FINAL

Compass Report

Wisconsin State Highway
2012
Maintenance, Traffic, and Operations Conditions

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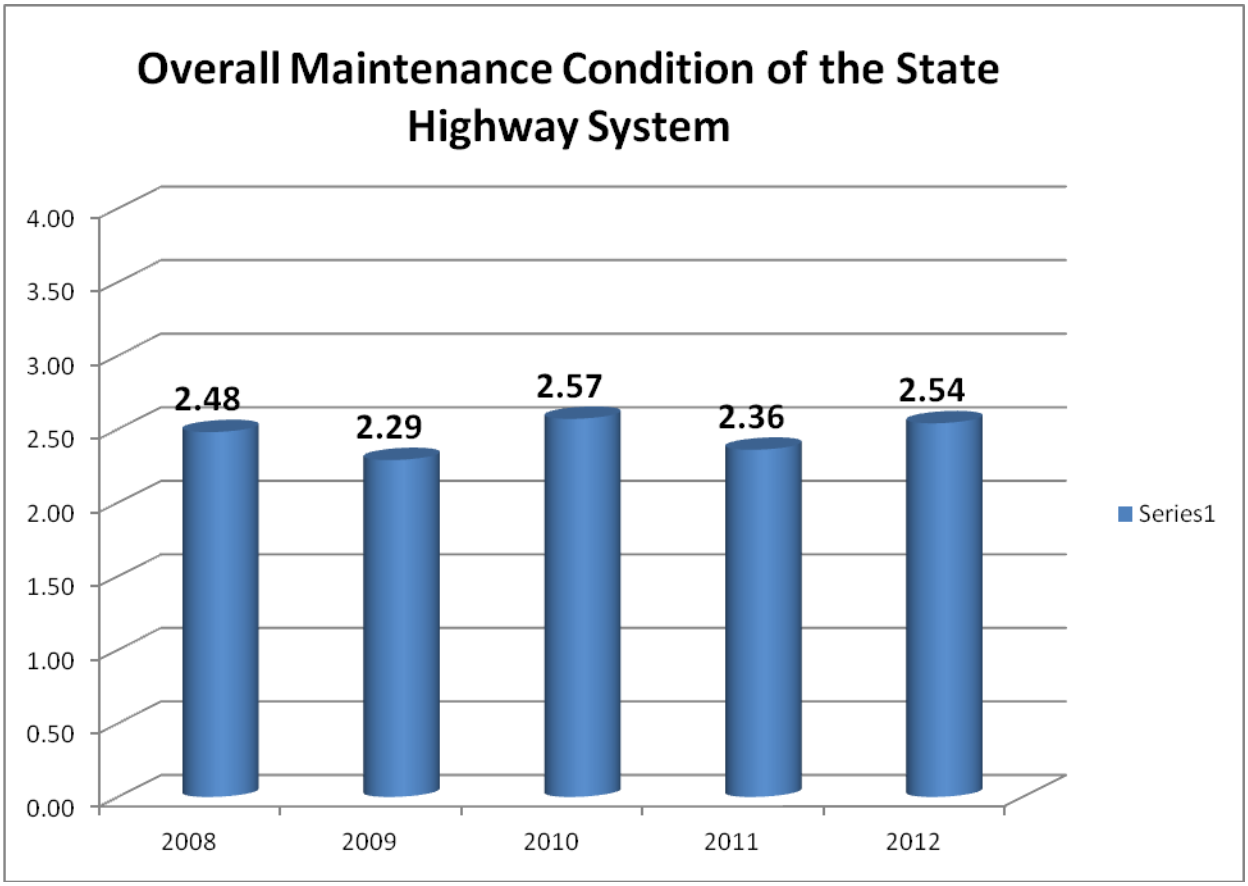
Executive Summary

The "Compass" program collects field data each year to help the department understand current infrastructure conditions and trends. The data also helps Wisconsin Department of Transportation (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 2012 Compass Annual Report has been completed based on the yearly Compass field review process and current data from the WisDOT Sign Inventory Management System, WisDOT Annual Winter Maintenance Report and WisDOT Highway Structures Information System. Below are the significant messages on current conditions and specific examples of how WisDOT uses the information to manage the state highway system:

- *MAPSS performance data:* The overall condition of the 28 Compass roadway features is a cumulative 2012 grade point average (GPA) of 2.54, an improvement from the 2.36 GPA in 2011 (refer to chart on next page). The Compass grade point average is the highway maintenance performance measure for the MAPSS (Mobility, Accountability, Preservation, Safety and Service) performance monitoring system. While conditions improved over the last year, conditions are still below the department's maintenance goal of a 3.0 GPA.
- *Continued focus on reducing shoulder drop-off*: There has been continued emphasis on fixing drop-off along unpaved shoulders so drivers who veer off the traveled way can safety get back onto the paved surface. More aggressive maintenance targets have been set over the last five years to deal with this problem. The actual amount of drop-off on unpaved shoulders decreased one percent in 2012 to 36%, after staying consistent at 37% between 2010 and 2011. There will be a continued focus on improving safety by reducing shoulder drop-off.
- *Removing hazardous debris on shoulders*: For several years the department has emphasized the safety benefits of removing hazardous debris from roadways. This year the backlog for hazardous debris is 7%, which matches the backlog level in 2011, the lowest level recorded during the previous five-year period.
- *More visible, longer lasting traffic signs*: More than 17,000 new high-intensity signs were installed along the state highway system between 2011 and 2012. More than 81% percent of the 295,000 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 64,000 signs around the state are older than their suggested useful life. This is a reduction of about 9,000 signs from the 2011 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, 12% of the regulatory and warning signs are beyond their recommended service life, a three percent improvement from the 2011 level. Thirty-seven percent of other signs (e.g. detour, object marker, recreation, or guide signs) are older than their suggested useful life. This is a two percentage point improvement from last year.



Compass Annual Report

About this report

The *Compass Annual Report* is issued each year to tell the story about the condition of Wisconsin's state highway network and to demonstrate accountability for maintenance expenditures. The primary audience for this report is Maintenance Supervisors and Operations Managers at WisDOT along with County Highway Commissioners and County Patrol Superintendents across the state. Compass reports illustrate conditions and trends, help prioritize resources, and guide future target condition levels for the state highway system. The condition data is also used to estimate the costs to reduce maintenance backlogs to improved levels of service.

This report *includes* data on roadway shoulders, drainage features, roadsides elements, selected traffic control 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 report card based on current roadway 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 the format, content, and other aspects of the report is encouraged and should be sent to Scott Bush, Compass Program Manager, at Scott.Bush@dot.wi.gov or (608) 266-8666.

Background

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

Process

The Compass report is issued annually in cooperation with the research team from the Wisconsin Transportation Center (WisTrans) at University of Wisconsin – Madison. Starting in January of each year, WisTrans and the Compass Program Manager work on the analysis of each element. The project team presents the draft report at the 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 in the fall.

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

Winter maintenance data is gathered from the 2011-12 winter season. Key performance measures for winter operations include time to bare/wet pavement, Winter Severity Index, winter vehicle miles traveled (VMT), and crash data. Figures and tables are taken directly from the 2011-12 WisDOT *Annual Winter Maintenance Report* prepared by WisDOT's Winter Operations unit, including the "Winter by the Numbers" table and the statewide snowfalls and Winter Severity Index figures.

Starting with the 2009 Compass Annual Report, pavement data was obtained directly from WisDOT's Pavement Maintenance Management System (PMMS). This completes the transition from the previous method. The transition started with the 2008 Compass Annual Report by reporting condition based on the deficiency thresholds and condition categories in the PMMS

while still getting the pavement data from the Program Information Files (PIF). Pavement conditions are not reported in the 2012 Compass Annual Report because of the unavailability of pavement data due to the reprogramming of PMMS. PMMS should be on-line in late 2013. 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 field evaluations identify backlog percentages for each feature at the region and statewide level. Backlog percentages indicate what percent of that feature is in a condition where maintenance work is required, assuming available budget. Therefore, an increasing backlog percentage reflects fiscal constraints rather than inadequate work in the field.

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

WisDOT Maintenance Supervisors and Operations Managers annually set the targets for backlog percentage levels for each feature. These targets are intended to reflect priorities and goals for the year in light of fiscal constraints. Appendix E provides the maintenance targets for 2012.

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/Mobility", "Stewardship", "Ride/Comfort", 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 or nearly all basic routine maintenance needs have been met within the maintenance season and there is not a significant backlog. Appendix B identifies the contribution category for each Compass feature, while Appendix C lists the grading curve for each feature.

Some changes were implemented in this 2012 Compass Annual Report. Highway features were reevaluated and some of them were redistributed to different contribution categories. This change affected the grading curves for these features, and features moved from one contribution category to another may receive different grades. The features are also now listed in the report card in their relative priority order. Additionally, grading curves for Stewardship features and Ride/Comfort features were switched, adding priority to Stewardship related maintenance activities. The following report card shows the features in priority order under their new contribution categories, with the grades from the previous four years adjusted using the new grading curve for the entire review period.

System Overview

Below is a summary of the 2012 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 2.54, or level of service grade "C". The two roadway features with failing grades include drop-off/build-up on unpaved shoulders and cracking on paved shoulders.

- A grade: 11 features (39%)
- B grade: 4 features (14%)
- C grade: 4 features (14%)
- D grade: 7 features (25%)
- F grade: 2 features (7%)

The condition grade for most features stayed constant between 2011 and 2012. The condition grade remained unchanged for 23 of the 28 features surveyed (82%). All five of the features that received a new grade improved one letter grade during the past year *(highlighted below)*. It is also worth noting that four of the features that improved are in the Critical Safety category, the highest priority group, while the other improved feature is in the Safety/Mobility category.

Twenty features (71%) met their targeted condition level in 2012, which is defined as within five percentage points of the actual condition. Five features (18%) exceeded their maintenance target, including three Safety/Mobility features (Special Pavement Markings, Fences, and routine replacement of Regulatory/Warning Signs). Three features were below their targeted condition, including Drop-off/Build-up on unpaved shoulders, Cross Slope of unpaved shoulders, and Flumes. The following tables identify the five-year trend in Compass feature grades by contribution category. Key observations are also provided for each contribution category.

Critical Safety Features

The roadway features considered critical for safety are those that require immediate action to remedy a problem situation.

Feature	2012	2011	2010	2009	2008	Element
Regulatory/warning signs (emergency repair)	**A**	B	A	A	A	Traffic and safety devices
Hazardous debris	**C**	C	C	C	C	Shoulders
Protective barriers	**B**	B	A	B	B	Traffic and safety devices
Centerline markings	**B**	C	C	C	B	Traffic and safety devices
Edgeline markings	**B**	C	C	D	B	Traffic and safety devices
Drop-off/build-up (unpaved)	**F**	F	F	F	F	Shoulders
Drop-off/build-up (paved)	**A**	B	A	B	N/A	Shoulders

- Four Critical Safety features improved to a new condition grade during the past year. Centerline Markings and Edgeline Markings improved to a B grade this year after two years at the C level, while Drop-off/build-up on paved shoulders and Emergency Repair of Regulatory/warning Signs improved back to an A grade after dropping to a B grade last year.

- All Critical Safety features met their condition target, except for Drop-off/build-up on unpaved shoulders, similar to last year. This feature missed the actual target backlog value by 6%. It had a backlog percentage of 36%, while the target is 30%. However, this is a 1% improvement from last year.
- Drop-off/build-up of unpaved shoulders continued to receive a grade of F, consistent with the targeted condition level.
- Removal of Hazardous Debris on roadway shoulders continued to receive a grade of C, consistent with the targeted condition level.

Safety/Mobility Features

Safety/Mobility 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	2012	2011	2010	2009	2008	Element
Woody vegetation control for vision	**A**	A	A	A	A	Roadsides
Mowing for vision	**A**	A	A	B	A	Roadsides
Special pavement markings	**B**	C	C	C	B	Traffic and safety devices
Woody vegetation control	**A**	A	A	A	A	Roadsides
Culverts	**D**	D	D	D	D	Drainage
Storm sewer systems	**C**	C	C	D	C	Drainage
Cross-slope (unpaved)	**D**	D	C	D	C	Shoulders
Delineators	**D**	D	C	D	D	Traffic and safety devices
Regulatory/warning signs (routine replacement)	**C**	C	C	D	D	Traffic and safety devices
Fences	**A**	A	A	A	A	Roadsides

- All features in Safety/Mobility category maintained the respective grades they received last year, except for Special Pavement Markings, which improved to a B grade from the C grade it received last year.
- Woody vegetation control, Woody vegetation control for vision, and Mowing for vision all maintained the A grades they received in the previous two years (2010-2011).

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	2012	2011	2010	2009	2008	Element
Ditches	**A**	A	A	A	A	Drainage
Curb & gutter	**A**	A	A	A	A	Drainage
Flumes	**D**	D	D	D	D	Drainage
Cracking (paved)	**F**	F	F	F	F	Shoulders
Erosion (unpaved)	**A**	A	A	A	A	Shoulders
Under-drains/edge-drains	**D**	D	C	C	D	Drainage

- All six Stewardship features maintained the grades they received last year.
- Ditches, Curb & gutter, and Erosion on unpaved shoulders all continued to receive A grades.

- Flumes and Under-drains/edge-drains maintained the D grades they received last year.
- Cracking on paved shoulders continued to receive the F grades it has received for the past five 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	2012	2011	2010	2009	2008	Element
Potholes/raveling (paved)	**A**	A	A	A	A	Shoulders
Detour/object markers/ recreation/ guide/signs (emergency repair)	**A**	A	A	A	A	Traffic and safety devices
Detour/object marker/recreation/guide signs (routine replacement)	**D**	D	D	D	D	Traffic and safety devices

- Potholes/raveling on paved shoulders and emergency repair of 'other signs' maintained the A grades they have been receiving for the past five years.
- Routine replacement of 'other signs' maintained the D grades it has been receiving for the past five years

Aesthetics Features

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

Feature	2012	2011	2010	2009	2008	Element
Mowing	**C**	C	C	C	C	Roadsides
Litter	**D**	D	D	D	D	Roadsides

- The grade for Mowing is a C, consistent over the past five years.
- Compass measures the presence of litter, which detracts from roadway sightlines. The grade for litter in 2012 is a D, consistent over the past five years.

