



Milfoil Advisory Group Agenda

MONDAY DECEMBER 21, 2020 – 4:00 P.M.

This meeting will be held using Zoom video/audio conference technology due to the COVID-19 restrictions currently in place.

Join online by visiting:

<https://us02web.zoom.us/j/2698572603>

Join by phone by dialing:

**(312) 626-6799 -or-
(646) 518-9805**

Then enter "Meeting ID":

2698572603

1. CALL TO ORDER
2. PUBLIC COMMENT
3. REVIEW DRAFT COMMITTEE REPORT
 - a. Finalize recommendation for funding treatment
4. COMMITTEE MEMBER COMMENTS
5. ADJOURN

Eurasian Water Milfoil Advisory Committee Report to Saugatuck City Council

December 28, 2020



Eurasian Water Milfoil Advisory Committee Report to Saugatuck City Council

Introduction

Lake Kalamazoo (the Harbor) has experienced a troublesome and increasing growth of an invasive species of weed known as Eurasian Water Milfoil. This invasive species is a nuisance to the public's use and enjoyment of the Harbor. In an effort to minimize and control the growth of this weed the Saugatuck City Council, at its regular meeting of October 12, 2020 appointed the Eurasian Water Milfoil (EWM) Advisory Committee and tasked the committee to "review the existing documentation, consult with appropriate agencies and experts, identify costs, and to ultimately report the committee's recommendations to the Saugatuck City Council on or before their regular meeting of February 8, 2021."

The committee members:

- Mayor Ken Trester, City Council member
- Garnet Lewis, City Council member (through November 23, 2020)
- Scott Dean, City Council member, communications advisor with Michigan Department of Environment, Great Lakes, and Energy (beginning November 24, 2020)
- Robert Shuchman, Co-Director of Michigan Technological Research Institute
- Pat Burroughs, Past Harbor Authority Board member, Environmental Law Attorney, Civil Engineer
- Tim Straker, Chair of Historic District Commission
- Karen Doyle Homan, Interim City Manager

Methodology/Discussion

For its first meeting, the committee concentrated on reviewing the data and other information collected by the City in the prior two years. This review included the Aquatic Vegetation Survey and Treatment Options Report performed in 2018 by Kaiser & Associates. (Committee packet materials containing all documents/video/photos shared are available at <https://www.saugatuckcity.com/index.php/2020-03-11-16-11-12/news>).

For its second meeting, a panel of experts was assembled. The panel was made up of:

- Melissa DeSimone, Executive Director, Michigan Lakes and Streams Association
- Zach Berry, Biologist, General Manager, Aquatic Doctors
- Ryan Schauland, Biologist/Aquatic Ecosystems, President/Owner Aquatic Doctors
- Andy Tomaszewski, Biologist, PLM Lake and Land Management Corp.

- Jason Broekstra, Biologist, VP of Great Lakes Operations, PLM Lake and Land Management Corp.
- Michael Smith, Owner, Mtt DASH Divers
- Kim Arter, Laketon Township Supervisor; President, Bear Lake Lake Board

With the experts' assistance, all possible methods of treatment were evaluated. These methods and the conclusions reached were:

- Cutting/Harvesting: Harvesters mow the milfoil under water. It is a short-term relief method without any long-term benefits. The resulting fragmentation of the EWM spreads it further.
- Diver Assisted Suction Harvesting (DASH): DASH is being used successfully when the EWM is contained to a small area, less than an acre if dense (Higgins Lake), or in a larger area if the pockets of EWM are scattered (Lake Leelanau). The Kalamazoo Harbor infestation is currently localized, dense and over many acres (17-20 acres). Mtt DASH Divers stated that it takes a week to do a dense half acre equipped with two boats and divers, and advised this method was not recommended for the Harbor because of its size.
- Weevils: Weevils were once promising for long-term control of EWM. They are difficult to propagate for commercial use and not widely used anymore. There is also the danger of introducing another non-native species to the lake.
- Dredging: Dredging is a possible long-term solution. The cost of dredging and the difficulty of permitting does not make it viable in the short-term.
- Benthic Barriers: Benthic barriers are like landscape tarps. They would be difficult to anchor in a flowing river system. They would also kill the native plants along with the invasive species. They are illegal to use for this purpose in Michigan.
- Sonar (fluridone): Not to be confused with acoustic technology, Sonar (fluridone) treatment is like chlorinating a swimming pool. The dilution, 6 ppb, will kill EWM, but will not impact native plants. It is a risky option in a flowing system because it needs to stay 60 days to be effective.
- Aeration: Aeration is great to restore health to an inland lake with algae blooms. It is not effective for EWM or recommended in a flowing system.
- Herbicide: Herbicides placed appropriately, systemically, and properly will cause the die-off of the invasive EWM without harming the native species. Granulated herbicide products that quickly sink to the targeted treatment areas are recommended because they are less impacted by flow. It is already being used in the watershed by the City of Douglas and proving to be effective. Other

