
Shoulders	Hazardous debris	NC	8%	8%	5%	8%	5%
		NE	8%	8%	14%	6%	12%
		NW	5%	5%	2%	2%	1%
		SE	5%	5%	15%	12%	18%
		SW	18%	18%	9%	12%	9%
	Drop-off/build-up (paved)	NC	-	-	2%	2%	4%
		NE	-	-	5%	3%	3%
		NW	-	-	4%	2%	1%
		SE	-	-	6%	2%	7%
		SW	-	-	6%	3%	4%
	Cracking (paved)	NC	47%	47%	57%	59%	55%
		NE	56%	56%	63%	56%	68%
		NW	44%	44%	66%	59%	59%
		SE	63%	63%	66%	73%	64%
		SW	53%	53%	59%	58%	60%
	Potholes/raveling (paved)	NC	4%	4%	5%	5%	6%
		NE	5%	5%	6%	3%	6%
		NW	6%	6%	3%	5%	8%
		SE	11%	11%	12%	10%	6%
		SW	4%	4%	9%	6%	5%
	Drop-off/build-up (unpaved)	NC	30%	38%	33%	38%	43%
		NE	45%	46%	38%	30%	37%
		NW	47%	35%	24%	32%	35%
		SE	39%	60%	30%	33%	48%
		SW	36%	44%	45%	44%	31%
	Cross-slope (unpaved)	NC	19%	19%	24%	26%	39%
		NE	17%	17%	27%	14%	34%
		NW	24%	24%	18%	18%	19%
		SE	14%	14%	10%	10%	34%
		SW	15%	15%	24%	16%	21%
	Erosion (unpaved)	NC	1%	0%	2%	2%	2%
		NE	1%	1%	2%	1%	1%
		NW	3%	1%	3%	1%	1%
		SE	2%	2%	1%	1%	6%
		SW	0%	4%	3%	1%	1%
Drainage	Ditches	NC	1%	1%	1%	2%	7%
		NE	1%	1%	1%	2%	1%
		NW	1%	1%	2%	1%	1%

		NC	1%	1%	1%	2%	7%
		NE	1%	1%	1%	2%	1%
		NW	1%	1%	2%	1%	1%
		SE	6%	5%	3%	8%	6%
		SW	2%	2%	2%	1%	1%
	Culverts	NC	14%	21%	14%	22%	23%
		NE	24%	23%	24%	33%	11%
		NW	25%	25%	30%	33%	19%
		SE	15%	36%	25%	29%	39%
		SW	24%	34%	22%	26%	26%
	Under-drains/edge-drains	NC	7%	7%	15%	15%	27%
		NE	11%	9%	9%	5%	5%
		NW	21%	0%	33%	25%	37%
		SE	16%	36%	43%	22%	42%
		SW	45%	76%	32%	42%	49%
	Flumes	NC	10%	32%	56%	25%	42%
		NE	21%	25%	22%	43%	28%
		NW	50%	33%	53%	25%	44%
		SE	24%	42%	36%	14%	37%
		SW	19%	67%	30%	53%	46%
	Curb & gutter	NC	11%	8%	6%	3%	3%
		NE	5%	3%	2%	3%	1%
		NW	12%	9%	10%	25%	11%
		SE	3%	3%	2%	4%	0%
		SW	10%	16%	8%	4%	8%
	Storm sewer system	NC	9%	15%	7%	15%	10%
		NE	7%	13%	17%	15%	10%
		NW	23%	26%	15%	20%	6%
		SE	9%	16%	22%	18%	21%
		SW	7%	21%	22%	16%	30%
Roadsides	Litter	NC	49%	49%	59%	53%	54%
		NE	69%	69%	71%	58%	78%
		NW	57%	57%	58%	58%	50%
		SE	57%	57%	77%	72%	83%
		SW	71%	71%	74%	71%	66%
	Mowing	NC	24%	32%	32%	36%	31%
		NE	52%	49%	44%	50%	51%
		NW	34%	41%	26%	34%	31%
		SE	46%	43%	58%	56%	47%
		SW	23%	45%	34%	24%	41%
		NC	3%	3%	2%	0.0%	0%

	Mowing for vision	NC	3%	3%	2%	0.0%	0%
		NE	1%	2%	2%	1%	0%
		NW	0%	4%	6%	3%	0%
		SE	2%	0%	0%	6%	5%
		SW	7%	6%	11%	7%	0%
	Woody vegetation control	NC	8%	1%	3%	3%	2%
		NE	2%	1%	2%	1%	3%
		NW	2%	4%	2%	5%	2%
		SE	2%	1%	7%	3%	2%
		SW	3%	4%	5%	4%	3%
	Woody vegetation control for vision	NC	3%	0%	0%	2%	1%
		NE	2%	0%	0%	1%	2%
		NW	0%	2%	0%	1%	0%
		SE	3%	1%	3%	0.0%	1%
		SW	2%	0%	0%	1%	1%
	Fences	NC	2%	4%	2%	1%	5%
		NE	0%	0%	0%	0.0%	0%
		NW	5%	0%	10%	2%	5%
		SE	1%	1%	0%	4%	0%
		SW	0%	4%	5%	2%	0%
Traffic and safety (selected devices)	Centerline markings	NC	1%	1%	7%	4%	7%
		NE	2%	2%	3%	6%	2%
		NW	5%	5%	8%	8%	7%
		SE	3%	3%	13%	18%	6%
		SW	3%	3%	6%	4%	6%
	Edgeline markings	NC	6%	6%	4%	5%	7%
		NE	1%	1%	4%	6%	1%
		NW	6%	6%	8%	8%	5%
		SE	5%	5%	20%	21%	11%
		SW	4%	4%	22%	8%	11%
	Special pavement markings	NC	23%	4%	0%	10%	2%
		NE	4%	6%	5%	3%	7%
		NW	11%	0%	12%	6%	12%
		SE	6%	7%	17%	18%	15%
		SW	5%	17%	8%	7%	8%
	Regulatory/warning signs (emergency repair)	NC	0%	0%	0%	2%	3%
		NE	1%	1%	0%	0.4%	1%
		NW	1%	1%	2%	1%	1%
		SE	2%	1%	2%	1%	1%
		SW	1%	1%	1%	0.3%	7%
	Regulatory/warning signs	NC	25%	18%	18%	16%	N/A

	(routine replacement)	NC	25%	18%	18%	16%	N/A
		NE	39%	38%	36%	29%	N/A
		NW	19%	16%	14%	12%	N/A
		SE	28%	28%	28%	22%	N/A
		SW	21%	18%	19%	12%	N/A
	Detour/object marker/recreation/guide signs (emergency repair)	NC	0%	0%	0%	2%	3%
		NE	0%	0%	0%	1%	0%
		NW	0%	1%	0%	1%	2%
		SE	0%	1%	0%	2%	3%
		SW	1%	0%	1%	2%	7%
	Detour/object marker/recreation/guide signs (routine replacement)	NC	60%	51%	40%	36%	N/A
		NE	64%	65%	59%	51%	N/A
		NW	54%	55%	48%	39%	N/A
		SE	49%	51%	53%	48%	N/A
		SW	56%	54%	51%	46%	N/A
	Delineators	NC	6%	15%	6%	6%	12%
		NE	10%	15%	18%	12%	13%
		NW	22%	12%	16%	15%	21%
		SE	14%	41%	39%	11%	46%
		SW	20%	34%	23%	18%	26%
	Protective barriers	NC	1%	5%	4%	0.3%	15%
		NE	12%	3%	8%	0.0%	1%
		NW	2%	0%	4%	1%	8%
		SE	3%	3%	3%	0.3%	6%
		SW	8%	5%	2%	1%	3%

Mowing

The following table shows the number of segments that are backlogged for Mowing and the statewide distribution of the deficiencies: 'how' (shown as columns) and 'why' (shown as rows). For the report, all of the segments shown are considered backlogged and contributed to the backlog percentage reported for Mowing. Note that multiple reasons for mowing deficiency are allowed; therefore the sum of percentages for each deficiency type can be more than 100%.

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

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

		How is it deficient?			
		# of segments with observed deficiency			
		% of segment			
		Too Wide	Too Short	Too High	In the No Mow Zone
Why is it deficient?	Safety/Equipment	6	1	0	0
		3%	0%	0%	0%
	Mowed by Property Owner	184	404	155	0
		90%	98%	31%	0%
	Woody Vegetation Control	2	0	1	0
		1%	0%	0%	0%
	Maintenance Decision	71	161	500	3
		35%	39%	99%	100%
	Total	204	414	505	3

2011 Signs: Compass Report on Routine Replacement and Age Distribution

Data in this section comes from the Sign Inventory Management System (SIMS). This section covers only routine replacement, not emergency replacement of knocked-down signs and related work.

The analysis looks at the age distribution and service life of highway signs. The expected service life is determined relative to the date signs are manufactured rather than the date they are installed. It is possible that a sign is installed one year or more after it is manufactured.

Regulatory and warning signs on Wisconsin's highways are critically important for the safety of Wisconsin's motorists. As such, WisDOT prioritizes the routine replacement of regulatory and warning signs over the routine replacement of other signs, including detour, object marker, recreation and guide signs.

Key Observations in 2011:

- The backlog for routine replacement of regulatory and warning signs decreased from 17% in 2010 to 15%. Among regions, the percentage of regulatory and warning signs backlogged for replacement varies widely, from a low of 9% in the Southwest Region to a high of 23% in the Northeast Region.
- The backlog for routine replacement of other signs (i.e. detour/object marker/recreation/ guide signs) decreased from 44% in 2010 to 39%. By region, the percentage of other signs backlogged for routine replacement varies from 34% in the North Central Region to 45% in the Southeast Region.
- Regulatory and warning signs are being used for an average 5.3 years beyond their recommended service lives. On average, other signs remain in service for 8.5 years beyond their recommended service life.
- There are 16,684 regulatory/warning signs and 38,299 other signs in service five years or more beyond their recommended service life. This represents 10% and 34% respectively of the state highway signs in each category. The percentage for regulatory and warning signs is the same as last year, while for other signs it is 3% more than what it was last year.
- WisDOT is migrating from engineering grade sign face material (grade 1) to more visible high intensity sign face material (grade 2). The percentage of high intensity signs on the state trunk highway system increased from 72% in 2010 to 77%. Almost 13,000 high intensity signs were added to the state system in the last year. Considering the sign group (regulatory/warning signs vs. other signs), 88% of regulatory/warning signs are high intensity signs, while 61% of other signs have high intensity face material.
- There are 4,237 Type – F Fluorescent signs in service. Among those, only 475 (11%) are beyond their service life, with only 51 (1%) at 5 years or more beyond their service life.

Wisconsin: Trend of Sign Condition

	Regulatory/Warning/School Signs				Detour/object marker/recreation/guide Signs			
	Total Signs	**%Backlog**	**Deficient Signs**	**Average Years Beyond Service Life[4]**	**Total Signs**	**%Backlog**	**Deficient Signs**	**Average Years Beyond Service Life[4]**
2005	160,185	41%	65,092	5.7	113,693	59%	67,449	6.0
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**

Regions 2011: Sign Condition

	Regulatory/Warning/School Signs				Detour/object marker/recreation/guide Signs			
Region	**Total Signs**	**%Backlog**	**Deficient Signs**	**Average Years Beyond Service Life[4]**	**Total Signs**	**%Backlog**	**Deficient Signs**	**Average Years Beyond Service Life[4]**
NC	28,938	15%	4,485	3.8	18,679	34%	6,379	7.0
NE	25,629	23%	5,821	7.8	18,055	39%	7,105	9.6
NW	33,909	11%	3,648	4.8	26,867	38%	10,117	7.6
SE	40,870	20%	8,244	6.7	26,875	45%	12,205	8.3
SW	41,856	9%	3,732	5.2	30,010	39%	11,762	10.5

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

Regions 2011: Routine Replacement of Signs

	Regulatory/Warning/School Signs					Detour/object marker/recreation/guide Signs			
Region	**Total Signs**		**%Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**	**Total Signs**	**%Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**
NC	2005	26,164	45%	11,746	6.1	18,480	66%	12,177	6.6
	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
NE	2005	22,246	47%	10,346	5.4	20,367	62%	12,647	5.5
	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
NW	2005	36,737	37%	13,606	5.4	29,848	59%	17,541	5.2
	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
SE	2005	32,872	32%	10,533	4.9	21,077	50%	10,439	5.7
	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

	Regulatory/Warning/School Signs					Detour/object marker/recreation/guide Signs			
Region	**Total Signs**		**%Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**	**Total Signs**	**%Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**
	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
SW	2005	42,166	45%	18,861	6.3	23,921	61%	14,645	7.0
	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

Wisconsin and Regions 2011: Sign Face Material Distribution

Face		Region					Statewide	
Grade	**Type**	**NC**	**NE**	**NW**	**SE**	**SW**	**Total**	**Percentage**
1	Non-Reflective	5	49	278	92	24	448	0.2%
	Other or Varies	96	20	235	17	481	849	0.3%
	Reflective - Engineering Grade	8,827	11,056	13,191	17,532	15,644	66,250	23%
2	Type D - Diamond Grade	-	-	-	-	-	-	-
	Type F - Fluorescent	686	807	538	1,115	1,149	4,295	1.5%
	Type H - High Intensity	12,794	9,565	19,740	17,560	23,112	82,771	28%
	Type HP - Prismatic High Intensity	24,534	21,868	26,555	31,276	31,087	135,320	47%
	Type SH - Super High Intensity	109	180	217	151	269	926	0.3%
Total		47,051	43,545	60,754	67,743	71,766	290,859	100%

Wisconsin and Regions: Sign Face Material Trends

	2008		2009		2010		2011	
Region	**Engineering Grade**	**High Intensity**	**Engineering Grade**	**High Intensity**	**Engineering Grade**	**High Intensity**	**Engineering Grade**	**High Intensity**
NC	14,956	32,438	12,701	35,013	10,256	36,827	8,928	38,014
NE	23,466	21,047	23,569	25,282	15,890	29,255	11,125	32,240
NW	24,987	37,648	18,617	43,287	15,190	45,782	13,704	46,833
SE	27,789	36,937	23,549	42,217	19,230	46,508	17,641	49,951
SW	24,910	43,370	23,638	47,096	19,608	51,044	16,149	55,348
Statewide	116,108	171,440	102,074	192,895	80,174	209,416	67,547	222,386
	40%	**60%**	**35%**	**65%**	**28%**	**72%**	**23%**	**77%**

