Seattle
Parks & Recreation

M E M O R A N D U M

Date: January 12, 2017

To: Board of Park Commissioners

From: Kathy Whitman, Aquatics Manager

Subject: Briefing on Lake Washington Aquatic Weed Management

Requested Board Action

This is a briefing on an integrated weed management plan for Eurasian milfoil and other regulated aquatic weeds in Lake Washington.

Project or Policy Description and Background

The Washington Department of Ecology (DOE) permits the use of an aquatic herbicide as a systemic solution to control specific aquatic weeds that affect recreation and water quality. The DOE permit for Seattle Parks and Recreation (SPR) properties on Lake Washington would target Eurasian milfoil and non-native lilies at lifeguarded beaches, moorages, and other high-use recreation sites currently impacted by these weeds.

Most importantly, the use of the herbicide would pose a very low risk to human health and the aquatic environment based on extensive analysis studies performed by toxicology experts at the University of Washington and Department of Ecology. More information on herbicides can be found here:
http://www.ecy.wa.gov/programs/wq/plants/pesticides.html

There are three primary reasons to add herbicide to SPR's tool kit for weed management:

1. Impacts on recreation enjoyment and safety at lifeguarded beaches, small craft centers, boat launching areas, moorages and selected shorelines.
    - ✓ Dense milfoil growth prevents any recreational activity.
    - ✓ Water lilies have up to 15-foot underwater stems that can trap swimmers.
    - ✓ Weed growth can create boating hazards, entangling small non-motorized water craft and/or clog engines of power boats.

- ✓ The extensive infestations and vigorous weed growth is encroaching into areas needed for the Seafair hydroplane race, triathlon swimming and other special events.
- ✓ The parasite that causes "swimmer's itch" thrives in a lily pad environment where water fowl and snails exist. Children in shallow water at swimming beaches or small craft centers are especially at risk.

2. Impacts on water quality include damage to desirable habitat.
   - ✓ Tight plant growth at the surface creates stagnant water that provides breeding grounds for mosquitos.
   - ✓ Extensive infestations raise water pH, decrease oxygen and increase water temperature, changing the environmental conditions that support salmon and other fish and aquatic species.
   - ✓ The problem continues to grow larger annually, with expanding areas for dense milfoil and non-native lilies.

3. Removal of milfoil makes beaches, small craft centers, moorages and other recreational facilities more welcoming and increases public safety.
   - ✓ Our swim beach sites need to be maintained to a "swimming beach standard" in order to provide opportunities for visitors to recreate in a safe manner. SPR's lifeguarded beaches have annual attendance of about 240,000 visitors. These sites offer safe, free access to all residents.
   - ✓ Swim beaches present challenges to truly effective harvesting and removal. Cutting milfoil can reduce the weed mass at the surface (like a haircut), but this also creates fragments which will eventually float away and re-root, continuing to grow and expand the infestation area. Contracting work or in-house work for control with harvesting is only a short-term strategy and requires ongoing attention.
   - ✓ Adding an herbicide strategy at moorages would result in a reduction of weeds, and prevent damage to engines of the moored vessels. Weed growth restrict access by sailboats and non-motorized craft. Responsible stewardship by the removal of a noxious weeds is recommended by DOE and we believe that our strategy for milfoil removal is the best way to manage the Lake Washington moorages.

SPR has used a variety of management options for milfoil since it was first reported in Lake Washington in 1974. The primary strategies have been mechanical harvesting and hand harvesting. Mechanical harvesting involves a floating lawn mower, cutting to a depth of 5 feet. This is a temporary solution that requires re-cutting about every 4 to 6 weeks during growing season. On Lake Washington this has been used in the Stan Sayres and Andrews Bay areas, along with some of the swimming beaches. Hand harvesting entails Scuba divers working to remove plants in smaller contained areas. This has been used at swimming beaches, moorages and small craft centers in combination with mechanical harvesting.

Herbicide use would be added to the mechanical harvesting and hand harvesting that is already underway. Combining these strategies into one integrated weed management program will ensure greater effectiveness of the program by employing all known weed management strategies. Use of the specific strategies will depend on the extent of the infestations and impacts at each site and the strategies will be assessed on an annual basis. These techniques are currently used throughout Lake Washington and Lake Union with 42 DOE permitted projects now in place. These permits are issued to groups, businesses and individuals, but SPR has not applied for a permit to perform in-water weed control work to date. Other cities with current permits to use herbicides include Bellevue, Kenmore, Kirkland, Lake Forest Park, Medina and Renton.

Ecology endorses and encourages this weed control action. There have been many recreational users, both swimmers and boaters, who have expressed concern and frustration with the weed growth along public shorelines. Current management methods are labor intensive and only provide short-term benefits. Other government agencies (U.S. Dept. of Agriculture, WDFW) endorse and support the use of these specific chemicals for the effective management of both milfoil and non-native lilies.

While we have not heard any opposing viewpoints, we do expect that questions will be raised about the potential for some harm to the environment, impacts on fish or health and concerns for people. We have contacted other government agencies or organizations to listen to the concerns raised by the public during their public review process and have incorporated these concerns and possible responses into this plan. We expect public comments to raise potential concerns because of the perception related to use of herbicides, but believe that each concern has been thoroughly addressed with the selection of these two products. When complete information is provided, we believe that residents will believe that any impacts are very small.

There are two herbicide products, both with low to no environmental, human health, and safety impact, that we are considering. These products are approved by Ecology, the U.S. Dept. of Agriculture (USDA) and Washington State Department of Fish & Wildlife (WDFW) and have no limitation for fish migration windows.

