



Prospect Heights Natural Resources Commission  
Implementation Plan for the Ecological Recommendations  
Presented in the Hey & Associates Survey of the  
Prospect Heights Slough and Hillcrest Lake

February 5, 2016

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## **PHNRC Recommended Action Plan for Prospect Heights Wetlands 2016**

**Abstract:** The Hey & Associates report commissioned by the Prospect Heights City Council is a thorough ecological assessment of the problems currently affecting the Prospect Heights Slough and Hillcrest Lake and makes recommendations for solving the problems, ongoing maintenance and solutions for remediating perceived “aesthetic” objections from residents who live in the proximity of the Hillcrest Lake and the Slough.

The Prospect Heights City Council has charged the Natural Resources Commission with creating a recommended action plan and budgets for implementation. The plan will make recommendations for the calendar year of 2016.

The PHNRC action plan will consider report recommendations and create a plan based on solutions that will most greatly benefit the wetlands without endangering them and will ensure its long term survival and sustainability for future generations.

### **Introduction**

Both natural wetlands, the Slough and Hillcrest Lake are in a state of eutrophication. Eutrophication is the enrichment of fresh water bodies by inorganic plant nutrients (e.g. nitrate, phosphate) and one of the biggest problems plaguing US fresh waterways. Left unchecked, the water will eventually become land. Decisive action is required in order to curtail the process to the fullest extent possible and reduce incoming high nutrient loads in order to preserve and improve the current state.

### **Purpose and scope**

The purpose of this plan is to make recommendations to the Prospect Heights City Council for implementation actions and ongoing maintenance policy, based on the recommendations outlined in the Hey and Associates report.

The scope of the PHNRC implementation plan will be on **prevention, wellness and maintenance** as a means to that end. The goals will be to establish and employ sound ecological principals and procedures to ensure the health and well being of the total wetland and its tributary watershed.

**Prevention** is key in reducing or eliminating the things that have contributed to and in turn created the current state of the wetlands. Starting with the tributary watershed all the way through to the lake, every attempt should be made to eliminate, control or reduce problematic conditions before they enter or affect the water.

**Wellness** is the process of monitoring water quality, plant life, insects and wildlife at regular intervals to assess the health of the whole ecosystem, verify the effectiveness of the actions taken and suggest changes where necessary as called for by this plan.

**Maintenance** is what will sustain conditions and promote stability on a continuum.

### **Summary of the Hey Report**

#### **Main Problems:**

1. Shoreline erosion
2. High nutrient loads
3. Excessive native aquatic growth
4. Large goose population
5. Shallow water depth
6. Invasive plant species, land and aquatic

#### **Recommended Solutions:**

1. Removal of turf grass at the shorelines
2. Re-vegetation of shorelines with native plants
3. Reduction of goose populations
4. Removal of invasives
5. Possible treatment of aquatic vegetation at the lake
  - a. Do no treatments
  - b. Herbicide or partial herbicide
  - c. Hand controls
  - d. Raise the water levels.
  - e. Other solutions
6. Community outreach and education
7. Detain, retain or filter incoming storm water
8. Separate management plans for the Lake and Slough
9. Controlled burns or scheduled mowing

### **PHNRC Recommended Plan of Preventative Action - 2016**

This plan will address problems and solutions of the three main areas individually. They are the Tributary Creek, Consisting of Lyons Park, The Sports Complex and the Residential Area, the Slough and Hillcrest Lake. (Fig. 1). The entire watershed, (Appendix C) will be addressed with the community outreach and education programs to promote best management practices.

