



American Lake – Lake Management District No. 1 Advisory Committee
Thursday, December 12, 2019, 6:00 to 7:30 PM
American Lake Conference Room, City Hall
6000 Main St. SW, Lakewood, WA 98499

MEMBERS

Thomas Blume
David Clouse
Mary Dodsworth
Peter Marsh
Richard Martinez
Mark Pfeiffer

YOUTH COUNCIL LIAISONS

None

COUNCIL LIAISON

None

STAFF

Paul Bucich, Public Works
Engineering Director

Greg Vigoren, Engineering
Services Manager

CALL TO ORDER 6:00 PM

PUBLIC COMMENT

APPROVAL OF NOVEMBER MINUTES

UNFINISHED BUSINESS:

- None

NEW BUSINESS:

- Elect Committee Chair and Vice-Chair
- Discuss results of 2019 lake treatment
- Prepare 2020 Work Plan, Schedule, and Budget

NEXT MEETING

T.B.D.

ADJOURNMENT

The role of the American Lake – Lake Management District No. 1 Advisory Committee is to represent the property owners of the LMD to the City Council, and (1) each spring discuss with the City the proposed annual work program consistent with the American Lake Integrated Aquatic Vegetation Management Plan (or its successors); (2) provide input and suggestions to the City regarding the implementation of the district’s annual work program; (3) work with the City in the preparation of any educational materials related to American Lake and the LMD; (4) each winter, review and provide input to the City on the preparation of an annual report to the City Council regarding progress on the LMD work program and the health of the lake; and (5) support an annual public meeting to brief LMD members on the contents of the annual report and related LMD activities.



**American Lake – Lake Management District No. 1
Meeting Minutes**
Tuesday, November 5, 2019 Time: 6:00PM – 7:00 PM
Lakewood City Hall, American Lake Conference Room
6000 Main Street SW, Lakewood, WA 98499

CALL TO ORDER

Mr. Greg Vigoren called the meeting to order at 6:00 p.m.

ATTENDANCE

American Lake – Lake Management District No. 1 Members Present: Richard Martinez, Mary Dodsworth, Mark Pfeiffer, Thomas Blume, and Peter Marsh

American Lake – Lake Management District No. 1 Members Excused: David Clouse

Staff: Greg Vigoren, Paul Bucich

Council Liaison: None

APPROVAL OF MINUTES

None; first meeting

PUBLIC COMMENT

None

UNFINISHED BUSINESS

None

NEW BUSINESS

Mr. Vigoren welcomed the members to the first meeting of the American Lake – Lake Management District (LMD) No. 1 Advisory Committee. Members introduced themselves.

Mr. Vigoren provided a brief background of how and why the LMD was created.

Mr. Vigoren reviewed City Council Resolution No. 2019-15 with the members. The resolution created the Advisory Committee and established their duties.

Mr. Vigoren led a review and discussion of the cost analysis that was used to determine the \$0.66 per foot cost for the LMD as well as the expected budget for future years.

Items expected to be covered at the next meeting include establishing 2020 meeting dates, electing a Committee Chair and Vice-Chair, discuss the results of the 2019 lake treatment, and prepare a 2020 work program and budget.

Council Comments: None

NEXT MEETING:

Thursday, December 12, 2019 @ 6:00 pm – Lakewood City Hall, American Lake Conf. Room

ADJOURNMENT Mr. Vigoren adjourned the meeting at 7:10 p.m.

Chair:

American Lake – Lake Management
District No. 1 Advisory Committee
December 12, 2019

Staff Person/Minutes: Greg Vigoren

American Lake – Lake Management
District No. 1 Advisory Committee
December 12, 2019

DRAFT

**AMERICAN LAKE – LAKE MANAGEMENT DISTRICT NO. 1
ADVISORY COMMITTEE
2020 ANNUAL WORK PLAN, BUDGET, AND MEETING SCHEDULE**

Members:

Chair: **TBD**

Vice-Chair: **TBD**

Thomas Blume

David Clouse

Mary Dodsworth

Peter Marsh

Richard Martinez

Mark Pfeiffer

Council Liaison:

None

City Staff Support:

