

**MEETING DATE:** August 13, 2015

**TITLE:** Authorization to enter into an agreement with Waterfront Restoration for hand removal of Flowering Rush in Lake Minnetonka

**RESOLUTION NUMBER:** 15-XXX

**PREPARED BY:** Eric Fieldseth, AIS Program Manager

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**TELEPHONE:** 952-471-7873

**REVIEWED BY:**  Administrator  Counsel  Program Mgr. (Name): Craig Dawson  
 Board Committee  Engineer  Other

**WORKSHOP ACTION:**

<input checked="" type="checkbox"/> Advance to Board mtg. Consent Agenda.	<input type="checkbox"/> Advance to Board meeting for discussion prior to action.
<input type="checkbox"/> Refer to a future workshop (date): _____	<input type="checkbox"/> Refer to taskforce or committee (date): _____
<input type="checkbox"/> Return to staff for additional work.	<input type="checkbox"/> No further action requested.
<input type="checkbox"/> Other (specify):	

**PURPOSE or ACTION REQUESTED:**

Authorization to enter into an agreement with Waterfront Restoration for hand removal of Flowering Rush in Lake Minnetonka, and further the evaluation of the method as a control tool.

**PROJECT/PROGRAM LOCATION:**

Lake Minnetonka – multiple sites

**PROJECT TIMELINE:**

September – October 2015

**PROJECT/PROGRAM COST:**

Fund name and number: AIS (5005)

Current budget: \$40,000 for Flowering Rush Pilot

Expenditures to date: \$4,500 for pre-removal survey completed by Blue Water Science

\$500 is budgeted for herbicide treatments in the rocky substrate of Maxwell Channel

\$5,850 was approved by the Board in March for Flowering Rush survey on Minnehaha Creek by Blue Water Science

Requested amount of funding: \$24,000

## **PAST BOARD ACTIONS:**

8/25/2011

- Board approved authorization to hire Waterfront Restoration to pilot a non-chemical program to control flowering rush in Lake Minnetonka

7/26/2012

- Board approved authorization to extend contract with Waterfront Restoration to remove Flowering Rush on Lake Minnetonka

7/26/2012

- Board approved authorization to hire Blue Water Science (Steve McComas) to complete a flowering rush and substrate survey on MCWD Water Bodies

7/25/2013

- Board approved authorization to extend contract with Waterfront Restoration to remove Flowering Rush on Lake Minnetonka

7/10/2014

- Board approved authorization to extend contract with Waterfront Restoration to remove Flowering Rush on Lake Minnetonka

3/26/2015

- Board authorized an agreement with Blue Water Science to complete Flowering Rush survey on Minnehaha Creek from Grays Bay Dam to Lake Nokomis weir, as well assess areas of known Flowering Rush downstream of Nokomis weir

## **SUMMARY:**

A pilot program to evaluate the effectiveness of hand removal as a control option on the invasive aquatic plant, Flowering Rush, was started in 2011 on three sites in Lake Minnetonka. Hand removal appeared to be successful in soft sediments, but more difficult and not as effective in rocky substrate. Removal continued in the soft sediment sites, but not in the rocky substrate site (Maxwell Channel) until a herbicide treatment was performed in 2014. In 2013, hand removal was expanded from two sites to include eight additional sites.

Below in this summary is further data and analysis, but with the latest pre-removal survey from this year, it appears there are seasonal fluctuations with Flowering Rush, even on sites we have not managed. There is still an overall reduction in stem density in most managed sites since the start of the pilot, but Flowering Rush is more abundant this year than the past couple years. Lower water levels in the spring could have factored into this. While it may be more abundant in the known Flowering Rush areas, it does not seem to be spreading across the lake, and still encompasses less than one acre of the whole lake.

It would be preferred to have more years of data on all ten sites to properly evaluate the effectiveness of this strategy, especially taking into account there can be seasonal fluctuations.

If the Board chooses not to engage in removal, it would be important to still monitor the sites to see if they are expanding.