nearby harbor communities in West Michigan are also using herbicides to combat invasive EWM.

The panel and committee discussed unintended consequences (impact on native species, fish, and habit) if an herbicide is used. The consensus among the experts was, that by taking out the fast-spreading, non-native invasive species the native species—which are currently being choked out—will return and natural habitat will reappear in the treated areas.

The consequences of allowing the invasive EWM to spread are the potential collapse of the ecosystem. The EWM blocks out the sun, and it degrades and destroys food sources and habitat. When it dies out in the fall, the decaying plants reduce oxygen in the water, which in turn kills fish because there is no food source for them.

An additional benefit of eliminating the invasive EWM is that the foul-smelling duckweed, a native species, will no longer be trapped in EWM's dense mat and thus more likely to continue its normal path down river and out to Lake Michigan.

In addition to environmental considerations, controlling the spread of invasive EWM positively benefits the public's enjoyment of Kalamazoo Lake and Harbor. Controlling it is vital to our local tourist-dependent economy.

(The panel discussion may be viewed on youtube at:
<https://www.youtube.com/watch?v=eYMXBjNYTeE>)

Riparian/Waterfront Property Owners' Consent

As a part of its investigation the Committee looked into the need to obtain individual riparian owners' consent to treat the Harbor for the invasive milfoil. The Committee found the following points:

- Municipalities have an obligation to keep water bodies navigable and free from noxious weeds, just as they do to maintain roads and land areas.
- The Michigan Department of the Environment, Great Lakes and Energy (EGLE) does not require individual property owner consents when the aquatic weed treatments are being done by a municipality through a professional contractor. This is true whether the funding comes from special assessments or from the City's General Fund.

Conclusion

The panel unanimously concluded that herbicide treatment of the invasive EWM patches in Kalamazoo Lake and Harbor would be safe and effective. Herbicide is recognized as a viable treatment option by the Michigan Department of Environment Great Lakes, and Energy (EGLE) and does not come with some of the unintended

consequences of other treatment or cutting technologies. It is also likely the most cost-effective option. The panel also concluded that once the growing EWM infestation is under control, Diver Assisted Suction Harvesting (DASH) may become a viable long-term option of continued maintenance of invasive aquatic weed growth. Although not the focus of the panel's discussion, it was noted that longer-term work and engagement with communities upstream of Kalamazoo Lake would be beneficial in addressing the root causes of weed growth (agricultural run-off, failing septic systems, loss of habitat).

Recomendation

The Committee recommends that the City of Saugatuck partners with the City of Douglas to treat invasive Eurasian Water Milfoil with herbicide. Douglas has already proven that this can be accomplished safely and effectively and partnering in the stewardship of this shared body of water will save both cities money. The City of Douglas's vendor, Aquatic Doctors, has offered a 5% quantity discount if our two communities' partner. We would share the cost of one permit from EGLE rather than obtaining two.

Further, the Advisory Committee recommends the city fund the cost of treatment in the first year.

This recommendation does not require a competitive bidding process. The City of Saugatuck's Code of Ordinances, Ordinance 32.18(C) states under the heading *Exceptions to Competitive Bidding*: "Where the City Council shall determine that the public interest will be best served by purchase from or joint purchase with another unit of government".

Another factor supporting partnering with the City of Douglas is that in early 2020 the City of Saugatuck sent out Requests for Proposals (RFP) for treating Eurasian Water Milfoil. Two contractors responded with Aquatic Doctors being the low bid. Their quoted price in 2021 did not increase from their 2020 bid.