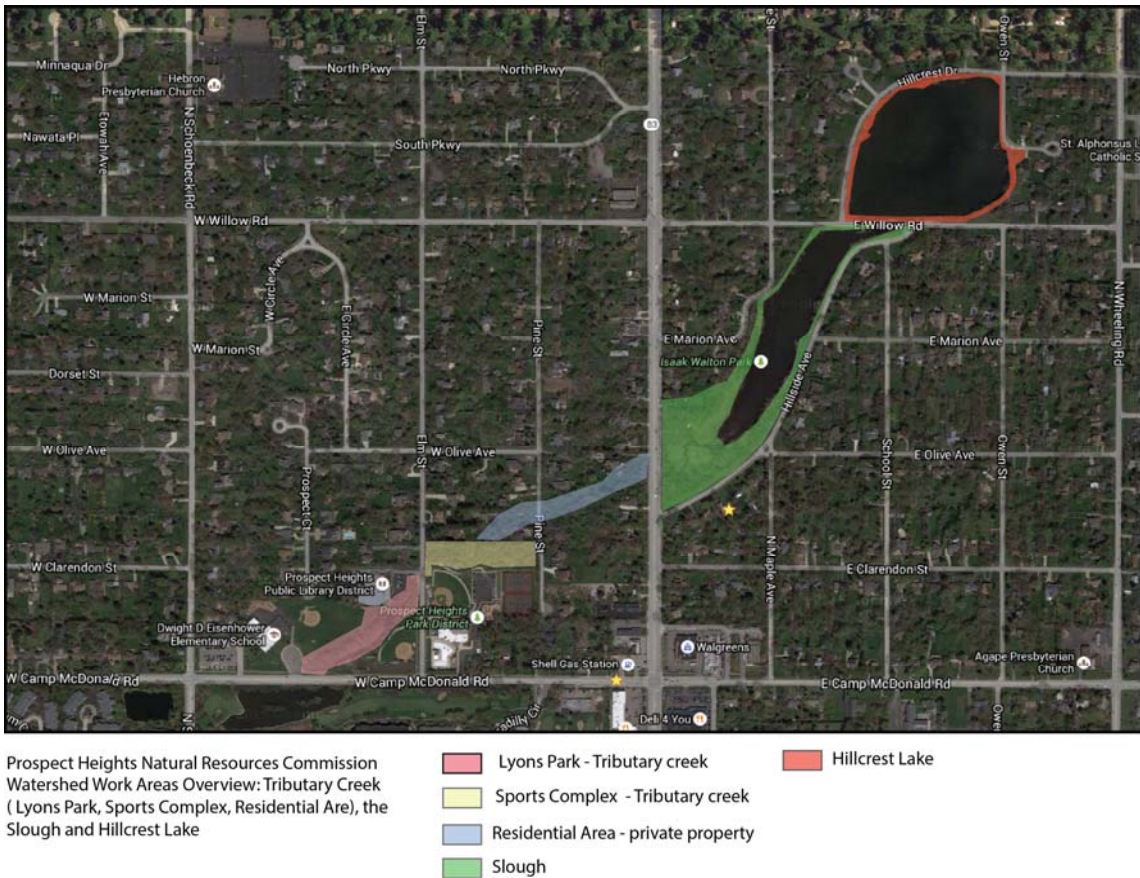


Fig. 1

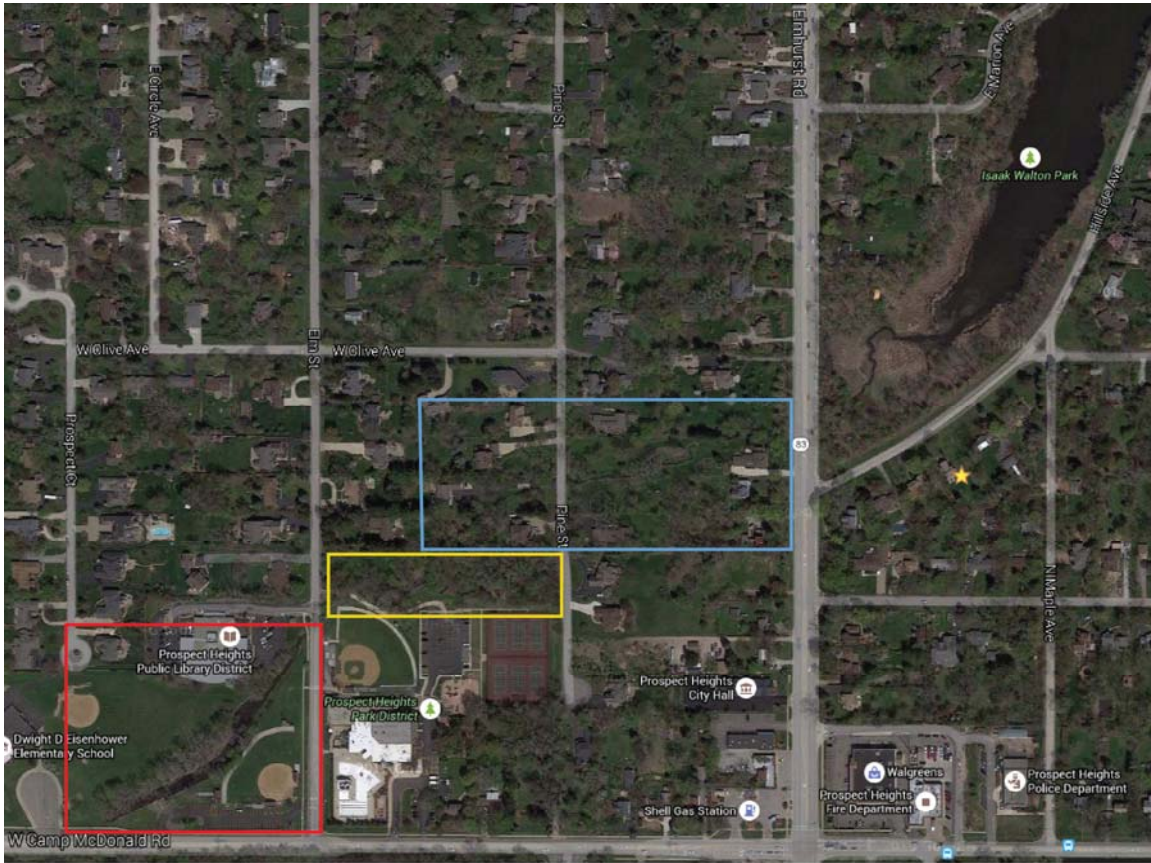
It is our opinion that the condition of the Elodea overgrowth in Hillcrest Lake is a byproduct of the entire watershed and the conditions that it collectively creates. High nutrient loads from the tributary creek all the way down, in addition to the storm water culverts and surface runoff that drain directly into the Slough and Hillcrest Lake, combined with significantly lower water levels have escalated the native Elodea to its present level of growth

Making changes in those areas will, over time, impact the amount of nutrient overload coming into the watershed fueling the aquatic overgrowth.

