

Menekaunee Harbor Restoration Project – Marinette, WI

MAINTENANCE PLAN



Prepared by:
Applied Ecological Services

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METHODS

1. Undesirable species control

Control of undesirable plant species will be performed throughout all plant community zones within the site boundaries as shown in the plans and site map provided (*Please see Appendix C for the Site Map.*) The focus of vegetation management shall be ensuring success of the planted and seeded vegetation in all plant community zones. This will be accomplished by using an adaptive management plan. Plans often change in response to new data and derived insights. For these reasons, this plan should be viewed as being neither conclusive nor absolute. This program is a starting point in an ongoing process of restoring the site's natural processes.

When regular monitoring and maintenance begins, it will provide feedback on the plans effectiveness, and generate information to evaluate and justify the need for changes. This process of evaluation, adjustment, refinement, and change is called "Adaptive Management." Adaptive management is a tool that is fundamental to the restoration, management, and maintenance work in the management plan described below.

A minimum number of five site visits per year will be scheduled during the growing season. A minimum of two treatments (herbicide and/or mowing as required) per growing season will be scheduled. Each trip will include monitoring of all planted locations. Applied Ecological Services (AES) will supply a maintenance log (*Please see Appendix A for a copy of this log*) for each visit with a description of treatments and findings. For each trip, the Engineer will be notified a day in advance.

Main Tools for Control

Herbicide Management:

The main tool for invasive species control needed at the site will be chemical control using a backpack sprayer and/or ATV sprayer depending on site conditions. By using these setups, we will selectively spray any undesirable vegetation throughout all of the plant community zones. Undesirable vegetation to be controlled, but not limited to, is reed canary grass, purple loosestrife, giant reed grass, spotted knapweed, etc. Care will be taken in the application and selection of chemicals to avoid damage to the trees and shrubs.

At all times, AES will follow the application guidelines listed in the herbicide labels for percent solution and rates per acre, disposal, etc. Also dictated on the label are the site conditions that particular herbicide may be applied. For example, by law, RoundUp cannot be applied over water, but Rodeo can. Chemicals that will be used onsite in aquatic areas will be approved for that use. All other herbicides to be used for the control of undesirable species onsite will be approved for that use. All chemicals will be applied by Wisconsin State-licensed commercial applicators (*Please see Appendix D for the Business & Applicator Licenses*) that are certified for specific categories (i.e. 5.0 - Aquatic & Mosquito, 1.1 - Field Crops & Vegetables/6.0 – Right-of-Way & Natural Areas).

Herbicides will be mixed with water, surfactants, oils, fuels, anti-foaming agents, tackifiers, dyes, and/or drift control agents to achieve desired results as specified by the manufacturer and in accordance with all applicable regulations.

Herbicide Application Data Forms will be filled out daily as chemical control methods are utilized. The site will be posted prior/after each chemical application with WDNR treatment signs for the wet areas and AES company treatment signs for the dry areas. Two types of forms will be needed depending on site conditions. For wet areas, a WDNR Aquatic Treatment Record will be filled out. For all other areas, an AES treatment record will be filled out. (*Please see Appendix B for the Herbicide Application Data Forms.*)

The types of equipment that may be used for herbicide management are backpack sprayers, ATV sprayers, spray bottles, Tyvek chemical suits, Nitrile chemical gloves, rubber steel-toed boots, and safety glasses.

Mowing:

The need for mechanical control may be utilized to keep undesirable species at bay throughout all plant community zones to promote growth of desirable vegetation and reduce competition for the trees and shrubs.

Mowing is a physical, non-selective activity that can be effectively implemented in the early stages of the restoration activities and is most often used during the construction and restoration phases of a project. It will be an effective tool for managing undesirable weed competition around the trees and shrubs.