Paul Bucich, Public Works Engineering Director

Greg Vigoren, Engineering Services Manager

Diana Halar, Compliance Inspector

Meeting Schedule:

March, May, September, and November

2020 Work Plan & Budget:

1.	Aquatic vegetation surveys (2)	\$3,100
2.	Invasive aquatic vegetation control/treatment	\$20,000
3.	Public education & outreach efforts	\$2,000
4.	Supplies, equipment, annual meeting	\$500
5.	City administrative costs	\$4,270
	Total Estimated Costs	\$29,870

Date	Topic(s)
Jan. 13 th	2020 work plan, budget, and schedule reviewed by City Council – chair and staff
March	Prepare member outreach postcard or newsletter – committee
May	Conduct beginning of season aquatic vegetation survey – contractor
May	Distribute member outreach postcard or newsletter – committee and staff
May	Install milfoil signs at boat launches – staff
June	Hire a contractor for aquatic vegetation control/herbicide treatment – staff
July/Aug	Conduct invasive aquatic vegetation control activities or herbicide treatment – contractor
September	Conduct end of season aquatic vegetation survey – contractor
October	Review control/treatment report – committee
November	Develop 2021 work plan, budget, and schedule based on 2020 activities, LMD needs, and available budget – committee
November	Elect Advisory Committee Chair and Vice-Chair for 2021 – committee

Special Events:

Date	Event
Aug/Sept	Annual member meeting at American Lake Park

AMERICAN LAKE MANAGEMENT DISTRICT COST ANALYSIS

COST ITEMS	SHORELINE FOOTAGE (ft.)	% OF TOTAL FOOTAGE	YEAR 1 2019 New	YEAR 2 2020	YEAR 3 2021	YEAR 4 2022	YEAR 5 2023	YEAR 6 2021	YEAR 7 2022	YEAR 8 2023	YEAR 9 2021	YEAR 10 2022	TOTAL YEARS 1-10
Cost Escalator (assumed 2%/yr)			Estimate	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	
CONTRACTOR COSTS:													
Summer Surveys			\$2,500	\$2,550	\$2,601	\$2,653	\$2,706	\$2,760	\$2,815	\$2,872	\$2,929	\$2,988	\$27,374
Obtain Permits			\$1,750	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,750
Treat 130 Acres in Lake			\$94,250	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$94,250
Diver Treatment Efforts			\$20,000	\$20,000	\$20,400	\$20,808	\$21,224	\$21,649	\$22,082	\$22,523	\$22,974	\$23,433	\$215,093
Post Treatment Evaluation			\$2,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,500
Public Education			\$4,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000
Year-end Planning for Following Year			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Misc.			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Estimated Contractor Costs (Shared cost with JBLM/VA)			\$125,000	\$22,550	\$23,001	\$23,461	\$23,930	\$24,409	\$24,897	\$25,395	\$25,903	\$26,421	\$344,967
DEPARTMENT OF ECOLOGY GRANT													
Net Estimated Contractor Costs (Shared cost with JBLM/VA)			\$50,000	\$22,550	\$23,001	\$23,461	\$23,930	\$24,409	\$24,897	\$25,395	\$25,903	\$26,421	\$269,967
JBLM/VA Portion (41.3%)			\$20,693	\$9,333	\$9,519	\$9,710	\$9,904	\$10,102	\$10,304	\$10,510	\$10,720	\$10,935	\$111,729
LMD (58.7%)			\$29,307	\$13,217	\$13,482	\$13,751	\$14,026	\$14,307	\$14,593	\$14,885	\$15,183	\$15,486	\$158,238
LAKEWOOD CITY COSTS													
Administrative Assistance			\$1,500	\$1,500	\$1,530	\$1,561	\$1,592	\$1,624	\$1,656	\$1,689	\$1,723	\$1,757	\$16,132
Contracting & Oversight			\$1,500	\$750	\$765	\$780	\$796	\$812	\$828	\$845	\$862	\$879	\$8,816
Public Education Assistance			\$0	\$1,500	\$1,530	\$1,561	\$1,592	\$1,624	\$1,656	\$1,689	\$1,723	\$1,757	\$14,632
Annual Plan Assistance			\$1,000	\$1,000	\$1,020	\$1,040	\$1,061	\$1,082	\$1,104	\$1,126	\$1,149	\$1,172	\$10,755
Cost for Notices & Collection of Taxes			\$1,000	\$1,020	\$1,040	\$1,061	\$1,082	\$1,104	\$1,126	\$1,149	\$1,172	\$1,195	\$10,950
Total Estimated Lakewood City Costs (NOT a shared cost with JBLM/VA)			\$5,000	\$5,770	\$5,885	\$6,003	\$6,123	\$6,246	\$6,371	\$6,498	\$6,628	\$6,760	\$61,284
													\$0
													\$0
MANAGEMENT DISTRICT COSTS													
Misc., supplies, equipment, annual meeting			\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$5,000
Public Education Efforts			\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$5,000
Total Management District Estimated Costs (NOT a shared cost with JBLM/VA)			\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$10,000
													\$0
													\$0
TOTAL ESTIMATED COSTS													
			\$131,000	\$29,320	\$29,886	\$30,464	\$31,053	\$31,654	\$32,268	\$32,893	\$33,531	\$34,181	\$416,251
NET ESTIMATED COSTS After Department of Ecology Grant													
			\$56,000	\$29,320	\$29,886	\$30,464	\$31,053	\$31,654	\$32,268	\$32,893	\$33,531	\$34,181	\$341,251
JBLM/VA Net Portion			\$20,693	\$9,333	\$9,519	\$9,710	\$9,904	\$10,102	\$10,304	\$10,510	\$10,720	\$10,935	\$111,729
LMD Net Portion			\$35,307	\$19,987	\$20,367	\$20,755	\$21,150	\$21,553	\$21,964	\$22,383	\$22,811	\$23,247	\$229,523
REVENUE													
DEPARTMENT OF ECOLOGY GRANT													
Needed funds for treatment (Not revenue)	\$50,000		\$75,000	-	-	-	-	-	-	-	-	-	\$75,000
JBLM/VA Hospital			\$20,693	\$9,333	\$9,519	\$9,710	\$9,904	\$10,102	\$10,304	\$10,510	\$10,720	\$10,935	\$111,729
Revenue from City			\$19,757										\$19,757
Balance of Revenue Needed from LMD			\$15,550	\$19,987	\$20,367	\$20,755	\$21,150	\$21,553	\$21,964	\$22,383	\$22,811	\$23,247	\$209,766
