



Lakeside  
ENGINEERS



# Roadside Facilities Implementation Plan

Wisconsin Department of Transportation  
Roadside Facilities Needs Study

Volume 1

March 29, 2016





## Contents

1	Introduction.....	1
2	Recommendations and Strategies .....	3
2.1	Rest Area Recommendation and Strategies.....	3
2.1.1	Rest Area Recommendations .....	3
2.1.2	Rest Area Strategies .....	8
2.2	Wayside Recommendation and Strategies.....	11
2.3	SWEF Recommendations and Strategies.....	13
2.4	VWIM Recommendations and Strategies .....	23
2.5	Staffing Recommended Strategies .....	27
2.6	Next Steps.....	30

## Tables

Table 2-1. Recommendations for Bottom Tier Rest Areas .....	5
Table 2-2. Recommendations for Middle and Top Tier Rest Areas to Address Aging Infrastructure.....	7
Table 2-3. Bottom Tier Waysides.....	13
Table 2-4. Potential SWEF Strategies .....	14
Table 2-5. Unconstrained and Constrained SWEF Prioritization.....	17
Table 2-6. Recommendations for Existing SWEFs.....	18
Table 2-7. Top VWIM Priorities .....	24
Table 2-8. Recommended VWIM Installations.....	25
Table 2-9. Staffing Analysis of SWEF Recommended Strategies .....	29

## Figures

Figure 2-1. Rest Area Evaluation Ranks and Corridor Priority .....	4
Figure 2-2. Wayside Evaluation Results .....	12
Figure 2-3. Most Heavily Traveled Corridors for Truck Traffic.....	15
Figure 2-4. Corridors with Truck Traffic Greater than 15% of Total Traffic.....	16

*This page is intentionally left blank.*



# 1 Introduction

Wisconsin Department of Transportation (WisDOT) roadside facilities provide travelers with safe locations to stop for rest, ensure public safety and protect Wisconsin's transportation infrastructure. Safe stopping opportunities are provided at WisDOT's rest areas and waysides. Ensuring public safety and protecting Wisconsin's infrastructure is provided through inspection and enforcement of freight loads at WisDOT's Commercial Motor Vehicle (CMV) Safety and Weight Enforcement Facilities (SWEFs) and is supported with Virtual Weigh-In-Motion (VWIM) sites.

Currently, WisDOT is facing a fiscal challenge with adequately maintaining all of their roadside facilities. Many of WisDOT's roadside facilities have either exceeded or are approaching their estimated service life. These fiscal challenges also extend to the level of appropriate staffing for the Department of State Patrol (DSP) to adequately enforce truck freight on Interstates, US highways or other State routes. WisDOT contracted this Roadside Facilities Needs Study to assess its existing roadside facilities and identify strategies for improving their roadside facility systems while keeping current fiscal constraints in mind.

The Roadside Facilities Needs Study documentation was prepared in three volumes to document the various types of roadside facilities. This volume (Volume 1) of the report summarizes the recommendations for WisDOT's roadside facilities based on the reviews and evaluations performed as part of the Roadside Facilities Needs Study. Volume 2 provides an implementation plan for rest areas and waysides that evaluates the existing WisDOT rest areas and wayside systems, and presents recommendations and strategies for optimizing these systems. Volume 3 includes an assessment of WisDOT's CMV SWEFs and staffing resources, VWIMs, and addresses needs and potential strategies for providing a statewide network of roadside motor carrier safety and weight enforcement sites.

The missions of this study as they relate to WisDOT roadside facilities are as follows:

## **Study Mission for WisDOT Rest Areas**

Identify recommendations to optimize Wisconsin's rest area system to meet user's needs with consideration of existing rest area sites, availability of private services and fiscal responsibility by:

- Determining the rest area user needs along highly traveled corridors for both passenger vehicles and trucks.
- Evaluating the existing and proposed rest area sites in order to prioritize them.
- Identifying rest area sites for potential closure, repurposing or relocation.
- Developing strategies for the closure, repurpose or relocation of rest area sites.

**Study Mission for WisDOT Waysides**

Identify waysides for repurpose, transfer of ownership or closure based on potential usage and operating costs.

**Study Mission for WisDOT SWEFs and VWIMs**

Identify needs and potential strategies for providing a statewide network of SWEFs and VWIMs that ensures public safety and protects Wisconsin's transportation infrastructure by:

- Assessing needs for SWEF and VWIM enforcement staffing.
- Prioritizing SWEF and VWIM locations and associated SWEF staffing model.
- Developing strategies and recommendations for future SWEF improvements, VWIM installations, staffing and data management initiatives.



## 2 Recommendations and Strategies

Recommendations for the rest area and wayside systems were developed by reviewing the results of the evaluations that were completed for the rest area and wayside systems. The evaluation completed for these systems identified facilities ranking in the bottom tier (bottom third) of each system based on a number of factors. Existing information about the rest area and wayside systems was also used in the development of recommendations. Strategies for implementing the recommendations and for future rest area changes were also developed.

Recommendations for the SWEF and VWIM systems were developed by reviewing the results of the evaluations that were completed for the SWEF and VWIM systems. Recommendations for technology improvements and staffing were also developed based on a review of the existing systems and operations.

### 2.1 Rest Area Recommendation and Strategies

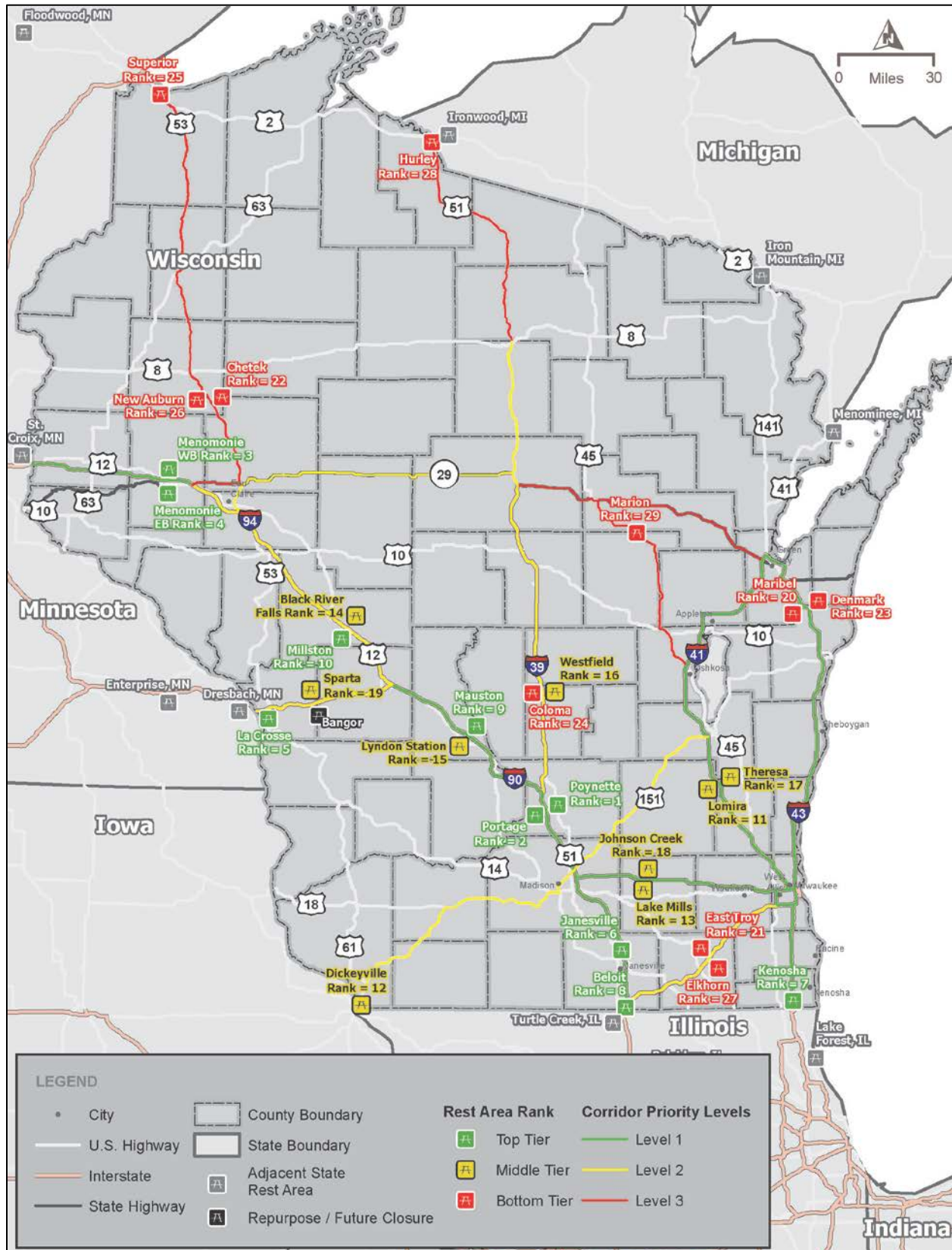
The following sections detail the recommendations and strategies specific to the WisDOT rest area system. The results of the rest area evaluation are summarized in **Figure 2-1**. More detail on the evaluation results that support development of **Figure 2-1** can be found in Volumes 2 of the Roadside Facilities Needs Study.

