

Long-Term Maintenance Plan

Joliet Junior College
1215 Houbolt Road, Joliet, Illinois

USCOE Permit No. LRC-2008-152
STS Project No. 200606159

July 30, 2008

Ms. Kimberly Fisher-Kubiak
Regulatory Branch
US Army Corps of Engineers (USACOE)
111 North Canal Street, Suite 600
Chicago, Illinois 60606-7206

Re: Long-Term Maintenance Plan
Joliet Junior College Lake Management Project
1215 Houbolt Road, Joliet, Illinois
USCOE Permit No. LRC-2008-152 -- STS Project No. 200606159

Dear Ms. Fisher-Kubiak:

STS, on behalf of Joliet Junior College, submits the attached long-term maintenance plan for the above-referenced lake management site at Joliet Junior College Lake in Joliet, Illinois. This plan is part of a holistic water quality management approach which will include participation from the staff and students of Joliet Junior College. As the Lake is a central aesthetic feature of the Joliet Junior College campus, the college is committed to improving its water quality using the maintenance practices outlined in this plan. Please contact Michael Baker at (847) 279-2589 if you have any questions or comments.

Sincerely,

Michael A. Baker, EIT, CFM
Assistant Project Engineer

William J. Weaver, PE, D.WRE
Senior Principal Engineer – Vice President

Table of Contents

1.0	Introduction	1
1.1	General	1
2.0	Management Plan for Restored Natural Areas	1
2.1	Control of Undesirable Plant Species	1
2.1.1	<i>Undesirable Plant Control Techniques by Species</i>	1
2.2	Native Plant Management.....	2
2.4	Soil Erosion Control Management	3
2.5	Site Monitoring Visits and Recording/Reporting	3
Table 1:	Planned Annual Maintenance Schedule	3

1.0 Introduction

1.1 General

A long-term wetland maintenance plan will be implemented for the mitigation area created on the Joliet Junior College Lake Management Site. The following sections present the management and maintenance plan for the created wetland and buffer areas on the northeast end of Joliet Junior College Lake.

2.0 Management Plan for Restored Natural Areas

A restored natural area at Joliet Junior College Lake includes the created wetland area on the north end of the lake planted in native vegetation. Implementation of specific management techniques shall be determined in the field based upon the individual characteristics and performance of the various restoration areas. Standard management protocols will include undesirable species control, and native plant management.

2.1 Control of Undesirable Plant Species

Control of undesirable plant species, when present in small quantities, shall be handled by hand-pulling prior to the development and maturity of the plants, recognizing that the timing of plant removal can be important in controlling invasive weed species. Hand-pulling shall include the removal of all above-ground and below-ground stems, roots, and flower masses prior to the development of seeds. Care shall be taken to disturb as little soil as possible during hand-pulling to avoid exposure of additional weed seed in the soil layer.

Under most circumstances, selective herbicide application will be utilized. Systemic herbicides are generally used because they are absorbed through the plant tissues and work their way into the root system, effectively killing the plant. Wetland areas shall be treated with herbicides which are approved for aquatic use or products specifically designed for wetland systems.

Herbicides may be applied through a variety of means. Selective spot spraying or hand wicking is very effective for smaller areas. For larger areas, mechanical sprayers or wicking systems may be used based upon the time of year and coverage of weeds. Systemic herbicides may be applied to planted areas in the spring, prior to the emergence of the warm season native plants, or in the fall, once the native species have gone dormant. A qualified contractor shall be consulted prior to applying herbicides.

2.1.1 Undesirable Plant Control Techniques by Species

Reed Canary Grass (*Phalaris arundinacea*): This common Eurasian invasive species shall be managed by the application of Fusilade™ herbicide whenever individuals or colonies affect the desired wetland community balance as determined by the JJC land laboratory staff.

Giant Reed (*Phragmites australis*): This species shall be managed using Aquaneat™, Habitat™ or a similar broad-spectrum systemic herbicide approved for aquatic application. This herbicide would be applied as the flowers have begun to set seed in late summer and early fall when the desired wetland community balance as determined by the JJC land laboratory staff is affected.

Sandbar Willow (*Salix exigua*): These species will be controlled by hand-cutting and applying Garlon 4™ (a 25% solution in basal oil) or a 50% Roundup™ solution to the cut stumps.

Teasel (*Dipsacus ssp.*): Teasel will be controlled by application of broad-leaf specific herbicides such as Lesco Momentum 2-4D™ or similar non-chloropyralid herbicides.

Purple Loosestrife (*Lythrum salicaria*): This species shall be controlled using Aquaneat™, Habitat™ or a similar broad-spectrum systemic herbicide approved for aquatic application as determined by the JJC land laboratory staff. In areas where no standing water is observed, Lesco Momentum 2-4D™ may be used. Late spring and early summer applications are recommended, to avoid allowing the plant to set seed. Additional applications shall be implemented according to site conditions.

Canada thistle (*Cirsium arvense*): This species shall be controlled using Lesco Momentum 2-4D™ as determined by the JJC land laboratory staff. Late spring and early summer applications are recommended to avoid allowing the plant to set seed. Additional applications shall be implemented according to site conditions.

2.2 Native Plant Management

Weed growth may be treated by hand pulling, spot spraying or wicking. Broadcast spraying of herbicides shall only be conducted in the early spring or late fall during times when the warm season native plants are dormant, and then with great care to ensure that the native plants will not be harmed. Periodic mowing may also be conducted. The appropriate weed control protocol shall be determined in the field by the JJC land laboratory staff. . By the end of each growing season, a decision may be made as determined by the JJC land laboratory staff as to the necessity of supplemental seeding or planting.

2.4 Soil Erosion Control Management

If soil erosion problems such as rills, gullies or bank sloughing are observed, all appropriate erosion control measures (erosion blanket, hydromulch, etc.) shall be installed according to the manufacturers directions and/or accepted industry standards and properly maintained.

2.5 Site Monitoring Visits and Recording/Reporting

One or two annual site monitoring visits during the growing season by the JJC land laboratory staff shall be conducted each year. JJC shall assess and record problems from erosion, undesirable plant species and the general condition of the wetland. These observations shall be recorded in a memorandum along with appropriate photo-documentation.

Table 1: Planned Annual Maintenance Schedule

Control Method	March/April	May	June	July	Sept./ Oct.	Nov./Dec.
Mow/Cut	All Brush					All Brush (spot mow)
Burn	Optional					Preferred
Herbicide		Thistles, Teasel	Reed Canary, Teasel	Loosestrife, Reed Canary	Loosestrife, Giant Reed, Teasel	

REFERENCES

Carroll, C. and J. White. 1997. Integrated Pest Management Pest Management Methods for Control of Invasive Exotic Plant Species at Midewin National Tallgrass Prairie. Ecological Services, Urbana, Illinois.

Hoffman, R. and K. Keans. 1997. Wisconsin Manual of Control Recommendations for Ecologically Invasive Plants. Bureau of Endangered Resources. Department of Natural Resources, Madison, Wisconsin.

Hubbard, K. 2008. P. Clifford Miller, Landscape Technical Specialist. Verbal Communication.