

Town of Friendship

Fond du Lac County, Wisconsin

Sign Asset Management Plan



2012-2017

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Introduction

A Sign Asset Management Plan (SAMP) is a five year plan designed to provide a governing body the necessary tools to make cost-effective resource allocation, program decisions and to maintain minimum retroreflectivity levels. Sign asset management is a systematic approach to managing and maintaining signs.

What is Asset Management?

Asset management is a broad term. It can be defined as a process that guides the gaining of assets, along with their use and disposal in order to make the most of the assets and their potential throughout the life of the assets. While doing this, it also manages and maintains any costs and risks associated with the assets. It is not something you can buy, but rather a **discipline** you must follow in order to maintain your assets.¹

Why Asset Management?

Applying asset management principles and practices can improve an agency's performance, cost-effectiveness, communication, accountability, and credibility. Specific benefits include:

- Lower long-term preservation **costs**
- Improved service to customers
- Improved cost-effectiveness and use of available resources
- Improved communication with elected officials and the public
- Improved credibility and accountability for decision-making

In order to achieve these benefits, an agency must evaluate its current business practices, establish where significant improvement can be achieved, and develop a plan to institute changes where necessary.²

What is Retroreflectivity?

Retroreflectivity describes how light is reflected from a surface and returned to its original source. Traffic signs are made with retroreflective sheeting materials to increase their visibility at night. Maintaining traffic sign retroreflectivity is important to promoting night time traffic safety. Traffic signs use technology with small glass beads or prismatic reflectors that reflect the light from the vehicle headlamps back to the vehicle and the driver's eyes, thus making the sign appear more bright and visible to the driver.³

The Manual on Uniform Traffic Control Devices (MUTCD) is the national standard for all traffic control devices installed on any street, highway, or bicycle trail open to public travel in

¹ http://www.eioba.com/a10206/the_definition_of_asset_management

² Asset Management Guide for Local Agencies in Michigan, December 2007

³ Sign Retroreflectivity Guide Book, Federal Highway Administration, September 2009

accordance with 23 U.S.C. 109(d) and 402(a). Below are the excerpts pertaining to sign design and retroreflectivity:

- Section 2A.06 – Design of Signs
 - The basic requirements of a highway sign are that it be legible to those for whom it is intended and that it be understandable in time to permit a proper response. Desirable attributes include:
 - High visibility by day and night; and
 - High legibility (adequately sized letters or symbols, and a short legend for quick comprehension by a road user approaching a sign).
- Section 2A.08 – Retroreflectivity or Illumination
 - ...signs shall be retroreflective or illuminated to show the same shape and similar color by both day and night, unless specifically stated otherwise...
 - The requirements for sign illumination shall not be considered to be satisfied by street or highway lighting.
- The responsibility for the design, placement, operation, maintenance, and uniformity of traffic control devices shall rest with the public agency or the official having jurisdiction.⁴

⁴ US Department of Transportation, Federal Highway Administration

Compliance Dates

January 2012

By this date, all agencies will have to establish and implement a sign maintenance program that addresses the minimum sign retroreflectivity requirements.

January 2015

By this date, all agencies must comply with the new retroreflectivity requirements for most of their traffic signs they have installed, including all red and white or white and black "regulatory" signs (such as STOP signs and Speed Limit signs), yellow and black "warning" signs, and ground-mounted green and white "guide" signs (except street name signs).

January 2018

By this date, all agencies must comply with the new retroreflectivity requirements for overhead guide signs and all street name signs.

Wisconsin will require the use of upper/lower case letters on street name signs by adopting Federal Standards, no compliance date, replace as needed.

Note: street signs do not need to be replaced until below minimum retroreflectivity levels. At that time, replacement should include lower and upper case letters.

Figure. 1



Source: Lang Enterprises Inc. (<http://www.911signs.com/mutcd-compliance.php>)

Inventory Assessment

Before any decisions can be made on replacement strategies; it's important to identify the inventory and assess the current condition. It is impossible to make any decision without knowing what you have and the condition it is in. It was important for data collection to take place in the field to ensure the accuracy and quality of the data.

The inventory was collected in the field utilizing ArcGIS and GPS to record the sign attributes and pin point the sign post location. Post location is important for map identification and to implement a replacement strategy in the most efficient way possible. Attributes collected include number of signs, inventory date, post type, post condition, sign type, sign description, sign legend color, sign sheeting color, sign sheeting type, sign code and sign install date. A geo-database was developed to house all post locations and sign attributes. Maps of each post location was developed displaying post location, pictures of signs on the post, major sign attributes including number of signs, sign description, sign code, sheeting type and install date. The inventory allows the Town to easily and quickly locate a post and assess the sign condition and plan for a replacement strategy. Refer to Appendix A. for inventory assessment and location.