**Tributary Creek – Problems: Shoreline erosion, contaminated storm water runoff, invasives, goose population.**

The tributary creek begins at Camp McDonald Road, progresses through Lyons Park, the public library, the sports complex and through the residential neighborhood. These work areas are defined on (Fig 2).





Prospect Heights Natural Resources Commission  
 Tributary Creek Work Areas- Lyons Park & Public Library ■ Sports Complex ■ Residential Area ■

Fig. 2

**1. Lyons Park and Public Library** - The plan calls for removing invasive plants, removing turf grass and planting 2.75 acres of vegetated buffer strips to retain and filter contaminated storm water runoff before it can enter the tributary creek. Changing the turf grass to native buffers will provide inhospitable habitat for congregating geese and the deep root systems will stabilize the shoreline.

**Actions**

- a. Create large, deep rooted vegetated buffers along creek
  - 1. Herbicide existing turf areas
  - 2. Reseed with site specific native grass and sedge species
  - 3. Plant native trees and shrubs.
  - 4. Augment buffers with flowering natives (seed and plugs)
  - 5. Create mow paths for public access
- b. Remove invasives

**2. Sports Complex Area** - This area is heavily infested with buckthorn and other invasives. The plan calls for removing invasive plants and planting 2.25 acres of vegetated buffer strips to retain and filter contaminated storm water runoff before it can enter the tributary creek. Changing the smaller areas of turf grass on the

public side to native buffers will provide inhospitable habitat for congregating geese. These buffers would feature showier flowering native plants.

Actions

- a. Create large, deep rooted vegetated buffers along creek
  2. Herbicide existing turf areas
  3. Reseed with site specific native grass and sedge species
  4. Plant native trees and shrubs.
  5. Augment buffers with flowering natives (seed and plugs)
  4. Create mow path for public access
- b. Remove invasives

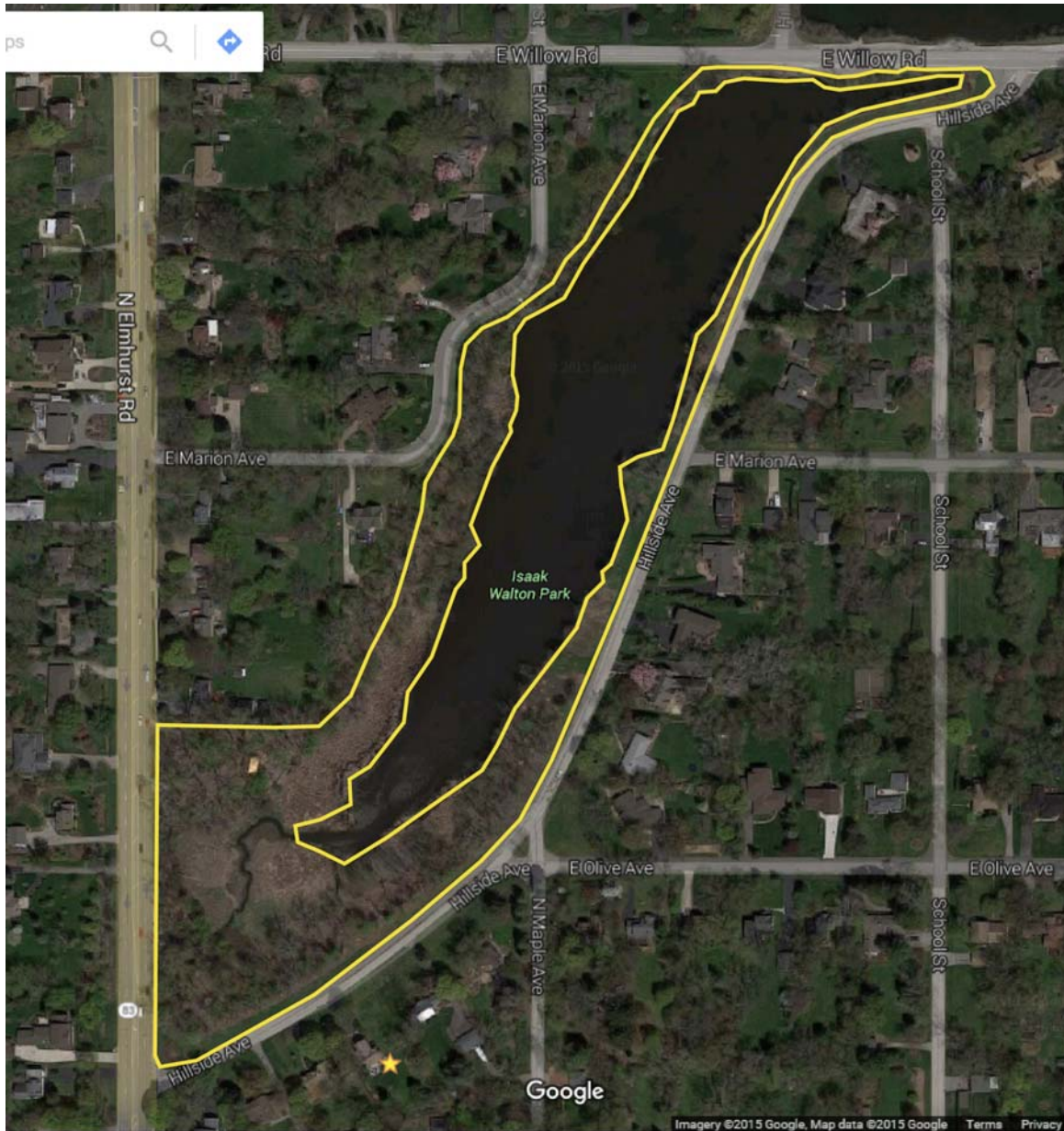
**3. Residential area** - As this is private property, PHNRC would begin with an outreach program to the residents immediately in the residential zone. PHNRC would offer to do the work free of charge or ask the residents to do the work themselves. This area has a limited amount of buckthorn but does contain a great deal of invasive reed canary. As it is immediately upstream from the Slough, it will continue to be a seed source for the reed canary infestation that plagues the east end of the slough. The plan would call for removing invasive plants, removing turf grass and planting vegetated buffer strips to retain and filter contaminated storm water runoff before it can enter the tributary creek. Changing the turf grass to native buffers will provide inhospitable habitat for congregating geese and the deep root systems will stabilize the shoreline.