#### 2.1.1 Rest Area Recommendations

Recommendations for rest areas that were ranked in the bottom tier from the rest area evaluation are shown in **Table 2-1**. These recommendations are related to repurpose or closure of these sites. The recommendations are prioritized as high, medium and low. High priority recommendations are those that should be considered first. A major factor in assessing priority for the recommendations was based on the age and condition of the rest area facility. Potential annual maintenance cost savings for each of the bottom tier rest areas are also shown in **Table 2-1** based on the FY 2016 budgets for these rest areas.

Additionally, it is recommended that the Bangor rest area (#15) be reviewed and considered for repurpose. Currently, this rest area is planned to be closed following the reopening of the new La Crosse rest area (#31). The Bangor rest area (#15) is located approximately 18 miles downstream of the La Crosse rest area (#31) and was built in 1969. The Bangor rest area (#15) is not included in **Table 2-1** since it was not part of the rest area evaluation.

Figure 2-1. Rest Area Evaluation Ranks and Corridor Priority



Source: Rest area evaluation performed by HDR, March 2016.

Table 2-1. Recommendations for Bottom Tier Rest Areas

Rest Area Number	Rest Area Name (Location)	Interstate/ Highway Number	Rank from Evaluation Scoring	Recommendation	Information/Data Supporting Recommendation <sup>1</sup>	Potential Annual Maintenance Cost Savings if Permanently Closed	Recommendation Priority
101	Marion	US 45	Rank 29	Consider for repurpose or closure	<ul style="list-style-type: none"><li>Meets the ASL thresholds for providing sufficient services nearby</li><li>25 years old (built in 1991)</li><li>Condition rating of 2.44</li><li>2<sup>nd</sup> highest maintenance cost per user among rest areas statewide (\$2.83/user)</li><li>No salt storage needs identified in the county</li></ul>	\$ 122,602	Low
103	Hurley	US 51	Rank 28	Consider for repurpose as truck parking only	<ul style="list-style-type: none"><li>Does not meet the ASL thresholds for providing sufficient services nearby <sup>3</sup></li><li>24 years old (built in 1992)</li><li>Condition rating of 2.40</li><li>Highest maintenance cost per user among rest areas statewide (\$3.41/user)</li><li>No salt storage needs identified in the county</li></ul>	\$ 177,941	Low
35	Elkhorn	I-43	Rank 27	Consider for repurpose as truck parking only	<ul style="list-style-type: none"><li>Does not meet the ASL thresholds for providing sufficient services nearby <sup>4</sup></li><li>42 years old (built in 1974)</li><li>Condition rating of 2.71</li><li>No salt storage needs identified in the county</li></ul>	\$ 112,822	High
33	New Auburn	US 53	Rank 26	Consider for repurpose or closure	<ul style="list-style-type: none"><li>Meets the ASL thresholds for providing sufficient services nearby</li><li>43 years old (built in 1973)</li><li>Condition rating of 2.57</li><li>Has salt storage needs identified in the county</li></ul>	\$ 114,838	High
23	Superior	US 2/53	Rank 25	Consider for repurpose or closure	<ul style="list-style-type: none"><li>Meets the ASL thresholds for providing sufficient services nearby</li><li>46 years old (built in 1970)</li><li>Condition rating of 2.83</li><li>3<sup>rd</sup> highest maintenance cost per user among rest areas statewide (\$2.53/user)</li><li>Has salt storage needs identified in the county</li></ul>	\$ 193,774	High
81	Coloma	I-39/US 51	Rank 24	Consider for repurpose or closure	<ul style="list-style-type: none"><li>Meets the ASL thresholds for providing sufficient services nearby</li><li>42 years old (built in 1974)</li><li>Condition rating of 2.49</li><li>No salt storage needs identified in the county</li></ul>	\$ 111,190	High
52	Denmark	I-43	Rank 23	Consider for repurpose as truck parking only	<ul style="list-style-type: none"><li>Does not meet the ASL thresholds for providing sufficient services nearby <sup>4</sup></li><li>36 years old (built in 1980)</li><li>New roof in year 2013</li><li>Condition rating of 2.52</li><li>Has salt storage needs identified in the county</li></ul>	\$ 154,106	Medium
34	Chetek	US 53	Rank 22	Consider for repurpose or closure	<ul style="list-style-type: none"><li>Meets the ASL thresholds for providing sufficient services nearby</li><li>43 years old (built in 1973)</li><li>Condition rating of 2.58</li><li>Has salt storage needs identified in the county</li></ul>	\$ 114,838	High
36	East Troy	I-43	Rank 21	Consider for repurpose as truck parking only	<ul style="list-style-type: none"><li>Does not meet the ASL thresholds for providing sufficient services nearby <sup>4</sup></li><li>42 years old (built in 1974)</li><li>Condition rating of 2.68</li><li>No salt storage needs identified in the county</li></ul>	\$ 112,822	High
51	Maribel	I-43	Rank 20	Consider for repurpose as truck parking only	<ul style="list-style-type: none"><li>Does not meet the ASL thresholds for providing sufficient services nearby <sup>4</sup></li><li>36 years old (built in 1980)</li><li>New roof in year 2013</li><li>Condition rating of 2.43</li><li>Has salt storage needs identified in the county</li></ul>	\$ 154,106	Medium

<sup>1</sup> Age, condition rating, maintenance cost per user and salt storage needs based on information supplied by WisDOT, June-December 2015.

<sup>2</sup> Potential annual maintenance cost savings based on FY 2016 maintenance budget provided by WisDOT, October 2015.

<sup>3</sup> Does not meet the service thresholds for truck parking and diesel fuel; all other service thresholds are met.

<sup>4</sup> Does not meet the service thresholds for truck parking; all other service thresholds are met.

Recommendations are also provided for select rest areas that ranked in the middle and top tiers from the evaluation. These recommendations are intended to address aging infrastructure that has either exceeded its design life of 30 years or will exceed its design life within the next 10 years. The recommendations are shown in **Table 2-2**. The terminology of high, medium and low priority is the same as that used for the recommendations related to rest areas in the bottom tier. Rest areas that are selected to be rebuilt would have up-front capital costs, but would likely recoup some costs through reduced operational expenses as a result of new facilities being more energy efficient. Currently, WisDOT estimates the capital cost to reconstruct a rest area at \$5 million for its programming purposes.

Note that additional study of each rest area for which there is a recommendation provided in **Table 2-1** and **Table 2-2** may be required to determine the needs at that site before changes are made to the rest area.

Table 2-2. Recommendations for Middle and Top Tier Rest Areas to Address Aging Infrastructure

Rest Area Number	Rest Area Name (Location)	Interstate/ Highway Number	Rank from Evaluation Scoring	Recommendation	Information/Data Supporting Recommendation <sup>1</sup>	Recommendation Priority
16	Sparta	I-90	Rank 19	Assess rest area infrastructure. Rebuild rest area or perform major upgrades/improvements to extend service life as needed.	<ul style="list-style-type: none"><li>47 years old (built in 1969)</li></ul>	High
26	Kenosha	I-94	Rank 18	Assess rest area infrastructure at end of service life (approximately 5 years). Rebuild rest area or perform major upgrades/improvements at rest area to extend service life as needed.	<ul style="list-style-type: none"><li>25 years old (built in 1991)</li></ul>	Medium
64	Theresa	I-41	Rank 16	Assess rest area infrastructure at end of service life (approximately 3 years). Rebuild rest area or perform major upgrades/improvements at rest area to extend service life as needed.	<ul style="list-style-type: none"><li>27 years old (built in 1989)</li></ul>	Medium
82	Westfield	I-39/US 51	Rank 15	Assess rest area infrastructure at end of service life (approximately 1 year). Rebuild rest area or perform major upgrades/improvements at rest area to extend service life as needed.	<ul style="list-style-type: none"><li>29 years old (built in 1987)</li></ul>	Medium
9	Lyndon Station	I-90/94	Rank 14	Assess rest area infrastructure at end of service life (approximately 6 years). Rebuild rest area or perform major upgrades/improvements at rest area to extend service life as needed.	<ul style="list-style-type: none"><li>24 years old (built in 1992)</li></ul>	Low
106	Dickeyville	US 61/151	Rank 11	Relocate rest area to provide improved access to travelers entering the state on US 61/US 151. Explore possibility of integrating weight enforcement/validation at new site for trucks entering the state on US 61/US 151.	<ul style="list-style-type: none"><li>23 years old (built in 1993)</li><li>Does not provide direct access for those entering the state on US 61/US 151</li></ul>	Low
63	Lomira	I-41	Rank 10	Assess rest area infrastructure at end of service life (approximately 2 years). Rebuild rest area or perform major upgrades/improvements at rest area to extend service life as needed.	<ul style="list-style-type: none"><li>28 years old (built in 1988)</li></ul>	Medium
10	Mauston	I-90/94	Rank 8	Assess rest area infrastructure at end of service life (approximately 5 years). Rebuild rest area or perform major upgrades/improvements at rest area to extend service life as needed.	<ul style="list-style-type: none"><li>25 years old (built in 1991)</li></ul>	Medium
17	Janesville	I-39/90	Rank 6	Assess rest area infrastructure at end of service life (approximately 9 years). Rebuild rest area or perform major upgrades/improvements at rest area to extend service life as needed.	<ul style="list-style-type: none"><li>21 years old (built in 1995)</li></ul>	Low
61	Menomonie EB	I-94	Rank 4	Assess rest area infrastructure at end of service life (approximately 3 years). Rebuild rest area or perform major upgrades/improvements at rest area to extend service life as needed.	<ul style="list-style-type: none"><li>27 years old (built in 1989)</li></ul>	Medium
62	Menomonie WB	I-94	Rank 3	Assess rest area infrastructure at end of service life (approximately 3 years). Rebuild rest area or perform major upgrades/improvements at rest area to extend service life as needed.	<ul style="list-style-type: none"><li>27 years old (built in 1989)</li></ul>	Medium

<sup>1</sup> Rest area age from WisDOT Facility Inventory Access Database, June 2015.