System Summary

Town of Friendship System Summary		
Sign Type	Number Signs	Replacement Cost
Regulator Non Park	42	\$1,358.40
Regulator Park	28	\$442.88
Warning	102	\$3,368.94
Guide	75	\$2,310.00
Sign Date Sticker Roll (2000)	0	\$560.00
Total	247	\$8,040.22

Sign Management & Replacement Methods

The goal for any municipality in managing their asset is to maximize the assets life, while reducing cost. The proper replacement method or methods will help in maximizing sign life and cost.

Visual Inspection

Visual inspection relies on visual inspection of signs at night to assess their compliance with the MUTCD's retroreflectivity requirements. Of all the maintenance methods listed in the MUTCD, the Visual Inspection Method is probably the most practical for a small agency with limited resources because it requires practically no additional equipment and no sign inventories.

Retroreflectivity Measurements

Retroreflectivity is measured using a retroreflectometer. Signs with retroreflectivity below the minimum levels should be replaced. The Retroreflectivity Measurement Method requires equipment purchases over \$10,000.

Expected Sign Life

When signs are installed, the installation date is labeled or recorded so that the age of a sign is known. The age of the sign is compared to the expected sign life. The expected sign life is based on the experience of sign retroreflectivity degradation in a geographic area compared to the minimum levels. Signs older than the expected life should be replaced.

- **Sign Sheeting Warranties**

Wisconsin Department of Transportation's (WisDOT) current general sign policy is to replace signs based on age and condition. Below is WisDOTS sign replacement policy:

1. The Department's Sign Inventory Management System (SIMS) shall be used to track inventory data on signs that include manufacture date of sign, sign sheeting code and condition of sign.
2. Sign date and sheeting code tags shall be placed on the upper right corner on the back of Type II signs by the sign manufacturer or contractor. Type I signs shall have the sign date and sheeting code tag placed on the lower right corner on the back of the sign. The WisDOT Central Sign Shop provides all date and sheeting code tags to sign manufacturers and contractors.
3. In general, signs should be replaced on a **twelve year cycle**, following the priority established by the Bureau of Highway Operations on an annual basis.
4. In general, signs needed for improvement projects will not be supplied through the Region Sign Shops or Central Sign Shops. The exception to this would be if there is an unexpected lack of signs by the contractor that may otherwise cause a delay in the

completion of the project or needed for safety or operational issues. Detailed guidance is given below on the sign replacement criteria for improvement projects.

5. County Highway Departments, through Traffic Maintenance Agreements, should handle all of the other routine Type II sign replacements where an improvement project is not anticipated any time soon.
6. WisDOT shall provide all signs to the County Highway Departments. There are statewide procurement contracts to handle this. Counties shall not furnish signs, other than TODS or TRANS 200 arrowboards that are covered by other policies.
7. Routine Type I sign replacements should be performed by Let Contract. The statewide open-end signing contractor should only be used for knock-down repairs and replacements of Type I signs, Type I or Type II Supplemental Traffic Generator sign installations or for safety or operational issues where the county cannot get to the site in the timeframe needed.
8. Any signs or posts that are damaged, illegible, leaning, not in proper orientation to the roadway should be repaired or replaced as soon as opportunities permit.⁵

- **Sign Test Deck**

WisDOT started a sign farm test deck in 2008 to perform a sign life cycle analysis. Currently, WisDOT is collecting data and will continue to collect data until their signs don't meet retroreflectivity minimum levels. As soon as the life cycle analysis is completed, other municipalities will be able to use that data to apply to their signs to get the maximum use and cost savings.

Blanket Replacement

All signs in an area/corridor or of a given type should be replaced at specified intervals. This eliminates the need to assess retroreflectivity or track the life of individual signs. The replacement interval is based on the expected sign life, compared to the minimum levels, for the shortest-life material used on the affected signs.

Control Signs

Replacement of signs in the field is based on the performance of a sample of control signs. The control signs might be a small sample located in a maintenance yard or a sample of signs in the field. The control signs are monitored to determine the end of their retroreflective life. All field signs represented by the control sample should be replaced before the retroreflectivity levels of the control sample reach the minimum levels.⁶

⁵ WisDOT Traffic Guidelines Manual, WisDOT sign policy 02-15-51

⁶ Sign Retroreflectivity Guide Book, Federal Highway Administration, September 2009

Town of Friendship's Replacement Methodology

Recommendations on replacement methods were selected based on the age and condition of the sign stock and the needs of the municipality. "Expected Sign Life" was selected as the method that would allow the Town of Friendship maximize the life of their signs, while saving as much money as possible. "Expected Sign Life" utilizes sign installation dates to determine the year the sign needs to be replaced. The majority of the Town of Friendship's signs possessed no install date, making "Expected Sign Life" not feasible at this time. To get to a position where the Town of Friendship can take advantage of "Expected Sign Life" they will have to use "Blanket Replacement" to replace entire stock and incorporate installation stickers in the replacement process. There are a few signs that do have installation dates, which the "Expected Sign Life" will be used. The Town of Friendship will use a combination of "Blanket Replacement" and "Expected Sign Life" in the next five years to update their entire fleet of signs. As soon as the signs are updated and WisDOT releases their sign farm deck data, the Town of Friendship will incorporate the sign life data into their plan to maximize sign life and cost savings.