Winter:

- In 2011-12, Wisconsin experienced its lightest winter of the past ten years. Compared to the previous year's record breaking winter costs of $91,054,937, this winter's costs totaled $56,217,319. The state experienced an average of 26 winter storms this winter, resulting in an average of 51.2 total inches of snowfall. This average represents a nearly 50% decrease from last year's statewide average of 100.1 inches of snow.
- Snowfall varied quite a bit across the state this winter, with an average of approximately 50 inches. While this was in line with the historical average amount, it was approximately half the average of the previous winter. The highest snowfall recorded in 2011-12 winter season was in Iron County, at 170 inches; the lowest was in Buffalo County, at 20 inches. Both figures were well below those of the previous winter.

- The average time to bare/wet pavement during winter 2011-12 was 54 minutes, which is 36 minutes less 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 355,519 tons of salt (10.5 tons per mile) was used on state highways this winter, compared to 573,253 tons (17 tons per mile) last year. This year's total salt use was comparable to most other years with a similar severity index.

Bridges:

- 31% of decks statewide are in Fair condition and need reactive maintenance, based on their NBI ratings of 5 or 6. These include 25% of concrete bridges and 43% of steel bridges.
- The NW region has the lowest percent of decks in good condition, only 52% 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 (14,865,779 ft2).
- The NE region (893 bridges) has the best bridge ratings in the state with 87% of decks in Good condition and an impressive 0% in Poor and Critical condition.

Wisconsin 2012: 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: 2011 to 2012[2]	% of system backlogged					How well maintained is the system? 2012 Feature grades				
	FY 08	FY 09	FY 10	FY 11	FY 12			**2008**	**2009**	**2010**	**2011**	**2012**	A	B	C	D	F
Shoulders	8.20 8.74 0.26 0.27	8.99 9.62 0.28 0.30	13.28 13.98 0.41 0.44	11.05 11.28 0.34 0.35	11.08 11.08 0.34 0.34	Hazardous debris	--	9	8	8	7	**7**					
						Drop-off/build-up (paved)	↑	N/A	4	2	3	**1**					
						Cracking (paved)	↑	53	62	60	60	**55**					
						Potholes/raveling (paved)	--	6	6	5	6	**6**					
						Drop-off/build-up (unpaved)	↑	44	34	37	37	**36**					
						Cross-slope (unpaved)	↑	18	22	18	27	**26**					
						Erosion (unpaved)	↑	2	3	1	2	**1**					
Drainage	8.00 8.53 0.25 0.27	9.84 10.53 0.31 0.33	9.13 8.67 0.28 0.27	8.54 8.72 0.26 0.27	7.90 7.90 0.24 0.24	Ditches	↑	2	2	2	3	**1**					
						Culverts	↓	28	23	28	22	**25**					
						Under-drains/edge-drains	↑	30	24	21	33	**30**					
						Flumes	↓	39	36	36	39	**45**					
						Curb & gutter	↓	5	5	6	4	**5**					
						Storm sewer system	↑	16	19	17	17	**13**					
Roadsides	19.40 20.69 0.61 0.65	20.29 21.71 0.63 0.68	16.48 17.35 0.51 0.54	16.60 16.94 0.51 0.52	23.10 23.10 0.71 0.71	Litter	↑	61	66	62	63	**62**					
						Mowing	↓	42	35	36	38	**39**					
						Mowing for vision	--	3	5	3	1	**1**					
						Woody vegetation	↓	2	4	4	2	**3**					
						Woody veg. control for vision	--	1	0.4	1	1	**1**					
						Fences	↓	1	3	2	1	**3**					

[1] The dollar values listed in each column show the nominal dollars, constant dollars (base year 2012), nominal dollars per thousand lane miles, and constant dollars per thousand lane miles, respectively.

[2] Arrows indicate a condition change from 2011 to 2012 (↑= 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: 2011 to 2012[2]	% of system backlogged					2012 Feature grades				
	FY 08	FY 09	FY 10	FY 11	FY 12			**2008**	**2009**	**2010**	**2011**	**2012**	A	B	C	D	F
Traffic & safety (selected)	20.70 22.07 0.65 0.69	21.63 23.15 0.68 0.72	17.61 18.54 0.55 0.58	20.12 20.54 0.62 0.64	21.93 21.93 0.67 0.67	Centerline markings	↑	3	7	7	6	**4**					
						Edgeline markings	↑	4	12	8	7	**3**					
						Special pavement markings	↑	7	10	11	10	**6**					
						Reg./warning signs (emergency repair)	↑	1	1	1	3	**1**					
						Reg./warning signs (routine replacement)	↑	23	23	17	15	**12**					
						Detour/object marker/recreation/guide signs (emergency repair)	↑	0.4	0.3	1	4	**3**					
						Detour/object marker/recreation/guide signs (routine replacement)	↑	55	51	44	39	**37**					
						Delineators	↑	26	20	14	25	**21**					
						Protective barriers	↑	3	3	1	5	**3**					

Wisconsin 2012: 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 2012**	**Target % backlog 2012**	**On target[3]**	**20**	**10**	**0**	**0**	**10**	**20**	**Worse condition**	**On Target**	**Better condition**
Critical Safety	Regulatory/warning signs (emergency repair)	Traffic and safety devices	1	0	◎								All	
	Hazardous debris	Shoulders	7	6	◎							**SE**	NC, NE, NW, SW	
	Protective barriers	Traffic and safety devices	3	3	◎							**SE**	NC, NE, NW, SW	
	Centerline markings	Traffic and safety devices	4	5	◎								All	
	Edgeline markings	Traffic and safety devices	3	8	◎								NC,NE,NW,SE	SW
	Drop-off/build-up (unpaved)	Shoulders	36	30				**6**				NC, NE, SE	NW, SW	
	Drop-off/build-up (paved)	Shoulders	1	4	◎								All	
Safety/ Mobility	Woody vegetation control for vision	Roadsides	1	2	◎								All	
	Mowing for vision	Roadsides	1	5	◎								All	
	Special pavement markings	Traffic and safety devices	6	23						**17**				All
	Woody vegetation control	Roadsides	3	5	◎								All	

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

			Statewide									Regions		
						Gap if target missed								
						Worse condition			Better condition					
Contribution Category	**Feature**	**Element**	**Actual % backlog 2012**	**Target % backlog 2012**	**On target[3]**	**20**	**10**	**0**	**0**	**10**	**20**	**Worse condition**	**On Target**	**Better condition**
	Culverts	Drainage	25	30	◎								NC, NE, NW, SW	SE
	Storm sewer system	Drainage	13	15	◎							SW	NC, SE	NE, NW
	Cross-slope (unpaved)	Shoulders	26	20				**6**				NC, NE, SE	NW, SW	
	Delineators	Traffic and safety devices	21	25	◎								NW, SE, SW	NC, NE
	Regulatory/warning signs (routine replacement)	Traffic and safety devices	12	25						**13**			NE	NC, NW, SE, SW
	Fences	Roadsides	3	14						**11**			NW	NC, NE, SE, SW
Stewardship	Ditches	Drainage	1	5	◎								All	
	Curb & gutter	Drainage	5	10	◎								NE, NW, SW	NC, SE
	Flumes	Drainage	45	35			**10**					NC, SW	NE, NW, SE	
	Cracking (paved)	Shoulders	55	60	◎							NE, SE		NC, NW, SW
	Erosion (unpaved)	Shoulders	1	5	◎								All	
	Under-drains/edge-drains	Drainage	30	30	◎							NW, SW		NC, NE, SE
Ride/Comfort	Potholes/raveling (paved)	Shoulders	6	10	◎								NC, NE, SE	NW, SW
	Detour/object markers/recreation/guide signs (emergency repair)	Traffic and safety devices	3	1	◎							NC	NE, NW, SE, SW	
	Detour/object marker/recreation/guide signs (routine replacement)	Traffic and safety devices	37	59				**.**			**22**			All
Aesthetics	Mowing	Roadsides	39	40	◎							NE	SE, SW	NC, NW
	Litter	Roadsides	62	81						**19**				All

2012 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. Data is statistically relevant at the statewide and region levels. No statistical analysis has been completed on the county level data in Appendix G. Readers should take the number of observations into account when reviewing the information. Extreme caution should be exercised when analyzing data that has less than 30 observations.

Below is a summary of the change between 2011 and 2012 in the percentage of roadways that are backlogged for maintenance. These changes don't necessarily result in a new level of service grade. Refer to the "Maintenance Report Card" in the front part of the report for a complete summary of condition grade level changes between 2011 and 2012.

- Eighteen features (64%) had a reduction in the percentage of roadways that are backlogged for maintenance.
- Four features (14%) did not have a change in the amount of roadways that are backlogged for maintenance.
- Six features (21%) had an increase in the percentage of roadways that are backlogged for maintenance.
- All of the changes in backlog levels were six percentage points or less.

Shoulders:

- The individual grades for the seven Shoulder features translate to an overall condition grade point average of 2.40 or grade level C.
- Five Shoulder features had a reduction in the percentage of roadways that are backlogged for maintenance. They are drop-off on paved shoulders (-2%), cracking on paved shoulders (-5%), drop-off on unpaved shoulders (-1%), cross-slope on unpaved shoulders (-1%), and erosion on unpaved shoulders (-1%)
- Two of the seven Shoulder features (hazardous debris, potholes on paved shoulders) did not have a change in the amount of roadways that are backlogged for maintenance.
- No Shoulder feature had an increase in the percentage of roadways that are backlogged for maintenance.
- Drop-off /buildup on unpaved shoulders received a feature grade of F for the eighth consecutive year. The percentage of roadways that are backlogged for maintenance is 36%, a 1% reduction from 2011.

Drainage:

- The individual grades for the six Drainage features translate to an overall condition grade point average of 2.20 or grade level C.
- Three of the six Drainage features had a reduction in the percentage of roadways that are backlogged for maintenance. These features include ditches (-2%), under-drains/edge-drains (-3%) and storm sewer system (-4%)

- Culverts (+3%), flumes (+6%) and curb and gutter (+1%) 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.

Roadsides:

- The individual grades for the six Roadside features translate to an overall condition grade point average of 3.20 or grade level B.
- Litter (-1%) is the only one of the six Roadside features had a reduction in the percentage of roadways that are backlogged for maintenance.
- Three features had an increase in the percentage of roadways that are backlogged for maintenance. These features include mowing (+1%), woody vegetation (+1%) and fences (+2%).
- Mowing for vision and woody vegetation control for vision are the two features 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 from 2011.

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 2.70 or grade level B.
- All 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 (-2%), edgeline markings (-4%), special pavement markings (-4%), emergency repair of regulatory/warning signs (-2%), routine replacement of regulatory/warning signs (-3%), emergency repair of detour/object marker/recreation/guide signs (-1%), routine replacement of detour/object marker/recreation/guide signs (-2%), delineators (-4%), and protective barriers (-2%).
- Four of the changes were significant enough to change the level of service grades of the features. They are centerline markings, edgeline markings and special pavement markings (B, from C), and emergency repair of regulatory/warning signs (A, from B).

Regions 2012: Compass Report on Highway Maintenance Conditions

Shoulders

- Hazardous Debris: The Southeast Region (17%) had a significantly higher backlog level than the other four regions (2% to 10%).
- Paved Shoulders: The maintenance backlog for drop-off/build-up was low (1% to 3%) and evenly distributed between four of the five regions.
- Unpaved Shoulders: The Northeast Region had the most cross-slope problems (42%) and drop-off/build-up (53%) in the state. There was a low level of erosion problems around the state (0% to 2%).

Drainage

- Ditches: There were very low ditches problems around the state (0% to 2%), which is an improvement over last year when region backlog levels were 6% and 7%.
- Culverts: All the regions had a similar amount of deficient culverts (between 25% and 28%), except for the Southeast Region which had a very low backlog percentage (5%).
- Drains: There was a wide disparity in conditions, with the North Central and Southeast Regions (13%) having the fewest deficient drains and the Northwest Region (58%) having the largest backlog.
- Flumes: While not as dramatic as Drains, there also was a wide disparity in flume conditions, with the Southwest Region (65%) having the highest backlog and the Northwest Region (31%) having the lowest backlog level.
- Curb and Gutter: The Northwest Region (14%) and the Southwest Region (9%) had the highest deficiency levels while the other regions varied between 1% and 5%.
- Storm Sewer Systems: The Southwest Region had the highest deficiency level at 28% while the Northeast and Northwest Regions had the lowest at 5% and 3%, respectively.

Roadsides

- Litter: The Northeast Region (72%) and the Southeast Region (74%) had more problems with litter than the other three regions (52% to 65%).
- Mowing: The Northeast Region (49%) had the highest backlog level, while the North Central and Northwest Region (34%) had the lowest backlog levels.
- Mowing for Vision: All the regions had low backlog levels between 0% and 3%.
- Woody Vegetation: The backlog levels were between 1% and 4%, except for the Southwest region with 7% backlog.
- Woody Vegetation for Vision: The regions have evenly distributed backlog levels between 0% and 3%.
- Fences: The Northwest Region had the highest backlog level at 12%, while the other regions had backlog levels between 0% and 3%.

Traffic Control and Safety Devices

- Pavement Markings: The North Central Region had the highest backlog level for deficient special pavement markings at 11%. Backlog levels for Centerline and Edgeline Markings varied between 3% and 8%, except for the Southwest Region with a very low backlog at 1%.
- Regulatory/Warning Signs and 'Other' Signs (emergency): The backlog levels for Regulatory/Warning Signs are between 0% and 2% across the state. The North Central Region had the highest backlog level for Other Signs (at 7%), while other regions had backlog levels between 0% and 5%.
- Protective Barriers: The Southeast Region (10%) and the North Central Region (7%) had significantly higher backlog level compared to the other regions (0%-1%).

