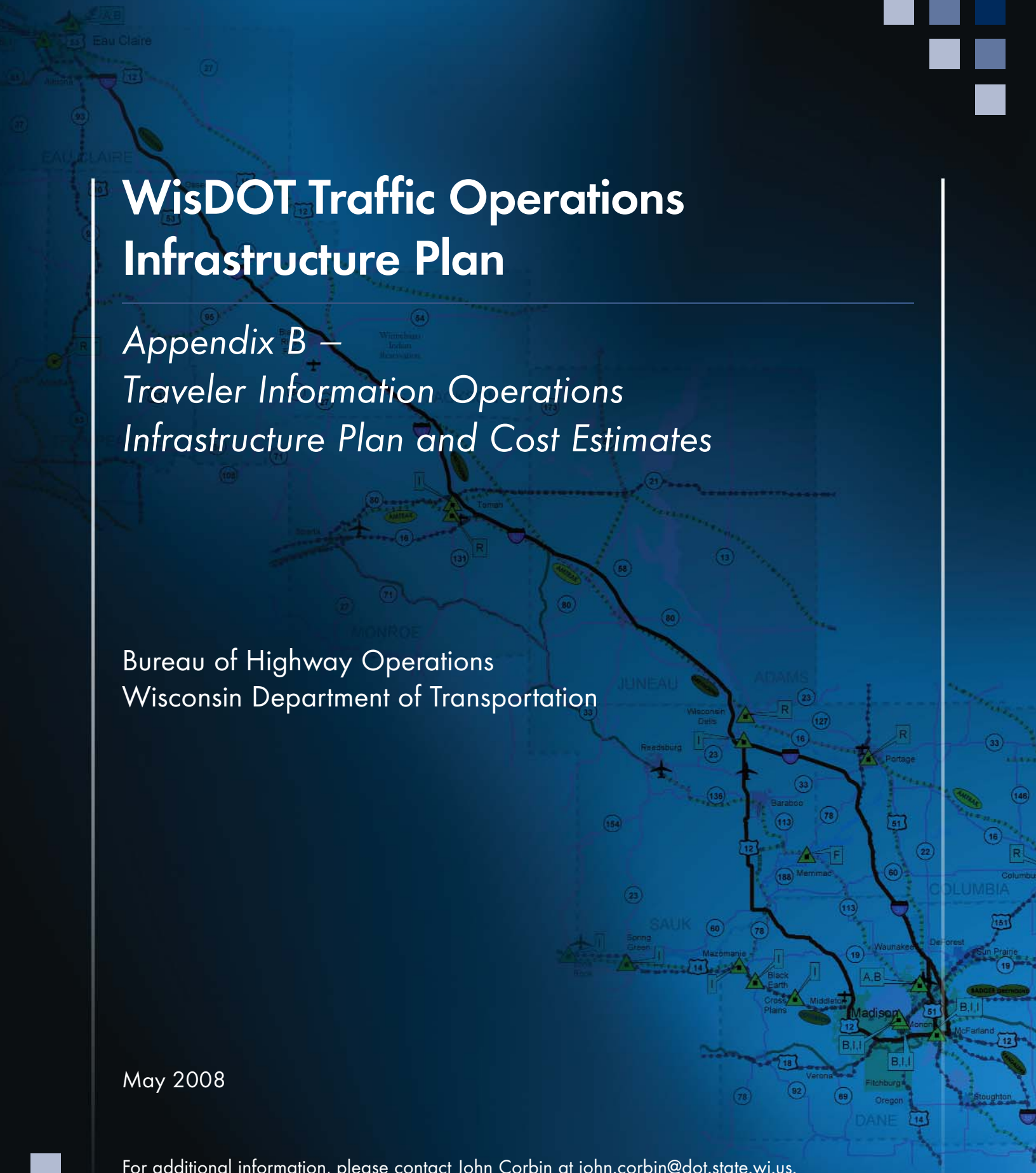
WisDOT Traffic Operations Infrastructure Plan

Appendix B – Traveler Information Operations Infrastructure Plan and Cost Estimates



Bureau of Highway Operations
Wisconsin Department of Transportation

May 2008

For additional information, please contact John Corbin at john.corbin@dot.state.wi.us.

Overview

This Appendix presents the detailed break-out of the Traveler Information and Warning Systems component of the WisDOT Traffic Operations Infrastructure Plan. Detailed maps as well as planning level cost estimate are included in this section for the Priority and Emerging Priority corridors only. The corridors are presented here with brief narratives.

The narratives contain information that lead to the signpost recommendations. The recommendations were based in part on information from the Meta Manager database as well as input from the Regions, Bureau of Highway Operations staff and knowledge of the corridors.

Cost Assumptions

The assumptions for developing the capital costs for the recommended equipment deployment are as follows:

- Dynamic Message Sign (DMS)

  The costs assume deployment with a sign with full matrix (3-lines of 18-inch text) with walk-in enclosure with an external mounted control cabinet. The deployment includes full-span overhead mountings for large high speed facility / freeway text sized DMS and either cantilever overhead structures or ground mounted side view structures for arterial signs.

- Portable Dynamic Message Sign (PDMS) Permanently Installed

  The costs assume deployment with a sign with full matrix with 3-lines of text. The sign is equipped with a wireless communication system (Jamlogic). The deployment also includes a concrete pad for mounting.

- Portable Dynamic Message Sign (PDMS) Stored

  The costs assume deployment with a sign with full matrix with 3-lines of text. The sign is equipped with a wireless VHF communication system (Jamlogic).

- Web-based Travel Information

  The costs assume the development and deployment of a web-based travel information site that provides real-time, comprehensive, personalized access to travel information on the major transportation corridors throughout the state (Interstate System).

- Statewide 511

  The costs for the Statewide 511 system came directly from the University of Wisconsin's Traffic Operations and Safety Laboratory.

The assumptions for developing the staffing costs for the recommended equipment deployment are shown in the following table.

Travel Warning and Information Cost Assumptions

	Maintenance		Operations			
Technology	Staffing	Direct	Staffing	Direct	Communication	Power
PDMS (1)	1 FTE per 150 units	10% of Capital cost	1 FTE per 100 units	$100/month* 0.10	$100/month*0.90	na
PDMS (2)	PDMS (1) * 0.25	PDMS (1) * 0.50	PDMS (1) * 0.25	PDMS (1)	PDMS (1)	na
DMS	1 FTE per 50 units	10% of Capital cost	1 FTE per 25 units	$100/month* 0.10	$100/month*0.90	$200/month

Detailed Corridor Analysis

84th Division Rail Splitters Corridor

The 84th Division Rail Splitters includes WIS 33 from Beaver Dam to Port Washington. The corridor includes the cities of Horicon, Allentown, West Bend, and Saukville. The deployment recommendations for the Travel Warning and Information area are as follows:

- Baseline density deployment is recommended for the entire corridor.

Badger State Corridor

The Badger State Corridor includes the Madison MPO and Chippewa Falls – Eau Claire MPO Regions as well as I-94 from Eau Claire to Madison, I-90 from Tomah to Madison and I-39 from Portage to Madison. The corridor includes a system interchange with I-90 and I-94 near Tomah. The corridor experiences significant regional traffic, high peaking on weekends (Friday afternoon and evening and Sunday afternoon), and weather disturbances during the winter months. The deployment recommendations for the Travel Warning and Information area are as follows:

- The segment of I-94 from Eau Claire to Tomah is recommended for medium density deployment. The segment experiences high levels of weekend traffic throughout the year and especially high during holiday weekends. It is recommended that a portable DMS be deployed between Black River Falls and Tomah upstream from the I-90/94 system interchange to provide incident and alternative route guidance as well as for weather and construction alerts.

- I-90/94 from Tomah through Madison is classified as medium density deployment. Portable DMS along the corridor will be maintained to provide incident and alternate route guidance as well as being used for weather and construction alerts. The majority of the deployments were installed as part of the earlier Blue Route project. The Blue Route is an alternate route signing concept for when a major incident on the interstate requires a lengthy closure or results in major delays. The Blue Route uses US 51 (Stoughton Road) from US 12/18 (the Madison Beltline) at the south to its intersection with I-39/90/94 at the north. An additional portable DMS is recommended for southbound US 51 for the Blue Route as well as to provide incident and alternate route guidance as well as being used for weather and construction alerts.

- The segment of US 12 from I-90/94 to Sauk City is classified as baseline deployment density for travel warning and information due to the limited opportunity for benefits from higher deployments. US 12 is not a viable long distance alternate route for I-39/90/94 due to the capacity constraints along the corridor (Village of Sauk City). The segment from Sauk City to Middleton is classified as low density and from Middleton to I-39/90 as medium density. A portable DMS for eastbound US 12 north of the Parmenter Street interchange is recommended to provide incident and alternate route guidance as well as being used for weather and construction alerts.

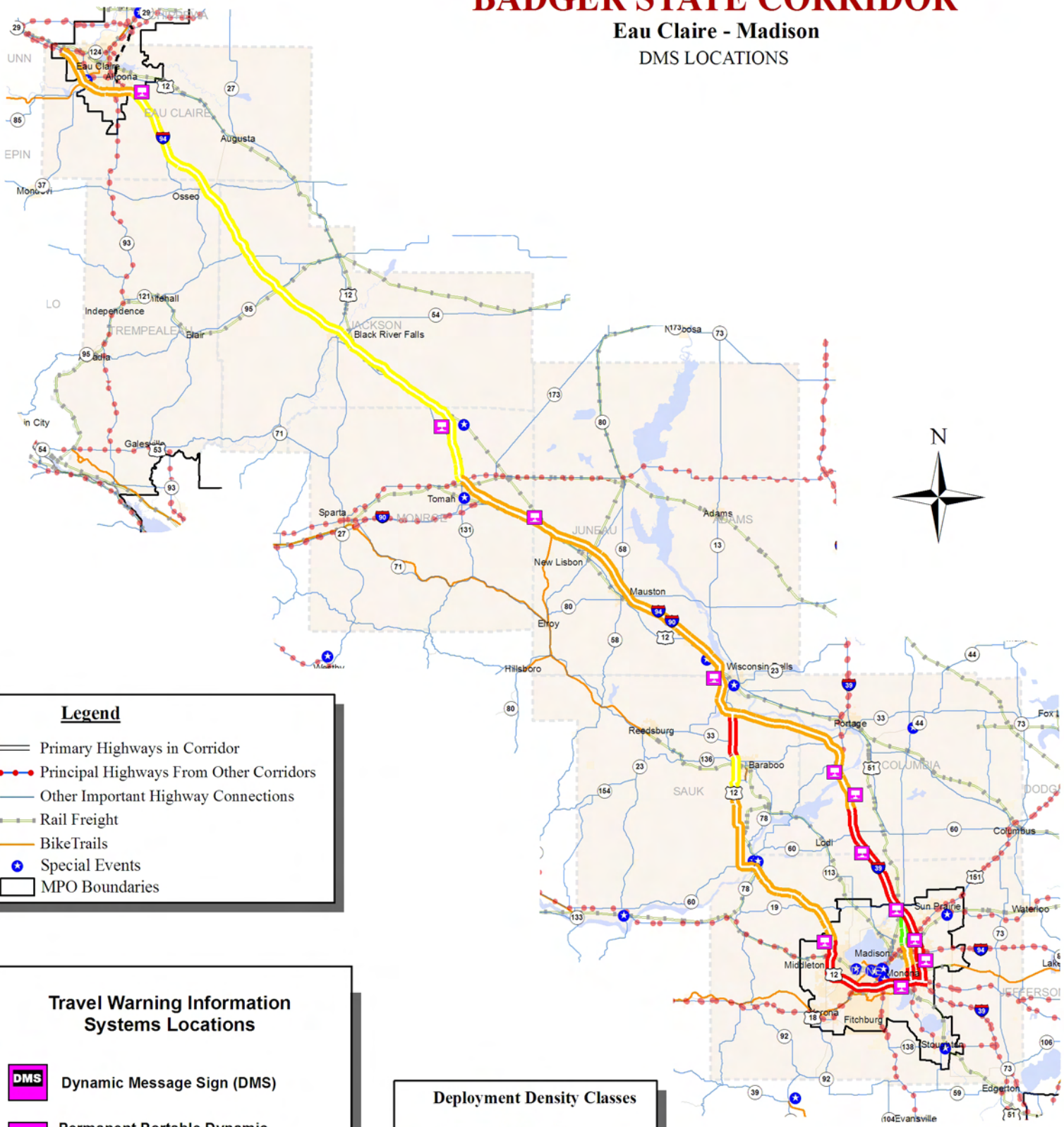
- For the Chippewa Falls – Eau Claire MPO Region, it is recommended that portable DMS be located on major approaches to the Chippewa Falls/Eau Claire ring road (I-94, WIS 29, and US 53) to provide incident and alternate route guidance as well as being used for weather and construction alerts.

Traffic Operations Sketch Plan

BADGER STATE CORRIDOR

Eau Claire - Madison

DMS LOCATIONS



Legend

- Primary Highways in Corridor
- Principal Highways From Other Corridors
- Other Important Highway Connections
- Rail Freight
- BikeTrails
- Special Events
- MPO Boundaries

Travel Warning Information Systems Locations

- DMS — Dynamic Message Sign (DMS)
- Permanent Portable Dynamic Message Sign

Deployment Density Classes

- Baseline
- Low
- Medium
- High

0 5 10 20 30 40 Miles

Basemap Design by Wisconsin DOT GIS

Badger State Corridor

Region	Highway	Segment Start	Segment End	Segment Length	Facility Type	Recommended Deployment Level	Device Type	Estimated Quantity	Estimated Unit Cost	Estimated Cost (Hardware)	Estimated Cost (Installation)	Estimated Total Capital Cost	Maintenance Cost (Per Year)	Operation Cost (Per Year)	Total (Per Year)	Total O&M Cost (Per Year)	Estimated Maintenance Staffing Cost (Per Year)	Estimated Direct Maintenance Cost (Per Year)	Estimated Operation Staffing Cost (Per Year)	Estimated Direct Operation Cost (Per Year)	Estimated Power Cost (Per Year)	Estimated Communications Cost (Per Year)	Estimated Service Patrol Staffing Cost (Per Year)
NW	I-94	US 12	US 53	12.2 Miles	A	Low	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					A	Low	DMS													$0			na
NW	I-94	US 53	US 10	11.0 Miles	A	Medium	PDMS													$0	na		na
					A	Medium	DMS													$0			na
NW	I-94	US 10	MONROE COUNTY	45.4 Miles	B	Medium	PDMS													$0	na		na
					B	Medium	DMS													$0			na
SW	I-94	JACKSON COUNTY	WIS 21	10.5 Miles	B	Medium	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					B	Medium	DMS																na
SW	I-94	WIS 21	I-90	4.1 Miles	A	Medium	PDMS														na		na
					A	Medium	DMS																na
SW	I-90/94	I-90	WIS 80	16.4 Miles	A	Medium	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					A	Medium	DMS																na
SW	I-90/94	WIS 80	I-39	47.2 Miles	B	Medium	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					B	Medium	DMS																na
SW	I-39/90/94	I-39	MADISON MPO LINE	22.4 Miles	B	Medium	PDMS	3	$50,000	$135,000	$15,000	$150,000	$17,340	$7,110	$174,450	$24,450	$2,340	$15,000	$3,510	$360	na	$3,240	na
					B	Medium	DMS																na
SW	I-39/90/94	MADISON MPO LINE	I-94	7.1 Miles	A	Medium	PDMS	2	$50,000	$90,000	$10,000	$100,000	$11,560	$4,740	$116,300	$16,300	$1,560	$10,000	$2,340	$240	na	$2,160	na
					A	Medium	DMS																na
SW	I-39/90	I-94	US 12/18	4.0 Miles	A	Medium	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					A	Medium	DMS																na
SW	US 51	I-39/90/94	US 151	3.9 Miles	C	Medium	PDMS														na		na
					C	Medium	DMS																na
SW	US 51	US 151	US 12/18	4.5 Miles	B	Medium	PDMS														na		na
					B	Medium	DMS																na
SW	US 12	I-90/94	WIS 78	27.0 Miles	C	Baseline	PDMS														na		na
					C	Baseline	DMS																na
SW	US 12	WIS 78	US 14	16.9 Miles	B	Low	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					B	Low	DMS																na
SW	US 12/14	US 14	US 18	6.7 Miles	A	Medium	PDMS														na		na
					A	Medium	DMS																na
SW	US 12/14/18/151	US 18	US 14/151	3.0 Miles	A	Medium	PDMS														na		na
					A	Medium	DMS																na
SW	US 12/18	US 14/151	I-39/90	6.1 Miles	A	High	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					A	High	DMS																na
							PDMS	12															
Totals							DMS	0															
	Total							Total		$540,000	$60,000	$600,000	$69,360	$28,440	$697,800	$97,800	$9,360	$60,000	$14,040	$1,440		$12,960	$0