The Sign Management Program incorporates "Blanket Replacement" and "Expected Sign Life" to update the entire fleet of signs. The majority of Warning, Regulatory Park and Regulatory Non Park signs are being replaced in 2013, 2014, and 2015 to meet Federal guidelines. Guide signs are being replaced in 2016 and 2017 to meet Federal guidelines. In reference to the Guide signs; Federal guidelines state that street sign do not need to be replace until warranted, based on retroreflectivity minimum levels. The Town of Friendship's street signs need to be replaced to meet minimum retroreflectivity levels, thus the 2016 and 2017 replacement schedule.

The signs that do possess installation dates will take advantage of "Expected Sign Life" methodology and adopt WisDOT replacement policy until WisDOT's sign farm deck data is released. WisDOT's sign replacement policy states that signs should be replaced on a twelve year cycle, which will be incorporated in the "Expected Sign Life" methodology.

Sign Management Program 2013-2021

2013 Program

Post Number	Number Sign	Sign Type	Sign Description	Sign Code	Cost \$	Install date	Replacement Year	Future Replacement Year	Zone
1	1	Warning	Neighborhood Watch		\$36.75	0	2013	2025	1
2	2	Warning	No Train Horn	W10-9	\$19.31	0	2013	2025	1
		Warning	Railroad Crossing	W10-1	\$35.91		2013	2025	1
3	1	Regulatory Parking	No Parking Here to Tracks	R8-3	\$23.45	0	2013	2025	1
5	1	Regulatory Non Parking	Yield	R1-2	\$26.95	0	2013	2025	1
6	1	Warning	Stop Ahead	W3-1	\$37.85	2001	2013	2025	1
7	1	Regulatory Parking	No Parking	R8-3	\$11.69	0	2013	2025	1
8	1	Regulatory Non Parking	Stop Sign	R1-1	\$29.95	0	2013	2025	1
10	1	Warning	Dead End	W14-1	\$35.91	0	2013	2025	1
11	1	Regulatory Non Parking	Yield	R1-2	\$26.95	0	2013	2025	1
13	1	Warning	Two-Direction Large Arrow	W1-7	\$44.75	0	2013	2025	1
15	1	Regulatory Non Parking	Weight Limit 6 Tons	R12-1	\$43.75	1993	2013	2025	1
16	1	Regulatory Non Parking	Yield	R1-2	\$26.95	0	2013	2025	1
18	1	Warning	Stop Ahead	W3-1	\$37.85	2001	2013	2025	1
20	1	Warning	Neighborhood Watch		\$36.75	0	2013	2025	1
22	1	Regulatory Non Parking	Speed Limit 45	R2-1	\$29.55	0	2013	2025	1
23	1	Regulatory Parking	No Parking	R8-3	\$11.69	0	2013	2025	1

24	2	Warning	No Train Horn	W10-9	\$19.31	2001	2013	2025	1
		Warning	Railroad Crossing	W10-1	\$35.91	2001	2013	2025	1
40	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3R	\$19.31	0	2013	2025	1
41	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3L	\$19.31	0	2013	2025	1
43	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3R	\$19.31	0	2013	2025	1
44	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3L	\$19.31	0	2013	2025	1
46	1	Warning	Stop Ahead	W3-1	\$37.85	2001	2013	2025	1
48	1	Warning	Stop Ahead	W3-1	\$37.85	1995	2013	2025	1
49	1	Warning	Railroad Crossing	W10-1	\$35.91	0	2013	2025	1
50	1	Regulatory Non Parking	Stop Sign	R1-1	\$29.95	1995	2013	2025	1
52	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3R	\$19.31	0	2013	2025	1
53	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3L	\$19.31	0	2013	2025	1
54	1	Warning	Stop Ahead	W3-1	\$37.85	1999	2013	2025	1
56	1	Warning	Low Shoulder	W8-9	\$35.91	0	2013	2025	1
58	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3R	\$19.31	0	2013	2025	1
59	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3L	\$19.31	0	2013	2025	1
60	1	Warning	Stop Ahead	W3-1	\$37.85	0	2013	2025	1
61	1	Warning	Snowmobile	W11-6	\$35.91	0	2013	2025	1
62	1	Warning	Railroad Crossing	W10-1	\$35.91	0	2013	2025	1
63	1	Regulatory Non Parking	Stop Sign	R1-1	\$29.95	1986	2013	2025	1
66	1	Warning	Curve Left Warning	W1-2L	\$35.91	0	2013	2025	1
67	1	Warning	Stop Ahead	W3-1	\$37.85	1996	2013	2025	1
68	1	Regulatory Non Parking	Speed Limit 15	R2-1	\$29.55	1986	2013	2025	1
69	2	Warning	Curve Right Warning	W1-2R	\$35.91	1993	2013	2025	1
		Warning	Railroad Crossing	W10-1	\$35.91	1993	2013	2025	1
70	1	Regulatory Non Parking	Stop Sign	R1-1	\$29.95	0	2013	2025	1

