

**NORTH LAKE
Management District
2015 Final Report**

Prepared by:
City of Federal Way
Public Works Department
Surface Water Management Division

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Author and Contact Information

Hollie Shilley
Water Quality Specialist
City of Federal Way, Washington
Public Works Department
Division of Surface Water Management
33325 8th Avenue South
Federal Way, WA 98063
(253) 835-2752
Hollie.shilley@cityoffederalway.com

For more information contact: Public Works, phone (253) 835-2700.

ACKNOWLEDGMENTS

The City of Federal Way acknowledges the significant contribution provided by the North Lake Advisory Committee (NLAC) members and the entire lake community who contributed to the successful development of the North Lake Management District and the continued implementation of the aquatic plant management program. The Advisory Committee includes the following members:

- Lake Residents: Chuck Gibson (Chair), Terry Thomas, Robin Cook, Mary McClellan-Aronen, and Brian Cleary
- Weyerhaeuser Corporation: Samantha Turner
- Washington Department of Fish and Wildlife: Derek Hacker

1.0 EXECUTIVE SUMMARY

The North Lake Advisory Committee (NLAC) and the Surface Water Management Division (SWM) successfully implemented the following goals as described in the 2015 work plan:

- Identified and controlled noxious aquatic plants (purple loosestrife, yellow flag iris, and fragrant water lily).
- A public education program was undertaken that continued to help prevent the introduction of noxious weeds, nuisance plants, and non-native animal species into the lake.
- A comprehensive water quality monitoring program was implemented through the year to provide important data concerning the health of North Lake.

2.0 BACKGROUND

2.1 IAVMP Development and Ecology Grant Funding

Prior to annexation into the City of Federal Way in 2005, North Lake was within the jurisdictional boundary of unincorporated King County. Leading up to annexation, the lake community had been implementing an informal aquatic plant management program for a number of years. But starting in 2004, a more formal effort was undertaken when North Lake began coordinating with King County in the development of an Integrated Aquatic Vegetation Management Plan (IAVMP)—a comprehensive document that established all future goals and strategies for freshwater lake noxious weed management.

Anticipating that North Lake would soon be annexed into the city, SWM staff began collaborating with King County to finalize of the North Lake IAVMP (a document required by the Washington Department of Ecology for future grant funding). Consequently, North Lake was awarded a four-year Washington State Department of Ecology Aquatic Weed Management Fund (AWMF) grant in 2005 with SWM designated as the administrator. The action plan outlined in the grant included a combined approach of annual surveys, treatment, control, and public education designed to begin eradication of the following noxious weeds: milfoil, fragrant water lily, purple loosestrife and yellow flag iris. The grant budget totaled approximately \$80,000, with up to 75% of the eligible project costs reimbursed by Ecology. The AWMF grant expired December 31, 2009.

2.2 Lake Management District

While the AWMF grant program was being implemented, city staff and residents began meeting with the intent to form a Lake Management District for North Lake as a means to provide a long-term funding mechanism. In 2010, a ten-year LMD was formed. Per RCW 36.61, annual

assessments collected from LMD property owners funds the following programs: ongoing aquatic vegetation management, water quality monitoring, public education, and related lake improvement programs.

2.3 The Aquatic Weed Problem

Noxious freshwater aquatic weeds are plants that are not native to the State of Washington. They are invasive and pose a serious threat to our state's waterbodies, including North Lake. Because noxious plants have few natural controls, spread rapidly, and out-compete native plant and animal habitats. The presence of noxious freshwater weeds can lead to a loss of recreational opportunities and may even lower values of lakefront properties (Ecology, 2005).

The Washington State Noxious Weed Control Board classifies noxious weeds based on the stage of invasion of each species. This classification system is designed to: (1) prevent small infestations from becoming large infestations; (2) contain already established infestations to regions of the state where they occur; and, (3) prevent their movement to un-infested areas of Washington. The following three major noxious weed classifications are listed according to the seriousness of the threats posed to the state:

Class A Weeds: Non-native species with a limited distribution in Washington. Preventing new infestations and eradicating existing infestations is the highest priority. Eradication is required by law.

Class B Weeds: Non-native species presently limited to portions of the state. Species are designated for control in regions where they are not yet wide-spread. Preventing new infestations in these areas is a high priority. In regions where a Class B species is already abundant, control is decided at the local level, with containment as the primary goal.

