

Maspenock Aquatic Vegetation Control and Management Plan

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APPENDIX A

**LAKE HISTORY AND TIMELINE OF VEGETATION
CONTROL EFFORTS**



Lake Maspenock History

North Pond also known as Lake Maspenock, is a raised Great Pond with a surface area that occupies approximately 234 acres. It is bounded by the towns of Hopkinton, Upton and Milford. Its depth ranges between eight and 20 feet, its shoreline is privately owned and use of the pond is high. The lake is located at the headwaters of the Mill River with its main portion being located in Hopkinton. It is approximately two miles long, it is about 2,000 feet wide at its widest point and it has a north-south orientation. At its outlet, the lake drains an area of approximately 1,813 acres. From its outlet in Milford, Mill River eventually flows into the Blackstone River (called the Nipmuck River by the Indians) and into the Atlantic Ocean.

The name Maspenock comes from the Nipmuc dialect of Eastern Algonquin, and is written as MASSIBENOKIK, which means, 'The Waters At The Base Of The Great Hill', a direct reference to the steep rise of Peppercorn Hill on the shoreline in Upton.

In its original and natural state as shown on an 1831 map of Hopkinton, the lake probably had 30 or 40 acres of surface area, which made it a Great Pond. The fact that the surface area of Lake Maspenock is considerably greater than the natural pond was due to the construction of a dam at its southern tip in 1833 or 1834 and it being raised to its present height in 1901-seven feet higher than the dam that was here in 1833.

A 400-500 foot-long dam which retains the lake is located in Milford approximately 600 feet downstream from the Hopkinton-Milford town line. It consists of a 15 foot high earth fill structure with masonry walls. The principal spillway is granite block weir about 30 feet long together with a granite block spillway also about 30 feet long and there is a gate controlled spillway on the right abutment.

The major use of the lake is for water-based recreation. There is a public beach on Sandy Island and a public boat launch area located off West Main Street.

Lake Maspenock, or North Pond if you wish, has served as a source of non-contact cooling water, process water and sanitary use by the Draper and North American Rockwell corporations. At one time, its waters were considered as a potential drinking water supply but conflicts with its recreational use have resulted in no further consideration of its use for that purpose.

A physical study of the lake indicates the presence of islands, now or at one time bearing the names of Sandy Island, Woody Island, Twin Island, John Flanagan's Island and Piney Island. Many years ago, the town of Hopkinton filled in an area in order to join Sandy Island to a shoreline of the lake. This land now serves as a parking lot for automobiles whose occupants use the town beach facilities at Sandy Island.

Earl Cronin, 34 Church Street, has recalled that during the 1920's when Sandy Island was an island, he would swim from the beach to the island carrying his clothes on his head. It is believed that at one time, a small well located near Sandy Island, furnished water to a

number of homes at the lake. its actual site has not been determined and so far, no information about the well had been located. A dam at the southern end of the lake is indicated on town maps published as early as 1794 and it is believed that this was the site of one of the earliest mills constructed in colonial times.

Records dated October 16, 1833 found at the Worcester Registry of deeds and supplied to the writer by John J. Deneen, 71 Oakhurst Road, reveal that at that time, nine owners of mills starting at a "privilege" just below the dam and running down Mill river to Woonsocket, RI where Mill River joins the Blackstone River, associated themselves "for the purpose of constructing and maintaining a reservoir to raise and preserve a head of water to serve the mills on the Mill River " during dry periods.

According to the document, these individuals had expended \$2,100 in the purchase of the right and privilege of flowing certain lands in and about the reservoir and in the construction of a dam. This dam is believed to have been located about 150 feet south of where an earlier dam had been installed.

A total of 44 shares in this enterprise were possessed by Smith Arnold and Waldo Earle (the firm of Smith Arnold and Co.), Luke Aldrich, Joseph Roy, Seth and Eli Kelly, Clark Fiske, Pearly and Ebenezer Hunt (owners of a woolen factory near the reservoir). These shareholders then acquired title to land which would be flooded by the new dam and deeds were recorded during 1833 with the Middlesex South District Registry of deeds. It is interesting to note that this land sold for five to ten dollars per acre. In one instance, land owned by three of the original nine shareholders was conveyed to one Macfarland. By these actions it appears that the rights to what now is Lake Maspenock were acquired by purchase by the original shareholders or their successors.