Regions 2011: Sign Face Material by Group

	Region	Engineering Grade	High Intensity	Total
Reg/Warning Signs	NC	3,237	25,697	28,934
	NE	4,397	21,111	25,508
	NW	3,528	30,369	33,897
	SE	6,506	34,359	40,865
	SW	3,530	38,319	41,849
	Statewide	**21,198**	**149,855**	**171,053**
		12%	**88%**	
Other Signs	NC	5,691	12,317	18,008
	NE	6,728	11,129	17,857
	NW	10,176	16,464	26,640
	SE	11,135	15,592	26,727
	SW	12,619	17,029	29,648
	Statewide	**46,349**	**72,531**	**118,880**
		39%	**61%**	

Wisconsin and Regions 2011: Sign Age Distribution

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	13,800	2,640	2,270	2,748	1,355	816	739	1,071	474	347	512	1,823	258	28,853
	48%	9%	8%	10%	5%	3%	3%	4%	2%	1%	2%	6%	1%	100%
NE	11,932	1,263	828	2,156	1,246	898	602	421	327	531	626	2,610	1,306	24,746
	48%	5%	3%	9%	5%	4%	2%	2%	1%	2%	3%	11%	5%	100%
NW	16,082	4,026	3,284	3,357	2,096	845	472	535	315	334	448	1,868	148	33,810
	48%	12%	10%	10%	6%	2%	1%	2%	1%	1%	1%	6%	0%	100%
SE	20,728	2,879	2,681	2,662	1,879	808	637	564	199	591	1,128	4,257	1,505	40,518
	51%	7%	7%	7%	5%	2%	2%	1%	0%	1%	3%	11%	4%	100%
SW	20,195	4,546	5,333	3,626	2,289	1,210	597	318	66	47	392	2,085	824	41,528
	49%	11%	13%	9%	6%	3%	1%	1%	0%	0%	1%	5%	2%	100%
State	82,737	15,354	14,396	14,549	8,865	4,577	3,047	2,909	1,381	1,850	3,106	12,643	4,041	169,455
	49%	9%	8%	9%	5%	3%	2%	2%	1%	1%	2%	7%	2%	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	6,617	751	615	820	604	233	812	306	552	373	576	3,613	959	16,831
	39%	4%	4%	5%	4%	1%	5%	2%	3%	2%	3%	21%	6%	100%
NE	6,582	455	361	807	518	393	506	150	312	506	698	3,129	2,310	16,727
	39%	3%	2%	5%	3%	2%	3%	1%	2%	3%	4%	19%	14%	100%
NW	9,498	2,081	1,094	1,111	1,002	264	875	306	262	406	969	6,619	1,555	26,042
	36%	8%	4%	4%	4%	1%	3%	1%	1%	2%	4%	25%	6%	100%
SE	7,774	1,044	948	1,393	815	1,174	1,162	316	479	782	1,331	5,365	3,932	26,515
	29%	4%	4%	5%	3%	4%	4%	1%	2%	3%	5%	20%	15%	100%
SW	9,200	1,146	1,056	1,507	1,642	621	415	125	87	121	612	5,730	5,087	27,349
	34%	4%	4%	6%	6%	2%	2%	0%	0%	0%	2%	21%	19%	100%
State	39,671	5,477	4,074	5,638	4,581	2,685	3,770	1,203	1,692	2,188	4,186	24,456	13,843	113,464
	35%	5%	4%	5%	4%	2%	3%	1%	1%	2%	4%	22%	12%	100%

Wisconsin and Regions 2011: Sign Age Distribution of High Intensity Signs

Type F - Flourescent

	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	300	40	34	111	48	24	69	56	3	--	--	1	--	686
	44%	6%	5%	16%	7%	3%	10%	8%	0%	--	--	0%	--	100%
NE	391	26	24	58	70	49	70	55	3	9	6	34	3	798
	49%	3%	3%	7%	9%	6%	9%	7%	0%	1%	1%	4%	0%	100%
NW	289	33	58	35	41	36	19	25	--	1	--	--	--	537
	54%	6%	11%	7%	8%	7%	4%	5%	--	0%	--	--	--	100%
SE	581	27	36	127	68	28	65	150	--	1	2	6	--	1,091
	53%	2%	3%	12%	6%	3%	6%	14%	--	0%	0%	1%	--	100%
SW	609	29	116	102	41	29	79	110	3	--	--	5	2	1,125
	54%	3%	10%	9%	4%	3%	7%	10%	0%	--	--	0%	0%	100%
State	2,170	155	268	433	268	166	302	396	9	11	8	46	5	4,237
	51%	4%	6%	10%	6%	4%	7%	9%	0%	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	796	1,397	2,356	3,139	1,524	753	945	771	235	92	95	122	106	12,331
	6%	11%	19%	25%	12%	6%	8%	6%	2%	1%	1%	1%	1%	100%
NE	1,045	552	827	2,387	1,297	645	518	301	124	281	163	926	153	9,219
	11%	6%	9%	26%	14%	7%	6%	3%	1%	3%	2%	10%	2%	100%
NW	2,654	3,304	3,854	4,089	2,777	791	938	465	161	193	30	204	26	19,486
	14%	17%	20%	21%	14%	4%	5%	2%	1%	1%	0%	1%	0%	100%
SE	762	1,598	3,397	3,749	2,478	1,739	1,178	556	418	255	210	963	238	17,541
	4%	9%	19%	21%	14%	10%	7%	3%	2%	1%	1%	5%	1%	100%
SW	421	4,653	5,938	4,809	3,618	1,762	753	240	70	70	37	242	108	22,721
	2%	20%	26%	21%	16%	8%	3%	1%	0%	0%	0%	1%	0%	100%
State	5,678	11,504	16,372	18,173	11,694	5,690	4,332	2,333	1,008	891	535	2,457	631	81,298
	7%	14%	20%	22%	14%	7%	5%	3%	1%	1%	1%	3%	1%	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	19,317	1,790	451	281	315	245	432	350	583	157	106	207	120	24,354
	79%	7%	2%	1%	1%	1%	2%	1%	2%	1%	0%	1%	0%	100%
NE	16,976	1,071	224	463	216	354	440	148	128	210	163	839	162	21,394
	79%	5%	1%	2%	1%	2%	2%	1%	1%	1%	1%	4%	1%	100%
NW	22,500	2,541	283	180	121	115	140	108	81	69	44	108	29	26,319
	85%	10%	1%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	100%
SE	27,158	2,289	188	177	147	198	128	70	85	58	33	169	78	30,778
	88%	7%	1%	1%	0%	1%	0%	0%	0%	0%	0%	1%	0%	100%
SW	28,344	997	313	199	254	19	167	77	51	45	48	235	123	30,872
	92%	3%	1%	1%	1%	0%	1%	0%	0%	0%	0%	1%	0%	100%
State	114,295	8,688	1,459	1,300	1,053	931	1,307	753	928	539	394	1,558	512	133,717
	85%	6%	1%	1%	1%	1%	1%	1%	1%	0%	0%	1%	0%	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	87	1	--	1	1	2	3	--	--	--	1	3	1	100
	87%	1%	--	1%	1%	2%	3%	--	--	--	1%	3%	1%	100%
NE	154	15	--	--	2	--	--	1	--	--	1	2	1	176
	88%	9%	--	--	1%	--	--	1%	--	--	1%	1%	1%	100%
NW	131	66	2	--	1	--	--	5	--	--	1	6	--	212
	62%	31%	1%	--	0%	--	--	2%	--	--	0%	3%	--	100%
SE	133	2	1	1	3	2	1	1	--	--	--	--	--	144
	92%	1%	1%	1%	2%	1%	1%	1%	--	--	--	--	--	100%
SW	201	13	--	4	3	--	2	7	1	1	--	14	--	246
	82%	5%	--	2%	1%	--	1%	3%	0%	0%	--	6%	--	100%
State	706	97	3	6	10	4	6	14	1	1	3	25	2	878
	80%	11%	0%	1%	1%	0%	1%	2%	0%	0%	0%	3%	0%	100%

2011 Winter: Compass Report on Winter Operations

This section of the report looks at winter operations on state highways from November 1, 2010 to April 30, 2011.

The Bureau of Highway Operations issues two reports on winter. This Compass report presents measures for winter maintenance focused on a few key winter operations outcomes critical to drivers and taxpayers, and is directed toward a general audience. The Annual Winter Maintenance Report focuses on operational measures and analysis, and is directed toward front-line operations managers.

The Winter Severity Index (WSI) is a tool WisDOT uses to analyze individual storms and the winter as a whole. It facilitates comparisons from one winter to the next and from county to county within the same season. The average WSI in 2010-11 was 38.5 versus 26.6 in the previous year.

Wisconsin endured the most expensive winter in history in 2010-11, exceeding the previous record incurred in 2007-08 by $5 million. There were also more snow storms on average than any prior winter which only compounds the difficult task of managing winter operations within the available budget. The 2010-11 winter season was one of the snowiest on record. Winter Severity Index this year is recorded at 38.5, twelve points more severe than last year and one point more severe than 2007-08 winter season which was the previous record high.

Statewide measures for winter

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Time to bare/wet pavement	**1 hour 55 minutes** after the storm ended	**1 hour 28 minutes** after the storm ended	**3 hour 16 minutes** after the storm ended	**2 hour 32 minutes** after the storm ended	**1 hour 11 minutes** after the storm ended	**1 hour 30 minutes** after the storm ended
Cost per lane mile	**$1,386**	**$1,549**	**$2,591**	**$2,365**	**$2,222**	**$2,696**
Winter severity index	**31.8**	**28.4**	**37.2**	**36.2**	**26.6**	**38.5**
Winter related crash	**24 per 100 million** vehicle miles traveled	**23 per 100 million** vehicle miles traveled	**43 per 100 million** vehicle miles traveled	**40 per 100 million** vehicle miles traveled	**22 per 100 million** vehicle miles traveled	**35 per 100 million** vehicle miles traveled

Key Observations:

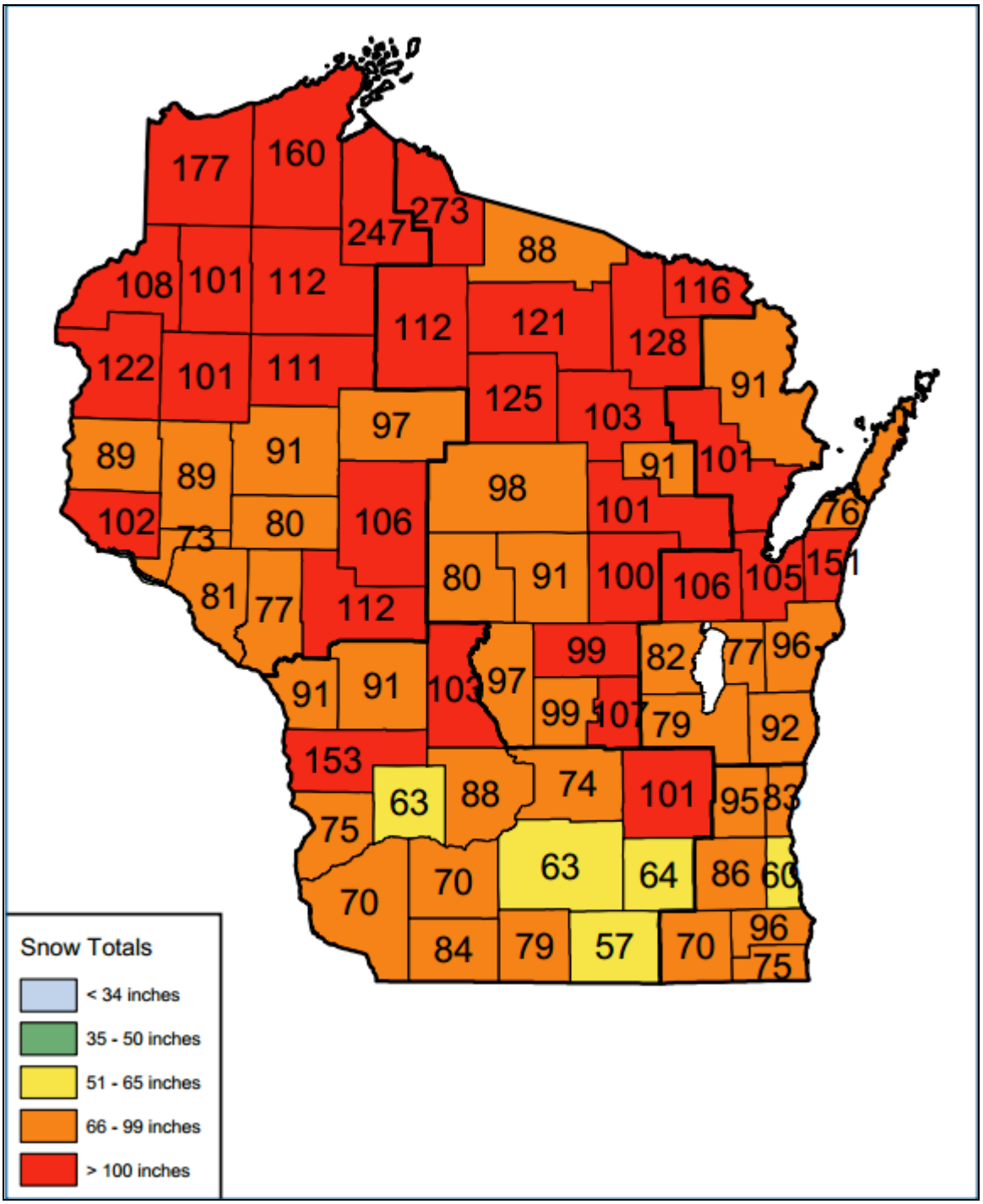
- The winter of 2010-11 was much harsher than the previous several winters. Unlike the previous two winter seasons, it did not let up from December through March. Numerous large storms dropped six or more inches of snow across various portions of the state. The statewide average snowfall was 100 inches, which is almost twice the average of 52 inches. This was well above the winter of 2009-10, but in line with the two winters previous to that.
- Snowfall varied quite a bit across the state this winter (see Figure 1). The highest snowfall recorded was in Iron County, at 273 inches; the lowest was in Rock County, at 57 inches. Both figures were well above those of the previous winter. Statewide, this winter's total snowfall was well above average. On average, temperatures were below normal statewide this winter.

