

# Como Golf Course North Pond Buffer Ecological Management Brief



Capitol Region Watershed District  
Saint Paul, MN

February 12, 2016



# COMO GOLF COURSE NORTH POND BUFFER

Ecological Management Brief  
By Capitol Region Watershed District

Project conducted in partnership with the City of St. Paul

Report prepared by Applied Ecological Services, Inc.

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## 5 TASKS AND SCHEDULE

Restoration and management tasks are presented on the assumption that work will begin in early 2016. If the project is delayed, tasks can be postponed but should still take place in the season and sequence specified below.

### 5.1 Restoration and Management Task Summary

**Prairie (1.0 acres).** Work begins with removal or moving of conifers and perhaps deciduous trees from the planting area. Tall herbaceous vegetation will be cut and the planting area burned. Site preparation requires three herbicide applications, with planting occurring in the second year. If desired, live plants can be plugged after seeding to increase the diversity of forbs.

To minimize bringing weed seeds to the surface, a state seed mix with cover crop (35-641 or 35-241) will be broadcast and lightly harrowed to establish good seed-soil contact. The choice of the state seed mix will depend on the success of weed control. The southeast mesic prairie mix (35-641) will be used if weed competition is judged to be below average, and the general prairie mix (35-241) if weed competition is judged to be greater than average.

Short term management in the restoration year and for two more years consists of small tractor mowing and spot-herbiciding with backpack sprayers. After the third full growing season after planting, a prescribed burn will occur.

**Pond Edge (0.1 ac).** At the same time as the prairie seeding occurs, the emergent and wet zones along the pond edge will be planted with live plants of species already present or ones that will readily establish and add plant variety (Table 1). Plants will be 2-inch plugs (48 per tray) to minimize cost while maximizing plant growth potential. Mowing and spot-herbiciding will be employed to control weeds. Mowing will be with weed whips.

**Erosion Prevention and Control.** Erosion will be prevented and, if necessary, controlled. If erosion control blanket (ECB) is required, seeding should occur before laying down ECB. Use biodegradable #3 (or S75 or S100), which allows plant seedlings to develop and degrades quickly to reduce fatalities of snakes, frogs and others. Edges of the ECB should be well-staked. The seepage areas on the lower slope should be marked and vehicles should steer around them.

#### 1. Prevention

- a. Install silt fencing at the base of slope between the grassland and pond edge planting areas.
- b. Prepare SWPPP if necessary

#### 2. Control

- a. Regularly inspect planting areas for indications of incipient erosion
- b. If necessary, install erosion control BMPs (biologs or bales where flow is concentrated and forming micro-ravines, ECB where sheet flow is causing rill erosion)

**Protection of the Plantings.** Plantings are expected to attract and be grazed by geese. To reduce losses, goose-proof fencing should be erected and maintained around the plantings until the vegetation in late summer and fall covers 80 percent of the ground and is 30 inches or taller.

**Irrigation.** Irrigation can be used to stimulate weed germination during site preparation and enhance growth during drought. After the first spraying for site preparation (below), the area can be irrigated until the top one inch of soil is saturated. This may stimulate the weed seed bank and reduce future weed seed germination. After the native prairie seeding, the planting may be irrigated to make up for lost precipitation during severe drought, especially if live plant plugs were installed. For example, if no

rain falls in July, and if August is predicted to remain dry, plantings could be irrigated with the precipitation amount that was not received in those two months.

## 5.2 Restoration and Management Task Detail

Table 3. Task schedule and detail

Year	Timing	Task	Detail
<b>2016</b>	<b>Site Preparation (2016-2017)</b>		
	Feb-Mar	Tree removal	Cut 2-3 mature spruce; spade & move 3 young white pine; cut 1 mature green ash; spade 1 young red maple?
	Mar-May	Burn 1	Remove vegetation to facilitate seeding & planting; cut silver grass to a height of 2-3 feet when cutting fire breaks; protect trees at northwest corner; burn after at least three warm, windy days to dry out litter layer to ground level
	Jun	Spray 1	RoundUp or similar; use aquatic formulation at water's edge; apply with <2 mph wind and no rain; ATV spray rig recommended; backpack pumps at water's edge to protect willows, bulrush, and marsh aster
	Jul	Mow 1	Mow vegetation to 1 inch height with power mower; slope can accommodate tractor or ATV; do not mow when soil is wet; use weed whips near shoreline to protect willows, etc.
	Jul	Alternative cattail control	Two options: a) Cut and flood – cut cattails as far below average water level as possible; raise pond water level by placing stop log at outlet; target depth over cut cattail stem is 5-6 inches; hold water level above cattail stems for 4-8 weeks, then remove stop log; a second year of treatment may be required; b) Repeat cuttings – cut cattails as far below average water level as possible, and repeat cutting at intervals to keep cattail stems below the water level at all times (compensate for dry periods when water levels fall); a second year of treatment may be required
	Aug-Sep	Spray 2	As for Spray 1
<b>2017</b>	<b>Restoration &amp; Short Term Management (2017-2019)</b>		
	May-Jun	Spray 3	As for Spray 1