Capitol Corridor

The Capital Corridor includes the Madison MPO and Milwaukee-Waukesha Regions as well as I-94 from Madison to Milwaukee, WIS 151/19/16 from Madison to Milwaukee, and US 18 from Madison to Milwaukee. The corridor includes system interchanges with US 41/45 and I-43 in Milwaukee. The corridor experiences significant regional traffic, high peaking on weekends (Friday afternoon and evening and Sunday afternoon), and recurring congestion during the weekday peak periods in the Milwaukee-Waukesha urban areas and weather disturbances during the winter months. The deployment recommendations for the Travel Warning and Information area are as follows:

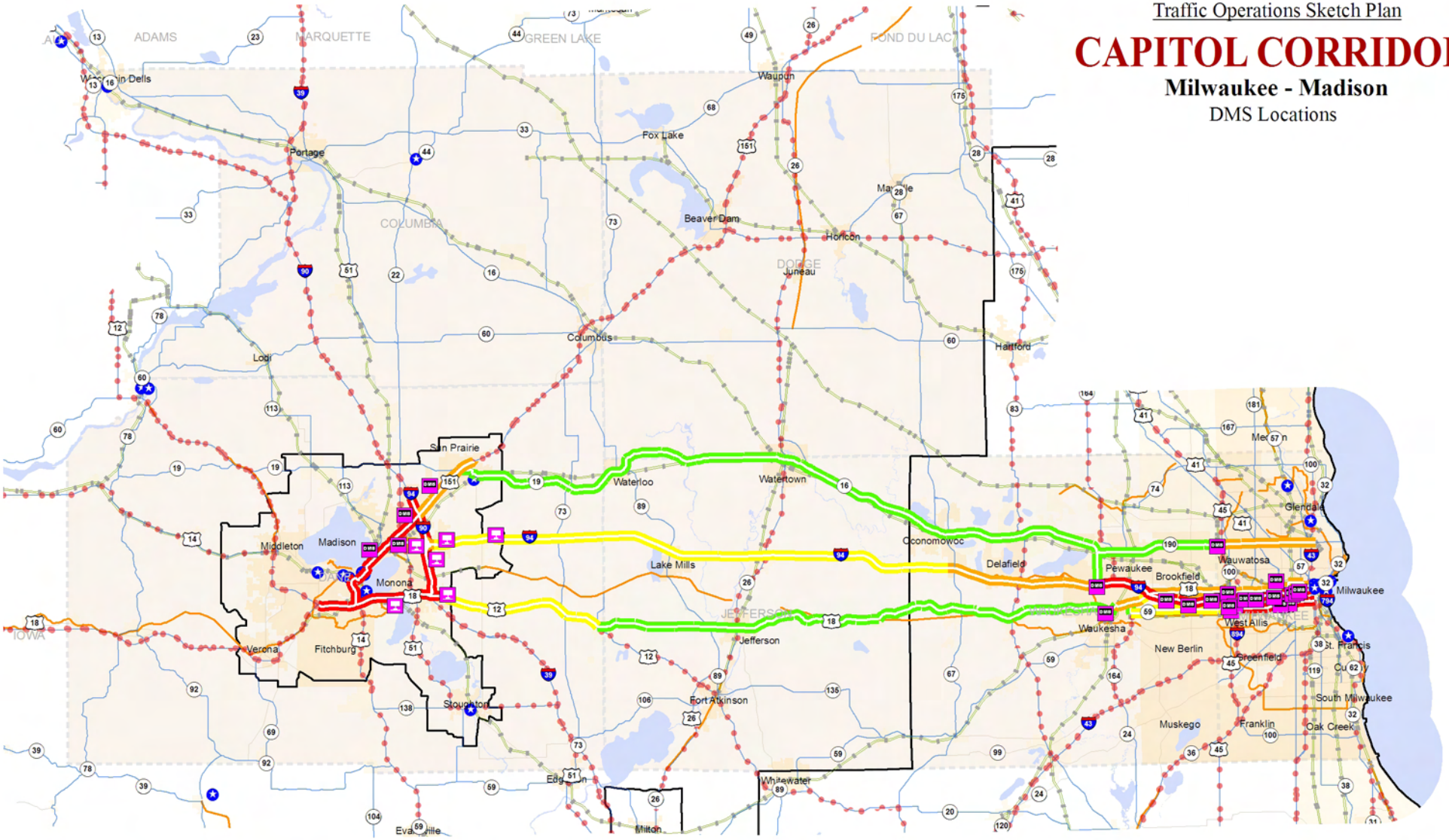
- The majority of the freeways within the Milwaukee-Waukesha Metro Region are recommended for high density deployment. Permanent DMS are recommended throughout the Region to provide real time travel time information to key destinations as well as information on incident and alternative route guidance as well as for weather and construction alerts.
- The majority of highways entering the Madison area within the Madison MPO Region are recommended for medium density deployment. Portable DMS are recommended throughout the corridor to provide incident and alternate route guidance as well as being used for weather and construction alerts. The majority of the deployments were installed as part of the earlier Blue Route project. The Blue Route is an alternate route signing concept for when a major incident on the interstate requires a lengthy closure or results in major delays. The Blue Route uses US 51 (Stoughton Road) from US 12/18 (the Madison Beltline) at the south to its intersection with I-39/90/94 at the north. An additional portable DMS is recommended for southbound US 51 for the Blue Route as well as to provide incident and alternate route guidance as well as being used for weather and construction alerts.
- Baseline density deployment is recommended for the WIS 16, WIS 18 and WIS 19 corridors between Madison and the Milwaukee-Waukesha area.
- Low density deployment is recommended for I-94 between Madison and the Milwaukee-Waukesha area.

Traffic Operations Sketch Plan

CAPITOL CORRIDOR

Milwaukee - Madison

DMS Locations



Travel Warning Information Systems Locations

- DMS — Dynamic Message Sign (DMS)
- Permanent Portable Dynamic Message Sign

Deployment Density Classes

- Baseline
- Low
- Medium
- High

Legend

- Primary Highways in Corridor
- Principal Highways From Other Corridors
- Other Important Highway Connections
- Rail Freight
- BikeTrails
- Special Events
- MPO Boundaries

0 2 4 6 Miles

N

Basemap Design by Wisconsin DOT GIS

Capitol Corridor

Region	Highway	Segment Start	Segment End	Segment Length	Facility Type	Recommended Deployment Level	Device Type	Estimated Quantity	Estimated Unit Cost	Estimated Cost (Hardware)	Estimated Cost (Installation)	Estimated Total Capital Cost	Maintenance Cost (Per Year)	Operation Cost (Per Year)	Total (Per Year)	Total O&M Cost (Per Year)	Estimated Maintenance Staffing Cost (Per Year)	Estimated Direct Maintenance Cost (Per Year)	Estimated Operation Staffing Cost (Per Year)	Estimated Direct Operation Cost (Per Year)	Estimated Power Cost (Per Year)	Estimated Communications Cost (Per Year)	Estimated Service Patrol Staffing Cost (Per Year)
SW	US 12/14/18/151	US 12/14	US 14/151	3.0 Miles	A	Medium	PDMS																
					A	Medium	DMS																
SW	US 151	US 12/18	I-39/90/94	9.8 Miles	C	High	PDMS																
					C	High	DMS	2	$200,000	$360,000	$40,000	$400,000	$44,680	$16,560	$461,240	$61,240	$4,680	$40,000	$9,360	$240	$4,800	$2,160	na
SW	US 151	I-39/90/94	WIS 19	5.3 Miles	A	High	PDMS																
					A	High	DMS	1	$200,000	$180,000	$20,000	$200,000	$22,340	$8,280	$230,620	$30,620	$2,340	$20,000	$4,680	$120	$2,400	$1,080	na
SW	US 12/18	US 14/151	I-39/90	6.1 Miles	A	Medium	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					A	Medium	DMS																
SW	US 12/18	I-39/90	WIS 73	10.8 Miles	B	Medium	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					B	Medium	DMS																
SW	US 12/18	WIS 73	WIS 134	3.1 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
SW	US 18	WIS 134	WAUKESHA COUNTY	25.2 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
SW	I-39/90/94	US 151	I-94	2.4 Miles	A	Medium	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					A	Medium	DMS																
SW	I-39/90	I-94	US 12/18	4.0 Miles	A	Medium	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					A	Medium	DMS																
SW	I-94	I-39/90	MADISON MPO LINE	6.2 Miles	A	Medium	PDMS	2	$50,000	$90,000	$10,000	$100,000	$11,560	$4,740	$116,300	$16,300	$1,560	$10,000	$2,340	$240	na	$2,160	na
					A	Medium	DMS																
SW	I-94	MADISON MPO LINE	WIS 89	13.3 Miles	B	Medium	PDMS																
					B	Medium	DMS																
SW	I-94	WIS 89	WIS 26	7.5 Miles	A	Low	PDMS																
					A	Low	DMS																
SW	I-94	WIS 26	WAUKESHA COUNTY	11.6 Miles	B	Low	PDMS																
					B	Low	DMS																
SW	WIS 19	US 151	WIS 16	27.4 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
SW	WIS 16	WIS 19	WAUKESHA COUNTY	10.9 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
SW	WIS 30	US 151	I-39/90/94	2.6 Miles	C	Medium	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					C	Medium	DMS	1	$200,000	$180,000	$20,000	$200,000	$22,340	$8,280	$230,620	$30,620	$2,340	$20,000	$4,680	$120	$2,400	$1,080	na
SE	WIS 16	JEFFERSON COUNTY	WIS 67	3.3 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
SE	WIS 16	WIS 67	WIS 83	5.7 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
SE	WIS 16	WIS 83	I-94	9.1 Miles	A	Baseline	PDMS																
					A	Baseline	DMS																
SE	WIS 190	WIS 16	US 45	8.9 Miles	C	High	PDMS																
					C	High	DMS	1	$200,000	$180,000	$20,000	$200,000	$22,340	$8,280	$230,620	$30,620	$2,340	$20,000	$4,680	$120	$2,400	$1,080	na
SE	WIS 190	US 45	I-43	6.9 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
SE	I-94	JEFFERSON COUNTY	WIS 67	3.6 Miles	B	Low	PDMS																
					B	Low	DMS																
SE	I-94	WIS 67	WIS 16	11.4 Miles	A	High	PDMS																
					A	High	DMS	1	$200,000	$180,000	$20,000	$200,000	$22,340	$8,280	$230,620	$30,620	$2,340	$20,000	$4,680	$120	$2,400	$1,080	na
SE	I-94	WIS 16	I-43	17.2 Miles	A	High	PDMS																
					A	High	DMS	8	$200,000	$1,440,000	$160,000	$1,600,000	$178,720	$66,240	$1,844,960	$244,960	$18,720	$160,000	$37,440	$960	$19,200	$8,640	na
SE	US 18	JEFFERSON COUNTY	WIS 164	18.5 Miles	C	High	PDMS																
					C	High	DMS	1	$200,000	$180,000	$20,000	$200,000	$22,340	$8,280	$230,620	$30,620	$2,340	$20,000	$4,680	$120	$2,400	$1,080	na
SE	US 18	WIS 164	I-43	14.9 Miles	C	High	PDMS																
					C	High	DMS	1	$200,000	$180,000	$20,000	$200,000	$22,340	$8,280	$230,620	$30,620	$2,340	$20,000	$4,680	$120	$2,400	$1,080	na
SE	WIS 59	WIS 164	I-894	8.4 Miles	C	High	PDMS																
					C	High	DMS	1	$200,000	$180,000	$20,000	$200,000	$22,340	$8,280	$230,620	$30,620	$2,340	$20,000	$4,680	$120	$2,400	$1,080	na
SE	WIS 59	I-894	I-43	6.2 Miles	C	High	PDMS																
					C	High	DMS	2	$200,000	$360,000	$40,000	$400,000	$44,680	$16,560	$461,240	$61,240	$4,680	$40,000	$9,360	$240	$4,800	$2,160	na
								7															
								19															
	Total									$3,735,000	$415,000	$4,150,000	$464,920	$173,910	$4,788,830	$638,830	$49,920	$415,000	$97,110	$3,120	$45,600	$28,080	$0

Cheese Country Corridor

The Cheese Country Corridor includes WIS 11 between the Iowa border (Dubuque) and Janesville as well as WIS 81 from WIS 11 to Beloit (I-43). The deployment recommendations for the Travel Warning and Information area are as follows:

- Baseline density deployment is recommended for the entire corridor.

Chippewa Valley

The Chippewa Valley Corridor includes I-94 from the Minnesota border (Hudson) to Eau Claire as well as the parallel routes of US 12 and WIS 29 as well as the Eau Claire – Chippewa Falls MPO Region. The corridor experiences significant regional traffic, high peaking on weekends (Friday afternoon and evening and Sunday afternoon), recurring congestion westbound into Minneapolis during the daily peak periods and weather disturbances during the winter months. The deployment recommendations for the Travel Warning and Information area are as follows:

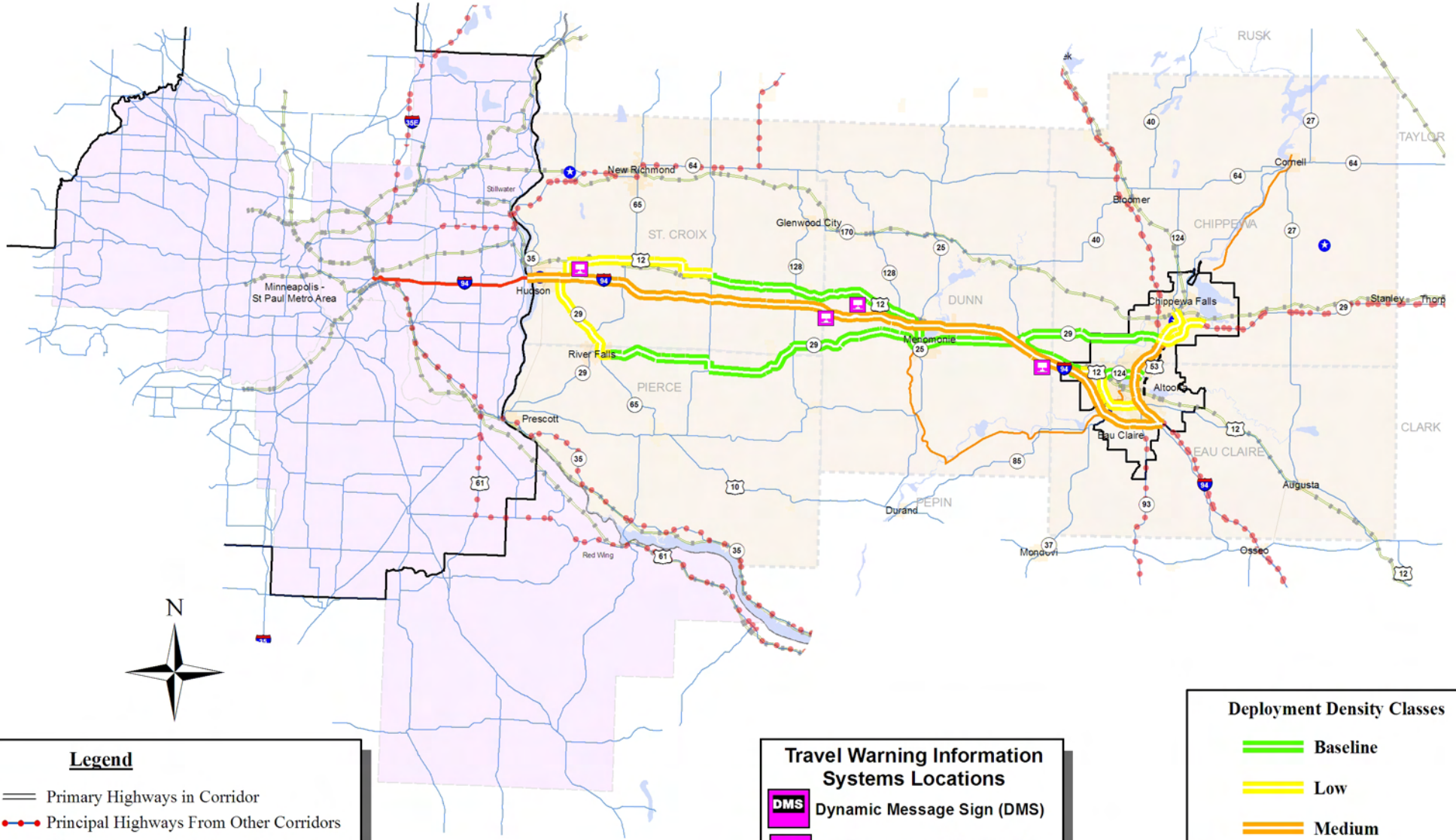
- The entire segment of I-94 is recommended for medium density deployment. Portable DMS are recommended for westbound traffic approaching Hudson and westbound and eastbound approaching the Knapp Hill to provide additional weather warnings.
- For the Chippewa Falls – Eau Claire MPO Region, it is recommended that portable DMS be located on major approaches to the Chippewa Falls/Eau Claire ring road (I-94, WIS 29, and US 53) to provide incident and alternate route guidance as well as being used for weather and construction alerts.