Cost

Aquatic Doctors cost per acre of granular triclopyr (used in Douglas) is \$560 an acre, per treatment. In 2018, when Kaiser & Associates performed their study, the recommended treatment areas were estimated between 17 and 20 acres. Using 20 acres as a high estimate, and applying the 5% discount, the cost for treating 20 acres would be \$21,375 (two treatments over the season).

Since the study, the EWM infestation has grown. We now have it right up to the shoreline in many areas. There are variables which make it difficult to determine what the full cost will be. Those variables include which herbicide EGLE will permit along the shoreline and how many acres these additional areas add up to. The Aquatic Doctors' a la carte menu follows this report. The cost for the shoreline areas could vary from \$185 per acre all the way up to \$575 per acre.



AQUATIC DOCTORS LAKE MANAGEMENT, INC. ("Aqua Docs") of P.O. Box 150247, Grand Rapids, Michigan 49515 and City of Saugatuck of Saugatuck, Michigan agree:

Aqua Docs will provide a professional aquatic program for the control of weeds and/or algae in **Kalamazoo Harbor**. The program will consist of the following:

May/June: Weed and Algae treatment applying restrictive products such as Navigate (2,4-D), Diquat, Triclopyr, Aquathol K, Hydrothol 191, and non-water restrictive products such as copper sulfate, Cutrine-Plus, Cutrine-Ultra, Cygnet Plus, and shade as a tracer.

**3-4 weeks after initial treatment- spot treat weed beds and algae treatment.

July and August: Algae treatments applying non-water restrictive products such as copper sulfate, Cutrine-Plus, Cutrine-Ultra, Cygnet Plus and shade as a tracer. Spot weed treatment for EWM and other nuisance plant growth.

Cost per Acre:

Navigate: Granular systemic 2,4-D herbicide to control Eurasian Watermilfoil	\$ 315.00
Triclopyr: Granular systemic herbicide to control Eurasian	\$ 560.00
Triclopyr: Liquid systemic herbicide to control EWM	\$ 285.00
Clipper: systemic herbicide to control Starry Stonewort	\$ 575.00
Harpoon: granular systemic herbicide to contro Starry Stonewort	\$ 425.00
Diquat: Liquid herbicide to control EWM, Curlyleaf, and Pondweeds	\$ 185.00
Aquathol K-Hydrothol 191: Liquid herbicide to control Pondweeds	\$ 205.00
Algaecides: Granular products to control Chara	\$ 50.00
Algaecides: Granular and liquid products to control algae	\$ 40.00
Water Quality Program:	\$ 50.00/sample

Description and Optional Services:

Weed Treatment: Milfoil, Curly-leaf, Coon-tail, Chara, and various pondweed treatments applying restrictive products such as granular Navigate (2,4-D), Aquathol K, Hydrothol 191, Diquat, Triclopyr, Komeen, Glyphosate, and Cygnet Plus.

Algae treatment: Non-water restrictive algaecides such as Copper Sulfate, Curtain-Plus, Cutrine-Ultra, Chelated Copper, Earthtech, Greenclean, and shade as a tracer. Treatments should occur monthly to prevent existing growth and prevent re-growth. Surrounding conditions (i.e. sunlight, temperature, nutrient concentration, etc...) may require additional treatments.

Muck/Enzyme Treatment: Designed to decrease levels of organic sediment in lakes and ponds while reducing odors and improving water clarity. The pellets sink quickly, targeting 'muck' on the bottom. Mukk Busster does not contain pathogenic bacteria and it is fish and wildlife friendly. Contains 3 billion CFU/gram (Colony-forming units).

Water Quality Program: Water quality program consists of lake samples taken and sent to an independent laboratory (Prein & Newhof). The samples can be tested for a variety of things including; fecal bacteria (E. coli), dissolved oxygen, conductivity, total dissovled solids, pH and alkalinity. Primarily E. coli is the focus.



