

Con Com  
Pat Perry

**Grant Proposal for the  
Lake Boon Watershed Restoration Project**

**Hudson/Stow, Massachusetts**

**July 20, 2001**

**Submitted by: Lake Boon Commission**

**received**  
8/21/01

# Proposed Lake Boon Restoration and Watershed Management Project

## Administrative Summary

### Responding Organization – Lake Boon Commission

Contact Name – John C. Toole, Chairman  
Address – 34 Pine Point Road, Stow, MA 01775  
Telephone – 978 562 7582  
Facsimile – 617 536 7480  
Internet Address – johnjttoole@aol.com

### Project Title – Lake Boon Restoration and Watershed Management Project

### Project Category – Lake Watershed Restoration Project

### Watershed served – SuAsCo

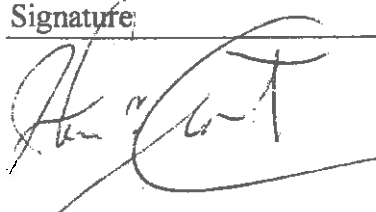
### Amount of Funding Requested and Amount of Match

Total Project Budget	\$243,000
State Funds via EOE A	\$169,750
Available Match	\$73,250

### Project Summary

Objectives of the proposed lake management program are restoration of all Lake Boon basins for long-term multiple recreational usage for lake residents and the general public. To achieve this, phosphate loading must be reduced to acceptable levels according to the TMDL criteria. Further, the non-native invasive weed infestation should be reduced substantially.

### Principle Contact

Signature:	Name printed	Date
	JOHN C. TOOLE	7/19/01

## I. Concise Statement of the Problem

Lake Boon and its watershed are located in the western suburbs of Hudson and Stow, Massachusetts. It covers approximately 161 acres and is about 24 feet deep at its deepest point. It is supplied by rain (14%), storm flows (50%), groundwater (23%), and background flow (13%). The Lake consists of four basins. Nearly 64% of the watershed is forested with roughly 28% allocated to residential development. The watershed is approximately 6 ½ times the size of the lake's four basins and contains 437 households. A significant portion of the watershed is not fully developed and there is potential for further development. Sixty-seven new homes are now under construction, all with wells and septic systems. Lake Boon offers recreational opportunities for hundreds of lakeshore residents as well as the general public via a town beach and free boat ramp.

The recent study *A Nutrient and Limnological Investigation of Lake Boon* (ESS, 1999:17) states "Lake Boon is currently within the transition range, where an increase in the rate of phosphorus input to the system is likely to result in a drastic decrease in water quality. The need to control phosphate loading is also critical because Lake Boon's flushing rate is only about 1.67 times per year which is lower than most Lakes and Ponds in the Commonwealth. The ESS Study goes on to state that "actual in-lake concentrations of phosphorus and nitrogen are moderate to slightly high, and indicate an immediate threat to water quality."

The lake was originally named Boons Pond, named after Matthew Boon, an explorer from Charlestown, Massachusetts, who settled here around 1660. About 1870, a dam was built where the Lake flows into the Assabet River, to provide a constant water supply for power to mills in Maynard, Massachusetts. Consequently, an expansion of the pond, what is now called the first basin, took place, forming the second, third and fourth basins, which are still in existence today.

Lake residents observation of the proliferation of thick aquatic weeds plus numerous environmental studies conducted on Lake Boon indicate that the Lake is on the mesotrophic/eutrophic boundary. The phosphorus load has recently been modeled and predicted to be 186/kg per year. This is above the 151 kg/year considered permissible and indicates that water quality impacts are likely to occur on a regular basis. Aquatic weeds as a result of phosphates are seriously degrading the recreational and aesthetic values of the Lake. Further, the studies pointedly show the process of eutrophication is advancing far more rapidly than on a natural timeline.

There are three lake organizations:

- The Lake Boon Association (LBA), formed in 1913 and incorporated in 1921, provides social and environmental education activities.
- The Lake Boon Commission (LBC), created in 1941 by the State Legislature through the acts of 1941 Chapter 712 and 713 is the governing and enforcement body bridging both towns.
- The Friends of Lake Boon (FLB) was formed in the early 1990s and incorporated as a non-profit organization in 1997 to provide more active environmental advocacy for the Lake Boon watershed.