Traffic Operations Infrastructure Plan

CHIPPEWA VALLEY CORRIDOR

Eau Claire - Twin Cities

DMS LOCATIONS



Legend

- Primary Highways in Corridor
- Principal Highways From Other Corridors
- Other Important Highway Connections
- Rail Freight
- BikeTrails
- Special Events
- MPO Boundaries

Travel Warning Information Systems Locations

- DMS — Dynamic Message Sign (DMS)
- Permanent Portable Dynamic Message Sign

Deployment Density Classes

- Baseline
- Low
- Medium
- High

0 10 20 30 Miles

Basemap Design by Wisconsin DOT GIS

Chippewa Valley Corridor

Region	Highway	Segment Start	Segment End	Segment Length	Facility Type	Recommended Deployment Level	Device Type	Estimated Quantity	Estimated Unit Cost	Estimated Cost (Hardware)	Estimated Cost (Installation)	Estimated Total Capital Cost	Maintenance Cost (Per Year)	Operation Cost (Per Year)	Total (Per Year)	Total O&M Cost (Per Year)	Estimated Maintenance Staffing Cost (Per Year)	Estimated Direct Maintenance Cost (Per Year)	Estimated Operation Staffing Cost (Per Year)	Estimated Direct Operation Cost (Per Year)	Estimated Power Cost (Per Year)	Estimated Communications Cost (Per Year)	Estimated Service Patrol Staffing Cost (Per Year)
NW	US 12	I-94	WIS 29	41.0 Miles	C	Baseline	PDMS								$0								
					C	Baseline	DMS								$0								
NW	WIS 29	I-94	WIS 65	10.6 Miles	B	Baseline	PDMS								$0								
					B	Baseline	DMS								$0								
NW	WIS 29	WIS 65	US 12	36.1 Miles	C	Baseline	PDMS								$0								
					C	Baseline	DMS								$0								
NW	I-94	STATE LINE	US 12	4.1 Miles	A	Medium	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					A	Medium	DMS								$0								
NW	I-94	US 12	US 12	38.0 Miles	B	Medium	PDMS	2	$50,000	$90,000	$10,000	$100,000	$11,560	$4,740	$116,300	$16,300	$1,560	$10,000	$2,340	$240	na	$2,160	na
					B	Medium	DMS								$0								
NW	I-94	US 12	CTH B	3.9 Miles	A	Medium	PDMS								$0								
					A	Medium	DMS								$0								
NW	I-94	CTH B	WIS 312	14.2 Miles	B	Medium	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					B	Medium	DMS								$0								
NW	I-94	WIS 312	US 53	11.1 Miles	A	Medium	PDMS								$0								
					A	Medium	DMS								$0								
NW	US 12 / WIS 29	US 12	US 12	10.7 Miles	C	Baseline	PDMS								$0								
					C	Baseline	DMS								$0								
NW	US 12	WIS 29	WIS 312	6.7 Miles	C	Baseline	PDMS								$0								
					C	Baseline	DMS								$0								
NW	US 12	WIS 312	US 53	8.6 Miles	A	Baseline	PDMS								$0								
					A	Baseline	DMS								$0								
NW	WIS 29	US 12	US 53	15.0 Miles	B	Baseline	PDMS								$0								
					B	Baseline	DMS								$0								
NW	US 53	I-94	WIS 29	11.0 Miles	A	Medium	PDMS								$0								
					A	Medium	DMS								$0								
NW	WIS 312	US 12	US 53	0.6 Miles	A	Baseline	PDMS								$0								
					A	Baseline	DMS								$0								
NW	WIS 124	US 53	CHIPPEWA RIVER	3.8 Miles	A	Baseline	PDMS								$0								
					A	Baseline	DMS								$0								
NW	WIS 29	US 53	LAKE WISSOTA	5.5 Miles	A	Baseline	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					A	Baseline	DMS								$0								
	Total									$225,000	$25,000	$250,000	$28,900	$11,850	$290,750	$40,750	$3,900	$25,000	$5,850	$600	$0	$5,400	$0

Cornish Heritage Corridor

The Cornish Heritage Corridor includes US 18/151 from the Iowa border (Dubuque) to Columbus and a portion of the Madison MPO Region. This corridor accommodates regional travel between Iowa and the Madison area and experiences high peaking on weekends (Friday afternoon and evening and Sunday afternoon), and weather disturbances during the winter months. The segment from Verona to Sun Prairie also experiences recurring congestion during the weekday peak periods. The deployment recommendations for the Travel Warning and Information area are as follows:

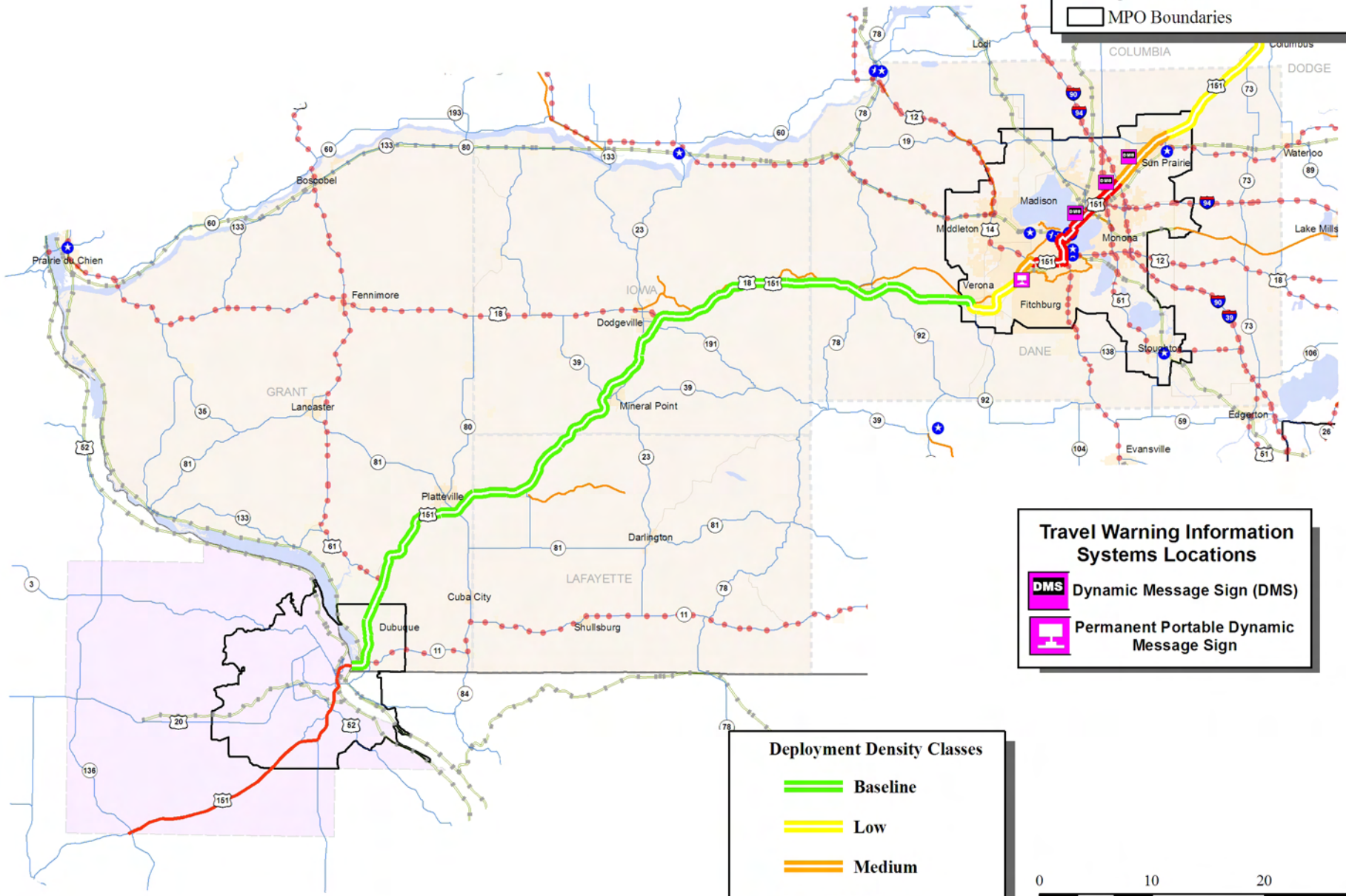
- US 18/151 is recommended for baseline density deployment between Dubuque and Verona.
- US 18/151 from Verona to Madison is recommended for medium density deployment. Portable DMS are recommended for US 18/151 prior to and along the Madison Beltline to provide incident and alternate route guidance as well as being used for weather and construction alerts.
- US 151 between downtown Madison and Sun Prairie is recommended for high density deployment. Permanent DMS are recommended to provide real time travel time information to key destinations as well as provide information on incident and alternative route guidance as well as for weather and construction alerts.'
- US 151 between Sun Prairie and Columbus is recommended for low density deployment.

Traffic Operations Infrastructure Plan

CORNISH HERITAGE CORRIDOR

Dubuque - Madison

DMS Locations



Cornish Heritage Corridor

Region	Highway	Segment Start	Segment End	Segment Length	Facility Type	Recommended Deployment Level	Device Type	Estimated Quantity	Estimated Unit Cost	Estimated Cost (Hardware)	Estimated Cost (Installation)	Estimated Total Capital Cost	Maintenance Cost (Per Year)	Operation Cost (Per Year)	Total (Per Year)	Total O&M Cost (Per Year)	Estimated Maintenance Staffing Cost (Per Year)	Estimated Direct Maintenance Cost (Per Year)	Estimated Operation Staffing Cost (Per Year)	Estimated Direct Operation Cost (Per Year)	Estimated Power Cost (Per Year)	Estimated Communications Cost (Per Year)	Estimated Service Patrol Staffing Cost (Per Year)
SW	US 151	STATE LINE	WIS 39	38.5 Miles	B	Baseline	PDMS																
					B	Baseline	DMS																
SW	US 151	WIS 39	US 18	9.1 Miles	A	Baseline	PDMS																
					A	Baseline	DMS																
SW	US 18/151	US 18	WIS 69	30.6 Miles	B	Baseline	PDMS																
					B	Baseline	DMS																
SW	US 18/151	WIS 69	CTH PD	1.9 Miles	A	Medium	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					A	Medium	DMS																
SW	US 18/151	CTH PD	US 12/14	5.6 Miles	A	Medium	PDMS																
					A	Medium	DMS																
SW	US 12/14/18/151	US 151	US 151	3.0 Miles	A	Medium	PDMS																
					A	Medium	DMS																
SW	US 151	US 12/14	I-39/90/94	9.8 Miles	C	High	PDMS																
					C	High	DMS	2	$200,000	$360,000	$40,000	$400,000	$44,680	$16,560	$461,240	$61,240	$4,680	$40,000	$9,360	$240	$4,800	$2,160	na
SW	US 151	I-39/90/94	WIS 19	5.3 Miles	A	High	PDMS																
					A	High	DMS	1	$200,000	$180,000	$20,000	$200,000	$22,340	$8,280	$230,620	$30,620	$2,340	$20,000	$4,680	$120	$2,400	$1,080	na
	Total									$585,000	$65,000	$650,000	$72,800	$27,210	$750,010	$100,010	$7,800	$65,000	$15,210	$480	$7,200	$4,320	$0

Coulee Country Corridor

The Coulee Country Corridor includes I-90 from the Minnesota border to Tomah (I-94) and WIS 16 from La Crosse to Sparta, and WIS 21 from Sparta to Tomah (I-94). This corridor accommodates regional travel between Minnesota and Tomah and experiences high peaking on weekends (Friday afternoon and evening and Sunday afternoon), and weather disturbances during the winter months. The deployment recommendations for the Travel Warning and Information area are as follows:

- The majority of I-90 between the Minnesota border and Tomah is recommended for low density deployment. The short segment east of WIS 16 is recommended for medium density deployment. A portable DMS is recommended for westbound traffic approaching the La Crosse to provide incident and alternate route guidance as well as being used for weather and construction alerts.

Cranberry Country Corridor

The Cranberry County Corridor includes WIS 21 from Tomah (I-94) to Oshkosh (US 41). The corridor includes the cities of Wautoma and Omro. The deployment recommendations for the Travel Warning and Information area are as follows:

- Baseline density deployment is recommended for the entire corridor.

Door Peninsula Corridor

The Door Peninsula Corridor includes WIS 57 from Green Bay (I-43) to Sturgeon Bay. WIS 57 accommodates significant recreational traffic during weekends. The deployment recommendations for the Travel Warning and Information area are as follows:

- Medium density deployment is recommended for the segment adjacent to I-43. Portable DMS is recommended for southbound WIS 57 to provide incident and alternate route guidance as well as being used for weather and construction alerts.
- Baseline density deployment is recommended for the remainder of the corridor.

Fox Valley Corridor

The Fox Valley Corridor includes the Milwaukee-Waukesha, Appleton-Oshkosh-Fond-du-Lac, and Green Bay Regions as well as US 41 from Milwaukee to Green Bay, and US 45 between Milwaukee and Fond-du-Lac. The corridor experiences significant regional traffic, high peaking on weekends (Friday afternoon and evening and Sunday afternoon), significant event traffic, and weather disturbances occur during the winter months.

- The segment of US 41/45 from I-94 to the split is recommended for high density deployment. The segment experiences significant recurring congestion on a daily basis. It is recommended that permanent DMS be deployed inbound into the Milwaukee metro area. The DMS should be equipped with real time travel time capability as well as incident and weather warnings.
- For the Fond-du-Lac area, it is recommended that portable DMS be located on US 41 approaching the city from the south and north to provide incident and alternate route guidance as well as being used for weather and construction alerts.
- For the Oshkosh area, it is recommended that portable DMS be located on US 41 approaching the city from the south and north to provide incident and alternate route guidance as well as being used for weather, construction, and traffic event (EAA Fly-in) alerts. In addition, it is recommended that a portable DMS be located north of the WIS 26 exit for southbound traffic to provide additional alternate route guidance
- For the Appleton area, it is recommended that portable DMS be located on US 41 approaching the city from the south and north to provide incident and alternate route guidance via WIS 441 as well as being used for weather and construction alerts.
- For the Green Bay area, it is recommended that a combination of portable DMS and permanent DMS be located approaching the US 41, I-43, and WIS 172 ring road around the city to provide incident and alternate route guidance as well as for weather, construction, and event (Green Bay Packer games) alerts. The permanent DMS signs should also communicate real time travel times to key destinations.