Annual Revenue Needed			\$131,000	\$29,320	\$29,886	\$30,464	\$31,053	\$31,654	\$32,268	\$32,893	\$33,531	\$34,181	\$416,251
Total Shoreline Footage in LMD (Private Lakeside Owners, City of Lakewood w/o ROW, Cam)			36,115	36,115	36,115	36,115	36,115	36,115	36,115	36,115	36,115	36,115	
Total Lake Shoreline Footage (ft) (61,714 or 61,615?)	61,615												
(See below)			\$14,977	\$989	\$609	\$222	-\$173	-\$576	-\$987	-\$1,406	-\$1,834	-\$2,270	
TAX METHOD - BY SHORELINE FOOTAGE													
ANNUAL LMD TAX RATE TO ALL OWNERS													
Tax for current year costs Option 1	\$0.581	36,115	\$20,977	\$20,977	\$20,977	\$20,977	\$20,977	\$20,977	\$20,977	\$20,977	\$20,977	\$20,977	\$209,766
Tax to repay City of Lakewood for 1st year fronted funds plus	\$0.076	36,115	\$2,759	\$2,759	\$2,759	\$2,759	\$2,759	\$2,759	\$2,759	\$2,759	\$2,759	\$2,759	\$27,588
Annual Total LMD Tax Rate to All Owners:	\$0.657	36,115	\$23,735	\$23,735	\$23,735	\$23,735	\$23,735	\$23,735	\$23,735	\$23,735	\$23,735	\$23,735	\$237,354
LMD Assess Over/(Under) Revenue Needed from LMD:			\$4,977	\$989	\$609	\$222	(\$173)	(\$576)	(\$987)	(\$1,406)	(\$1,834)	(\$2,270)	(\$450)
City & LMD costs as % of yearly base tax revenues			28.6%	32.3%	32.8%	33.4%	34.0%	34.5%	35.1%	35.7%	36.4%	37.0%	34.0%
City & LMD non-education costs as % of base revenues			26.2%	22.7%	23.1%	23.6%	24.0%	24.4%	24.9%	25.3%	25.8%	26.2%	24.6%
Notes:													
- Assumption is that City/LMD receives \$75k Ecology Grant.													
- Assumption is that first year's collections will reserve \$7,250 for City support of LMD Advisory Board and preparation for second year's efforts.													
- City will recover \$11,000 of first year's collections plus the tax for repayment of remaining loan. Total approximately \$13,759 (\$11,000 + \$2,759).													
- Assumption is that JBLM and others outside of LMD will cost share the efforts annually for summer survey and diver efforts.													
Property Owner Allocation													
Private Lakeside Landowners	26,581	43.1%											
JBLM & VA Hospital	25,500	41.4%											
Camp Murray	8,592	13.9%											
City of Lakewood	942	1.5%											
City of Lakewood (ROW)	-	0.0%											
Total Lake Shoreline Footage (ft)	61,615	100%											
Amount to finance from City													
\$24,307													
Total LMD collection without City finance debt:													
\$209,766													
LMD Rate based on LMD needs:													
\$0.58													
City repayment with interest:													
\$27,588													
LMD Rate City repayment annual with interest:													
\$0.076													
LMD Funds Total Needed:													
JBLM/VA													
\$111,729													
Camp Murray:													
\$0													
City loan:													
\$19,757													
Grant:													
\$75,000													
Total Funds:													
\$416,251													
Original Loan Amount = \$24,307													
	Interest Rate	Loan Interest	Principle & Interest Due	Principle Paid	Interest Paid	Total Paid	Principle Balance						
Year 1 2019	3.0%	\$0	\$2,431	\$2,431	\$0	\$2,431	\$21,876						
Year 2 2020	3.0%	\$656	\$3,087	\$2,431	\$656	\$3,087	\$19,446						
Year 3 2021	3.0%	\$583	\$3,014	\$2,431	\$583	\$3,014	\$17,015						
Year 4 2022	3.0%	\$510	\$2,941	\$2,431	\$510	\$2,941	\$14,584						
Year 5 2023	3.0%	\$438	\$2,868	\$2,431	\$438	\$2,868	\$12,153						
Year 6 2024	3.0%	\$365	\$2,795	\$2,431	\$365	\$2,795	\$9,723						
Year 7 2025	3.0%	\$292	\$2,722	\$2,431	\$292	\$2,722	\$7,292						
Year 8 2026	3.0%	\$219	\$2,649	\$2,431	\$219	\$2,649	\$4,861						
Year 9 2027	3.0%	\$146	\$2,577	\$2,431	\$146	\$2,577	\$2,431						
Year 10 2028	3.0%	\$73	\$2,504	\$2,431	\$73	\$2,504	\$0						
		\$3,281	\$27,588	\$24,307	\$3,281	\$27,588							
Total Loan + Interest Straightline Annual Assessment = \$2,759													