These organizations' main goals have been to provide an environmentally safe and useable body of water for Lake residents and the general public. The three Lake organizations believe the level of commitment is much higher now than it has ever been in the past, and a special opportunity exists to have watershed residents become truly engaged in seeking out and implementing a long term watershed management and lake restoration program.

At the most recent COLAP conference/workshops, Secretary Durand requested that any lake organization proposing a project grant should note their presence in such a proposal. We are pleased to state that all three organizations were represented by the eight Lake Boon participants at the conference.

In the efforts to save the lake, these organizations in conjunction with both town governments have contracted studies of the phosphorous loading and consequent weed problems. These studies have been conducted on Lake Boon and its watershed evaluating various in-lake management techniques and the long-term management of the water body as follows:

- Boons Pond, Diagnostic/Feasibility Study undertaken by the Department of Environmental Quality Engineering (DEQE) Division of Water Pollution Control in April 1979 –July 1980.
- Diagnostic/Feasibility Study Lake Boon in 1987 undertaken by Camp Dresser & McKee in association with IEP, Inc.
- A Nutrient and Limnological Investigation of Lake Boon undertaken by Environmental Science Services, Inc. in 1999.
- Lake Boon, (Boons Pond) Hudson and Stow, MA. (MA 82011) TMDL, Sept. 22, 1999.
- Lake Boon Wildlife Habitat Study 2000 undertaken by Environmental Science Services, Inc., in 2000.
- Lake-Level Drawdown Study undertaken by Lycott Environmental, Inc. in 2000-2001.
- Lake-Level Drawdown Well Impact Report undertaken by Lycott Environmental, in 2000-2001.

The above named studies conducted at Lake Boon have recommended the implementation of an integrated management program. Such an overall management and restoration plan would be phased in gradually over the three year period. The proposed program would include the following major elements:

- Lake level drawdown
- Herbicide application
- Door to door and other educational campaigns addressing runoff, septic systems, etc.
- Working with both towns to update ordinances and enforcement criteria in an effort to curb the nutrient and phosphorous loading
- Plan for a Watershed Management District to develop a necessary long-term stream of monies through watershed management fees to allow for the eventual sewerage and watering of the entire lake community.

These and additional proposed elements are explained in detail in the tabulated task section of this proposal.

It is important to note that these are not new ideas as the Lake organizations have been working cooperatively in an attempt to rectify the aforementioned problems of Lake Boon over the past four decades through a bi-annual newsletter, unsuccessful weed harvesting and now a very active website located at <http://townonline.koz.com-visit/lakeboon>. However, a unique opportunity offered through this grant allows all entities the chance to make a significant positive change for the entire watershed community.

Furthermore, this grant will allow the aforementioned management techniques to be thoroughly evaluated both before and after the implementation process begins and over the next three years. Important issues could be addressed that may relate to other water bodies in Massachusetts, such as: the effects on bordering vegetative wetlands; the effects on amphibians, freshwater mussels, crayfish, fisheries and turtles; the presence of any herbicide residues and the environmental fate of the compounds; and a comparison of the nutrient loading before and after the implementations of the management program. The Lake Boon Association has unique presentation capabilities through the Digital Imaging Scanning Cooperative which will facilitate sharing images, data and other information with other lake and pond groups in Massachusetts.

The time for action at Lake Boon is now. Lake Boon has four distinct basins; each basin is different from the other and is in a different eutrophic state. The second basin has excessive plant growth, which interferes with recreational activities and the fish and wildlife habitat. The aquatic plant growth in the third and fourth basins have advanced to the point where swimming and boating are impossible. As a result of the excessive aquatic plant growth many of the taxpayers are receiving rebates between 11 - 22% on their property taxes. It is because of these issues that all parties (Lake Boon Association, Lake Boon Commission, Friends of Lake Boon plus Boards of Health, Conservation Commissions, Planning Boards and Boards of Selectmen of both Hudson and Stow) have

shown continued support of these types of initiatives, including two recent successful DEM matching grants of \$20,000 each.

## II. Project Goal

The overall goal of the proposed lake management program is restoration of all Lake Boon basins for long-term multiple recreational usage for lake residents and the general public. To achieve this, phosphate loading must be reduced to acceptable levels according to the TMDL criteria. Further, the non-native invasive weed infestation should be reduced to approximately 10% of its present state.