- The average time to bare/wet pavement during winter 2010-11 was 1 hour and 30 minutes, which is 19 minutes more than the previous winter. From storm to storm, most of the variability in this time is due to weather effects (type, duration and severity of storms throughout the winter season).
- A total of 573,253 tons of salt (17 tons per mile) was used on state highways this winter, compared to 408,523 tons (12.2 tons per mile) last year. This year's total salt use was comparable to most other years with a similar severity index. Last year's salt use was higher than average relative to the severity index, which may have been partly due to the timing of storms (multiple storms in quick succession) as well as extended bouts of lower temperatures.

2010-2011 Winter season snowfall for Wisconsin

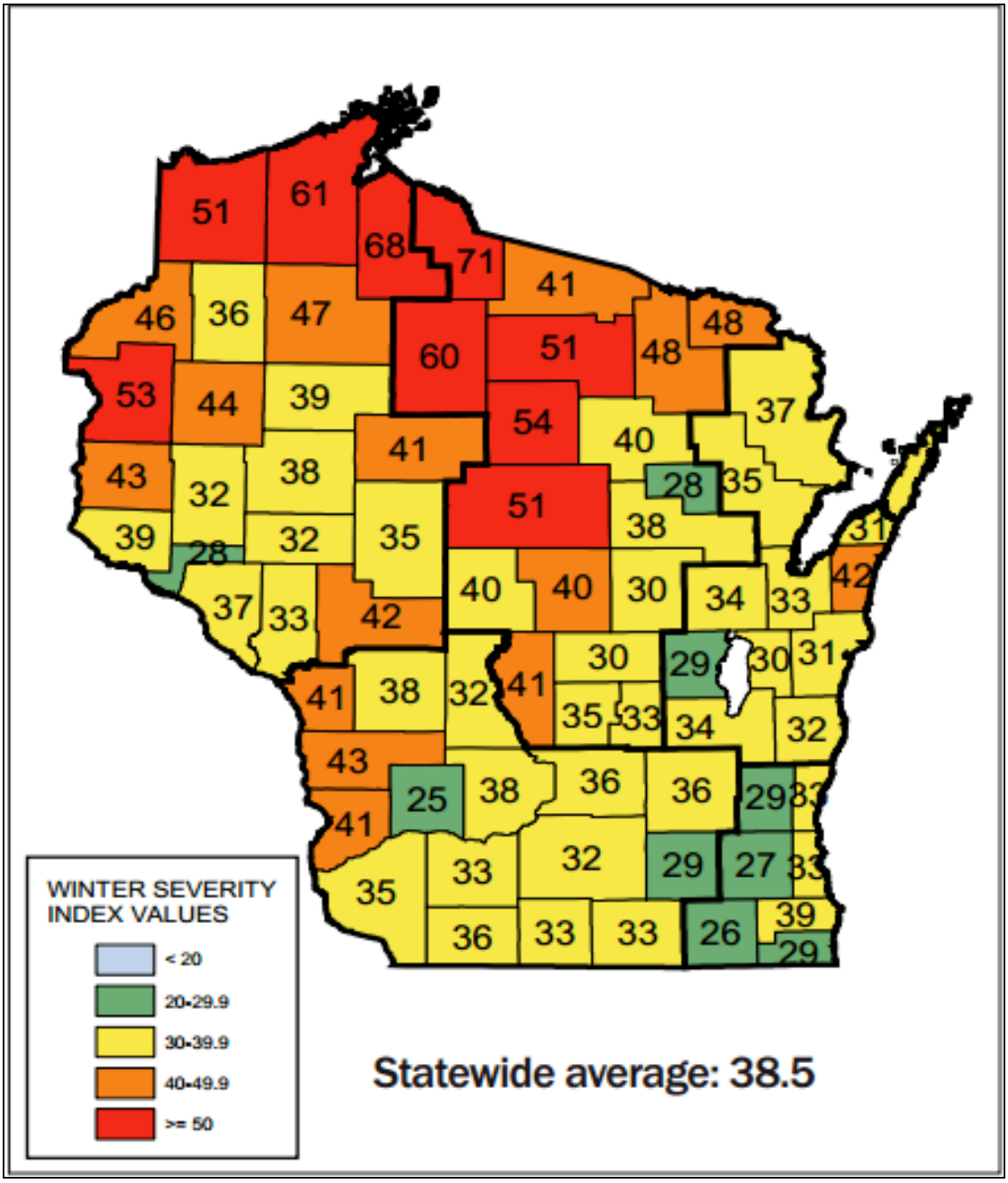
Note: The below map is in color. If you are not viewing a color copy, please contact the Compass Program Manager at the Bureau of Highway Operations for a color version to be mailed or emailed to you.

The National Weather Service (NWS) map below shows the snowfall for Wisconsin during the period July 1, 2010 to June 30, 2011.



2010-2011 Wisconsin Winter Severity Index

Note: The below map is in color. If you are not viewing a color copy, please contact the Compass Program Manager at the Bureau of Highway Operations for a color version to be mailed or emailed to you.
Wisconsin's Winter Severity Index (WSI) is highly correlated with snowfall. Looking at the statewide winter severity numbers, the statewide average for winter 2010-2011 was 38.45. The average for the previous ten-years (winter 2000-2001 to winter 2009-2010) is 31.9.



Winter by the numbers

		2006-07	2007-08	2008-09	2009-10	2010-11
Infrastructure	Lane miles	33,221 miles	33,297 miles	33,531 miles	33,532 miles	33,776 miles
	Road Weather Information System (RWIS) stations	58	59	58	58	60
Material usage[4]	Salt	405,793 tons 12.2 tons per lane mile	644,485 tons 19.4 tons per lane mile	569,985 tons 17.0 tons per lane mile	408,523 tons 12.2 tons per lane mile	573,253 tons 17.0 tons per lane mile
	Average cost of salt	$39.04 per ton	$41.69 per ton	$47.19 per ton	$60.92 per ton	$58.55 per ton
	Pre-wetting liquid used	745,919 gal.	1,293,655 gal.	1,321,290 gal.	1,099,971 gal	1,529,230 gal
	Anti-icing agent	485, 485 gal.	331,179 gal.	500,673 gal.	683,144 gal	714,860 gal
	Sand	13,636 cu. yd.	80,133 cu. yd.	44,179 cu. yd.	19,081 cu. yd.	18,941 cu. yd.
Services	Regular county hours on winter[5]	112,087 hrs.	178,682 hrs.	148,655 hrs.	133,715 hrs.	176,842 hrs.
	Overtime county hours on winter	120,603 hrs.	199,835 hrs.	176,636 hrs.	106,578 hrs.	175,373 hrs.
	Public service announcements aired	5,545 total 4,966 radio; 579 TV	6,786 total 6,109 radio; 677 TV	5,948 total 5,340 radio; 608 TV	6,754 total 6,122 radio; 632 TV	6,597 total 6,010 radio; 587 TV
	Cost of public service announcements	$35,000	$35,000 ($301,463 market value)	$46,500 ($288,895 market value)	$36,000 ($259,062 market value)	$36,000 ($209,144 market value)
Management and Technology	Patrol sections	768	768	762	767	759
	Average patrol section length	43.00 miles	43.36 miles	45.54 miles	43.72 miles	44.03 miles
	Salt spreaders equipped with on-board pre-wetting unit[6]	658 of 2586 (25%)	N/A	N/A	N/A	N/A
	Counties with salt spreaders equipped with on-board pre-wetting unit	56 of 72 (78%)	52 of 72(72%)	55 of 72 (76%)	55 of 72 (76%)	58 of 72 (80%)
	Salt spreaders equipped with ground-speed controller unit	1332of 2586 (52%)	N/A	N/A	N/A	N/A

[5] Costs and hours come from county storm reports, and reflect sanding, salting, plowing and anti-icing efforts.
[6] County equipment may be used on either state or county roads.
[4] All material usage quantities are from the county storm reports except for salt. The salt quantities are from the Salt Inventory Reporting System.

		2006-07	2007-08	2008-09	2009-10	2010-11
	Counties with salt spreaders equipped with ground-speed controller unit	65 of 72 (90%)	67 of 72(93%)	67 of 72 (93%)	67 of 72 (93%)	65 of 72 (90%)
	Underbody plows	507	565	572	572	589
	Counties with underbody plows	51 of 72 (71%)	55 of 72 (76%)	55 of 72 (76%)	55 of 72 (76%)	55 of 72 (76%)
	Counties equipped to use anti-icing agents	65 of 72 (90%)	65 of 72 (90%)	65 of 72 (90%)	65 of 72 (90%)	65 of 72 (90%)
	Counties that used anti-icing agents during 2007-08 winter season	56 of 72 (78%)	52 of 72 (72%)	54 of 72 (75%)	62 of 72 (86%)	61 of 72 (85%)

Compass winter operations measures

Time to bare/wet pavement

The counties, under contract to WisDOT, provide different levels of effort during and after a storm depending on how busy and how critical a given category of highway is. State highways fall into five such categories, with category 1 being the highest priority. It is expected that an urban freeway (category 1) receives more materials, labor and equipment – and consequently experiences shorter time to bare/wet pavement – than a rural two-lane highway (category 5).

The following table shows the average time to bare/wet pavement after storms end for each of the highway categories. In general, it is expected that the more critical the highway the shorter the average time to bare/wet pavement. This is true this year with the exception of highways in category 2 having the shortest time to bare/wet pavement.

Time to bare/wet pavement is measured from the reported end time of a storm. ‘Bare/wet never achieved’ means that it took more than 24 hours to achieve bare/wet condition, or the next storm began before the bare/wet condition was achieved. Less critical highways are more likely to have snow on them 24 hours after a storm has ended than are more critical highways. This suggests that major urban freeways and highways are receiving a higher level of effort for winter operations than secondary roads.

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

Highway category		Average time to bare/wet pavement (hours after end of storm)*					
		2005 - 06	2006 - 07	2007 - 08	2008-09	2009-10	2010-11
More critical highways	1	-1.21	-2.50	2.20	1.35	-1.02	-0.95
	2	0.2	-0.55	0.76	1.01	-1.58	-0.55
⇩	3	1.32	1.57	3.14	2.40	1.65	2.25
Less critical highways	4	2.47	2.70	4.01	3.06	2.32	1.39
	5	3.4	2.73	4.84	3.74	2.41	2.92

* Only includes storms where bare/wet pavement was achieved

Costs per lane mile versus winter severity index

The following table lists the WSI and total cost per lane mile for winter operations in each Region. The costs were obtained from the WisDOT's FOS (Financial Operating System). The statewide average cost per lane mile was $2,696 with average severity index of 38.5. Total costs include material, labor, equipment, and administrative costs.

Region	Average WSI				Cost/LM				Relative cost per WSI point			
	2007-08	2008 - 09	2009-10	**2010-11**	2007-08	2008 - 09	**2009-10**	**2010-11**	2007-08	2008 - 09	**2009-10**	**2010-11**
NC	41.2	43.0	28.7	43.4	$2,373	$2,183	$1,965	$2,448	$58	$51	$69	$56
NE	37.5	35.2	24.6	33.4	$2,618	$2,526	$2,234	$2,592	$70	$72	$91	$78
NW	35.7	36.2	28.0	42.2	$1,914	$1,918	$1,747	$2,397	$54	$53	$63	$57
SE	35.6	31.6	22.3	30.7	$3,233	$3,042	$2,906	$3,434	$91	$96	$130	$112
SW	35.1	31.2	25.7	35.0	$2,909	$2,366	$2,370	$2,716	$83	$76	$92	$78
Statewide	37.2	36.2	26.6	38.5	$2,591	$2,365	$2,052	$2,696	$70	$65	$81	$70

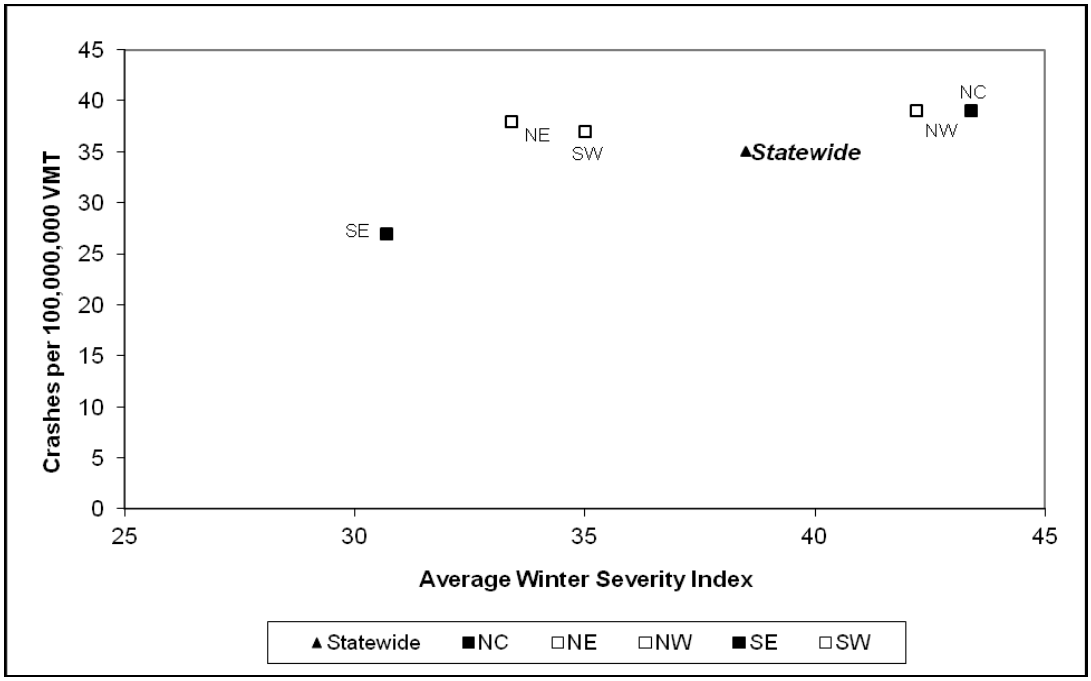
Winter weather crashes per vehicle miles traveled (VMT)

The following table shows the four-year trend of crashes per 100 million VMT statewide and in each Region. The state average is 35 winter crashes per 100 million VMT. In 2010-11 the NC and NW region have the largest number of crashes per VMT at 39 winter crashes per 100 million VMT.