Regions 2012: 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	7%	10%	2%	17%	7%	7%
	Drop-off/build-up (paved)	1%	1%	1%	3%	2%	1%
	Cracking (paved)	48%	70%	47%	70%	54%	55%
	Potholes/raveling (paved)	8%	5%	4%	11%	4%	6%
	Drop-off/build-up (unpaved)	37%	53%	26%	43%	35%	36%
	Cross-slope (unpaved)	35%	42%	15%	28%	21%	26%
	Erosion (unpaved)	0%	2%	0%	1%	1%	1%
	Dollars spent on shoulders (millions)	3.04	1.16	2.88	1.14	2.86	11.08
Drainage	Ditches	2%	0%	1%	1%	0%	1%
	Culverts	25%	26%	28%	5%	26%	25%
	Under-drains/edge-drains	13%	19%	58%	13%	50%	30%
	Flumes	46%	34%	31%	35%	65%	45%
	Curb & gutter	4%	5%	14%	1%	9%	5%
	Storm sewer system	19%	5%	3%	11%	28%	13%
	Dollars spent on drainage (millions)	0.66	0.84	1.45	3.03	1.93	7.90
Roadsides	Litter	52%	72%	56%	74%	65%	62%
	Mowing	34%	49%	34%	43%	42%	39%
	Mowing for vision	2%	0%	1%	3%	1%	1%
	Woody vegetation control	4%	1%	1%	2%	7%	3%
	Woody vegetation control for vision	0%	1%	0%	3%	0%	1%
	Fences	3%	0%	12%	0%	3%	3%
	Dollars spent on roadsides (millions)	3.39	3.24	5.30	5.07	6.11	23.10
Traffic and safety (selected devices)	Centerline markings	3%	6%	8%	6%	1%	4%
	Edgeline markings	4%	6%	3%	4%	1%	3%
	Special pavement markings	11%	3%	8%	3%	7%	6%
	Regulatory/warning signs (emergency repair)	2%	0%	2%	1%	2%	1%
	Regulatory/warning signs (routine replacement)	7%	20%	8%	16%	8%	12%
	Detour/object marker/recreation/guide signs (emergency repair)	7%	0%	3%	0%	5%	3%
	Detour/object marker/recreation/guide signs (routine replacement)	29%	34%	40%	45%	35%	37%
	Delineators	5%	10%	22%	27%	30%	21%
	Protective barriers	7%	0%	1%	10%	1%	3%
	Dollars spent on traffic and safety (selected devices) (millions)	4.20	2.56	4.34	5.04	5.80	21.93

Regions 2012: Regional Trend

Element	Feature	Region	Year				
			2008	2009	2010	2011	2012
Shoulders	Hazardous debris	NC	8%	5%	8%	5%	7%
		NE	8%	14%	6%	12%	10%
		NW	5%	2%	2%	1%	2%
		SE	5%	15%	12%	18%	17%
		SW	18%	9%	12%	9%	7%
	Drop-off/build-up (paved)	NC	-	2%	2%	4%	1%
		NE	-	5%	3%	3%	1%
		NW	-	4%	2%	1%	1%
		SE	-	6%	2%	7%	3%
		SW	-	6%	3%	4%	2%
	Cracking (paved)	NC	47%	57%	59%	55%	48%
		NE	56%	63%	56%	68%	70%
		NW	44%	66%	59%	59%	47%
		SE	63%	66%	73%	64%	70%
		SW	53%	59%	58%	60%	54%
	Potholes/raveling (paved)	NC	4%	5%	5%	6%	8%
		NE	5%	6%	3%	6%	5%
		NW	6%	3%	5%	8%	4%
		SE	11%	12%	10%	6%	11%
		SW	4%	9%	6%	5%	4%
	Drop-off/build-up (unpaved)	NC	38%	33%	38%	43%	37%
		NE	46%	38%	30%	37%	53%
		NW	35%	24%	32%	35%	26%
		SE	60%	30%	33%	48%	43%
		SW	44%	45%	44%	31%	35%
	Cross-slope (unpaved)	NC	19%	24%	26%	39%	35%
		NE	17%	27%	14%	34%	42%
		NW	24%	18%	18%	19%	15%
		SE	14%	10%	10%	34%	28%
		SW	15%	24%	16%	21%	21%
	Erosion (unpaved)	NC	0%	2%	2%	2%	0%
		NE	1%	2%	1%	1%	2%
		NW	1%	3%	1%	1%	0%
		SE	2%	1%	1%	6%	1%
		SW	4%	3%	1%	1%	1%
Drainage	Ditches	NC	1%	1%	2%	7%	2%
		NE	1%	1%	2%	1%	0%

Element	Feature	Region		Year			
			2008	2009	2010	2011	2012
		NW	1%	2%	1%	1%	1%
		SE	5%	3%	8%	6%	1%
		SW	2%	2%	1%	1%	0%
	Culverts	NC	21%	14%	22%	23%	25%
		NE	23%	24%	33%	11%	26%
		NW	25%	30%	33%	19%	28%
		SE	36%	25%	29%	39%	5%
		SW	34%	22%	26%	26%	26%
	Under-drains/edge-drains	NC	7%	15%	15%	27%	13%
		NE	9%	9%	5%	5%	19%
		NW	0%	33%	25%	37%	58%
		SE	36%	43%	22%	42%	13%
		SW	76%	32%	42%	49%	50%
	Flumes	NC	32%	56%	25%	42%	46%
		NE	25%	22%	43%	28%	34%
		NW	33%	53%	25%	44%	31%
		SE	42%	36%	14%	37%	35%
		SW	67%	30%	53%	46%	65%
	Curb & gutter	NC	8%	6%	3%	3%	4%
		NE	3%	2%	3%	1%	5%
		NW	9%	10%	25%	11%	14%
		SE	3%	2%	4%	0%	1%
		SW	16%	8%	4%	8%	9%
	Storm sewer system	NC	15%	7%	15%	10%	19%
		NE	13%	17%	15%	10%	5%
		NW	26%	15%	20%	6%	3%
		SE	16%	22%	18%	21%	11%
		SW	21%	22%	16%	30%	28%
Roadsides	Litter	NC	49%	59%	53%	54%	52%
		NE	69%	71%	58%	78%	72%
		NW	57%	58%	58%	50%	56%
		SE	57%	77%	72%	83%	74%
		SW	71%	74%	71%	66%	65%
	Mowing	NC	32%	32%	36%	31%	34%
		NE	49%	44%	50%	51%	49%
		NW	41%	26%	34%	31%	34%
		SE	43%	58%	56%	47%	43%
		SW	45%	34%	24%	41%	42%
		NC	3%	2%	0.0%	0%	2%

Element	Feature	Region	Year				
			2008	2009	2010	2011	2012
	Mowing for vision	NE	2%	2%	1%	0%	0%
		NW	4%	6%	3%	0%	1%
		SE	0%	0%	6%	5%	3%
		SW	6%	11%	7%	0%	1%
	Woody vegetation control	NC	1%	3%	3%	2%	4%
		NE	1%	2%	1%	3%	1%
		NW	4%	2%	5%	2%	1%
		SE	1%	7%	3%	2%	2%
		SW	4%	5%	4%	3%	7%
	Woody vegetation control for vision	NC	0%	0%	2%	1%	0%
		NE	0%	0%	1%	2%	1%
		NW	2%	0%	1%	0%	0%
		SE	1%	3%	0.0%	1%	3%
		SW	0%	0%	1%	1%	0%
	Fences	NC	4%	2%	1%	5%	3%
		NE	0%	0%	0.0%	0%	0%
		NW	0%	10%	2%	5%	12%
		SE	1%	0%	4%	0%	0%
		SW	4%	5%	2%	0%	3%
Traffic and safety (selected devices)	Centerline markings	NC	1%	7%	4%	7%	3%
		NE	2%	3%	6%	2%	6%
		NW	5%	8%	8%	7%	8%
		SE	3%	13%	18%	6%	6%
		SW	3%	6%	4%	6%	1%
	Edgeline markings	NC	6%	4%	5%	7%	4%
		NE	1%	4%	6%	1%	6%
		NW	6%	8%	8%	5%	3%
		SE	5%	20%	21%	11%	4%
		SW	4%	22%	8%	11%	1%
	Special pavement markings	NC	4%	0%	10%	2%	11%
		NE	6%	5%	3%	7%	3%
		NW	0%	12%	6%	12%	8%
		SE	7%	17%	18%	15%	3%
		SW	17%	8%	7%	8%	7%
	Regulatory/warning signs (emergency repair)	NC	0%	0%	2%	3%	2%
		NE	1%	0%	0.4%	1%	0%
		NW	1%	2%	1%	1%	2%
		SE	1%	2%	1%	1%	1%
		SW	1%	1%	0.3%	7%	2%

Element	Feature	Region		Year			
			2008	2009	2010	2011	2012
	Regulatory/warning signs (routine replacement)	NC	18%	18%	16%	15%	7%
		NE	38%	36%	29%	23%	20%
		NW	16%	14%	12%	11%	8%
		SE	28%	28%	22%	20%	16%
		SW	18%	19%	12%	9%	8%
	Detour/object marker/recreation/guide signs (emergency repair)	NC	0%	0%	2%	3%	7%
		NE	0%	0%	1%	0%	0%
		NW	1%	0%	1%	2%	3%
		SE	1%	0%	2%	3%	0%
		SW	0%	1%	2%	7%	5%
	Detour/object marker/recreation/guide signs (routine replacement)	NC	51%	40%	36%	34%	29%
		NE	65%	59%	51%	39%	34%
		NW	55%	48%	39%	38%	40%
		SE	51%	53%	48%	45%	45%
		SW	54%	51%	46%	39%	35%
	Delineators	NC	15%	6%	6%	12%	5%
		NE	15%	18%	12%	13%	10%
		NW	12%	16%	15%	21%	22%
		SE	41%	39%	11%	46%	27%
		SW	34%	23%	18%	26%	30%
	Protective barriers	NC	5%	4%	0.3%	15%	7%
		NE	3%	8%	0.0%	1%	0%
		NW	0%	4%	1%	8%	1%
		SE	3%	3%	0.3%	6%	10%
		SW	5%	2%	1%	3%	1%

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 15 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	5	1	1	0
		2%	0%	0%	0%
	Mowed by Property Owner	225	418	106	0
		93%	95%	21%	0%
	Woody Vegetation Control	1	1	0	0
		0%	0%	0%	0%
	Maintenance Decision	68	129	493	3
		28%	29%	99%	100%
	Total	242	438	496	3

2012 Signs: Compass Report on Routine Replacement and Age Distribution

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

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. The service life of "engineering-grade" face material is seven years and the service life for "high intensity" face material is twelve years.

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 2012:

- The backlog for routine replacement of regulatory and warning signs decreased from 15% in 2011 to 12%. Among regions, the percentage of regulatory and warning signs backlogged for replacement varies widely, from a low of 7% in the North Central Region to a high of 20% in the Northeast Region.
- The backlog for routine replacement of other signs (i.e. detour/object marker/recreation/ guide signs) decreased from 39% in 2011 to 37%. By region, the percentage of other signs backlogged for routine replacement varies from 29% in the North Central Region to 45% in the Southeast Region.
- 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 77% in 2011 to 81%. More than 17,000 high intensity signs were added to the state system in the last year. Considering the sign group (regulatory/warning signs vs. other signs), 91% of regulatory/warning signs are high intensity signs, while 67% of other signs have high intensity face material.
- 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 8.1 years beyond their recommended service life.
- There are 14,042 regulatory/warning signs and 35,701 other signs in service five years or more beyond their recommended service life. This represents 8% and 31% respectively of the state highway signs in each category. The percentage for regulatory and warning signs is 2% less than what it was last year, while for other signs it is 3% less than what it was last year.
- There are 12,364 Type – F Fluorescent signs in service. Among those, only 599 (5%) are beyond their service life, with only 67 (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]**
2006	157,742	31%	49,457	5.0	126,362	55%	69,051	5.9
2007	160,206	25%	40,548	4.8	125,891	56%	70,099	6.3
2008	163,215	23%	37,060	4.7	124,333	55%	68,430	6.3
2009	166,741	23%	37,839	4.9	128,953	51%	65,350	7.3
2010	168,653	17%	29,313	5.3	121,743	44%	53,561	7.7
2011	171,202	15%	25,930	5.3	120,486	39%	47,568	8.5
2012	**176,712**	**12%**	**20,399**	**5.3**	**118,509**	**37%**	**44,225**	**8.1**

Regions 2012: 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	29,179	7%	2,007	3.5	17,654	29%	5,066	4.9
NE	26,294	20%	5,221	7.3	16,328	34%	5,580	9.3
NW	33,958	8%	2,560	5.1	26,293	40%	10,502	7.7
SE	43,216	16%	7,085	7.4	27,567	45%	12,286	8.6
SW	44,065	8%	3,526	5.4	30,667	35%	10,791	11.1

[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 2012: Trend of 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
	2012	29,179	7%	2,007	3.5	17,654	29%	5,066	4.9
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
	2012	26,294	20%	5,221	7.3	16,328	34%	5,580	9.3
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
	2012	33,958	8%	2,560	5.1	26,293	40%	10,502	7.7
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

	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**
	2007	36,390	28%	10,234	5	27,341	49%	13,386	6.2
	2008	37,249	28%	10,461	4.7	27,477	51%	14,133	6.2
	2009	38,563	28%	10,807	5.3	27,203	53%	14,341	6.9
	2010	39,451	22%	8,510	6.0	26,287	48%	12,491	7.6
	2011	40,870	20%	8,244	6.7	26,875	45%	12,205	8.3
	2012	43,216	16%	7,085	7.4	27,567	45%	12,286	8.6
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
	2012	44,065	8%	3,526	5.4	30,667	35%	10,791	11.1

Wisconsin and Regions 2012: Sign Face Material Distribution

Face		Region					Statewide	
Grade	**Type**	**NC**	**NE**	**NW**	**SE**	**SW**	**Total**	**Percentage**
1	Non-Reflective	5	21	285	86	25	422	0.1%
	Other or Varies	85		200	17	447	749	0.3%
	Reflective - Engineering Grade	6,876	7,439	11,192	15,297	13,384	54,188	18.4%
2	Type D - Diamond Grade	-	-	-	-	-	-	-
	Type F - Fluorescent	3,683	1,778	2,206	1,436	3,301	12,404	4.2%
	Type H - High Intensity	10,522	7,849	17,058	15,754	21,973	73,156	24.8%
	Type HP - Prismatic High Intensity	25,519	25,061	29,092	37,926	35,137	152,735	51.7%
	Type SH - Super High Intensity	143	474	218	267	465	1,567	0.5%
Total		46,833	42,622	60,251	70,783	74,732	295,221	100.0%

Wisconsin and Regions: Sign Face Material Trends

	2009		2010		2011		2012	
Region	**Engineering Grade**	**High Intensity**	**Engineering Grade**	**High Intensity**	**Engineering Grade**	**High Intensity**	**Engineering Grade**	**High Intensity**
NC	12,701	35,013	10,256	36,827	8,928	38,014	6,966	39,867
NE	23,569	25,282	15,890	29,255	11,125	32,240	7,460	35,162
NW	18,617	43,287	15,190	45,782	13,704	46,833	11,677	48,574
SE	23,549	42,217	19,230	46,508	17,641	49,951	15,400	55,383
SW	23,638	47,096	19,608	51,044	16,149	55,348	13,856	60,876
Statewide	102,074	192,895	80,174	209,416	67,547	222,386	55,359	239,862
	35%	**65%**	**28%**	**72%**	**23%**	**77%**	**19%**	**81%**