Year	Timing	Task	Detail
	Jun	Seed & cover crop prairie (see alternate below)	Broadcast seed with cover crop using State Seed Mix 35-641 (Mesic Prairie Southeast) if weed competition below average, or State Seed Mix 35-241 (Mesic Prairie General) if weed competition above normal; use recommended rates and oat cover crop; lightly rake with harrow on tractor or ATV; light raking should not penetrate deeper than 1/4 -1/2 inch; slope is not steep and roots from prior vegetation will hold soil, but prevent and control erosion if necessary (see Section 5.1 above)
	Jun	Plant plugs at shoreline	Plant plugs of wetland species in Table 1; recommend 2-inch plugs grown in trays of 48 each to reduce costs; plant on 1-foot centers from 6 inches below water (emergent species) to 1 foot above ordinary high water level (wet species); requires about 2450 plugs if plants are at center of 1-foot square (about 15 inches apart) or 4350 if plugs are exactly 1 foot apart; assume 10% fewer plugs to account for willow, bulrush, and marsh aster patches
	Jul-Aug	Mow 2	When vegetation reaches 12-16 inches height, mow to 6-8 inches; do not mow when soil is wet
	Sep-Oct	Mow 3	As for Mow 2
	Oct	Alternate - spray 4	If necessary, spot-spray dense patches of invasive and aggressive perennial weeds (e.g., silver grass, thistle, bluegrass, clover, creeping charlie, broad-leaved plantain) with RoundUp or equivalent; in first growing season, such patches may not develop
	Oct-Nov	Alternate- seed & cover crop prairie	Broadcast seed with cover crop using State Seed Mix 35-641 (Mesic Prairie Southeast) if weed competition below average, or State Seed Mix 35-241 (Mesic Prairie General) if weed competition above normal; use recommended rates and winter wheat cover crop; lightly rake with harrow on tractor or ATV; light raking should not penetrate deeper than 1/4 -1/2 inch; slope is not steep and roots from prior vegetation will hold soil, but prevent and control erosion if necessary (see Section 5.1 above)
<b>2018</b>			
	May-Jun	Mow 5	As for Mow 2

Year	Timing	Task	Detail
	Jul	Spray 5	As for Spray 4
	Jul-Aug	Mow 5 (alternate)	As for Mow 2
	Sep-Oct	Spray 6	As for Spray 4
<b>2019</b>			
	Jun-Jul	Spray 7	As for Spray 4
	Aug-Sep	Spray 8	As for Spray 4
<b>2020</b>	<b>Perpetual Management (2020-Indefinitely)</b>		
	Mar-May	Burn every 3 years	Write burn plan identifying fire breaks, ignition and burning sequence and weather conditions suitable for burning; removal of dead vegetation is major purpose of burn, but woody plant removal and stimulation of flowering are also expected to occur; install fire breaks as necessary and mow near trees in northwest corner to reduce flame length and avoid scorch; obtain burn permit from MnDNR; execute burn within weather window of burn plan; inspect and document percent leaf litter removed
	May-Jun	Seed & plant as needed	Where native plant cover is damaged or removed, reseed according to original seeding specifications
	July	Spray every year as needed	As for Spray 4
	Aug-Nov	Inspect each year & plan next year's work	Note issues and recommend solutions each time the site is visited; maintain good records in spreadsheet or similar document; in late summer or early fall complete a walkabout to confirm work required in next year; establish a budget for the work and secure funding

## 6 ATTACHMENTS

State Seed Mix 35-641 (Mesic Prairie Southeast)

State Seed Mix 35-241 (Mesic Prairie General)