American Lake Eurasian Milfoil Program 2019 Year End Report



Prepared for
City of Lakewood

AquaTechnex,
LLC

www.aquatechnex.com

HEADQUARTERS
Bellingham, WA 98228
Local Offices
Lynnwood, WA
Centralia, WA
Medical Lake, WA

Pleasant Hill, CA Boise, ID
Santa Ana, CA
Palm Desert, CA

Introduction

American Lake in Lakewood, Washington has a history of being impacted by invasive aquatic species. *Myriophyllum spicatum* or Eurasian Watermilfoil has been a major problem in lakes along the I 5 Corridor in Western Washington for several decades. At some point in the past, this plant was introduced to American Lake. Eurasian Milfoil spreads via fragmentation. Generally, the plant will move into a lake transported on a boat trailer. Once there, it will grow root hairs and sink to the bottom and establish. As the plants mature each year, they spread within the lake by fragmentation. Milfoils can grow up to a foot per week and rapidly replace native aquatic vegetation in the system. By the summer of 2017 the problem in American Lake was widespread.

The City of Lakewood and the American Lake Community banded together to develop an Integrated Aquatic Vegetation Management Plan. The first year of this plan focused on significantly reducing the population of Eurasian Milfoil in the lake to the point that small maintenance treatments in future years could hold the problem in check.

An RFP was issued by the City and awarded to our firm. The objective of the work for 2019 under this agreement was to perform a pretreatment survey to determine if there had been a change in the populations, to develop and implement a treatment program using ProcellaCOR herbicide and monitor the results. This report will summarize this work and findings.

Summary of operations

The American Lake survey occurred shortly after award of contract. At the end of 2018, the Integrated Aquatic Vegetation Management Plan and survey work that supported it had mapped approximately 120 acres of Eurasian Milfoil. The survey conducted in the summer of 2019 found that closer to 166 acres were now infested in the littoral area of the lake. This had the potential to exceed the budget and pricing quoted in the winning RFP.

Based on the City's desire to have a significant impact on the plants present, our team revisited the pricing. We had used an average depth from the shoreline to outside edge of the treatment zones to calculate the amount of herbicide necessary to treat the acres present at the end of 2018.

We broke the acres found in 2019 into three zones based on average water depths. This allowed us to use less material in the acres that were shallow, a bit more as per label in a second zone marked medium depth, and the most in area mapped as deeper. So instead of treating 166 acres with one average depth, we treated 48.3 acres mapped as shallow, 111.52 acres mapped as medium and 6.7 acres mapped as deep. In this fashion we were able to treat at label rates and expand the number of acres treated with the same chemical budget that was assumed in the proposal that was submitted.

ProcellaCOR herbicide was not allowed for use in Washington State until July 5th of this year when the revised NPDES permit for application of aquatic herbicide became active. The vote on a Lake Management District and contracting also took place in June and early July. On completion of contracting, the survey work and communication with the City, the first application was planned for August 1st. A 10 day prior notice was delivered to all shoreline residents informing them of treatment and water use restriction. In this case ProcellaCOR restricted use of water from the treatment area for 24 hours.

American Lake Milfoil Control Program Year End Report

The Tacoma Golf and Country Club has a water right and withdraws water to irrigate the golf course from American Lake. During the summer months, a golf course requires from 500,000 to 1,000,000 gallons per night to maintain turf health. As the lake was the only water supply for this purpose, we worked with the Superintendent to come back later in the summer when rain supplied relief from the need to irrigate and target the areas around the Club's intake.

On July 31st, our team mobilized a posting crew to the lake and performed shoreline signage posting as required by the permit. On August 1st, we mobilized three application vessels to the lake, assigned them treatment zones and began making the application of ProcettaCOR herbicide. The work began approximately 7 am and was completed approximately 3 pm.

In late August the City notified us that a competitor has provided a picture of milfoil along the shoreline and comments about the treatment not working. There was a green dock located in the picture, but no address was provided for that location. We surveyed the shoreline and located the dock in the imagery. This location was not part of the treatment area. At the time of the survey in early summer, milfoil was not observed at this location and not included in the treatment area. As we were coming back to treat the County Club zone in September, we added this location to that treatment plan and targeted that growth.

We performed two surveys, one in September about 6 weeks post treatment and a second one on October 9th.

Summary of results

We performed two surveys.

The first trip to the lake was approximately six weeks post treatment on September 12th. All areas of the lake showed signs of severe herbicide injury. Some of the zones in the western portion of the lake has plant still standing however and it was decided to do a second review in a few more weeks to allow the plants to move through the process.

The second review and survey of the lake took place on October 9th. We mobilized a survey team equipped with a underwater video drone system to the lake so that observations of our team could be recorded for display to the City in this report.

The results of this survey are shown on the attached maps and video links. It should be noted that at the time of treatment the water levels in the lake were approximately three feet higher than during the October survey, and on August 1, the milfoil was either topped out or within a few inches of the lake surface at this higher water level.

The first map is of the treatment areas that were subject to herbicide application. The second map provides an overview of conditions in the lake at approximately two months post treatment.

There are two zones mapped with respect to control. We experienced two different situations on the lake.