At some undetermined early date, land on which the dam and a half mile long roadway had been constructed was purchased by the Lawton Spinning Co. and Manville-Jenckes Co. who also acquired rights of flowage. Later, the predecessors of the Draper Corporation, by reasons of proximity, attended to the closing and opening of the gates. They paid a share of the general expense but they were not a member of the original associates.

During a legal search made 20 years ago, it was determined that at least 30 of the 44 original shares were owned by the Draper Corporation and as such, the company controlled the upper seven feet of the lake. However, the use of water which could be drawn off could only be used to serve the mills located downstream on Mill River.

During the early 1850's, some inhabitants of the town were displeased with the raising of the water level which, in turn, flooded a town roadway. Proprietors of the North Pond Reservoir were successful in a law suit to prevent the objectors from lowering the height of the water. This resulted in the town selling flowage rights over the way to the proprietors for \$1,200 as reported in a grant to the Social Manufacturing Co. of Rhode Island. Records kept by a former Hopkinton Town Clerk named Joseph A. Tillinghast included a certificate to the Selectmen that was signed in 1859 by William F. Ellis, and engineer. In the certificate, it is stated, "This may certify that on the 29th of August 1859, I took some levels from the

site of the old dam about 150 feet below the present North Pond dam in Milford commencing on the bed of the stream and ending on top of the banks of the wasteway.

"The top of said bank is 14 feet higher than the bed of the stream at the starting point. "An iron bolt was inserted in a rock on the east side of the pond about 150 feet above said dam, said rock being in front of a very large boulder. "Another iron bolt was inserted in a rock on a headland by the west side of the pond which will be an island at high water and is about 200 feet northerly from the west end of the dam, both said bolts being on a level with the top of the wasteway. "An iron bolt was also placed in a rock below the dam, 10.8 feet from the southeast corner of the wasteway, said bolt being 3 feet, 4 inches below the level of the wasteway."

Around 1890, the dam was found to be unsafe and the gates were left open. Around 1900, it was decided to rebuild the dam to its original height and construction work was completed during 1901. Costs of the work were met by contributions from the Lonsdale Co., Manville, Co., Lawton Spinning Co. and the Draper Corp. Smaller contributions were received from a few companies below Woonsocket. The Milford dam was maintained for many years for power, water and as a means of reducing the possibility of floods. As long as they remained in business, the Draper Corp. attended to the opening and closing of the gates and the making of incidental repairs at the request and under the direction of the owners of the privilege.

According to H.A. Billings, Work Manager at Draper's in 1929, in a communication to a property abutter, the company had no ownership of the water or the dam. Necessary repairs were made to the dam in 1928. Billings said that the main purpose of maintaining the dam was to store water during the wet season for use later when it was needed. This involved drawing the water down.

"The effect of the existence of the dam and the use of the water impounded is not to reduce the natural water storage at any time, but its effect is to produce most the year a larger pond than would otherwise exist," Billings once stated.

On October 1, 1929, it was decided by a vote of the Massachusetts Public Works department to have a survey made of the lake. This was done under the direction of the late Francis L. Sellow, district waterways engineer. His report was that the area of this natural lake determined it to be a Great Pond of the Commonwealth. During the early 1930's, there was a lot of development at the lake, especially on its eastern side. A large unknown number of small house lots were laid out with many being sold.

A 1933 map on file at the Land Registration Office shows a lot of these lots being located on streets bearing the names Chester Street, Keeby Road, Fisher Road, B Street, D Street, Laurel Avenue, Columbia Road, Harvard Road and Old Town Road. Names like Hillcrest Camp lots which were sold by Newell D. Atwood, Bridgham Spring, Doris Spring and Lake Shores Realty Co. which was owned by William E. Schlusemeyer are still remembered by residents of the area.

In January 1959, the Draper Corp. aligned with Normandy Realty of Woonsocket and took over operation of the dam. During the spring of 1966, the town of Hopedale submitted a bill to the state legislature declaring Lake Maspenock for town drinking water. After a period of spirited and aggressive oppositions by numerous townspeople and organizations, an act was approved by the state legislature in 1967 which limited the quantity of water to be withdrawn from the lake.

Commencing on the first Monday in October each year and ending on March 31, the following year, water may be taken to a depth of two feet below the brass marker located at the site of the dam. During the months of July and August, if the Draper Corp. required water from Mill River, it was taken from Fiske Pond, Mill Pond or Hopedale Pond. If Draper required water during September, it was taken from Lake Maspenock, but no more than a foot.

From all outward appearances, the lake appears tranquil and silent, which it is most of the time. The exceptions being when unwanted growth tests were conducted a year or two ago and more recently, it is understood that borings are being made as part of a program which is believed to be a search for contaminated areas.