## 2.1.2 Rest Area Strategies

Rest area strategies were divided into the following groups:

- Strategies for existing rest areas and for rest areas being rebuilt.
- Strategies for relocating rest areas or developing new rest areas.
- Strategies for repurpose or closure of rest areas.
- Miscellaneous rest area strategies

### Strategies for Existing Rest Areas and for Rest Areas Being Rebuilt

The following strategies should be considered for existing rest area sites that are not selected for relocation, repurpose or closure.

- Coordinate with Wisconsin State Patrol and Motor Vehicle Enforcement to determine any needs they may have at the site that could be incorporated into site improvements.
- Expand truck parking for sites that regularly have demand exceeding the number of dedicated truck parking spaces.
- Build additional structures to house WisDOT equipment and materials for locations that would have reduced costs to mobilize equipment and materials by locating them closer to where they are needed.
- Assess rest area infrastructure as it reaches/exceeds its design life and review rest area usage. Review nearby ASL development for replacement of rest area services. Rebuild rest area or perform major upgrades/improvements at rest area to extend service life as needed to provide appropriate level of service to travelers based on these reviews.
- Coordinate with WisDOT Division of Transportation Investment Management (DTIM) to review expected future traffic forecasts adjacent to a rest area site so that a rest area being expanded or rebuilt will provide adequate service.
- Address public comments:
  - Supply free Wi-Fi at rest areas
  - Enhance security at rest areas.

### Strategies for Relocating Rest Areas or Developing New Rest Areas

The following strategies should be considered for rest areas that are selected for relocation. These strategies also apply for new rest area locations that may be identified in the future to address service needs.

- Conduct a location study for new rest areas that consider site quality, utility availability, site spacing to other rest areas and urbanized areas, corridor geometry, potential environmental impacts and right-of-way opportunities.

- Conduct desktop and field reviews to narrow sites, and identify the preferred site by following the NEPA process.
- Coordinate with Wisconsin State Patrol and Motor Vehicle Enforcement to determine any needs they may have at the new site that could be incorporated into the design.
- Coordinate with WisDOT DTIM to review expected future traffic forecasts adjacent to a rest area site so that a new or relocated rest area will provide adequate service.
- Review potential for design to incorporate green technologies to reduce facility energy use and overall environmental impact.

### Strategies for Repurpose or Closure of Rest Areas

The following strategies should be considered for rest areas that are selected for repurpose or closure. These strategies should be conducted in a step-by-step process that first identifies potential needs that would be addressed by repurpose of the site before selecting the site for closure.

- Determine if there are any needs at the rest area location related to the following items that could be addressed by repurpose of the site:
  - Truck parking needs.
  - WisDOT equipment and materials storage needs.
  - SWEF, virtual weigh-in-motion (VWIM) or other Motor Vehicle Enforcement (MVE) needs.
  - OSOW staging area needs.
- If there are needs identified to be addressed by repurpose of the site, review if the site was built with LAWCON funds.
  - If the site was built with LAWCON funds, review the identified needs to determine if repurpose of the site would meet the requirements of sites built with LAWCON funds. If so, repurpose site to address the identified needs. If repurpose of the rest area would not meet the requirements of sites built with LAWCON funds, coordinate with the National Park Service to take steps for repurposing the site.
  - If the site was not built with LAWCON funds, repurpose the site to address the identified needs.
- If no needs were identified for the site, consider the site for closure.
- Once a decision has been made to repurpose or close a site, perform a public outreach campaign to inform the traveling public of the decision. This should consider the fact that many rest area users are not frequent users of the site. Public outreach may include advanced notice of the upcoming repurpose/closure and notices posted on WisDOT's website.

### Miscellaneous Rest Area Strategies

- Maintain WisDOT roadside asset condition database to monitor infrastructure maintenance needs.

- Review each of the following public private partnership (P3) strategies for implementation if/when state legislation allows for P3. Current legislation would need to be reviewed and new State legislation may be needed to implement the following strategies.
  - Interstate Oasis Program – The Interstate Oasis Program, developed by FHWA, allows States to partner with private operators who meet the minimum criteria to provide basic rest area services in exchange for online highway signing and official designation as an Interstate Oasis. The result is an expanded network of signed locations where the traveling public can expect to find services similar to those at rest areas. This expanded network supplements the rest area system without having to construct and maintain new rest area facilities.
  - Rest area sponsorship – Rest area sponsorship represents another type of partnership with the private sector, where the private partner(s) would fund a particular service at a rest area in exchange for advertising rights within the rest area. This advertising would be limited to a single free-standing sign prior to the rest area exit (as stated by FHWA policy) and limited to locations within the rest area building (based on Title 23, Section 752.7 of the Code of Federal Regulations (23 CFR 752.7)). Among other requirements as stated in Title 23 of the Code of Federal Regulations, the advertising must be limited to matters relating to and of interest to the traveling public.
- Investigate truck parking opportunities at SWEFs. There are some challenges associated with getting truck drivers to use these spaces. Many truck drivers are hesitant to use parking at SWEFs due to potential of inspection that may otherwise be avoided. Currently, there are no methods available for truck drivers to park at a SWEF without the potential for being inspected upon arrival or departure of the SWEF. The issue of getting truck drivers to park at SWEFs is nationwide and not restricted to Wisconsin. Truck parking space is currently limited at SWEFs and many of the available spaces need to be maintained for inspection. Additional truck parking could be accomplished through signing/stripping of spaces within the SWEF and a program that provides education to truck drivers on parking at SWEFs. To ensure use of available parking at SWEFs, parking availability signage at SWEFs would need to be incorporated as well as educating drivers of the availability of parking at SWEFs.
- Install systems to improve traveler information dissemination to better inform truck drivers of parking availability. WisDOT is already implementing a system to provide truck parking availability information to truck drivers. This system is expected to expand to several new locations along the I-94 corridor as a result of a US DOT grant that was awarded to Wisconsin and seven other states. Providing real-time information on truck parking at rest areas may also result in greater utilization of parking at private service locations when truck drivers are informed of no available parking at a downstream rest area. Evaluation of these truck parking availability systems along with truck parking usage at rest areas across the state should be used to determine potential implementation of these systems at other locations.



## 2.2 Wayside Recommendation and Strategies

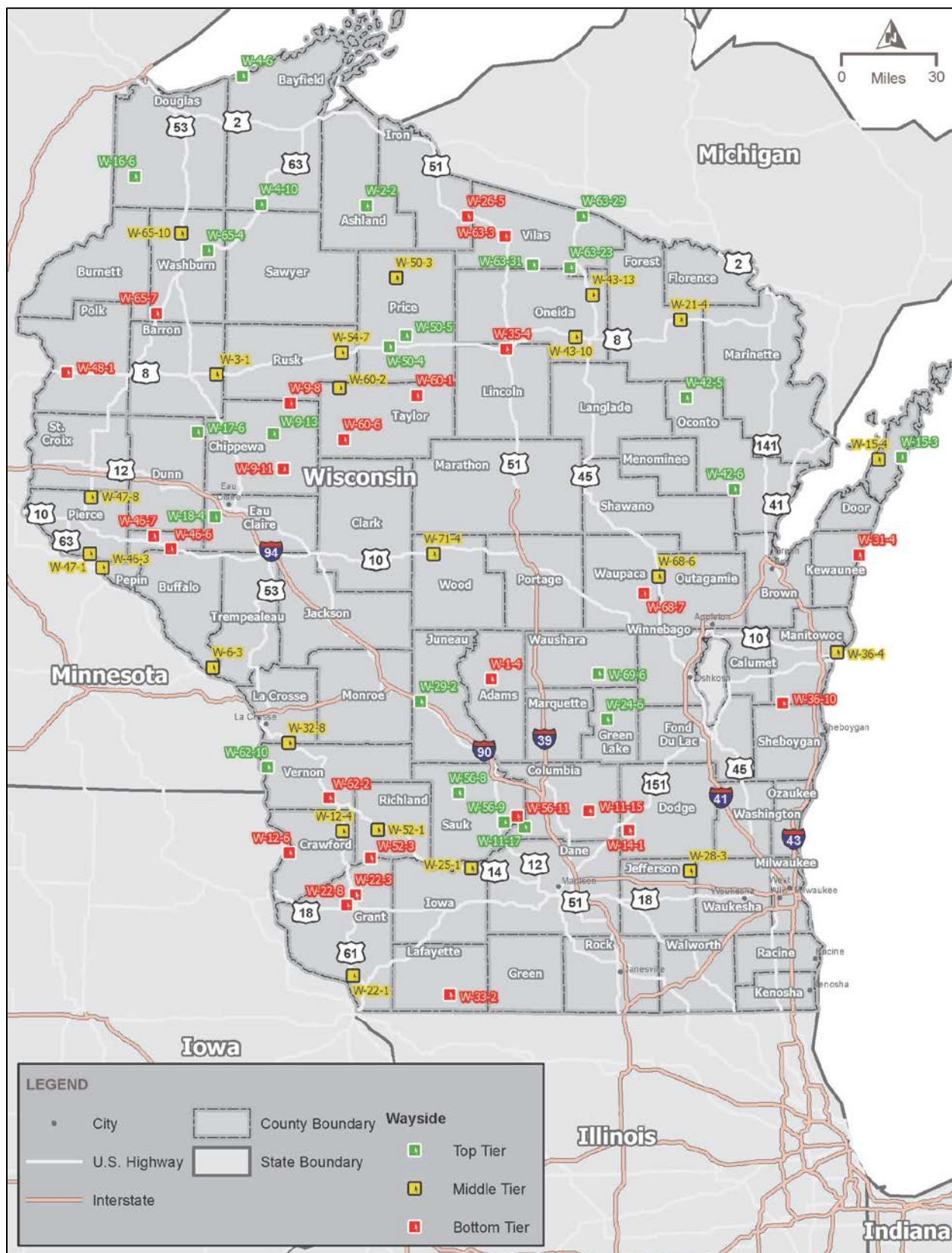
To support the wayside recommendations identified in this section, the results of the wayside evaluation are summarized in **Figure 2-2**. More detail on the evaluation results that support development of **Figure 2-2** can be found in Volumes 2 of the Roadside Facilities Needs Study.