Zone one is labeled Milfoil Dead. The milfoil beds in this zone are dead and gone from the water column. There are however significant levels of native aquatic plant growth present. Potamogeton species and Vallisneria were the dominant species present. These plants while present are not the

dense mat forming beds that milfoil presented prior to treatment. It is probable that removing the milfoil allows this growth to recover into this zone.



Aquatechnex biologist deploying 4k video drone system. This system has 4K resolution camera, is controlled by handheld system and is steered to locations to video or runs programed transects.

American Lake Milfoil Control Program Year End Report

Two representative underwater videos are presented here:

- North shore east of beach. <https://vimeo.com/365405388> Naiad, vallisneria, pondweeds present.
- South shore west of Tacoma Country Club <https://vimeo.com/365407452> dense milfoil monoculture present pre treatment. Pondweeds, vallisneria, naiad and elodea present.

Zone two is labeled severely injured. Plants in this zone all showed herbicide symptomology, all stems 6-8 feet below the water line level on day of treatment, more than half of the stems laying over and defoliated. There was also green growth remaining on the stems in perhaps 50% of the plants present in this zone (all stems however showed herbicide impacts). Two representative underwater video are presented here:

- Beach area in front of VA Facilities. <https://vimeo.com/365396110> Note all stems injured, significant numbers laying over, some green growth remaining on declining stems.
- Area on south shore at start of severe injury zone <https://vimeo.com/365409197> same as above

We have discussed this development with both the manufacturer, SePRO and federal research scientists that have been following ProcellaCOR treatments for a couple years in the field nationally. There have been occasions where control takes longer than a few months to complete, so there is some possibility that these plants will still die out. A survey this coming spring should be performed to confirm or map any surviving plants.



Boom jet system designed to apply ProcellaCOR at water surface used on American Lake Project

The second point is the only variable that seem different is that all of the areas where milfoil is injured and not completely gone was treated with a new application set up. SePRO indicated that the herbicide moves into plants so fast that later in the season the herbicide should be applied where the apical tips of

American Lake Milfoil Control Program Year End Report

the plant are in the water column. We built a boat spray system to make surface applications where the majority of the apical tips of the plant were in the mid to late summer, at the water surface.

Two of our application boats worked on the areas where we obtained excellent control. They used our standard drop hose system that injects the herbicide and mixes it in the upper four feet of the water column.

The one new system used a surface spray boom-jet system that applied the herbicide right on the water surface. This boat did all of the work in the western portion of the lake where control is not as rapid. There is a distinct line where the one boat stopped, and the new boat started.

This is a new herbicide and people are still learning about it in the field. One theory might be that the herbicide that was surface applied absorbed very high in the plants, at the lake surface and damage causes may have limited translocation. The boom systems that injected may have more rapidly exposed more of the plant vertically in the water column and absorption occurred at more points on the plant stem vertically in the water column.

In any event, the results in a portion of the lake are not complete.

Lessons Learned and suggested steps forward

As mentioned, this is a new herbicide and people will be learning about how it behaves under different field conditions as time goes on. The biology and plant conditions vary from lake to lake and region to region. There have been similar cases where control was thought to be less than optimal a few months after treatment, but plants did not reappear the following year.

The fact that the permit did not allow us to use this product earlier in the year could have some impact on this as well. While this and most other auxin herbicides perform well all summer long, they can work better at lower rates in the early summer when the plant is more actively emerging from the winter and growing rapidly. Going earlier in future treatments could optimize results.

In retrospect, our attempt to treat more acres for your budget may have been a mistake. We might have treated fewer acres at a higher rate and that may have changed things.

But the primary factor that differentiates control is the boats that worked on the lake. This boat was built specifically to address where the manufacturer wanted to put the herbicide in mid to late summer, and it may be that it doesn't work as well as the drop hose system in terms of exposing the plant in the water column to the herbicide. While this is an opinion, it seems well founded.