If mowing is necessary, it will be performed as the undesirable vegetation starts to crowd and compete with the desirable vegetation, trees and shrubs. It will then be mowed to a height of 2-10 inches using a hand weed whip, ATV mower, DR mower or an amphibious machine with mower, depending on site conditions.

The type of equipment needed will be dependent on the size of the treatment area, the water level and its location and if the owner's representative will allow a motorized piece of equipment based on conditions at the time of mowing.

Manual Controls:

Multiple hand tools may be used in place of chemical treatment or mowing depending on site conditions and treatment size of areas.

Additional Notes:

- The controlled pesticide applications at the Menekaunee Harbor Restoration Project will need an aquatic herbicide permit from the WDNR issued by an Aquatic Plant Management Coordinator. This permit will be obtained by AES yearly and a copy will be forwarded on to the owner's representative when it comes in each year. All general and specific conditions within this permit will be followed.
- AES will follow all applicable safety regulations and guidelines of federal, state, and local jurisdictions, all applicable OSHA safety regulations and guidelines, and Federal Construction Safety and Health Standards while carrying out activities related to the project.
- The following safety equipment will be available at all times onsite for personnel: first aid kit, portable emergency eyewash, chemical spill kit, fire extinguisher, Material Safety Data Sheets, and appropriate PPE.
- All handling of materials and non-native species management will comply with the guidance provided in the Wisconsin Natural Resources Code 40 (Chapter NR 40).

2. Watering

Watering to maintain the plant community zones is not expected to be necessary due to the hydric soils found on site. In drought situations, we may need to water some of the plant community zones to

maintain survivability necessary to meet the project goals. During our visits to maintain these zones, we will monitor the condition of the trees and shrubs and will schedule watering as necessary. In this instance, we will water the trees and shrubs using drip irrigation tree rings or bags and entire zone watering would be done with watering cannons. Water will be pulled from the harbor/lake or brought in via ATV's depending on site conditions.

3. Replacements

The contractor will work with the owner's representative to meet the performance standards outlined in the specifications. Replacements necessary to meet the performance standards will be determined by a joint yearly inspection conducted with the owner's representative and the contractor or otherwise as identified by the Owner. Replacements will be installed once during the 1- year warranty period within the planting periods as identified in the specifications within 30 days after written notification from the Owner's representative. Consideration for these replanting periods will be given for site conditions and weather. The contractor has the right to agree or disagree with replacements and offer alternative resolutions. Any agreed upon replacements will be installed during the next appropriate planting date as outlined in the specifications. Replacement trees and shrubs will be negotiated to determine what species are best suited for the site conditions. Some species may find the soil conditions on site to be more suitable than others and AES would like to plant more of the successful replacement species and have the option to remove replacement species that have shown poor survivability due to site conditions.

Replacements will occur:

- If less than 90% of the installed trees, shrubs, plants, and live stakes are living and healthy.
- If there is less than 75% total native vegetation coverage.
- If bare areas larger than 10 square feet exist.
- If vegetation is not in healthy condition.

Exclusions:

The contractor is not liable for replacement costs to seeds and plants damaged by extreme weather conditions (severe droughts/floods), plants not installed by the contractor, plants relocated or removed by others, acts of God, losses because of curtailment of water by local authorities, or damage by vandalism. Vegetation management is for the contracted bid items only. The contract does not include any management or guarantee for the past, current, or future addition of plantings by others throughout the

site. All care will be given in trying to avoid damage to plantings done by others. To minimize damage and increase visibility, the contractor requests flagging be installed and maintained on all plantings done by others that will be visible as the tall vegetation grows in. A location map is also requested for such plantings to be provided as a reference for the contractor. The contractor will only be liable for any contractor damage to plantings installed by others provided those plantings were flagged by the owner's representative.

4. Herbivory Fencing

Fencing of appropriate height and type to exclude herbivory grazing will be maintained in each zone that it applies to for the first full growing season. This includes the goose fencing, tree protectors, and carp fencing installed by the contractor and as directed by the owner throughout the warranty period.