Traffic Operations Infrastructure Plan

FOX VALLEY CORRIDOR

Milwaukee - Green Bay

DMS Locations

Legend

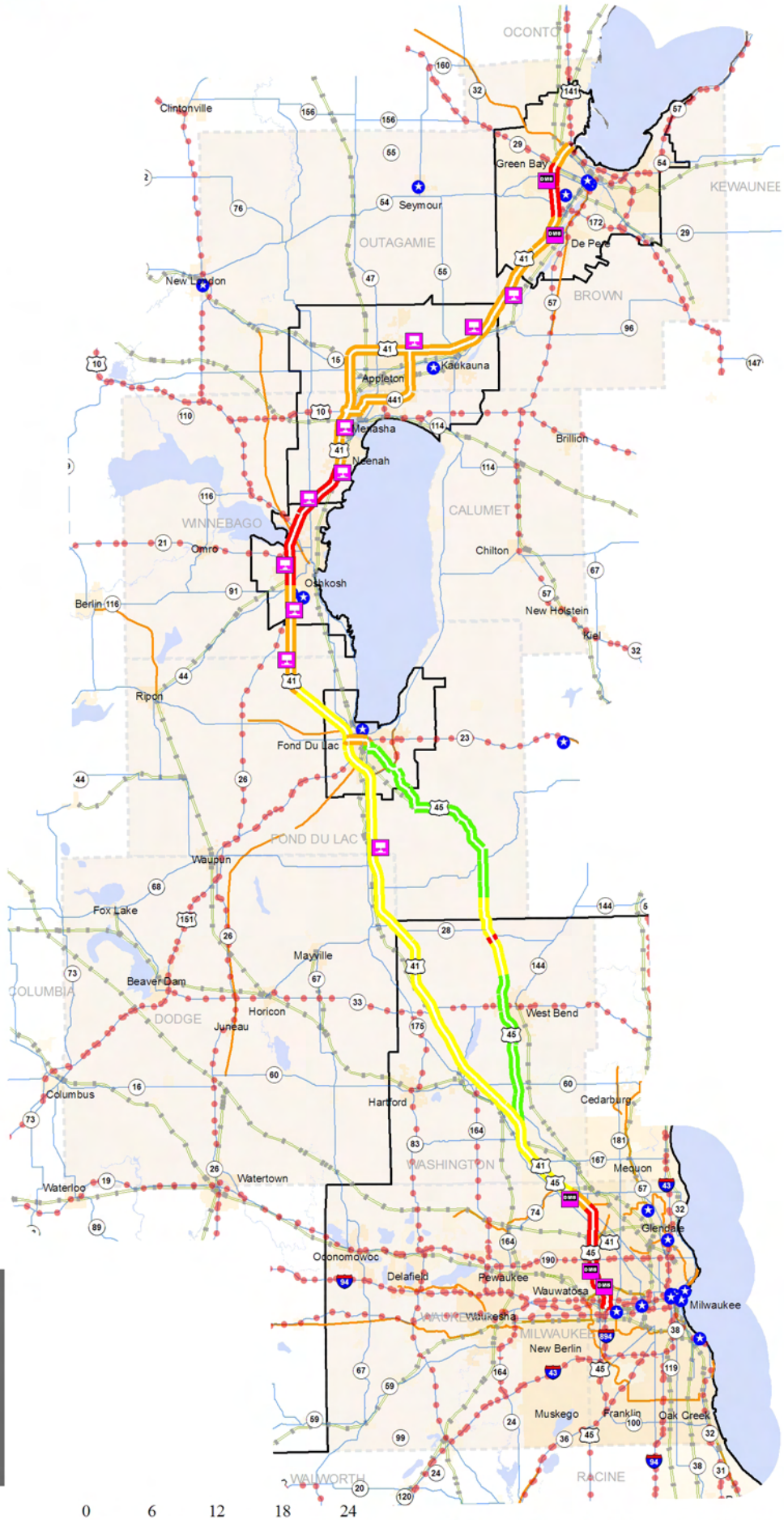
- Primary Highways in Corridor
- Principal Highways From Other Corridors
- Other Important Highway Connections
- Rail Freight
- BikeTrails
- Special Events
- MPO Boundaries

Deployment Density Classes

- Baseline
- Low
- Medium
- High

Travel Warning Information Systems Locations

- DMS — Dynamic Message Sign (DMS)
- Permanent Portable Dynamic Message Sign



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Basemap Design by Wisconsin DOT GIS

Fox Valley Corridor

Region	Highway	Segment Start	Segment End	Segment Length	Facility Type	Recommended Deployment Level	Device Type	Estimated Quantity	Estimated Unit Cost	Estimated Cost (Hardware)	Estimated Cost (Installation)	Estimated Total Capital Cost	Maintenance Cost (Per Year)	Operation Cost (Per Year)	Total (Per Year)	Total O&M Cost (Per Year)	Estimated Maintenance Staffing Cost (Per Year)	Estimated Direct Maintenance Cost (Per Year)	Estimated Operation Staffing Cost (Per Year)	Estimated Direct Operation Cost (Per Year)	Estimated Power Cost (Per Year)	Estimated Communications Cost (Per Year)	Estimated Service Patrol Staffing Cost (Per Year)
SE	US 45	I-94	US 41	7.9 Miles	A	High	PDMS																
					A	High	DMS	2	$200,000	$360,000	$40,000	$400,000	$44,680	$16,560	$461,240	$61,240	$4,680	$40,000	$9,360	$240	$4,800	$2,160	na
SE	US 41/45	US 41	US 45	13.2 Miles	A	High	PDMS																
					A	High	DMS	1	$200,000	$180,000	$20,000	$200,000	$22,340	$8,280	$230,620	$30,620	$2,340	$20,000	$4,680	$120	$2,400	$1,080	na
SE	US 41	US 45	DODGE COUNTY	21.3 Miles	B	Low	PDMS																
					B	Low	DMS																
SE	US 45	US 41	WIS 33	10.3 Miles	B	Baseline	PDMS																
					B	Baseline	DMS																
SE	US 45	WIS 33	FOND DU LAC COUNTY	8.2 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
NE	US 41	WASHINGTON COUNTY	FOND DU LAC MPO LINE	12.6 Miles	B	Medium	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$3,540	$59,320	$9,320	$780	$5,000	$2,340	$120	na	$1,080	na
					B	Medium	DMS																
NE	US 45	WASHINGTON COUNTY	WIS 23	22.2 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
NE	WIS 23	US 45	US 41	1.9 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
NE	US 41	FOND DU LAC MPO LINE	FOND DU LAC MPO LINE	9.3 Miles	A	Low	PDMS																
					A	Low	DMS																
NE	US 41	FOND DU LAC MPO LINE	WIS 26	9.9 Miles	B	Low	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$3,540	$59,320	$9,320	$780	$5,000	$2,340	$120	na	$1,080	na
					B	Low	DMS																
NE	US 41	WIS 26	WIS 44	3.2 Miles	B	Medium	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$3,540	$59,320	$9,320	$780	$5,000	$2,340	$120	na	$1,080	na
					B	Medium	DMS																
NE	US 41	WIS 44	US 10	17.6 Miles	A	Medium	PDMS	4	$50,000	$180,000	$20,000	$200,000	$23,120	$14,160	$237,280	$37,280	$3,120	$20,000	$9,360	$480	na	$4,320	na
					A	Medium	DMS																
NE	US 41	US 10	WIS 441	11.0 Miles	A	Medium	PDMS																
					A	Medium	DMS																
NE	WIS 441	US 41	US 41	10.7 Miles	A	Baseline	PDMS																
					A	Baseline	DMS																
NE	US 41	WIS 441	GREEN BAY MPO LINE	13.5 Miles	B	Medium	PDMS	3	$50,000	$135,000	$15,000	$150,000	$17,340	$10,620	$177,960	$27,960	$2,340	$15,000	$7,020	$360	na	$3,240	na
					B	Medium	DMS																
NE	US 41	GREEN BAY MPO LINE	WIS 29	11.5 Miles	A	High	PDMS																
					A	High	DMS	2	$200,000	$360,000	$40,000	$400,000	$44,680	$16,560	$461,240	$61,240	$4,680	$40,000	$9,360	$240	$4,800	$2,160	na
NE	US 41	WIS 29	I-43	2.2 Miles	A	Medium	PDMS																
					A	Medium	DMS																
							PDMS	10															
							DMS	4															
	Total									$1,350,000	$150,000	$1,500,000	$169,500	$76,800	$1,746,300	$246,300	$19,500	$150,000	$46,800	$1,800	$12,000	$16,200	$0

Frank Lloyd Wright Corridor

The Frank Lloyd Write Corridor includes US 14/61/53 from La Crosse to Madison (US 12) as well as a portion of the Madison MPO Region. The deployment recommendations for the Travel Warning and Information area are as follows:

- Baseline density deployment is recommended for the entire corridor.

French Fur Trade Corridor

The French Fur Trade Corridor includes US 18 from the Minnesota border (Prairie du Chien to Dodgeville. The deployment recommendations for the Travel Warning and Information area are as follows:

- Baseline density deployment is recommended for the entire corridor.

Geneva Lakes Corridor

The Geneva Lakes Corridor includes US 12 from Madison (I-39/90/94) to the Illinois border south of Lake Geneva as well as a portion of the Madison MPO Region. The deployment recommendations for the Travel Warning and Information area are as follows:

- Medium density deployment is recommended for the segment adjacent to I-39/90/94. Portable DMS is recommended for westbound US 12 to provide incident and alternate route guidance as well as being used for weather and construction alerts.
- Baseline density deployment is recommended for the remainder of the corridor.

Glacial Plains Corridor

The Glacial Plains Corridor includes a portion of the Janesville-Beloit Region as well as I-43 from Beloit (I-39/90) to I-94 in Milwaukee as well as WIS 11/14 from Janesville (I-39/90) to I-43, and WIS 36 from WIS 20 to I-894. This corridor accommodates regional travel between Illinois and the Milwaukee area and experiences high peaking on weekends (Friday afternoon and evening and Sunday afternoon), and weather disturbances during the winter months. The eastern section of I-43 experiences significant recurring congestion during the weekday peak periods through the Milwaukee metro area. The deployment recommendations for the Travel Warning and Information area are as follows:

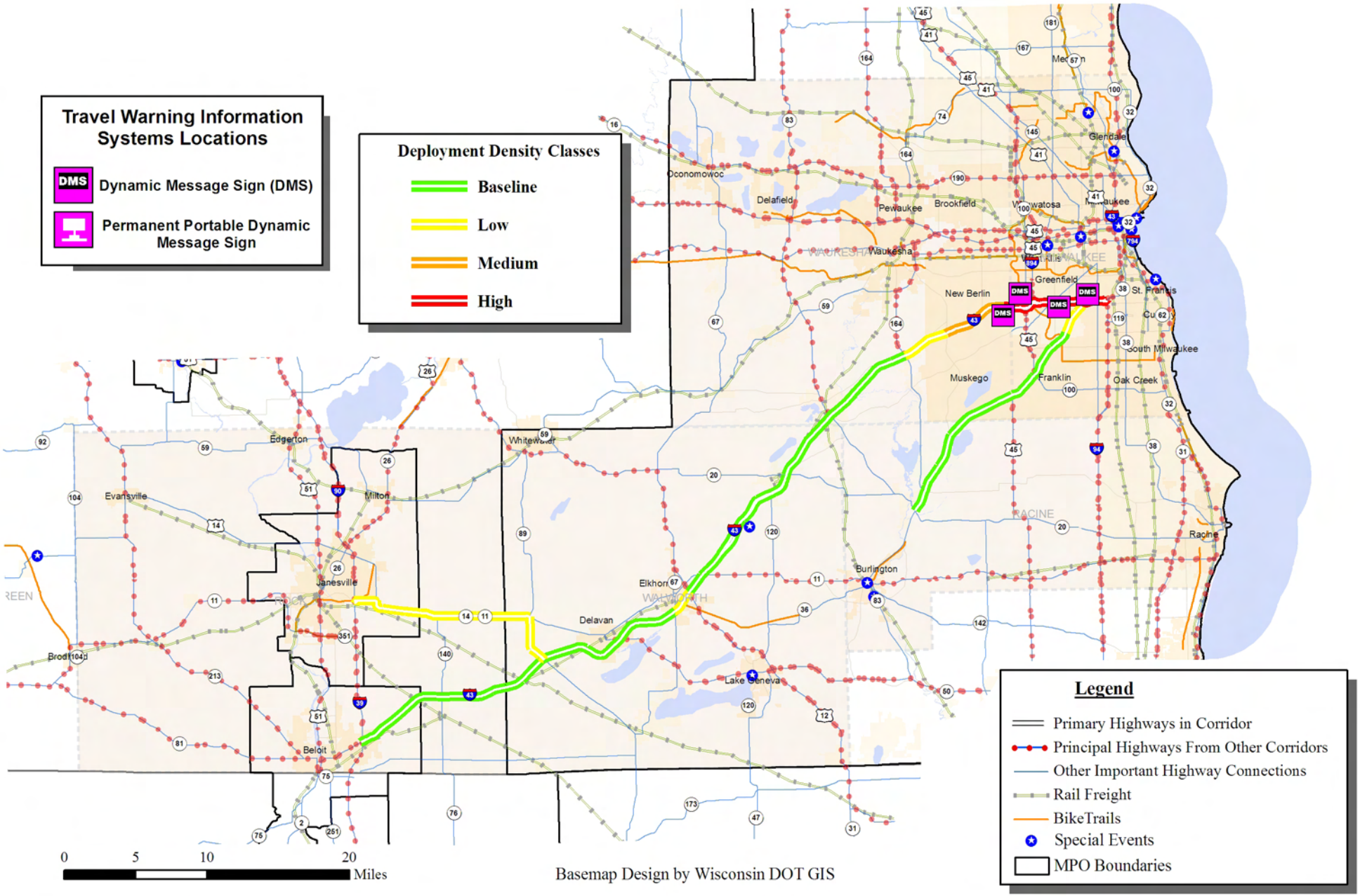
- I-43 from Beloit to New Berlin is recommended for low density deployment.
- High density deployment is recommended for I-43 (New Berlin to I-94) as enters the Milwaukee metro area. Permanent DMS are recommended to provide real time travel time information to key destinations as well as information on incident and alternative route guidance as well as for weather and construction alerts.
- Baseline density deployment is recommended for WIS 11/14 and WIS 36.