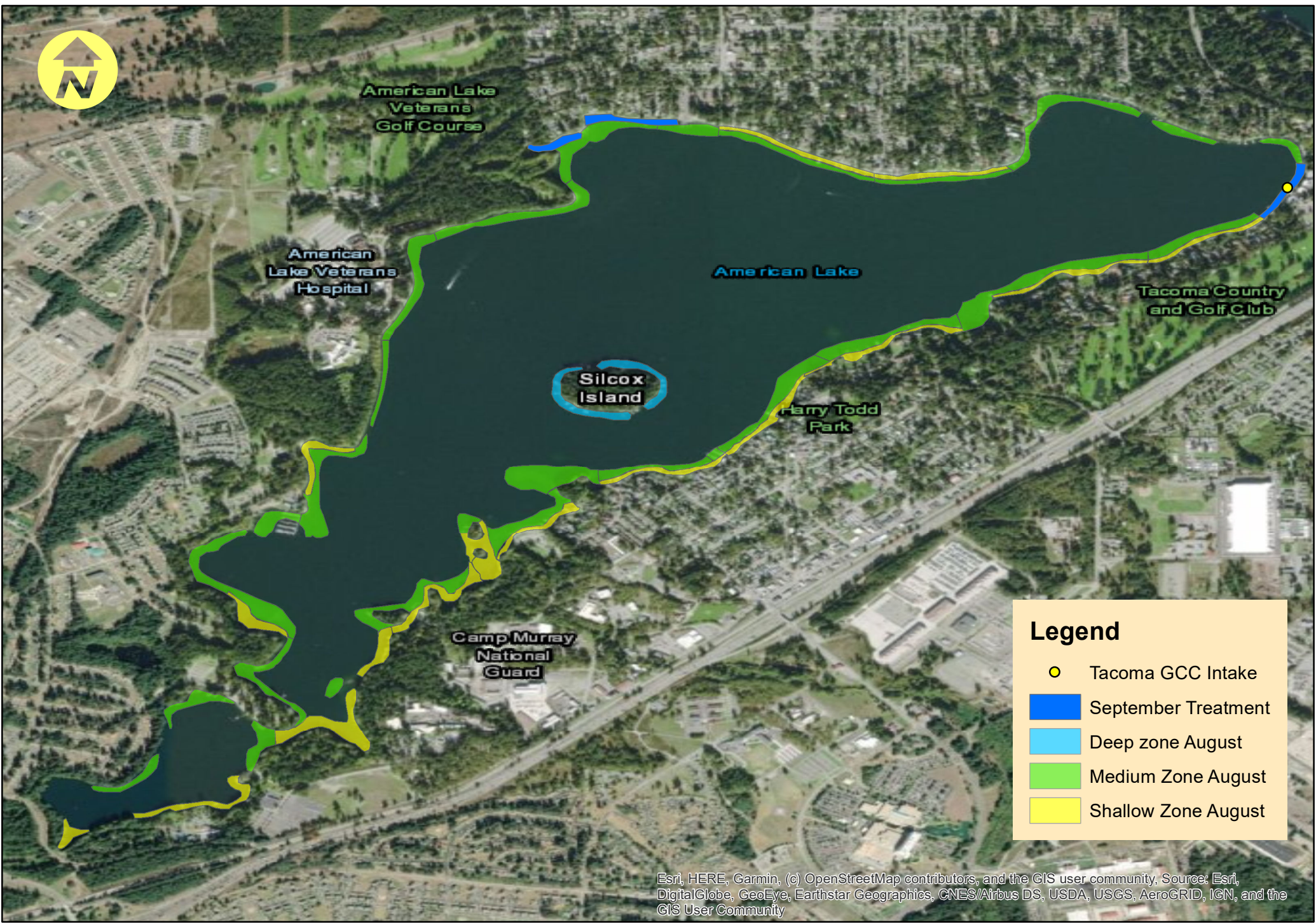
We would suggest the following steps.

In the spring of 2020, starting in mid-May, the lake should be inspected to determine if there is regrowth in the areas mapped as injured.

Our contract expires at the end of this year. If it is renewed, and there is significant regrowth in the areas mapped as severely injured, we would offer to perform a second application to these zones providing the herbicide and the application equipment and team to finish this off.

American Lake Milfoil Control Program Year End Report

Please review this and address questions to Terry McNabb, 360-201-2612. Thanks for your consideration.

