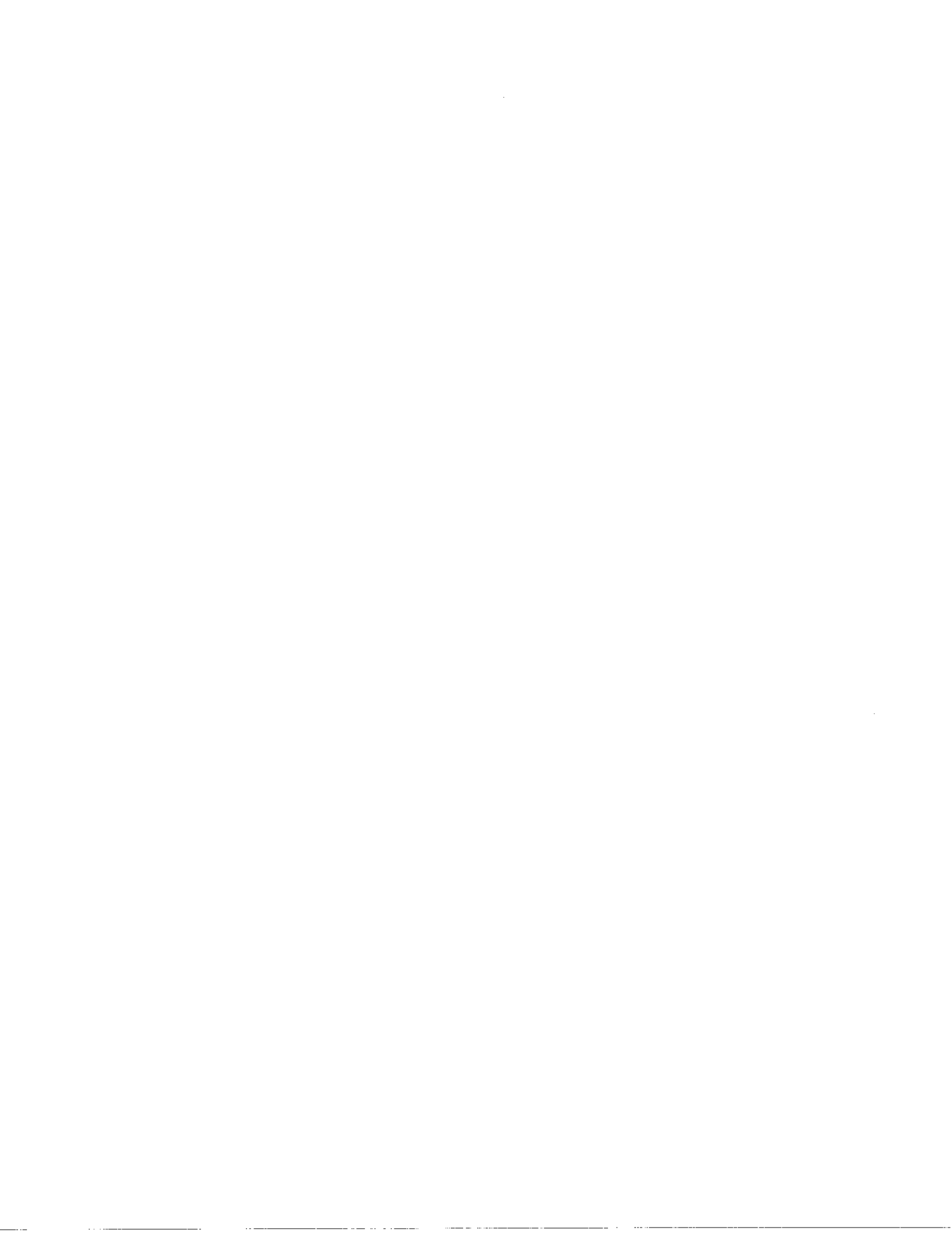
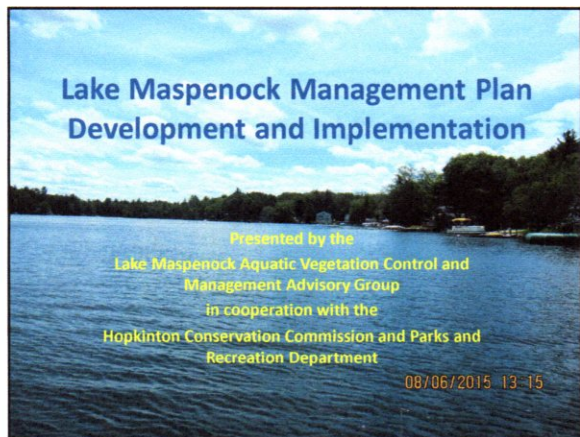


APPENDIX F

PUBLIC FORUM PRESENTATION SLIDES AND COMMENTS





Lake Maspenock Aquatic Vegetation Control and Management Advisory Group

<p>Board of Selectmen's Charge: The Citizen Input Group shall make recommendations to the Director of Public Works (DPW) regarding measures to facilitate effective public participation in the formulation of the Comprehensive Weed Management and Control plan (The Plan) at Lake Maspenock.</p>	<p>Designees/Stakeholders:</p> <ul style="list-style-type: none"> • Conservation Commission • Parks and Recreation Commission • Lake resident with knowledge of prior weed control • Two at-large members
--	--

The Role of the Advisory Group

- Insuring that factual information regarding treatment options is communicated;
- Coordinating, consulting and providing methods and means for seeking public input; ensuring effective public participation at the meetings and that public input is fully considered;
- Formulating methods and means of increasing public awareness about the benefits, cost and potential for health or ecological risks of The Plan.

What does this really mean?

- Advisory Group is tasked with finding a workable long-term solution for the Lake's nuisance weeds;
- We start with an open mind and consider all potential options - keep those that might work and eliminate those that are not feasible, not effective, or too costly;
- Keep public well-informed by transparent decision-making, educational public meetings, and soliciting resident feedback; and
- Decide on a reasonable, comprehensive approach and initiate plan. We expect the approach to adapt and evolve over the long-term.

Lake Maspenock is a Great Pond !

- Lake Maspenock (a.k.a North Pond) is a recognized "Great Pond" by the Commonwealth of Massachusetts
- The name comes from the Nipmuc dialect of Eastern Algonquin translated as 'The Waters At The Base Of The Great Hill'
- Natural state of pond is about 30-40 acres but its size has been gradually increased by a series of impounding dams and currently is about 234 acres*
- Shoreline shared by Hopkinton, Upton and Milford

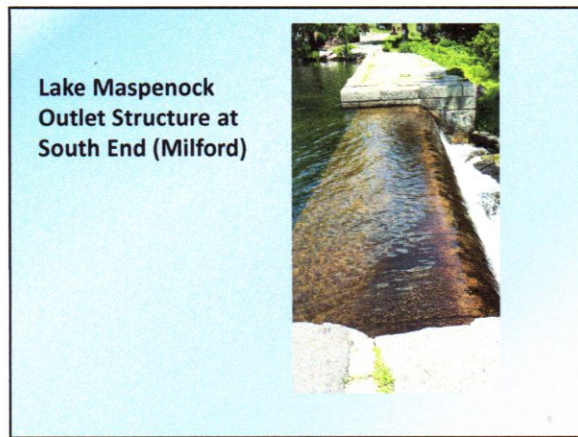
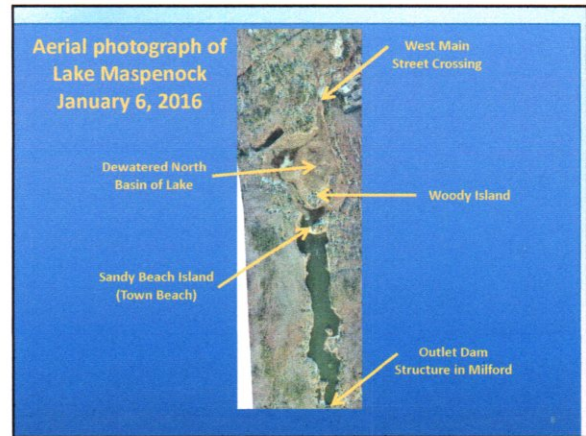
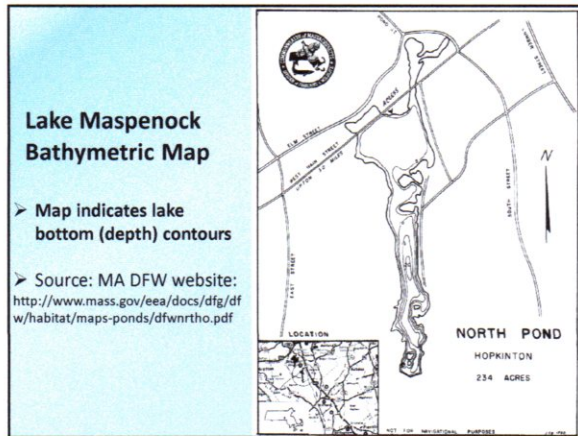
* Information from Lake Maspenock at: <http://www.lmpa.org/history/>