Traffic Operations Infrastructure Plan

GLACIAL PLAINS CORRIDOR

Janesville/Beloit - Milwaukee

DMS Locations



Glacial Plains Corridor

Region	Highway	Segment Start	Segment End	Segment Length	Facility Type	Recommended Deployment Level	Device Type	Estimated Quantity	Estimated Unit Cost	Estimated Cost (Hardware)	Estimated Cost (Installation)	Estimated Total Capital Cost	Maintenance Cost (Per Year)	Operation Cost (Per Year)	Total (Per Year)	Total O&M Cost (Per Year)	Estimated Maintenance Staffing Cost (Per Year)	Estimated Direct Maintenance Cost (Per Year)	Estimated Operation Staffing Cost (Per Year)	Estimated Direct Operation Cost (Per Year)	Estimated Power Cost (Per Year)	Estimated Communications Cost (Per Year)	Estimated Service Patrol Staffing Cost (Per Year)
SW	US 14	I-39/90	WALWORTH COUNTY	11.3 Miles	C	Low	PDMS																
					C	Low	DMS																
SW	I-43	I-39/90	BELOIT MPO LINE	5.2 Miles	A	Baseline	PDMS																
					A	Baseline	DMS																
SW	I-43	BELOIT MPO LINE	WALWORTH COUNTY	6.2 Miles	B	Baseline	PDMS																
					B	Baseline	DMS																
SE	US 14	ROCK COUNTY	I-43	5.0 Miles	C	Low	PDMS																
					C	Low	DMS																
SE	I-43	ROCK COUNTY	WIS 50	9.6 Miles	A	Baseline	PDMS																
					A	Baseline	DMS																
SE	I-43	WIS 50	WIS 67	6.3 Miles	B	Baseline	PDMS																
					B	Baseline	DMS																
SE	I-43	WIS 67	WIS 11	1.6 Miles	A	Baseline	PDMS																
					A	Baseline	DMS																
SE	I-43	WIS 11	WIS 20	9.4 Miles	B	Baseline	PDMS																
					B	Baseline	DMS																
SE	I-43	WIS 20	MUSKEGO CITY LIMITS	14.2 Miles	A	Baseline	PDMS																
					A	Baseline	DMS																
SE	I-43	MUSKEGO CITY LIMITS	US 45	8.0 Miles	A	High	PDMS																
					A	High	DMS	2	$200,000	$360,000	$40,000	$400,000	$44,680	$16,560	$461,240	$61,240	$4,680	$40,000	$9,360	$240	$4,800	$2,160	na
SE	I-43/894	US 45	I-94	5.5 Miles	A	High	PDMS																
					A	High	DMS	2	$200,000	$360,000	$40,000	$400,000	$44,680	$16,560	$461,240	$61,240	$4,680	$40,000	$9,360	$240	$4,800	$2,160	na
SE	WIS 36	WIS 20	WIND LAKE	5.9 Miles	B	Baseline	PDMS																
					B	Baseline	DMS																
SE	WIS 36	WIND LAKE	US 45	5.3 Miles	A	Baseline	PDMS																
					A	Baseline	DMS																
SE	WIS 36	US 45	I-43/894	6.4 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
	Total									$720,000	$80,000	$800,000	$89,360	$33,120	$922,480	$122,480	$9,360	$80,000	$18,720	$480	$9,600	$4,320	$0

Hiawatha Corridor

The Hiawatha Corridor includes the Milwaukee-Waukesha Region area as well as I-94 from downtown Milwaukee (I-43) to the Illinois border, I-894 from I-43 to I-94, and parallel routes WIS 45, WIS 31 and WIS 32. The corridor experiences significant regional traffic, high peaking on weekends (Friday afternoon and evening and Sunday afternoon), recurring congestion westbound into the Milwaukee metro area during daily peak periods and weather disturbances during the winter months. The deployment recommendations for the Travel Warning and Information area are as follows:

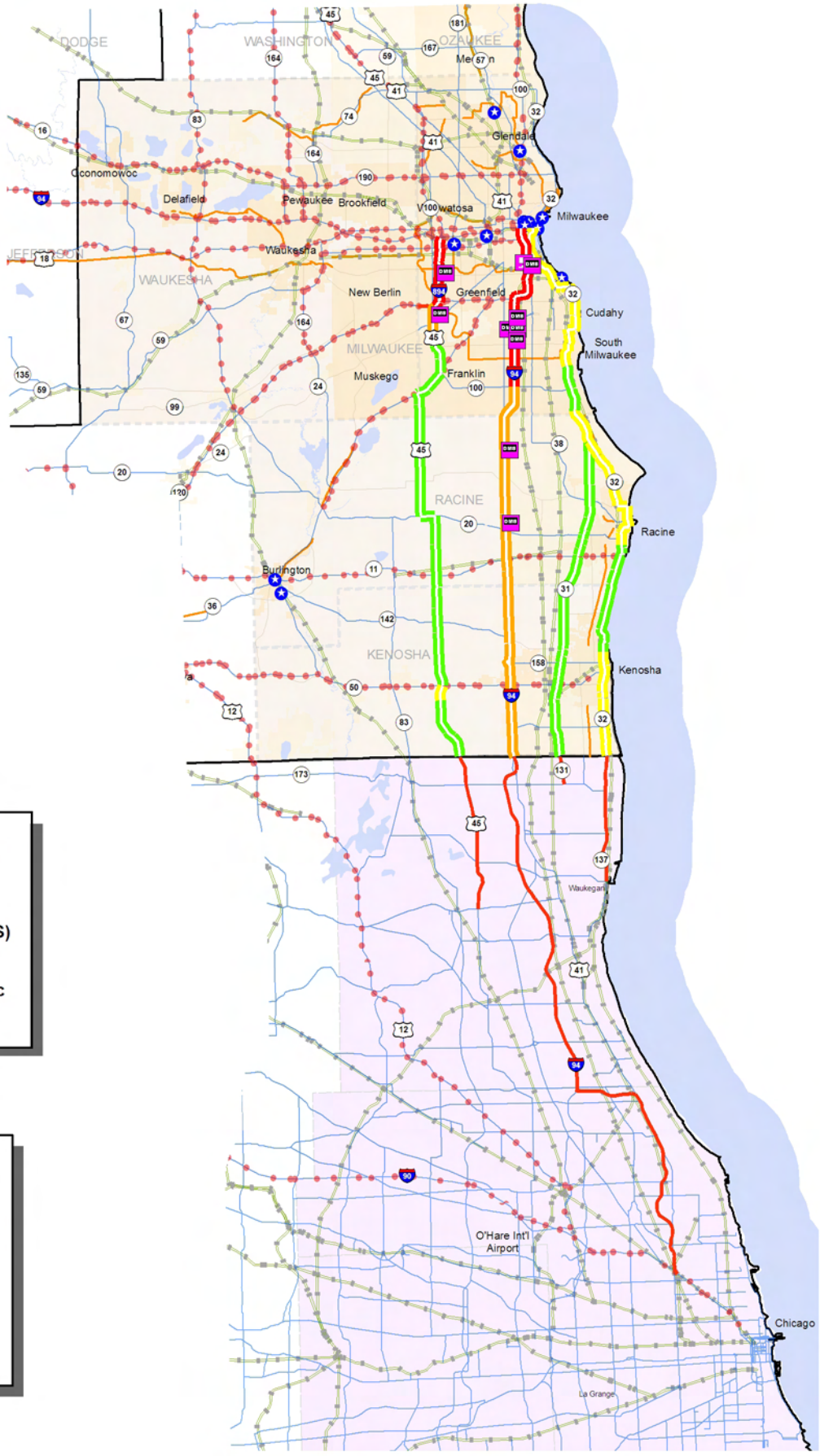
- I-94 from downtown Milwaukee to WIS 11, and I-894 are recommended for high density deployment. Permanent DMS are recommended to provide real time travel time information to key destinations as well as provide information on incident and alternative route guidance as well as for weather and construction alerts.
- Baseline density deployment is recommended for US 45, WIS 31, and WIS 32.

Traffic Operations Infrastructure Plan

HIAWATHA CORRIDOR

Milwaukee - Chicago

DMS Locations



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Deployment Density Classes

- Baseline
- Low
- Medium
- High

Travel Warning Information Systems Locations

- DMS — Dynamic Message Sign (DMS)
- Permanent Portable Dynamic Message Sign

Legend

- Primary Highways in Corridor
- Principal Highways From Other Corridors
- Other Important Highway Connections
- Rail Freight
- BikeTrails
- Special Events
- MPO Boundaries

0 5 10 20 Miles

Basemap Design by Wisconsin DOT GIS

Hiawatha Corridor

Region	Highway	Segment Start	Segment End	Segment Length	Facility Type	Recommended Deployment Level	Device Type	Estimated Quantity	Estimated Unit Cost	Estimated Cost (Hardware)	Estimated Cost (Installation)	Estimated Total Capital Cost	Maintenance Cost (Per Year)	Operation Cost (Per Year)	Total (Per Year)	Total O&M Cost (Per Year)	Estimated Maintenance Staffing Cost (Per Year)	Estimated Direct Maintenance Cost (Per Year)	Estimated Operation Staffing Cost (Per Year)	Estimated Direct Operation Cost (Per Year)	Estimated Power Cost (Per Year)	Estimated Communications Cost (Per Year)	Estimated Service Patrol Staffing Cost (Per Year)
SE	I-43/94 / US 41	I-94 / US 41	I-43/894	5.6 Miles	A	High	PDMS																
					A	High	DMS	2	$200,000	$360,000	$40,000	$400,000	$44,680	$14,640	$459,320	$59,320	$4,680	$40,000	$9,360	$240	$4,800	$240	na
SE	I-94 / US 41	I-43/894	WIS 50	27.7 Miles	A	High	PDMS																
					A	High	DMS	5	$200,000	$900,000	$100,000	$1,000,000	$111,700	$36,600	$1,148,300	$148,300	$11,700	$100,000	$23,400	$600	$12,000	$600	na
SE	I-94 / US 41	WIS 50	WIS 165	3.1 Miles	A	Low	PDMS																
					A	Low	DMS																
SE	I-94 / US 41	WIS 165	STATE LINE	2.1 Miles	B	Low	PDMS																
					B	Low	DMS																
SE	I-894 / US 45	I-94	I-43	4.5 Miles	A	High	PDMS																
					A	High	DMS	2	$200,000	$360,000	$40,000	$400,000	$44,680	$14,640	$459,320	$59,320	$4,680	$40,000	$9,360	$240	$4,800	$240	na
SE	US 45	I-43	WIS 100	5.0 Miles	C	High	PDMS																
					C	High	DMS	1	$200,000	$180,000	$20,000	$200,000	$22,340	$7,320	$229,660	$29,660	$2,340	$20,000	$4,680	$120	$2,400	$120	na
SE	US 45	WIS 100	WIS 20	11.9 Miles	A	Baseline	PDMS																
					A	Baseline	DMS																
SE	US 45	WIS 20	STATE LINE	17.4 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
SE	WIS 32	I-94	WIS 100	13.7 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
SE	WIS 32	WIS 100	WIS 31	4.4 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
SE	WIS 32	WIS 31	STATE LINE	23.8 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
SE	WIS 31	WIS 32	STATE LINE	22.6 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
							PDMS	0															
							DMS	10															
	Total									$1,800,000	$200,000	$2,000,000	$223,400	$73,200	$2,296,600	$296,600	$23,400	$200,000	$46,800	$1,200	$24,000	$1,200	$0

Kettle County Corridor

The Kettle Country Corridor includes WIS 23 from Fond du Lac (US 41)to Sheboygan (I-43) and US 151 from US 41 to WIS 23. The deployment recommendations for the Travel Warning and Information area are as follows:

- Baseline density deployment is recommended for the entire corridor.

Lake Superior Corridor

The Lake Superior Corridor includes US 2 from the Minnesota border (Duluth/Superior) and to the Michigan border (Ironwood). The deployment recommendations for the Travel Warning and Information area are as follows:

- Medium density deployment is recommended for the segment in Superior where Portable DMS are recommended for northbound US 2/53 to provide incident and alternate route guidance (two bridges into Minnesota) as well as being used for weather and construction alerts.
- Medium density deployment is also recommended for the segment through Ashland where Portable DMS are recommended to provide weather alert warnings for eastbound and westbound traffic approaching Chequamegon Bay along US 2.
- Baseline density deployment is recommended for the remainder of the corridor.

Lake to Lake Corridor

The Lake to Lake Corridor includes US 10 from Appleton (US 41) to Lake Michigan (Manitowoc) and WIS 210 from US 10 to Two Rivers. The deployment recommendations for the Travel Warning and Information area are as follows:

- Baseline density deployment is recommended for the entire length of the corridor.

Lumber Country Heritage Trail Corridor

The Lumber Country Heritage Trail Corridor includes US 41/141 from the Michigan border (Iron Mountain) to Green Bay (I-43) as well as a portion of the Green Bay Region. The deployment recommendations for the Travel Warning and Information area are as follows:

- Medium density deployment is recommended for the segment adjacent to I-43/US 41. Portable DMS is recommended for southbound US 41/141 to provide incident and alternate route guidance as well as being used for weather and construction alerts.
- Baseline density deployment is recommended for the remainder of the corridor

Marshfield-Rapids Connection Corridor

The Marshfield-Rapids Connection Corridor includes WIS 13 from Abbotsford through Marshfield, US 10 from Marshfield to Stevens Point (I-39), WIS 34 from US 10 to Wisconsin Rapids, and WIS 54 from Wisconsin Rapids to Stevens Point (I-39). The deployment recommendations for the Travel Warning and Information area are as follows:

- Baseline density deployment is recommended for the entire corridor

Mississippi River Corridor

The Mississippi River Corridor includes WIS 35 from the Minnesota border (Prescott) to the Iowa border (Prairie du Chien), and US 61 from La Crosse to the Iowa border (Dubuque). The deployment recommendations for the Travel Warning and Information area are as follows:

- Baseline density deployment is recommended for the entire corridor

North Country Corridor

The North Country Corridor includes US 8 from the Minnesota border (St. Croix Falls) to the Michigan border (Iron Mountain). The deployment recommendations for the Travel Warning and Information area are as follows:

- Baseline density deployment is recommended for the entire corridor

Northern Lakes Corridor

The Northern Lakes Corridor includes WIS 64 from the Minnesota border (Stillwater) to US 63 east of New Richmond, and US 63 from WIS 64 to Ashland. The deployment recommendations for the Travel Warning and Information area are as follows:

- Baseline density deployment is recommended for the entire corridor up to US 2. From there medium density deployment is recommended where Portable DMS are recommended to provide weather alert warnings for eastbound and westbound traffic approaching Chequamegon Bay along US 2.

Northwoods Connection Corridor

The Northwoods Connection Corridor includes US 8 from Rhinelander to US 45, and US 45 to Oshkosh (US 41) as well as a portion of the Appleton-Oshkosh-Fond du Lac Region. The deployment recommendations for the Travel Warning and Information area are as follows:

- Baseline density deployment is recommended for the entire corridor

Peace Memorial Corridor

The Peace Memorial Corridor includes a portion of the Eau Claire-Chippewa Falls MPO Region as well as US 53 from Eau Claire (I-94) to the Minnesota border (Duluth/Superior). The deployment recommendations for the Travel Warning and Information area are as follows:

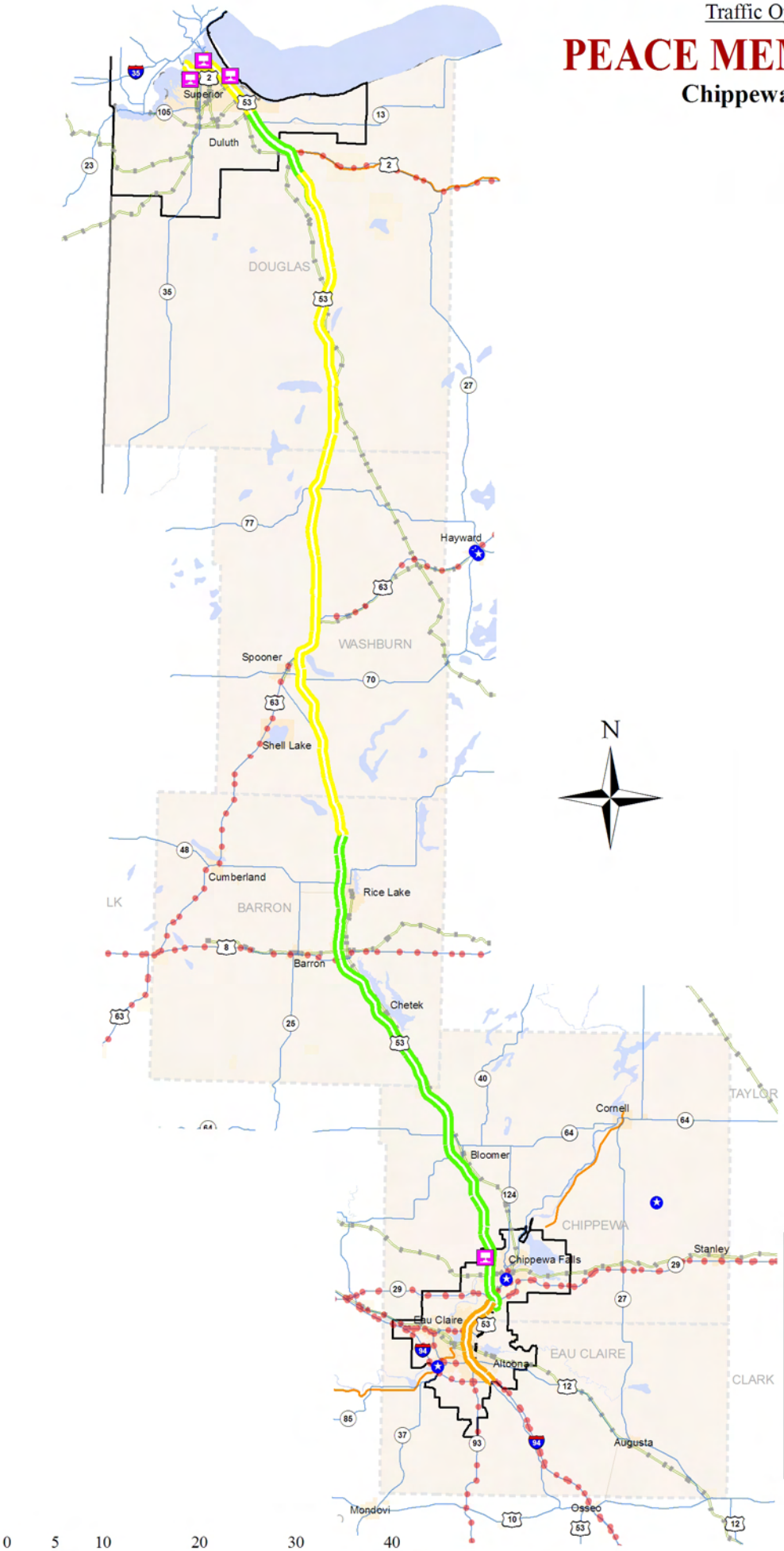
- Medium density deployment is recommended for the segment in Superior where Portable DMS are recommended for northbound US 2/53 to provide incident and alternate route guidance (two bridges into Minnesota) as well as being used for weather and construction alerts.
- For the Chippewa Falls – Eau Claire MPO Region, it is recommended that portable DMS be located on major approaches to the Chippewa Falls/Eau Claire ring road (I-94, WIS 29, and US 53) to provide incident and alternate route guidance as well as being used for weather and construction alerts.
- Baseline density deployment is recommended for the remainder of the corridor.