Class C Weeds: Non-native weeds found in Washington. Many of these species are widespread in the state. Long-term programs of suppression and control are a county option, depending upon local threats and the feasibility of control in local areas.

3.0 NPDES AQUATIC PLANT & ALGAE PERMIT

In 2015, coverage for North Lake continued under the state of Washington Department of Ecology (Ecology) National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit (permit) for the management of aquatic plants and algae. Permit issuance complies with state law and maintains the state's ability to regulate the use of herbicides in aquatic settings. Effective March 18, 2011, the five-year NPDES permit (issued under the authority of RCW 90.48) has been implemented by the City's aquatic plant management contractor AquaTechnex, LLC. The permit governs activities such as: aquatic herbicide applications, residential postings/notifications, annual reporting, and records retention. The permit expires on March 18, 2016.

4.0 AQUATIC WEED MANAGEMENT CONTRACT

In 2015, AquaTechnex operated under the fourth year of a four-year Professional Services Agreement with the City of Federal Way. The scope of the agreement includes: systematic aquatic plant surveys, implementation of control methods to target aquatic plants (diver hand pulling, hand cutting/raking, diver installation of bottom barriers, diver dredging, removal of floating water lily islands, treatment with Ecology-approved aquatic herbicides), post control surveys, mapping, reports, and attending meetings as required. In November the Advisory Committee approved an amended two year contract extension with AquaTechnex.

5.0 2015 AQUATIC WEED MANAGEMENT ACTIVITIES

5.1 Systematic Survey – Noxious Plants

AquaTechnex completed the annual initial systematic aquatic plant survey of North Lake on June 11, 2015. The survey consisted of transects being recorded at approximately 400-500 foot intervals around the shoreline, with rake-toss samples taken in a line perpendicular to the shoreline to determine the presence and abundance of the lake's aquatic plant species. During the effort, the survey team mapped all submerged, floating, and emergent noxious weeds from a vessel (equipped with Global Positioning System [GPS] equipment), and recorded the location and extent of the plant communities discovered in and around the lake from the surface. A diver also performed a more detailed underwater inspection of the littoral zone. The GPS information obtained in the field was later processed for map creation and analysis using ArcView GIS software. Plant location maps may be found in the AquaTechnex Report: *North Lake: Summary of Activities in 2015*. Native plant information is provided below in Section 5.6.

Noxious weeds found during the 2015 North Lake initial systematic survey included:

- Fragrant water lily, (*Nymphaea odorata*), Class C
- Yellow flag iris, (*Iris pseudacorus*), Class C
- Purple loosestrife, (*Lythrum salicaria*), Class A

The following is a discussion regarding noxious weeds documented during the 2015 plant survey.

5.1.1 Fragrant Water Lily

Fragrant water lily (FWL) is a familiar aquatic plant that commonly grows around lake margins. It is recognized by its fragrant (white, pink to purple in color) flowers that float on the water surface; and by its large, round, floating leaves that have distinctive slits on one side. Due to its attractiveness, this nonnative plant has been introduced to many lakes in Washington. Unfortunately, FWL is a noxious plant that can become invasive in lakes with extensive shallow areas such as North Lake (Ecology 2014). Therefore it is listed as a State of Washington Class C Weed.

The June survey documented very small patches of FWL growth in North Lake, which have significantly decreased over the years. Based on the survey results, the plant has been nearly eradicated.

5.1.2 Yellow Flag Iris

When flowering, yellow flag iris (YFI) is unmistakable along the edge of water and in wetlands. Its yellow-colored flowers bloom in late spring or early summer. This noxious aquatic plant (State of Washington Class C Weed) has a flower stalk that grows up to nearly five feet tall. Additionally, the rhizomes of this nonnative plant spread to form dense stands that exclude more desirable native wetland species.

The June survey found sparse populations of YFI along the east shoreline where treatment has been very successful over the years. The undeveloped western shoreline is more difficult to access which hampers control efforts. Annual glyphosate treatment will continue with the goal of eradication of YFI.

5.1.3 Purple Loosestrife

Purple loosestrife (PL) has vivid purple-pink flowers and blooms in summer and early fall. This robust, square-stemmed noxious plant crowds out native wetland species to form dense stands in shallow water and wet soil. PL is an invasive, rapidly-spreading European species that is a State of Washington Class A weed (Ecology, 2014).