Lake Maspenock

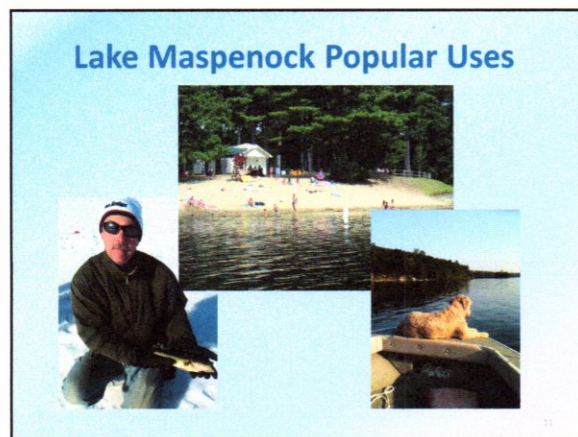
Hopkinton, Upton, and Milford, MA

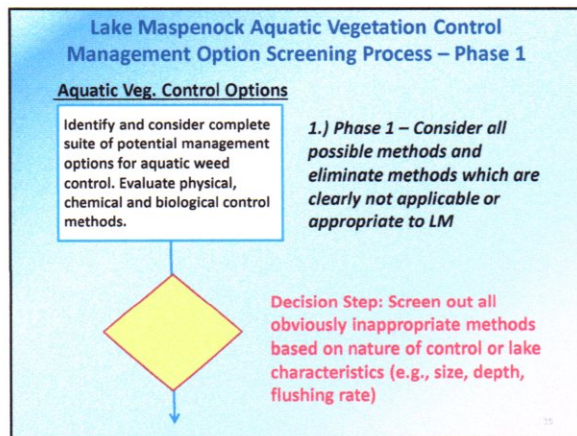
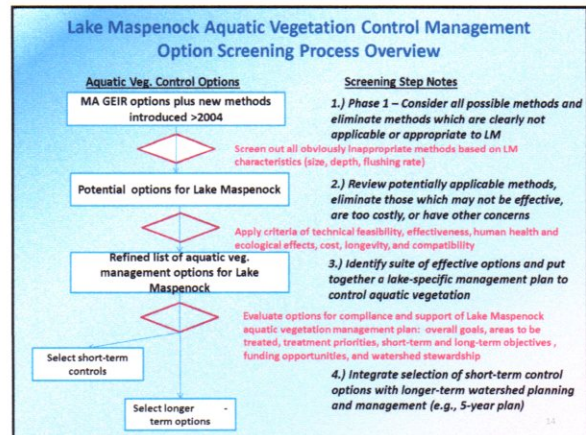
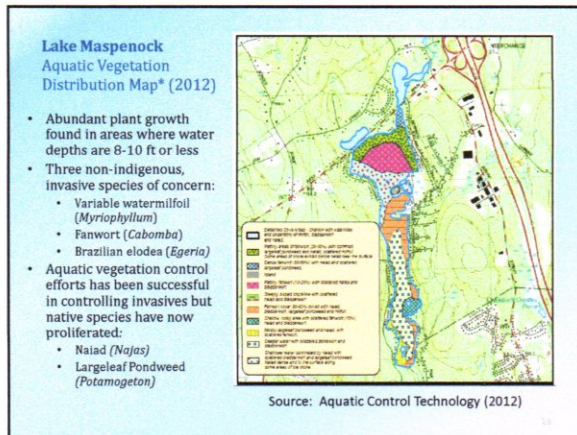
- Surface area is 234 acres. The lake is approximately 2 miles long and 2,000 ft wide at its widest part
- Watershed area is estimated at 1,813 acres. Part of Blackstone River drainage.
- Outlet flow estimated at 28 cfs. Hydraulic retention time is 260 days or annual flushing rate of 1.4 exchanges per year
- Average water depth is 8 feet. Current drawdown practice is typically 5 ft with maximum 8 ft on third year.

Source: Aquatic Control Technology (2012)



- ### Lake Maspenock Water Uses/Issues
- Major Uses of the Lake:
 - Swimming: Town's public beach on Sandy Beach Island
 - Boating: Public boat launch area located off Sandy Beach Island; many shoreline docks
 - Fishing: Open water and ice fishing popular
 - Other current/historic uses - wildlife habitat, industrial
 - Diagnostic Feasibility (D/F) study from late 1980s; recommended dredging and stormwater treatment
 - Review of water quality data from 1970s to present indicates improved water quality/clarity
 - Current major concern is how to safely address impairment of recreational use and ecological habitat value by dense growth of aquatic weeds





- ### Process used to Identify Potential Weed Control Methods/Techniques
- Review previous studies of Lake Maspenock and earlier vegetation control efforts
 - Consult MA DEP/EOEA (2004) 'Generic Environmental Impact Statement for Eutrophication and Aquatic Plant Management in Massachusetts (GEIR)'
 - Research new approaches, updated techniques, and successful implementations
 - Technical support from Certified Lake Manager

- ### Commonly accepted physical methods used for aquatic weed control
- Benthic Barriers**
 - Porous Materials
 - Non-Porous Materials
 - Sediment Barrier
 - Dredging**
 - "Dry" excavation
 - "Wet" dredging
 - Hydraulic dredging
 - Surface covers and dyes**

- ### Review of Physical Controls – Example of Phase I screening
- Benthic Barriers**
 - Porous Materials
 - Non-Porous Materials
 - ~~Sediment Barrier~~ - can't place fill in lake basin
 - Dredging**
 - ~~"Dry" excavation~~ - can't fully drain the lake basin
 - "Wet" dredging
 - Hydraulic dredging
 - ~~Surface covers and dyes~~ - lake size prohibitive

Physical methods used for aquatic weed control (continued)

4. Mechanical harvesting
 - 4.a Hand-pulling or diver-assisted removal
 - 4.b Cutting (no collection)
 - 4.c Cutting (w/ collection)
 - 4.d Rototilling
 - 4.e Hydroraking
5. Water Level Control
 - 5.a Drawdown
 - 5.b Flooding

Physical Controls – Phase I screening

4. Mechanical harvesting
 - 4.a Hand-pulling or diver-assisted removal
 - ~~4.b Cutting (no collection) –organic material decays~~
 - 4.c Cutting (w/ collection)
 - ~~4.d Rototilling – not used for nuisance weed control~~
 - ~~4.e Hydroraking – used for deep-rooted woody stems~~
5. Water Level Control
 - 5.a Drawdown – already being practiced
 - ~~5.b Flooding – increased water potential flooding~~

Winter Drawdown (2015-2016)

Sandy Beach Boat Ramp Area



West Main St. public access



Winter Drawdown (2015-2016)

Marshy area along Hayward St.



Milford shoreline toward dam



Chemical Controls for Aquatic Weed Management

6. Herbicides

6.a Copper-based algaecides	6.g Imazamox
6.b Diquat	6.h Imazapyr
6.c Endothall	6.i Penoxsulfam
6.d Flumioxazin	6.j Peroxide-based
6.e Fluoridone	6.k Triclopyr
6.f Glyphosate	6.l 2,4-D

Chemical Controls - Phase I Results

6. Herbicides

6.a Copper-based algaecides	6.g Imazamox
6.b Diquat	6.h Imazapyr
6.c Endothall	6.i Penoxsulfam
6.d Flumioxazin	6.j Peroxide-based
6.e Fluoridone	6.k Triclopyr
6.f Glyphosate	6.l 2,4-D

Herbicides were eliminated based on their target plants or algae. Those retained have demonstrated effective control of one or more of the three major nuisance species: Fanwort, Variable Milfoil, or Largeleaf Pondweed.

Biological Controls for Aquatic Weed Management

7. Biological Controls

- 7.a Herbivorous fish
- 7.b Herbivorous insects
- 7.c Bacterial/viral pathogens
- 7.d Selective Planting
- 7.e Biomanipulation by fish stocking

Biological Controls - Phase I Results

7. Biological Controls

- 7.a ~~Herbivorous fish~~ – not legal in Massachusetts
- 7.b Herbivorous insects
- 7.c ~~Bacterial/viral pathogens~~ – not for plant control
- 7.d ~~Selective plantings~~ - not feasible for weed mgmt.
- 7.e ~~Biomanipulation by fish stocking~~ – works on algae

Lake Maspenock Aquatic Vegetation Control Management Option Screening Process – Phase 2

Aquatic Veg. Control Options

Continue to refine list of physical, chemical and biological control methods using against key factors.