## III. Project Strategy

The three lake organization's strategy will involve intensive communication with watershed and town residents on the implementation of the program. Currently LBA provides both regular forums for discussion of Lake issues, distributes a regular monthly newsletter and maintains a very active and up-to-date website at <http://townonline.koz.com/visit/lakeboon>. It is anticipated that the grant implementation will require a least monthly public gatherings chaired by the LBC to discuss progress, air issues of concern and build consensus for implementation of specific mitigation measures. Special attention will be paid to citizen's with views in opposition to the majority or residents in an effort to find workable and amicable solutions.

The overall management and restoration plan will be phased in gradually over the three year period. During the first year major emphasis will be placed on those measures which the LBC and LBA believe can be implemented with least public opposition such as continued emphasis on voluntary measures, continuation of the baseline monitoring program, full implementation of Septrack, and a possible ban on lawn fertilizers in the Watershed.

However, at the same time, LBC will form three special committees:

- **Proposed LBC/Town of Stow/Town of Hudson Joint Committees on Town Action**
- **LBC Action Committee for Formation of Lake Boon Watershed Management District (LBWM)**
- **LBC Action Committee for Long-Term Pollution Prevention**

The first of these committees, the **LBC/Stow/Hudson Joint Committees on Town Action** will pursue those actions requiring joint LBC/Town actions over the first two years. Actions will develop new ordinances, or update present ordinances and by-laws.

Further, the Committee will work to develop and implement the necessary enforcement criteria in hopes of eliminating current septic system abuses.

**The Action Committee for Formation of Lake Boon Watershed Management District (LBWM)** will be charged with the task of investigating and making every effort to establish an LBWM District with annual management fees. This is perceived by the LBC and LBA leadership as the only way to guarantee long-term, sound management and restoration of Lake Boon. Without taking this step, long-term restoration is likely to fail. A cost of perhaps \$150 per year per household might be vehemently resisted by some Lake Boon watershed residents. A draft *LBWM District Charter* will be prepared and extensive consultation carried out with residents and the Towns, so actual formation of the LBWM District is not anticipated until Year 3 of the grant.

**The Action Committee for Long-Term Pollution Prevention** will investigate new, innovative low-cost alternatives to control the 80 percent of phosphates entering the lake from runoff. Similarly the Committee will be charged with researching and potentially testing alternative more environmentally sound alternative septic systems, since near shore systems have been determined to be the next largest source of phosphates. The Committee will also be responsible for investigating other experimental methods for controlling phosphates, such as bio-remediation. Nevertheless, given current state of the art, it is our assessment (and that of various consultants who have looked at Lake Boon's current and long-term conditions) that major capital expenditures will be required to mitigate effectively against current phosphate and pollutant loading from runoff and septic systems.

The Committee will prepare and propose for implementation a *Management Action Plan for Pollution Prevention* that fully addresses the mitigation required to maintain and potentially improve the long-term condition of the Lake. The *Plan* will be developed through full public consultation with all affected residents and the Towns. If, as current recommendations seem to indicate, the most workable option for Lake Management is storm water and septic management through sewerage, this will require bonding and Town Meeting Approval. Lake residents might have to shoulder more of the bonding burden than other Town residents.

Thus the implementation of the Action Committee's *Management Action Plan* will provide implementable recommendations for Years 1 and 2, but reserve implementation of long-term capital intensive mitigation measures for Year 3 of the grant. It should be noted that provision of piped water to Lake Boon residents would allow drawdown of the Lake to proceed largely unopposed. Given the shallowness of Lake Boon (24 feet at its deepest point, and approximately 6 feet in some basins, annual drawdown could actually stabilize or even reverse eutrophication. Implementation of a well-conceived *Action Plan* could significantly increase property values over the next decade as the demand for recreational space escalates.

#### IV. Milestones

- Formation of committees with assigned tasks
- Completion of door to door educational campaign concerning residents' contribution to nutrient loading
- Licensing & permitting of contracted in-lake activities as set forth in the Lake Boon Commission's orders of conditions
- Implementation of drawdown and/or herbicide treatment programs as set forth by Stow and Hudson Conservation Commission orders of conditions
- Submittal of proposal for DEP 319 Non-point Source Pollution Grant covering storm drain runoff and educational programs
- Submittal of proposal for DEP Mass Revolving Loan Fund loan and grant funds for septic and water quality improvement
- Town meetings to approve new ordinances and enforcement criteria

#### V. Activities

This proposal has been developed in direct response to the concerns of residents in the Lake Boon Watershed Community who have become increasingly concerned by effects of increasing phosphate loading and continuing accumulation of pollutants in Lake Boon.