Regions 2012: Sign Face Material by Group

	Region	Engineering Grade	High Intensity	Total
Reg/Warning Signs	NC	2,296	26,883	29,179
	NE	3,260	23,034	26,294
	NW	2,433	31,525	33,958
	SE	5,298	37,918	43,216
	SW	2,601	41,464	44,065
	Statewide	15,888	160,824	176,712
		9%	**91%**	
Other Signs	NC	4,670	12,984	17,654
	NE	4,200	12,128	16,328
	NW	9,244	17,049	26,293
	SE	10,102	17,465	27,567
	SW	11,255	19,412	30,667
	Statewide	39,471	79,038	118,509
		33%	**67%**	

Wisconsin and Regions 2012: Sign Age Distribution by Group

Regulatory/warning/school signs

	Years prior to the end of service life							Years beyond service life						
	6-10	**5**	**4**	**3**	**2**	**1**	**0**	**1**	**2**	**3**	**4**	**5-10**	**>10**	**Total**
NC	14,720	3,393	2,096	1,925	3,160	1,134	710	429	259	168	231	893	27	29,145
	51%	12%	7%	7%	11%	4%	2%	1%	1%	1%	1%	3%	0%	100%
NE	12,176	2,906	1,231	791	2,009	1,156	801	567	412	329	468	2,303	1,142	26,291
	46%	11%	5%	3%	8%	4%	3%	2%	2%	1%	2%	9%	4%	100%
NW	14,681	5,041	3,603	2,884	2,905	1,634	647	354	323	219	218	1,292	154	33,955
	43%	15%	11%	8%	9%	5%	2%	1%	1%	1%	1%	4%	0%	100%
SE	22,624	3,213	2,836	2,612	2,548	1,540	618	444	390	152	453	4,092	1,554	43,076
	53%	7%	7%	6%	6%	4%	1%	1%	1%	0%	1%	9%	4%	100%
SW	17,838	6,449	4,404	5,100	3,512	2,154	881	284	363	150	144	1,894	691	43,864
	41%	15%	10%	12%	8%	5%	2%	1%	1%	0%	0%	4%	2%	100%
State	82,039	21,002	14,170	13,312	14,134	7,618	3,657	2,078	1,747	1,018	1,514	10,474	3,568	176,331
	47%	12%	8%	8%	8%	4%	2%	1%	1%	1%	1%	6%	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	7,627	653	1,047	631	1,463	594	248	1,029	190	188	296	2,692	671	17,329
	44%	4%	6%	4%	8%	3%	1%	6%	1%	1%	2%	16%	4%	100%
NE	7,697	880	523	301	578	427	333	421	165	264	422	2,425	1,883	16,319
	47%	5%	3%	2%	4%	3%	2%	3%	1%	2%	3%	15%	12%	100%
NW	8,682	1,756	2,093	1,050	1,039	910	251	1,199	311	250	377	6,050	2,315	26,283
	33%	7%	8%	4%	4%	3%	1%	5%	1%	1%	1%	23%	9%	100%
SE	8,824	1,044	1,049	953	1,374	785	1,181	1,184	323	421	714	5,538	4,106	27,496
	32%	4%	4%	3%	5%	3%	4%	4%	1%	2%	3%	20%	15%	100%
SW	10,907	1,150	1,133	971	1,355	1,453	503	393	122	85	170	4,876	5,145	28,263
	39%	4%	4%	3%	5%	5%	2%	1%	0%	0%	1%	17%	18%	100%
State	43,737	5,483	5,845	3,906	5,809	4,169	2,516	4,226	1,111	1,208	1,979	21,581	14,120	115,690
	38%	5%	5%	3%	5%	4%	2%	4%	1%	1%	2%	19%	12%	100%

Wisconsin and Regions 2012: 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	3,348	65	41	33	97	50	20	17	9	1		1	1	3,683
	91%	2%	1%	1%	3%	1%	1%	0%	0%	0%	0%	0%	0%	100%
NE	1,240	110	34	29	75	81	41	53	47	7	17	33	11	1,778
	70%	6%	2%	2%	4%	5%	2%	3%	3%	0%	1%	2%	1%	100%
NW	1,950	41	37	57	36	28	29	16	10					2,204
	88%	2%	2%	3%	2%	1%	1%	1%	0%	0%	0%	0%	0%	100%
SE	905	58	29	44	125	67	25	61	106			5	1	1,426
	63%	4%	2%	3%	9%	5%	2%	4%	7%	0%	0%	0%	0%	100%
SW	2,694	36	38	128	107	45	22	72	114	2		11	4	3,273
	82%	1%	1%	4%	3%	1%	1%	2%	3%	0%	0%	0%	0%	100%
State	10,137	310	179	291	440	271	137	219	286	10	17	50	17	12,364
	82%	3%	1%	2%	4%	2%	1%	2%	2%	0%	0%	0%	0%	100%

Type H - High Intensity

	Years prior to the end of service life							Years beyond service life						
	6-10	**5**	**4**	**3**	**2**	**1**	**0**	**1**	**2**	**3**	**4**	**5-10**	**>10**	**Total**
NC	874	452	1,453	2,039	2,814	1,291	676	410	186	38	47	71	37	10,388
	8%	4%	14%	20%	27%	12%	7%	4%	2%	0%	0%	1%	0%	100%
NE	515	537	501	693	1,990	1,062	545	484	265	146	238	660	213	7,849
	7%	7%	6%	9%	25%	14%	7%	6%	3%	2%	3%	8%	3%	100%
NW	1,498	934	2,964	3,432	3,586	2,273	617	1,006	289	96	123	197	42	17,057
	9%	5%	17%	20%	21%	13%	4%	6%	2%	1%	1%	1%	0%	100%
SE	432	196	1,514	3,236	3,553	2,089	1,516	989	431	318	220	920	325	15,739
	3%	1%	10%	21%	23%	13%	10%	6%	3%	2%	1%	6%	2%	100%
SW	50	252	4,494	5,876	4,661	3,426	1,216	566	197	119	87	398	256	21,598
	0%	1%	21%	27%	22%	16%	6%	3%	1%	1%	0%	2%	1%	100%
State	3,369	2,371	10,926	15,276	16,604	10,141	4,570	3,455	1,368	717	715	2,246	873	72,631
	5%	3%	15%	21%	23%	14%	6%	5%	2%	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	18,004	3,519	1,490	440	286	317	231	644	114	123	79	149	25	25,421
	71%	14%	6%	2%	1%	1%	1%	3%	0%	0%	0%	1%	0%	100%
NE	17,681	3,012	1,124	232	472	271	362	369	194	158	189	730	259	25,053
	71%	12%	4%	1%	2%	1%	1%	1%	1%	1%	1%	3%	1%	100%
NW	19,823	5,531	2,394	280	180	110	111	305	107	51	43	119	35	29,089
	68%	19%	8%	1%	1%	0%	0%	1%	0%	0%	0%	0%	0%	100%
SE	29,873	3,994	2,325	272	235	158	237	156	73	88	62	197	81	37,751
	79%	11%	6%	1%	1%	0%	1%	0%	0%	0%	0%	1%	0%	100%
SW	25,646	7,301	985	59	94	128	125	13	33	15	45	108	54	34,606
	74%	21%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
State	111,027	23,357	8,318	1,283	1,267	984	1,066	1,487	521	435	418	1,303	454	151,920
	73%	15%	5%	1%	1%	1%	1%	1%	0%	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	118	1	1	--	1	1	2	5	--	--	--	2	3	134
	88%	1%	1%	--	1%	1%	1%	4%	--	--	--	1%	2%	100%
NE	422	7	16	--	7	2	4	5	1	--	--	6	4	474
	89%	1%	3%	--	1%	0%	1%	1%	0%	--	--	1%	1%	100%
NW	60	72	66	2	--	1	--	5	5	--	--	7	--	218
	28%	33%	30%	1%	--	0%	--	2%	2%	--	--	3%	--	100%
SE	228	4	3	1	1	6	2	10	2	2	--	1	2	262
	87%	2%	1%	0%	0%	2%	1%	4%	1%	1%	--	0%	1%	100%
SW	341	1	15	--	2	5	--	1	5	1	1	39	--	411
	83%	0%	4%	--	0%	1%	--	0%	1%	0%	0%	9%	--	100%
State	1,169	85	101	3	11	15	8	26	13	3	1	55	9	1,499
	78%	6%	7%	0%	1%	1%	1%	2%	1%	0%	0%	4%	1%	100%

2012 Winter: Compass Report on Winter Operations

This section of the report looks at winter operations on state highways from November 1, 2011 to April 30, 2012.

The WisDOT Bureau of Highway Maintenance 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 2011-12 was 24.3 versus 38.5 in the previous year.

The 2011-12 winter season was incredibly mild. Temperatures averaged 5 to 7 degrees above normal from December through February. This resulted in much less snowfall than had been seen the previous winter. The statewide average snowfall fell from around 100 inches to near 50 inches. Winter Severity Index this year is recorded at 24.3, which is 25 percent lower than the average of the previous ten winters (32.6).

Statewide measures for winter

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Time to bare/wet pavement	**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	**54 minutes** after the storm ended
Cost per lane mile	**$1,549**	**$2,591**	**$2,365**	**$2,222**	**$2,696**	**$1,656**
Winter severity index	**28.4**	**37.2**	**36.2**	**26.6**	**38.5**	**24.3**
Winter related crash	**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	**20 per 100 million** vehicle miles traveled

Key Observations:

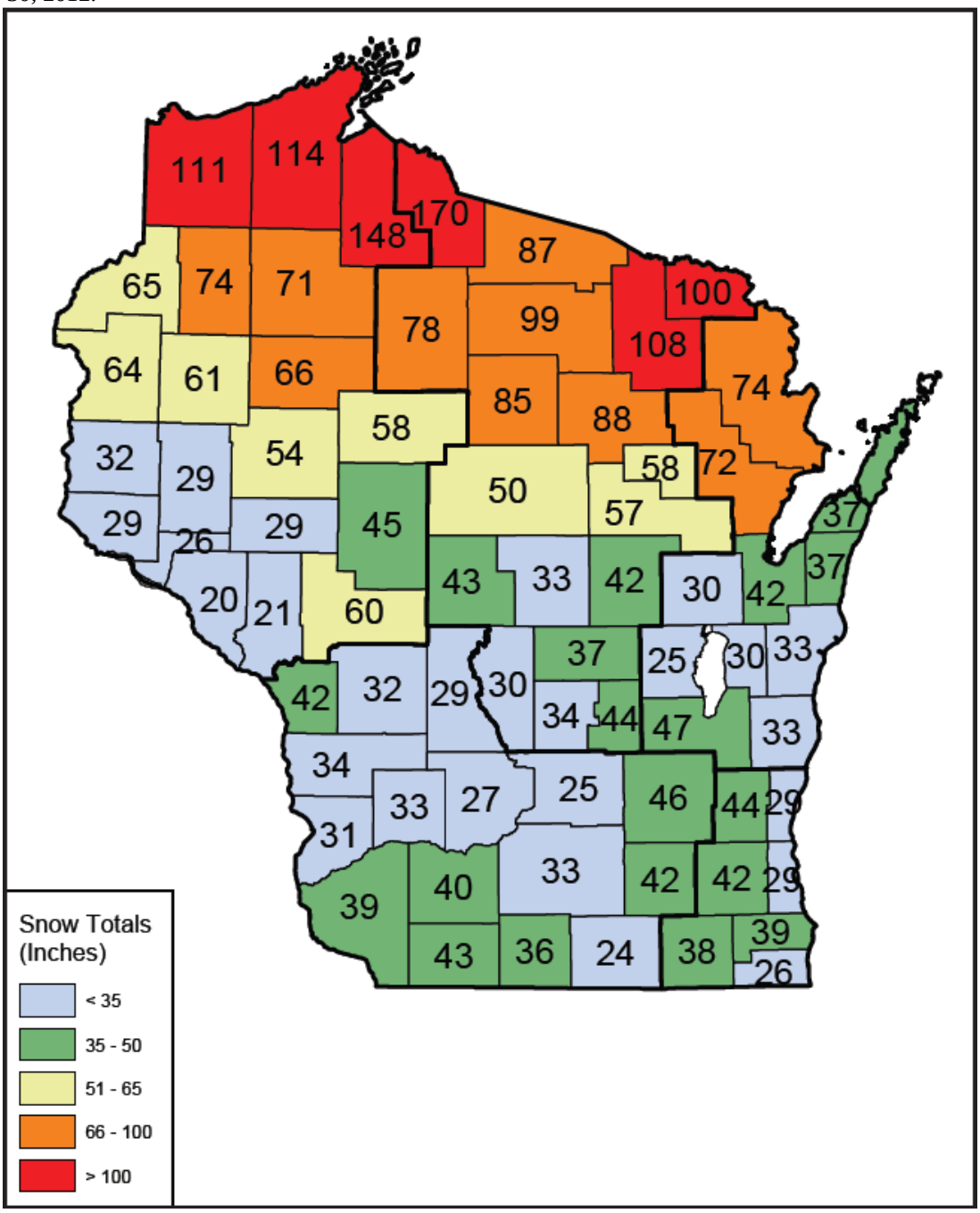
- In 2011-12, Wisconsin experienced its lightest winter of the past 10 years. Compared to last year's record breaking winter costs of $91,054,937, this winter's costs totaled $56,217,319. The state experienced an average of 26 winter storms this winter, resulting in an average of 51.2 total inches of snowfall. This average represents a nearly 50% decrease from last year's statewide average of 100.1 inches of snow.
- Snowfall varied quite a bit across the state this winter, with an average of approximately 50 inches. While this was in line with the historical average amount, it was approximately half the average of the previous winter. The highest snowfall recorded in 2011-12 winter season was in Iron County, at 170 inches; the lowest was in Buffalo County, at 20 inches. Both figures were well below those of the previous winter.

- The average time to bare/wet pavement during winter 2011-12 was 54 minutes, which is 36 minutes less 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 355,519 tons of salt (10.5 tons per mile) was used on state highways this winter, compared to 573,253 tons (17 tons per mile) last year. This year's total salt use was comparable to most other years with a similar severity index.

2011-2012 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.