REPORTING

1. Maintenance Logs

Maintenance logs will be filled out by the maintenance crews for every trip that occurs to the site, detailing specific areas and what activity occurred (herbicide treatment, mowing, watering, reseeding, replanting, herbivory fence repair, tree and shrub condition, etc.) The maintenance logs will be sent to the owner's representative/engineer within a week of the site visit.

Please see Appendix A for a copy of this log.

2. Pesticide Application Forms

All pesticide treatments will be recorded on a form, detailing the target area, type and amount of chemical used, and the target species. Maintenance crews will be recording this information. A copy of the pesticide application forms will be sent to the owner's representative/engineer within 30 days of application.

Please see Appendix B for a copy of these forms.

APPENDICES

Appendix A. Maintenance Log



MAINTENANCE LOG

Project: _____ Client: _____
By: _____ Date: _____ Time: _____
ABS Project Number: _____

Undesirable Species Control: _____

Irrigation: _____

Tree/Shrub Condition: _____

Replacements: _____

Herbivory Fence: _____

Other: _____

Owner Signature: _____

Date: _____

Copies: Owner A/E Contractor Consultants _____ _____ File

Appendix B. Herbicide Application Data Forms



APPLIED ECOLOGICAL SERVICES, INC.

17921 Smith Road, P.O. Box 256 Brodhead, WI 53520
 Phone: (608) 897-8641 • Fax: (608) 897-2044
 Email: info@appliedeco.com

SPECIALISTS IN ENVIRONMENTAL MANAGEMENT AND RESEARCH

HERBICIDE APPLICATION DATA FORM

DATE: _____ PROJECT MANAGER: _____

PROJECT NAME: _____ PROJECT #: _____

PROJECT LOCATION: (City, State) _____

APPLICATOR(S) NAME: _____ LICENSE #'S ON BACK OF PAGE

START TIME: _____ END TIME: _____ LABOR HOURS: _____

DESCRIPTION/LOCATION OF AREA TREATED (or as indicated on map): _____

VEGETATION TREATED: _____

CAUTION SIGNAGE PLACED: _____ REENTRY PERIOD: _____ MIXED LOAD SITE MAPPED: _____

✓	Equipment Used	✓	Method Used
	Backpack Sprayer		Spot Spray
	Glove Applicator		Broadcast Spray
	Hand Sprayer		Wick Application
	Wick Applicator		Stump Treat
	Tractor Sprayer		Other:
	ATV Sprayer		Other:

PRODUCT INFORMATION

Product Name	Spray Volume	Manufacturer	% a.i.	EPAF	Amount Used	Application Rate

WEATHER CONDITIONS: DIRECTION & WIND SPEED: _____ TEMPERATURE: _____ HUMIDITY: _____

(Please check one)

CLEAR: _____ PARTLY CLOUDY: _____ CLOUDY: _____

DID IT RAIN WITHIN 12 HOURS AFTER APPLICATION? _____ YES, if so, when: _____

_____ NO

*Product Labels and MSDS sheets are available by request free of charge

Revised 2-15-07

Notice: Completion of this form is a condition of the permit and provides records required by WDNR (NR 107) and DATCP (ATCP 29.21 and 29.22). The Department may not issue you future permits unless you complete and submit this form. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law [ss. 19.31-19.36 Wis. Stat.].

Submit this form: (1) immediately if any unusual circumstances occurred during treatment
 (2) as soon after treatment as possible, no later than 30 days
 (3) by October 1 if no treatment occurred

Completion of this form along with the permit satisfies the requirements of WDNR (NR 107) and DATCP (ATCP 29.21 and 29.22).