Lake Boon and its watershed are within the Towns of Stow and Hudson. It covers approximately 161 acres and is about 24 feet deep at its deepest point. formed by and receives its supply from rain (14%), storm flows (50%), groundwater (23%), and background flow (13%). The Lake consists of three basins (See Fig. 1). Nearly 64% of the watershed is forested with roughly 28% allocated to residential development. The watershed is approximately 6 ½ times the size of the lake's three basins (See Fig. 2.) and contains 437 households. A significant portion of the watershed is not fully developed and there is potential for further development. Sixty-seven new homes are now under construction, all with wells and septic systems.

The phosphorus load has recently been modeled and predicted to be 186/kg per year. This is above the 151 kg/year considered permissible and indicates that water quality impacts are likely to occur on a regular basis. Numerous environmental studies conducted on Lake Boon indicate that the lake is on the mesotrophic/eutrophic boundary and that additional increases in phosphate may seriously degrade the multiple use recreational values of the lake, which are highly prized by both Lake Boon residents and the Towns of Stow and Hudson.

The ESS Study finds: "Phosphorus concentrations in Lake Boon are at a level that is very sensitive to changes in phosphorus loading to the lake. Any management efforts that reduce phosphorus loading are likely to exhibit immediate benefits to in-lake water quality (ESS:40)." Most of the loading is estimated to be coming from stormwater runoff (82%) and groundwater (10%, including septic systems), so efforts will be primarily directed at curtailing loading from these two sources.

Through the Lake Boon Association's 134 committed members and the Friends of Lake Boon, many of the residents in the Watershed are now mobilized to take action. Voluntary campaigns to reduce use of phosphates and manage septic systems have been promoted by the LBA and



LBC over the last two decades, but it has become increasingly clear that these steps alone will do little to address the major sources of phosphate and pollutants, stormwater runoff and inadequate management of septic systems.

Currently many Lake residents with septic systems view meaningful attenuation of phosphates and pollutants as too costly and politically difficult to implement, although these costs could be stretched out over 30 years or more, so as to be born by both future residents in the watershed and by the Towns. Other lake communities similar to Lake Boon have already provided an example of what is doable if there is enough concern and will.

The Lake organizations are prepared to bite the bullet, but will not do so without full consultation with all affected parties.

Responsibility for communicating the progress and results of the demonstration will rest with the Lake Boon Commission and the Lake Boon *Digital Imaging Scanning Collaborative* (DISC) (See Section VI and the DISC Letter of Support). The Collaborative together with LBA will document progress and help prepare findings to be shared with other Lake and Pond Associations and COLAP. Results will be documented through both digital photos and Powerpoint presentations posted to the LBA website, as well as through COLAP meetings.

The task to be accomplished under the grant are summarized in the tables that follow:

Tasks # 1.0 – 1.11

Deliverables:

Task Number	Options	Evaluation	Advantages	Disadvantages	Lake improvement impact & effect on property values	Cost to implement
1.0	Continue to Promote Current Voluntary Actions through the Lake Boon Commission (LBC) and the Lake Boon Association (LBA)					
1.1	Prepare additional educational materials by DISC and continue to maintain active website		Awareness building and education remain important in altering Lake damaging practices	Slight cost and high volunteer investment. Already done regularly by the LBA through both newsletter and well-maintained website	Moderate to small	\$3000 in materials; Volunteer 100 hrs/year x 3 @ \$25/hr = \$7,500
1.2	Regularly publish information on voluntary measures		Keeps watershed residents aware of steps they can take to reduce		Small, but helpful	80 hrs/year x 3 @ \$25/hr = \$6,000
1.3	Use non-phosphate detergents for laundry and dishwashing		Relatively easy action for each homeowner	Requires education residents will implement	Small, but helpful	Minimal
1.4	Limit Lawn Fertilization		Relatively easy action for each homeowner. Easy for community to monitor.	Requires education campaign. Some residents will be highly resistant, particularly those whose houses are not on the lake	Probably a significant contributor to lake phosphate load and continued deterioration	Minimal