The waysides identified in the bottom tier of the wayside evaluation are recommended to be considered for repurpose, transfer of ownership or closure. The bottom tier waysides from the wayside evaluation and their potential cost savings are listed in **Table 2-3**. A review of these waysides found that none were developed with LAWCON funds.

Strategies for determining repurpose, transfer of ownership or closure of the bottom tier waysides are outlined below. These strategies should be conducted in a step-by-step process that first identifies potential needs that would be addressed by repurpose of the site or transferring ownership of the wayside before selecting the site for closure.

- Determine if there are any needs at the wayside location related to the following items that could be addressed by repurpose of the site:
  - Truck parking needs.
  - WisDOT equipment and materials storage needs.
  - SWEF, virtual weigh-in-motion (VWIM) or other MVE needs.
  - OSOW staging area needs.
- If there are needs identified to be addressed by repurpose of the site, review if the site was built with LAWCON funds.
  - If the site was built with LAWCON funds, review the identified needs to determine if repurpose of the site would meet the requirements of sites built with LAWCON funds. If so, repurpose site to address the identified needs. If repurpose of the rest area would not meet the requirements of sites built with LAWCON funds, coordinate with the National Park Service to take steps for repurposing the site.
  - If the site was not built with LAWCON funds, repurpose the site to address the identified needs.
- If no needs were identified for the site, coordinate with local County or other public/private entity to determine if there is interest in transferring ownership of the wayside.
- If no needs were identified for the site and there is no interest by others in transferring ownership of the wayside, consider the site for closure.

Figure 2-2. Wayside Evaluation Results



Source: Wayside evaluation performed by HDR, November 2016.

**Table 2-3. Bottom Tier Waysides**

Site Number	County	Route	Potential Annual Maintenance Cost Savings if Permanently Closed <sup>†</sup>
W-1-4	Adams	WIS 13	\$ 13,147.10
W-9-8	Chippewa	WIS 27	\$ 6,931.90
W-9-11	Chippewa	WIS 27	\$ 12,472.66
W-11-15	Columbia	WIS 16	\$ 32,155.43
W-12-6	Crawford	WIS 35	\$ 28,301.58
W-14-1	Dodge	WIS 16	\$ 16,879.49
W-22-3	Grant	US 61	\$ 28,834.85
W-22-8	Grant	US 18	\$ 28,834.85
W-26-5	Iron	US 51	\$ 8,544.14
W-31-4	Kewaunee	WIS 42	\$ 33,065.71
W-33-2	Lafayette	WIS 11	\$ 27,272.01
W-36-10	Manitowoc	WIS 32	\$ 7,789.68
W-46-6	Pepin	US 10	\$ 30,954.68
W-46-7	Pepin	WIS 25	\$ 30,954.68
W-48-1	Polk	WIS 35	\$ 12,052.22
W-52-3	Richland	WIS 60	\$ 27,541.92
W-56-11	Sauk	WIS 78	\$ 27,269.59
W-60-1	Taylor	WIS 13	\$ 9,968.08
W-60-6	Taylor	WIS 64	\$ 9,968.08
W-62-2	Vernon	US 14	\$ 5,636.91
W-63-3	Vilas	US 51	\$ 13,776.21
W-65-7	Washburn	US 63	\$ 7,406.43
W-68-7	Waupaca	WIS 54	\$ 16,430.47

Source: Wayside evaluation performed by HDR, November 2015

<sup>†</sup> Potential annual maintenance cost savings based on FY 2016 maintenance budget provided by WisDOT, October 2015.

## 2.3 SWEF Recommendations and Strategies

There are several strategies available to maximize the potential CMV enforcement for each existing SWEF location. As shown in **Table 2-4**, the strategies fall into three categories: physical improvements, technology improvements, and staffing.

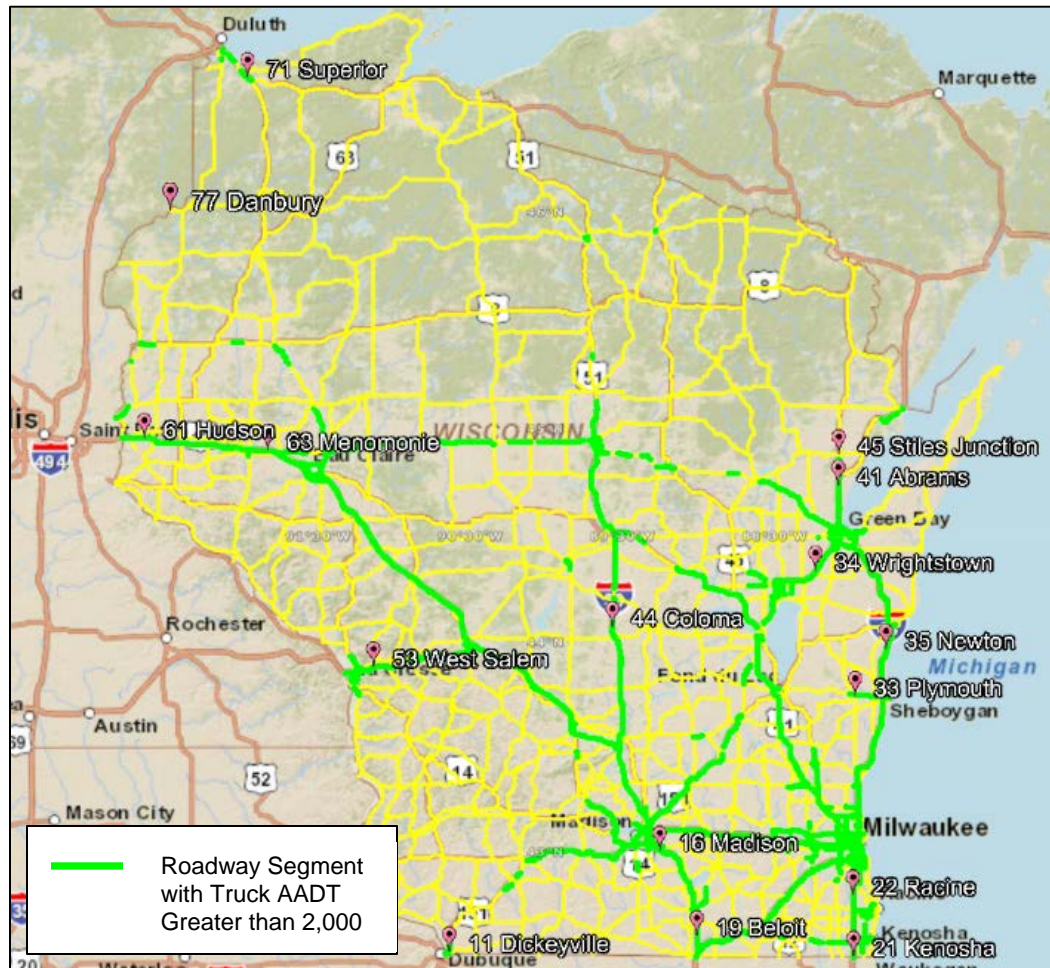
**Table 2-4. Potential SWEF Strategies**