Actions

- a. Educational outreach to residents to determine if work can be done on their property and who will be doing it.
- b. Encourage native planting, reduce the use of fertilizers and adopt natural landscaping with native plants.
- c. Create large, deep rooted vegetated buffers along creek where permitted.
  2. Herbicide existing turf areas
  3. Reseed with site specific native grass and sedge species
  4. Augment buffers with flowering natives (seed and plugs)
- d. Remove invasives
- e. Promote rain barrel programs to hold storm water

**Slough – Problems: Shoreline erosion, nutrient overload, invasive aquatic growth, goose population, invasive plant species, contaminated storm water runoff.**

The Slough area begins at Elmhurst Road and continues northeast to Willow Road. The work area is defined on (Fig 3).



Prospect Heights Natural Resources Commission  
Slough Work Area - 

Fig 3

**1. Slough** - The plan calls for removing invasive plants and turf grass and planting 8 acres of vegetated buffer strips to retain and filter contaminated storm water runoff before it can enter the Slough. Changing the turf grass to native buffers will provide inhospitable habitat for congregating geese and the deep root systems will stabilize the shoreline. Native aquatic plantings from the shoreline out into the water will enhance shoreline visual appeal while providing habitat and shading out other aquatic plants.



There is no action to be taken for seasonal Duckweed accumulations at the Slough. Duckweed is a valuable food source for water fowl, habitat for frogs and fish, is very good at absorbing excess nutrients and producing shade which can reduce certain growths of algae and other aquatic plants. With the possible elevation of water levels in the watershed, the duckweed will be more fluid. Educational programs can help change public perception.

#### Actions

- a. Create deep rooted vegetated buffers along the slough
  1. Herbicide existing turf areas
  2. Reseed with site specific native grass and sedge species
  3. Plant native trees and shrubs.
  4. Augment buffers with flowering natives (seed and plugs)
  5. Create mow path for public access
- b. Remove invasives
- c. Create aquatic plantings from the shoreline out into the water
- d. Educational outreach to residents of the Slough and Lake watershed to encourage native planting, reduce the use of fertilizers and adopt natural landscaping.
- e. Community outreach rain barrel program

**Hillcrest Lake – Problems: Shoreline erosion, nutrient overload, non-invasive aquatic growth, goose population, invasive plant species, contaminated storm water runoff.**

The Hillcrest Lake area begins at Willow Road and is bounded by Hillcrest Drive and Owen Court. The work area is defined on (Fig 4).



Prospect Heights Natural Resources Commission  
Hillcrest Lake Work Area

Fig. 4

**1. Hillcrest Lake** - Elodea is a native submergent plant that has risen to aggressive levels at the Hillcrest Lake. We believe that the condition of the Elodea overgrowth in Hillcrest Lake is in part a byproduct of the entire watershed and the conditions that it collectively creates. High nutrient loads from the tributary creek all the way through the system in addition to the storm water culverts and surface storm water that all drains directly into the Slough and Hillcrest Lake, large amounts of nutrient rich goose feces combined with significantly lower water levels have escalated the Elodea levels to their present levels. Other contributing factors include the silty bottom and lack of turbidity in the water.

Elodea is an important part of a healthy ecosystem. It excels at using up excess nutrients, provides vital habitat for amphibians, invertebrates and fish. It is the reason that the lake is so clear and is an important food source for ducks, muskrats and turtles.

We consider the Elodea overrun to be an aesthetic problem as opposed to an ecological problem and take opposition to the use of herbicides to control

aesthetic issues. We are strongly opposed to using herbicides to remove the native Elodea in total or as a partial treatment as the risks to the ecosystem far outweigh the gain.

The two biggest concerns are economic and ecological. Once you start with chemical treatments in the water, you are often committing yourself to a never ending cycle of mandatory applications year after year and more likely that not, multiple times a year. Ten to thirteen thousand dollars every year for a clear water surface for 2 months out of the year does not make economic or common sense to us. Annual expense aside, the more significant ecological issue of what comes in next to replace it may cause the most harm; invasive milfoil, curly pond weed, algae, or worse yet, toxic blue green algae. This represents significant problems that mandate the use of herbicides and valuable resources.

Perhaps the advice of Senior Biologist Michael Adam at the Lake County Lakes Management Unit provides additional understanding.