General Permit Information

Permit Number	Waterbody Name (including ponds, e.g. Smith Pond)			
County	Permit Holder Name (Customer Name)			
Permit Holder Address	City	State	ZIP Code	

Treatment Information

Treatment Date (mm/dd/yyyy)	Starting Time (24 hr)	Ending Time (24 hr)	Water Temp (°C)	Ambient Air Temp (°C)
Wind Speed (mph)	Wind Direction	Expected Duration of Chemical Residuals		
Adverse Conditions Noted (i.e., dead fish, spawning fish, algae bloom, etc.)				

If adverse conditions noted, indicate corrective actions taken

Onsite Supervision Present? Yes No If Yes, Supervisor Name

Mixing and Loading Site Location (if other than business site or from prepackaged retail container or applied with equipment with a total capacity of not more than 5 gallons liquid or 50 pounds dry)

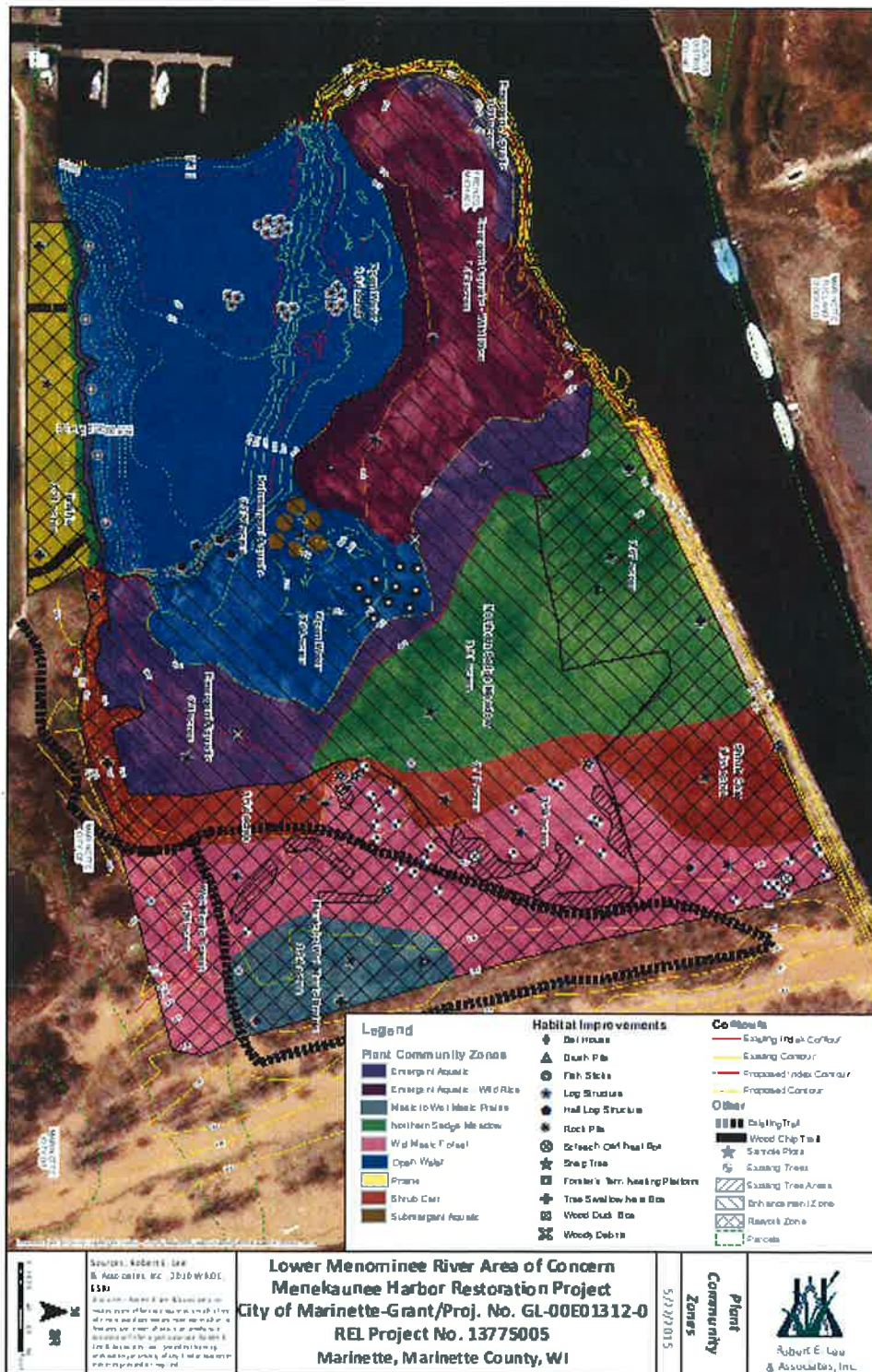
Herbicide Treatment and Water Use Restrictions Signs Posted in Accordance With NR 107? Yes No