Physical Improvements	Technology Improvements	Staffing
<ul style="list-style-type: none"> <li>• Reconstruct to modern standards at new location (Consolidate Rest Area and SWEF services)</li> <li>• Reconstruct to modern standards at current site</li> <li>• Remodel existing facilities <ul style="list-style-type: none"> <li>• Building and storage</li> <li>• Increase building counter space</li> <li>• Resurface pavement/minor parking expansion</li> <li>• Extend mainline ramps</li> </ul> </li> <li>• Repurpose <ul style="list-style-type: none"> <li>• Salt storage/Maintenance staging area</li> <li>• Weight Validation Site with pre-positioned portable scales and inspection pit (in coordination with upstream VWIM)</li> <li>• Training Facility</li> <li>• Truck Only Parking (including OSOW accommodations)</li> <li>• Weight Validation Sites at existing facilities (Park and Ride Lots or Rest Areas)</li> </ul> </li> <li>• Abandon and maintain land (maintain State Patrol comm. facilities)</li> <li>• Abandon and sell land</li> </ul>	<ul style="list-style-type: none"> <li>• Location specific upgrades <ul style="list-style-type: none"> <li>• Static Scale Upgrade</li> <li>• WIM (Ramp and Mainline)</li> <li>• VWIM (WIM + cameras)</li> <li>• E-screening (PrePass, Drivewyze)</li> <li>• License Plate Readers/USDOT Number Readers</li> <li>• Height Detectors</li> <li>• Infrared brake detection</li> <li>• Ramp queue length detection</li> </ul> </li> <li>• Use DTIM planning data-only WIM sites to enhance enforcement activities (Improve situational awareness)</li> <li>• Maintain roadside asset condition database</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust SWEF hours of operation if analysis of traffic data indicates significant overweight violations occur outside normal hours of operations</li> <li>• Close SWEF and reallocate personnel to other operations</li> <li>• Shift some annual vehicle inspection duties to non-sworn personnel</li> <li>• Optimize mobile and SWEF staffing to maximize the effective use of available MCSAP funding</li> </ul>

Every existing SWEF is located on a major truck corridor and are therefore important to the continued protection of Wisconsin's transportation infrastructure. The most heavily traveled corridors in Wisconsin for truck traffic are highlighted in **Figure 2-3**. Corridors with truck traffic greater than 15% of the total traffic are highlighted in **Figure 2-4**. **Figure 2-3** and **Figure 2-4** show that all but a few SWEFs are located on the most heavily traveled truck routes. Using the strategies most appropriate for each SWEF will enhance functionality and maximize resources necessary to prepare for projected increases in truck volumes.

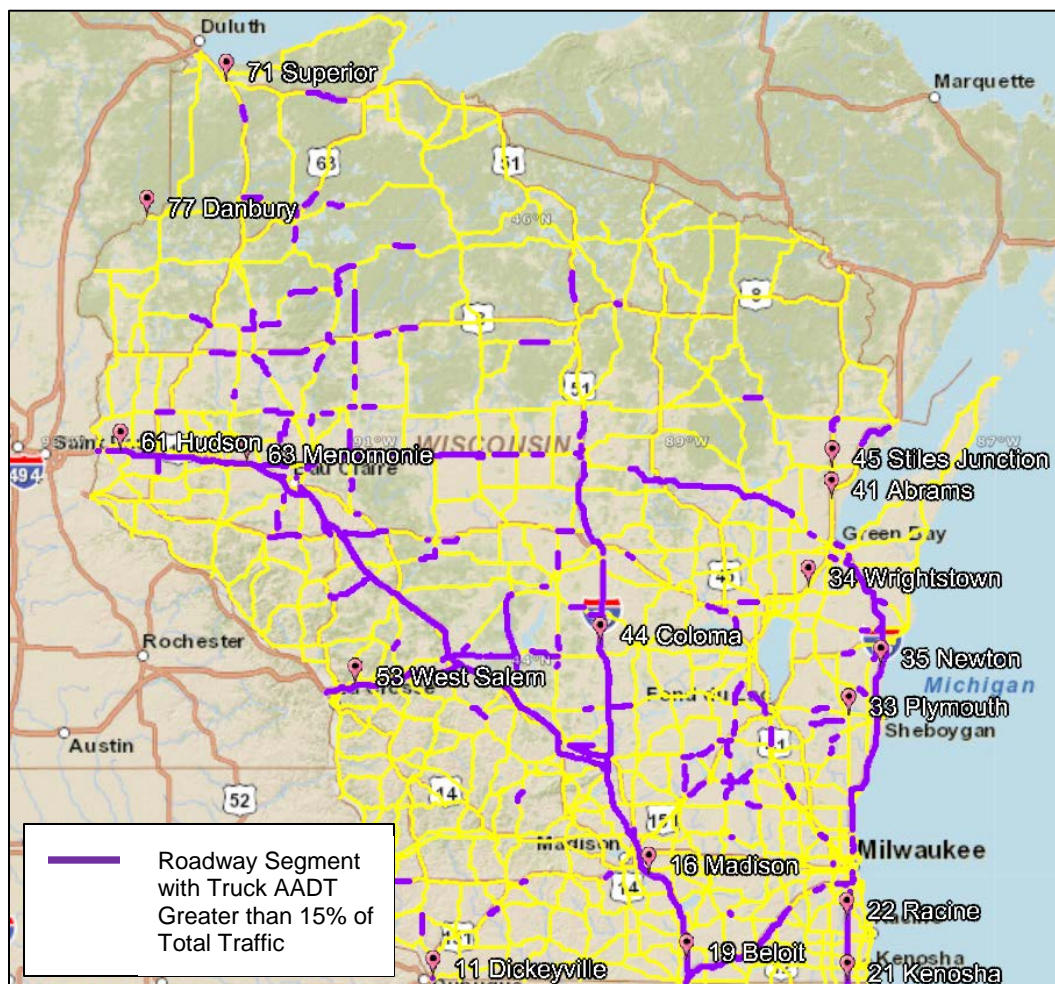


Figure 2-3. Most Heavily Traveled Corridors for Truck Traffic



Source: Wisconsin DOT, 2016 AADT Meta Manager

**Figure 2-4. Corridors with Truck Traffic Greater than 15% of Total Traffic**



Source: Wisconsin DOT, 2016 AADT Meta Manager

The SWEF analysis completed for this project determined prioritization scores for each SWEF based on unconstrained conditions and constrained conditions. Unconstrained conditions represented an evaluation as if there is no SWEF at that location and do not include operating cost, staffing or maintenance history. Constrained conditions represent an evaluation that includes a SWEF at that location and includes all of the existing information associated with that SWEF. These priorities are shown in **Table 2-5**. Much of the prioritization scoring was found to be similar between the unconstrained and constrained conditions.

The prioritization scoring of SWEFs was considered when determining a recommendation for each SWEF. A summary of recommendations for each SWEF is provided in **Table 2-6**. Detailed recommendations for each SWEF are provided in the following sections.

**Table 2-5. Unconstrained and Constrained SWEF Prioritization**

Name	Corridor	Prioritization Scores	
		Unconstrained Evaluation	Constrained Evaluation
21 Kenosha	I-41/94 WB	100	90
19 Beloit	I-39/90 NB	80	78
61 Hudson	I-94 EB	80	67
22 Racine	I-41/94 EB	76	62
16 Madison	I-39/90 SB	72	68
63 Menomonie	I-94 WB	60	51
53 West Salem	I-90 EB	58	52
34 Wrightstown	I-41 NB	54	47
44 Coloma	I-39 NB/SB	48	42
71 Superior	US 2/53 NB/SB	46	55
35 Newton	I-43 SB	46	43
41 Abrams	US 41 NB/SB	43	42
Future Dodgeville	US 18/151 NB	38	42
11 Dickeyville	US 61/151 NB/SB	33	33

Source: SWEF prioritization determined thru analysis by Lakeside Engineers.

Notes: SWEFs are highlighted based on the results from the completed analysis: bottom tier SWEFs are highlighted red; middle tier SWEFs are highlighted yellow; and top tier SWEFs are highlighted green.

Table 2-6. Recommendations for Existing SWEFs

Site Number	Name	Highway	Traffic Direction	Recommended Strategies [Year Scheduled]	Estimated Cost
11	Dickeyville/ Dodgeville	US 61/151; US 18/151	Northbound	1. Abandon Dickeyville SWEF. 2. Install two new mainline VWIM on US 151 NB in Grant County. 3. Install one new VWIM on a bypass route in the future (WIS 11 NB) ( <i>**Not included in SWEF cost estimate**</i> ). 4. Co-located Weight Validation Site and Rest Area ( <i>**Not included in SWEF cost estimate**</i> ).  [2021 or later]	\$1.0 Million
16	Madison	I-39/90	Southbound	<i>No Proposed Changes</i>	
19	Beloit	I-39/90	Northbound	1. Install two new VWIM on a bypass route in the future (US 51 NB and WIS 140 NB) ( <i>**Not included in SWEF cost estimate**</i> ).	
21	Kenosha	I-41/94	Westbound	1. Upgrade mainline WIM. 2. Install E-Screening. 3. Install three new VWIM on bypass routes in the future (US 45 NB, WIS 31 NB, and WIS 32 NB) ( <i>**Not included in SWEF cost estimate**</i> ).  [2019-2020]	\$1.5 Million
22	Racine	I-41/94	Eastbound	1. Reconstruct to modern standards at a new location. 2. Install mainline WIM and E-Screening. 3. Repurpose existing site for truck only parking. 4. Install one new VWIM on a bypass route in the future (US 45 SB) ( <i>**Not included in SWEF cost estimate**</i> ).  [2023 or later]	\$16.0 Million (Based on Kenosha construction costs and land purchase costs)
34	Wrightstown	I-41	Northbound	1. Repurpose as a weight validation site. 2. Install two new mainline VWIM on I-41 NB/SB.  [2017 or later]	\$1.5 Million ( <i>Funding already Committed</i> )
35	Newton	I-43	Southbound	<i>No Proposed Changes</i>	
41	Abrams	US 41	Northbound/ Southbound	<i>No Proposed Changes</i>	
44	Coloma	I-39	Northbound/ Southbound	<i>No Proposed Changes</i>	
53	West Salem/ Sparta	I-90	Eastbound	1. Reconstruct to modern standards on I-90 EB in Monroe County near Sparta, WI with training center. 2. Install mainline WIM and E-Screening. 3. Repurpose existing site for truck only parking. 4. Install one new VWIM on a bypass route (WIS 16).  [2017-2018]	\$10.6 Million ( <i>Funding already Committed</i> )
61	Hudson	I-94	Eastbound	1. Reconstruct to modern standards at current site and co-locate with travel information center. 2. Upgrade mainline WIM and E-Screening.  [2022 or Later]	\$16.0 Million
63	Menomonie	I-94	Westbound	1. Repurpose as a weight validation site, field office and salt storage area. 2. Install one new mainline VWIM on I-94 WB. 3. Install one new VWIM on a bypass route in the future (WIS 29 WB) ( <i>**Not included in SWEF cost estimate**</i> ).  [2019]	\$1.5 Million
71/72	Wentworth/ Superior	US 2/53	Eastbound/ Westbound	<i>No Proposed Changes – New facility to open in 2016</i>	
Total Estimated SWEF Cost					\$48.1 Million



## SWEF Location 11 – Dickeyville/Future Dodgeville

The recommendation is to abandon the existing facility located on WIS 11/WIS 35.