Because the plant's seedlings tend to emerge from the lake sediments along the shorelines during the entire growing season, it has been necessary to perform multiple surveys through the summer to map PL locations. In 2015, this noxious emergent plant continues to be widely scattered along the western shorelines of the lake. Densities on the east side have decreased more dramatically over the years. The control action for PL involved several scheduled herbicide applications of triclopyr (Renovate3) on private property via permission (right of entry) from landowners.

5.2 Herbicide Treatments

The NPDES General Permit covers all noxious and quarantine-list weed control activities that discharge herbicides directly into surface waters of the state of Washington. Persons conducting herbicide applications must be covered by the General Permit for control activities in lakes, and the applicator must also comply with all herbicide label instructions and public notice procedures.

Glyphosate

Glyphosate (Rodeo) was used to treat FWL and YFI colonies on North Lake in 2015. Glyphosate is a systemic herbicide registered by the United States Environmental Protection Agency (USEPA) for aquatic applications.

With applications generally made in mid to late summer to maximize translocation of the herbicide down into the root system, glyphosate provides effective long-term control. Visible

effects on most annual weeds occur within two to four days; seven days or more on most perennial weeds; and thirty days or more on most woody plants. However, extremely cool or cloudy weather following treatment may slow the activity of this product and delay visual effects of control. Visible effects of glyphosate treatment includes gradual wilting and yellowing of the plant, which then advances to complete browning of above-ground growth and deterioration of underground plant parts.

The advantages of glyphosate include:

- The product is a systemic herbicide which is effective in the removal of targeted plants with no impact to plants not treated.
- Application can be conducted in a spot-treatment or isolated area fashion.
- There are no water use restrictions.

Triclopyr

Triclopyr (Renovate 3) is a liquid aquatic herbicide labeled for control of submersed, emergent and floating plants in and around aquatic sites such as lakes. The active ingredient (triclopyr) rapidly enters through the targeted plant leaves and stems and interferes with the plant's metabolism. The aquatic herbicide impacts most dicot (broadleaf) plants, and has little to no impact on most monocots (grassy type species). It is highly effective in selectively targeting purple loosestrife and carries no restrictions on recreational use such as swimming and fishing in the treatment area.

5.2.1 Fragrant Water Lily Treatment

All FWL colonies on the lake were targeted for eradication. The control plan was designed to achieve the following:

- Allow for the gradual replacement of FWL with native vegetation to improve fish habitat.
- Improve boater access and provide safer recreational opportunities.
- Reduce the possibility of excessive amounts of dying vegetation (which contributes to an increase in nutrient loading that may result in more frequent algae blooms).
- Limit the production of dead vegetation which reduces the likelihood for higher oxygen demand in the water column.

The AquaTechnex Report: *North Lake: Summary of Activities in 2015* contains maps locating FWL colonies. Glyphosate (Rodeo), a liquid, was applied directly on the lily pads by a two-person crew using boat-mounted low-pressure spray equipment. Two separate treatments took place in 2015. The aquatic herbicide (1.5 percent solution) and LI 700 surfactant were mixed in the spray tank and applied (by licensed applicators) uniformly over the lily pads within the designated treatment areas. This process included reapplication as necessary to areas that did not initially uptake enough herbicide because of weather or plant wash off. The total area treated equaled less than one acre.

5.2.2 Yellow Flag Iris & Purple Loosestrife Treatment

Continued eradication of all YFI and PL continued in 2015. In order to apply herbicide on private property, SWM staff obtained Temporary Rights of Entry from all participating property owners granting the city and its agents (AquaTechnex) access to complete treatments of these emergent plant species. In 2015, 82% of North Lake residents have granted access for emergent treatment.

During treatment, AquaTechnex licensed applicators used glyphosate (Rodeo) for YFI and triclopyr (Renovate 3) for PL. The noxious weeds were sprayed from the lake-side off of a motorboat and from the land-side by licensed applicators using a backpack mounted unit. AquaTechnex personnel were careful not to impact adjacent ornamental plants or grasses during treatment activity.