2.) Review potentially applicable methods, eliminate those which may not be feasible or not effective, are too costly, or have other concerns

Decision Step: Apply criteria of technical feasibility, effectiveness, human health and ecological effects, cost, longevity, and compatibility

How will the Advisory Group evaluate and select lake management options?

- We look at these key factors:
 - **Feasibility** – could we do this on Lake Maspenock?
 - **Effectiveness** – how well does the option work?
 - **Human health and ecological effects** – is it safe?
 - **Cost** – what is the cost (total or \$/per acre)?
 - **Longevity of treatment** – how long does it last?
 - **Compatibility with other options** – does it complement the beneficial effect of other options?
- Final options will include both short-term and long-term management

Lake Maspenock Aquatic Vegetation Control Management Option Screening Process – Phases 3 & 4

Aquatic Veg. Control Options

Use “Toolbox” of promising and safe aquatic vegetation management options for Lake Maspenock and combine them to develop short-term and long-term management goals

3.) Identify suite of effective options and put together a lake-specific management plan to control aquatic vegetation

Decision Steps: Evaluate options for support of LM aquatic vegetation management plan: overall goals, treatment areas, treatment priorities, short- and long-term objectives, funding opportunities & watershed stewardship

4.) Integrate selection of short-term control options with longer-term watershed planning and management (e.g., 5-year plan)

Advisory Group Progress to date

- We reviewed important previous studies of the lake and water quality reports to learn more about the Lake and its watershed.
- We identified potential weed control methods described in the State technical guidance (GEIR), similar documents for other states, and applicable information available on the internet.
- We have prepared a lake user’s survey to get a better definition of who uses Lake Maspenock, what they like to do on the lake, and their impressions on the current lake experience. Please participate at: <http://kwiksurveys.com/s/15qy2QZO>

Advisory Group Progress (cont.)

- Group met with representative from Lake Cochituate (Wayland) describing their experience with nuisance weed control and finding public consensus
- Conducted a Phase I screening to eliminate aquatic weed control methods which are clearly not applicable or appropriate to the Lake
- Scheduled two public forums in February to present and discuss the current status of Plan with Town residents and get input from stakeholders

31

Next Steps and Timeline

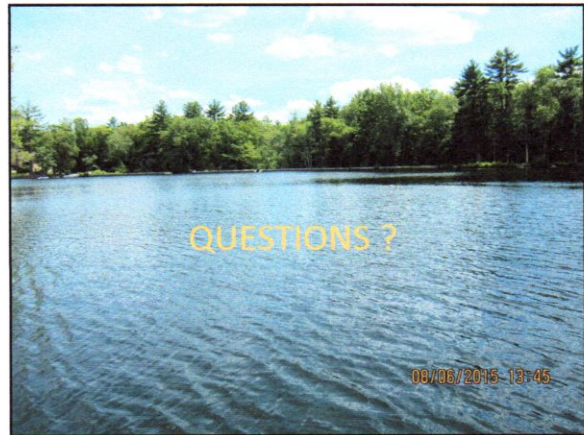
- Advisory Group Review and Develops Draft Long-Term Management Plan for Aquatic Weed Control
- Group Presents Plan at public meetings to provide information and solicit feedback from Town
 - February 9th at 7:00 - 8:30 pm at Hopkinton Town Hall
 - February 27th at 10:00 – 11:30 am at Town Hall
- Advisory Group finalizes Management Plan and makes copies available to public
- Submit recommendations to Board of Selectmen

32

Over the next few weeks....

- As the Lake Maspenock Watershed plan continues to develop, the Advisory Group will provide updates and additional details.
- For additional information regarding the Advisory Group and its activities, feel free to contact the Hopkinton DPW Director, John Westerling, at: jwesterling@hopkintonma.gov

33



LAKE MASPENOCK WEED MANAGEMENT AND CONTROL ADVISORY GROUP
HOPKINTON MA 10748

PUBLIC FORUM #1 MINUTES
February 9, 2016

Note: Meeting was filmed in its entirety by HCAM

Committee Members in Attendance:

John Westerling, Dept. of Public Works
Jeff Barnes, Conservation Commission
Cynthia Esthimer, At Large/Vice Chair
Jamie Goncalves, At Large/Chairman
Drew Logan, At Large/Secretary
David Mitchell, Environmental Consultant
Eric Sonnet, Parks & Rec. Dept.

John Westerling started the meeting promptly at 7:00 pm by introducing the members of the committee and welcoming the attendees in the audience. Approximately 15 people were in attendance in addition to the committee. Jaimie Goncalves again thanked those in attendance, explained the purpose of the forum and turned the meeting over to Jeff Barnes who presented a detailed presentation. (attached) Comments and questions from the audience were held until after the presentation was complete.

Questions/Comments from the audience, in order:

- What is the timing for the committee to make its recommendations to the town? Specifically, will recommendations requiring funding be made in time to have a warrant at this year's Town Meeting. Committee: yes, it is our intent to complete our work and submit any funding requests, if needed, in time for Town Meeting.
- A concern about drawdowns was expressed. The drawdowns seem inconsistent each year, may have a negative impact on quality of life and property values for homeowners. Additionally, a question was asked about whether anyone has measured the effectiveness of the drawdown as the questioner could not find anything on public record. Impact on West Main Street area was noted. Committee: weed surveys conducted over the last several years have shown a

positive effect of the extended drawdowns on controlling the invasive species. These surveys are available at www.LMPA.org, the Lake Maspenock Preservation Association website. The variability of drawdowns is explained 2 fold; first, the extended drawdowns (up to 8') are conducted every 3 years according to the Order of Conditions. In other years, the drawdown is scheduled for up to 5'. These have historically been done in order to allow for repairs on structures such as seawalls, around the lake. Precipitation levels over the time period have a major effect on the levels of drawdown any given year. Shallower areas, such as those around W Main Street, will be more significantly impacted by the drawdown, however those are also the areas most impacted by weeds.

- Why wasn't aeration included in the list of considerations since that has been discussed previously? Committee: it was discussed and considered, we will put it back on our list to show that. Via regular water testing, we noted the level of dissolved oxygen in the lake is not at levels in which aeration has been shown to be effective.
- The committee should reconsider dry dredging. We need to get rid of the muck which contains the nutrients feeding the weeds. The other treatment options will only be band aids.
- There are many owners on the lake that still use commercial fertilizers. The town should ban their use on the lake. Committee: in addition to treatment options, the committee will also include recommendations for education and non-treatment activities that will assist with weed control. It's tough to regulate something like fertilizer use, but we have to keep educating.
- We need to convert the remaining septic systems to town sewer. Committee: The lake surveys have shown considerable improvement in water quality after the majority of Hopkinton homes were put on town sewer. The lake quality today is actually quite good in terms of phosphorous and clarity. Although septic systems still remain, they have been improved over the years.
- After Cynthia Esthimer reviewed the interim results of the lake survey (almost 90 participants thus far), a comment was made encouraging the committee to not only consider the impacts to human health and recreational uses of the lake but also the environmental ecosystem.

Meeting was adjourned at 8:15 pm.

LAKE MASPENOCK WEED MANAGEMENT AND CONTROL ADVISORY GROUP
HOPKINTON MA 10748

PUBLIC FORUM #2 MINUTES
February 27, 2016

Note: Meeting was filmed in its entirety by HCAM

Committee Members in Attendance:

John Westerling, Dept. of Public Works
Jeff Barnes, Conservation Commission
Cynthia Esthimer, At Large/Vice Chair
Jamie Goncalves, At Large/Chairman
Drew Logan, At Large/Secretary
David Mitchell, Environmental Consultant
Eric Sonnet, Parks & Rec. Dept.

John Westerling started the meeting promptly at 10:00 am by introducing the members of the committee and welcoming the attendees in the audience. Approximately 30 people were in attendance in addition to the committee. Jaimie Goncalves again thanked those in attendance, explained the purpose of the forum and turned the meeting over to Jeff Barnes who presented a detailed presentation. (attached) Comments and questions from the audience were held until after the presentation was complete.

Questions/Comments from the audience, in order:

Attendee 1

- Expressed concerns about chemicals, particularly Diquat. It is banned in Scandinavia, Netherlands and Japan. Concerns about downstream affects from north basin to south basin where he lives. Asks the committee to please take concerns into consideration

Attendee 2

- We should reconsider dry excavation. Use bulldozers & inflatable tires to take 6" of muck out of north end. If dump on rock island, it could be feasible and not too costly

Attendee 3

- Questions about what funds are left from \$60k approved for weed management at Town Meeting. Will we need more funding and if so, do we go back to Town Meeting?
- Attributes some of the weed problems to lack of sewers on south end of lake
- She has never received info from the town on fertilizers and runoff concerns. Would suggest we send that information out.
- In favor of looking at excavation as the lake continues to get shallower.
- Drawdowns – we should take into account the fact that it impacts winter recreational uses. (a discussion followed on the effectiveness of drawdowns and the history at Lake Maspenock)
- Fishermen seem to be keeping the fish vs putting them back. Do we see a difference in the fish population?