It is also recommended to install two VWIM on US 61/151 between the Iowa/Wisconsin state line and Dodgeville to monitor CMV traffic. This is the primary point of entry into Wisconsin from Iowa (and vice versa for Iowa). Truck AADT in this corridor is highest on the bridge from Dubuque, IA across the Mississippi River into Grant County, so there may be an opportunity to share resources with Iowa DOT to install VWIM technology on/near the bridge to collect real-time CMV weight data that is beneficial to enforcement efforts in both states.

It is recommended to assign mobile enforcement inspectors to Grant County to patrol US 61/151 and nearby bypass locations (WIS 11 and WIS 35). Inspectors will need a suitable pull-off location to safely inspect CMVs along US 61/151, so there is potential to construct a combined use Weight Validation/Rest Area site in the future on this corridor.

*Timeline - 2021 or later; no planned roadway improvements on US 61/151 from 2016-2021*

*Estimated Cost - \$1.0 Million (Install two VWIM)*

## SWEF Location 16 – Madison

No improvements or changes are needed in the near future for this SWEF. A modern facility was constructed in 2007, with three weigh decks, 17 truck parking spaces, mainline WIM, and Drivewyze/Pre-Pass E-Screening. Four VWIM were installed on nearby bypass routes (US 51, County N, and WIS 73) to augment enforcement. Eight inspection staff are currently assigned to this facility. The facility's 17 spaces are available for use during off-hours, but are underutilized, probably due to CMV operators' hesitancy to park where they may be subject to an inspection when the facility re-opens.

This site should be re-evaluated in 2022 to determine any needed improvements.

## SWEF Location 19 – Beloit

No improvements or changes are needed in the near future for this SWEF. A modern facility was constructed in 2008, with three weigh decks, 20 truck parking spaces, mainline WIM, Drivewyze/Pre-Pass E-Screening, and an enclosed inspection building with two bays. Eight inspection staff are currently assigned to this facility. The facility's 20 spaces are available for use during off-hours, but are underutilized, probably due to CMV operators' hesitancy to park where they may be subject to an inspection when the facility re-opens.

This site should be re-evaluated in 2022 to determine any needed improvements.

Because of the high potential for trucks to bypass this facility, it is recommended that VWIM be installed in the future on US 51 NB and WIS 140 NB in Rock County to aid mobile enforcement efforts.

## SWEF Location 21 – Kenosha

The recommendation is to install a mainline WIM and Pre-Pass E-Screening upstream as part of a planned resurfacing project on I-94 in 2019-2020. Mainline WIM and E-Screening would be useful tools at this very high truck volume location to screen out CMVs that should bypass the inspection process (i.e., drivers, vehicles and carriers with good safety inspection records), which would allow DSP inspection personnel to focus on drivers and vehicles that are likely to have safety and weight issues, and also minimize travel delay for many CMV operators.

A modern facility was constructed in 2003, with three weigh decks, 24 truck parking spaces, ramp WIM, and an enclosed inspection building with two bays. Eight inspection staff are currently assigned to this facility. The facility's 24 spaces are available for use during off-hours, but are underutilized, probably due to CMV operators' hesitancy to park where they may be subject to an inspection when the facility re-opens.

This site should be re-evaluated in 2022 to determine any needed improvements.

Because of the high potential for trucks to bypass this facility, it is recommended that VWIM be installed in the future on US 45 NB, WIS 31 NB, and WIS 32 NB in Kenosha County to aid mobile enforcement.

*Timeline – 2019-2020; planned resurfacing project on I-94 from 2019-2020*  
*Estimated Cost - \$1.5 Million (Install mainline WIM and E-Screening)*

## SWEF Location 22 – Racine

The recommendation is to build a new SWEF, including mainline WIM and E-Screening, at a nearby location on I-41/94 and to repurpose the existing facility as a truck parking only site that could accommodate OSOW trip-permitted vehicles waiting to pass into Illinois.

Built in 1981, the current facility has eight truck parking spaces and three weigh decks, and is assigned four inspection staff. Due to geometric constraints of the County G interchange to the north, the proximity of the frontage road to the west of the current facility, nearby residential and commercial development, and past public opposition to locating a SWEF along the freeway Racine County, the Racine site has never been expanded to allow for additional ramp and parking storage space needed to inspect the estimated 15,000 trucks that pass by this facility each weekday. Currently, DSP Inspectors must close the entrance ramp into the facility soon after the platform scale is open because there is insufficient ramp length for multiple CMVs to wait in queue for an inspection. If left open too long, the queue backs up onto the busy freeway, creating a potentially hazardous situation.

Mainline WIM and E-Screening would be useful tools at this very high truck volume location to screen out CMVs that should bypass the inspection process (i.e., drivers, vehicles and carriers with good safety inspection records), which would allow DSP inspection personnel to focus on drivers and vehicles that are likely to have safety and weight issues, and also minimize travel delay for many CMV operators.

With a new expanded facility, which could remain open 0600 to 1800 on weekdays, inspection staffing could be increased to eight Inspectors.

*Timeline – 2023 or Later; planned reconstruction and resurfacing projects on I-41/94 from 2019-2020*

*Estimated Cost - \$16 Million (Reconstruct new facility at a new location (on I-41/94 SB and repurpose the existing facility for truck parking) (Cost based on Kenosha SWEF construction costs and costs to acquire right of way for a new location)*

#### SWEF Location 34 – Wrightstown

The recommendation is to repurpose the existing facility located on I-41 NB to a weight validation site for mobile enforcement operations on the corridor. The existing SWEF location built in 1991 has five truck parking spaces, one weigh deck, and no recent upgrades to the platform scale or buildings. The cost to reconstruct a facility in the same location to modern standards is estimated to be \$13 million based on Roadside Facilities 10 year program estimates. The staffing analysis concluded that closing the SWEF and reassigning staff to mobile enforcement would not adversely affect the number of inspections performed.

It is also recommended to install two VWIM on I-41 (one SB south of WIS 47 and the other one NB north of County S) to aid in monitoring CMV traffic in the corridor. The majority of existing bypass routes (WIS 47, WIS 55, WIS 96, County J, County N, and County S) are between these two proposed VWIM locations. Inspectors could use the cameras at these VWIM locations to monitor trucks using the bypass routes. Instead of staffing a fixed SWEF location, inspectors would be assigned to perform mobile enforcement on I-41 and nearby bypasses.

*Timeline - 2017 or later; planned roadway and bridge improvements on I-41 from WIS 55 to DePere, WI from 2016 to 2017*

*Estimated Cost - \$1.5 Million (Install two VWIM and repurpose existing facility)*

#### SWEF Location 35 – Newton

The recommendation is to keep the current facility open as is. The building and grounds that were constructed in 1982 received an average rating of 3 (meaning “OK”) during a recent WisDOT detailed site evaluation. The static scale, with a single weigh deck, was replaced in 2012. Routine annual maintenance activities should be sufficient to maintain systems in the building, site landscaping, and the static scale for at least five years. One Inspector is currently assigned to this facility, but it is recommended that two more Inspectors be assigned to maximize enforcement potential of the SWEF.

This site should be re-evaluated in 2022 to determine if reconstruction of the buildings or pavement is warranted.

#### SWEF Location 41 – Abrams

The recommendation is to keep the current facility open as is. The building and grounds that were constructed in 1987 received an average rating of 3 (meaning “OK”) during a recent WisDOT detailed site evaluation. The static scale, with a single weigh deck, and two ramp WIM were replaced in 2014. Routine annual maintenance activities should be sufficient to maintain systems in the building, the landscaping, and the static scale for at least five years. Three Inspectors are currently assigned to this facility.

This site should be re-evaluated in 2022 to determine if reconstruction of the buildings or pavement is warranted.

#### SWEF Location 44 – Coloma

The recommendation is to keep the current facility open as is. The building and grounds that were constructed in 1985 received a good rating of 2.6 (meaning somewhere between “GOOD” and “OK”) during a recent WisDOT detailed site evaluation. The static scale, with one weigh deck, and two ramp WIM were replaced in 2013. Routine annual maintenance activities should be sufficient to maintain systems in the building, the landscaping, and the static scale for at least five years. Four Inspectors are currently assigned to this facility.