Traffic Operations Infrastructure Plan

PEACE MEMORIAL CORRIDOR

Chippewa Valley - Duluth/Superior

DMS Locations



Travel Warning Information Systems Locations

- DMS — Dynamic Message Sign (DMS)
- Permanent Portable Dynamic Message Sign

Deployment Density Classes

- Baseline
- Low
- Medium
- High

Legend

- Primary Highways in Corridor
- Principal Highways From Other Corridors
- Other Important Highway Connections
- Rail Freight
- BikeTrails
- Special Events
- MPO Boundaries

0 5 10 20 30 40 Miles

Basemap Design by Wisconsin DOT GIS

Peace Memorial Corridor

Region	Highway	Segment Start	Segment End	Segment Length	Facility Type	Recommended Deployment Level	Device Type	Estimated Quantity	Estimated Unit Cost	Estimated Cost (Hardware)	Estimated Cost (Installation)	Estimated Total Capital Cost	Maintenance Cost (Per Year)	Operation Cost (Per Year)	Total (Per Year)	Total O&M Cost (Per Year)	Estimated Maintenance Staffing Cost (Per Year)	Estimated Direct Maintenance Cost (Per Year)	Estimated Operation Staffing Cost (Per Year)	Estimated Direct Operation Cost (Per Year)	Estimated Power Cost (Per Year)	Estimated Communications Cost (Per Year)	Estimated Service Patrol Staffing Cost (Per Year)
NW	US 53	I-94	WIS 29	10.8 Miles	A	Baseline	FDMS																
					A	Baseline	DMS																
NW	US 53	WIS 29	CHIPPEWA FALLS MPO LINE	4.6 Miles	A	Medium	FDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					A	Medium	DMS																
NW	US 53	CHIPPEWA FALLS MPO LINE	US 2	125.6 Miles	B	Baseline	FDMS																
					B	Baseline	DMS																
NW	US 2/53	US 2	US 2	11.5 Miles	B	Baseline	FDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					B	Baseline	DMS																
NW	US 53	US 2	STATE LINE	2.7 Miles	C	Medium	FDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370		$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					C	Medium	DMS																
NW	US 2	US 53	STATE LINE	3.7 Miles	C	Medium	FDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					C	Medium	DMS																
	Total									$180,000	$20,000	$200,000	$23,120	$9,480	$174,450	$32,600	$3,120	$20,000	$4,680	$480	$0	$4,320	$0

Peshtigo Fire Corridor

The Peshtigo Fire Corridor includes US 41 from Green Bay (I-43) to the Michigan border (Menomonee) as well as a portion of the Green Bay Region. The deployment recommendations for the Travel Warning and Information area are as follows:

- Medium density deployment is recommended for the segment adjacent to I-43/US 41. Portable DMS is recommended for southbound US 41 to provide incident and alternate route guidance as well as being used for weather and construction alerts.
- Baseline density deployment is recommended for the remainder of the corridor

POW/MIA Remembrance Corridor

The POW/MIA Remembrance Corridor includes WIS 13 from Ashland (US 2) to Colby (WIS 29). The deployment recommendations for the Travel Warning and Information area are as follows:

- Baseline density deployment is recommended for the entire corridor

Rock River Corridor

The Rock River Corridor includes WIS 26 from Janesville (I-39/90) to Oshkosh (US 41) as well as a portion of the Appleton-Oshkosh-Fond du Lac Region. The deployment recommendations for the Travel Warning and Information area are as follows:

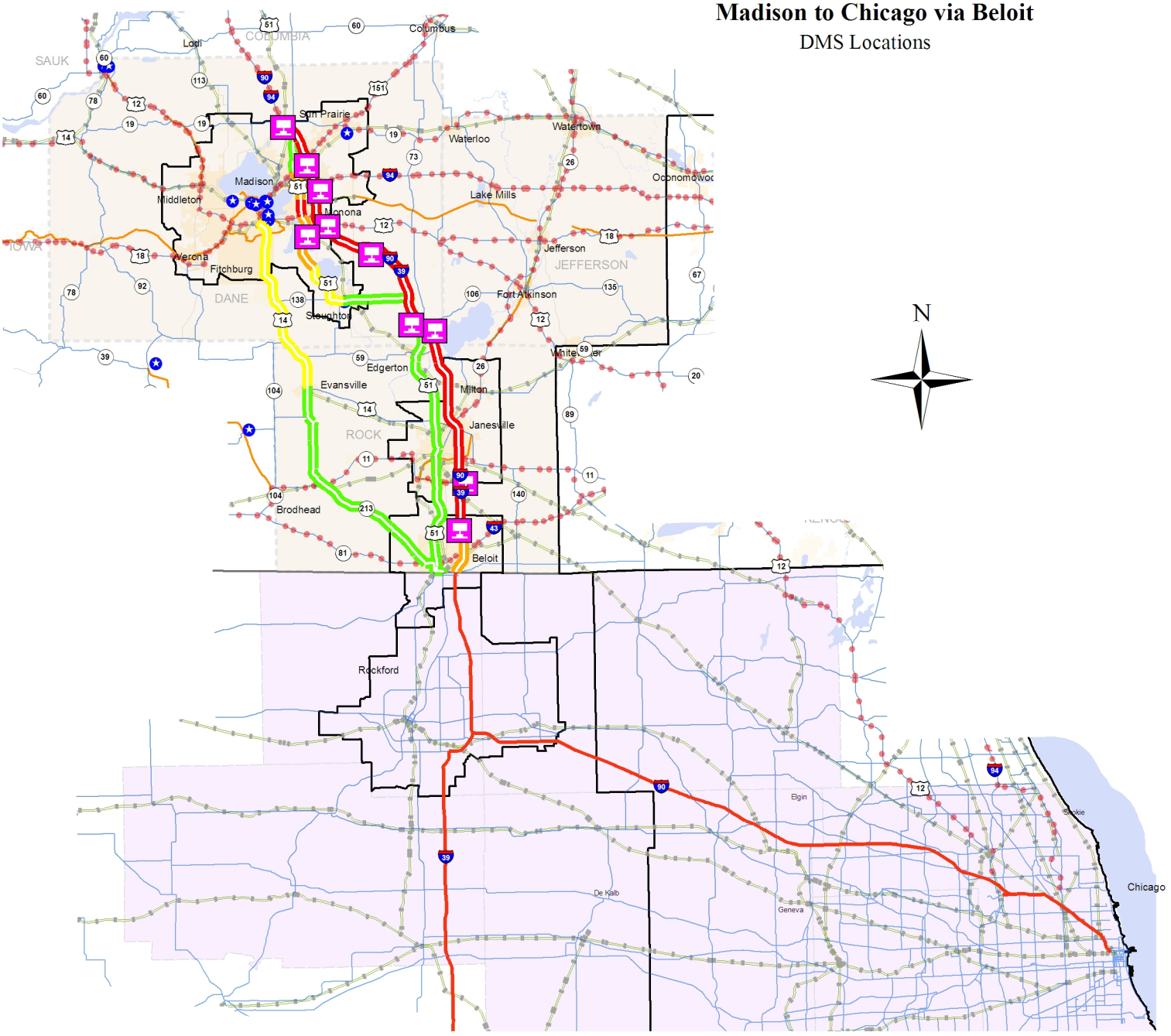
- Baseline density deployment is recommended for the entire corridor.

Traffic Operations Infrastructure Plan

SOUTH CENTRAL CONNECTION

Madison to Chicago via Beloit

DMS Locations



Legend

- Primary Highways in Corridor
- Principal Highways From Other Corridors
- Other Important Highway Connections
- Rail Freight
- BikeTrails
- Special Events
- MPO Boundaries

Travel Warning Information Systems Locations

- DMS — Dynamic Message Sign (DMS)
- Permanent Portable Dynamic Message Sign

Deployment Density Classes

- Baseline
- Low
- Medium
- High

0 7.5 15 22.5 Miles

Basemap Design by Wisconsin DOT GIS

South Central Connection

The South Central Connection includes the Madison MPO and Janesville-Beloit Regions as well as I-39/90 from the Illinois border to Madison, and US 14, WIS 59/213 from Beloit to Madison, and US 51 from Beloit to Madison. The corridor experiences significant regional traffic, high peaking on weekends (Friday afternoon and evening and Sunday afternoon), and weather disturbances during the winter months. The deployment recommendations for the Travel Warning and Information area are as follows:

- I-39/90 from the Illinois border through Janesville is recommended for medium density deployment. Portable DMS are recommended for southbound into Beloit and southbound and northbound into Janesville to provide incident and alternative route guidance as well as for weather and construction alerts.
- I-39/90 through Madison classified as medium density deployment. Portable DMS along the corridor will be maintained to provide incident and alternate route guidance as well as being used for weather and construction alerts. The majority of the deployments were installed as part of the earlier Blue Route project. The Blue Route is an alternate route signing concept for when a major incident on the interstate requires a lengthy closure or results in major delays. The Blue Route uses US 51 (Stoughton Road) from US 12/18 (the Madison Beltline) at the south to its intersection with I-39/90/94 at the north. An additional portable DMS is recommended for southbound US 51 for the Blue Route as well as to provide incident and alternate route guidance as well as being used for weather and construction alerts.
- Baseline density deployment is recommended for US 14, US 51 and WIS 59/213.

South Central Connection

Region	Highway	Segment Start	Segment End	Segment Length	Facility Type	Recommended Deployment Level	Device Type	Estimated Quantity	Estimated Unit Cost	Estimated Cost (Hardware)	Estimated Cost (Installation)	Estimated Total Capital Cost	Maintenance Cost (Per Year)	Operation Cost (Per Year)	Total (Per Year)	Total O&M Cost (Per Year)	Estimated Maintenance Staffing Cost (Per Year)	Estimated Direct Maintenance Cost (Per Year)	Estimated Operation Staffing Cost (Per Year)	Estimated Direct Operation Cost (Per Year)	Estimated Power Cost (Per Year)	Estimated Communications Cost (Per Year)	Estimated Service Patrol Staffing Cost (Per Year)
SW	I-39/90/94	WIS 19	I-94	7.0 Miles	A	Medium	PDMS	2	$50,000	$90,000	$10,000	$100,000	$11,560	$4,740	$116,300	$16,300	$1,560	$10,000	$2,340	$240	na	$2,160	na
					A	Medium	DMS																
SW	I-39/90	I-94	US 12/18	4.0 Miles	A	Medium	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					A	Medium	DMS																
SW	I-39/90	US 12/18	US 51	14.3 Miles	B	Medium	PDMS	2	$50,000	$90,000	$10,000	$100,000	$11,560	$4,740	$116,300	$16,300	$1,560	$10,000	$2,340	$240	na	$2,160	na
					B	Medium	DMS																
SW	I-39/90 - US 51	US 51	US 51	3.8 Miles	B	Medium	PDMS	2	$50,000	$90,000	$10,000	$100,000	$11,560	$4,740	$116,300	$16,300	$1,560	$10,000	$2,340	$240	na	$2,160	na
					B	Medium	DMS																
SW	I-39/90	US 51	STATE LINE	27.9 Miles	A	Medium	PDMS	2	$50,000	$90,000	$10,000	$100,000	$11,560	$4,740	$116,300	$16,300	$1,560	$10,000	$2,340	$240	na	$2,160	na
					A	Medium	DMS																
SW	US 51	I-39/90/94	US 151	4.0 Miles	C	Medium	PDMS																
					C	Medium	DMS																
SW	US 51	US 151	US 12/18	4.5 Miles	A	Medium	PDMS																
					A	Medium	DMS																
SW	US 51	US 12/18	CTH MN	2.5 Miles	C	Medium	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					C	Medium	DMS																
SW	US 51	CTH MN	I-39/90	16.4 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
SW	US 51	I-39/90	WIS 11	17.5 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
SW	US 51	WIS 11	BELOIT CITY LIMITS	5.3 Miles	C	Medium	PDMS																
					C	Medium	DMS																
SW	US 51	BELOIT CITY LIMITS	STATE LINE	5.6 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
SW	US 14	US 12/18	WIS 138	8.8 Miles	A	Baseline	PDMS																
					A	Baseline	DMS																
SW	US 14	WIS 138	WIS 213	10.9 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
SW	WIS 213	US 14	WIS 81	25.2 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
							PDMS	10															
Totals							DMS	0															
	Total									$450,000	$50,000	$500,000	$57,800	$23,700	$581,500	$81,500	$7,800	$50,000	$11,700	$1,200	$0	$10,800	$0

Southern Tier Corridor

The Southern Tier Corridor includes I-43 from Beloit to Elkhorn, and US 14 from Janesville (I-39/90) to I-43, and WIS 50 from Delavan (I-43) to Kenosha. The deployment recommendations for the Travel Warning and Information area are as follows:

- Low density deployment is recommended for the entire length of I-43.
- Baseline density deployment is recommended for the remainder of the corridor (US 14, WIS 11/50).