Attendee 4

- We never had weeds in the old days
- Thinks boats from out of town have brought in the weeds (attached to boats)
- The Companies on top of the hill have contributed to runoff into the streams
- We need education and awareness to these companies and others
- Misses the frogs...they seem to be gone.

Attendee 5

- Also thinks we should look again at Dry Dredging for the reasons expressed by attendee 1
- Areas without silt don't have weeds, ie, where neighbors have dumped sand long ago.
- Surprised chemicals are still being considered after last years negative vote at town meeting
- Has seen no education on fertilizers or buffer zone planting, which are key contributors

Attendee 6

- Moving to the lake soon
- Would like to see a "welcome wagon" of sorts for educating newcomers

Attendee 7

- She lives on Lake Whitehall and is a continuing ed student
- Has her Horticulture degree and specializes in pesticides. Working on her certification in plant management
- She asks everyone to stay open minded about the use of chemicals as she works with them everyday.
- She supports whatever action the committee recommends

Attendee 8

- Does not live on the lake
- Takes a lot of hubris for us to consider chemicals, they will only perpetuate the problem
- The long term solution is for us to determine how we work with nature

- We shouldn't be as concerned with how we "use" the lake but rather how we can be its guardian

Attendee 9

- Would like to see comparative graph of each option including costs and durability
- What about volunteerism? We could have people pull the weeds
- Fertilizer use – really annoys her that people tend to do what they want. Can we amend the town bylaws to make phosphorous fertilizers illegal lakeside?
- Would like to see specific recommendations on fertilizers (cost, type, where to buy)

Attendee 5

- The LMPA has \$ in their account that was donated for hand harvesting of the weeds, not sure where that stands.
- Volunteering is a great idea, we could get a lot of people that would be willing to handpick the weeds

Attendee 4

- A lot of new people have moved to the lake and they don't know about the LMPA. A lot of people don't have computers.

Attendee 10

- He heard the State was to treat Whitehall last summer with Herbicides, why wasn't it done? Jeff Barnes answered– it was decided to be put on hold given the divisiveness of the Lake Maspenock decision on using chemicals.

Attendee 3

- Can we use the beach to distribute educational material? (there was an ensuing discussion about the broken poster board sign at the beach as well as the opportunity to use the entrance table during the summer)
- Concerns about the new surface material on Oakhurst leaching into the lake.

Attendee 11

- The depth of the sediment in the north basin must be pretty thick
- Asks everyone to keep an open mind about mechanical and chemical uses. Thinks its hypocritical to be against chemicals when they are part of so many everyday uses

Attendee 5

- Roads and other non-permeable services are definitely part of the problem. LMPA should be promoting non-paved driveways.

Meeting was adjourned at 11:30 am.

List of Questions and Comments from Public during February 2016 Public Forums and Advisory Group Responses.

Forum	General Topic	Comment	Committee response
9-Feb	Timing/funding	What is timing for recommendations? How will it correspond with Town Meeting?	Recommendations will be made in public forum, then Selectman, then at Town Meeting if funding is needed
27-Feb	Timing/funding	How much of \$60k is left? Can any unused funds rollover into next year?	Unused funds from this year can be rolled over into next year provided a contract for work is in place by end of fiscal year. \$60k has been submitted for next year.
27-Feb	Timing/funding	Do we have to go back to town meeting for more funding?	See above
27-Feb	Timing/funding	How will the LMPA use their weed fund money in light of town funding?	According to the LMPA, they are retaining the weed fund until such time the town's weed advisory committee recommendations are set in motion. The membership will decide if/how these funds might be used the future.
9-Feb	Drawdown	How do we measure effectiveness? (also on 2/27)	A comprehensive monitoring plan will be put in motion as part of the advisory committee's recommendations
9-Feb	Drawdown	Do we take into account how unusable lake is in the winter?	Yes, which is one of the reasons why the extended drawdown is only implemented every 3 years.
9-Feb	Drawdown	Do we take into account negative impact on property values? (also on 2/27)	See above
9-Feb	Aeration	Why wasn't aeration considered? It has been discussed previously	Aeration is most effective where dissolve oxygen levels are high. We have researched this option by speaking with companies that perform aeration as well as lake associations that have used this method. We began testing for dissolved oxygen last summer and do not have levels in our lake that would allow aeration to be successful. This is also an expensive option.
9-Feb	Dredging	Dry dredging should be considered. All other solutions are band-aids	Dredging was considered and ultimately rejected as an option. See decision tree for the criteria that was used for selection.
27-Feb	Dredging	Use bulldozers w/inflatable tires in winter; dump on rock island	See above
27-Feb	Dredging	In favor of dredging when water is low (2 people)	See above
9-Feb	Runoff	The town should ban fertilizers with phosphorus/nitrogen around the lake	Legislation is not currently being pursued, but rather education, as part of a watershed plan will be implemented
27-Feb	Runoff	The town and LMPA should do more education about fertilizer use & runoff.	This will be part of the lake management plan of action, part of the watershed management component.
27-Feb	Runoff	Would like to know what type of fertilizer and where to buy	This will be part of the lake management plan of action, part of the watershed management component.
27-Feb	Runoff	Streams coming down from South Street have contributed to nutrient loading	Watershed management plan will include sources of water coming into the lake
27-Feb	Runoff	Use the sign at Sandy Beach and the check in table for educational materials	Agreed, this will be part of the educational plan
27-Feb	Runoff	Buffer zone planting - need educational materials on this.	This will be part of the lake management plan of action.
27-Feb	Runoff	We should promote permeable driveway materials	This will be part of the lake management plan of action.
27-Feb	Runoff	New road material on Oakhurst must contribute to runoff. Poor material	Has not been investigated
27-Feb	Hand pulling	Organize volunteers (multiple comments)	ConComm is working on a "permit" that would instruct what can and cannot be done by residents. Hand harvesting will most probably be allowed, provided acceptable disposal methods are used. 11/13/16 update: this permit will not be pursued.
9-Feb	Sewer	We need to convert remaining septic systems to town sewer	This is a longer term issue that could be addressed.
27-Feb	Sewer	Lack of sewers on south end is contributing to the problem	See above
9-Feb	Lake uses	We should focus less on recreational uses of the lake vs ecological protection	The committee believe we need to focus on both.
27-Feb	Lake uses	Similar comment on 2/27	See above
27-Feb	Chemicals	Diquat is banned in Scandinavia, Netherlands and Japan	Select herbicides are being retained as options for certain lake management zone, although they are not considered first line options.
27-Feb	chemicals	Worry about downstream (from the north basin) effects	See above
27-Feb	chemicals	Surprised we are considering given last year's vote at TM	See above
27-Feb	chemicals	A degree in horticulture, specializing in herbicides; they are safe	See above
27-Feb	chemicals	Lake Whitehall was approved for use...whatever happened?	They deferred treatment once the lake management proposal was voted down at town meeting
27-Feb	Miscellaneous	Do we see a decrease in the fish population? Frog population?	Only anecdotal evidence of both and there seems to be conflicting reports. For example, the bass tournament in the spring yielded numerous fish
27-Feb	Miscellaneous	We never had weeds in the old days	History of weeds is part of lake management plan
27-Feb	Miscellaneous	Boats from out of town have brought in invasive weeds.	See new sign at boat ramp
27-Feb	Miscellaneous	Put together graph comparing treatment effectiveness, cost, etc	Part of lake management plan

TOWN OF HOPKINTON MA LAKE MASPENOCK WEED MANAGEMENT & CONTROL ADVISORY GROUP

DPW Director: John Westerling
email: westerling@hopkintonma.gov

The Hopkinton DPW, Conservation Commission, and Parks & Rec. Dept., in concert with the Advisory Group, will sponsor a Public Forum for Hopkinton residents on **Saturday, October 8, 2016 from 10 a.m. to 11:30 a.m..**

A formal Comprehensive Weed Management and Control Plan will be developed for monitoring and control of nuisance and invasive weed problems specific to Lake Maspenock. Hopkinton residents are urged to attend the Public Forum in order to provide feedback and ask questions about benefits and ecological impact from the proposed plan ('the Plan'). The Plan is expected to be submitted to the Board of Selectmen in late October 2016.