72	2	Regulatory Parking	No Parking 11:00 PM to 11:00 AM from Nov 15th to Apr 1st	R8-3	\$32.45	0	2013	2025	1
		Regulatory Non Parking	Speed Limit 15	R2-1	\$29.55	1986	2013	2025	1
73	1	Warning	Dead End	W14-1	\$35.91	0	2013	2025	1
75	1	Regulatory Non Parking	Speed Limit 15	R2-1	\$29.55	0	2013	2025	1
78	2	Regulatory Parking	No Parking 11:00 PM to 11:00 AM from Nov 15th to Apr 1st	R8-3	\$32.45	0	2013	2025	1
		Regulatory Non Parking	Speed Limit 15	R2-1	\$29.55	1986	2013	2025	1
81	1	Warning	Dead End	W14-1	\$35.91	1995	2013	2025	1
82	2	Warning	Railroad Crossing	W10-1	\$35.91	0	2013	2025	1
		Warning	Stop Ahead	W3-1	\$37.85	1985	2013	2025	1
83	1	Warning	Dead End	W14-1	\$35.91	1999	2013	2025	1
86	1	Warning	Stop Ahead	W3-1	\$37.85	1999	2013	2025	1
87	1	Warning	Reverse Curve Right Ahead	W1-4R	\$35.91	0	2013	2025	1
88	1	Regulatory Non Parking	Stop Sign	R1-1	\$29.95	0	2013	2025	1
89	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3R	\$19.31	0	2013	2025	1
90	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3L	\$19.31	0	2013	2025	1
91	1	Warning	Stop Ahead	W3-1	\$37.85	0	2013	2025	1
92	1	Regulatory Non Parking	Stop Sign	R1-1	\$29.95	1995	2013	2025	1
				Total	\$1,830.90				

2014 Program

Post Number	Number Sign	Sign Type	Sign Description	Sign Code	Cost \$	Install date	Replacement Year	Future Replacement Year	Zone
29	1	Warning	Railroad Crossing	W10-1	\$35.91	0	2014	2026	2
30	1	Regulatory Non Parking	Stop Sign	R1-1	\$29.95	0	2014	2026	2
31	1	Warning	Two-Direction Large Arrow	W1-7	\$44.75	0	2014	2026	2
34	1	Warning	Slow Children	W9-11	\$19.31	0	2014	2026	2
36	1	Warning	Stop Ahead	W3-1	\$37.85	1999	2014	2026	2
37	1	Regulatory Non Parking	Stop Sign	R1-1	\$29.95	1999	2014	2026	2
38	1	Warning	Stop Ahead	W3-1	\$37.85	1993	2014	2026	2
95	1	Warning	Stop Ahead	W3-1	\$37.85	1999	2014	2026	2
98	1	Warning	Railroad Crossing	W10-1	\$35.91	0	2014	2026	2
99	1	Warning	Stop Ahead	W3-1	\$37.85	1995	2014	2026	2
100	1	Regulatory Non Parking	Stop Sign	R1-1	\$29.95	0	2014	2026	2
102	1	Warning	Stop Ahead	W3-1	\$37.85	0	2014	2026	2
104	1	Warning	Dead End	W14-1	\$35.91	1995	2014	2026	2
105	1	Regulatory Parking	No Parking	R8-3	\$11.69	0	2014	2026	2
106	1	Regulatory Parking	No Parking	R8-3	\$11.69	0	2014	2026	2
107	1	Regulatory Parking	No Parking	R8-3	\$11.69	0	2014	2026	2
108	1	Regulatory Parking	No Parking	R8-3	\$11.69	0	2014	2026	2