- Specific treatment dates will be set by Aqua Docs, in cooperation with Kirk Harrier.
- Please be aware Aqua Docs can only treat weeds and algae present at the time of treatment. We have no control over future weed or algae growth based on the current chemicals registered for aquatic use in Michigan.
- Unless otherwise stated in the program, all other aquatic pest control will require a separate program (i.e. cattails, duckweed, largeleaf pondweed, lily pads, purple loosestrife, watermeal, etc...)

Aqua Docs will obtain the DEQ “Aquatic Nuisance Control permit” and post restriction signs as required. Any facility or location related permits/requirements, for example, “Discharge or Retention” permits will be the responsibility of the customer, association, resident or facility. It is your association’s/group’s responsibility to notify each resident within one hundred (100) feet of the treatment area at least seven (7) days in advance of the first treatment that chemicals will be applied. This notification requirement must be provided to every property owner who has consented to have their property treated. Lake boards and townships who assess the lake property owners are exempt from individual consent documentation. The property owner is responsible for removing any restriction signs ten (10) days after the conclusion of water use restrictions.

Aqua Docs carries a general liability policy of insurance for workmans comp, bodily injury and property damage with limits of \$1,000,000.00 per occurrence. Certificates of insurance will be provided upon request.

The State of Michigan requires a minimum fee of \$75.00 and increases the fee to \$1500.00 for treatment areas of 100 acres or more. Please make check to the State of Michigan. Application for the DEQ “Aquatic Nuisance Control permit” shall occur promptly after the fee is received from the customer.

Special Notes & Conditions of Treatments

- #1 – Our office must be notified of any inlets/outlets to meet specific permit requirements with the Michigan DEQ.
- #2 – If the water body is being used as a source of irrigation, please notify our office prior to any treatments.
- #3 – To minimize the possible effects on health and the environment, the treated waters MAY be restricted for such uses as swimming, bathing, irrigation, fish consumption and/or livestock.
- #4 – If an access site has not been determined or established prior to services rendered, then an access site must be determined at the discretion of the applicator at the time of treatment.

Payment in full is due within fifteen (15) days of each application. Any amount remaining unpaid when due shall accrue a penalty of 1.5% per month.

All materials utilized by Aqua Docs shall be of the highest quality and are registered with the U.S. Environmental Protection Agency and the Michigan Department of Agriculture.

The accumulation of dying and decomposing plants and algae can deplete the dissolved oxygen supply in the water, which may result in fish mortality. Please note that such occurrences are minimal, however, the possibility does exist. Due to their level of sensitivity, Goldfish, Coy, and Trout are more susceptible to a treatment than other fish species. During Late Spring and Summer, many NATURAL fish kills occur due to an increase in water temperature and spawning habits, primarily.

Three or five year treatment program: As an incentive to establish a multiple year agreement we will treat your lake or pond at the same price structure as 2019 for 2020! The remaining years (2021-2023) will have cost increases of three percent or less. If total chemical costs exceeds 10% from the previous year a new agreement will have to be mutually acceptable. If during the life of the contract the DNR or other regulatory agencies significantly change the approved treatment procedures or the client finds the manner in which the work is performed less than satisfactory, either party may terminate this agreement upon giving ninety (90) days advance written notice thereof.



Contract:

Signature Page for “City of Saugatuck”

Program Option for City of Saugatuck:

One (1) Year Program- _____
Three (3) Year Program- _____
Five (5) Year Program- _____
(Just initial your choice)

Aquatic Doctors Lake Management, Inc.

By: MT Ryan Schauland B.S.
President

Signature

Date

For City of Saugatuck Representative:

Name (Print) _____

Title _____

Address: _____

Phone: _____

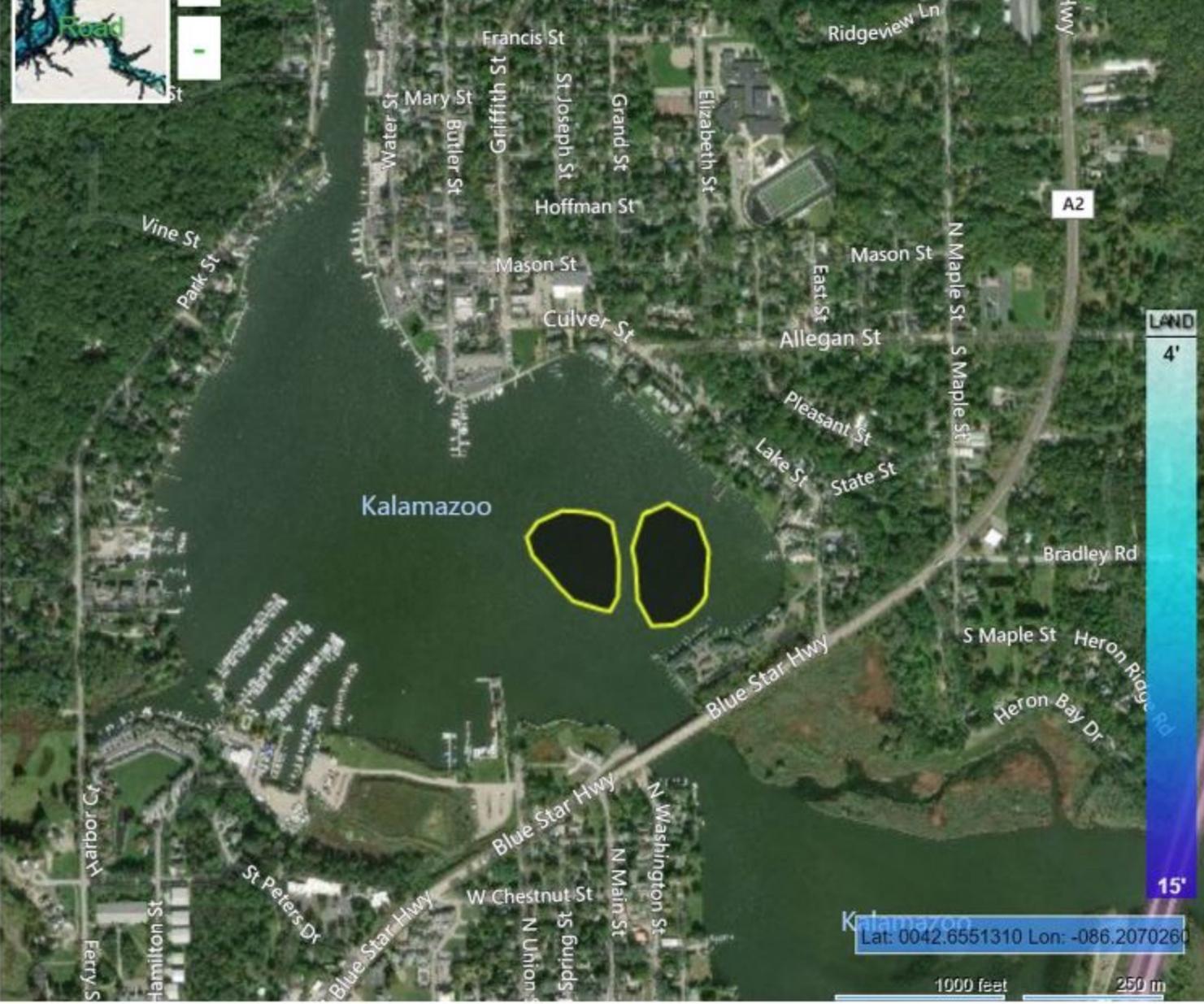
(Day): _____

(Eve): _____

Signature

Date

email: _____



Kalamazoo

LAND

4'

15'

Kalamazoo
Lat: 0042.6551310 Lon: -086.2070260

1000 feet

250 m

Francis St
Mary St
Water St
Butler St
Griffith St
St Joseph St
Grand St
Elizabeth St
Hoffman St
Mason St
Culver St
Vine St
Park St
Ridgeview Ln
A2
N Maple St
S Maple St
East St
Allegan St
Pleasant St
Lake St
State St
Bradley Rd
S Maple St
Heron Ridge Rd
Heron Bay Dr
Blue Star Hwy
Blue Star Hwy
N Washington St
N Main St
N Union St
Spring St
W Chestnut St
St Peters Dr
Hamilton St
Ferry St
Hawthorn Ct



Figure 1. Kalamazoo Harbor Bathymetric Contour Map, Kieser & Associates, June 2018