Additional information will be posted in Town Hall and on the Town website;

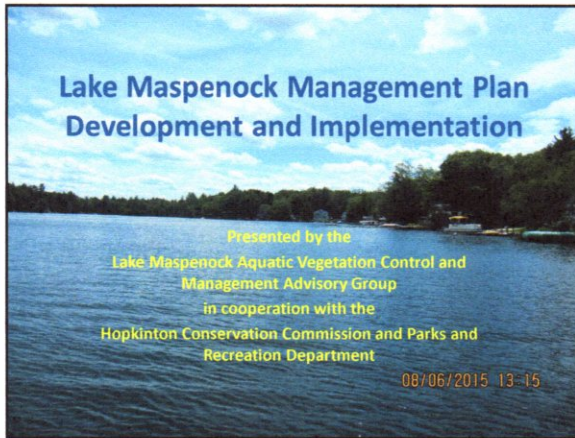
<http://www.hopkintonma.gov/home/government/towncalendar>

FORUM LOCATION:

HOPKINTON TOWN HALL, RM. 215

MAIN ST., HOPKINTON MA





Lake Maspenock Management Plan Development and Implementation

Presented by the
Lake Maspenock Aquatic Vegetation Control and Management Advisory Group
 in cooperation with the
Hopkinton Conservation Commission and Parks and Recreation Department

08/06/2015 13-15

Lake Maspenock Aquatic Vegetation Control and Management Advisory Group

Board of Selectmen's Charge:
 The Citizen Input Group shall make recommendations to the Director of Public Works (DPW) regarding measures to facilitate effective public participation in the formulation of the Comprehensive Weed Management and Control plan (The Plan) at Lake Maspenock.

Designees/Stakeholders:

- Conservation Commission
- Parks and Recreation Commission
- Lake resident with knowledge of prior weed control
- Two at-large members

Lake Maspenock Draft Management Plan

The Role of the Advisory Group

- Insuring that factual information regarding treatment options is communicated;
- Coordinating, consulting and providing methods and means for seeking public input; ensuring effective public participation at the meetings and that public input is fully considered;
- Formulating methods and means of increasing public awareness about the benefits, cost and potential for health or ecological risks of The Plan.

Lake Maspenock Draft Management Plan

What does this really mean?

- Advisory Group is tasked with finding a workable long-term solution for the Lake's nuisance weeds;
- We start with an open mind and consider all potential options - keep those that might work and eliminate those that are not feasible, not effective, or too costly;
- Keep public well-informed by transparent decision-making, educational public meetings, and soliciting resident feedback; and
- Decide on a reasonable, comprehensive approach and initiate plan. We expect the approach to adapt and evolve over the long-term.

Lake Maspenock Draft Management Plan

Lake Maspenock is a Great Pond !


- Lake Maspenock (a.k.a North Pond) is a recognized "Great Pond" by the Commonwealth of Massachusetts
- The name comes from the Nipmuc dialect of Eastern Algonquin translated as 'The Waters At The Base Of The Great Hill'
- Natural state of pond is about 30-40 acres but it size has been gradually increased by a series of impounding dams and currently is about 234 acres*
- Shoreline shared by Hopkinton, Upton and Milford

* Information from Lake Maspenock at: <http://www.lmpa.org/history/>

Lake Maspenock Draft Management Plan

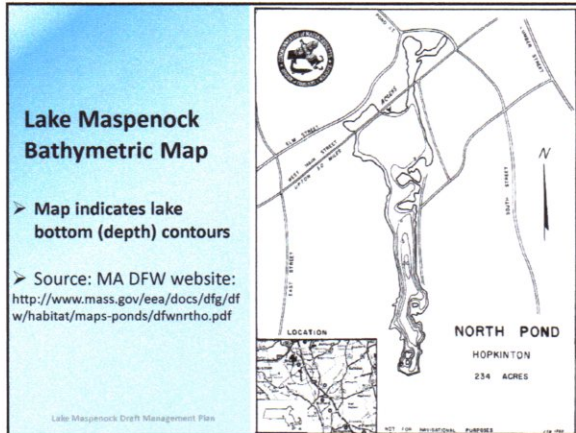
Lake Maspenock
 Hopkinton, Upton, and Milford, MA

- Surface area is 234 acres. The lake is approximately 2 miles long and 2,000 ft wide at its widest part
- Watershed area is estimated at 1,813 acres. Part of Blackstone River drainage.
- Outlet flow estimated at 28 cfs. Hydraulic retention time is 260 days or annual flushing rate of 1.4 exchanges per year
- Average water depth is 8 feet. Current drawdown practice is typically 5 ft with maximum 8 ft on third year.



Source: Aquatic Control Technology (2012)

Lake Maspenock Draft Management Plan



Lake Maspenock Outlet Structure at South End (Milford)

- Dam structure bought by Hopkinton in 2007
- Operated by Town DPW according to the Lake Maspenock Dam Operations & Maintenance Manual
- Operating conditions allow for an annual drawdown of 5 ft. with a "deep" drawdown to 8 ft. allowed every three years

The photograph shows a concrete dam structure with water flowing over it, creating a small waterfall effect. The surrounding area is green with trees and grass.

Lake Maspenock Water Quality

- Review of water quality data from 1970s and 1980s to current data indicates much improved water quality/clarity
- Water quality improvements likely due to installation of sewers in the watershed and better treatment of storm water
- Current conditions indicate low nutrient levels and healthy levels of productivity which fully support existing ecological and recreational uses of the Lake
- However, we still need to continue monitoring WQ

Lake Maspenock Popular Uses

The collage includes: a person fishing from a boat, a sandy beach with people swimming and sunbathing, a dog lying on a boat, and a scenic view of the lake with trees.

Resident Lake User's Survey

- A Resident Lake User's Survey was conducted in early 2016 to get a better definition of who uses Lake Maspenock, what they like to do on the lake, and their impressions on the current lake experience.
- The survey was circulated widely through local print media, town websites, at public forums, and through other means
- Responses were sent in by 140 lake users. Survey provides the most accurate snapshot of how the Lake is currently used and whether residents/users have concerns as to trends in water or aesthetic quality

Responses from 2016 Resident Survey

6) How do you use the lake for recreational activities?

Swimming	116
Motor boating	60
Canoeing or kayaking	91
Water skiing or jet skiing	33
Fishing	72
Passive enjoyment such as picnicking	65
Sandy Beach playground	59
Winter sports, such as ice fishing, snow shoeing, cross country skiing	60
Snowmobiles or ATVs	25
Other	

Responses from 2016 Resident Survey

9) Have you noticed a change in your enjoyment of the lake over time?	
Yes	91
No	47

10) If so, do you attribute this to?	
Water quality change	19
Weed density change	73
Personal lifestyle change	2

Lake Maspenock Draft Management Plan

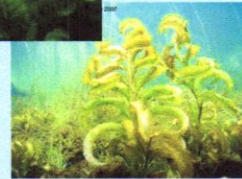
13

Lake Maspenock Nuisance Aquatic Weeds

Fanwort (*Cabomba caroliniana*)



Variable milfoil (*Myriophyllum heterophyllum*)



Largeleaf Pondweed (*Potamogeton amplifolius*)

Lake Maspenock Draft Management Plan

14

Impacts of Excess Vegetation

- Deterioration and potential loss of habitat for fish, wildlife, and other aquatic species;
- Deterioration of wetlands and water quality;
- Diminished area for recreational activities such as swimming, fishing and boating;
- Increased silting, and reduced lake basin capacity; and
- Reduction of property value adjacent to the deteriorated aquatic habitat.

Lake Maspenock Draft Management Plan

15

Lake Maspenock 2015 Survey Map of Aquatic Vegetation*

- Abundant plant growth found in areas where water depths are 8-10 ft or less
- Three non-indigenous, invasive species of concern:
 - Variable watermilfoil (*Myriophyllum*)
 - Fanwort (*Cabomba*)
- The annual drawdown has been successful in reducing invasives but native species have now proliferated:
 - Naiad (*Najas*)
 - Largeleaf Pondweed (*Potamogeton*)



*Source: SOLitude Corporation (2016)

Lake Maspenock Draft Management Plan

16

Record of Aquatic Macrophytes in Lake

Plant Name	Species Name	Status	Invasive?	1974	1984	2007	2012	2015	2016
Fanwort	<i>Cabomba caroliniana</i>	Exotic	Yes	X	X	X	X	X	*
Variable watermilfoil	<i>Myriophyllum heterophyllum</i>	Exotic	Yes	X	X	X	X	X	*
Largeleaf Pondweed	<i>Potamogeton amplifolius</i>	Native	Possible	-	-	*	*	X	*
Naiad species	<i>Najas</i> spp.	Exotic	Possible	-	-	*	X	X	*
Ribbon-leaf Pondweed	<i>Potamogeton ephedrus</i>	Native	No	-	-	-	*	*	-
Thistleleaf Pondweed	<i>Potamogeton pusillus</i>	Native	No	*	-	-	*	-	-
Curlyleaf Pondweed	<i>Potamogeton crispus</i>	Exotic	Yes	-	-	*	*	-	-
Brazilian elodea	<i>Egeria densa</i>	Exotic	Possible	-	-	*	*	-	-
Waterweed	<i>Elodea canadensis</i>	Native	Possible	*	-	-	-	-	-
Tape Grass	<i>Vallisneria americana</i>	Native	No	-	-	-	*	*	*
Bladderwort	<i>Utricularia</i> spp.	Native	No	*	*	*	*	*	*
Stonewort	<i>Nitello</i> spp.	Native	No	*	-	-	-	-	-
Watershield	<i>Brasenia schreberi</i>	Native	No	*	-	-	-	-	-
White Waterlily	<i>Nymphaea odorata</i>	Native	No	*	-	-	-	-	-
Spatterdock	<i>Nuphar advena</i>	Native	No	*	-	-	-	-	-
Filamentous Algae	Various species	Native	No	*	-	-	-	-	-

Key: X = dominant species; * = non-dominant species reported by survey; - = not reported in survey.