Scope	VMT* (100 million)	Crashes	Crashes per 100 million VMT				Average Winter Severity Index			
			2007 - 08	**2008 - 09**	**2009-10**	**2010-11**	**2007 - 08**	**2008 - 09**	**2009-10**	**2010 -11**
NC	34.11	1,317	41	46	23	39	41.24	43.0	28.7	43.4
NE	47.44	1,803	43	47	25	38	37.53	35.2	24.6	33.4
NW	39.53	1,542	35	35	22	39	35.65	36.2	28.0	42.2
SE	81.82	2,263	37	35	16	27	35.57	31.6	22.3	30.7
SW	67.09	2,524	57	42	26	37	35.07	31.2	25.7	35.0
Statewide	269.9	9,449	43	40	22	35	37.20	36.2	26.6	38.5

*100 million vehicle miles traveled (VMT) for November 1, 2010 through April 30, 2011 determined from annual average daily traffic (AADT) counts, gallons of gas sold, fuel tax collected, and average vehicle miles per gallon.

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



Winter Data, Definitions, and Categories

Data

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

Definitions

Dollars: Cost data are from the fiscal year, July 1, 2010 to June 30, 2011.

Winter: November 1 through April 30, unless otherwise noted.
Winter Activities: Actual cost data incorporates all winter activities, including putting up snow fence, transporting salt, filling salt sheds, thawing out frozen culverts, calibrating salt spreaders, producing and storing salt brine, and anti-icing applications, as well as plowing and salting. Costs from storm reports, however, cover only plowing, sanding, salting, and anti-icing.
Roads: The roads referred to in this report are state maintained highways, including Interstate and US highways. See the following tables for groupings.

Categories & groupings

Winter service group assignments

Winter Service Group	County Name
A	Brown, Dane, Eau Claire, Kenosha, La Crosse, Marathon, Milwaukee, Ozaukee, Portage, Racine, Waukesha, Winnebago
B	hippewa, Columbia, Dodge, Dunn, Jefferson, Manitowoc, Marquette, Oneida, Outagamie, Rock, Sauk, Shawano, Sheboygan, St. Croix, Walworth, Washington, Waushara
C	Calumet, Clark, Crawford, Door, Douglas, Fond Du Lac, Grant, Iowa, Jackson, Juneau, Kewaunee, Lafayette, Lincoln, Monroe, Oconto, Trempealeau, Vernon, Vilas, Washburn, Waupaca, Wood
D	Adams, Ashland, Barron, Bayfield, Buffalo, Burnett, Florence, Forest, Green, Green Lake, Iron, Langlade, Marinette, Menominee, Pepin, Pierce, Polk, Price, Richland, Rusk, Sawyer, Taylor

Passable roadway expectation categories

Category	Definition	Lane miles	% of total
1	Major urban freeways and most highways with six lanes and greater	2,797	8%
2	High volume four-lane highways (ADT $\geq$ 25,000) and some four-lane highways (ADT < 25,000), and some 6-lane highways.	3,200	9%
3	All other four-lane highways (ADT < 25,000)	8,704	26%
4	Most high volume two-lane highways (ADT $\geq$ 5,000) and some 2-lanes (ADT <5000)	4,934	15%
5	All other two-lane highways	14,141	42%

2011 Bridges: Compass Report on Condition, Maintenance, and Inspection Backlog

The Compass bridge report uses data from the Highway Structures Information System (HSI) online report. Data was taken during the period of one week from May 2nd to May 8th, 2011.

Key observations:

Bridge Deck Condition Distribution

- 32% of decks statewide are in Fair condition and need reactive maintenance, based on their NBI ratings of 5 or 6. These include 26% of concrete bridges and 44% of steel bridges.
- The NW region has the lowest percent of decks in good condition, only 51% of decks in good condition. The SE region has the highest percentage of decks in poor condition at 3%. The SE region has the largest deck area to maintain (14,741,435 ft^2).
- The NE region (884 bridges) has the best bridge ratings in the state with 85% of decks in Good condition and an impressive 0% in Poor and Critical condition.

Bridge Maintenance Needs

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

Wisconsin 2011: Bridge Condition Distribution

	Bridges	Deck Area (ft^2)	Component	% of bridges in condition			
				Good[1]	Fair[2]	Poor[3]	Critical[3]
All	5,198	51,699,080	Decks	66%	32%	2%	0%
			Superstructures	71%	28%	1%	0%
			Substructures	71%	28%	1%	0%
Concrete	3,672	29,376,929	Decks	72%	26%	2%	0%
			Superstructures	80%	19%	1%	0%
			Substructures	80%	19%	0%	0%
Steel	1,526	22,322,151	Decks	53%	44%	3%	0%
			Superstructures	53%	45%	2%	0%
			Substructures	51%	48%	2%	0%

Region 2011: Bridge Condition Distribution

Region	Bridges	Deck Area (ft^2)	Component	% of bridges in condition			
				Good[1]	Fair[2]	Poor[3]	Critical[3]
NC	663	5,511,271	Decks	71%	27%	2%	0%
			Superstructures	82%	17%	1%	0%
			Substructures	78%	21%	1%	0%
NE	884	9,400,297	Decks	85%	15%	0%	0%
			Superstructures	84%	16%	1%	0%
			Substructures	79%	20%	1%	0%
NW	1,062	9,383,518	Decks	51%	47%	2%	0%
			Superstructures	66%	33%	2%	0%
			Substructures	69%	30%	1%	0%
SE	1,068	14,741,435	Decks	56%	41%	3%	0%
			Superstructures	53%	46%	1%	0%
			Substructures	56%	44%	1%	0%
SW	1,521	12,662,559	Decks	71%	27%	2%	0%
			Superstructures	76%	23%	2%	0%
			Substructures	74%	25%	1%	0%

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

Wisconsin and Regions 2011: Bridge Condition

Region	Year	Percent of Bridges Feature in Fair condition			Number of state-maintained bridges	Dollar spent on bridges (in millions)
		Decks	Superstructures	Substructures		
NC	2006	19%	14%	17%	604	
	2007	21%	15%	17%	620	
	2008	21%	17%	18%	637	
	2009	22%	16%	18%	650	
	2010	26%	17%	20%	653	
	2011	27%	17%	21%	663	
NE	2006	23%	15%	27%	771	
	2007	21%	17%	25%	837	
	2008	19%	18%	24%	859	
	2009	19%	19%	22%	874	
	2010	17%	18%	22%	878	
	2011	15%	16%	20%	884	
NW	2006	44%	35%	34%	1040	
	2007	47%	32%	31%	1067	
	2008	45%	31%	29%	1067	
	2009	47%	33%	29%	1072	
	2010	46%	32%	29%	1061	
	2011	47%	33%	30%	1062	
SE	2006	51%	52%	51%	1034	
	2007	48%	50%	50%	1023	
	2008	45%	47%	47%	1055	
	2009	41%	45%	45%	1052	
	2010	41%	45%	43%	1063	
	2011	41%	46%	44%	1068	
SW	2006	24%	20%	16%	1451	
	2007	24%	22%	18%	1462	
	2008	24%	23%	22%	1466	
	2009	24%	23%	23%	1470	
	2010	27%	23%	24%	1507	
	2011	27%	23%	25%	1521	
statewide	2006	33%	29%	29%	4900	$10.50
	2007	33%	28%	29%	5007	$11.40
	2008	32%	28%	29%	5084	$11.78
	2009	31%	28%	28%	5118	$11.87
	2010	32%	28%	28%	5162	$12.17
	2011	32%	28%	28%	5198	$11.62

Wisconsin and Regions: Trend of Bridge Maintenance Needs

Region	Year	Percent of Bridges needing maintenance								# of Bridges needing maintenance					
		Maintenance Action													
		Deck – Seal Surface Cracks		Expansion Joints – Seal		Misc. – Cut Brush		Approach – Seal Approach to Paving Block		Deck – Patching		Drainage - Repair Washouts / Erosion		Approach - Wedge Approach	
NC	**2006**	24%	144	8%	48	2%	12	1%	4	10%	61	1%	8	2%	14
	2007	39%	241	11%	66	4%	24	1%	5	12%	75	2%	11	3%	17
	2008	45%	287	22%	141	7%	42	2%	11	16%	101	8%	48	4%	26
	2009	56%	364	30%	194	11%	71	2%	12	16%	102	9%	58	5%	31
	2010	63%	413	42%	277	14%	93	3%	20	18%	120	14%	89	6%	39
	2011	72%	476	42%	281	16%	109	10%	65	19%	128	14%	92	10%	64
NE	**2006**	13%	102	22%	167	2%	18	2%	15	6%	48	7%	56	1%	5
	2007	18%	150	25%	209	4%	32	4%	37	9%	78	9%	78	1%	11
	2008	21%	182	28%	238	6%	53	12%	107	12%	103	13%	115	2%	13
	2009	28%	248	31%	268	7%	63	17%	147	15%	135	15%	127	1%	13
	2010	34%	300	33%	293	9%	79	24%	214	17%	150	16%	143	2%	19
	2011	37%	323	35%	306	9%	83	29%	260	19%	164	16%	144	2%	18
NW	**2006**	8%	78	1%	11	8%	85	17%	175	4%	37	5%	50	3%	31
	2007	7%	77	2%	24	5%	57	16%	174	4%	37	4%	45	2%	25
	2008	2%	22	3%	28	1%	16	5%	51	3%	29	5%	49	1%	14
	2009	3%	35	3%	34	2%	21	9%	97	5%	52	6%	67	3%	28
	2010	4%	41	3%	37	4%	43	11%	121	7%	74	9%	93	3%	35
	2011	4%	45	4%	43	5%	56	14%	153	9%	95	13%	135	4%	38
SE	**2006**	12%	122	15%	150	13%	138	6%	63	8%	87	11%	112	11%	109
	2007	14%	140	18%	181	17%	174	9%	89	9%	96	12%	121	12%	126
	2008	15%	153	19%	203	21%	226	14%	147	11%	121	13%	140	14%	147
	2009	16%	172	20%	213	23%	238	17%	177	14%	145	16%	164	15%	159
	2010	18%	192	22%	233	25%	268	21%	226	15%	155	19%	201	17%	176
	2011	21%	228	22%	240	26%	277	25%	269	16%	174	22%	230	17%	178
SW	**2006**	8%	114	3%	39	5%	68	5%	74	2%	33	3%	46	4%	65
	2007	13%	188	4%	51	12%	174	10%	146	4%	65	6%	83	7%	95
	2008	18%	260	4%	61	18%	257	14%	203	6%	94	9%	131	9%	138
	2009	20%	293	4%	66	25%	369	21%	308	8%	112	12%	181	11%	162
	2010	23%	354	5%	69	29%	443	27%	400	9%	134	15%	229	13%	196
	2011	28%	424	5%	71	34%	515	33%	504	10%	150	18%	277	14%	214
statewide	**2006**	11%	560	8%	415	7%	321	7%	331	5%	266	6%	272	5%	224
	2007	16%	796	11%	531	9%	461	9%	451	7%	351	7%	338	5%	274
	2008	17%	904	12%	671	11%	594	10%	519	8%	448	9%	483	6%	338

Region	Year	Percent of Bridges needing maintenance								# of Bridges needing maintenance					
		Maintenance Action													
		Deck – Seal Surface Cracks		Expansion Joints – Seal		Misc. – Cut Brush		Approach – Seal Approach to Paving Block		Deck – Patching		Drainage - Repair Washouts / Erosion		Approach - Wedge Approach	
	2009	22%	1112	15%	775	15%	762	14%	741	11%	546	12%	597	8%	393
	2010	25%	1300	18%	909	18%	926	19%	981	12%	633	15%	755	9%	465
	2011	29%	1496	18%	941	20%	1040	24%	1251	14%	711	17%	878	10%	512

Appendices

A. **Program Contributors**
B. **Feature Thresholds and Grade Ranges**
C. **Feature Contribution Categories**
D. **WisDOT Highway Operations 2011 Target Service Levels**
E. **2011 Maintenance Targets**
F. **2011 Compass Rating Sheet**
G. **County Data:**
    1. **Field Review: Traffic, Shoulders, Drainage and Roadside**
    2. **Signs (routine replacement needs)**
    3. **Bridge Maintenance Needs**

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B. 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
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)	4%	9%	18%	30%	>30%
	Delineators	Missing OR not visible at posted speed OR damaged (by delineator)	5%	12%	23%	40%	>40%
	Detour/object marker/recreation/guide signs (emergency repair)	Missing OR not visible at posted speed (by sign)	4%	9%	18%	30%	>30%
	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)	4%	9%	18%	30%	>30%
	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)	5%	12%	23%	40%	>40%
	Special pavement markings	Missing OR not functioning as intended (by marking)	5%	12%	23%	40%	>40%
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)	7%	18%	35%	60%	>60%
	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)	6%	15%	29%	50%	>50%
	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)	7%	18%	35%	60%	>60%
	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)	7%	18%	35%	60%	>60%
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)	7%	18%	35%	60%	>60%

Element	Feature	Threshold	Ranges for System Grades *Grade determined by percent backlogged* shown: top of range				
			A	B	C	D	F
	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)	9%	22%	41%	70%	>70%
	Ditches	Ditch with greater than minimal erosion of ditch line OR obstructions to flow of water requiring action (by linear feet of ditch)	7%	18%	35%	60%	>60%
	Flumes	Not functioning as intended OR deteriorated to the point that they are causing erosion (by flume)	7%	18%	35%	60%	>60%
	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)	7%	18%	35%	60%	>60%
	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)	9%	22%	41%	70%	>70%
Roadsides	Fences	Fence missing OR not functioning as intended (by LF of fence)	4%	9%	18%	30%	>30%
	Litter	Any pieces of litter on shoulders and roadside visible at posted speed, but not causing a safety threat. (by mile)	10%	25%	47%	80%	>80%
	Mowing	Any roadside has mowed grass that is too short, too wide or is mowed in a no-mow zone (by mile)	10%	25%	47%	80%	>80%
	Mowing for vision	Any instances in which grass is too high or blocks a vision triangle (by mile)	4%	9%	18%	30%	>30%
	Woody vegetation control	Any instances in which a tree is present in the clear zone OR trees and/or branches overhang the roadway or shoulder creating a clearance problem (by mile)	4%	9%	18%	30%	>30%
	Woody vegetation control for vision	Any instances in which woody vegetation blocks a vision triangle (by mile)	4%	9%	18%	30%	>30%