*"In my experience, once you start an herbicide program it is difficult to get out of that cycle. I'm assuming by the photograph that the lake is shallow. You are correct that since it has high phosphorus, an herbicide treatment may result in severe algae blooms. Something is going to use those nutrients. In situations like this where there are natives dominating the waterbody, an herbicide treatment may either "flip" the lake from a plant dominated one to an algae dominated one (at which point you may be compelled to chemically treat the algae, sometimes several times per year, depending on your constituents demands), or you may open the door for invasives to creep in, making the situation worse. In general, we have also seen herbicide programs start small then gradually increase, using more and more product, often treating the entire lake. If you were looking for a compromise, maybe creating a management plan for the lake that allows for some treatments (say 1/3 of the lake), while leaving other portions untouched. It depends on what you want to use the lake for. If it's purely for ecologic reasons, I would not treat."*

*Michael Adam, B.S., M.S. – Senior Biologist  
Lake County Health Department Ecological Services Unit*

The plan calls for removing invasive plants surrounding the lake, removing turf grass and planting 3 acres of vegetated buffer strips to retain and filter contaminated storm water runoff before it can enter the Lake. Changing the turf grass to native buffers will provide inhospitable habitat for congregating geese and the deep root systems will stabilize the shoreline. Native floating leaved aquatic plantings from the shoreline out into the water will enhance the shoreline's visual appeal while providing habitat and shading out other aquatic plants.

Based on recommendations from the IDNR Fish and Wildlife Frank Jakubicek we would also advise temporarily screening off the carp from the Slough during spawning season to increase the turbidity of the water at the lake. This may lead to a mutual benefit; decrease the amount of Elodea at the Lake while increasing the success of shoreline aquatics at the Slough.

Further, PHNRC has been involved in discussions with MWRD and IDNR to acquire a permit for a managed weir to raise water levels at the lake. While it is too early in the process to guarantee it as one of the key solutions to the aesthetic problem at the lake, we are confident that it will become a key component. Raising the water levels will help submerge the Elodea, increase the distance that the sunlight has to travel and restore previous conditions that kept the Elodea in a more balanced growth pattern.

In Lieu of herbiciding native Elodea, the condition should see improvement from increased water levels, decreased nutrient loads, floating leaved aquatic plants and retaining carp in the lake to increase turbidity. Educational programs in conjunction with a more visually appealing shoreline should also help change public perception.

#### Actions

- a. Remove invasives
- b. Create deep rooted vegetated buffers along the slough
  1. Herbicide existing turf areas
  2. Reseed with site specific native grass and sedge species
  3. Plant native trees and shrubs.
  4. Augment buffers with flowering natives (seed and plugs)
  5. Create mow path for public access
- c. Create aquatic plantings from the shoreline out into the water
- d. Educational outreach to residents of the Slough and Lake watershed to encourage native planting, reduce the use of fertilizers and adopt natural landscaping
- e. Community outreach rain barrel program
- f. Increase water levels
- g. Carp fencing to keep carp in the lake

In the event that City Council wishes to proceed with herbiciding due to public pressure, it would be in opposition with the recommendations of the Natural Resources Commission. Our only recommendation in that instance would be to use Hey and Associates for a partial, spot application selectively applied. The proposal is number 16-0038 and is attached as Appendix C. Hey and Associates would be our only recommendation based on their environmental sensitivities and thorough understanding of the wetland.

### **Recommended Wellness Action Plan 2015-2016**

Monitoring and keeping records is essential to assessing the wellness of an ecosystem. Monitoring plant species, soil composition, water quality, wildlife, amphibians, bird migrations and insects are key indicators to the health of the habitat they exist in. Recording the results of those investigations provides a historical record with which the results can be compared so judgments can be made about the steps that have been taken, how effective they have been and if changes need to be made.

1. Establish baselines for all categories
2. Establish a monitoring schedule unique to each category based on predetermined criteria for that category
3. Keep the historical record, set guidelines for review and adjustments
4. Categories
  - a. Plants
  - b. Soil
  - c. Water quality
  - d. Wildlife
  - e. Amphibians
  - f. Birds
  - g. insects
  - h. Education and outreach

### **Recommended Maintenance Action Plan 2015-2016**

1. Make adjustments based on monitoring
2. Continue invasive removal
3. Continue seeding and replanting efforts
4. Prescribed burns
5. Scheduled mowing

Decisions will need to be made as to who will do the proposed maintenance and how the City/Park District will contribute resources. The PHNRC is available and willing to help work with everyone involved to create a plan with a sustainable result.



## **Timeline of PHNRC Activities**

### January 2016

- Slough invasive plant and shrub removal
- Gary Morava McDonald Tributary Creek invasive plant and shrub removal
- Seeding appropriate grass and forb seeds after invasive removal

### February 2016

- Tributary Creek invasive removal and reseeding

### March

- Tributary invasive removal and reseeding
- Hillcrest Lake invasive removal pending MWRD road construction plans

### April

- Herbicide turf grass at Slough (and Lake)
- Hillcrest Lake invasive removal pending MWRD construction
- Seed native grass at Slough (and Lake)
- Slough invasive removal garlic mustard

### May

- Invasive garlic mustard removal
- Invasive reed canary control
- Green house propagation and planting
- Plant spatterdock at the Lake Pending MWRD construction

### June

- Sedge meadow seed collection
- Planting native plant plugs
- Invasive plant control

### July

- Sedge meadow Seed collecting
- Sedge meadow seed collection
- Slough (and Lake) sedge seed sowing
- Invasive plant control

## **Summary**

It is critical to understand how important, fragile and essential this wetland is to the community, the state and the overall ecosystem. As guardians and advocates for this historically significant sliver of natural wetland, we have a moral obligation to ensure its health and wellbeing, not only for future generations, but for the reptiles, amphibians, macroinvertebrates, insects, fish, birds, mammals and all of the wildlife that call it home. These residents depend on the wetland for their existence yet they have no voice of their own so they can do nothing to preserve or protect it.