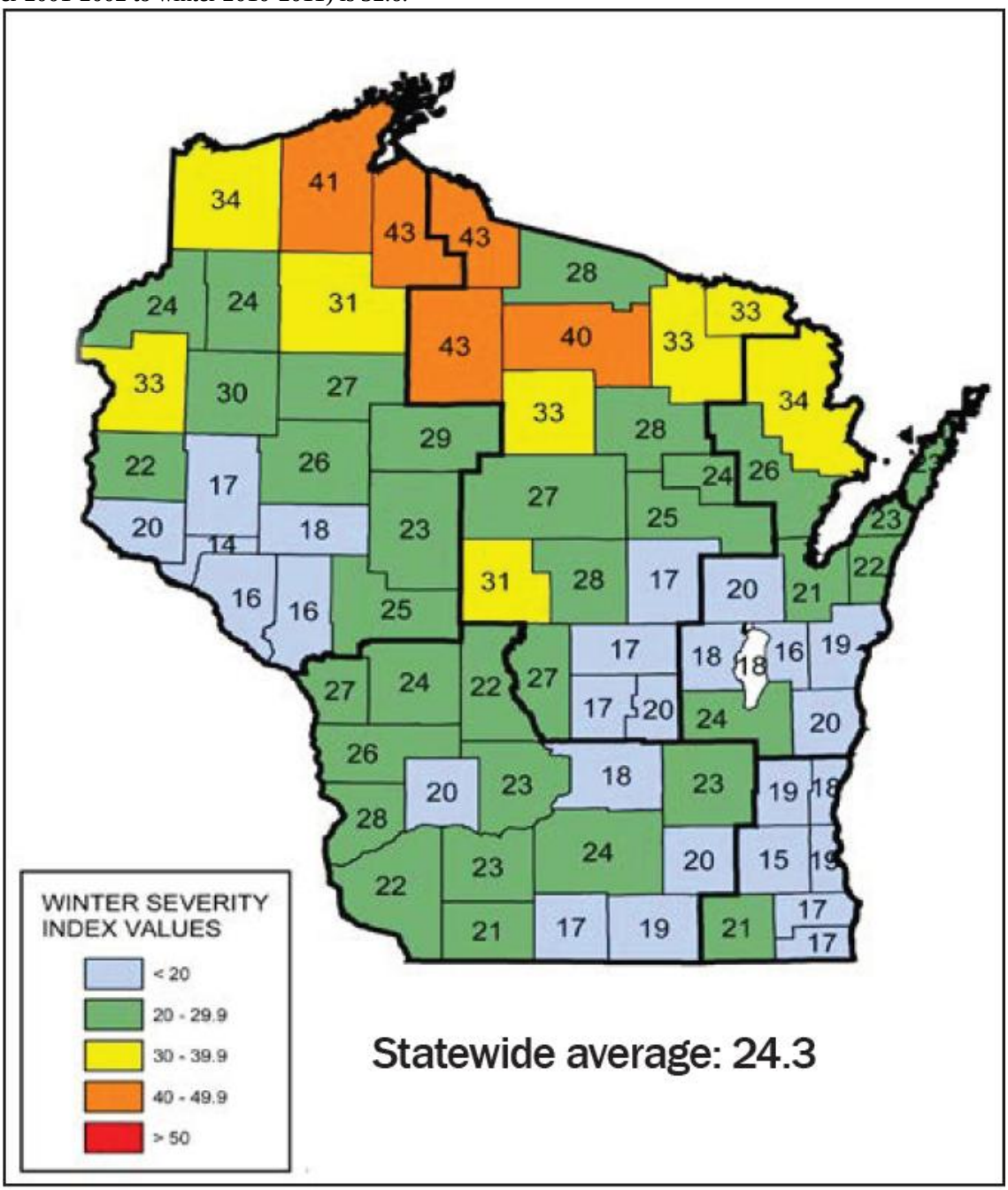
The National Weather Service (NWS) map below shows the snowfall for Wisconsin during the period July 1, 2011 to June 30, 2012.



2011-2012 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 2011-2011 was 24.3. The average for the previous ten-years (winter 2001-2002 to winter 2010-2011) is 32.6.



Winter by the numbers

		2007-08	2008-09	2009-10	2010-11	2011-12
Infrastructure	Lane miles	33,297 miles	33,531 miles	33,532 miles	33,776 miles	33,944 miles
	Road Weather Information System (RWIS) stations	59	58	58	60	60
Material usage[4]	Salt	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	355,519 tons 10.5 tons per lane mile
	Average cost of salt	$41.69 per ton	$47.19 per ton	$60.92 per ton	$58.55 per ton	$59.18 per ton
	Pre-wetting liquid used	1,293,655 gal.	1,321,290 gal.	1,099,971 gal	1,529,230 gal	1,082,163 gal
	Anti-icing agent	331,179 gal.	500,673 gal.	683,144 gal	714,860 gal	1,164,394 gal
	Sand	80,133 cu. yd.	44,179 cu. yd.	19,081 cu. yd.	18,941 cu. yd.	7,513 cu. yd.
Services	Regular county hours on winter[5]	178,682 hrs.	148,655 hrs.	133,715 hrs.	176,842 hrs.	103,332 hrs
	Overtime county hours on winter	199,835 hrs.	176,636 hrs.	106,578 hrs.	175,373 hrs.	82,657 hrs
	Public service announcements aired	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	6,668 total 6,016 radio 652 TV
	Cost of public service announcements	$35,000 ($301,463 market value)	$46,500 ($288,895 market value)	$36,000 ($259,062 market value)	$36,000 ($209,144 market value)	$36,000 ($268,399 market value)
Management and Technology	Patrol sections	768	762	767	759	770
	Average patrol section length	43.36 miles	45.54 miles	43.72 miles	44.03 miles	44.08 miles
	Salt spreaders equipped with on-board pre-wetting unit[6]	N/A	N/A	N/A	N/A	N/A
	Counties with salt spreaders equipped with on-board pre-wetting unit	52 of 72(72%)	55 of 72 (76%)	55 of 72 (76%)	58 of 72 (80%)	58 of 72 (80%)
	Salt spreaders equipped with ground-speed controller unit	N/A	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.

		2007-08	2008-09	2009-10	2010-11	2011-12
	Counties with salt spreaders equipped with ground-speed controller unit	67 of 72(93%)	67 of 72 (93%)	67 of 72 (93%)	65 of 72 (90%)	68 of 72 (94%)
	Underbody plows	565	572	572	589	619
	Counties with underbody plows	55 of 72 (76%)	55 of 72 (76%)	55 of 72 (76%)	55 of 72 (76%)	57 of 72 (79%)
	Counties equipped to use anti-icing agents	65 of 72 (90%)	65 of 72 (90%)	65 of 72 (90%)	65 of 72 (90%)	66 of 72 (92%)
	Counties that used anti-icing agents during 2007-08 winter season	52 of 72 (72%)	54 of 72 (75%)	62 of 72 (86%)	61 of 72 (85%)	60 of 72 (83%)

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 critical a given category of highway is and average traffic levels. 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)*					
		2006 - 07	2007 - 08	2008-09	2009-10	2010-11	2011-12
More critical highways	1	-2.50	2.20	1.35	-1.02	-0.95	**-0.72**
	2	-0.55	0.76	1.01	-1.58	-0.55	**-0.8**
	3	1.57	3.14	2.40	1.65	2.25	**0.18**
Less critical highways	4	2.70	4.01	3.06	2.32	1.39	**1.65**
	5	2.73	4.84	3.74	2.41	2.92	**2.33**

* 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			
	2008 - 09	2009-10	2010-11	2011-12	2008 - 09	2009-10	2010-11	2011-12	2008 - 09	2009-10	2010-11	2011-12
NC	43.0	28.7	43.4	**28.5**	$2,183	$1,965	$2,448	**$1,755**	$51	$69	$56	**$61**
NE	35.2	24.6	33.4	**22.1**	$2,526	$2,234	$2,592	**$1,548**	$72	$91	$78	**$70**
NW	36.2	28.0	42.2	**25.6**	$1,918	$1,747	$2,397	**$1,446**	$53	$63	$57	**$56**
SE	31.6	22.3	30.7	**17.9**	$3,042	$2,906	$3,434	**$2,055**	$96	$130	$112	**$115**
SW	31.2	25.7	35.0	**22.3**	$2,366	$2,370	$2,716	**$1,572**	$76	$92	$78	**$70**
Statewide	36.2	26.6	38.5	**23.3**	$2,365	$2,052	$2,696	**$1,656**	$65	$81	$70	**$71**

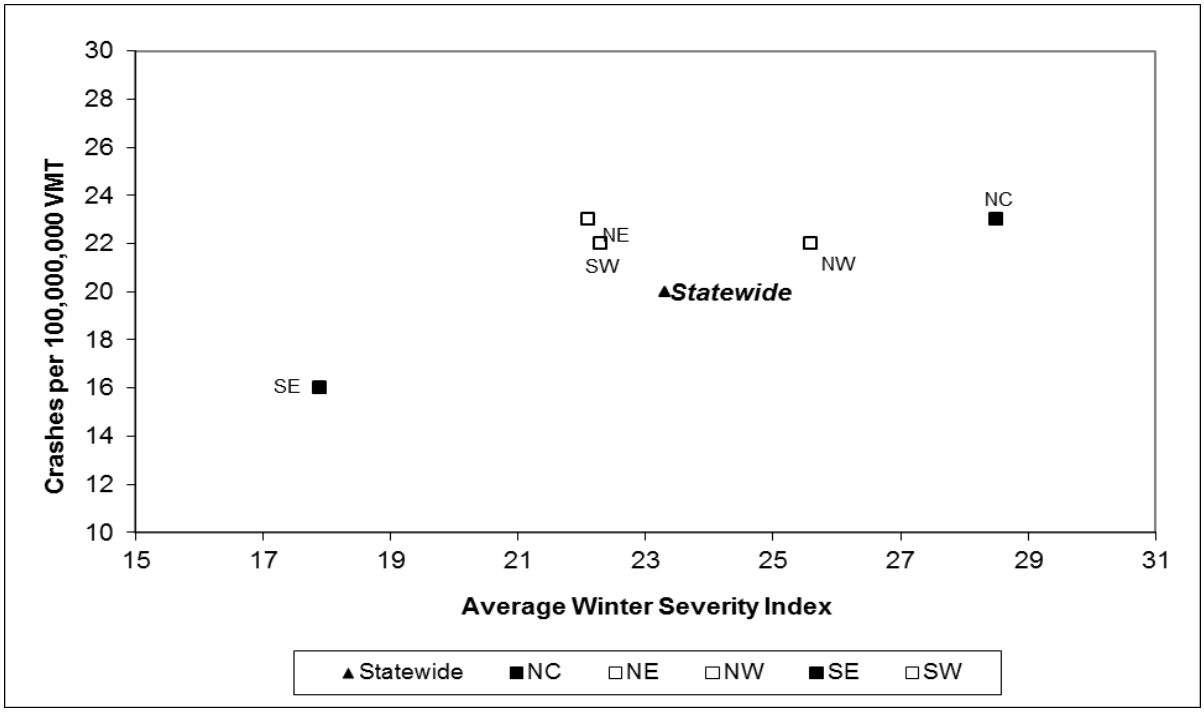
Winter weather crashes per vehicle miles traveled (VMT)

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			
			2008 - 09	2009-10	2010-11	2011-12	2008 - 09	2009-10	2010-11	2011-12
NC	33.26	753	46	23	39	**23**	43.0	28.7	43.4	**28.5**
NE	43.66	1,000	47	25	38	**23**	35.2	24.6	33.4	**22.1**
NW	39.43	870	35	22	39	**22**	36.2	28.0	42.2	**25.6**
SE	75.43	1,195	35	16	27	**16**	31.6	22.3	30.7	**17.9**
SW	64.91	1,423	42	26	37	**22**	31.2	25.7	35.0	**22.3**
Statewide	256.69	5,241	40	22	35	**20**	36.2	26.6	38.5	**23.3**

*100 million vehicle miles traveled (VMT) for November 1, 2011 through April 30, 2012 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, 2011 to June 30, 2012.
Winter: November 1 through April 30, unless otherwise noted.
Winter Activities: Actual cost data incorporates all winter activities, including putting up snow fence, transporting salt, filling salt sheds, thawing out frozen culverts, calibrating salt spreaders, producing and storing salt brine, and anti-icing applications, as well as plowing and salting. Costs from storm reports, however, cover only plowing, sanding, salting, and anti-icing.
Roads: The roads referred to in this report are state maintained highways, including Interstate and US highways. See the following tables for groupings.

Categories & groupings

Winter service group assignments

Winter Service Group	Definition	County Names	Number of Counties	% of Counties
A	Counties where all or most of the highways receive 24-hour coverage	Brown, Dane, Eau Claire, Kenosha, La Crosse, Marathon, Milwaukee, Ozaukee, Portage, Racine, Waukesha, Winnebago	12	17%
B	Counties with 18-hour and 24-hour coverage. More than 50% of highways receive 24-hour coverage	Chippewa, Columbia, Dodge, Dunn, Jefferson, Manitowoc, Marquette, Oneida, Outagamie, Rock, Sauk, Shawano, Sheboygan, St. Croix, Walworth, Washington, Waushara	17	24%
C	Counties with 18-hour and 24-hour coverage. Less than 50% of highways receive 24-hour coverage	Calumet, Clark, Crawford, Door, Douglas, Fond Du Lac, Grant, Iowa, Jackson, Juneau, Kewaunee, Lafayette, Lincoln, Monroe, Oconto, Trempealeau, Vernon, Vilas, Washburn, Waupaca, Wood	21	29%
D	Counties where no highways receive 24-hour coverage	Adams, Ashland, Barron, Bayfield, Buffalo, Burnett, Florence, Forest, Green, Green Lake, Iron, Langlade, Marinette, Menominee, Pepin, Pierce, Polk, Price, Richland, Rusk, Sawyer, Taylor	22	31%

Passable roadway expectation categories

Category	Definition	Lane miles	% of total
1	Major urban freeways and most highways with six lanes and greater	2,865	8%
2	High volume four-lane highways (ADT $\geq$ 25,000) and some four-lane highways (ADT < 25,000), and some 6-lane highways.	3,182	9%
3	All other four-lane highways (ADT < 25,000)	8,832	26%
4	Most high volume two-lane highways (ADT $\geq$ 5,000) and some 2-lanes (ADT <5000)	4,887	14%
5	All other two-lane highways	14,178	42%
Total		33,944	

2012 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 April 1st to April 15th, 2013.