Lake Maspenock Draft Management Plan

17

Identification of Lake Management Zones

- Critical next step was to identify and separate "lake management zones" (LMZs)
- LMZs are defined sub-areas within lake based on basin location, water depth, recreational usage, sediment type, and shore development
- Defining LMZs allowed a better match between management options and site-specific needs
- LMZs were further categorized as to priority of treatment based on past weed issues, important recreational uses and environmental settings

Lake Maspenock Draft Management Plan

18


Lake Management Zones

Zone	Identifier	Area (ac)	Priority
1	North & Middle Basin Shoreline	17	High
2	North Basin Center	94	High
3	Sandy Beach Shoreline	2	High
4	Central Basin Center	12	High
5	Southern Basin Undeveloped Shoreline WEST	2	Mod.-Low
6	Southern Basin Developed Shoreline EAST	2	Moderate
7	Southern Basin Undeveloped Shoreline EAST	2	Mod.-Low
8	Southern Basin Developed Shoreline WEST	8	Moderate
9	Southern Basin Center	94	Lowest
10	The Swamp	<1	Low

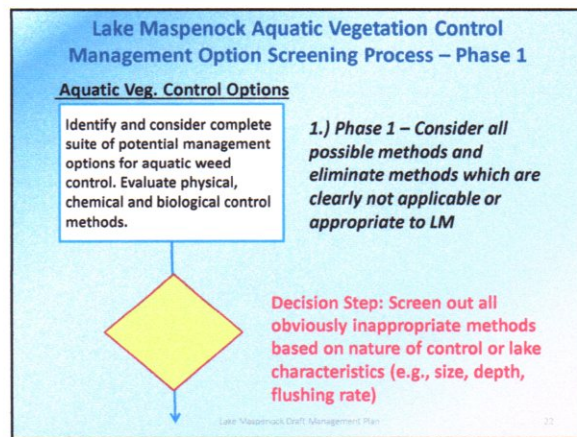
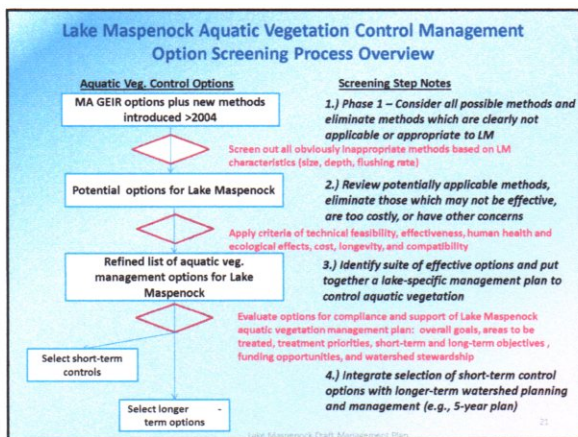
Lake Maspenock Draft Management Plan 19

Lake Management Zones (LMZs)

1. North & Middle Basin Shoreline
2. North Basin Center
3. Sandy Beach Shoreline
4. Central Basin Center
5. Southern Basin Undeveloped Shoreline WEST
6. Southern Basin Developed Shoreline EAST
7. Southern Basin Undeveloped Shoreline EAST
8. Southern Basin Developed Shoreline WEST
9. Southern Basin Center
10. The Swamp



Lake Maspenock Draft Management Plan 20



- ### Process used to Identify Potential Weed Control Methods/Techniques
- Review of previous studies of Lake Maspenock and earlier vegetation control efforts
 - Consult Massachusetts lake management guidance documents as well as other sources
 - Identify and evaluate physical, chemical and biological approaches and techniques, and track record of success of implementation in other comparable lakes
 - Additional technical support provided by Certified Lake Manager
- Lake Maspenock Draft Management Plan 23

- ### Useful Sources of Information
- Information regarding potential aquatic vegetation control options is widely available and easily accessed. For Massachusetts-specific information, the Group consulted the:
- Eutrophication and Aquatic Plant Management in Massachusetts. Final Generic Environmental Impact Report (GEIR)
 - Practical Guide to Lake Management in Massachusetts
 - The Massachusetts Lake and Pond Guide. Protection Through Education
 - EOEEA (2016a) website for Aquatic Vegetation Control at <http://www.mass.gov/eea/agencies/agr/pesticides/aquatic-vegetation-management.html>. (information on herbicide products that have been approved for use in Massachusetts)
- Additional aquatic vegetation control management information and guidance was also gleaned from the scientific literature, on websites of state regulatory agencies, non-profit lake associations, and commercial lake management companies
- Lake Maspenock Draft Management Plan 24

Commonly accepted Physical Methods used for aquatic weed control

1. Benthic Barriers
 - 1.a Porous Materials
 - 1.b Non-Porous Materials
 - 1.c Sediment Barrier
2. Dredging
 - 2.a "Dry" excavation
 - 2.b "Wet" dredging
 - 2.c Hydraulic dredging
3. Surface covers and dyes

Lake Maspenock Draft Management Plan 25

Review of Physical Controls – Example of Phase I screening

1. Benthic Barriers
 - 1.a Porous Materials
 - ~~1.b Non-Porous Materials~~ – gases can lift sheets
 - ~~1.c Sediment Barrier~~ - can't place fill in lake basin
2. Dredging
 - ~~2.a "Dry" excavation~~ – can't fully drain the lake basin
 - 2.b "Wet" dredging
 - 2.c Hydraulic dredging
3. ~~Surface covers and dyes~~ – lake size prohibitive

Lake Maspenock Draft Management Plan 26

Physical Controls – Phase I screening

4. Mechanical harvesting
 - 4.a Hand-pulling or diver-assisted removal
 - ~~4.b Cutting (no collection)~~ –organic material decays
 - 4.c Cutting (w/ collection)
 - ~~4.d Retotilling~~ – not used for nuisance weed control
 - ~~4.e Hydroraking~~ – used for deep-rooted woody stems
5. Water Level Control
 - 5.a **Drawdown** – already being practiced
 - ~~5.b Flooding~~ – increased water potential flooding

Lake Maspenock Draft Management Plan 27

Chemical Controls - Phase I Results

6. Herbicides	
6.a Copper-based algaecides	6.g Imazamox
6.b Diquat	6.h Imazapyr
6.c Endothal	6.i Peroxysulfam
6.d Flumioxazin	6.j Peroxide-based
6.e Fluoridone	6.k Triclopyr
6.f Glyphosate	6.l 2,4-D

Herbicides were eliminated based on their target plants or algae. Those retained have demonstrated effective control of one or more of the three major nuisance species: Fanwort, Variable Milfoil, or Largeleaf Pondweed.

Lake Maspenock Draft Management Plan 28

Biological Controls - Phase I Results

7. Biological Controls
 - 7.a ~~Herbivorous fish~~ – not legal in Massachusetts
 - 7.b Herbivorous insects
 - ~~7.c Bacterial/viral pathogens~~ – not for plant control
 - ~~7.d Selective plantings~~ - not feasible for weed mgmt.
 - ~~7.e Biomanipulation by fish stocking~~ – works on algae

Lake Maspenock Draft Management Plan 29

Lake Maspenock Aquatic Vegetation Control Management Option Screening Process – Phase 2

Aquatic Veg. Control Options

Continue to refine list of physical, chemical and biological control methods using against key factors.

2.) Review potentially applicable methods, eliminate those which may not be feasible or not effective, are too costly, or have other concerns

Decision Step: Apply criteria of technical feasibility, effectiveness, human health and ecological effects, cost, longevity, and compatibility

Lake Maspenock Draft Management Plan 30

How did the Advisory Group further evaluate and refine lake management options?