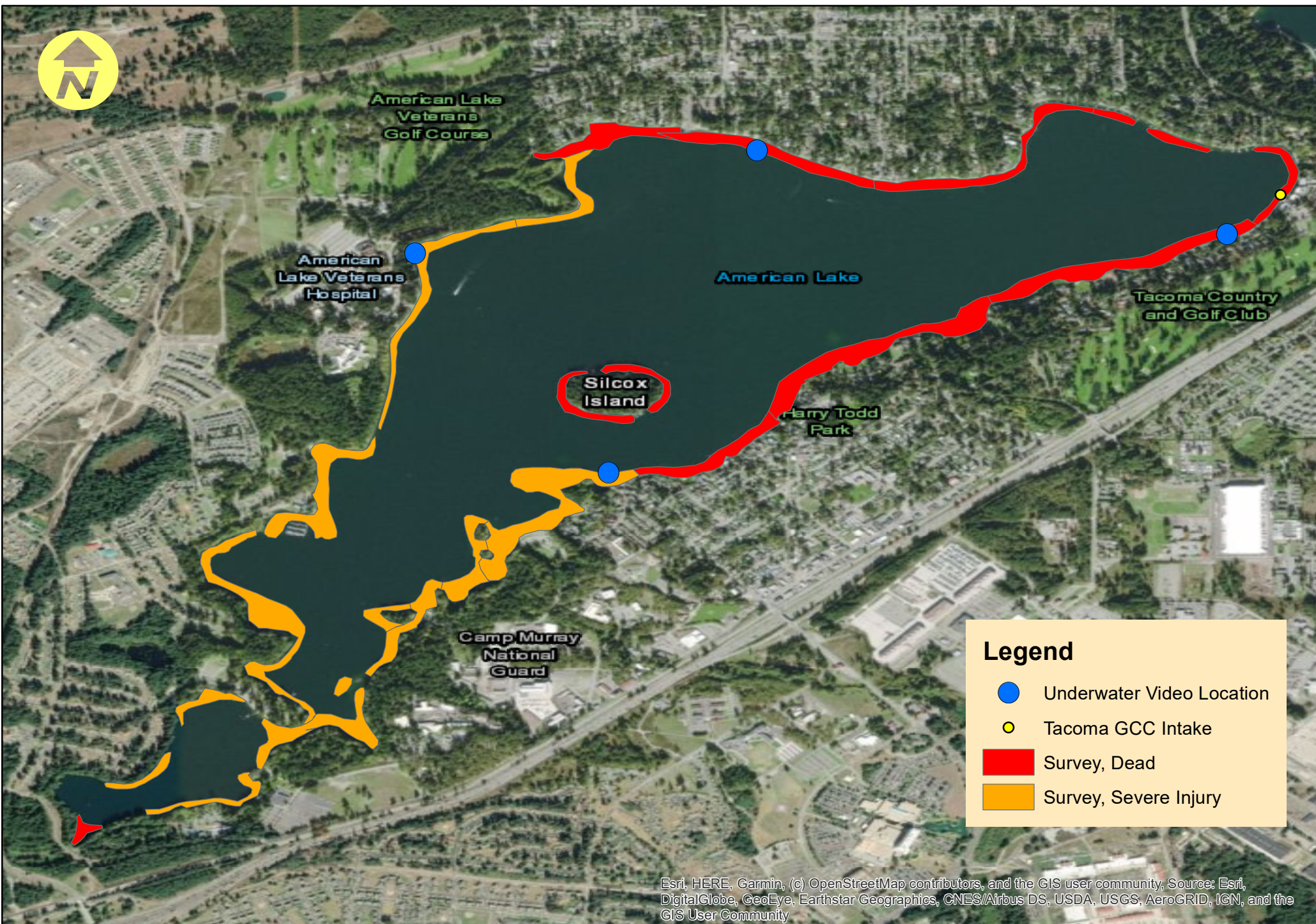


Legend

- Tacoma GCC Intake
- September Treatment
- Deep zone August
- Medium Zone August
- Shallow Zone August

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

American Lake Eurasian Milfoil Treatments, Summary of Control



Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

American Lake Eurasian Milfoil Treatments, Summary of Control