Key observations:

Bridge Deck Condition Distribution

- 31% of decks statewide are in Fair condition and need reactive maintenance, based on their NBI ratings of 5 or 6. These include 25% of concrete bridges and 43% of steel bridges.
- The Northwest Region has the lowest percent of decks in good condition, only 52% of decks in good condition. The Southeast Region has the highest percentage of decks in poor condition at 3%. The Southeast Region also has the largest deck area to maintain (14,865,779 ft^2).
- The Northeast Region (884 bridges) has the best bridge ratings in the state, with 87% 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
  - Approaches - Seal Approach to Paving Block
  - Expansion Joints – Clean
  - IMP - Concrete Overlay
  - Miscellaneous - Cut Brush
  - Decks – Clean and Sweep Deck/Drains
  - Drainage - Repair Washouts / Erosion
  - Expansion Joints – Seal
  - Deck-Patching

Wisconsin 2012: Bridge Condition Distribution

	Bridges	Deck Area (ft^2)	Component	% of bridges in condition			
				Good[1]	Fair[2]	Poor[3]	Critical[3]
All	5,221	52,259,889	Decks	67%	31%	2%	0%
			Superstructures	72%	27%	1%	0%
			Substructures	72%	27%	1%	0%
Concrete	3,716	29,996,533	Decks	73%	25%	2%	0%
			Superstructures	81%	18%	1%	0%
			Substructures	82%	18%	0%	0%
Steel	1,505	22,263,356	Decks	54%	43%	3%	0%
			Superstructures	53%	45%	2%	0%
			Substructures	51%	47%	2%	0%

Region 2012: Bridge Condition Distribution

Region	Bridges	Deck Area (ft^2)	Component	% of bridges in condition			
				Good[1]	Fair[2]	Poor[3]	Critical[3]
NC	663	5,491,810	Decks	72%	27%	1%	0%
			Superstructures	83%	17%	0%	0%
			Substructures	79%	21%	1%	0%
NE	893	9,569,896	Decks	87%	13%	0%	0%
			Superstructures	85%	14%	0%	0%
			Substructures	81%	18%	1%	0%
NW	1,063	9,458,643	Decks	52%	46%	2%	0%
			Superstructures	65%	33%	2%	0%
			Substructures	70%	29%	1%	0%
SE	1,068	14,865,779	Decks	58%	38%	3%	0%
			Superstructures	57%	42%	2%	0%
			Substructures	59%	41%	0%	0%
SW	1,534	12,873,761	Decks	70%	28%	2%	0%
			Superstructures	75%	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 2012: 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	
	2012	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	
	2012	13%	14%	18%	893	
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	
	2012	46%	33%	29%	1063	
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	
	2012	38%	42%	41%	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	
	2012	28%	23%	25%	1534	
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
	2012	31%	27%	27%	5221	$13.25

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	**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
	2012	85%	563	44%	289	19%	127	26%	171	20%	130	15%	101	12%	81
NE	**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
	2012	48%	425	37%	325	10%	87	34%	301	19%	166	17%	153	2%	18
NW	**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
	2012	4%	46	4%	43	6%	63	17%	178	11%	113	15%	154	4%	41
SE	**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
	2012	22%	240	22%	239	28%	301	32%	339	17%	181	25%	265	18%	191
SW	**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
	2012	35%	530	5%	74	39%	589	42%	643	11%	165	21%	316	15%	222
statewide	**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
	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
	2012	35%	1804	19%	970	22%	1167	31%	1632	15%	755	19%	989	11%	553

Appendices

A. **Program Contributors**
B. **Feature Contribution Categories**
C. **Feature Thresholds and Grade Ranges**
D. **2012 Highway Maintenance Target Service Levels Memo**
E. **2012 Maintenance Targets**
F. **2012 Compass Rating Sheet**
G. **County Data:**
    1. **Field Review: Shoulders, Drainage, Roadside and Traffic**
    2. **Signs (routine replacement needs)**
    3. **Bridge Maintenance Needs**

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

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Matt Rauch, WisDOT Central Office (signs)
Mike Sproul, WisDOT Central Office (winter)

B. Feature Contribution Categories

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

		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			✓		

Category Definitions:

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

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

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

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

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

C. Compass Feature Thresholds and Grade Ranges

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

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

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

D. 2012 Target Service Levels Memo

WisDOT Highway Maintenance
2012 Target Service Levels

Issued by David Vieth, Director of the Bureau of Highway Maintenance (August 31, 2011)

Attached are the 2012 target service levels for highway operations. Highway maintenance managers set these targets to provide guidance to central office and regional highway maintenance staff in prioritizing activities and expending resources. The 2012 targets are critical for structuring the 2012 Routine Maintenance Agreements (RMA). **The targets are consistent with the 2012 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 maintenance managers in the regions and BHM to set priorities within the budget and to increase consistency across region and county lines. The condition measure used is the percent of inventory with backlogged maintenance work. A measure greater than 0% backlogged reflects work left undone at the end of the summer season. Under full funding of maintenance needs, we would expect to see features at or close to 0%. The following chart provides historical service levels statewide and by region for 2010. Please remember targets have not yet been set for a portion of highway maintenance expenditures including winter operations, certain traffic control devices, and electrical operations.

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

- Focusing our resources on keeping the system safe and operating from day to day. Highway maintenance priorities will:
    - Decrease drop-off on unpaved shoulders.
    - Decrease the amount of hazardous debris on shoulders.
    - Repair damaged safety appurtenances and signs.
    - Repair damaged regulatory and warning signs, and continue to routinely replace old regulatory and warning signs.
- Expending far fewer resources because of limited funding.
    - Routine crack sealing and non-emergency concrete repair for preventive maintenance purposes should not be undertaken with routine maintenance funds.
    - Mowing is limited to one shoulder cut per season. The exception is for spot locations where vision is a safety issue for that specific area.
    - No maintenance of lane-line raised pavement markers and other wet reflective markings. Special pavement markings will only be addressed for the most critical safety needs. Some edgeline markings will be deferred.
    - Litter control is limited to once in the spring and Adopt-A-Highway efforts continue to be encouraged.
- Leveraging improvement funding and better coordinating improvement work to decrease maintenance workload and funding demands.

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

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

E.2012 Highway Maintenance Targets

Element	Feature	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	2012 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	4=B	4=B
	Cracking (paved)	60=D	60=D	60=D	60=D	70=F	70=F	60 = D
	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)	30=D	25=D	20=D	20=F	35=F	30=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	20=C	30=C	30=C	30=C
	Curb & Gutter	10=B	10=B	10=B	10=B	10=B	10=B	10=B
	Ditches	2=A	2=A	5=A	5=A	5=A	5=A	5=A
	Flumes	30=C	30=C	30=C	30=C	35=C	35=C	35=C
	Storm Sewer System	10=B	10=B	10=B	15=B	15=B	15=B	15=B
	Under-drains/Edge-drains	25=C	25=C	25=C	25=C	30=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	81=F	81=F	81=F

Element	Feature	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	2012 Target Percent Backlogged and Feature Grade - Statewide
	Mowing	40=C	40=C	40=C	40=C	40=C	40=C	40=C
	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	3=A	3=A	3=A	3=A	3=A	2=A	2=A
Traffic and Safety	Centerline Markings	5=B	6=C	5=B	5=B	5=B	5=B	5=B
	Delineators	25=D	25=D	25=D	25=D	25=D	25=D	25=D
	Edgeline Markings	6=B	7=B	6=B	8=C	8=B	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)	65=F	70=F	70=F	70=F	59=D	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)	35=D	30=D	25=D	25=D	25=D	25=D	25=D
	Special Pavement Markings	25=D	25=D	25=D	25=D	23=C	23=C	23=C

Element	Feature	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	2012 Target Percent Backlogged and Feature Grade - Statewide
Asphalt Traveled Way	Alligator Cracking	5=A	5=A	5=A	5=A	5=A	5=A	5=A
	Block Cracking	5=A	5=A	5=A	5=A	5=A	5=A	5=A
	Edge Raveling	18=B	20=C	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	28=C	30=C	30=C	65=F	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	13=D	10=D	7=B	7=C	7=C	7=C	7=C
	Surface Raveling	2=A	2=A	2=A	2=A	2=A	2=A	2=A
	Transverse Cracking	28=C	30=C	30=C	67=F	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	88=F	88=F	88=F	88=F

F. 2012 Compass Rating Sheet

2012 Compass Rating Sheet
Wisconsin Department of Transportation

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

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

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, 2012.** Please send the hardcopy Rating Sheets Inter-D to Scott Bush, Hill Farms, Room 501 **by October 15, 2012.**

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

G. County Data

Counties 2012: 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	10%	0%	50%	10%	33%	22%	0%	0%	0%	--	0%	1%	--
		10	10	10	10	9	9	9	8	1	--	1	3	--
	FLORENCE	0%	0%	100%	0%	14%	43%	0%	0%	--	--	--	--	--
		7	6	6	6	7	7	7	6	--	--	--	--	--
	FOREST	0%	0%	33%	7%	56%	88%	0%	0%	50%	--	100%	12%	100%
		16	15	15	15	16	16	16	15	2	--	1	2	1
	GREEN LAKE	29%	0%	29%	14%	43%	0%	0%	0%	25%	--	100%	14%	--
		7	7	7	7	7	7	7	7	4	--	1	3	--
	IRON	0%	0%	14%	0%	25%	33%	0%	1%	25%	0%	--	--	--
		12	7	7	7	12	12	12	12	4	1	--	--	--
	LANGLADE	0%	0%	67%	0%	13%	47%	7%	0%	0%	--	--	0%	0%
		15	12	12	12	15	15	15	15	2	--	--	1	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
	LINCOLN	0%	0%	79%	29%	63%	69%	0%	0%	0%	0%	--	9%	33%
		16	14	14	14	16	16	16	16	3	2	--	1	1
	MARATHON	14%	4%	50%	15%	50%	36%	0%	7%	73%	35%	--	0%	0%
		28	26	26	26	28	28	28	28	11	11	--	2	3
	MARQUETTE	11%	0%	56%	22%	22%	22%	0%	0%	25%	0%	--	--	--
		9	9	9	9	9	9	9	8	3	1	--	--	--
	MENOMINEE	0%	0%	75%	25%	75%	0%	0%	0%	--	--	--	28%	0%
		4	4	4	4	4	4	4	4	--	--	--	2	1
	ONEIDA	0%	0%	71%	0%	47%	47%	0%	2%	0%	--	--	0%	--
		17	17	17	17	17	17	17	16	2	--	--	1	--
	PORTAGE	25%	0%	38%	0%	0%	0%	0%	0%	11%	0%	0%	0%	0%
		16	16	16	16	16	16	16	13	7	5	1	3	6
	PRICE	0%	0%	62%	0%	38%	63%	0%	0%	29%	0%	--	--	--
		16	13	13	13	16	16	16	16	7	1	--	--	--
	SHAWANO	21%	0%	73%	20%	68%	63%	0%	5%	0%	11%	80%	13%	0%
		19	15	15	15	19	19	19	19	3	6	2	2	2
	VILAS	0%	0%	33%	0%	20%	40%	0%	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
		15	15	15	15	15	15	15	14	3	--	1	1	--
		5%	8%	31%	0%	42%	0%	0%	0%	0%	--	--	1%	0%
	WAUPACA	21	13	13	13	19	19	19	19	1	--	--	2	3
		0%	0%	7%	7%	0%	0%	0%	0%	0%	--	0%	100%	0%
	WAUSHARA	14	14	14	14	14	14	14	14	2	--	2	1	1
		6%	0%	25%	0%	40%	0%	0%	0%	33%	--	--	1%	38%
	WOOD	18	12	12	12	15	15	15	16	3	--	--	4	4
		31%	0%	100%	13%	87%	80%	0%	0%	0%	--	55%	1%	8%
NE	BROWN	16	16	16	16	15	15	15	16	3	--	3	5	6
		10%	0%	80%	10%	25%	13%	0%	0%	50%	40%	--	5%	0%
	CALUMET	10	10	10	10	8	8	8	9	2	1	--	3	2
		9%	0%	91%	0%	64%	45%	0%	3%	100%	--	100%	25%	7%
	DOOR	11	11	11	11	11	11	11	8	1	--	1	1	4
		5%	0%	70%	0%	50%	40%	0%	0%	20%	0%	0%	0%	0%
	FOND DU LAC	20	20	20	20	20	20	20	20	5	6	1	2	6
		17%	0%	83%	0%	50%	33%	17%	1%	100%	--	--	--	--
	KEWAUNEE	6	6	6	6	6	6	6	6	4	--	--	--	--

		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
		7%	0%	27%	0%	30%	30%	10%	0%	14%	--	--	4%	0%
	MANITOWOC	15	15	15	15	10	10	10	15	6	--	--	3	3
		13%	0%	33%	7%	13%	13%	0%	0%	0%	--	--	81%	0%
	MARINETTE	16	15	15	15	15	15	15	16	6	--	--	1	2
		0%	6%	63%	0%	31%	31%	0%	1%	0%	0%	100%	16%	0%
	OCONTO	16	16	16	16	16	16	16	16	2	3	1	1	5
		5%	0%	85%	15%	50%	63%	6%	0%	33%	50%	29%	5%	12%
	OUTAGAMIE	19	13	13	13	16	16	16	16	4	2	3	6	6
		6%	6%	76%	0%	76%	59%	0%	0%	25%	0%	15%	4%	0%
	SHEBOYGAN	17	17	17	17	17	17	17	17	4	2	7	7	2
		19%	0%	75%	13%	87%	33%	0%	0%	0%	45%	0%	1%	0%
	WINNEBAGO	16	16	16	16	15	15	15	15	1	4	1	5	3
		0%	0%	64%	18%	50%	33%	0%	1%	83%	--	--	--	--
NW	ASHLAND	12	11	11	11	12	12	12	12	5	--	--	--	--
		0%	0%	40%	7%	0%	0%	0%	0%	0%	--	--	--	--
	BARRON	15	15	15	15	15	15	15	15	3	--	--	--	--
	BAYFIELD	6%	0%	40%	13%	65%	41%	0%	5%	50%	--	100%	70%	100%