- We looked at these key factors:
 - **Feasibility** – could we do this on Lake Maspenock?
 - **Effectiveness** – how well does the option work?
 - **Human health and ecological effects** – is it safe?
 - **Cost** – what is the cost (total or \$/per acre)?
 - **Longevity of treatment** – how long does it last?
 - **Compatibility with other options** – does it complement the beneficial effect of other options?
- Final options include both short-term and long-term management

Lake Maspenock Draft Management Plan

32

Options Removed “After Further Review”

- Dredging of Basin
 - Too costly, sediment dewatering and disposal issues, ultimately may not eliminate weed problem
- Some Herbicides
 - Not all are effective on target species, some only treat entire lake not selected areas, cost considerations
- Biological Controls
 - Not reliably effective and sustainable over long-term, not appropriate for Lake size and water uses

Lake Maspenock Draft Management Plan

32

Vegetation Control Options Retained: Benthic Barriers

- Manufactured benthic barriers are man-made sheets (e.g., polyethylene, fiberglass) which are applied on bottom substrate to limit light, and physically disrupt growth
- Benthic barriers can be an effective treatment for the control macrophytes in small, localized areas of a lake like a dock, boat launch or a swimming beach, but are generally not practical for use in large areas

Lake Maspenock Draft Management Plan

33

Benthic Barriers



Lake Maspenock Draft Management Plan

34

Vegetation Control Options Retained: Hand-Harvesting

- Hand-pulling or hand-harvesting is the selective removal of unwanted plants on an individual basis.
 - It is very labor-intensive and may be conducted in shallow water by waders and in deeper waters by scuba divers (e.g., diver assisted suction harvesting or DASH).
- Hand pulling of localized populations can be fairly effective in removing small populations or patches of undesired plants, provided the plant fragments are removed from the water
- This technique is not suited to large-scale efforts, especially when the target species or assemblage occurs in dense or expansive beds.

Lake Maspenock Draft Management Plan

35

Hand-Harvesting



Lake Maspenock Draft Management Plan

36

Diver Assisted Suction Harvesting (DASH)



Lake Meadrock Draft Management Plan

37

Vegetation Control Options Retained: Mechanical Harvesting

- Mechanical Harvesting by specialized vessels may be used seasonally to remove vegetation that limits lake uses such as boating and swimming.
- Mechanical plant removal operations are successful in producing temporary relief from nuisance plants and in removing some organic matter and nutrients.
- Harvesting can be an effective short-term treatment to control the growth of aquatic plants. With repeated application, it may produce long-term shifts in the plant community, but it is unlikely to reduce long-term plant density substantially.

Lake Meadrock Draft Management Plan

38

Mechanical Harvesting



Lake Meadrock Draft Management Plan

39

Vegetation Control Options Retained: Herbicide Application

- Treatment of aquatic vegetation by herbicides is a commonly used method in many parts of the U.S. for rapidly reducing excessive plant biomass and promoting recreational use.
- An herbicide treatment can often be an effective short-term management procedure to produce a rapid reduction in algae or vascular plants for periods of weeks to months
- However, herbicide treatments can be costly and there are often concerns with direct and indirect effects of poorly planned or inappropriate treatments
- The Advisory Group felt herbicides should not necessarily be the management tool of first choice, but they also agreed that this approach should be retained and integrated with other vegetation controls for the Lake Management Plan.

Lake Meadrock Draft Management Plan

40

Herbicide Application



Lake Meadrock Draft Management Plan

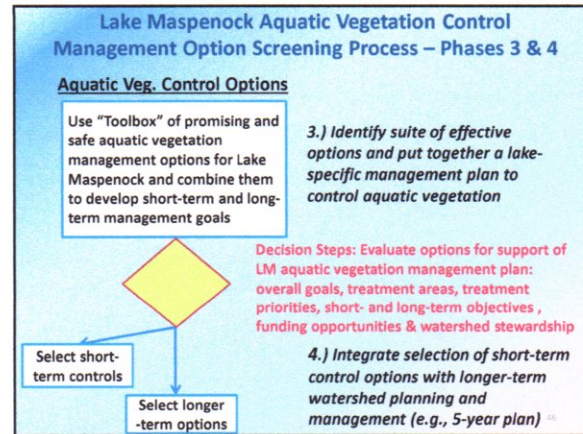
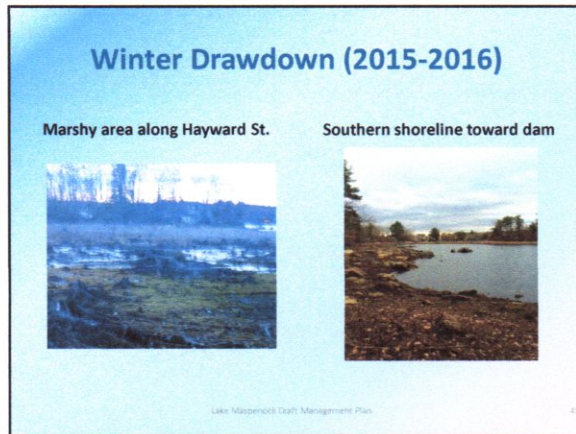
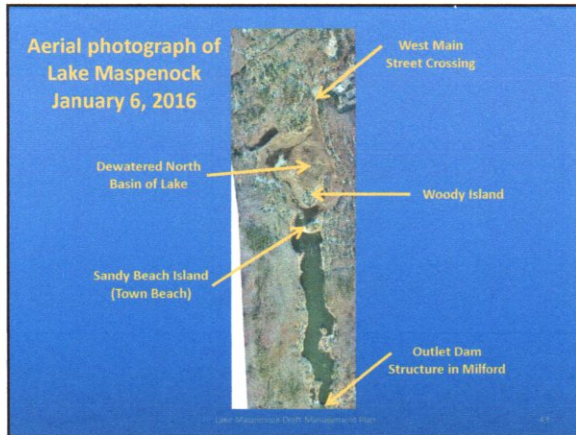
41

Vegetation Control Options Retained Lake Drawdown

- Drawdown is a multipurpose lake management tool that provides an inexpensive and effective control of certain macrophytes that expand by vegetative propagation (not seeds); includes fanwort and milfoil
- Additional benefits may include opportunities for shoreline maintenance, consolidation of flocculent bottom materials, and oxidation or removal of nutrient-rich sediments.
- The deep drawdown of winter 2015-2016 has been very effective in suppressing summer growth of fanwort, milfoil and largeleaf pondweed. While each deep drawdown may not reach the favorable conditions of last winter, the deep drawdown has been shown to be effective means to reduce nuisance macrophytes.
- The annual drawdown is already established so that no additional expenses are required (the Advisory Group especially liked that!).

Lake Meadrock Draft Management Plan

42



Summary of Vegetation Control Options

Management Intensity	Activity	Estimated Costs*	Conditions for Action	Plant Thresholds
No	Drawdown and Monitoring	\$0	Follows a successful deep draw down	Plants in check
Low	Benthic Barriers; Hand-Harvesting	\$2 - \$9K	Isolated patches in areas with high public use	Spotty patches, mostly preventative actions
Moderate	Small-scale Harvesting or Herbicide Treatment; DASH	\$10 - \$15K	Heavy plant growth but confined to isolated coves or shoreline areas	Plants clearly present but height or density does not significantly impact lake functions. In management zone
High	Large-Scale Harvesting or Herbicide Treatment	\$50 - \$100K	Lake-wide, heavy plant growth impeding ecological and recreational functions	Plants impinging surface over many areas, boating and swimming impacted over most zones

* Costs were estimated from information provided by lake management companies, agency reviews, or vendors

Lake Maspenock Draft Management Plan 47

- Matching Vegetation Control Options to Lake Management Zones**
- Group considered the size and nature of each LMZ
 - What options are available and cost-effective to treat aquatic weeds in these areas?
 - Some options would only be applied in specific LMZ (e.g., benthic barriers in LMZ 3)
 - Several options could be used in a variety of LMZs
 - Size of mechanical harvesting or herbicide required is highly variable between LMZs
 - If deployed, options would be evaluated afterward to see which are most useful and/or cost effective
- Lake Maspenock Draft Management Plan 55

LMZ-Specific Vegetation Control Options

Management Options	Lake Management Zones									
	1	2	3	4	5	6	7	8	9	10
Drawdown	X	X	X	X	X	X	X	X	-	X
Hand-harvesting	-	-	X	X	X	X	X	X	-	-
Benthic Barriers	-	-	X	-	-	-	-	-	-	-
DASH	-	-	X	X	-	-	-	-	-	-
Small-scale harvesting	-	-	-	X	-	X	-	X	-	-
Large-scale harvesting	X	X	-	-	-	-	-	-	-	-
Small-scale herbicide	-	-	X	X	-	X	-	X	-	-
Large-scale herbicide	X	X	-	-	-	-	-	-	-	-