C. Feature Contribution Categories

		This Feature Contributes Primarily To:				
Element	**Feature**	**Critical Safety**	**Safety/ Mobility**	**Ride/ Comfort**	**Stewardship**	**Aesthetics**
Asphalt Traveled Way	Alligator Cracking				✓	
	Block Cracking				✓	
	Edge Raveling				✓	
	Flushing				✓	
	Longitudinal Cracking				✓	
	Longitudinal Distortion			✓		
	Patch Deterioration			✓		
	Rutting	✓				
	Surface Raveling			✓		
	Transverse Cracking				✓	
	Transverse Distortion			✓		
Concrete Traveled Way	Distressed Joints/Cracks			✓		
	Longitudinal Joint Distress			✓		
	Patch Deterioration			✓		
	Slab Breakup			✓		
	Surface Distress				✓	
	Transverse Faulting			✓		

		This Feature Contributes Primarily To:				
Element	**Feature**	**Critical Safety**	**Safety/ Mobility**	**Ride/ Comfort**	**Stewardship**	**Aesthetics**
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		✓			
Shoulders	Hazardous Debris	✓				
	Cracking (paved)				✓	
	Drop-off/Build-up (paved)	✓				
	Potholes/Raveling (paved)			✓		
	Cross-Slope (unpaved)			✓		
	Drop-off/Build-up (unpaved)	✓				
	Erosion (unpaved)				✓	

		This Feature Contributes Primarily To:				
Element	**Feature**	**Critical Safety**	**Safety/ Mobility**	**Ride/ Comfort**	**Stewardship**	**Aesthetics**
Drainage	Culverts				✓	
	Curb & Gutter				✓	
	Ditches				✓	
	Flumes				✓	
	Storm Sewer System				✓	
	Under-drains/Edge-drains				✓	
Roadside	Fences		✓			
	Litter					✓
	Mowing		✓			
	Mowing for Vision		✓			
	Woody Vegetation		✓			
	Woody Veg. Control for Vision		✓			

Category Definitions:

Critical safety: Critical safety features that would necessitate immediate action – with overtime pay if necessary - 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 or decorative structures, located along a highway corridor. Also, the absence of things like litter and graffiti, that detract from the sightlines of the road.

D. 2011 Target Service Levels Memo

WisDOT Highway Operations 2011 Target Service Levels

October 14, 2010

Issued by
David Vieth, Director of the Bureau of Highway Operations (BHO)

Attached are the 2011 target service levels for highway operations. Highway operations managers set these targets to provide guidance to central office and regional highway operations staff in prioritizing activities and expending resources. The 2011 targets are critical for structuring the 2011 Routine Maintenance Agreements (RMA). **The targets are consistent with the 2011 RMA guidance that I also sent to regions today.**

Targets are the conditions expected on state highways at the end of the summer maintenance season. They were selected by highway operations managers in the regions and BHO 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 operations needs, we would expect to see features at or close to 0%. The following chart provides historical service levels statewide and by region for 2009. Please remember targets have not yet been set for a portion of highway operations expenditures including winter operations, certain traffic 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, these organizational priorities include:

- Focusing our resources on keeping the system safe and operating from day to day. Highway operations will:
  - Decrease the amount of hazardous debris on shoulders.
  - Decrease drop-off on unpaved shoulders.
  - Continue routine replacement of regulatory and warning signs.
  - Repair damaged safety appurtenances and signs.
- Expending far fewer resources because of limited funding.
  - Litter control is limited to once in the spring and Adopt-A-Highway efforts continue to be encouraged.
  - 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. Mowing for woody vegetation shall be accomplished with the normal shoulder cut and shall not be done as a standalone work activity.
  - Routine crack sealing and non-emergency concrete repair for preventive maintenance purposes should not be undertaken with routine maintenance funds.

    - 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. Some edgeline markings will be deferred.
- 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 decrease pavement rutting and to improve the condition of culverts.

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

E.2011 Highway Operations Targets

Element	Feature	2005 Target Percent Backlogged and Feature Grade - Statewide	2006 Target Percent Backlogged and Feature Grade - Statewide	2007 Target Percent Backlogged and Feature Grade - Statewide	2008 Target Percent Backlogged and Feature Grade - Statewide	2009 Target Percent Backlogged and Feature Grade - Statewide	2010 Target Percent Backlogged and Feature Grade - Statewide	2011 Target Percent Backlogged and Feature Grade - Statewide
Shoulders	Hazardous Debris	6=C	6=C	6=C	6=C	6=C	6=C	6=C
	Drop-off/Build-up (paved)	N/A	N/A	N/A	N/A	N/A	N/A	4=B
	Cracking (paved)	60=D	60=D	60=D	60=D	60=D	70=F	70=F
	Potholes/Raveling (paved)	10=B	10=B	10=B	10=B	10=B	10=B	10=B
	Cross-Slope (unpaved)	20=C	20=C	20=C	20=C	20=C	20=C	20=C
	Drop-off/Build-up (unpaved)	35=F	30=D	25=D	20=D	20=F	35=F	30=F
	Erosion (unpaved)	5=A	5=A	5=A	5=A	5=A	5=A	5=A
Drainage	Culverts	15=B	15=B	15=B	15=B	20=C	30=C	30=C
	Curb & Gutter	8=A	10=B	10=B	10=B	10=B	10=B	10=B
	Ditches	2=A	2=A	2=A	5=A	5=A	5=A	5=A
	Flumes	30=C	30=C	30=C	30=C	30=C	35=C	35=C
	Storm Sewer System	10=B	10=B	10=B	10=B	15=B	15=B	15=B
	Under-drains/Edge-drains	20=B	25=C	25=C	25=C	25=C	30=C	30=C
Roadside	Fences	14=C	14=C	14=C	14=C	14=C	14=C	14=C
	Litter	75=D	75=D	75=D	75=D	75=D	81=F	81=F
	Mowing	40=C	40=C	40=C	40=C	40=C	40=C	40=C

Element	Feature	2005 Target Percent Backlogged and Feature Grade - Statewide	2006 Target Percent Backlogged and Feature Grade - Statewide	2007 Target Percent Backlogged and Feature Grade - Statewide	2008 Target Percent Backlogged and Feature Grade - Statewide	2009 Target Percent Backlogged and Feature Grade - Statewide	2010 Target Percent Backlogged and Feature Grade - Statewide	2011 Target Percent Backlogged and Feature Grade - Statewide
	Mowing for Vision	5=B	5=B	5=B	5=B	5=B	5=B	5=B
	Woody Vegetation	5=B	5=B	5=B	5=B	5=B	5=B	5=B
	Woody Veg. Control for Vision	5=B	3=A	3=A	3=A	3=A	3=A	2=A
Traffic and Safety	Centerline Markings	5=B	5=B	6=C	5=B	5=B	5=B	5=B
	Delineators	15=C	25=D	25=D	25=D	25=D	25=D	25=D
	Edgeline Markings	6=B	6=B	7=B	6=B	8=C	8=B	8=B
	Detour/object marker/recreation/guide signs (emerg. repair)	1=A	1=A	1=A	1=A	1=A	1=A	1=A
	Detour/object marker/recreation/guide signs (routine repair)	50=D	65=F	70=F	70=F	70=F	59=D	59=D
	Protective Barriers	3=A	3=A	3=A	3=A	3=A	3=A	3=A
	Reg./Warning Signs (emerg.)	0=A	0=A	0=A	0=A	0=A	0=A	0=A
	Reg./Warning Signs (routine)	40=D	35=D	30=D	25=D	25=D	25=D	25=D
	Special Pavement Markings	25=D	25=D	25=D	25=D	25=D	23=C	23=C
Asphalt Traveled	Alligator Cracking	5=A	5=A	5=A	5=A	5=A	5=A	5=A

Element	Feature	2005 Target Percent Backlogged and Feature Grade - Statewide	2006 Target Percent Backlogged and Feature Grade - Statewide	2007 Target Percent Backlogged and Feature Grade - Statewide	2008 Target Percent Backlogged and Feature Grade - Statewide	2009 Target Percent Backlogged and Feature Grade - Statewide	2010 Target Percent Backlogged and Feature Grade - Statewide	2011 Target Percent Backlogged and Feature Grade - Statewide
Way								
	Block Cracking	5=A	5=A	5=A	5=A	5=A	5=A	5=A
	Edge Raveling	15=B	18=B	20=C	20=C	20=C	20=C	20=C
	Flushing	1=A	1=A	1=A	1=A	1=A	1=A	1=A
	Longitudinal Cracking	25=C	28=C	30=C	30=C	65=F	65=F	65=F
	Longitudinal Distortion	1=A	1=A	1=A	1=A	1=A	1=A	1=A
	Patch Deterioration	10=B	10=B	10=B	10=B	10=B	10=B	10=B
	Rutting	15=D	13=D	10=D	7=B	7=C	7=C	7=C
	Surface Raveling	2=A	2=A	2=A	2=A	2=A	2=A	2=A
	Transverse Cracking	25=C	28=C	30=C	30=C	67=F	67=F	67=F
	Transverse Distortion	5=A	5=A	5=A	5=A	5=A	5=A	5=A
Concrete Traveled Way	Distressed Joints/Cracks	43=D	43=D	43=D	43=D	43=D	43=D	43=D
	Longitudinal Joint Distress	27=C	27=C	27=C	27=C	27=C	27=C	27=C
	Patch Deterioration	30=D	30=D	30=D	30=D	30=D	30=D	30=D
	Slab Breakup	45=D	45=D	45=D	45=D	45=D	45=D	45=D
	Surface Distress	25=C	25=C	25=C	25=C	25=C	25=C	25=C
	Transverse Faulting	75=F	75=F	75=F	75=F	88=F	88=F	88=F

F. 2011 Compass Rating Sheet

2011 Compass Rating Sheet
Wisconsin Department of Transportation

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

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

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

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

Shoulders	Standard	Value	Comments
Hazardous Debris (S-1)	Number of items large enough to cause a safety hazard.....		
Paved Shoulder	☐None (If none, skip to Unpaved Shoulder)		
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 ft² x 1" deep.....		
Unpaved Shoulder	☐ None (If none, skip to Drainage) Unpaved Shoulder Width=_____		
Drop off/ build-up (S-5)	Linear feet of paved-to-unpaved drop-off/build-up greater than 1.5"=_____ Percentage of the segment with unpaved shoulder paved-to-unpaved drop-off/build-up greater than 1.5" *(select a corresponding check box in the "value" column to the right)*.....	Segment Deficient: ☐ 0% ☐ 1%-33% ☐ 34%-66% ☐ 67%-100%	
Cross Slope (S-6)	Linear feet with unpaved cross slope greater than twice the planned angle=_____ Percentage of the segment with unpaved shoulder cross slope greater than twice the planned angle *(select a corresponding check box in the "value" column to the right)*.....	Segment Deficient: ☐ 0% ☐ 1%-33% ☐ 34%-66% ☐ 67%-100%	
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)	Mowing meets standard If NO, grass is mowed: ☐ too wide ☐ too short ☐ too tall ☐ in a no mow zone If NO, why: ☐ safety/equipment ☐ mowed by property owner ☐ woody vegetation control ☐ maintenance decision		☐yes ☐no	
🚗 **Mowing Vision** (R-2)	☐ None	Grass blocks a vision triangle or sightlines	☐yes ☐no	
Woody Vegetation (R-3)	Number of instances in which a tree > 4" in diameter is present in the clear zone OR trees and/or branches overhang the roadway or shoulder creating a clearance problem			
🚗 **Woody Vegetation Vision** (R-3)	Woody vegetation causes a vision problem		☐yes ☐no	
Fences (R-4)	☐ None	Total linear feet of right-of-way fence Linear feet missing OR not functioning as intended	 	

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

🚗 Indicates some or all of feature rating must be completed while driving at posted speed OR rated through the eyes of a driver traveling at posted speed.

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

Rating Sheets should be entered into the LAN database **by October 15, 2011.** Please send the hardcopy Rating Sheets Inter-D to Scott Bush, Hill Farms, Room 501 **by October 15, 2011.**

Questions? Please call Scott Bush, Compass Program Manager at 608-266-8666 or email at Scott.Bush@dot.wi.gov

G. County Data

Counties 2011: Shoulders and Drainage

		Condition % backlogged # of observations												
		Shoulders							**Drainage**					
Region	County	Hazardous Debris	Paved Dropoff	Paved Cracking	Paved Potholes/Raveling	Unpaved Dropoff	Unpaved Cross slope	Unpaved Erosion	Ditches	Culverts	Under-drains/edge-drains	Flumes	Curb & Gutter	Storm Sewer
NC	ADAMS	11%	0%	33%	0%	22%	0%	0%	0%	100%	--	100%	0%	--
		9	9	9	9	9	9	9	9	2	--	1	1	--
	FLORENCE	0%	0%	29%	0%	29%	43%	0%	0%	0%	--	--	--	--
		7	7	7	7	7	7	7	7	1	--	--	--	--
	FOREST	6%	0%	55%	0%	40%	73%	0%	0%	33%	--	--	5%	17%
		16	11	11	11	15	15	15	12	6	--	--	2	1
	GREEN LAKE	14%	0%	71%	0%	29%	0%	0%	0%	0%	--	--	--	--
		7	7	7	7	7	7	7	6	4	--	--	--	--
	IRON	0%	0%	33%	0%	8%	50%	0%	0%	17%	--	0%	79%	--
		12	6	6	6	12	12	12	10	5	--	1	1	--
	LANGLADE	0%	0%	82%	0%	40%	53%	0%	0%	29%	--	0%	7%	--
		15	11	11	11	15	15	15	15	6	--	1	1	--
	LINCOLN	6%	7%	50%	0%	50%	56%	0%	7%	33%	6%	--	--	--