Habitat is the single most important and essential factor in determining what is attracted to it. A healthy environment equates directly to the right abundance of microbotic and macrobotic elements, the plants and all of the living things that make it a functional ecosystem. Everything is interdependent, so loss of any one of these components results in a change to the whole. As an entire community changes, so do the parts. It is a cyclical balance that has a tipping point. We have already witnessed changes in plant populations based on changes in the hydrology. As plants disappear, so do the things that depend on them.

The recommendations that we have made have been based on this understanding. They are conservative in action, which means that results will not be immediate. The nutrient overload will not be affected overnight. Lush native buffers and shorelines will not happen overnight. Progress and transformation will be a slow, but with a steady progression. It will take years to see significant impact, but it can happen naturally and in the right way.

It is our sincere hope that the community, local residents and the city council will support our recommendations and their implementation.

PHNRC February 2016

# Appendix A

## *Hey and Associates, Inc.*

Engineering, Ecology and Landscape Architecture

*MILWAUKEE, WISCONSIN*

*26575 W. COMMERCE DRIVE, SUITE 601*

*VOLO, ILLINOIS 60073*

*PHONE (847) 740-0888*

*FAX (847) 740-2888*

*CHICAGO, ILLINOIS*

February 4, 2016

Mr. Steve Berez, P.E.  
City of Prospect Heights  
8 N. Elmhurst Road  
Prospect Heights, IL 60070

Proposal No.: 16-0038

Re: Proposal for Elodea control at Hillcrest Lake  
Prospect Heights, Cook County Illinois

Dear: Steve:

Thank you for considering Hey and Associates, Inc. (Hey) for this work. As you are aware, we prepared the "Assessment and Management for The Slough and Hillcrest Lake" report for the City of Prospect Heights in 2015. We appreciate the opportunity to continue working with the city. This proposal provides a scope and fee for the herbicidal treatment in Hillcrest Lake for the submergent macrophyte Elodea (*Elodea canadensis*). Hillcrest Lake is located north of Willow Road, between IL 83 and N. Wheeling Road, in the City of Prospect Heights, Cook County, Illinois.

### **ELODEA TREATMENT**

We understand the lake is approximately 14 acres in size and based on a recent bathymetric survey, averages 2 to 2½ feet in depth. Assuming we can deploy our boat with motor and spreader, we will treat this body of water for a population of Elodea that has grown to a nuisance level over the past several years. We understand that Elodea is the only species known to be growing in Hillcrest Lake and attempting to eradicate the species could allow other undesired species to invade. We propose to use a granular formulation of the chemical Fluridone for this treatment at an application rate of 30 ppb (parts per billion). The product name we propose to use is SonarQ™. This particular product is a selective, systemic herbicide manufactured for the management of aquatic vegetation in fresh water ponds, lakes, reservoirs, drainage canals, irrigation canals and rivers. SonarQ™ has no restrictions listed for drinking, fishing, and swimming at the application rate we are proposing. At the application rate of 30 ppb, we would be applying approximately 4 pounds per treated acre. At this application rate, we intend to inhibit the growth of the Elodea versus attempting total eradication. We propose this plan as a result of goals and concerns listed below.

Having reviewed data from the completed bathymetric survey, we believe we could access (with our equipment) and treat approximately 9 to 10 acres of the lake. We are limited to treating depths of 2 feet and deeper. Of that treatable area, we propose treating roughly half of that area (minimum of 5 acres) with a lower product application rate to achieve the goal expressed to us by a representative of the Natural Resource Commission (NRC). The goal is to address the Elodea growth without endangering other local natural resources. The concerns of the NRC regarding

chemical treatments include the effect on area fish and wildlife both in the treatment area as well as in areas downstream of the lake discharge. Another concern is what plant species may move into the treated area if the Elodea population is severely reduced or removed from the lake. Without competition, other plant species no doubt will move in, however there really is no way to predict what native and/or non-native species will invade the area or at what densities.

By treating a pre-determined 5-acre area of the lake with the lower application rate, there wouldn't be a large amount of product being applied to the water. This would reduce the cost substantially from a whole-lake eradication treatment or treatments. Given the special characteristics of this lake, this approach would also allow interested parties monitor how the lake reacts to the treatment or treatments on a smaller scale in terms of fish, wildlife and aquatic vegetation. If the desired result has been achieved or it appears the resulting conditions are acceptable, we can then discuss treating another 5-acre area if desired by the City.

Under optimum conditions, 30-90 days are required before the desired level of aquatic plant management is achieved with the proposed product. For best results, SonarQ™ should be applied prior to initiation of plant growth or when the plant(s) begin active growth. Application to mature target plants may require higher application rates and take longer to control.