		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
		17	15	15	15	17	17	17	15	8	--	1	2	1
		0%	0%	62%	8%	47%	27%	0%	1%	0%	100%	--	--	--
	BUFFALO	16	13	13	13	15	15	15	13	6	1	--	--	--
		0%	0%	64%	0%	45%	0%	0%	0%	0%	--	--	33%	--
	BURNETT	11	11	11	11	11	11	11	9	2	--	--	1	--
		0%	0%	38%	0%	23%	0%	0%	0%	0%	100%	--	0%	0%
	CHIPPEWA	22	21	21	21	22	22	22	22	7	1	--	2	4
		0%	0%	29%	0%	24%	6%	0%	0%	38%	24%	50%	20%	0%
	CLARK	17	17	17	17	17	17	17	16	7	4	2	3	1
		0%	0%	63%	0%	13%	0%	6%	0%	0%	67%	0%	70%	0%
	DOUGLAS	16	16	16	16	16	16	16	14	1	2	2	2	1
		0%	0%	57%	10%	24%	29%	0%	0%	29%	--	--	9%	0%
	DUNN	21	21	21	21	21	21	21	21	7	--	--	3	2
		6%	7%	57%	0%	31%	15%	0%	0%	0%	100%	0%	3%	2%
	EAU CLAIRE	16	14	14	14	13	13	13	13	1	1	4	7	7
		5%	0%	59%	0%	0%	5%	0%	0%	9%	100%	100%	0%	--
	JACKSON	20	17	17	17	19	19	19	18	7	1	1	1	--

		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
	PEPIN	0%	0%	60%	0%	25%	0%	0%	0%	0%	--	--	--	--
		5	5	5	5	4	4	4	4	1	--	--	--	--
	PIERCE	0%	0%	44%	6%	22%	11%	0%	0%	0%	--	50%	1%	0%
		18	18	18	18	18	18	18	18	2	--	2	3	1
	POLK	6%	0%	31%	0%	25%	38%	0%	0%	60%	--	--	0%	0%
		17	16	16	16	16	16	16	16	3	--	--	1	1
	RUSK	0%	0%	38%	0%	0%	27%	0%	1%	50%	--	--	--	--
		11	8	8	8	11	11	11	10	2	--	--	--	--
	SAWYER	6%	7%	33%	0%	29%	0%	0%	4%	17%	100%	--	89%	--
		17	15	15	15	17	17	17	15	5	1	--	2	--
	ST. CROIX	0%	0%	42%	5%	43%	19%	0%	1%	50%	--	--	0%	20%
		21	19	19	19	21	21	21	19	3	--	--	1	2
	TAYLOR	0%	0%	25%	0%	17%	0%	0%	0%	25%	--	0%	4%	--
		12	12	12	12	12	12	12	11	6	--	1	2	--
	TREMPEALEAU	0%	0%	47%	6%	32%	42%	0%	2%	40%	--	--	7%	--
		19	17	17	17	19	19	19	19	8	--	--	1	--
	WASHBURN	0%	0%	67%	0%	14%	0%	0%	0%	17%	--	0%	13%	--

		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	15	15	15	14	14	14	14	5	--	1	2	--
SE	KENOSHA	18%	0%	63%	13%	43%	29%	0%	10%	--	13%	0%	0%	4%
		11	8	8	8	7	7	7	9	--	2	2	7	7
	MILWAUKEE	18%	6%	59%	6%	33%	0%	0%	2%	0%	--	--	0%	14%
		17	17	17	17	3	3	3	13	3	--	--	11	15
	OZAUKEE	50%	0%	75%	0%	38%	25%	0%	0%	0%	40%	0%	0%	15%
		8	8	8	8	8	8	8	8	2	3	1	1	4
	RACINE	0%	0%	60%	7%	87%	80%	0%	1%	0%	10%	0%	0%	23%
		15	15	15	15	15	15	15	15	5	2	2	5	4
	WALWORTH	33%	0%	67%	29%	29%	19%	5%	0%	14%	14%	50%	20%	13%
		21	21	21	21	21	21	21	21	4	4	3	7	3
	WASHINGTON	11%	6%	94%	6%	47%	29%	0%	0%	--	25%	0%	0%	14%
		18	16	16	16	17	17	17	16	--	2	1	4	2
	WAUKESHA	4%	6%	75%	6%	24%	0%	0%	0%	0%	0%	80%	0%	2%
		23	16	16	16	17	17	17	16	3	3	3	12	8
SW	COLUMBIA	7%	0%	40%	0%	39%	39%	0%	0%	20%	100%	100%	0%	0%
		29	25	25	25	28	28	28	27	8	1	1	2	3

		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
	CRAWFORD	16%	0%	46%	38%	92%	83%	0%	0%	63%	--	50%	10%	36%
		19	13	13	13	12	12	12	16	7	--	2	7	2
	DANE	10%	6%	72%	0%	28%	23%	5%	0%	14%	100%	83%	4%	48%
		41	32	32	32	39	39	39	39	11	5	4	11	7
	DODGE	4%	4%	38%	8%	17%	13%	0%	1%	56%	67%	88%	30%	0%
		24	24	24	24	24	24	24	23	8	2	4	7	1
	GRANT	15%	9%	57%	9%	60%	36%	0%	1%	20%	14%	100%	18%	11%
		27	23	23	23	25	25	25	27	10	3	1	2	5
	GREEN	0%	8%	67%	0%	0%	0%	0%	0%	0%	--	0%	0%	0%
		13	12	12	12	11	11	11	13	5	--	1	1	2
	IOWA	0%	0%	23%	0%	39%	0%	0%	0%	14%	--	50%	4%	0%
		18	13	13	13	18	18	18	18	7	--	1	3	3
	JEFFERSON	0%	0%	59%	0%	11%	33%	0%	0%	100%	100%	100%	11%	60%
		18	17	17	17	18	18	18	17	4	1	2	8	3
	JUNEAU	0%	0%	71%	6%	40%	5%	0%	0%	33%	0%	--	0%	--
		20	17	17	17	20	20	20	16	9	4	--	1	--
	LA CROSSE	7%	0%	80%	0%	50%	33%	0%	0%	0%	40%	0%	11%	19%

		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	10	10	10	12	12	12	12	3	2	1	3	5
		0%	0%	33%	0%	14%	0%	0%	0%	0%	100%	--	3%	0%
	LAFAYETTE	14	12	12	12	14	14	14	14	3	2	--	1	2
		0%	0%	50%	4%	26%	17%	0%	0%	30%	--	17%	1%	0%
	MONROE	25	24	24	24	23	23	23	24	9	--	4	9	3
		25%	0%	25%	0%	64%	50%	7%	0%	40%	--	--	13%	100%
	RICHLAND	16	12	12	12	14	14	14	14	5	--	--	2	2
		21%	0%	90%	0%	33%	0%	0%	0%	33%	0%	--	43%	0%
	ROCK	24	21	21	21	24	24	24	24	3	2	--	1	1
		0%	0%	20%	0%	18%	9%	0%	0%	7%	100%	100%	9%	50%
	SAUK	23	20	20	20	22	22	22	22	11	3	3	6	2
		5%	0%	80%	7%	50%	15%	0%	0%	0%	--	--	6%	50%
	VERNON	22	15	15	15	20	20	20	20	9	--	--	4	3

Counties 2012: 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	90%	40%	0%	0%	0%	--	0%	0%	0%	0%	0%	17%	0%
		10	10	2	10	10	--	10	10	2	5	5	1	1
	FLORENCE	0%	29%	50%	0%	0%	--	0%	0%	--	14%	30%	23%	100%
		7	7	2	7	7	--	7	7	--	3	1	1	1
	FOREST	38%	31%	0%	6%	0%	--	0%	0%	0%	15%	35%	--	--
		16	16	4	16	16	--	16	16	1	7	5	--	--
	GREEN LAKE	86%	86%	0%	0%	0%	--	0%	0%	0%	0%	6%	0%	--
		7	7	2	7	7	--	7	7	2	5	4	1	--
	IRON	25%	25%	0%	8%	0%	--	0%	33%	--	0%	0%	--	--
		12	12	3	12	12	--	12	12	--	5	2	--	--
	LANGLADE	20%	33%	0%	0%	0%	--	0%	0%	--	6%	0%	0%	--
		15	15	4	15	15	--	15	15	--	9	6	1	--
	LINCOLN	75%	44%	0%	0%	0%	13%	6%	0%	0%	0%	0%	0%	--
		16	16	2	16	16	4	16	16	1	7	5	4	--
	MARATHON	79%	50%	0%	11%	0%	3%	0%	0%	0%	0%	0%	9%	--
		28	28	4	28	28	6	28	28	2	10	8	9	--

		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	67%	56%	--	0%	0%	0%	0%	0%	0%	0%	0%	0%	--
		9	9	--	9	9	4	9	9	1	2	4	5	--
	MENOMINEE	50%	50%	--	25%	0%	--	50%	0%	--	0%	0%	--	0%
		4	4	--	4	4	--	4	4	--	1	1	--	1
	ONEIDA	18%	29%	0%	24%	0%	--	0%	0%	--	0%	0%	7%	0%
		17	17	8	17	17	--	17	17	--	3	2	3	1
	PORTAGE	56%	19%	0%	0%	0%	0%	6%	6%	44%	0%	3%	2%	0%
		16	16	2	16	16	8	16	16	3	7	9	9	4
	PRICE	50%	0%	0%	0%	0%	--	0%	0%	--	0%	0%	--	--
		16	16	9	16	16	--	16	16	--	6	1	--	--
	SHAWANO	68%	37%	0%	0%	0%	--	5%	11%	0%	0%	0%	0%	--
		19	19	5	19	19	--	19	19	2	5	5	6	--
	VILAS	40%	13%	0%	0%	0%	--	0%	0%	--	0%	0%	50%	31%
		15	15	3	15	15	--	15	15	--	6	4	1	1
	WAUPACA	43%	38%	0%	0%	0%	--	5%	5%	0%	0%	0%	0%	0%
		21	21	1	21	21	--	21	19	3	8	4	3	1
	WAUSHARA	29%	14%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%
		14	14	5	14	14	1	14	14	2	5	4	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
		83%	44%	0%	0%	0%	--	6%	11%	31%	0%	0%	--	0%
	WOOD	18	18	4	18	18	--	18	18	3	6	7	--	1
		81%	38%	0%	0%	0%	0%	6%	6%	0%	0%	0%	0%	0%
NE	BROWN	16	16	3	16	16	5	16	16	3	6	7	7	2
		50%	90%	0%	10%	0%	--	20%	30%	0%	0%	0%	--	--
	CALUMET	10	10	7	10	10	--	10	10	2	7	5	--	--
		73%	36%	0%	9%	9%	0%	0%	0%	0%	0%	0%	0%	--
	DOOR	11	11	5	11	11	2	11	11	1	5	5	2	--
		80%	55%	0%	0%	0%	0%	0%	0%	0%	0%	0%	13%	0%
	FOND DU LAC	20	20	10	20	20	6	20	20	5	8	7	6	5
		83%	83%	--	0%	0%	--	0%	0%	--	0%	0%	0%	0%
	KEWAUNEE	6	6	--	6	6	--	6	6	--	3	2	1	1
		47%	40%	0%	0%	0%	0%	13%	7%	0%	0%	0%	0%	0%
	MANITOWOC	15	15	8	15	15	5	15	15	1	9	7	7	2
		75%	44%	0%	0%	0%	0%	6%	0%	0%	0%	0%	0%	--
	MARINETTE	16	16	9	16	16	5	16	16	2	6	7	5	--
		81%	38%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	0%
	OCONTO	16	16	3	16	16	4	16	16	5	9	6	7	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
		53%	74%	0%	0%	0%	0%	16%	16%	6%	0%	0%	36%	0%
	OUTAGAMIE	19	19	16	19	19	3	19	19	7	14	7	2	2
		76%	41%	0%	0%	0%	0%	0%	6%	0%	3%	0%	11%	0%
	SHEBOYGAN	17	17	7	17	17	4	17	17	4	10	8	7	2
		88%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	0%
	WINNEBAGO	16	16	6	16	16	7	16	16	4	5	11	7	2
		58%	25%	0%	8%	0%	--	25%	0%	--	0%	0%	--	--
NW	ASHLAND	12	12	1	12	12	--	12	12	--	4	3	--	--
		73%	40%	--	0%	0%	0%	20%	0%	--	0%	0%	0%	0%
	BARRON	15	15	--	15	15	4	15	15	--	5	3	5	1
		59%	35%	17%	0%	0%	--	6%	6%	--	0%	0%	18%	0%
	BAYFIELD	17	17	6	17	17	--	17	17	--	8	4	2	2
		31%	75%	0%	0%	0%	--	6%	0%	--	0%	33%	33%	16%
	BUFFALO	16	16	5	16	16	--	16	16	--	7	3	4	4
		64%	36%	0%	0%	0%	--	18%	9%	--	0%	--	--	--
	BURNETT	11	11	3	11	11	--	11	11	--	7	--	--	--
		64%	32%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	CHIPPEWA	22	22	1	22	22	5	22	21	2	9	6	9	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
	CLARK	35%	24%	0%	0%	0%	--	0%	0%	0%	7%	0%	0%	0%
		17	17	3	17	17	--	17	17	3	4	8	6	1
	DOUGLAS	75%	13%	0%	0%	0%	--	13%	0%	0%	3%	0%	0%	0%
		16	16	3	16	16	--	16	16	3	10	7	5	2
	DUNN	86%	24%	0%	0%	0%	52%	0%	0%	11%	0%	0%	0%	0%
		21	21	5	21	21	2	21	21	3	8	8	5	3
	EAU CLAIRE	56%	44%	0%	0%	0%	0%	0%	0%	10%	7%	3%	47%	0%
		16	16	3	16	16	3	16	16	5	11	9	5	5
	JACKSON	15%	10%	0%	0%	0%	36%	15%	0%	0%	0%	0%	45%	0%
		20	20	2	20	20	5	20	20	3	3	4	7	2
	PEPIN	40%	60%	--	0%	0%	--	0%	0%	--	0%	0%	43%	0%
		5	5	--	5	5	--	5	5	--	4	2	1	1
	PIERCE	39%	50%	0%	0%	0%	--	0%	0%	0%	0%	0%	63%	0%
		18	18	6	18	18	--	18	18	3	11	6	3	2
	POLK	82%	24%	0%	0%	0%	--	12%	13%	20%	0%	0%	0%	0%
		17	17	5	17	17	--	17	16	1	7	4	1	2
	RUSK	27%	36%	0%	0%	0%	--	9%	9%	--	0%	20%	--	--
		11	11	2	11	11	--	11	11	--	4	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
		47%	29%	0%	6%	6%	--	24%	12%	--	0%	0%	0%	0%
	SAWYER	17	17	7	17	17	--	17	17	--	8	6	1	2
		86%	33%	0%	0%	0%	0%	0%	0%	--	0%	0%	2%	0%
	ST. CROIX	21	21	5	21	21	4	21	21	--	11	3	7	6
		25%	25%	0%	0%	0%	--	0%	0%	100%	0%	0%	0%	--
	TAYLOR	12	12	3	12	12	--	12	12	1	5	3	1	--
		53%	68%	0%	0%	0%	--	11%	16%	0%	11%	21%	69%	3%
	TREMPEALEAU	19	19	4	19	19	--	19	19	2	9	5	5	5
		67%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	WASHBURN	15	15	7	15	15	1	15	15	1	12	6	5	2
		100%	55%	--	0%	0%	0%	9%	0%	0%	0%	0%	25%	5%
SE	KENOSHA	11	11	--	11	11	1	11	10	4	8	3	1	2
		88%	24%	11%	6%	6%	0%	18%	18%	4%	0%	0%	56%	0%
	MILWAUKEE	17	17	9	17	17	6	17	17	15	13	13	2	9
		75%	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%	26%	0%
	OZAUKEE	8	8	3	8	8	3	8	8	2	5	5	4	4
		67%	67%	0%	7%	7%	--	7%	0%	0%	0%	0%	0%	0%
	RACINE	15	15	5	15	15	--	15	15	4	8	7	3	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
		100%	48%	0%	0%	0%	0%	0%	0%	0%	2%	0%	31%	58%
	WALWORTH	21	21	5	21	21	5	21	21	7	18	9	7	7
		56%	39%	0%	0%	6%	0%	6%	0%	7%	0%	0%	30%	0%
	WASHINGTON	18	18	7	18	18	5	18	18	7	12	9	7	5
		48%	48%	--	0%	0%	0%	4%	4%	3%	1%	0%	8%	0%
	WAUKESHA	23	23	--	23	23	8	23	23	11	20	9	4	3
		48%	79%	8%	17%	0%	0%	0%	0%	5%	3%	6%	18%	0%
SW	COLUMBIA	29	29	12	29	29	6	29	29	4	20	7	8	5
		58%	37%	0%	16%	5%	--	0%	0%	0%	7%	0%	82%	3%
	CRAWFORD	19	19	17	19	19	--	19	18	2	8	2	8	7
		98%	27%	0%	0%	0%	4%	7%	3%	6%	0%	2%	36%	0%
	DANE	41	41	10	41	41	12	41	40	6	14	22	9	6
		21%	63%	0%	17%	0%	0%	0%	0%	44%	0%	0%	22%	--
	DODGE	24	24	9	24	24	4	24	24	2	12	7	3	--
		63%	19%	0%	0%	0%	2%	0%	0%	0%	6%	3%	3%	0%
	GRANT	27	27	19	27	27	5	27	27	3	11	12	7	6
		85%	62%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	--
	GREEN	13	13	5	13	13	2	13	13	1	5	2	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	72%	33%	0%	0%	0%	0%	6%	6%	0%	0%	0%	40%	0%
		18	18	3	18	18	2	18	18	2	12	5	2	2
	JEFFERSON	61%	78%	0%	22%	0%	0%	0%	0%	0%	9%	29%	75%	0%
		18	18	7	18	18	1	18	18	2	11	8	2	1
	JUNEAU	45%	20%	--	25%	0%	1%	0%	0%	--	0%	0%	0%	0%
		20	20	--	20	20	4	20	20	--	5	5	5	1
	LA CROSSE	71%	7%	0%	0%	0%	18%	0%	0%	0%	0%	0%	78%	0%
		14	14	12	14	14	5	14	14	1	5	7	6	4
	LAFAYETTE	79%	57%	0%	0%	0%	0%	0%	14%	--	0%	14%	72%	0%
		14	14	4	14	14	1	14	14	--	7	4	5	4
	MONROE	52%	36%	--	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		25	25	--	25	25	4	25	25	4	11	5	8	5
	RICHLAND	75%	56%	0%	13%	0%	--	0%	0%	--	0%	9%	11%	12%
		16	16	12	16	16	--	16	16	--	5	5	4	3
	ROCK	75%	42%	0%	0%	0%	0%	0%	0%	0%	6%	0%	3%	0%
		24	24	5	24	24	9	24	24	1	12	8	10	3
	SAUK	91%	39%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		23	23	4	23	23	3	23	23	2	4	9	3	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
		41%	36%	0%	0%	0%	--	0%	0%	0%	0%	0%	14%	0%
	VERNON	22	22	12	22	22	--	22	20	1	11	5	8	8