Traffic Operations Infrastructure Plan

SOUTHERN TIER CORRIDOR

Janesville/Beloit - Racine/Kenosha

DMS Locations

Travel Warning Information Systems Locations

- DMS — Dynamic Message Sign (DMS)
- Permanent Portable Dynamic Message Sign

Deployment Density Classes

- Baseline
- Low
- Medium
- High

Legend

- Primary Highways in Corridor
- Principal Highways From Other Corridors
- Other Important Highway Connections
- Rail Freight
- BikeTrails
- Special Events
- MPO Boundaries

0 5 10 15 20 Miles

Basemap Design by Wisconsin DOT GIS

Southern Tier Corridor

Region	Highway	Segment Start	Segment End	Segment Length	Facility Type	Recommended Deployment Level	Device Type	Estimated Quantity	Estimated Unit Cost	Estimated Cost (Hardware)	Estimated Cost (Installation)	Estimated Total Capital Cost	Maintenance Cost (Per Year)	Operation Cost (Per Year)	Total O&M Cost (Per Year)	Estimated Maintenance Staffing Cost (Per Year)	Estimated Direct Maintenance Cost (Per Year)	Estimated Operation Staffing Cost (Per Year)	Estimated Direct Operation Cost (Per Year)	Estimated Power Cost (Per Year)	Estimated Communications Cost (Per Year)	Estimated Service Patrol Staffing Cost (Per Year)
SW	US 14	I-39/90	WALWORTH COUNTY	11.3 Miles	C	Baseline	PDMS															
					C	Baseline	DMS															
SW	I-43	I-39/90	BELOIT MPO LINE	5.2 Miles	A	Low	PDMS															
					A	Low	DMS															
SW	I-43	BELOIT MPO LINE	WALWORTH COUNTY	6.2 Miles	B	Low	PDMS															
					B	Low	DMS															
SE	US 14	ROCK COUNTY	I-43	5.0 Miles	C	Baseline	PDMS															
					C	Baseline	DMS															
SE	I-43	ROCK COUNTY	WIS 50	9.6 Miles	A	Low	PDMS															
					A	Low	DMS															
SE	I-43	WIS 50	WIS 67	6.3 Miles	C	Low	PDMS															
					C	Low	DMS															
SE	WIS 50	I-43	US 12	12.1 Miles	C	Baseline	PDMS															
					C	Baseline	DMS															
SE	WIS 50	US 12	WIS 83	10.2 Miles	B	Baseline	PDMS															
					B	Baseline	DMS															
SE	WIS 50	WIS 83	I-94	9.2 Miles	C	Baseline	PDMS															
					C	Baseline	DMS															
SE	WIS 50	I-94	WIS 32	6.9 Miles	C	Baseline	PDMS															
					C	Baseline	DMS															
SE	I-43	WIS 67	WIS 11	1.6 Miles	A	Baseline	PDMS															
					A	Baseline	DMS															
SE	WIS 11	I-43	US 45	23.7 Miles	C	Baseline	PDMS															
					C	Baseline	DMS															
SE	WIS 11	US 45	I-94	5.2 Miles	C	Baseline	PDMS															
					C	Baseline	DMS															
SE	WIS 11	I-94	WIS 32	8.0 Miles	C	Baseline	PDMS															
					C	Baseline	DMS															
	Total									$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Titletown Corridor

The Titletown Corridor includes I-43/WIS 32 from Milwaukee (I-94) to Green Bay (US 41) and WIS 57 from I-43 to Green Bay (WIS 172) and WIS 172 from US 41 to I-43. The Titletown Corridor also includes portions of the Green Bay and Milwaukee-Waukesha Regions. The corridor experiences significant regional traffic, high peaking on weekends (Friday afternoon and evening and Sunday afternoon), and weather disturbances during the winter months. The deployment recommendations for the Travel Warning and Information area are as follows:

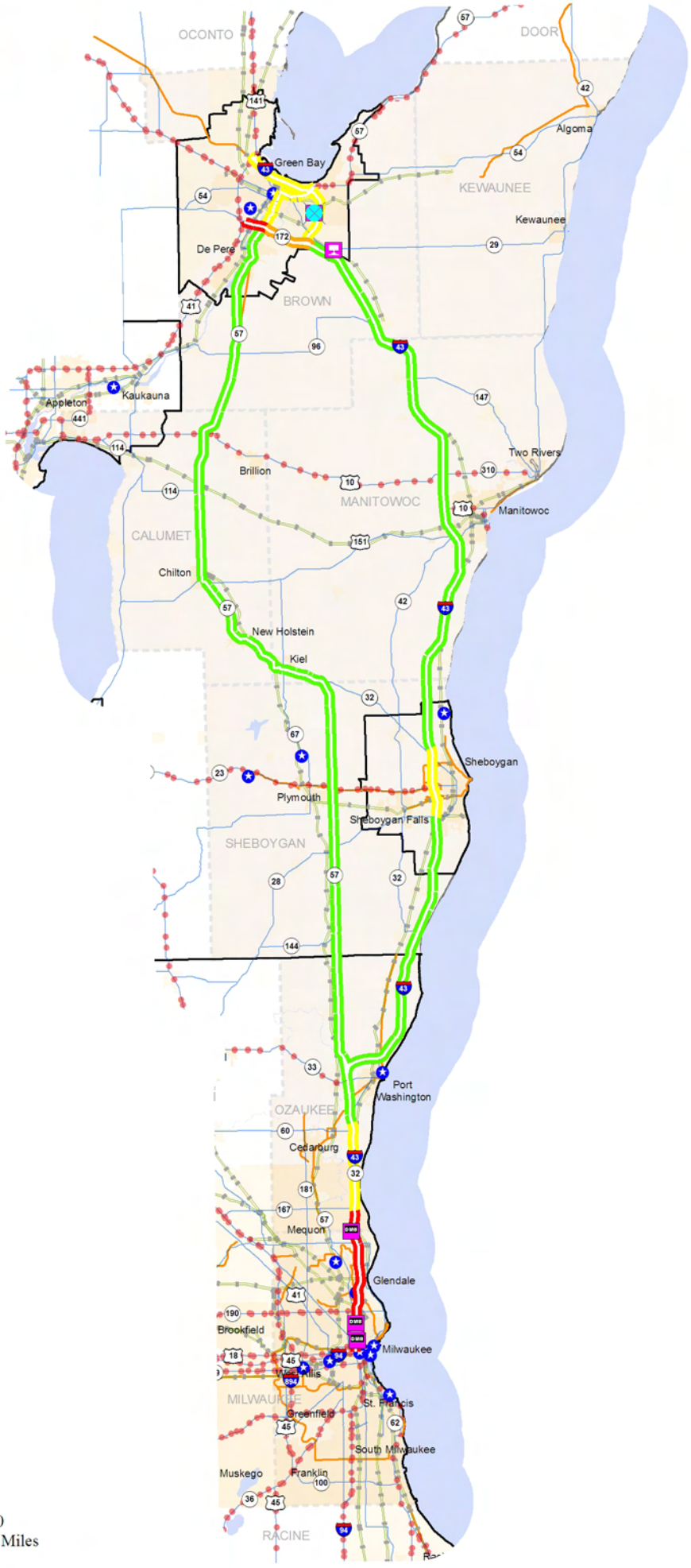
- High density deployment is recommended for I-43 beginning at I-94 and running through the northern Milwaukee suburbs. The segment experiences significant recurring congestion on a daily basis. It is recommended that permanent DMS be deployed inbound into the Milwaukee metro area. The DMS should be equipped with real time travel time capability as well as incident and weather warnings.
- Medium density deployment is recommended for WIS 172 and I-43 north of WIS 172. It is recommended that Portable DMS be located approaching the US 41, I-43, and WIS 172 ring road around the city to provide incident and alternate route guidance as well as for weather, construction, and event (Green Bay Packer games) alerts.
- Low density deployment is recommended for the remainder of I-43.
- Baseline density deployment is recommended for WIS 57 from I-43 to WIS 172.

Traffic Operations Infrastructure Plan

TITLETOWN CORRIDOR

Milwaukee - Green Bay

DMS Locations



N

Deployment Density Classes

- Baseline
- Low
- Medium
- High

Travel Warning Information Systems Locations

- DMS — Dynamic Message Sign (DMS)
- Permanent Portable Dynamic Message Sign

Legend

- Primary Highways in Corridor
- Principal Highways From Other Corridors
- Other Important Highway Connections
- Rail Freight
- BikeTrails
- Special Events
- MPO Boundaries

0 5 10 20 30 40 Miles

Basemap Design by Wisconsin DOT GIS

Titletown Corridor

Region	Highway	Segment Start	Segment End	Segment Length	Facility Type	Recommended Deployment Level	Device Type	Estimated Quantity	Estimated Unit Cost	Estimated Cost (Hardware)	Estimated Cost (Installation)	Estimated Total Capital Cost	Maintenance Cost (Per Year)	Operation Cost (Per Year)	Total (Per Year)	Total O&M Cost (Per Year)	Estimated Maintenance Staffing Cost (Per Year)	Estimated Direct Maintenance Cost (Per Year)	Estimated Operation Staffing Cost (Per Year)	Estimated Direct Operation Cost (Per Year)	Estimated Power Cost (Per Year)	Estimated Communications Cost (Per Year)	Estimated Service Patrol Staffing Cost (Per Year)
SE	I-43	I-94	WIS 167	12.6 Miles	A	High	PDMS																
					A	High	DMS	3	$200,000	$540,000	$60,000	$600,000	$67,020	$24,840	$691,860	$91,860	$7,020	$60,000	$14,040	$360	$7,200	$3,240	na
SE	I-43 / WIS 32	WIS 167	WIS 57	9.5 Miles	A	Low	PDMS																
					A	Low	DMS																
SE	I-43 / WIS 57	WIS 57	WIS 57	3.3 Miles	A	Low	PDMS																
					A	Low	DMS																
SE	I-43	WIS 57	SHEBOYGAN COUNTY	13.0 Miles	B	Low	PDMS																
					B	Low	DMS																
SE	WIS 57	I-43	SHEBOYGAN COUNTY	9.9 Miles	B	Baseline	PDMS																
					B	Baseline	DMS																
NE	I-43	OZAUKEE COUNTY	SHEBOYGAN MPO LINE	7.5 Miles	B	Low	PDMS																
					B	Low	DMS																
NE	I-43	SHEBOYGAN MPO LINE	SHEBOYGAN MPO LINE	15.3 Miles	A	Low	PDMS																
					A	Low	DMS																
NE	I-43	SHEBOYGAN MPO LINE	WIS 172	47.6 Miles	B	Low	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					B	Low	DMS																	
NE	I-43	WIS 172	US 141	11.1 Miles	A	Medium	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					A	Medium	DMS																	
NE	WIS 32/57	OZAUKEE COUNTY	WIS 23	14.8 Miles	B	Baseline	PDMS																
					B	Baseline	DMS																
NE	WIS 32/57	WIS 23	I-43	64.1 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
NE	WIS 172	I-43	US 41	6.1 Miles	A	Medium	PDMS																
					A	Medium	DMS																
	Total									$630,000	$70,000	$700,000	$78,580	$29,580	$808,160	$108,160	$8,580	$70,000	$16,380	$600	$7,200	$5,400	$0

Trempealeau River Corridor

The Trempealeau River Corridor includes WIS 35/US 53 from La Crosse (I-90) to WIS 93, and WIS 93 from WIS 54 to Eau Claire (I-94) as well as a portion of the Eau Claire-Chippewa Falls MPO Region. The deployment recommendations for the Travel Warning and Information area are as follows:

- Baseline density deployment is recommended for the entire corridor

Waukesha Connection Corridor

The Waukesha Connection Corridor includes WIS 83 from WIS 33 south to I-43 and WIS 164 from US 41 south through Waukesha to I-43 as well as a portion of the Milwaukee-Waukesha Region. The deployment recommendations for the Travel Warning and Information area are as follows:

- Baseline density deployment is recommended for the entire corridor.

Wild Goose Corridor

The Wild Goose Corridor includes US 151 from Madison (US 12) to Fond du Lac (US 41), WIS 26 from US 151 to Oshkosh (WIS 26), and US 41 from Fond du Lac to Oshkosh (US 45) as well as portions of the Madison MPO and Appleton-Oshkosh-Fond du Lac Regions. The deployment recommendations for the Travel Warning and Information area are as follows:

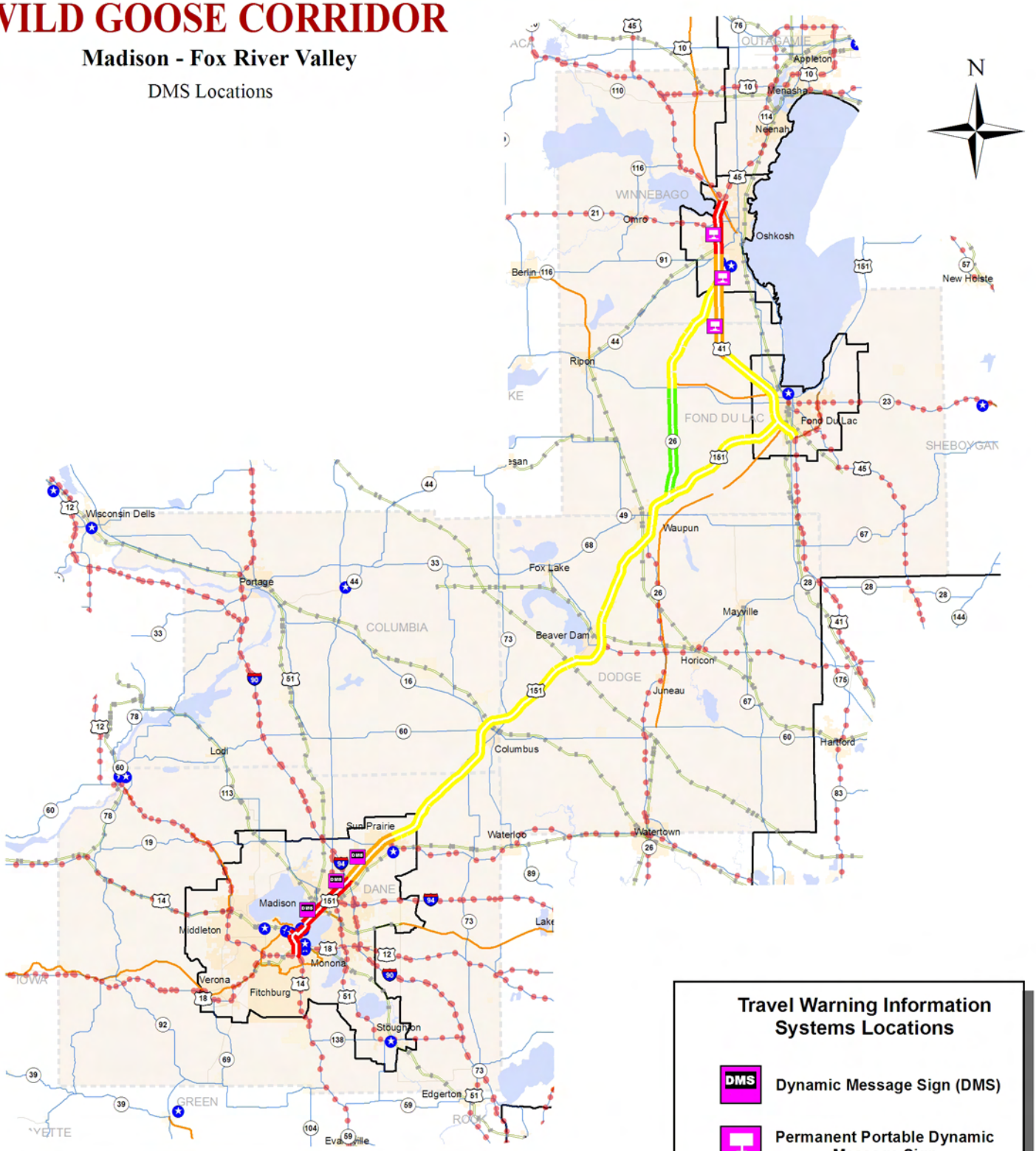
- US 151 between downtown Madison and Sun Prairie is recommended for high density deployment. Permanent DMS are recommended to provide real time travel time information to key destinations as well as provide information on provide incident and alternative route guidance as well as for weather and construction alerts.
- Baseline density deployment is recommended for remainder of the US 151 corridor.
- Baseline density deployment is recommended for entire WIS 26 corridor.
- Medium density deployment is recommended for the majority of the US 41 corridor. For the Fond-du-Lac area, it is recommended that portable DMS be located on US 41 approaching the city from the south and north to provide incident and alternate route guidance as well as being used for weather and construction alerts.
- For the Oshkosh area, it is recommended that portable DMS be located on US 41 approaching the city from the south and north to provide incident and alternate route guidance as well as being used for weather, construction, and traffic event (EAA Fly-in) alerts. In addition, it is recommended that a portable DMS be located north of the WIS 26 exit for southbound traffic to provide additional alternate route guidance.