In accordance with state law, the King County Noxious Weed Control Board requires property owners to control purple loosestrife on private and public lands throughout the county (control means to prevent all seed production and to prevent the dispersal of all propagative parts capable of forming new plants). In 2015, both SWM and AquaTechnex continued coordinating with King County in the identification and control of PL on North Lake. Survey information is shared annually between each agency; this effort leads to a markedly improved identification program that allows for more effective treatment and control, therefore, a larger percentage of PL colonies can be eradicated.

5.3 YFI and PL Manual Control

The North Lake aquatic weed management program utilizes public education materials to inform lake residents about effective manual removal efforts they may undertake themselves to help control the spread of both YFI and PL. SWM provides information regarding proper manual control methods (digging up the roots or cutting back the stalks), and the proper disposal of all organic debris (roots, seed heads, and stems) for both YFI and PL.

5.4 Water Lily Island Control

Floating mud islands, resulting from past herbicide treatment of fragrant water lily colonies, are characterized by suspended masses of organic deposits (plant roots, peat and mud) that range in size from a few inches to a few feet thick. Gasses can build up from decomposing fibrous material and may lift the plant roots and parts of the lake bottom to the surface to form mud islands that can migrate from property-to-property. The NLAC agreed that floating mud island removal action would continue to be implemented on an as-needed basis if floating masses interfered with the beneficial uses of the lake. Although floating mud islands have been problematic in the past, none formed in 2015.

5.5 Weed Rakes

In 2015, the weed rake loan program continued to provide North Lake residents an opportunity to borrow rakes that are designed especially for the control of native aquatic vegetation. The rakes were used as necessary through the summer to maintain beneficial uses (fishing, boating and swimming) along private shorelines.

Weed rakes can only be used to the minimum extent necessary to maintain beneficial use of the shoreline (not to exceed the maximum length of ten linear feet), as specified in the WDFW Aquatic Plants and Fish pamphlet (publication #APF-1-98). Depending on the type of plant targeted, North Lake residents were able to control native aquatic plants using two different styles of rakes: a rake with a sharp cutting blade for submerged vegetation, and a rake with large tines for control of floating or slightly submerged plants.

SWM staff take care each growing season to ensure proper use of weed rakes. For instance, if milfoil is present, the action of the rake may fragment the noxious plant and allow it to uncontrollably spread throughout the lake. Because neither milfoil nor any other submerged noxious aquatic plants were detected during the initial 2015 survey, weed rakes were able to be loaned out immediately to lake residents to control native aquatic plants when needed. The weed rake program was shut down for the season on September 15 pursuant to Washington Department of Fish and Wildlife (WDFW) Aquatic Plants and Fish pamphlet requirements.

5.6 Systematic Survey – Native Plants

The objective of the systematic survey is to quantify the presence and location of all aquatic plant vegetation (native and non-native) on North Lake. Detailed survey information and mapping may be found in the AquaTechnex Report: *North Lake: Management Review- 2015*.

In addition to the noxious species identified and discussed in Section 5.1, the following information details the most prevalent native plant species currently populating North Lake:

Emergent Plants

Scattered along the shoreline in moderate to dense patches are a number of emergent species that grow in the shallow margins of the lake: *Typha spp.* (Cattail) and *Scirpus spp.* (Bull Rush). The seeds of the rushes are an important food for waterfowl and mammals. Cattail rhizomes and their basal portions are a food source for geese and provide habitat for amphibians and fish. Additionally, all of North Lake's emergent vegetation helps to stabilize shorelines and reduce erosion.

Floating Plants

Nuphar spp. (Yellow pond lily) is a perennial waterlily plant that can form extensive stands in the shallow waters of lakes and ponds. It is a food source for mammals and waterfowl and provides spawning habitat for fish. With the clearing of the noxious white water lily, the native *Nuphar* population has been able to expand.

Submersed Plants

Najas sp. (Water nymph) is an annual aquatic plant that dominates the lake bottom. Unlike most other perennial aquatic plants, it reproduces from seed each year. This aquatic plant generally grows rapidly in the spring and produces seeds that drop into the lake sediments. Over time, a substantial seed bank may develop that can expand the weed population to the point of excluding other native plants. However, the recent expansion of yellow pond lily is providing shade and beginning to balance out the dominance of *Najas* that the lake has experienced the last few years.