Lake Maspenock Draft Management Plan

49

Thresholds for Treatment

- The precise threshold for switching to active treatment will vary according to LMZs
- Some of the factors to be considered
 - Coverage – area of % of LMZ area occupied by plants
 - Density – how much of water column is taken up by plants
 - Topping – what % of plants are reaching water surface
 - Seasonality – is there indication of likely plant impacts based on early season observations or current conditions
 - LMZ function – some areas are important for recreation or ecological function, prompting faster response
 - Previous experience or other factors

Lake Maspenock Draft Management Plan

50

Why a Monitoring Program is needed

- A regular monitoring program is a good investment for Lake Maspenock because:
 - Allows tracking of aquatic vegetation community and provide data for triggering management options
 - Allows early detection of new invasive species
 - Water quality monitoring helps ensure that treatment of the weeds does not inadvertently cause water quality issues (e.g., nuisance algal blooms)
 - Allows long-term evaluation of the options as to their ability to reduce/manage weeds, longevity, and cost-effectiveness and better management of Lake

Lake Maspenock Draft Management Plan

51

Monitoring Program

- Regular Monitoring Program for both water quality and aquatic vegetation community
 - Coordination of monitoring with LMPA and liaison with Hopkinton CC and Parks & Recreation
 - Continue seasonal water quality monitoring for key nutrients, dissolved oxygen and others
 - Initiate monitoring of aquatic vegetation for species, coverage and density at fixed locations (e.g., sites visited by Advisory Group in June and August)

Lake Maspenock Draft Management Plan

52

Why Watershed Management is also needed

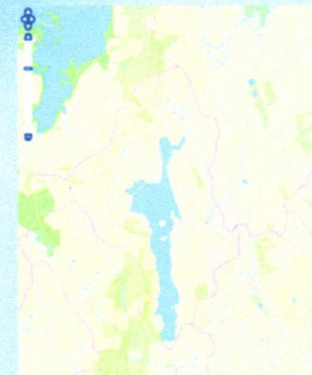
- Watershed management covers a number of options and is the most cost-effective means to reduce or eliminate future watershed inputs of contaminants to the Lake
- The watershed is the ultimate source of nutrient and sediments to the Lake, and controlling or reducing watershed sediment and nutrient loads will help protect the Lake for future generations.
- Even where in-Lake management is applied, watershed management is often necessary and certainly protects the investment made through in-Lake techniques.

Lake Maspenock Draft Management Plan

53

Lake Maspenock Watershed

- Watershed area about 1,813 acres; boundaries shown in purple
- Ratio of watershed to lake area about 8:1
- Mostly in Hopkinton with some in Upton and minor area in Milford
- Primary land uses are residential, industrial, open space, wetlands, and transportation



Lake Maspenock Draft Management Plan

54

Potential Watershed Management Options

- Stakeholder education regarding shoreline protection, environmental stewardship, and outreach for new watershed residents
- Watershed inspection for areas of potential erosion or sources of nutrients
- Coordinate with town boards regarding extending conservation restrictions or additional protection to key watershed areas

Lake Maspenock Lake Management Plan

55

Five Year Plan

	YEAR 1 2017	YEAR 2 2018	YEAR 3 2019	YEAR 4 2020	YEAR 5 2021
In-Lake Activities					
Winter Drawdown	Normal	Normal	Deep	Normal	Normal
Active Treatment	Treatment needs likely to be minor	Treatment needs likely to increase	Treatment needs likely to be minor	Treatment needs will vary based on deep draw success	Treatment needs may or may not be minor
Lake Monitoring	Seasonal	Seasonal	Seasonal	Seasonal	Seasonal
Watershed Activities					
Public Education	Identify Public Education Needs	Supply information to watershed resident	Distribution to new stakeholders, as needed	Distribution to new stakeholders, as needed	Evaluate information and update, as needed
Watershed Inspection	Identify issues, as relevant	Evaluate options, select BMPs	Seek funding- local sources or State 319 grants	Implementation, as needed	Identify any emerging issues
Land Protection	Identify Any Opportunities		Coordinate with CPA committee		Re-evaluate Opportunities
Lake Management Plan	Initiate plan and monitoring		Make any "mid-stream" adjustments		Assess Methods and Results; Modify Plan as Needed

Lake Maspenock Lake Management Plan

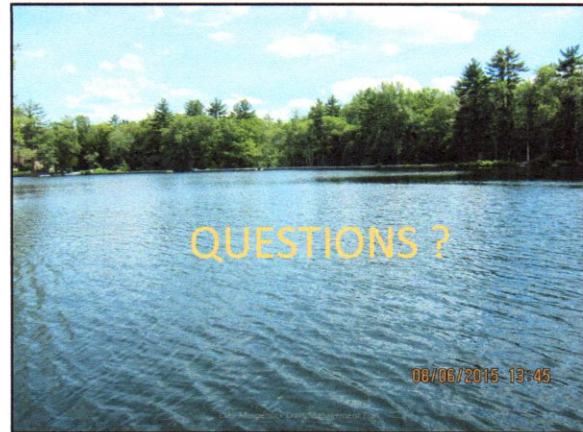
56

Over the next few weeks....

- The Advisory Group begins finalization of the Lake Maspenock Lake Management Plan:
 - Public discussion and comments are welcomed
 - Written comments will become part of public record
 - Review by Town agencies for consistency with other planning
- The final report and recommendations to be presented in upcoming November meeting of Board of Selectmen
- For additional information regarding the Advisory Group and its activities, feel free to contact the Hopkinton DPW Director, John Westerling, at: jwesterling@hopkintonma.gov

Lake Maspenock Lake Management Plan

57



LAKE MASPENOCK WEED MANAGEMENT AND CONTROL ADVISORY GROUP
HOPKINTON MA 10748

MINUTES OCTOBER 8, 2016
PUBLIC MEETING

In attendance;

John Westerling, DPW Director
Eric Sonnet, Parks & Rec. Liaison
Jaime Goncalves, Chair
Cynthia Esthimer, Vice Chair
Drew Logan, Resident
David Mitchell, Consultant

1. Meeting was called to order by Jaime Goncalves at 9:00am.
2. The group reviewed the Power Point Presentation on the background, methodology, findings and proposed recommendations of the LMWM&CAG.
3. John Westerling will approach the Board of Selectmen in the first week of November, 2016 to set a date to hear the Advisory Group's recommendations.
4. Next meeting of the Advisory Group will take place on October 18, 2016.
5. The presentation to the public began at 10:00am with introductions, a review of the Group's charge and moved into the detailed presentation including:
 - a. Identified Zones that demarcate the shoreline, beach, public boat ramp, coves, swamp, shallow and deeper areas
 - b. Types of weeds found in the Zones
 - c. Thresholds in each Zone that would trigger weed management
 - d. Prioritized management options within each Zone
 - e. Watershed considerations
 - f. Ongoing monitoring program
 - g. Five year management plan
6. The Group's next steps were stated to be:
 - a. Consideration of today's Public comments and questions
 - b. Presentation to the Board of Selectmen in November 2016
7. Public questions included:
 - a. Can a deep draw down occur every year? –*Con. Comm. permits the draw downs and must consider the environmental impact. A deep draw down every 3-5 years seems tolerable.*
 - b. How specific are the thresholds in each Zone? –*Compromised recreational use, generally by weeds breaking the surface, might trigger management.*

- c. When will decisions be made to manage weeds in any Zone?–*Each Zone in the lake is monitored in the spring and fall. Fall is typically the predictor of the next year’s weed situation. Spring monitoring will usually determine if management is needed.*
 - d. How will the Public be notified if management is necessary?–*Notice of a Public Forum will be posted on the Hopkinton Town website. Advisory Group meetings are open to the Public.*
 - e. Why were the weeds so bad last year?–*The previous draw down successfully knocked down invasive weeds but may have created a void that the indigenous large leaf pondweed filled. The deep draw down that occurred over the 2015-16 winter helped knock down the pondweed.*
 - f. Could the flowering tops of the large leaf pondweed be trimmed to prevent spreading seeds? –*Yes, but there will always be dormant seeds in the lake bed that can sprout at any time.*
 - g. Will this plan be placed on the Town’s website? –*Yes. It will be located in the DPW section.*
8. In wrapping up this Forum, the Chair thanked the residents. He noted that to date the Advisory Group has held 13 meetings, 3 Public Forums and 2 monitoring field trips all of which have been open to the public.
9. The meeting adjourned at 10:56am.

Minutes respectfully submitted by Cynthia Esthimer