This site should be re-evaluated in 2022 to determine if reconstruction of the buildings or pavement is warranted.

#### SWEF Location 53 – West Salem / Sparta

No improvements or changes are needed in the near future for the existing SWEF at the West Salem location since a new enforcement facility will be built near Sparta on I-90 EB in 2016/2017. The new SWEF will feature standard inspection buildings, mainline WIM, E-Screening, and a training room that can be used by Inspectors, troopers, and DSP Academy staff. In addition, VWIM will be installed on WIS 16 as part of the Sparta SWEF project to monitor CMV traffic on this bypass route. The current staff level at West Salem is four Inspectors, but this number should be increased to six after the new facility is open to maximize enforcement potential.

An increase in CMV traffic in the I-90 corridor beginning in 2016 is anticipated due to completion of Minnesota DOT reconstruction of the I-90 Dresbach Bridge, which connects LaCrosse, WI to Winona County, MN (See: <http://www.dot.state.mn.us/dresbachbridge/>). This bridge improvement may also allow more OSOW trip-permitted vehicles to enter Wisconsin on I-90 from Minnesota.

There is a WisDOT planning-purpose WIM detector located east of Sparta on I-90 WB that could be an opportunity for use in screening trucks as they head west towards the SWEF. This would be a pilot project to test real-time data-sharing of WIM installations for both planning and enforcement purposes.

*Timeline – 2016 to 2017; planned facility on I-90 EB near Sparta, WI*  
*Estimated Cost - \$10.6 Million (Construct new facility and one VWIM on WIS 16)*

#### SWEF Location 61 – Hudson

The recommendation is to build a modern SWEF with mainline WIM and E-Screening at a current location in 2020/2021 to coincide with funding that will be available from planned construction projects in this portion of the I-94 corridor. The new SWEF facility will be co-located with modern Wisconsin Department of Tourism travel center, at an estimate cost of \$19 million.

The current staff level at the Hudson SWEF is four Inspectors, but it is recommended this number be increased to six after the new facility is open to maximize enforcement

potential at the SWEF and to help patrol CMV traffic using the new WIS 64 border crossing from Stillwater, MN into St. Croix County.

*Timeline – 2020 to 2021; planned road improvements on I-94 during this timeframe*  
*Estimated Cost - \$16 Million (Construct new SWEF and travel information center)*

#### SWEF Location 63 – Menomonie

The recommendation is to repurpose the existing facility on I-90 WB to a weight validation site for mobile enforcement operations, a field office for highway maintenance staff, and a salt storage area for the Dunn County Highway Department. It is also recommended that one VWIM be installed on I-94 WB upstream from the existing facility to monitor CMV movements. Inspectors would be assigned to patrol I-94 and nearby bypass roads.

The existing SWEF location built in 1985 has 10 truck parking spaces, three weigh decks, mainline WIM, and E-Screening. There have been no recent upgrades to the scale or buildings. The mainline WIM and E-Screening should be maintained so that data can be sent to DSP personnel on mobile enforcement duty, to the SWEF at Hudson, and to WisDOT planning staff in Madison.

The cost to reconstruct a facility in the same location to modern standards is estimated to be \$14 million based on similar new SWEF constructions in Superior and Kenosha. The staffing analysis concluded that closing the SWEF and reassigning staff to mobile enforcement would not adversely affect the number of inspections performed, citations issued, or warnings issued in the region.

*Timeline – 2020 to 2021; planned road improvements on I-94 during this timeframe*  
*Estimated Cost - \$1.5 Million (Install one VWIM and repurpose existing facility)*

#### SWEF Location 71 – Superior

No improvements or changes are needed in the near future for this SWEF. A modern facility was constructed at the existing location this past year and is scheduled to open February 1, 2016. Six inspection staff are currently assigned to this facility.

This site should be re-evaluated in 2022 to determine if any enforcement technology improvements are warranted.

## 2.4 VWIM Recommendations and Strategies

The VWIM candidate location evaluation determined the top locations most likely to be beneficial for CMV safety and weight enforcement. The top VWIM locations and the prioritization scoring completed for this project are shown in **Table 2-7**. Most of the locations are associated with SWEF bypass routes.

**Table 2-7. Top VWIM Priorities**

Region	Location	Corridor	Prioritization Scores
SW	Beloit Bypass	US 51 NB	80
NW	Stillwater, MN (Planned)	WIS 64 EB	80
SW	West Salem (Sparta) Bypass (Planned)	WIS 16 EB	79
NE	Green Bay (East of WIS 32)	WIS 29 EB/WB	75
SW	Dickeyville Bypass	WIS 11 EB	75
SE	Kenosha Bypass	WIS 31 NB	74
SW	Beloit Bypass	WIS 140 NB	74
SE	Kenosha Bypass	US 45 NB	74
SE	Kenosha Bypass	WIS 32 WB	72
NC	Colby, WI (West of WIS 13)	WIS 29 EB/WB	71
NW	Hager City	US 63 EB	71
NC	Between Wausau & Stevens Point	I-39 NB/SB	70
SE	Racine Bypass	US 45 SB	70
NW	Menomonie Bypass	WIS 29 WB	70

Source: VWIM prioritization determined thru analysis by Lakeside Engineers.

Notes: VWIMs are highlighted based on the results from the completed analysis: middle tier scoring VWIMs are highlighted yellow; and top tier scoring VWIMs are highlighted green.

The prioritization scoring of VWIMs was considered when determining a recommendation for each VWIM. A summary of recommended VWIM installations is provided in **Table 2-8**. **Table 2-8** separates recommendations for new VWIMs on SWEF bypass routes and new VWIMs on mainline routes. Note that the recommendations for new VWIMs on SWEF bypass routes are also discussed in **Table 2-6**. Detailed recommendations and strategies for installation of VWIMs are provided in the following sections.

Table 2-8. Recommended VWIM Installations

Recommendations for New VWIMs on SWEF Bypass Routes					
SWEF Number	Nearest SWEF Location	Highway	Traffic Direction	Recommended Strategy for SWEF Bypass Route [Year Scheduled]	Estimated Cost
11	Dickeyville	WIS 11	Eastbound	Install VWIM when existing site is repurposed. [2021 or later]	\$0.5 Million
19	Beloit	US 51	Northbound	Install VWIM after roadway projects are completed on US 51. [2021 or later]	\$0.5 Million
19	Beloit	WIS 140	Northbound	Install VWIM after roadway projects are completed on WIS 140. [2017 or later]	\$0.5 Million
21	Kenosha	US 45	Northbound	Install VWIM after roadway projects are completed on US 45. [2018 or later]	\$0.5 Million
21	Kenosha	WIS 31	Northbound	Install VWIM when mainline WIM and E-screening are installed at Kenosha SWEF. [2020 or later]	\$0.5 Million
21	Kenosha	WIS 32	Northbound	Install VWIM after roadway projects are completed on WIS 32. [2016 or later]	\$0.5 Million
22	Racine	US 45	Southbound	Install VWIM when existing SWEF site is repurposed. [2020 or later]	\$0.5 Million
63	Menomonie	WIS 29	Westbound	Install VWIM when existing SWEF site is repurposed. [2021 or later]	\$0.5 Million
Recommendations for New VWIMs on Mainline Routes					
Region	Location	Highway	Traffic Direction	Recommended Strategy for Mainline Route [Year Scheduled]	Estimated Cost
NE	Green Bay, WI	WIS 29	Eastbound/ Westbound	Install VWIM after roadway projects are completed on WIS 29. Install for both directions of traffic. [2016 or later]	\$1.0 Million
NW	Colby, WI	WIS 29	Eastbound/ Westbound	Install VWIM after roadway projects are completed on WIS 29. Install for both directions of traffic. [2017 or later]	\$1.0 Million
NC	Between Wausau, WI and Stevens Point, WI	I-39	Northbound/ Southbound	Install VWIM when budget allows. Install for both directions of traffic. [2016 or later]	\$1.0 Million
Total Estimated VWIM Cost					\$7.0 Million



### Install VWIM with a Nearby SWEF Improvement

The optimum time to install VWIM on bypass routes is when the nearby SWEF is improved, as is the case with the planned VWIM installation in Sparta, WI. It is recommended that VWIM on bypass routes be implemented when the following five SWEF locations are improved:

- 11 Dickeyville – WIS 11 EB
- 19 Beloit – US 51 NB and WIS 140 NB
- 21 Kenosha – US 45 NB, WIS 31 NB, and WIS 32 NB
- 22 Racine – US 45 SB
- 63 Menomonie – WIS 29 WB

### Install VWIM as Part of a Roadway Improvement Project

Two recommended VWIM locations currently have WisDOT roadway improvement projects planned at or very near the VWIM installation sites. It is recommended that WisDOT Division of Transportation System Development (DTSD) determine if these VWIM installations could be funded as part of the planned roadway projects. If VWIM cannot be fiscally integrated with the roadway improvement projects, then VWIM should be funded through the DTSD roadside facilities annual capital improvements budget after all roadwork is completed to avoid any installation conflicts. The two locations include:

- Green Bay, WI – WIS 29 EB/WB just west of Green Bay (planned project in 2016)
- Colby WI – WIS 29 EB/WB just west of Colby (planned project in 2017)

### Install VWIM as a Stand Alone Project

One of the recommended VWIM locations is not near an existing SWEF nor is it on a section of roadway scheduled for improvements by WisDOT. This proposed location is in the I-39 corridor between Stevens Point and Wausau and already has very high truck traffic. This location should be incorporated into the DTSD roadside facilities annual capital improvements program.