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TIME LINE NARRATIVE

The issue of controlling invasive and problematic weed growth in Lake Maspenock has been studied and debated for over a decade. In 2009, the LMPA teamed with the Hopkinton DPW to formalize the annual draw down plan of Lake Maspenock. The request to formalize the plan was made by the Hopkinton Conservation Commission. At that time, the LMPA advocated to include an aquatic plant control method on the Notice of Intent to be filed. Since the requested method was directly related to the requested task, it seemed to be the perfect opportunity. The LMPA, after much research, had chosen the extensive draw down every 3rd year as the aquatic plant control method to pursue. The normal draw down is about 4 feet, while the more extensive draw down is a reduction of up to 8 feet. The more extensive draw down would expose more of the lake bed to freezing winter temperatures which kill the root systems of the invasive weeds. Native aquatic growth reproduces by both seed and root growth so is not eliminated by this method. The invasive weeds are targeted, leaving the native plants in place. As part of the plan the LMPA is required to conduct a biological survey of the lake the summer following each extensive draw down. This is intended to assess the effectiveness of the method in controlling the invasive weeds, and to detect any unintended negative side effects. No town funds are requested or used to conduct the biological surveys; all costs are funded by the LMPA. The Hopkinton Conservation Commission approved the draw down plan which included the more extensive draw downs.

The survey following the first extensive draw down, (Approx. 7' reduction), in the fall/winter of 2010/2011, confirmed the anecdotal reports received from lake area residents. The density of the weed growth the summer following that draw down was dramatically reduced. No adverse effects to other life forms in the lake were detected. The density of milfoil and fanwort had been reduced to non-problematic levels. As is common in nature, the void opened up by the reduced levels of those two weeds, was filled by other weed growth. The 2nd summer after the first extensive draw down an increase, to problematic levels, was seen in the large leaf pond weed. This plant, which is native to the area, reproduces by both root growth and seed, so the draw down method has very limited success in controlling it. A request was made to the Hopkinton Conservation Commission to conduct another extensive draw down the fall winter of 2013/2014. The hope was that some reduction in this weed could be accomplished. The draw down plan has very strict protocol, which must be followed per the 'order of conditions' issued with the permit. All draw downs are subject to restrictions as to when reductions can begin and when they must cease. In addition, the maximum rate of reduction per day is strictly controlled.

The Hopkinton DPW administers and controls the draw down of the lake each year. One of the major limitations to the draw down method is that it is subject to the whims of the weather. If heavy rains off-set reduction levels or if no freezing temperatures are experienced when the lake bed is exposed, the draw down will have little or no effect on the weed growth. That scenario took place during the 2nd extensive draw down effort. Abundant fall rains off-set the reductions and mild weather occurred when the maximum reduction level for that year was reached. A reduction of only about 5 feet was reached that year because of the amount of rain in the fall. This is only 1 foot more than a normal draw down year. No relief from the large leaf pond weed was realized, and the summer of 2014 showed extreme growth of the weed in some areas of the lake. The density of the growth made the lake un-usable in those areas.

Early in the fall of 2014, requests were made to all LMPA members to serve on a weed management study committee being formed. Absolutely no restrictions were placed on who could or could not serve on the committee, other than that they be members of the LMPA. This committee was tasked with researching and assessing the viability of all weed control methods. They were to report back to the LMPA executive board and had no authority to act on behalf of the LMPA. Extensive research was done, including reaching out to other lake associations, to seek information on how they managed aquatic weed growth in their lakes. The LMPA officers and executive board members reviewed and evaluated the recommendations of the committee. The recommendation of the committee was that the application of herbicides was the most viable method to control the large leaf pond weed. The executive board agreed with that assessment and voted unanimously to make that recommendation to the membership. It was decided that a full membership meeting would be held, and to ask for a vote from the membership, to confirm that they were in agreement with the LMPA executive board vote. The membership would make the final decision. Multiple notices of the meeting were issued in December. The subject matter, and that a vote would be taken, were clearly indicated. The meeting was held January 8, 2015 in the Hopkinton High School cafeteria. 64 members of the association were in attendance, far in excess of the 20 member quorum required in our bylaws. A presentation was made, members were allowed to write down questions and submit them to be answered. This procedure was followed because the time for access to the room was very limited. The result of a vote taken that evening was overwhelmingly in favor of seeking all required approvals and permits required by the Town and State, to apply herbicides in an effort to control the excessive aquatic weed growth. Through discussions with town officials, the Hopkinton DPW sponsored a Notice of Intent for the plan. A public hearing was held by the Hopkinton Conservation Commission, on March 9, 2015, after all required notifications and postings were completed. The plan had previously been reviewed by the Conservation Commissions in the Towns of Milford and Upton. Both Towns deferred to the Hopkinton Commission after their reviews. This hearing was open to all Hopkinton residents. Only 3 residents in attendance were opposed, all others were in support of the plan. The Hopkinton Conservation Commission voted unanimously to approve the plan.