## **Evaluation of Pilot Program**

We now have 4 years of hand removal data on two sites, and an additional 2 years of data on hand removal in 8 other sites. To evaluate the effectiveness of this program, we have had our consultants collecting Flowering Rush stem density estimates at the sites prior to and after removal. Waterfront Restoration also has reported the wet weight biomass of the Flowering Rush they are removing from each site. The data tables below show stem densities for a number of sites we have surveyed over the past years, as well another table showing the wet weight biomass that has been removed. Estimating stem density has been challenging, and involves a bit of extrapolating. Waterfront Restoration is typically finding additional submerged stems once it starts the hand removal process. As you can see from the tables, stem density has decreased in some sites, some fairly substantial, but is more abundant in 2015 in most sites. There are even large fluctuations in sites we have not managed. More years of data to analyze would be ideal to look for long-term trends.

Site	Stems 2011	Stems 2012	Stems 2013	Stems 2014	Stems 2014 from Waterfront Restoration during removal	Stems 2015
2	200	30	0	34		3000
3		100	550	0	10	400
4		50	110	110	29	250
5		250	59,400	967	3500	6600
6		200	6,400	145	265	2400
7		100	1000	398	60	25
8		250	1800	75	520	400
9		80	550	275	205	1200
10	18368	649	600	2985	5072	13000
11		1050	400	115	192	700
14		50	600	11	11	300
<b>Maxwell Channel</b>	4658	5484	3800	2140		30400
1		2	400	100		3000
12		700	46000	1350		72000
13		600	56000	50000		48000

Hand Removal Performed  
Herbicide Treatment

Site	Biomass 2011	Biomass 2012	Biomass 2013	Biomass 2014	Biomass 2015
3			38	0.1	
4			5	0.7	
5			954	359	
6			1188	109	
7			104	11	
8			698	122	
9			81	37	
10	5152	483	309	413	
11	2700	880	268	25	
14			5	0.1	

**RESOLUTION**

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**RESOLUTION NUMBER: 15-XXX**

**TITLE: Authorization to enter into an agreement with Waterfront Restoration for hand removal of Flowering Rush in Lake Minnetonka**

WHEREAS, flowering rush has been identified as an invasive species that can grow in dense stands displacing native vegetation and interfere with recreational lake activities such as swimming and boating; and

WHEREAS, flowering rush was first identified in Lake Minnetonka in Maxwell Bay in 1976 and has continued to spread to eight additional bays in Lake Minnetonka; and

WHEREAS, MCWD Board approved a pilot program in 2011 to control flowering rush in Lake Minnetonka using Hand Removal Methods to be performed by Waterfront Restoration LLC; and

WHEREAS, Waterfront Restoration and Blue Water Science performed a survey in 2012 and concluded that hand removal of Flowering Rush in soft substrates appeared to be effective, while hand removal in hard substrates was not effective; and

WHEREAS, Blue Water Science conducted a Flowering Rush survey in fall of 2012 and concluded that it is not spreading rapidly and may be a containable population that can be reduced annually; and

WHEREAS, stem density and biomass have been decreasing since the start of the pilot, but in a number of sites has increased this season, possibly due to lower lake levels in the spring; and

WHEREAS, more years of removal in the ten sites is needed to properly assess the effectiveness of hand removal of Flowering Rush, taking into account there can be seasonal fluctuations along the way; and

WHEREAS, containment of AIS populations when feasible is a primary goal in the MCWD AIS Management Plan; and

NOW, THEREFORE, BE IT RESOLVED, to authorize the District Administrator to enter into a contract with Waterfront Restoration, upon approval of District Counsel as to form and execution, to continue hand removal in Lake Minnetonka at multiple sites. The amount expended shall not exceed \$24,000 and is contingent upon the MCWD or its contractor receiving a permit to do the work from the DNR.

Resolution Number 15-XXX was moved by Manager \_\_\_\_\_, seconded by Manager \_\_\_\_\_. Motion to adopt the resolution \_\_\_ ayes, \_\_\_ nays, \_\_\_ abstentions. Date: \_\_\_\_\_

\_\_\_\_\_  
Secretary Date: \_\_\_\_\_