110	1	Warning	Stop Ahead	W3-1	\$37.85	1995	2014	2026	2
111	1	Warning	Railroad Crossing	W10-1	\$35.91	2009	2021	2033	2
112	1	Regulatory Non Parking	Stop Sign	R1-1	\$29.95	0	2014	2026	2
113	1	Warning	Stop Ahead	W3-1	\$37.85	0	2014	2026	2
115	1	Warning	Intersection Warning	W2-4	\$35.91	1999	2014	2026	2
130	1	Warning	Dead End	W14-1	\$35.91	1994	2014	2026	2
131	1	Regulatory Non Parking	Stop Sign	R1-1	\$29.95	1999	2014	2026	2
132	1	Warning	Stop Ahead	W3-1	\$37.85	0	2014	2026	2
134	1	Regulatory Parking	No Parking	R8-3	\$11.69	0	2014	2026	2
135	1	Warning	Dead End	W14-1	\$35.91	1999	2014	2026	2
136	1	Regulatory Parking	No Parking	R8-3	\$11.69	0	2014	2026	2
137	2	Regulatory Non Parking	Speed Limit 15	R2-1	\$29.55	0	2014	2026	2
		Regulatory Non Parking	Speed Limit 15	R2-1	\$29.55		2014	2026	2
138	1	Warning	Dead End	W14-1	\$35.91	1985	2014	2026	2
139	1	Regulatory Non Parking	Stop Sign	R1-1	\$29.95	0	2014	2026	2
142	1	Warning	Dead End	W14-1	\$35.91	1994	2014	2026	2
143	3	Regulatory Parking	No Parking 11:00 PM to 11:00 AM from Nov 15th to Apr 1st	R8-3	\$32.45	0	2014	2026	2
		Warning	Neighborhood Watch		\$36.75	0	2014	2026	2
		Regulatory Non Parking	Speed Limit 15	R2-1	\$29.55	0	2014	2026	2
144	3	Regulatory Parking	No Parking 11:00 PM to 11:00 AM from Nov 15th to Apr 1st	R8-3	\$32.45	0	2014	2026	2
		Warning	Neighborhood Watch		\$36.75	0	2014	2026	2

		Regulatory Non Parking	Speed Limit 15	R2-1	\$29.55	0	2014	2026	2
145	1	Regulatory Parking	No Parking	R8-3	\$11.69	0	2014	2026	2
146	1	Regulatory Parking	No Parking This Side of Street	R7-13	\$11.69	0	2014	2026	2
147	2	Regulatory Non Parking	No Parking This Side of Street	R7-13	\$11.69	0	2014	2026	2
		Regulatory Parking	No Parking This Side of Street	R7-13	\$11.69		2014	2026	2
148	1	Regulatory Parking	No Parking	R8-3	\$11.69	0	2014	2026	2
150	1	Warning	Railroad Crossing	W10-1	\$35.91	1999	2014	2026	2
209	1	Warning	Two-Direction Large Arrow	W1-7	\$44.75	0	2014	2026	2
				Total	\$1,335.60				

2015 Program

Post Number	Number Sign	Sign Type	Sign Description	Sign Code	Cost \$	Install date	Replacement Year	Future Replacement Year	Zone
121	1	Regulatory Non Parking	Reduce Speed Limit Ahead	W3-5	\$61.65	1994	2015	2027	3
122	1	Regulatory Non Parking	Speed Limit 25	R2-1	\$29.55	0	2015	2027	3
123	1	Regulatory Non Parking	Speed Limit 45	R2-1	\$29.55	1995	2015	2027	3
124	1	Warning	Curve Left Warning	W1-2L	\$35.91	2001	2015	2027	3
128	1	Warning	Stop Ahead	W3-1	\$37.85	0	2015	2027	3
151	2	Regulatory Parking	No Parking 11:00 PM to 11:00 AM from Nov 15th to Apr 1st	R8-3	\$32.45	0	2015	2027	3
		Warning	Caution Children At Play	C1-2	\$76.85	1995	2015	2027	3
153	1	Warning	Dead End	W14-1	\$35.91	0	2015	2027	3
154	1	Regulatory Non Parking	Speed Limit 25	R2-1	\$29.55	2003	2015	2027	3
155	1	Warning	Slow Children	W9-11	\$19.31	0	2015	2027	3
156	1	Regulatory Non Parking	Road Closed	R11-2	\$58.05	0	2015	2027	3
157	1	Warning	Dead End	W14-1	\$35.91	0	2015	2027	3
158	1	Regulatory Parking	No Parking	R8-3	\$11.69	0	2015	2027	3
160	1	Warning	Dead End	W14-1	\$35.91	1995	2015	2027	3
161	1	Regulatory Non	Yield	R1-2	\$26.95	0	2015	2027	3