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TIME LINE OF AQUATIC GROWTH MANAGEMENT ISSUE

Brief Outline:

- 2003 – Comprehensive biological survey conducted of Lake Maspenock
- 2004 Through 2006 – Invasive weed Problem recognized and discussed, no clear direction chosen
- 2006 – Decision made to conduct another Biological survey in 2007
- 2007 – Comprehensive biological survey conducted to use as a baseline to measure any remedial efforts undertaken to control invasive weed growth
- 2007 Town of Hopkinton purchased the dam on lake Maspenock
- 2008 Town of Hopkinton Conservation Commission requested that the traditional draw down of Lake Maspenock be submitted to them as a formalized plan
- 2008 Work began on this plan, Hopkinton Department of Public works spearheaded the process of formalizing the draw down plan with the input and significant assistance of the LMPA
- 2009 Notice of Intent submitted to the Hopkinton Conservation Commission which includes the plan for the normal annual draw down, but also a plan for a more extensive draw down for invasive weed control. Also included is a plan to re-build the Town owned boat ramp at Sandy Beach and the re-paving of the parking lot at Sandy Beach
- 2009 April – Hopkinton Conservation Commission approved the NOI which included the normal and more extensive draw downs, and the work on the boat ramp and parking lot at Sandy Beach.
- 2010/2011(Fall/Winter) First more extensive draw down conducted on Lake Maspenock resulting in a water level reduction of approximately 7 feet
- 2011(Summer) – Invasive weed problem markedly improved. Comprehensive Biological Survey of the lake conducted, confirmed a drastic reduction of the biomass in the lake, with no apparent negative effects on other life forms in the lake.
- 2012 - Reports of a “new” weed becoming problematic
- 2013 – The “new” weed is identified as ‘large leaf pond weed’, problem with this weed becoming significant
- 2013(November) – LMPA General membership meeting held, The weed problem was extensively discussed and a motion was made and approved that a formal study would be pursued by the LMPA into how the problem could be managed and controlled

- 2013/2014(Fall/Winter) – The 2nd more extensive draw down attempted, Weather conditions prevented the draw down from being implemented effectively, lake level reduced by only about 5 feet
- 2014(Summer) Partial draw down had no effect, the large leaf pond weed problem had progressed to the point of making some areas of the lake un-usable. The Hopkinton Conservation Commission waived the requirement that a Biological Survey be conducted because of the insignificant draw down the prior winter. This waiver was requested by the LMPA to save the considerable expense of the report.
- 2014 - Early Fall, multiple appeals made to the membership to organize a 'weed management committee, there were no restrictions placed on who could serve on the committee, the committee was formed and extensive research conducted
- 2014 - November/December, Weed Management Committee reported research results and made recommendations to the officers and executive board members of the LMPA
- 2014 – Multiple notices sent to the membership concerning a general meeting to be held in January, where a vote would be taken to determine the direction the LMPA would follow in regards to the excessive weed growth in the lake.
- 2015 - January 8th, Meeting with the membership held in the Hopkinton High School cafeteria, 64 members attended which is far in excess of the required quorum of 20 members, the LMPA had access to this venue for a limited time, members were asked to write down questions, which were submitted to the panel assembled, to be answered, when all the questions, which had been submitted, had been addressed, a voice vote was taken, which was overwhelming in favor of the LMPA seeking permitting to conduct treatment of the lake with herbicides in an effort to control and manage the excessive weed growth in the lake.
- 2015(February) - A Notice of Intent, sponsored by the Hopkinton DPW, was submitted to the Hopkinton Conservation Commission and filed with the State DEP, as required. All required notices and postings were made and conducted concerning public hearings to be held
- 2015(March 9th) - The Hopkinton Conservation Commission held a public hearing to discuss the NOI. Only 3 members of the public attended who, were in opposition to the use of herbicides in the lake
- March 9, 2015 – The Hopkinton Conservation Commission approved the NOI subject to an 'order of conditions' issued by that body