Applicator shall provide each customer with a free copy of each pesticide label used (if requested)

Applicator Information

Individual or Business Name		Telephone Number	
Street Address			
City	State	ZIP Code	
Individuals Making Pesticide Application	Last Name	First	Certification #
	Last Name	First	Certification #
	Last Name	First	Certification #
Name of Person Completing Form	Signature	Date Signed	DNR Use Only Date Received

Appendix C. Site Map



Appendix D. Business & Applicator Licenses

**Wisconsin Department of Agriculture,
Trade and Consumer Protection
PO BOX 8911, MADISON, WI 53708-8911**

**NUMBER:
03-002104-019082**

COMMERCIAL PESTICIDE APPLICATION BUSINESS LIC
s. 93.703, Wis. Statutes

**EXPIRES:
12/31/2013**

**LICENSED BUSINESS LOCATION
APPLIED ECOLOGICAL SERVICES INC
W2836 DUNDAS RD
BRILLION WI**

**SUBJECT TO REVOCATION
AS PROVIDED BY LAW**

**MAIL ADDRESS
APPLIED ECOLOGICAL SERVICES INC
PO BOX 256
BRODHEAD WI 53520**

DOING BUSINESS AS:

THIS LICENSE IS NOT TRANSFERABLE

POST OR CARRY AS REQUIRED BY LAW

2015 WI PESTICIDE APPLICATOR LICENSES

Last	First	License #	Exp Date	Cert. #	Category	Exp Date
Banach	Evan	298226-CA	12/31/2015	90130	1.1	3/31/2019
Campbell	Charles	149492-CA	12/31/2015	67694	1.1, 5.0	5/31/2015
deChrams	Cory	301287-CA	12/31/2015	95590	1.1	8/31/2019
Garbyszak	Thomas	292791-CA	12/31/2015	90718	1.1, 2.0, 5.0	12/31/2017
Germano	Jeffrey	302242-CA	12/31/2015	95568	3.0	8/31/2019
Gingench	Nathan	185254-CA	12/31/2015	70714	1.1, 5.0	5/31/2015
Kraemer	Joshua	185255-CA	12/31/2015	70715	1.1, 5.0	6/30/2016
Krogstad	Tad	287691-CA	12/31/2015	91793	1.1, 3.0, 5.0	3/31/2018
Kubichka	Aaron	146291-CA	12/31/2015	54107	1.1, 5.0	4/30/2017
LaPointe	Joshua	150783-CA	12/31/2015	69736	1.1, 5.0	6/30/2019
Solawetz	Alex	268275-CA	12/31/2015	87864	1.1, 5.0	5/31/2016
Walker	Robert	199025-CA	12/31/2015	72124	1.1, 5.0	4/30/2017
Location		WDA/CP Business Lic.			Exp Date	
AES - Brodhead, WI		93-002104-002104			12/31/2015	
AES - Prior Lake, MN		93-017946-014832			12/31/2015	
AES - Appleton, WI		93-002104-019082			12/31/2015	
AES - West Allis, WI		93-002104-009727			12/31/2015	