		Parking							
162	1	Warning	Stop Ahead	W3-1	\$37.85	0	2015	2027	3
164	2	Regulatory Non Parking	Speed Limit 25	R2-1	\$29.55	0	2015	2027	3
		Warning	Dead End	W14-1	\$35.91	1999	2015	2027	3
165	1	Warning	Slow Children	W9-11	\$19.31	0	2015	2027	3
167	1	Warning	Dead End	W14-1	\$35.91	0	2015	2027	3
169	1	Regulatory Non Parking	Bridge 7/10 MI Weight Limit 10 Tons	R12-5	\$54.65	0	2015	2027	3
170	1	Regulatory Non Parking	Bridge Weight Limit 10 Tons	R12-5	\$43.75	0	2015	2027	3
171	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3R	\$19.31	0	2015	2027	3
172	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3L	\$19.31	0	2015	2027	3
173	2	Warning	Advisory Speed 45	W13-1	\$15.53	0	2015	2027	3
		Warning	Curve Right	W1-2R	\$35.91	0	2015	2027	3
174	1	Regulatory Parking	No Parking	R8-3	\$11.69	0	2015	2027	3
175	1	Regulatory Parking	No Parking	R8-3	\$11.69	0	2015	2027	3
176	1	Warning	Two-Direction Large Arrow	W1-7	\$44.75	0	2015	2027	3
177	1	Warning	One-Direction Large Arrow	W1-6	\$44.75	0	2015	2027	3
178	1	Warning	One-Direction Large Arrow	W1-6	\$44.75	0	2015	2027	3
180	1	Warning	Two-Direction Large Arrow	W1-7	\$44.75	0	2015	2027	3
182	2	Warning	Advisory Speed 45	W13-1	\$15.53	1999	2015	2027	3
		Warning	Curve Left	W1-2L	\$35.91	1999	2015	2027	3
184	1	Regulatory Parking	No Parking	R8-3	\$11.69	0	2015	2027	3
185	1	Regulatory Non Parking	Speed Limit 45	R2-1	\$29.55	1993	2015	2027	3
186	1	Regulatory Parking	No Parking	R8-3	\$11.69	0	2015	2027	3
187	1	Regulatory Parking	No Parking	R8-3	\$11.69	0	2015	2027	3

190	1	Regulatory Non Parking	Stop Sign	R1-1	\$29.95	2000	2015	2027	3
193	1	Warning	Stop Ahead	W3-1	\$37.85	0	2015	2027	3
195	1	Regulatory Non Parking	Speed Limit 45	R2-1	\$29.55	1993	2015	2027	3
196	1	Regulatory Parking	No Parking Anytime	R7-1D	\$11.69	0	2015	2027	3
197	1	Regulatory Parking	No Parking	R8-3	\$11.69	0	2015	2027	3
198	1	Warning	Curve Right	W1-2R	\$35.91	1993	2015	2027	3
199	1	Regulatory Non Parking	Speed Limit 45	R2-1	\$29.55	1993	2015	2027	3
200	2	Regulatory Parking	No Parking	R8-3	\$11.69	1999	2015	2027	3
		Warning	Stop Ahead	W3-1	\$37.85		2015	2027	3
201	1	Regulatory Non Parking	Stop Sign	R1-1	\$29.95	0	2015	2027	3
202	1	Regulatory Non Parking	Bridge 7/10 MI Weight Limit 10 Tons	R12-5	\$54.65	0	2015	2027	3
204	1	Warning	T Intersection	W2-4	\$35.91	1996	2015	2027	3
205	1	Regulatory Non Parking	Bridge Weight Limit 10 Tons	R12-5	\$43.75	0	2015	2027	3
206	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3R	\$19.31	0	2015	2027	3
207	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3L	\$19.31	0	2015	2027	3
				Total	\$1,661.13				

2016 Program

Post Number	Number Sign	Sign Type	Sign Description	Sign Code	Cost \$	Install date	Replacement Year	Future Replacement Year	Zone
4	1	Guide	Street Sign SAWMILL RD	D3-1	\$30.80	0	2016	2028	4
9	2	Guide	Street Sign VAN DYNE RD	D3-1	\$30.80	0	2016	2028	4
		Guide	Street Name LONE ELM RD	D3-1	\$30.80	0	2016	2028	4
12	1	Guide	Street Sign CURVE RD	D3-1	\$30.80	0	2016	2028	4
17	1	Guide	Street Sign WHITE PINE RD	D3-1	\$30.80	0	2016	2028	4
19	2	Guide	Street Sign LAKESHORE DR	D3-1	\$30.80	0	2016	2028	4
		Guide	Street Name LONE ELM RD	D3-1	\$30.80	0	2016	2028	4
39	2	Guide	Street Sign TOWN LINE RD	D3-1	\$30.80	0	2016	2028	4
		Guide	Street Sign CTY HWY N	D3-1	\$30.80	0	2016	2028	4
42	1	Guide	Street Sign BRIDGE RD	D3-1	\$30.80	0	2016	2028	4
45	1	Guide	Street Sign SHOE RD	D3-1	\$30.80	0	2016	2028	4
47	2	Guide	Street Sign VAN DYNE RD	D3-1	\$30.80	0	2016	2028	4
		Guide	Street Sign LINCOLN RD	D3-1	\$30.80	0	2016	2028	4
51	1	Guide	Street Sign ACORN RD	D3-1	\$30.80	0	2016	2028	4
55	1	Guide	Street Sign CHESTNUT RD	D3-1	\$30.80	0	2016	2028	4
57	2	Guide	Street Sign LAKESHORE RD	D3-1	\$30.80	0	2016	2028	4
		Guide	Street Sign LINCOLN RD	D3-1	\$30.80	0	2016	2028	4
65	1	Guide	Street Sign VIADUCT RD	D3-1	\$30.80	0	2016	2028	4
71	1	Guide	Street Sign VIADUCT RD	D3-1	\$30.80	0	2016	2028	4