We will complete this 5-acre treatment task for a lump sum fee of \$3,500.

#### **ALGAE TREATMENT**

Another issue raised by the NRC was algal blooms. The strong possibility exists that after the Elodea treatment has been completed and the targeted vegetation dies off, an algal bloom occurs resulting from higher concentrations of nutrients in the water combined with the shallow depths and warmer temperatures. Algae can be unsightly and become a nuisance to the lake recreation and aesthetics.

Upon direction from the City, we will treat algae with either a liquid or granular form of a chelated copper algicide. These algae treatments may either be spot treatments or larger area treatments if warranted. These treatments will be completed via boat with motor and a spreader or pump. The treatment areas will be recorded and calculated using a survey-grade GPS system.

We will complete this task for a lump sum fee of \$350 per treated acre pre site visit.

#### **FEES**

<b>TASK</b>	<b>FEE</b>
1. Elodea Treatment – per 5-acre treatment area	\$3,500 LS
2. Algae Treatment – per acre treated	\$350 LS
<b>TOTAL</b>	<b>Varies per Treated Area</b>

Completion of the tasks listed above requires approved lake access, boat launch access points and a minimum of 2 feet of water.

Mr. Steve Berez  
Hey 16-0038 Hillcrest Lake Treatment  
February 4, 2016  
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All necessary permits will be obtained by Hey and Associates, Inc. prior to any lake treatment being conducted. Treatment notifications will be made to project contact three (3) days prior to treatment date or as requested by client.

Any additional meetings or supplemental work would be in addition to the above amount or by separate proposal. Our Standard Terms and Conditions are attached.

If this agreement is acceptable, please sign below and return this proposal to our office. Upon receipt, we will sign and return a fully executed copy for your records. This proposal is valid for 60 days from the date of this letter. Should you have any questions, please contact the project manager, Jeremy Husnik at our Volo office.

\_\_\_\_\_  
Hey and Associates, Inc.

\_\_\_\_\_  
City of Prospect Heights

\_\_\_\_\_  
Attest

\_\_\_\_\_  
Attest

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

Please return this proposal in the return envelope provided.



**EXHIBIT A – ATTACHMENT  
STANDARD TERMS AND CONDITIONS**

Hey and Associates, Inc.