### Assess Current VWIM Locations

Each existing VWIM location should have a suitable nearby weight validation site where CMVs can be pulled over for inspection.

### VWIM Data Management

Vehicle weight data collected at each VWIM (i.e., number of vehicles in Classes 5 thru 13 that exceeded legal limits for axles, axle groupings, GVW, or Bridge Formula) should be archived for periodic analysis by DTSD and DSP staff to identify time of day, day of week, and month of year patterns in suspected overweight CMV operations.



## VWIM Installation Costs

Based on recent research performed by the Iowa Department of transportation in 2015, a VWIM installation costs approximately \$500,000 per travel direction. (*Source: Iowa Department of Transportation Virtual Weigh Station (VWS) Cost Summary, June 22, 2015*).

## 2.5 Staffing Recommended Strategies

WisDOT has several opportunities to make more efficient and more effective use of its fixed-site and VWIM enforcement facilities and staffing resources. These include:

**SWEF/VWIM Data Management** – It is recommended that a user-friendly data summary or “dashboard” be developed for DSP management to monitor SWEF and VWIM enforcement activity data (e.g., SWEF hours of operation, inspector hours worked, vehicles weighed, vehicles exceeding legal weight limits, number of citations issued, number of out of service orders issued by type, MCSAP inspections conducted by level).

**Confirm SWEF Hours of Operation with Periodic Traffic Data Analysis** – At least once every three years analyze available CMV traffic volume data (e.g., by time of day, day of week, month of year) upstream from SWEF sites to confirm that scheduled hours of operation are optimal relative to trends in traffic patterns.

**Reallocate Inspectors Following Future Closure/Repurposing of SWEFs** – As selected SWEFs are closed or repurposed in coming years, sworn personnel currently assigned to those locations should be reallocated to other CMV field enforcement operations, where needed.

**Shift Some Annual Vehicle Inspection Duties to Civilian Personnel** – Where operationally appropriate and where qualified staffing resources permit, shift some annual or as-needed vehicle inspection duties (i.e., school buses, human service/specialized transit vehicles, salvage title vehicles) to new or re-assigned non-sworn civilian DSP personnel. This does NOT include CMV safety/weight inspections conducted at SWEFs or on mobile enforcement operations, which should continue to be performed by sworn DSP Inspectors.

**Make Greater Use of VWIMs** – Increase the potential operational value of past and future investments in VWIM technology by expanding the number of DSP troopers in high truck volume corridors and by storing joint-use portable scales in permanent secure enclosures in WisDOT-owned truck pull-off sites.

**Encourage Local Involvement in CMV Safety/Weight Enforcement** – In high truck volume corridors, where local resources and interest permit, DSP should continue to encourage local law enforcement agencies to remain active and proficient in CMV safety and weight enforcement thru DSP-led training and information sharing, and if deemed appropriate, thru equipment sharing and joint operational deployments.

### Staffing Analysis of Recommended SWEF Strategies

A staffing analysis tool was used to calculate projected regional inspections, citations, and warnings if Wrightstown, Dickeyville, and Menomonie SWEFs were closed and

converted to weight validations sites for mobile enforcement operations. Results of this staffing analysis indicate that closing these fixed SWEF sites would not decrease the amount of inspections if all current staff vacancies are filled. A summary of the staffing analysis results are shown in **Table 2-9**.

Table 2-9. Staffing Analysis of SWEF Recommended Strategies

Region	Assignment (Mobile Enforcement and SWEF Onsite Enforcement)	Staffing		Staff Hours				Baseline Conditions				Forecast Results		Inspection Regional Differences	% Trucks Inspected Differences at SWEF
		# Active Inspectors	# Vacant Inspectors	Onsite Inspection Staff Hours	Mobile Inspection Staff Hours	Total Region Staff Hours	Percentage	Baseline Inspections	Baseline Inspections per Active Inspector	Annual Weekday Truck Volume	Baseline % Trucks Inspected	Inspections	% Trucks Inspected		
North Central (Wausau)	Mobile Enforcement	7	0		9,724	14,454	67.3%	1,537	384			2,688		1,153	
	44 Coloma	4	0	4,730			32.7%	1,562	391	678,860	0.230%	1,564	0.230%		0.000%
Northeast (Fond Du Lac)	Mobile Enforcement	11	0		15,111	21,024	71.9%	2,434	348			3,828		410	
	34 Wrightstown	0	0	0			0.0%	984	492	971,100	0.101%	0	0.000%		-0.101%
	35 Newton	2	0	2,365			11.3%	1,385	693	560,560	0.247%	1,386	0.247%		0.000%
	41 Abrams	3	0	3,548			16.9%	1,066	355	1,081,860	0.099%	1,065	0.098%		0.000%
Northwest (Eau Claire)	Mobile Enforcement	9	0		13,271	26,280	50.5%	2,178	363			3,267		3,635	
	61 Hudson	5	0	5,913			22.5%	1,556	519	1,829,620	0.085%	2,595	0.142%		0.057%
	63 Menomonie	0	0	0			0.0%	965	483	1,315,340	0.073%	0	0.000%		-0.073%
	71 Superior	6	0	7,096			27.0%	1,236	618	575,380	0.215%	3,708	0.644%		0.430%
Southeast (Waukesha)	Mobile Enforcement	4	0		6,833	21,024	32.5%	1,666	417			1,668		1,049	
	21 Kenosha	8	0	9,461			45.0%	2,154	359	3,997,760	0.054%	2,872	0.072%		0.018%
	22 Racine	4	0	4,730			22.5%	991	330	3,900,780	0.025%	1,320	0.034%		0.008%
Southwest (DeForest)	Mobile Enforcement	9	0		14,454	38,106	37.9%	4,997	555			4,995		-34	
	11 Dickeyville	0	0	0			0.0%	614	307	223,080	0.275%	0	0.000%		-0.275%
	16 Madison	8	0	9,461			24.8%	1,822	260	2,090,140	0.087%	2,080	0.100%		0.012%
	19 Beloit	8	0	9,461			24.8%	2,277	325	1,982,760	0.115%	2,600	0.131%		0.016%
53 West Salem		4	0	4,730			12.4%	1,087	272	657,280	0.165%	1,088	0.166%		0.000%
Totals		92	0	61,495	59,393	120,888		30,511		19,864,520		36,724			

Note: SWEFs highlighted red indicate those closed in the staffing analysis recommended strategy.

Staffing Analysis Assumptions:

1. Fill all current staff vacancies, average inspector works 1,314 hours per year on enforcement.

2. Convert the following SWEFs to Weight Validation Sites with VWIM: 34 Wrightstown, 63 Menomonie, and 11 Dickeyville.

3. Rates used to forecast inspections and percentage of trucks inspected are from the existing staff analysis.

4. SWEF assigned staff will be onsite 90% of the time and conducting mobile enforcement 10% of the time.

## 2.6 Next Steps

Next steps for WisDOT regarding their rest area, wayside, SWEF and VWIM systems include reviewing the recommendations and strategies provided in this Implementation Plan. Specifically, next steps for WisDOT include the following:

- Review rest area recommendations that were identified as high priority for action and consider implementing the recommendation. Note that additional study of each rest area for which there is a recommendation may be required to determine the needs at that site before changes are made to the rest area. Refer to the rest area strategies in this Implementation Plan when making a change to an existing rest area. Include new projects in WisDOT's Six Year Highway Improvement Program to commit funding.
- Review bottom tier waysides for consideration of repurpose, transfer of ownership or closure. Refer to the wayside strategies in this Implementation Plan when making a change to an existing wayside.
- Review SWEF recommendations for action, particularly those scheduled to begin in the next five years (starting in 2021 or earlier). Those scheduled to begin in the next five years have relatively low estimated costs (\$1.5 million and less) or already have funding committed. Include new projects in WisDOT's Six Year Highway Improvement Program to commit funding.
- Review VWIM locations identified for installation. Install VWIMs in conjunction with SWEF or other roadway improvements based on the strategies outlined in this Implementation Plan. Include new projects in WisDOT's Six Year Highway Improvement Program to commit funding.
- Develop a dashboard for DSP management to monitor SWEF and VWIM enforcement activity data. Review other SWEF/VWIM staffing strategies to maximize enforcement with staff availability.

**Additional Comment Responses:**

<b>Comment</b>	<b>Response</b>
Should RA #15 (Bangor) be evaluated in the rest area evaluation?	We were instructed that RA #15 will be closed after RA #31 (La Crosse) is reopened. Therefore, RA #15 is not included in the evaluation. Text has been added in the report to review this rest area for truck parking needs.
Do we want to consider making RA #15 (Bangor) into truck parking only?	It was not originally considered for truck parking only since we were instructed that it will be closed. However, text has been added to the report to discuss a review of the rest area for consideration of repurpose as truck parking.
Do we want to consider adding access to RA #23 (Superior) for northbound traffic?	RA #23 is one of the sites in the bottom tier from the rest area evaluation and is recommended for repurpose/closure. Additionally, the truck parking demand/capacity ratio is 0.08.