		Condition % backlogged # of observations												
		Shoulders							Drainage					
Region	County	Hazardous Debris	Paved Dropoff	Paved Cracking	Paved Potholes/Raveling	Unpaved Dropoff	Unpaved Cross slope	Unpaved Erosion	Ditches	Culverts	Under-drains/edge-drains	Flumes	Curb & Gutter	Storm Sewer
		16	14	14	14	16	16	16	16	3	3	--	--	--
		4%	18%	54%	7%	64%	68%	7%	39%	38%	51%	100%	1%	11%
	MARATHON	28	28	28	28	28	28	28	28	7	11	4	5	7
		13%	0%	75%	75%	100%	38%	0%	0%	67%	--	0%	0%	--
	MARQUETTE	8	8	8	8	8	8	8	8	3	--	1	1	--
		0%	0%	0%	0%	75%	25%	0%	0%	33%	--	--	--	--
	MENOMINEE	4	2	2	2	4	4	4	4	3	--	--	--	--
		6%	0%	38%	0%	25%	50%	0%	0%	33%	--	0%	0%	9%
	ONEIDA	17	16	16	16	16	16	16	17	3	--	1	4	2
		19%	7%	71%	0%	47%	0%	0%	0%	100%	0%	--	0%	0%
	PORTAGE	16	14	14	14	15	15	15	13	1	6	--	1	5
		0%	0%	69%	8%	50%	71%	7%	1%	0%	--	--	--	--
	PRICE	16	13	13	13	14	14	14	15	6	--	--	--	--
		0%	7%	60%	0%	78%	67%	0%	0%	0%	9%	0%	4%	0%
	SHAWANO	18	15	15	15	18	18	18	17	3	3	1	2	1
		0%	0%	62%	0%	31%	31%	0%	1%	0%	--	--	6%	9%
	VILAS	15	13	13	13	13	13	13	14	3	--	--	2	2

		Condition % backlogged # of observations												
		Shoulders							**Drainage**					
Region	County	Hazardous Debris	Paved Dropoff	Paved Cracking	Paved Potholes/Raveling	Unpaved Dropoff	Unpaved Cross slope	Unpaved Erosion	Ditches	Culverts	Under-drains/edge-drains	Flumes	Curb & Gutter	Storm Sewer
		14%	0%	56%	17%	24%	0%	5%	0%	0%	--	40%	0%	0%
	WAUPACA	21	18	18	18	21	21	21	21	3	--	2	5	4
		0%	0%	31%	8%	23%	0%	8%	0%	0%	0%	--	0%	0%
	WAUSHARA	14	13	13	13	13	13	13	14	3	1	--	1	1
		0%	0%	80%	0%	40%	7%	0%	0%	--	0%	0%	0%	33%
	WOOD	18	10	10	10	15	15	15	13	--	1	1	3	2
		0%	0%	94%	6%	67%	0%	0%	0%	0%	--	0%	1%	0%
NE	BROWN	16	16	16	16	15	15	15	15	3	--	1	2	2
		9%	10%	90%	10%	30%	70%	0%	6%	0%	13%	--	2%	13%
	CALUMET	11	10	10	10	10	10	10	10	1	2	--	4	3
		9%	9%	55%	9%	55%	9%	0%	0%	0%	--	0%	0%	0%
	DOOR	11	11	11	11	11	11	11	9	2	--	1	2	3
		15%	5%	60%	15%	32%	53%	5%	0%	0%	0%	--	0%	10%
	FOND DU LAC	20	20	20	20	19	19	19	19	3	6	--	4	7
		0%	0%	67%	0%	17%	0%	0%	0%	0%	--	0%	0%	--
	KEWAUNEE	6	6	6	6	6	6	6	6	1	--	1	1	--
	MANITOWOC	20%	0%	71%	0%	23%	31%	0%	0%	0%	--	100%	0%	0%

		Condition % backlogged # of observations												
		Shoulders							Drainage					
Region	County	Hazardous Debris	Paved Dropoff	Paved Cracking	Paved Potholes/Raveling	Unpaved Dropoff	Unpaved Cross slope	Unpaved Erosion	Ditches	Culverts	Under-drains/edge-drains	Flumes	Curb & Gutter	Storm Sewer
		15	14	14	14	13	13	13	15	2	--	1	4	2
		19%	0%	38%	0%	13%	31%	0%	2%	0%	--	--	2%	25%
	MARINETTE	16	16	16	16	16	16	16	16	2	--	--	2	2
		0%	7%	67%	0%	14%	50%	0%	0%	11%	0%	0%	0%	14%
	OCONTO	16	15	15	15	14	14	14	15	9	2	1	2	3
		28%	0%	77%	8%	50%	63%	6%	2%	50%	0%	50%	5%	14%
	OUTAGAMIE	18	13	13	13	16	16	16	17	2	1	1	4	3
		24%	6%	82%	6%	63%	44%	0%	0%	20%	0%	27%	2%	18%
	SHEBOYGAN	17	17	17	17	16	16	16	16	9	1	3	4	5
		0%	0%	56%	6%	33%	7%	0%	0%	17%	8%	--	2%	0%
	WINNEBAGO	16	16	16	16	15	15	15	16	6	4	--	4	1
		0%	0%	60%	0%	50%	0%	0%	3%	100%	--	--	--	--
NW	ASHLAND	12	10	10	10	12	12	12	11	1	--	--	--	--
		0%	0%	47%	0%	7%	0%	0%	0%	0%	--	100%	24%	0%
	BARRON	15	15	15	15	15	15	15	15	6	--	1	1	2
		0%	0%	46%	15%	71%	41%	0%	13%	33%	--	--	--	--
	BAYFIELD	17	13	13	13	17	17	17	15	6	--	--	--	--

		Condition % backlogged # of observations												
		Shoulders							Drainage					
Region	County	Hazardous Debris	Paved Dropoff	Paved Cracking	Paved Potholes/Raveling	Unpaved Dropoff	Unpaved Cross slope	Unpaved Erosion	Ditches	Culverts	Under-drains/edge-drains	Flumes	Curb & Gutter	Storm Sewer
	BUFFALO	0%	0%	71%	21%	62%	62%	0%	0%	45%	--	--	7%	--
		16	14	14	14	13	13	13	15	7	--	--	2	--
	BURNETT	0%	0%	80%	10%	55%	9%	0%	1%	0%	--	--	--	--
		11	10	10	10	11	11	11	10	3	--	--	--	--
	CHIPPEWA	9%	5%	74%	0%	41%	0%	0%	0%	7%	91%	100%	0%	20%
		22	19	19	19	22	22	22	21	10	4	1	1	3
	CLARK	0%	0%	35%	0%	12%	0%	0%	0%	0%	0%	--	100%	0%
		17	17	17	17	17	17	17	17	6	3	--	1	1
	DOUGLAS	6%	0%	63%	6%	31%	19%	0%	0%	0%	0%	--	71%	--
		16	16	16	16	16	16	16	14	1	1	--	2	--
	DUNN	0%	0%	52%	5%	33%	10%	0%	1%	33%	--	--	3%	0%
		21	21	21	21	21	21	21	20	3	--	--	1	4
	EAU CLAIRE	0%	0%	60%	7%	40%	7%	0%	0%	29%	100%	0%	0%	8%
		16	15	15	15	15	15	15	15	7	1	1	1	2
	JACKSON	0%	0%	100%	7%	59%	71%	0%	0%	36%	--	--	20%	0%
		20	14	14	14	17	17	17	17	10	--	--	3	4
	PEPIN	0%	0%	75%	0%	25%	0%	0%	0%	0%	--	--	--	--

		Condition % backlogged # of observations												
		Shoulders							Drainage					
Region	County	Hazardous Debris	Paved Dropoff	Paved Cracking	Paved Potholes/Raveling	Unpaved Dropoff	Unpaved Cross slope	Unpaved Erosion	Ditches	Culverts	Under-drains/edge-drains	Flumes	Curb & Gutter	Storm Sewer
		4	4	4	4	4	4	4	4	1	--	--	--	--
		0%	0%	88%	0%	29%	0%	0%	0%	0%	--	0%	0%	--
	PIERCE	17	16	16	16	17	17	17	17	6	--	1	3	--
		6%	0%	14%	21%	33%	33%	0%	0%	0%	--	--	6%	0%
	POLK	17	14	14	14	15	15	15	14	3	--	--	5	3
		0%	0%	38%	0%	10%	0%	0%	0%	--	--	100%	13%	0%
	RUSK	11	8	8	8	10	10	10	10	--	--	1	2	1
		0%	0%	56%	19%	12%	6%	0%	0%	14%	--	--	--	--
	SAWYER	17	16	16	16	17	17	17	13	5	--	--	--	--
		0%	0%	65%	20%	14%	29%	0%	6%	50%	--	0%	3%	21%
	ST. CROIX	22	20	20	20	21	21	21	21	6	--	1	4	7
		0%	0%	58%	0%	33%	17%	0%	0%	0%	--	--	5%	0%
	TAYLOR	12	12	12	12	12	12	12	12	3	--	--	1	1
		0%	0%	56%	11%	44%	50%	6%	1%	13%	--	0%	3%	0%
	TREMPEALEAU	19	18	18	18	18	18	18	15	8	--	1	3	1
		0%	20%	53%	7%	40%	0%	13%	0%	--	--	--	--	0%
	WASHBURN	15	15	15	15	15	15	15	14	--	--	--	--	2

		Condition % backlogged # of observations												
		Shoulders							**Drainage**					
Region	County	Hazardous Debris	Paved Dropoff	Paved Cracking	Paved Potholes/Raveling	Unpaved Dropoff	Unpaved Cross slope	Unpaved Erosion	Ditches	Culverts	Under-drains/edge-drains	Flumes	Curb & Gutter	Storm Sewer
SE		0%	0%	67%	0%	63%	38%	0%	15%	0%	33%	--	1%	53%
	KENOSHA	11	6	6	6	8	8	8	9	2	1	--	4	5
		35%	0%	41%	0%	50%	0%	0%	31%	100%	50%	--	0%	17%
	MILWAUKEE	17	17	17	17	2	2	2	12	3	1	--	13	16
		25%	38%	75%	13%	75%	50%	13%	0%	50%	92%	--	0%	25%
	OZAUKEE	8	8	8	8	8	8	8	8	2	3	--	1	3
		0%	7%	60%	7%	69%	62%	15%	4%	43%	0%	0%	0%	16%
	RACINE	15	15	15	15	13	13	13	15	6	2	1	6	5
		27%	0%	68%	5%	45%	50%	9%	1%	--	0%	20%	2%	8%
	WALWORTH	22	22	22	22	22	22	22	20	--	6	3	6	7
		17%	18%	88%	12%	33%	17%	0%	4%	25%	78%	--	0%	10%
	WASHINGTON	18	17	17	17	18	18	18	15	4	4	--	2	3
		13%	0%	56%	6%	29%	6%	0%	0%	25%	50%	43%	0%	14%
	WAUKESHA	23	18	18	18	17	17	17	14	3	2	4	12	10
SW		11%	0%	69%	12%	55%	73%	0%	4%	60%	57%	0%	12%	18%
	COLUMBIA	28	26	26	26	22	22	22	26	8	2	1	6	6
	CRAWFORD	0%	0%	42%	0%	28%	17%	0%	6%	23%	--	--	0%	0%

		Condition % backlogged # of observations												
		Shoulders							**Drainage**					
Region	County	Hazardous Debris	Paved Dropoff	Paved Cracking	Paved Potholes/Raveling	Unpaved Dropoff	Unpaved Cross slope	Unpaved Erosion	Ditches	Culverts	Under-drains/edge-drains	Flumes	Curb & Gutter	Storm Sewer
		19	12	12	12	18	18	18	18	10	--	--	2	1
		25%	9%	82%	6%	21%	3%	3%	0%	38%	83%	100%	6%	59%
	DANE	40	34	34	34	39	39	39	38	5	7	2	9	9
		4%	5%	76%	0%	26%	42%	5%	0%	63%	82%	40%	1%	32%
	DODGE	24	21	21	21	19	19	19	21	7	4	4	6	9
		0%	0%	68%	0%	44%	28%	0%	0%	0%	--	--	--	--
	GRANT	26	19	19	19	25	25	25	26	12	--	--	--	--
		8%	0%	60%	0%	38%	15%	0%	0%	20%	--	0%	2%	--
	GREEN	13	10	10	10	13	13	13	13	5	--	1	1	--
		0%	0%	44%	0%	33%	6%	0%	0%	0%	--	--	0%	0%
	IOWA	18	16	16	16	18	18	18	17	4	--	--	3	1
		6%	6%	76%	12%	38%	85%	0%	5%	75%	--	50%	1%	30%
	JEFFERSON	18	17	17	17	13	13	13	17	4	--	4	4	3
		0%	12%	47%	0%	5%	0%	0%	0%	0%	0%	--	--	--
	JUNEAU	20	17	17	17	19	19	19	19	3	3	--	--	--
		64%	0%	75%	33%	25%	50%	0%	0%	29%	--	100%	35%	24%
	LA CROSSE	14	12	12	12	4	4	4	13	5	--	2	4	7

		Condition % backlogged # of observations												
		Shoulders							**Drainage**					
Region	County	Hazardous Debris	Paved Dropoff	Paved Cracking	Paved Potholes/Raveling	Unpaved Dropoff	Unpaved Cross slope	Unpaved Erosion	Ditches	Culverts	Under-drains/edge-drains	Flumes	Curb & Gutter	Storm Sewer
	LAFAYETTE	0%	0%	23%	0%	29%	7%	0%	0%	20%	--	0%	0%	0%
		14	13	13	13	14	14	14	14	5	--	1	3	1
	MONROE	0%	0%	50%	5%	22%	11%	0%	2%	30%	--	--	0%	0%
		25	20	20	20	18	18	18	20	10	--	--	2	1
	RICHLAND	6%	0%	44%	13%	44%	25%	0%	1%	13%	--	0%	94%	0%
		16	16	16	16	16	16	16	15	6	--	1	2	2
	ROCK	0%	0%	76%	0%	21%	0%	0%	0%	38%	0%	0%	1%	0%
		24	21	21	21	24	24	24	24	7	3	1	2	3
	SAUK	17%	11%	26%	0%	11%	0%	0%	0%	10%	100%	100%	0%	100%
		23	19	19	19	18	18	18	21	8	1	1	2	1
	VERNON	9%	15%	62%	0%	71%	29%	0%	0%	9%	--	67%	2%	17%
		22	13	13	13	17	17	17	21	9	--	3	3	2