74	2	Guide	Street Sign S EASTWOOD ST	D3-1	\$30.80	0	2016	2028	4
		Guide	Street Sign N EASTWOOD ST	D3-1	\$30.80	0	2016	2028	4
76	2	Guide	Street Sign PARK AV	D3-1	\$30.80	0	2016	2028	4
		Guide	Street Sign HIGH ST	D3-1	\$30.80	0	2016	2028	4
77	2	Guide	Street Sign VAN DYNE RD	D3-1	\$30.80	0	2016	2028	4
		Guide	Street Sign PARK ST	D3-1	\$30.80	0	2016	2028	4
79	2	Guide	Street Sign MAIN ST	D3-1	\$30.80	0	2016	2028	4
		Guide	Street Sign HIGH ST	D3-1	\$30.80	0	2016	2028	4
80	2	Guide	Street Sign VAN DYNE RD	D3-1	\$30.80	0	2016	2028	4
		Guide	Street Sign MAIN ST	D3-1	\$30.80	0	2016	2028	4
84	1	Guide	Street Sign DONOVAN RD	D3-1	\$30.80	0	2016	2028	4
94	1	Guide	Street Sign HICKORY RD	D3-1	\$30.80	0	2016	2028	4
96	2	Guide	Street Sign VAN DYNE RD	D3-1	\$30.80	0	2016	2028	4
		Guide	Street Sign CEMETERY RD	D3-1	\$30.80	0	2016	2028	4
101	1	Guide	Street Sign EVERGREEN RD	D3-1	\$30.80	0	2016	2028	4
103	2	Guide	Street Sign LAKESHORE RD	D3-1	\$30.80	0	2016	2028	4
		Guide	Street Sign CEMETERY RD	D3-1	\$30.80	0	2016	2028	4
140	1	Guide	Street Sign SHADY DR	D3-1	\$30.80	0	2016	2028	4
141	2	Guide	Street Sign LAKESHORE DR	D3-1	\$30.80	0	2016	2028	4
		Guide	Street Sign KINKER RD	D3-1	\$30.80	0	2016	2028	4
				Total	\$1,201.20				

2017 Program

Post Number	Number Sign	Sign Type	Sign Description	Sign Code	Cost \$	Install date	Replacement Year	Future Year Replacement	Zone
26	2	Guide	Street Sign TOWNLINE RD	D3-1	\$30.80	0	2017	2029	5
		Guide	Street Sign SUBWAY RD	D3-1	\$30.80	0	2017	2029	5
27	2	Guide	Street Sign SUBWAY RD	D3-1	\$30.80	0	2017	2029	5
		Guide	Street Sign VAN DYNE	D3-1	\$30.80	0	2017	2029	5
32	1	Guide	Street Sign MAPLE RD	D3-1	\$30.80	0	2017	2029	5
35	1	Guide	Street Sign BARK RD	D3-1	\$30.80	0	2017	2029	5
129	1	Guide	Street Sign COTTONWOOD RD	D3-1	\$30.80	0	2017	2029	5
133	2	Guide	Street Sign LAKESHORE DR	D3-1	\$30.80	0	2017	2029	5
		Guide	Street Sign SUBWAY RD	D3-1	\$30.80	0	2017	2029	5
152	2	Guide	Street Sign WESTLAKE CT	D3-1	\$30.80	0	2017	2029	5
		Guide	Street Sign LAKESHORE DR	D3-1	\$30.80	0	2017	2029	5
159	2	Guide	Street Sign LAKESHORE DR	D3-1	\$30.80	0	2017	2029	5
		Guide	Street Sign SILVER ST	D3-1	\$30.80	0	2017	2029	5
163	1	Guide	Street Sign NORTHWESTERN AVE	D3-1	\$30.80	0	2017	2029	5
166	2	Guide	Street Sign LAKE SHORE DR	D3-1	\$30.80	0	2017	2029	5
		Guide	Street Sign FRANKLIN AVE	D3-1	\$30.80	0	2017	2029	5
168	4	Guide	Street Sign SUNSET CIR	D3-1	\$30.80	0	2017	2029	5
		Guide	Street Sign SUNSET CIR	D3-1	\$30.80	0	2017	2029	5
		Guide	Street Sign PROSPECT AVE	D3-1	\$30.80	0	2017	2029	5