Other submerged plant species observed in North Lake included:

- *Potamogeton praelongus* (White stemmed pondweed). This native member of the pondweed family occurs in small clumps and was observed throughout the deeper littoral lake zones.
- *Elodea*, a native plant that acts as an under story or secondary plant in the lake.
- *Chara* (Muskgrass), a macro algae that is generally considered very beneficial. In most cases, this plant is low growing and occupies space on the lake bottom without posing a weed problem to lake users.

5.7 Post Control Visual Assessment

During the Second Systematic Survey on September 24, AquaTechnex personnel performed a visual assessment to determine the effectiveness of the herbicide treatments and control methods conducted in 2015 on the three targeted noxious species (FWL, PL, and YFI). All targeted plants showed clear symptoms of herbicide damage. Surviving stands of YFI and PL were primarily located in areas that were difficult to access.

5.8 Native Growth and Impacts to Beneficial Uses

The native plant community in North Lake has a level of diversity common for the lakes in this area. Additionally, the community exhibits a relative dominance of one species over all others: *Najas flexilis*. This plant is native to Washington but has the ability to grow to nuisance levels in an urban lake environment like North Lake. In recent summers, a small number of residents have complained about excessive *Najas* growth—an observation that is most probably linked to recently warmer spring and summers. The resulting extended growing season causes plant growth to peak towards the beginning of August, and increasing plant densities observed well into September.

When aquatic plant growth is excessive, it may impair beneficial uses for lake residents—for example, impairment to recreational activities (boating, fishing and swimming). In August, AquaTechnex biologists reported that the density of the submerged aquatic plant *Najas* was high enough in three distinct areas to potentially adversely impact the beneficial uses of North Lake (one ½ acre location on the north end of the lake, a 1 acre area around the east hook, and a 2 acre stretch along the southeast shore). Consequently the contractor proposed that this location be treated with the contact herbicide Diquat dibromide. On August 17, the North Lake Advisory Committee approved herbicide treatments in select nuisance areas identified by AquaTechnex.

5.9 Blue-Green Algae

Blue-Green algae (cyanobacteria) are common in freshwater lakes, and they frequently form dense populations (blooms) in eutrophic (nutrient rich) waters. The main factors that may determine the development of algae blooms are: light, temperature, pH, and nutrients (nitrogen and phosphorous).

Blue-green blooms can pose a human health concern. Although most are non-toxic, some blue-green algae produce nerve or liver toxins. Toxicity is difficult to predict because a single species of algae can produce both toxic and non-toxic strains. Additionally, a bloom that tests non-toxic one day can turn toxic the next day. People may become ill after coming into contact with lake waters that are impacted with toxic blue-green algae. Humans may experience stomach pains, vomiting, diarrhea, and skin rashes; and nerve and liver damage have been observed following long-term exposure (such as drinking impacted water). Although pets and wildlife have died after exposure to toxic blue-green algae in Washington lakes, there have been no confirmed human deaths reported worldwide (Ecology, 2014).

There was a report of blue-green algae bloom in North Lake in August. Tests confirmed that toxin levels were below levels of concern established by the Washington State Health Department.

6.0 WATER QUALITY MONITORING

The King County Lake Stewardship Program Volunteer Monitoring Program for North Lake began in the 1980s and continued for several decades until budget cuts ended the program in 2005. Although the most recent data generated by this program (nine years prior to the date of this report) indicated that North Lake had been relatively low in primary productivity (borderline oligotrophic to mesotrophic) with very good water quality, a significant data gap exists between then and now.

The long-term objectives of the current North Lake Management District Water Quality Monitoring Program include: (1) continuation of the gathering of baseline data with the intent of assessing long-term trends; (2) defining seasonal and water column variability; (3) identifying potential problems, proposing possible management solutions when feasible, or pinpointing additional studies to be made; and (4) educating lake residents, lake users, and policy makers regarding lake water quality.

Monitoring this year began in early summer, with samples collected from the surface and one meter above the bottom from the deepest part of the lake to define changes found in the vertical profiles of the parameters. These data will not be useful to assess water quality trends and the ecology of North Lake until several years-worth have been collected. Data are currently being posted on the King County Small Lakes Data website:

<http://green2.kingcounty.gov/SmallLakes/WQData.aspx>

7.0 PUBLIC INVOLVEMENT/PUBLIC EDUCATION

Public involvement and public education for North Lake incorporates elements and concepts presented in the 2004 Integrated Vegetation Management Plan (IAVMP). Using the IAVMP, the annual Work Plan strives to improve lake health through the promotion of lake stewardship and through the implementation of educational programs designed to help lake residents and lake users detect and prevent the spread of noxious aquatic plant species.