Counties 2011: Roadsides and Traffic

		Condition % backlogged # of observations												
		Roadsides						Traffic						
Region	County	Litter	Mowing	Mowing for Vision	Woody Vegetation Control	Woody Vegetation Control for Vision	Fences	Centerline Markings	Edgeline Markings	Special Pavement Markings	Regulatory/Warning Signs	Detour/object marker/recreation guide Signs	Delineators	Protective Barriers
NC	ADAMS	44%	22%	0%	0%	0%	--	0%	0%	0%	0%	0%	33%	0%
		9	9	3	9	9	--	9	9	1	2	3	1	1
	FLORENCE	29%	14%	0%	0%	0%	--	0%	0%	--	0%	--	--	--
		7	7	3	7	7	--	7	7	--	2	--	--	--
	FOREST	56%	13%	0%	6%	0%	--	0%	13%	--	17%	0%	--	--
		16	16	4	16	16	--	16	15	--	4	1	--	--
	GREEN LAKE	43%	71%	0%	0%	0%	--	0%	0%	0%	0%	0%	--	--
		7	7	2	7	7	--	7	7	1	5	4	--	--
	IRON	58%	42%	0%	8%	0%	--	8%	8%	--	0%	0%	--	--
		12	12	1	12	12	--	12	12	--	4	3	--	--
	LANGLADE	40%	33%	0%	0%	0%	--	0%	0%	0%	0%	0%	7%	0%
		15	15	5	15	15	--	15	15	1	4	2	2	2
	LINCOLN	75%	44%	0%	0%	0%	0%	13%	6%	0%	0%	0%	9%	0%
		16	16	3	16	16	3	16	16	2	5	5	6	1
	MARATHON	71%	32%	0%	0%	0%	11%	4%	4%	0%	0%	0%	8%	57%
		28	28	7	28	28	6	28	28	4	12	11	13	2

		Condition % backlogged # of observations												
		Roadsides						Traffic						
Region	County	Litter	Mowing	Mowing for Vision	Woody Vegetation Control	Woody Vegetation Control for Vision	Fences	Centerline Markings	Edgeline Markings	Special Pavement Markings	Regulatory/Warning Signs	Detour/object marker/recreation guide Signs	Delineators	Protective Barriers
	MARQUETTE	63%	13%	0%	0%	0%	--	0%	0%	--	0%	0%	--	--
		8	8	2	8	8	--	8	8	--	3	2	--	--
	MENOMINEE	0%	0%	--	50%	0%	--	0%	0%	--	0%	0%	0%	16%
		4	4	--	4	4	--	4	4	--	1	3	1	1
	ONEIDA	65%	0%	0%	12%	12%	28%	0%	6%	0%	14%	0%	--	0%
		17	17	5	17	17	1	17	16	1	6	8	--	1
	PORTAGE	63%	13%	0%	0%	0%	0%	38%	25%	0%	0%	11%	12%	0%
		16	16	1	16	16	8	16	16	1	6	6	8	2
	PRICE	38%	6%	0%	0%	0%	--	0%	19%	--	0%	27%	--	0%
		16	16	3	16	16	--	16	16	--	6	8	--	1
	SHAWANO	44%	33%	0%	0%	6%	0%	6%	11%	0%	27%	6%	18%	--
		18	18	3	18	18	1	18	18	1	10	9	4	--
	VILAS	80%	33%	0%	0%	0%	--	0%	0%	--	0%	0%	0%	0%
		15	15	8	15	15	--	15	14	--	7	5	1	1
	WAUPACA	71%	33%	0%	0%	0%	--	19%	10%	8%	0%	0%	24%	0%
		21	21	4	21	21	--	21	21	7	13	7	5	2
	WAUSHARA	14%	86%	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%	--
		14	14	4	14	14	1	14	14	2	10	5	3	--

		Condition % backlogged # of observations												
		Roadsides						**Traffic**						
Region	County	Litter	Mowing	Mowing for Vision	Woody Vegetation Control	Woody Vegetation Control for Vision	Fences	Centerline Markings	Edgeline Markings	Special Pavement Markings	Regulatory/Warning Signs	Detour/object marker/recreation guide Signs	Delineators	Protective Barriers
	WOOD	44%	50%	0%	0%	0%	--	17%	6%	0%	0%	0%	--	--
		18	18	4	18	18	--	18	16	2	6	7	--	--
NE	BROWN	88%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		16	16	2	16	16	10	16	16	3	5	9	10	2
	CALUMET	82%	91%	0%	0%	0%	--	9%	0%	13%	0%	0%	0%	--
		11	11	9	11	11	--	11	10	5	6	5	1	--
	DOOR	91%	64%	--	18%	0%	0%	0%	0%	0%	0%	0%	0%	--
		11	11	--	11	11	1	11	11	1	5	6	2	--
	FOND DU LAC	75%	50%	0%	0%	0%	0%	0%	0%	0%	3%	0%	11%	3%
		20	20	3	20	20	6	20	20	2	8	6	7	3
	KEWAUNEE	67%	83%	--	17%	17%	--	0%	0%	0%	--	0%	0%	--
		6	6	--	6	6	--	6	6	1	--	1	1	--
	MANITOWOC	93%	53%	0%	0%	0%	0%	20%	13%	0%	0%	0%	15%	0%
		15	15	10	15	15	3	15	15	2	5	7	6	3
	MARINETTE	69%	38%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%
		16	16	16	16	16	4	16	16	1	9	4	5	1
	OCONTO	69%	25%	0%	0%	6%	0%	0%	0%	100%	0%	0%	40%	0%
		16	16	3	16	16	1	15	15	1	9	7	3	2

		Condition % backlogged # of observations												
		Roadsides						Traffic						
Region	County	Litter	Mowing	Mowing for Vision	Woody Vegetation Control	Woody Vegetation Control for Vision	Fences	Centerline Markings	Edgeline Markings	Special Pavement Markings	Regulatory/Warning Signs	Detour/object marker/recreation guide Signs	Delineators	Protective Barriers
		72%	89%	0%	6%	0%	0%	0%	0%	50%	0%	0%	15%	0%
	OUTAGAMIE	18	18	17	18	18	4	18	18	4	10	8	5	4
		71%	29%	0%	0%	6%	0%	0%	0%	0%	0%	0%	33%	0%
	SHEBOYGAN	17	17	7	17	17	1	17	17	6	7	11	2	1
		88%	50%	0%	6%	0%	0%	0%	0%	0%	0%	0%	8%	--
	WINNEBAGO	16	16	2	16	16	5	16	16	2	9	8	4	--
		33%	0%	0%	17%	0%	--	42%	33%	--	0%	0%	--	--
NW	ASHLAND	12	12	2	12	12	--	12	12	--	6	5	--	--
		67%	40%	0%	0%	0%	0%	7%	0%	0%	13%	8%	0%	0%
	BARRON	15	15	3	15	15	1	15	15	2	8	5	3	3
		71%	41%	0%	12%	0%	--	29%	24%	--	0%	0%	--	0%
	BAYFIELD	17	17	3	17	17	--	17	17	--	9	2	--	3
		38%	44%	0%	0%	0%	--	0%	0%	75%	0%	0%	88%	86%
	BUFFALO	16	16	9	16	16	--	16	16	2	6	3	3	2
		45%	0%	--	0%	0%	--	0%	0%	0%	0%	0%	0%	--
	BURNETT	11	11	--	11	11	--	11	11	1	5	2	2	--
		64%	18%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	CHIPPEWA	22	22	3	22	22	7	22	22	1	11	6	13	4

		Condition % backlogged # of observations												
		Roadsides						**Traffic**						
Region	County	Litter	Mowing	Mowing for Vision	Woody Vegetation Control	Woody Vegetation Control for Vision	Fences	Centerline Markings	Edgeline Markings	Special Pavement Markings	Regulatory/Warning Signs	Detour/object marker/recreation guide Signs	Delineators	Protective Barriers
	CLARK	35%	53%	0%	0%	0%	--	0%	0%	0%	0%	0%	47%	0%
		17	17	1	17	17	--	17	17	1	9	2	4	3
	DOUGLAS	31%	0%	0%	0%	0%	0%	13%	13%	25%	0%	0%	0%	--
		16	16	2	16	16	1	16	16	3	5	4	3	--
	DUNN	86%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	41%	0%
		21	21	2	21	21	7	21	21	1	5	6	9	4
	EAU CLAIRE	56%	38%	--	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
		16	16	--	16	16	3	16	16	1	4	6	9	6
	JACKSON	35%	25%	0%	0%	0%	39%	15%	10%	0%	0%	0%	29%	0%
		20	20	2	20	20	3	20	20	1	10	5	6	3
	PEPIN	25%	0%	0%	0%	0%	--	25%	25%	--	0%	0%	25%	6%
		4	4	2	4	4	--	4	4	--	3	1	1	1
	PIERCE	24%	53%	0%	6%	0%	--	0%	0%	67%	0%	0%	72%	0%
		17	17	4	17	17	--	17	17	2	10	6	6	6
	POLK	41%	59%	0%	0%	0%	--	12%	25%	10%	0%	0%	0%	0%
		17	17	7	17	17	--	17	16	3	11	9	1	1
	RUSK	55%	27%	0%	0%	0%	--	9%	0%	0%	0%	0%	--	0%
		11	11	1	11	11	--	11	11	2	5	2	--	1

		Condition % backlogged # of observations												
		Roadsides						**Traffic**						
Region	County	Litter	Mowing	Mowing for Vision	Woody Vegetation Control	Woody Vegetation Control for Vision	Fences	Centerline Markings	Edgeline Markings	Special Pavement Markings	Regulatory/Warning Signs	Detour/object marker/recreation guide Signs	Delineators	Protective Barriers
		47%	24%	0%	6%	0%	--	6%	0%	--	0%	0%	0%	--
	SAWYER	17	17	3	17	17	--	17	17	--	6	2	1	--
		95%	23%	0%	0%	0%	0%	5%	0%	0%	0%	8%	7%	1%
	ST. CROIX	22	22	4	22	22	3	22	22	4	11	5	9	6
		0%	67%	--	0%	0%	--	0%	0%	0%	0%	0%	--	--
	TAYLOR	12	12	--	12	12	--	12	12	1	5	5	--	--
		26%	47%	0%	0%	0%	--	0%	0%	0%	0%	38%	85%	71%
	TREMPEALEAU	19	19	5	19	19	--	19	19	1	6	6	3	3
		80%	0%	0%	0%	0%	0%	0%	0%	--	0%	0%	5%	0%
	WASHBURN	15	15	1	15	15	5	15	15	--	3	2	6	2
		73%	91%	14%	9%	9%	--	0%	0%	12%	0%	13%	--	--
SE	KENOSHA	11	11	7	11	11	--	11	11	6	8	5	--	--
		94%	41%	10%	6%	0%	0%	29%	50%	38%	3%	5%	0%	0%
	MILWAUKEE	17	17	10	17	17	9	17	16	12	11	17	3	10
		100%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%	0%
	OZAUKEE	8	8	4	8	8	4	8	8	3	5	6	5	4
		93%	73%	0%	0%	0%	--	0%	0%	0%	0%	0%	--	0%
	RACINE	15	15	4	15	15	--	15	15	5	10	8	--	1

		Condition % backlogged # of observations												
		Roadsides						Traffic						
Region	County	Litter	Mowing	Mowing for Vision	Woody Vegetation Control	Woody Vegetation Control for Vision	Fences	Centerline Markings	Edgeline Markings	Special Pavement Markings	Regulatory/Warning Signs	Detour/object marker/recreation guide Signs	Delineators	Protective Barriers
	WALWORTH	100%	27%	0%	0%	0%	1%	5%	9%	0%	3%	0%	66%	32%
		22	22	4	22	22	8	22	22	5	10	13	14	9
	WASHINGTON	67%	33%	0%	0%	0%	0%	0%	6%	18%	0%	0%	40%	0%
		18	18	9	18	18	6	18	18	3	10	8	11	6
	WAUKESHA	65%	52%	--	0%	0%	1%	4%	4%	11%	0%	0%	0%	0%
		23	23	--	23	23	7	23	23	12	19	11	6	6
SW	COLUMBIA	64%	46%	0%	18%	4%	0%	4%	11%	7%	3%	10%	62%	1%
		28	28	7	28	28	6	28	28	5	11	11	8	5
	CRAWFORD	11%	16%	0%	5%	0%	--	0%	0%	0%	6%	4%	19%	0%
		19	19	5	19	19	--	19	19	1	9	6	7	6
	DANE	100%	28%	0%	0%	0%	0%	3%	3%	0%	0%	1%	42%	2%
		40	40	10	40	40	14	40	39	9	13	26	10	11
	DODGE	42%	54%	0%	0%	0%	0%	0%	0%	4%	16%	43%	12%	0%
		24	24	3	24	24	6	24	24	8	14	6	7	2
	GRANT	23%	58%	0%	0%	0%	--	0%	0%	0%	0%	33%	7%	2%
		26	26	5	26	26	--	26	26	2	6	2	3	2
	GREEN	69%	54%	0%	0%	0%	--	15%	31%	--	0%	0%	--	--
		13	13	2	13	13	--	13	13	--	6	3	--	--

		Condition % backlogged # of observations												
		Roadsides						Traffic						
Region	County	Litter	Mowing	Mowing for Vision	Woody Vegetation Control	Woody Vegetation Control for Vision	Fences	Centerline Markings	Edgeline Markings	Special Pavement Markings	Regulatory/Warning Signs	Detour/object marker/recreation guide Signs	Delineators	Protective Barriers
	IOWA	94%	44%	0%	0%	0%	0%	0%	6%	0%	0%	0%	0%	0%
		18	18	3	18	18	4	18	18	1	10	8	5	3
	JEFFERSON	56%	61%	0%	6%	0%	0%	0%	28%	0%	32%	38%	7%	0%
		18	18	11	18	18	5	18	18	2	12	6	4	1
	JUNEAU	30%	25%	0%	5%	0%	0%	26%	26%	--	9%	0%	8%	0%
		20	20	1	20	20	3	19	19	--	4	2	4	2
	LA CROSSE	50%	43%	0%	0%	7%	2%	29%	21%	0%	0%	5%	51%	11%
		14	14	6	14	14	6	14	14	4	6	7	10	8
	LAFAYETTE	100%	43%	0%	0%	0%	0%	36%	50%	0%	0%	0%	36%	0%
		14	14	3	14	14	3	14	14	3	8	5	3	2
	MONROE	48%	16%	0%	0%	0%	0%	4%	4%	0%	0%	0%	2%	0%
		25	25	2	25	25	6	25	25	2	7	8	10	6
	RICHLAND	75%	56%	0%	0%	0%	--	0%	0%	--	0%	0%	9%	3%
		16	16	5	16	16	--	16	16	--	6	3	3	3
	ROCK	96%	54%	0%	0%	0%	0%	4%	17%	0%	0%	0%	0%	0%
		24	24	6	24	24	5	24	24	6	12	6	4	1
	SAUK	100%	22%	0%	4%	0%	0%	4%	14%	43%	0%	0%	0%	0%
		23	23	4	23	23	3	23	22	3	4	14	2	2