		Guide	Street Sign PROSPECT AVE	D3-1	\$30.80	0	2017	2029	5
181	1	Guide	Street Sign MELODY LN	D3-1	\$30.80	0	2017	2029	5
183	2	Guide	Street Sign N PIONEER RD	D3-1	\$30.80	0	2017	2029	5
		Guide	Street Sign MELODY LN	D3-1	\$30.80	0	2017	2029	5
188	1	Guide	Street Sign OSBORN WAY	D3-1	\$30.80	0	2017	2029	5
191	1	Guide	Street Sign MOSHER DR	D3-1	\$30.80	0	2017	2029	5
194	1	Guide	Street Sign TOWN LINE RD	D3-1	\$30.80	0	2017	2029	5
208	2	Guide	Street Sign VAN DYNE RD	D3-1	\$30.80	0	2017	2029	5
		Guide	Street Sign MELODY LN	D3-1	\$30.80	0	2017	2029	5
30	2	Guide	Street Sign SUBWAY RD	D3-1	\$30.80	0	2017	2029	5
		Guide	Street Sign MINNESOTA AVE	D3-1	\$30.80	0	2017	2029	5
139	1	Guide	Street Sign COTTAGE LN	D3-1	\$30.80	0	2017	2029	5
189	1	Guide	Street Sign PENNY LN	D3-1	\$30.80	0	2017	2029	5
143	2	Guide	Street Sign LAKE SHORE DR	D3-1	\$30.80	0	2017	2029	5
		Guide	Street Sign COTTAGE DR	D3-1	\$30.80	0	2017	2029	5
144	2	Guide	Street Sign LAKE SHORE DR	D3-1	\$30.80	0	2017	2029	5
		Guide	Street Sign COTTAGE DR	D3-1	\$30.80	0	2017	2029	5
179	1	Regulatory Non Parking	Stop Sign	R1-1	\$29.95	2005	2017	2029	3
203	1	Warning	Stop Ahead	W3-1	\$37.85	2005	2017	2029	3
				Total	\$1,176.60				

2018 Program

Post Number	Number Sign	Sign Type	Sign Description	Sign Code	Cost \$	Install date	Replacement Year	Future Year Replacement	Zone
33	1	Warning	Stop Ahead	W3-1	\$37.85	2006	2018	2030	2
				Total	\$37.85				

2019 Program

Post Number	Number Sign	Sign Type	Sign Description	Sign Code	Cost \$	Install date	Replacement Year	Future Year Replacement	Zone
116	1	Warning	Curve Right Warning	W1-2R	\$35.91	2007	2019	2031	3
117	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3R	\$19.31	2007	2019	2031	3
118	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3R	\$19.31	2007	2019	2031	3
119	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3L	\$19.31	2007	2019	2031	3
120	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3L	\$19.31	2007	2019	2031	3
125	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3R	\$19.31	2007	2019	2031	3
126	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3L	\$19.31	2007	2019	2031	3

127	1	Warning	Type 3 Object Marker (Tiger Board)	OM-3L	\$19.31	2007	2019	2031	3
189	1	Regulatory Non Parking	Stop Sign	R1-1	\$29.95	2007	2019	2031	3
				Total	\$201.03				

2020 Program

-None

2021 Program

Post Number	Number Sign	Sign Type	Sign Description	Sign Code	Cost \$	Install date	Replacement Year	Future Year Replacement	Zone
15	1	Warning	Dead End	W14-1	\$35.91	2009	2021	2033	1
				Total	\$35.91				

Monitor & Update

It is important to monitor the sign replacement to ensure the success of the plan. To accomplish this, work orders should be filled out prior to sign replacement and upon completion a copy of the work order should be submitted to East Central Wisconsin Regional Planning Commission staff to update the data base. A work order template can be found in Appendix B.

The plan should be updated biannually to include the following out years; maintaining a five year window and to reevaluate sign management program to ensure maximum sign life and cost savings.

East Central Wisconsin Regional Planning Commission Traffic Sign Contact:

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Sign Contractor

Lange Enterprise, Inc.

<http://www.911signs.com/>

Lange Enterprise products and services relating to the traffic control industry. Lange specializes in 3M High Intensity Prismatic (HIP) manufactured traffic signs. Lane also provides date stickers for sign tracking.

Lane Enterprise, Inc. contact information

1131 W. 2nd Street • PO Box 4

Oconomowoc, WI 53066

Phone: 1-800-242-3126 or

1-262-567-9541

Fax: 1-262-567-2822

Email: info@langeenterprises.com

Refer to Appendix C. for product cost and description.

Appendix

Appendix A. Sign Inventory

Appendix B. Work Order

Appendix C. Product Cost & Description