Renovate OTF Granular, contains the active ingredient Triclopyr TEA. This granular product controls milfoil very effectively. It is a quick-acting product that controls broadleaf plants like milfoil, leaving native shoreline plants unharmed. It has an 18 to 24-hour contact period and the plant is dead in about 30 days.

AquaPro, a liquid containing the active ingredient glyphosate. This liquid product is applied directly to the floating leaf surface of non-native lilies, just prior to blooming. AquaPro is absorbed immediately into the plant and travels down the stems into the root system, where it interrupts all plant growth. The result is that the lilies cannot

grow and die quickly. This method allows for a targeted treatment, without releasing residual product into the water.

Aquatic herbicides have been permitted and used previously to control selected noxious weeds along SPR shorelines. This is the first time that aquatic herbicides will be used on in-water weeds by SPR. Our permit from DOE will allow for use of these approved aquatic herbicides, previously screened for impacts and when applied properly by experienced, licensed professionals, cause no damage to the freshwater aquatic ecosystem.

The State of Washington allows for the use of these products once a permit has been issued by Ecology. We are working with City of Seattle planning departments to see if any local rules or permissions apply.

Public Involvement Process

Public Comment and Notification: The permit process includes a 30-day public comment period where we would advertise our intent and encourage comments be submitted directly to DOE. We would place advertisements in the Seattle Times (2) and post notices at every possible treatment location. For more information on the DOE permit process go to: (http://www.ecy.wa.gov/programs/wq/pesticides/index.html)

The presentation to Park Board is the only public meeting planned. As part of the Ecology permit process, we will bring visibility to the overall plan through web pages and social media, and communication with moorage tenants, community/neighborhood organizations, Citizens for Off Leash Areas (COLA), Mt. Baker Rowing and Sailing Center Advisory Council, Audubon Society, Washington Water Trails, Seafair, Seattle Police Harbor Patrol Unit, and others.

A summary of frequently asked questions (FAQ) and details of each planned location will be provided to SPR staff to facilitate effective, open communication with the public as questions arise. Citizens will be made aware of the DOE comment opportunity.

Property Owner Notification: There is a requirement to provide notification to all property owners along the shoreline within ¼ mile of any treatment site. These notifications would be done as part of the permit process and prior to treatment.

Project Schedule: Non-native water lily removal would be scheduled prior to the plant flowering, generally in April or May. We would hope to have milfoil treatment completed prior to beaches opening for summer (May or June), but could shift into summer (July) with a planned closure. DOE requires a 12-hour closure for each location where Renovate OTF is used, but we would post and close for 24 hours.

Budget

The project can be completed within available budgeted funds from the Recreation Division, Partnership Division, and Parks Division. While an annual treatment may be needed, the expense is expected to decrease beginning in the second year. In 2016, the expenditure to contractors was $56,000, in addition to extensive Parks staff time that was not tracked or measured.

Contracts are now in place for mechanical and hand harvesting. Both contracts, reissued in 2016, showed substantial price increases that essentially doubled the cost. Our Maintenance Division has been maintaining and operating an aging mechanical harvester to meet critical demands. When we no longer need the harvester we will sell or surplus the machine.

Next Steps

Obtain the permits necessary to pursue a multi-layered approach to aquatic weed management to include mechanical, hand harvesting and application of approved aquatic herbicide products.

Schedule

- **January** – Press release with notice of presentation to Park Board
- **February 1** –
  - Submit permit application to DOE; allow 60 days for processing, public notification and public input.
  - Begin a 2-week public notification in the Seattle Times.
  - Outreach correspondence to the organizations identified as having an interest or connection to make them aware of DOE application
  - Distribute FAQ to specific SPR staff to allow for open communication with citizens.
- **April 1** – Permit received.
- **April and May** –
  - Public notification with signage with be done 48 hours before application.
  - Monitor non-native lily growth and apply herbicide as buds have formed and are preparing to flower.
- **Late May/early June** – Monitor milfoil growth and apply herbicide to plant when new growth is clearly visible.
- **Mid-June** – Scuba inspection and hand harvesting as needed. Monitoring a two week intervals from first chemical application until early September.
- **July** – Second application period may be needed in July if re-growth is clearly visible.

Additional Information

Web page links:

Department of Ecology:
https://fortress.wa.gov/ecy/publications/summarypages/0410015.html

Ecology Aquatic weed management:
http://www.ecy.wa.gov/programs/wq/links/plants.html

Department of Ecology permit:
http://www.ecy.wa.gov/programs/wq/pesticides/final_pesticide_permits/aquatic_plants/aquatic_plant_permit_index.html

Ecology Fact sheet for Aquatic weed and algae permit:
http://www.ecy.wa.gov/programs/wq/pesticides/final_pesticide_permits/aquatic_plants/permitdocs/Reissue2016/2016APAMFactSheet.pdf

SPR staff leads:

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TIMELINE

January	▪ Press Release regarding Park Board Briefing ▪ 26 – Park Board Briefing	
February	▪ 1 – Submit Notice of Intent to DOE ▪ Public notification period as defined by DOE ▪ Outreach correspondence/communication ▪ FAQ to SPR staff	o 60-day processing time o 2 newspaper notifications 1 week apart on or before the Notice of Intent is sent
March	▪ DOE review period continues	
April	▪ 1 – Permit coverage received ▪ Non-native lily treatments as buds are forming	o Date range in April and May
May	▪ Milfoil treatment as new growth is visible ▪ Two-week inspection intervals begin	o Date range in May and June o Date range of May to Sept
June	▪ Scuba hand harvesting and site inspection at beaches ▪ Two-week inspections	
July	▪ Possible second round treatments ▪ Two-week inspections	o Date range of July to Sept
August	▪ Two-week inspections	
September	▪ Two-week inspections ▪ Evaluation and recommendations for 2018	