		Condition % backlogged # of observations												
		Roadsides						**Traffic**						
Region	County	Litter	Mowing	Mowing for Vision	Woody Vegetation Control	Woody Vegetation Control for Vision	Fences	Centerline Markings	Edgeline Markings	Special Pavement Markings	Regulatory/Warning Signs	Detour/object marker/recreation guide Signs	Delineators	Protective Barriers
		82%	50%	0%	0%	0%	--	5%	5%	--	0%	0%	18%	4%
	VERNON	22	22	11	22	22	--	22	22	--	11	5	8	8

Counties 2011: Sign Condition

		Regulatory/Warning/School Signs				Detour/object marker/recreation/guide Signs			
Region	**County**	**Total Signs**	**%Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**	**Total Signs**	**%Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**
NC	ADAMS	921	21%	196	4.1	640	35%	223	6.8
	FLORENCE	468	3%	12	2.2	350	35%	121	9.6
	FOREST	1,247	5%	62	3.6	821	23%	191	6.3
	GREEN LAKE	867	10%	91	3.9	674	32%	216	8.3
	IRON	1,064	5%	53	1.8	552	14%	79	8.1
	LANGLADE	1,162	11%	123	3.4	680	14%	94	6.0
	LINCOLN	1,425	17%	238	4.0	1,021	29%	301	7.7
	MARATHON	4,215	17%	697	4.1	2,784	36%	1,007	6.3
	MARQUETTE	950	6%	54	3.8	884	56%	495	8.4
	MENOMINEE	678	22%	151	4.6	215	17%	36	5.8
	ONEIDA	1,895	5%	86	3.3	1,033	12%	125	5.3
	PORTAGE	2,243	10%	221	5.0	1,733	43%	746	7.3
	PRICE	1,012	3%	35	2.3	790	26%	203	6.6

		Regulatory/Warning/School Signs				Detour/object marker/recreation/guide Signs			
Region	**County**	**Total Signs**	**%Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**	**Total Signs**	**%Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**
	SHAWANO	1,964	63%	1,229	5.7	1,378	60%	828	6.1
	VILAS	1,539	17%	256	6.1	953	15%	143	6.3
	WAUPACA	3,142	12%	389	3.9	1,799	39%	705	7.6
	WAUSHARA	1,914	11%	207	3.4	1,041	35%	366	7.3
	WOOD	2,232	17%	385	4.0	1,331	38%	500	6.5
NE	BROWN	3,854	30%	1,153	7.1	2,672	52%	1,397	8.4
	CALUMET	1,337	16%	215	14.2	686	25%	174	10.4
	DOOR	1,966	31%	604	6.4	766	36%	274	8.3
	FOND DU LAC	2,563	13%	339	7.1	1,948	20%	398	8.3
	KEWAUNEE	667	16%	108	5.5	376	39%	148	13.4
	MANITOWOC	2,191	31%	679	7.2	1,787	70%	1,246	9.3
	MARINETTE	1,834	27%	494	8.7	1,254	35%	442	9.7
	OCONTO	2,131	15%	321	5.8	1,272	24%	308	7.1
	OUTAGAMIE	3,566	15%	530	7.8	2,723	22%	594	12.4
	SHEBOYGAN	2,940	30%	880	7.7	2,490	59%	1,476	8.7

		Regulatory/Warning/School Signs				Detour/object marker/recreation/guide Signs			
Region	**County**	**Total Signs**	**%Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**	**Total Signs**	**%Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**
	WINNEBAGO	2,580	19%	498	8.3	2,081	31%	648	9.2
NW	ASHLAND	1,218	17%	210	5.6	870	45%	391	7.2
	BARRON	1,754	14%	243	4.9	1,634	37%	611	7.6
	BAYFIELD	1,446	26%	379	5.1	1,164	53%	622	6.7
	BUFFALO	1,599	4%	58	3.8	1,062	26%	281	10.6
	BURNETT	1,178	23%	276	5.6	739	45%	335	7.6
	CHIPPEWA	2,426	5%	130	5.0	2,014	28%	573	7.6
	CLARK	1,624	7%	112	4.3	1,111	26%	293	6.4
	DOUGLAS	1,907	23%	433	5.0	1,570	52%	814	7.6
	DUNN	2,043	10%	211	4.8	1,992	47%	946	7.1
	EAU CLAIRE	2,595	5%	142	6.4	1,957	18%	359	7.8
	JACKSON	1,564	5%	74	3.9	1,406	25%	345	10.8
	PEPIN	568	4%	21	3.5	431	24%	103	6.0
	PIERCE	1,665	8%	130	4.4	1,454	42%	611	8.1
	POLK	2,168	9%	203	4.9	1,423	43%	618	7.4

		Regulatory/Warning/School Signs				Detour/object marker/recreation/guide Signs			
Region	**County**	**Total Signs**	**%Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**	**Total Signs**	**%Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**
	RUSK	1,023	4%	38	3.3	754	38%	284	5.8
	SAWYER	1,426	10%	143	4.7	1,079	34%	366	6.3
	ST. CROIX	2,762	10%	271	5.3	2,441	43%	1,041	6.9
	TAYLOR	1,037	3%	34	4.4	786	19%	152	7.5
	TREMPEALEAU	1,956	5%	98	5.2	1,544	37%	569	9.5
	WASHBURN	1,950	23%	442	5.9	1,436	56%	803	7.8
SE	KENOSHA	4,328	24%	1,060	7.4	3,137	49%	1,531	8.8
	MILWAUKEE	12,194	22%	2,644	7.1	8,684	50%	4,356	9.1
	OZAUKEE	2,002	12%	233	5.7	1,243	54%	666	8.6
	RACINE	5,201	24%	1,266	6.7	3,461	50%	1,714	8.2
	WALWORTH	4,033	13%	514	6.3	2,516	41%	1,027	8.2
	WASHINGTON	3,845	19%	739	6.7	2,662	44%	1,163	8.2
	WAUKESHA	9,267	19%	1,788	6.7	5,172	34%	1,748	7.0
SW	COLUMBIA	3,055	5%	141	3.3	1,824	34%	623	9.7
	CRAWFORD	2,336	5%	118	5.7	1,513	41%	620	10.0

		Regulatory/Warning/School Signs				Detour/object marker/recreation/guide Signs			
Region	**County**	**Total Signs**	**%Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**	**Total Signs**	**%Backlog**	**Deficient Signs**	**Average Years Beyond Service Life**
	DANE	6,436	26%	1,669	10.6	4,355	34%	1,465	11.4
	DODGE	2,879	9%	245	4.2	1,884	46%	871	10.1
	GRANT	3,073	4%	126	4.9	2,102	39%	810	11.1
	GREEN	1,337	4%	52	5.2	792	37%	296	10.4
	IOWA	1,968	6%	110	5.3	1,353	37%	506	10.9
	JEFFERSON	1,934	5%	90	4.5	1,254	43%	535	11.8
	JUNEAU	1,754	8%	140	4.4	1,673	45%	747	9.8
	LA CROSSE	2,684	9%	231	4.8	2,774	45%	1,235	10.4
	LAFAYETTE	1,293	4%	54	4.6	865	42%	360	13.2
	MONROE	2,633	5%	128	4.7	2,306	34%	787	9.5
	RICHLAND	1,904	6%	109	4.9	1,462	39%	570	9.3
	ROCK	2,309	7%	165	6.4	1,862	42%	785	11.1
	SAUK	3,410	5%	156	4.5	1,891	19%	366	9.7
	VERNON	2,851	7%	198	6.1	2,100	56%	1,186	9.8

Counties 2011: Bridge Maintenance Needs

			Number of bridges recommended for maintenance								
Region	**County**	**Number of state bridges**	**Deck - Seal Surface Cracks**	**Expansion Joints - Clean**	**Approach - Seal Approach to Paving Block**	**Misc - Cut Brush**	**IMP-Concrete Overlay**	**Expansion Joints - Seal**	**Deck - Clean and Sweep Deck/Drains**	**Drainage - Repair Washouts / Erosion**	**Deck-Patching**
NC	ADAMS	8	6	1	2	0	0	6	0	2	0
	FLORENCE	8	2	0	0	0	0	0	0	0	2
	FOREST	12	2	0	2	1	0	0	0	1	4
	GREEN LAKE	10	8	1	3	3	0	6	2	0	0
	IRON	19	2	0	1	4	0	1	0	0	4
	LANGLADE	11	4	0	1	2	0	0	0	0	1
	LINCOLN	52	27	4	1	9	0	3	0	0	7
	MARATHON	162	123	54	5	36	2	98	23	27	33
	MARQUETTE	37	24	7	3	7	0	33	1	12	6
	MENOMINEE	3	2	0	1	1	0	0	0	0	1
	ONEIDA	14	7	0	4	1	0	0	0	1	4
	PORTAGE	97	80	38	12	15	1	52	12	12	34
	PRICE	21	6	2	1	1	0	0	1	0	1
	SHAWANO	53	55	3	6	12	0	0	6	9	1
	VILAS	13	9	0	0	1	0	0	0	1	2
	WAUPACA	66	48	18	9	2	0	46	2	16	5
	WAUSHARA	22	12	13	1	0	0	17	3	7	11
	WOOD	58	59	5	13	14	2	19	14	4	12
NE	BROWN	247	75	126	67	23	0	69	11	29	59
	CALUMET	13	2	1	0	1	0	6	0	7	2
	DOOR	19	15	7	3	1	0	7	2	0	1
	FOND DU LAC	80	45	32	30	0	0	16	7	12	3
	KEWAUNEE	17	1	2	1	2	0	2	0	2	3
	MANITOWOC	92	27	32	23	7	0	28	0	10	21

			Number of bridges recommended for maintenance								
Region	**County**	**Number of state bridges**	**Deck - Seal Surface Cracks**	**Expansion Joints - Clean**	**Approach - Seal Approach to Paving Block**	**Misc - Cut Brush**	**IMP-Concrete Overlay**	**Expansion Joints - Seal**	**Deck - Clean and Sweep Deck/Drains**	**Drainage - Repair Washouts / Erosion**	**Deck-Patching**
	MARINETTE	48	10	14	14	5	0	13	3	0	4
	OCONTO	45	17	4	3	0	0	21	1	7	3
	OUTAGAMIE	80	36	11	35	14	0	53	2	26	12
	SHEBOYGAN	83	29	25	22	12	0	39	0	13	25
	WINNEBAGO	157	66	54	62	18	0	52	4	38	31
NW	ASHLAND	19	0	0	2	0	2	0	0	1	7
	BARRON	65	5	0	9	9	2	4	2	8	26
	BAYFIELD	34	0	0	6	2	0	0	0	5	3
	BUFFALO	72	2	2	4	2	2	1	0	1	0
	BURNETT	15	1	0	3	0	0	0	1	2	2
	CHIPPEWA	135	9	18	14	0	3	22	2	18	6
	CLARK	42	0	1	25	2	0	1	0	2	2
	DOUGLAS	60	1	0	4	4	1	1	0	3	7
	DUNN	93	0	1	2	2	0	0	0	10	5
	EAU CLAIRE	109	8	8	20	3	0	2	1	19	3
	JACKSON	74	1	0	14	2	4	5	0	15	2
	PEPIN	16	0	0	2	0	0	1	0	2	0
	PIERCE	57	0	6	6	6	2	2	0	12	1
	POLK	13	3	1	0	0	0	0	0	3	10
	RUSK	28	2	0	0	8	3	1	0	3	4
	SAWYER	19	1	0	7	3	0	0	0	4	7
	ST. CROIX	98	5	2	8	3	0	3	0	13	2
	TAYLOR	20	3	0	0	2	0	0	0	3	4
	TREMPEALEAU	73	2	2	18	1	0	0	0	7	2
	WASHBURN	20	2	0	9	7	0	0	0	4	2
	KENOSHA	57	13	10	18	2	20	19	25	10	3

			Number of bridges recommended for maintenance								
Region	**County**	**Number of state bridges**	**Deck - Seal Surface Cracks**	**Expansion Joints - Clean**	**Approach - Seal Approach to Paving Block**	**Misc - Cut Brush**	**IMP-Concrete Overlay**	**Expansion Joints - Seal**	**Deck - Clean and Sweep Deck/Drains**	**Drainage - Repair Washouts / Erosion**	**Deck-Patching**
SE	MILWAUKEE	528	122	493	99	170	477	157	108	60	94
	OZAUKEE	51	12	10	19	19	57	4	4	13	17
	RACINE	62	6	9	25	9	46	8	10	8	1
	WALWORTH	118	22	39	30	19	97	23	9	28	8
	WASHINGTON	74	3	37	19	5	94	7	71	6	1
	WAUKESHA	178	50	30	59	53	157	22	9	105	50
SW	COLUMBIA	97	33	17	35	59	2	2	48	22	10
	CRAWFORD	68	48	2	16	12	0	2	6	15	6
	DANE	282	33	103	155	189	1	19	245	87	22
	DODGE	63	16	10	15	21	0	3	27	11	1
	GRANT	70	25	9	11	11	0	1	5	15	7
	GREEN	28	9	6	4	6	1	1	18	3	4
	IOWA	57	18	6	11	21	0	0	17	10	6
	JEFFERSON	108	9	27	23	15	2	4	31	6	8
	JUNEAU	80	29	21	21	2	0	14	5	8	12
	LA CROSSE	109	44	47	47	42	0	6	12	23	20
	LAFAYETTE	40	8	1	11	24	0	0	34	14	6
	MONROE	156	57	10	37	18	0	6	5	13	19
	RICHLAND	78	41	5	18	19	0	3	7	5	14
	ROCK	121	22	65	54	44	2	6	98	17	9
	SAUK	91	22	20	40	14	0	1	39	7	3
	VERNON	73	10	1	6	18	0	3	0	21	3

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