<b>COMPENSATION</b>	<b>Hourly Billing Rate</b>	<b>BILLING</b>										
<b>Principal</b>	\$175-195	<p>Billings shall be on a monthly basis and are payable upon receipt. An additional charge of 1½ percent per month (18% per annum) shall be applied to any balance unpaid more than 30 days beyond date of invoice. Client shall pay any attorney's fees, court costs or other expenses incurred collecting delinquent accounts.</p> <p>Hey and Associates Inc. (Hey), with seven days written notice, reserves the right to suspend or terminate work under this agreement on any account that is past due.</p> <p>The Client's obligation to pay for the work contracted is in no way dependent upon the Client's ability to obtain financing, zoning, permit approval by governmental or regulatory agencies, or upon the Client's successful completion of the project.</p> <p>The rates presented herein are effective for the period January 1, 2016 through January 31, 2017 and shall be subject to modification on February 1, 2017.</p> <p><b>LIMITATION OF COSTS</b></p> <p>Hey will not be obligated to continue performance or incur costs beyond the estimated costs unless the Client agrees in writing to a revised cost estimate.</p> <p><b>CLIENT'S RESPONSIBILITIES</b></p> <p>Client shall arrange for access to and make all provisions for Hey to enter upon private and public property as required for Hey to perform services under this Agreement.</p> <p>Client shall provide Hey with all existing available information regarding this project as required. Hey shall be entitled to rely upon information and documentation provided by the Client or consultants retained by the Client in relation to this project, however Hey assumes no responsibility or liability for their completeness or accuracy.</p> <p><b>COST OPINIONS</b></p> <p>Any cost opinions or project economic evaluations provided by Hey will be on the basis of experience and judgment, but, because Hey has no control over market conditions or bidding procedures, we cannot warrant that bids, construction cost, or project economics will not vary from these opinions.</p> <p><b>STANDARD OF CARE</b></p> <p>The services provided by Hey under this Agreement will be performed as reasonably required in accordance with generally accepted standards for services as offered in the proposal for this project at the time and the place where the services are performed.</p> <p><b>INSURANCE</b></p> <p>Throughout the duration of the project, Hey will procure and maintain the following insurance:</p> <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;"><b>Liability</b></th> <th style="text-align: left;"><b>Limits of Liability</b></th> </tr> </thead> <tbody> <tr> <td>Workers' Compensation and Employer's Liability</td> <td>\$ 500,000 each incident</td> </tr> <tr> <td>Comprehensive General Liability</td> <td>\$ 2,000,000</td> </tr> <tr> <td>Professional Liability</td> <td>\$ 2,000,000</td> </tr> <tr> <td>Automobile Liability</td> <td>\$ 1,000,000</td> </tr> </tbody> </table> <p>Within the limits of this insurance, Hey agrees to hold the Client harmless from and against loss, damage, injury or liability arising directly from the negligent acts or omissions of employees, agents or subcontractors of Hey.</p> <p>Client will limit any and all liability, claim for damages, losses, cost of defense, or expenses to be levied against Hey on account of any design defect, error, omission, or professional negligence to a sum not to exceed the amount of Hey's fee under this agreement. Should the Client require other types of insurance coverage, limits in excess of the above limits, and/or certificates naming any other(s) than the Client as additional insured parties, Hey's cost of obtaining such coverage, limits, or certificates shall be reimbursable by the Client.</p>	<b>Liability</b>	<b>Limits of Liability</b>	Workers' Compensation and Employer's Liability	\$ 500,000 each incident	Comprehensive General Liability	\$ 2,000,000	Professional Liability	\$ 2,000,000	Automobile Liability	\$ 1,000,000
<b>Liability</b>	<b>Limits of Liability</b>											
Workers' Compensation and Employer's Liability	\$ 500,000 each incident											
Comprehensive General Liability	\$ 2,000,000											
Professional Liability	\$ 2,000,000											
Automobile Liability	\$ 1,000,000											
<b>Engineering</b>												
Senior Civil Engineer	\$150											
Civil Engineer I to V	\$90-135											
Engineering Designer	\$90-125											
Engineering Technician	\$80-95											
<b>Ecological Services</b>												
<b>Wetlands and Ecology</b>												
Senior Project Scientist	\$140											
Environmental Services Manager	\$115											
Senior Water Resources Planner	\$95											
Environmental Scientist I to III	\$70-90											
<b>Native Landscape Restoration</b>												
Ecological Restoration Manager	\$115											
Environmental Scientist I to III	\$70-90											
Environmental Intern	\$40											
<b>Landscape Architecture</b>												
Senior Landscape Architect	\$150											
Landscape Architect	\$100 -125											
Landscape Designer	\$80											
<b>Erosion Control</b>												
Senior Erosion and Sediment Control Specialist	\$145											
Soil Erosion and Sediment Control Specialist	\$75											
<b>Surveying</b>												
Professional Land Surveyor	\$105											
<b>Subsurface Drainage Services</b>												
Subsurface Drainage Services Manager	\$125											
Engineering Technician	\$80-95											
<b>Design Support</b>												
CAD Manager	\$95											
CAD Technician	\$90											
GIS Specialist	\$80											
<b>Administration</b>												
Senior Administrator	\$100											
Administrative Assistant	\$55											
<b>Expert Testimony</b>												
Rates to be determined on per-project basis												
<b>REIMBURSABLE EXPENSES</b>												
<p>Reimbursable expenses shall be reimbursed at cost plus an 8% administrative service charge. Such expenses shall include, but are not necessarily limited to travel, reproduction, shipping/delivery, aerial photographs, phone and other communication charges, consultants and subcontractor fees, equipment and supply costs related to the execution of the project. Fixed reimbursable expense costs are as follows:</p>												
Travel	\$ .65/mile											
Copies	\$ .20/page											
Software/Digital Resource Charge	\$100.00/project											
ATV Usage	\$ 40.00/hour											
ATV Discing, Herbicide Spraying, Mowing	\$ 45.00/hour											
Boat Usage	\$ 75.00/hour											
Chain Saw Usage	\$ 20.00/hour											
Additional Plotting, B & W	\$ .90/sq. ft.											
Additional Plotting, Color	\$ 2.75/sq. ft.											
Additional Plotting, Mylar	\$ 4.50/sq. ft.											
Flow Meter	\$ 50.00/day											
GPS Rover	\$350.00/day											
Total Station	\$100.00/day											

# Appendix B

ITEM	CATEGORY	COST
<b>Tributary Area (PARK DISTRICT)</b>		
Herbicide, surfactant and dye	Triclopyr, glyphosate, Sethoxydum	100
Native seed	woodland, savannah	450
Protective fencing	fencing	80
<b>Slough (PARK DISTRICT AND CITY)</b>		
Herbicide, surfactant and dye	Triclopyr, Glyphosate, Sethoxydim	200
Native grass seeds	little bluestem, prairie dropseed	1100
Native plant plugs	prairie, wetland, woodland	300
Shrubs and trees	oaks, shrubs	800
Protective fencing	fencing	80
<b>Hillcrest Lake (CITY)</b>		
Herbicide, Surfactant and Dye	Triclopyr, Glyphosate, Sethoxydim	100
Native grass seeds	little bluestem, prairie dropseed	1800
Native plant plugs	prairie, wetland	600
Shrubs and trees	shrubs, hazel	300
Aquatic plants	spatterdock, pickerelweed	1100
Carp exclosure	fencing	650
Protective fencing	fencing	80
Managed weir/valve	range is from simple manual to automated	<b>10,000 - 20,000</b>
<b>Monitoring * (CITY?)</b>		
Water quality		250
Fish survey		N/A
Birds	volunteer	N/A
Insects/macroinvertebrates	volunteer	N/A
Amphibians	volunteer	N/A
<b>General use</b>		
Tools - Equipment	loppers, gloves, backpack sprayer	400
Greenhouse supplies	soil, trays	300

# Appendix C



- Legend:
- FEMA Water Line
  - Watershed Boundary

Project Number: 15-0320      Latest Revision: 10/0/2015      Data Source: Globetrotters & FluidClarity, Ltd.

Prepared by:

Project Name:  
Hillcrest Lake and Slough Assessment

Prepared for:  
City of Prospect Heights

Aerial Date:  
2014