7.1 Public Involvement

The North Lake Public Involvement program for 2015 included the following:

7.1.1 North Lake Advisory Committee (NLAC)

The NLAC is charged with setting lake management priorities and providing input on the implementation of the annual Work Plan. Resolution No. 09-560, passed by the City Council, created the Advisory Committee for North Lake LMD Number 2. The purpose of the NLAC is to provide for LMD property owner representation to the City Council.

Per Resolution No. 09-560, NLAC representation consists of:

- Five (5) representing single family and/or vacant properties; one (1) representing Washington Department of Fish and Wildlife (public boat launch property); and one (1) representing the Weyerhaeuser Corporation.

Currently, the term for property owners is two years. The 2015 NLAC members were:

Member	Representing	Term Expiration
Chuck Gibson	Committee Chair, Lake Resident	March 15, 2016, Second Term
Terry Thomas	Lake Resident	March 15, 2016, Second Term
Robin Cook	Lake Resident	March 15, 2016, Second Term
Mary McClellan-Aronen	Lake Resident	March 15, 2016, First Term
Brian Cleary	Lake Resident	March 15, 2016, First Term
Samantha Turner	Weyerhaeuser	N/A
Derek Hacker	Washington Department of Fish & Wildlife	N/A

The following outline includes, but is not limited to, the responsibilities and duties of the NLAC:

- Assists in the development of an annual lake management Work Plan and budget.
- Participates in evaluation of aquatic plant control activities and helps to recommend annual control strategies.
- Participates in other community involvement/education strategies efforts as needed.

The NLAC met formally four times in 2015:

February 9

- WDFW presentation
- Habitat discussion
- 2014 Nuisance plant treatment
- 2014 Budget approval
- 2015 Work plan approval
- 2015 Water quality monitoring program

May 5

- Nuisance plant control information
- Water quality monitoring
- Right of entry permission
- Opening day of boating season
- Draft Lakeview

August 17

- Plant survey results
- Nuisance native treatment
- Algae blooms
- AquaTechnex contract

November 10

- Dan's departure
- Annual report
- 2016 Work plan
- Extension of AquaTechnex's contract
- Advisory Committee recruitment

The minutes for each meeting may be accessed through the SWM web page devoted to North Lake publications.

7.1.2 Development of 2015 Work Plan

The goals and budget regarding the 2015 Work Plan are based upon Resolution Number 09-544 to form North Lake Management District Number 2. The following is a brief outline of the 2015 Work Plan approved by the NLAC:

Task 1 & 2: Aquatic Vegetation Control and Treatment: Identifies and describes the goals for effectively controlling and/or treating targeted noxious aquatic plant species. It also includes an estimate of all associated expenses necessary to accomplish the stated goals. A detailed description of Task 1 may be found in Section 6.0.

Task 3: Public Education: Describes public involvement and public education elements designed to help inform lake residents and users about the impacts of noxious aquatic weeds and the presence of non-native species in North Lake. Items in Task 2 may include: community meetings and Plant ID Workshop, quarterly newsletter (*The Lakeview*), boater outreach program, printing and distribution of educational flyers and press releases, web site development, and development of an annual report.

Task 4: Water Quality Monitoring: Describes the water quality sampling plan designed to measure and track the health of North Lake.

7.2 Public Education

The North Lake public education program for 2015 involved a combination of the following: quarterly newsletter, public notices, and educational materials.

7.2.1 Newsletter

SWM staff issued the publication, *The Lakeview*, quarterly to all North Lake residents in 2015 via US Postal Service and through the city's email subscribe list. The newsletter (created jointly with the Steel Lake Advisory Committee), includes updates to lake residents concerning recent LMD activities, and education information regarding lake stewardship and noxious weed management.

7.2.2 Public Notices

Notices were routinely provided to North Lake residents via email prior to contractor activities, including surveys and treatments. All NLAC meetings were advertised on the city's Calendar of Events web page.