Traffic Operations Infrastructure Plan

WILD GOOSE CORRIDOR

Madison - Fox River Valley

DMS Locations



Basemap Design by Wisconsin DOT GIS

Wild Goose Corridor

Region	Highway	Segment Start	Segment End	Segment Length	Facility Type	Recommended Deployment Level	Device Type	Estimated Quantity	Estimated Unit Cost	Estimated Cost (Hardware)	Estimated Cost (Installation)	Estimated Total Capital Cost	Maintenance Cost (Per Year)	Operation Cost (Per Year)	Total (Per Year)	Total O&M Cost (Per Year)	Estimated Maintenance Staffing Cost (Per Year)	Estimated Direct Maintenance Cost (Per Year)	Estimated Operation Staffing Cost (Per Year)	Estimated Direct Operation Cost (Per Year)	Estimated Power Cost (Per Year)	Estimated Communications Cost (Per Year)	Estimated Service Patrol Staffing Cost (Per Year)
SW	US 151	US 12/18	I-94	9.8 Miles	C	High	PDMS																
					C	High	DMS	2	$200,000	$360,000	$40,000	$400,000	$44,680	$16,560	$461,240	$61,240	$4,680	$40,000	$9,360	$240	$4,800	$2,160	na
SW	US 151	I-94	WIS 19	5.3 Miles	A	High	PDMS																
					A	High	DMS	1	$200,000	$180,000	$20,000	$200,000	$22,340	$8,280	$230,620	$30,620	$2,340	$20,000	$4,680	$120	$2,400	$1,080	na
SW	US 151	WIS 19	WIS 73	17.8 Miles	B	Baseline	PDMS																
					B	Baseline	DMS																
SW	US 151	WIS 73	WIS 33	12.0 Miles	A	Baseline	PDMS																
					A	Baseline	DMS																
SW	US 151	WIS 33	FON DU LAC COUNTY	14.2 Miles	B	Baseline	PDMS																
					B	Baseline	DMS																
NE	US 151	DODGE COUNTY	WIS 26	2.5 Miles	A	Baseline	PDMS																
					A	Baseline	DMS																
NE	US 151	WIS 26	FOND DU LAC MPO LINE	10.2 Miles	B	Baseline	PDMS																
					B	Baseline	DMS																
NE	US 151	FOND DU LAC MPO LINE	US 41	3.0 Miles	A	Baseline	PDMS																
					A	Baseline	DMS																
NE	US 41/151	US 151	US 151	2.2 Miles	A	Low	PDMS																
					A	Low	DMS																
NE	US 41	US 151	FOND DU LAC MPO LINE	5.4 Miles	A	Low	PDMS																
					A	Low	DMS																
NE	US 41	FOND DU LAC MPO LINE	WIS 26	9.9 Miles	B	Low	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					B	Low	DMS																
NE	US 41	WIS 26	WIS 44	3.2 Miles	B	Medium	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					B	Medium	DMS																
NE	US 41	WIS 44	WIS 110	5.1 Miles	A	Medium	PDMS	1	$50,000	$45,000	$5,000	$50,000	$5,780	$2,370	$58,150	$8,150	$780	$5,000	$1,170	$120	na	$1,080	na
					A	Baseline	DMS																
NE	WIS 26	US 151	US 41	21.6 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																
	Total									$675,000	$75,000	$750,000	$84,360	$31,950	$866,310	$116,310	$9,360	$75,000	$17,550	$720	$7,200	$6,480	$0

Wisconsin Heartland Corridor

The Wisconsin Heartland Corridor includes WIS 29 from I-94 east of Menomonee to Green Bay (US 41). The corridor includes the Wausau area. The deployment recommendations for the Travel Warning and Information area are as follows:

- Medium density deployment is recommended for the segment adjacent to US 41. Portable DMS is recommended for eastbound WIS 29 to provide incident and alternate route guidance as well as being used for weather and construction alerts.
- Baseline density deployment is recommended for the remainder of the corridor.
- Portable DMS is recommended for WIS 29 east of Chippewa Falls just east of Chippewa Falls on WIS 29 approaching the Chippewa Falls/Eau Claire ring road (I-94, WIS 29, and US 53) to provide incident and alternate route guidance as well as being used for weather and construction alerts.

Wisconsin River Corridor

The Wisconsin River Corridor includes a portion of the Madison MPO Region and US 51 from the Michigan border (Ironwood) to Wausau (I-39) and I-39 from Wausau to I-90/94 and I-39/90/94 to Madison (I-94). The deployment recommendations for the Travel Warning and Information area are as follows:

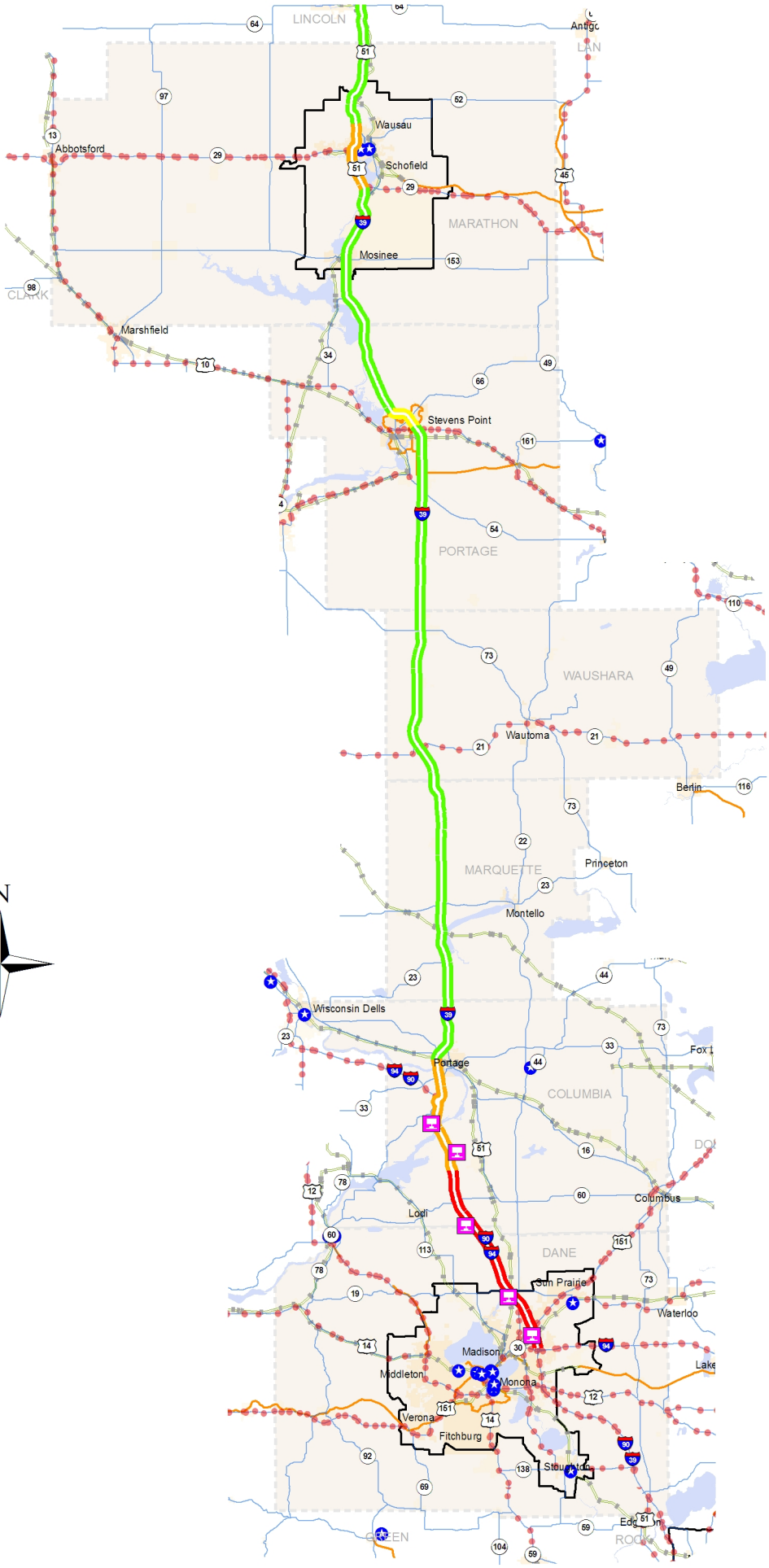
- Baseline density deployment is recommended for the entire length of US 51.
- Low density deployment is recommended for I-39 from Wausau to its junction with I-90/94.
- I-39/90/94 from I-39 through Madison is classified as medium density deployment. Portable DMS along the corridor will be maintained to provide incident and alternate route guidance as well as being used for weather and construction alerts. The majority of the deployments were installed as part of the earlier Blue Route project. The Blue Route is an alternate route signing concept for when a major incident on the interstate requires a lengthy closure or results in major delays. The Blue Route uses US 51 (Stoughton Road) from US 12/18 (the Madison Beltline) at the south to its intersection with I-39/90/94 at the north. An additional portable DMS is recommended for southbound US 51 for the Blue Route as well as to provide incident and alternate route guidance as well as being used for weather and construction alerts.

Traffic Operations Infrastructure Plan

WISCONSIN RIVER CORRIDOR

Madison - Ironwood, Michigan (Part 1)

DMS LOCATIONS



Basemap Design by Wisconsin DOT GIS

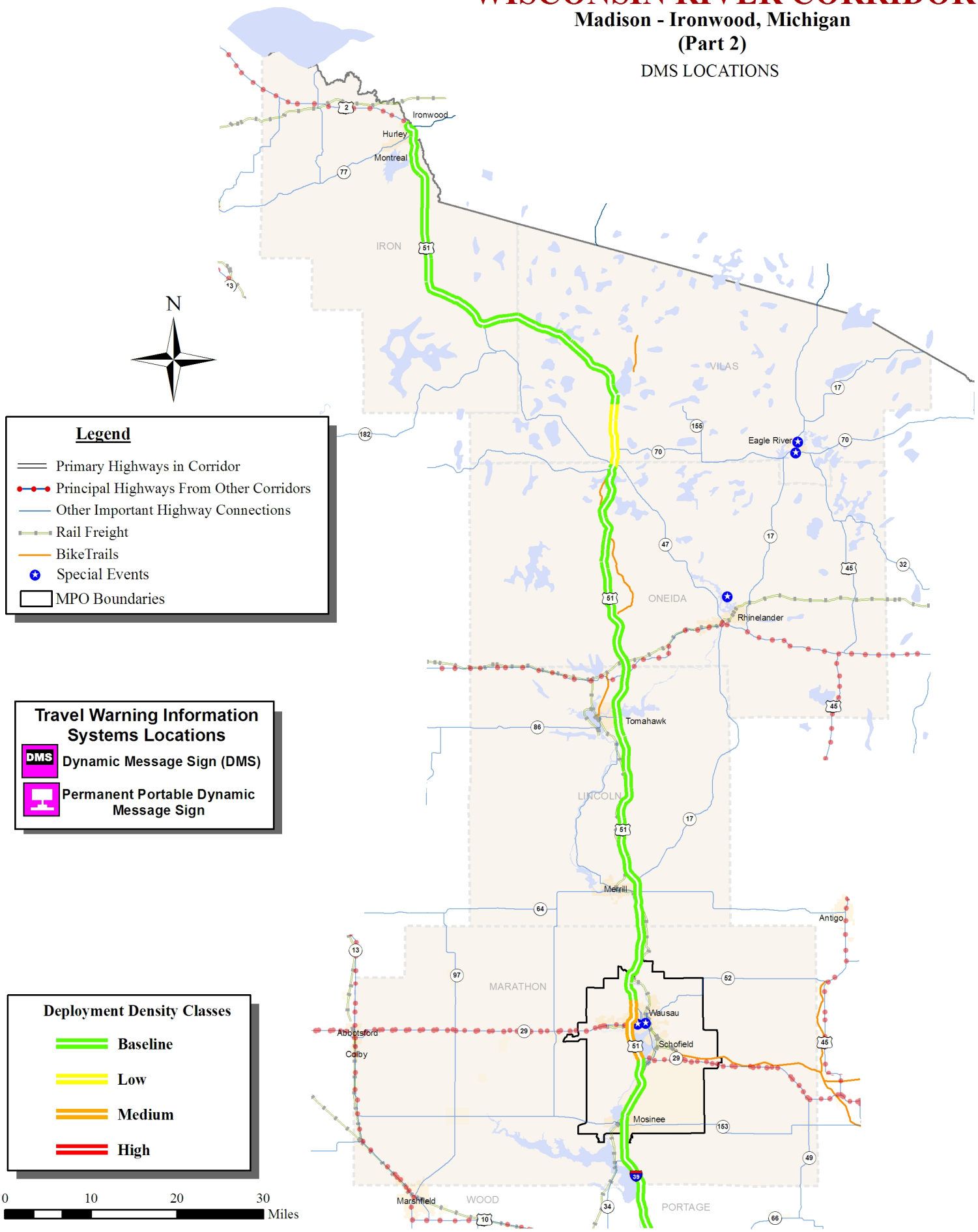
Traffic Operations Infrastructure Plan

WISCONSIN RIVER CORRIDOR

Madison - Ironwood, Michigan

(Part 2)

DMS LOCATIONS



Basemap Design by Wisconsin DOT GIS

Wisconsin River Corridor

Region	Highway	Segment Start	Segment End	Segment Length	Facility Type	Recommended Deployment Level	Device Type	Estimated Quantity	Estimated Unit Cost	Estimated Cost (Hardware)	Estimated Cost (Installation)	Estimated Total Capital Cost	Maintenance Cost (Per Year)	Operation Cost (Per Year)	Total (Per Year)	Total O&M Cost (Per Year)	Estimated Maintenance Staffing Cost (Per Year)	Estimated Direct Maintenance Cost (Per Year)	Estimated Operation Staffing Cost (Per Year)	Estimated Direct Operation Cost (Per Year)	Estimated Power Cost (Per Year)	Estimated Communications Cost (Per Year)	Estimated Service Patrol Staffing Cost (Per Year)
SW	I-39/90/94	I-94	MADISON MPO LINE	7.1 Miles	A	Medium	PDMS	5	$50,000	$225,000	$25,000	$250,000	$28,900	$11,850	$290,750	$40,750	$3,900	$25,000	$5,850	$600	na	$5,400	na
					A	Medium	DMS																	
SW	I-39/90/94	MADISON MPO LINE	I-39	22.5 Miles	B	Medium	PDMS																
					B	Medium	DMS																	
SW	I-39	I-90/94	MARQUETTE COUNTY	11.4 Miles	A	Low	PDMS																
					A	Low	DMS																	
NC	I-39	COLUMBIA COUNTY	WIS 21	28.0 Miles	A	Low	PDMS																
					A	Low	DMS																	
	I-39	WIS 21	WIS 54	28.0 Miles	B	Low	PDMS																
					B	Low	DMS																	
	I-39	WIS 54	MARATHON COUNTY	20.3 Miles	A	Low	PDMS																
					A	Low	DMS																	
	I-39	PORTAGE COUNTY	WAUSAU MPO LINE	6.5 Miles	B	Low	PDMS																
					B	Low	DMS																	
	I-39	WAUSAU MPO LINE	WAUSAU MPO LINE	22.1 Miles	A	Baseline	PDMS																
					A	Baseline	DMS																	
NC	WIS 51	WAUSAU MPO LINE	ONEIDA COUNTY	35.6 Miles	A	Baseline	PDMS																
					A	Baseline	DMS																	
NC	WIS 51	LINCOLN COUNTY	US 2	80.5 Miles	C	Baseline	PDMS																
					C	Baseline	DMS																	
	Total									$225,000	$25,000	$250,000	$28,900	$11,850	$290,750	$40,750	$3,900	$25,000	$5,850	$600	$0	$5,400	$0

Wolf/Waupaca Rivers Corridor

The Wolf/Waupaca Rivers Corridor includes US 10 from Stevens Point to Menasha (US 41) and US 45 from US 10 to Oshkosh (US 41) as well as a portion of the Appleton-Oshkosh-Fond du Lac Region. The deployment recommendations for the Travel Warning and Information area are as follows:

- Baseline density deployment is recommended for the entire corridor.