Counties 2012: 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	999	12%	120	5.1	607	36%	221	7.3
	FLORENCE	460	7%	32	1.5	350	12%	42	1.4
	FOREST	1,255	4%	49	2.0	818	15%	123	1.6
	GREEN LAKE	862	7%	61	3.1	636	24%	150	9.4
	IRON	1,065	2%	26	2.3	548	13%	70	1.6
	LANGLADE	1,162	5%	56	3.8	656	14%	89	2.6
	LINCOLN	1,426	13%	180	4.7	957	31%	300	7.9
	MARATHON	4,355	10%	436	4.7	2,687	35%	942	6.6
	MARQUETTE	959	3%	27	4.6	776	49%	380	8.9
	MENOMINEE	676	4%	29	2.1	215	7%	15	3.0
	ONEIDA	1,933	6%	124	3.1	1,002	17%	173	1.8
	PORTAGE	2,243	6%	133	5.1	1,568	35%	553	7.9
	PRICE	1,028	1%	8	2.4	791	17%	132	1.5
	SHAWANO	1,964	6%	126	2.6	1,283	17%	220	2.9

		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**
	VILAS	1,557	7%	116	4.1	942	24%	222	1.9
	WAUPACA	3,140	6%	190	4.4	1,584	40%	638	7.5
	WAUSHARA	1,920	7%	130	3.6	969	31%	305	7.1
	WOOD	2,175	8%	164	4.3	1,265	39%	491	7.1
NE	BROWN	4,183	30%	1,244	7.5	2,648	49%	1,308	9.5
	CALUMET	1,351	13%	178	7.1	690	28%	190	8.6
	DOOR	1,947	26%	507	6.8	751	34%	256	8.9
	FOND DU LAC	2,657	14%	363	6.7	1,745	18%	317	6.9
	KEWAUNEE	634	15%	94	5.8	372	30%	112	15.7
	MANITOWOC	2,241	29%	639	6.6	1,655	50%	834	9.6
	MARINETTE	1,932	21%	404	8.9	1,116	33%	364	7.4
	OCONTO	2,153	15%	332	6.7	1,233	25%	305	7.7
	OUTAGAMIE	3,196	16%	502	7.8	2,077	23%	471	10.7
	SHEBOYGAN	3,004	20%	602	8.0	2,172	47%	1,010	8.5
	WINNEBAGO	2,996	12%	356	8.5	1,869	22%	413	8.9

		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**
NW	ASHLAND	1,207	11%	130	5.2	904	50%	450	7.0
	BARRON	1,795	9%	169	5.4	1,629	41%	671	7.8
	BAYFIELD	1,447	16%	226	5.6	1,134	65%	736	6.6
	BUFFALO	1,630	3%	52	4.3	1,041	28%	296	10.7
	BURNETT	1,176	10%	123	6.4	745	45%	336	8.4
	CHIPPEWA	2,438	4%	107	5.1	1,922	26%	493	7.5
	CLARK	1,631	6%	90	5.0	1,100	31%	337	6.5
	DOUGLAS	1,901	11%	216	6.1	1,557	53%	824	8.2
	DUNN	2,063	12%	244	4.8	1,953	49%	958	7.3
	EAU CLAIRE	2,604	6%	145	6.4	1,934	23%	436	7.2
	JACKSON	1,562	4%	61	4.7	1,314	21%	282	9.9
	PEPIN	566	4%	23	4.0	446	26%	114	6.6
	PIERCE	1,659	8%	137	4.8	1,415	42%	596	8.6
	POLK	2,176	10%	224	5.3	1,424	46%	662	7.9
	RUSK	1,018	3%	30	3.7	721	36%	263	5.5

		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**
	SAWYER	1,419	5%	66	4.6	1,043	37%	391	6.6
	ST. CROIX	2,741	10%	272	5.4	2,390	48%	1,154	6.8
	TAYLOR	1,032	3%	34	4.1	778	18%	137	7.7
	TREMPEALEAU	1,976	5%	108	4.9	1,513	43%	655	9.2
	WASHBURN	1,917	5%	103	6.0	1,330	53%	711	7.8
SE	KENOSHA	4,703	21%	1,008	8.1	3,210	46%	1,484	9.0
	MILWAUKEE	12,933	19%	2,441	7.6	8,965	48%	4,338	9.0
	OZAUKEE	2,037	6%	113	6.5	1,268	49%	626	9.5
	RACINE	5,396	15%	833	7.3	3,506	52%	1,811	8.3
	WALWORTH	4,106	13%	517	7.1	2,594	40%	1,049	8.9
	WASHINGTON	3,988	15%	613	7.9	2,726	43%	1,171	8.6
	WAUKESHA	10,053	16%	1,560	7.3	5,298	34%	1,807	7.2
SW	COLUMBIA	3,423	5%	158	3.4	2,120	26%	548	10.6
	CRAWFORD	2,378	2%	52	7.6	1,478	29%	434	11.2
	DANE	6,766	24%	1,643	9.1	4,472	33%	1,492	10.5

		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**
	DODGE	2,967	7%	196	4.6	1,914	45%	858	11.1
	GRANT	3,203	2%	78	5.2	2,144	29%	613	12.8
	GREEN	1,360	9%	116	3.1	776	40%	312	10.7
	IOWA	2,095	5%	101	5.3	1,399	31%	440	11.2
	JEFFERSON	2,038	9%	188	5.0	1,337	41%	554	11.3
	JUNEAU	1,834	9%	162	5.2	1,663	36%	605	10.4
	LA CROSSE	2,928	5%	153	5.1	2,811	42%	1,174	10.7
	LAFAYETTE	1,339	2%	33	4.4	867	40%	347	13.8
	MONROE	2,701	2%	52	4.5	2,285	32%	722	10.0
	RICHLAND	1,916	2%	46	5.1	1,495	31%	459	10.5
	ROCK	2,403	6%	146	7.0	1,870	45%	836	11.7
	SAUK	3,646	8%	290	5.2	1,930	21%	398	10.3
	VERNON	3,068	4%	112	7.3	2,106	47%	999	10.6

Counties 2012: 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	5	1	2	0	0	5	0	2	0
	FLORENCE	8	3	0	0	0	0	0	1	0	3
	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	5	0	2	5	0	1	0	1	5
	LANGLADE	11	4	0	1	2	0	0	0	0	1
	LINCOLN	51	27	4	1	9	0	3	0	0	7
	MARATHON	162	143	64	47	39	2	106	22	31	29
	MARQUETTE	37	25	8	22	9	0	33	2	14	6
	MENOMINEE	3	2	0	1	1	0	0	0	0	1
	ONEIDA	14	12	0	4	1	0	0	0	1	6
	PORTAGE	97	97	54	20	24	1	54	12	12	35
	PRICE	21	11	2	2	2	0	0	1	0	3
	SHAWANO	53	79	4	20	14	0	2	6	11	1
	VILAS	13	16	0	2	1	0	0	0	2	4
	WAUPACA	66	49	24	20	2	0	46	2	17	5
	WAUSHARA	22	17	16	10	0	0	17	3	7	11
	WOOD	59	58	5	12	14	1	19	15	4	9
NE	BROWN	253	87	135	67	23	0	71	11	29	56
	CALUMET	13	2	1	0	1	0	6	0	7	2
	DOOR	19	15	7	3	1	0	7	2	0	2
	FOND DU LAC	80	51	39	33	0	0	20	7	13	3
	KEWAUNEE	17	1	3	1	2	0	2	0	2	3
	MANITOWOC	92	34	34	24	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	30	15	30	5	0	16	3	0	4
	OCONTO	45	21	4	3	1	0	21	1	8	3
	OUTAGAMIE	80	45	12	37	16	0	57	3	30	15
	SHEBOYGAN	85	35	25	25	12	0	41	0	13	25
	WINNEBAGO	158	104	60	78	19	0	53	4	39	32
NW	ASHLAND	19	1	0	2	0	2	0	0	3	10
	BARRON	66	5	0	9	9	2	4	2	8	26
	BAYFIELD	34	0	0	10	2	0	0	0	8	8
	BUFFALO	71	2	2	7	3	2	1	0	1	0
	BURNETT	15	1	0	3	0	0	0	1	2	2
	CHIPPEWA	136	9	18	14	0	3	22	2	18	6
	CLARK	42	0	1	25	2	0	1	0	2	2
	DOUGLAS	60	1	0	5	5	1	1	0	4	12
	DUNN	92	0	3	7	4	1	0	1	12	6
	EAU CLAIRE	110	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	10	9	2	2	0	17	1
	POLK	13	3	1	0	0	0	0	0	3	10
	RUSK	28	2	0	2	8	3	1	0	5	7
	SAWYER	19	1	0	7	3	0	0	0	4	7
	ST. CROIX	98	5	4	13	3	0	3	0	15	2
	TAYLOR	20	3	0	0	2	0	0	0	3	4
	TREMPEALEAU	73	2	3	19	1	1	0	0	9	3
	WASHBURN	20	2	0	9	7	0	0	0	4	2
	KENOSHA	57	12	10	25	2	28	19	25	12	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	530	127	508	129	182	604	155	124	79	98
	OZAUKEE	51	12	10	24	24	66	5	4	13	18
	RACINE	61	6	11	35	10	60	8	10	10	1
	WALWORTH	118	22	39	31	19	99	23	9	28	8
	WASHINGTON	74	4	39	22	5	119	7	73	6	1
	WAUKESHA	177	57	35	73	59	188	22	10	117	52
SW	COLUMBIA	97	39	21	46	67	2	2	53	27	12
	CRAWFORD	68	49	2	23	14	0	3	6	18	8
	DANE	285	44	120	204	212	2	18	276	97	23
	DODGE	70	31	11	27	26	0	3	30	12	1
	GRANT	70	25	9	10	11	0	1	5	15	8
	GREEN	28	14	8	7	9	2	2	23	4	4
	IOWA	57	25	7	13	21	0	0	21	12	6
	JEFFERSON	107	35	37	24	21	2	4	36	8	8
	JUNEAU	80	29	21	21	2	0	14	5	8	12
	LA CROSSE	109	44	47	49	42	0	6	12	25	21
	LAFAYETTE	40	9	1	16	28	0	0	44	14	6
	MONROE	155	57	8	52	19	0	6	5	13	23
	RICHLAND	78	46	5	18	21	0	3	7	6	16
	ROCK	125	37	76	69	51	2	6	109	22	11
	SAUK	92	36	25	53	26	0	2	46	12	3
	VERNON	73	10	1	11	19	0	4	0	23	3