7.2.3 Educational Materials

SWM staff continued to develop and issue the following lake-related informational flyers and brochures as needed:

- Milfoil Boater Education
- Good Plants/Bad Plants
- Purple Loosestrife Seed Head Removal
- Four Reasons Not to Feed the Ducks or Geese

- Aquatic Weed Rake Program
- Be Lake Steward
- Permanent signage at the public boat launch

7.2.4 Web Page

In 2015, SWM staff continued providing a web page devoted to North Lake aquatic plant management activities. The content of the information was kept up-to-date through the year. Web site information includes:

- AquaTechnex Report: *North Lake: Management Review-2015*
- Right of Entry form
- Advisory Committee Application
- *The Lakeview*

7.2.5 Annual Report

SWM staff develops and distributes a North Lake LMD final year-end report that describes all significant LMD program information and activities.

8.0 2015 BUDGET REVIEW

The information provided below consists of task-by-task work plan goals/scope of work and their associated expenditures for 2015.

TASK 1 & 2 Aquatic Vegetation Control/Treatment					
Date	Object Code	Reference#	Vendor	Description	Cost
1/1/15	411	N/A	AquaTechnex	Permit fee	\$496.00
2/16/15	411	5441	AquaTechnex	Attendance NLAC Meeting	\$265.00
6/25/15	411	5822	AquaTechnex	Initial Survey	\$821.25
7/27/15	411	5984	AquaTechnex	Treatment Notifications	\$383.25
7/27/15	411	5984	AquaTechnex	Mobilization Fee	\$328.50
7/27/15	411	5984	AquaTechnex	Shoreline Posting	\$82.13
7/27/15	411	5984	AquaTechnex	Treatment of PL (4hrs)	\$657.00
8/24/15	411	6120	AquaTechnex	Attendance NLAC Meeting	\$290.18
8/24/15	411	6120	AquaTechnex	Mobilization Fee	\$328.50
8/24/15	411	6120	AquaTechnex	Shoreline Posting	\$164.25
8/24/15	411	6120	AquaTechnex	Treatment Native Nuisance Vegetation	\$1,149.75

8/24/15	411	6120	AquaTechnex	Treatment of PL (2hrs)	\$328.50
10/12/15	411	6236	AquaTechnex	Post Survey	\$574.88
11/2/15	411	6276	AquaTechnex	Report Generation	\$492.75
11/24/15	411	6320	AquaTechnex	Report Generation	\$821.25
					\$7,183.19

TASK 3. Public Education					
Date	Object Code	Reference#	Vendor	Description	Cost
02/09/15	492	N/A	Petty cash	NLAC meeting	\$5.99
05/05/15	492	N/A	Petty cash	NLAC meeting	\$7.49
08/03/15	492	N/A	Petty cash	NLAC meeting	\$5.49
08/17/15	492	N/A	Petty cash	NLAC meeting	\$5.00
03/25/15	492	57602	Print solutions	Newsletter	\$170.23
05/20/15	492	58745	Print solutions	Newsletter	\$170.23
09/04/15	492	60912	Print solutions	Newsletter	\$168.98
11/06/15	492	62283	Print solutions	Newsletter	\$170.23
					\$703.64

TASK 4. Water Quality Monitoring					
Date	Object Code	Reference#	Vendor	Description	Cost
06/11/15	410	61607	King County lab	Sample Analysis	\$300.00
08/10/15	410	64242_a	King County lab	Sample Analysis	\$1,417.50
10/08/15	410	67280	King County lab	Sample Analysis	\$1,417.50
10/22/015	410	68207a	King County lab	Sample Analysis	\$367.50
12/03/15	410	70229a	King County lab	Sample Analysis	\$367.50
12/03/15	410	70115a	King County lab	Sample Analysis	\$367.50
					\$4,237.50

TASK 5. SWM-implemented LMD Efforts					
Date	Object Code	Reference#	Vendor	Description	Cost
Annual	110	N/A	SWM Staff	Annual efforts, 2015	\$3,781.63

2015 NORTH LAKE LMD BUDGET TOTALS

2014 LMD Balance Carried Forward	\$5,322.00
2015 LMD Assessments Collected (includes interest)	\$13,550.73
TOTAL 2015 REVENUE	\$18,872.73
TOTAL 2015 EXPENSES	\$15,905.96
Estimated Final 2015LMD Fund Balance	\$2,967