Task Number	Options	Evaluation	Advantages	Disadvantages	Lake improvement impact & effect on property values	Cost to implement
1.5	Eliminate car washing in the watershed		Easy for community to monitor.	Requires education campaign. An inconvenience to some homeowners.	of quality Small, but helpful	
1.6	Pump septic once a year for new systems/twice a year for ageing systems (ESS recommendation based on FLB survey work)		Should be a matter of good homeowner practice	May cost \$125 (+) per pumping	Very important	
1.7	Eliminate illegal disposal of oil, paint, and other toxic chemicals		Cuts down on possible carcinogens entering groundwater and the lake	Requires education and sensitivity to an seemingly "invisible" problem	Very important	Minimal

Estimated Cost: \$13,500 over 3 years

DEM Share: None

Non-State Match: \$13,500 from LBA and DISC in volunteer labor

Tasks # 2.0 – 2.7

Deliverables:

Task Number	Options	Evaluation	Advantages	Disadvantages	Lake improvement impact & effect on property values	Cost to implement
2.0	Establish LBC/Town of Stow/Town of Hudson Joint Committees on Town Action – Year 1 Tasks					
2.1	Establish improved Septic Monitoring Program (Using free Septrack software available from the State of Massachusetts) Marcia Riesing of the Board of Health is implementing Septrack. Board of Health Staff were trained in the use of the first version of the software and are adopting the second version.	Help Towns improve its monitoring of Townwide and Lake Septic system improvements and condition	Requires some additional training for Board of Health employees	Small, but helpful	25 hrs/month over 9 months volunteer sampling @ \$25/hr \$5500	
2.2	Test wells in watershed for nitrate. To be done by the Towns or homeowners	The quickest and least costly way to determine what is happening with septic system flows in the watershed.	Moderate cost to the town and/or homeowners	Small, but helpful	Small	
2.3	Increase street sweeping and catch basin cleaning and perform early in Spring and in late Fall	Improves lake water quality and reduces cumulative impact over time	None	Small, but helpful	Minimal	
2.4	Reduce use of salt in the watershed	Could significantly reduce future phosphate loading	None	Small, but helpful	None.	
2.5	Reexamine watershed impacts on Lake Boon and restrict development that has		Difficult to implement, requires close collaboration	Moderate to high, but	Initially low for planning, \$4000	

Task Number	Options	Evaluation	Advantages	Disadvantages	Lake improvement impact & effect on property values	Cost to implement
	additional deleterious impact on water resources. Conduct a watershed buildout analysis.		and pollutant inflows to the Lake	with Stow Planning Board in Master Planning exercise	certain property values could be adversely affected by future development restrictions	for build out analysis (ESS), but actual costs to implement are unknown
2.6	Erosion control on Town land near Town Beach		Stop severe bank erosion and the contribution to sediment accumulation in the Lake	Some cost to the Town	Small, but helpful	\$20,000 to correct current problem and provide long-term erosion control.
2.7	Env. Sound management of Town soccer fields			Some additional cost to the Town for organic herbicide/pesticide solutions	Small, but helpful	Minimal to moderate

**Estimated Cost:** \$20,000 for erosion control at Town Beach  
 \$4,000 for build out analysis  
 \$5,500 for septic monitoring

**DEM Share: Build Out Analysis & erosion control \$19,000**

**Non-State Match:** \$5000 from towns plus  
 \$5,500 in volunteer labor

Tasks # 3.0 – 3.6

Deliverables:

Task Number	Options	Evaluation	Advantages	Disadvantages	Lake improvement impact & effect on property values	Cost to implement
3.0		<b>Lake Boon Commission Year 1 Tasks</b>				
3.1	Continue annual monitoring program		Very important to have a baseline, so that we can tell if our actions are improving Lake quality or causing further adverse impacts	Moderate cost	Moderate	\$6000 (ESS) May be higher (exclusive of monitoring of weed control impact monitoring)
3.2	Establish a covenant system for Lake Boon residents. Residents would voluntarily sign the following homeowner covenants [each one separate]: (1) will only use non-phosphate soaps and detergents; (2) not use lawn fertilizers; (3) not wash or wax cars in the watershed; (4) not dispose of oils, paints, toxic chemicals in the watershed		Does not require passage of bylaws or impose legal restrictions. Most people would probably honor the covenants once signed	Would require education and a signature campaign. A small proportion of residents might chose not to sign the covenants.	Probably a significant contributor to lake phosphate load and continued deterioration of quality	200 hrs @ \$25/hr Volunteer time to develop and implement campaign \$5000
3.3	If feasible, ban use of lawn fertilizer in the Lake Boon Watershed using the legal resources of the town counsels of Hudson and Stow		Probably a significant contributor to lake phosphate load and continued deterioration of water quality	Resistance from some residents in the watershed	High	Minimal
3.4	Biocidal chemical treatment with Sonar (fluridone)		Would kill Fanwort ( <i>Cabomba caroliniana</i> )	Cost. Does not control algal blooms.	High for homeowners with frontage in weed areas	\$65,000

Task Number	Options	Evaluation	Advantages	Disadvantages	Lake improvement impact & effect on property values	Cost to implement
3.5	Biocidal chemical treatment with Reward (Diquat)		Would kill Variable leaf milfoil ( <i>Myriophyllum heterophyllum</i> )	Cost. Does not control algal blooms.	High for homeowners with frontage in weed areas	Including monitoring
3.6	Demonstration of draw down to control weeds and address phosphate loading. Begin with a two foot drawdown and increase each year to determine potential impact on shallow wells and allow for equitable remediation for affected homeowners		One of the few methods other than dredging which could potentially stabilize the affects of continuing to the phosphate loading to the Lake, through natural freezing processes. The shallowness of Lake Boon would potentially increase the effectiveness of drawdown as a mitigation measure	Resident costs estimated at [\$14,000] (ESS:48)	Very important	Minimal
3.7	Establish a Lake Boon Watershed Uniform Septic Pumping Contract		Regularly scheduled pumping at reduced rates	Some residents may consider annual pumping excessive and not wish to be part of the contract	Small, but important	Should save residents some money from reduced pumping costs

**Estimated Cost:** \$65,000 for herbicide treatment  
 \$6,000 for monitoring  
 \$5,000 for covenant campaign

**DEM Share:** \$58,750 for herbicide treatment  
 \$4,500 for monitoring

**Non-State Match:** \$6,250 from LBA for herbicide treatment  
 \$1,500 from LBA for monitoring  
 \$5,000 in volunteer labor for covenant campaign

Tasks # 4.0 – 4.3

Deliverables:

Task Number	Options	Evaluation	Advantages	Disadvantages	Lake improvement impact & effect on property values	Cost to implement
4.0	LBC/Town of Stow/Town of Hudson Joint Committees on Town Action - Year 2 Tasks					
4.1	Work with the Massachusetts Department of Environmental Protection RFR Coordinator, Jane Pierce's designee, Brian Duval, to set up 319 non-point source pollution grant, i.e. storm drainage and runoff, for submission in March 2002. This demonstration grant will be used to leverage for the 319 grant.	Help reduce wide range of contaminants to the Lake (e.g., sediment, phosphorus, nitrogen, bacteria and salt) Contributors: Lawn fertilizer; pesticides; pet and urban wildlife wastes; car washing; road sanding and salting; erosion from new construction	Cost and disruption of roadways.	Small	Volunteer time 100 hrs @ \$25/hr \$2500	
4.2	Work with Joseph McNealy, Financial Director of the Mass. revolving loan fund, through DEP to set up a septic management district allowing for grant and loan monies.	Identify and eliminate use of faulty and/or densely spaced septic systems that cannot be upgraded to Title V.	None other than cost	Moderate to large	Volunteer time 200 hrs @ \$25/hr \$5000	
4.3	Seek town approval of an annual contribution toward a Lake Boon Wafer Quality Maintenance Fund reflecting use by all Town citizens	Equitable town-wide contribution toward the two towns' usage of the Lake.	Cost	Moderate	Minimal	

Estimated Cost: \$7,500 for grant proposal work

DEM Share: None required

Non-State Match: \$7,500 volunteer labor for grant proposals & submissions



Tasks # 5.0 – 5.8

Deliverables:

Task Number	Evaluation	Advantages	Disadvantages	Lake improvement impact & effect on property values	Cost to implement
5.0	<b>Lake Boon Commission Year 2 Tasks</b>				
5.1	Continue annual monitoring program, including correct levels for herbicides used.	Very important to have a baseline, so that we can tell if our actions are improving Lake quality or causing further adverse impacts	Moderate cost	Moderate	\$6,000 per year May be higher (exclusive of monitoring of weed control impact monitoring)
5.2	Septic Hot Spot Monitoring	Would identify specific problem septic systems	Potential homeowner resistance	Moderate	
5.3	Develop a program for mitigating coliform and phosphate entering from the primary tributary entering the Lake		Will require discussion with homeowners whose residences are contributing to this source and an examination of financial resources to pay for mitigation	Moderate to low	Moderate to residents
5.4	Seek out and implement a small scale alternative septic system demonstration site	Certain treatments may be reaching the stage where practicable alternatives exist and which would also be acceptable aesthetically	Somewhat experimental	Potentially very important	Unknown but not minimal
5.5	Develop a program to encourage erosion control landscape techniques through model landscapes, demonstrations and planting assistance	Potentially quite useful in controlling runoff	Cost and volunteer or consultant effort to develop and advertise the program	Important	250 hrs @ \$25/hr = \$6,500 + \$2,500 for

Task Number	Options	Evaluation	Advantages	Disadvantages	Lake improvement impact & effect on property values	Cost to implement
5.6	Annual biocidal chemical treatment with Sonar (fluridone)	Annual biocidal chemical treatment with Sonar (fluridone)	Would kill Fanwort ( <i>Cabomba caroliniana</i> )	Cost. Does not control algal blooms.	High for homeowners with frontage in weed areas	plantings \$35,000-40,000
5.7	Annual biocidal chemical treatment with Reward (Diquat)	Annual biocidal chemical treatment with Reward (Diquat)	Would kill Variable leaf milfoil ( <i>Myriophyllum heterophyllum</i> )	Cost. Does not control algal blooms.	High for homeowners with frontage in weed areas	
5.8	Annual draw down to control weeds and address phosphate loading. Begin with a two foot drawdown and increase each year to determine potential impact on shallow wells and allow for equitable remediation for affected homeowners	Annual draw down to control weeds and address phosphate loading. Begin with a two foot drawdown and increase each year to determine potential impact on shallow wells and allow for equitable remediation for affected homeowners	One of the few methods other than dredging which could potentially stabilize the affects of continuing phosphate loading to the Lake, through natural freezing processes. The shallowness of Lake Boon would potentially increase the effectiveness of drawdown as a mitigation measure	Annual cost. Program would be needed to compensate those who can not afford to replace shallow wells near the Lake with deep wells	Very important	Low, but compensation for shallow well owners may raise to moderate

**Estimated Cost:**

- \$6,000 for monitoring program
- \$40,000 for herbicide application
- \$6,500 for erosion demonstration campaign
- \$2,500 for demonstration vegetative barrier plantings in 5 diverse locations

DEM Share: \$6,000 for monitoring program  
 \$32,500 for herbicide application

Non-State Match: \$7,500 from LBA for herbicide application  
 \$2,500 from towns for vegetative barrier plantings  
 \$6,500 in volunteer labor for erosion demonstration campaign

Tasks # 6.0 – 6.6

Deliverables:

Task Number	Evaluation	Advantages	Disadvantages	Lake improvement impact & effect on property values	Cost to implement
6.0	Lake Boon Commission Year 3 Tasks				\$6000 (ESS)
6.1	Continue annual monitoring program	Very important to have a baseline, so that we can tell if our actions are improving Lake quality or causing further adverse impacts	Moderate cost	Moderate	
6.3	Institute program for mitigating coliform and phosphate entering from the Primary Tributary entering the Lake		Will require discussion with homeowners whose residences are contributing to this source and an examination of financial resources to pay for mitigation	Moderate to low	Moderate
6.4	Install small scale alternative septic system demonstration	Certain treatments may be reaching the stage where practicable alternatives exist and which would also be acceptable aesthetically	Will not address immediate problems. Could prove costly. Might not work as expected	Potentially very important	Unknown but not minimal

Task Number	Options	Evaluation	Advantages	Disadvantages	Lake improvement impact & effect on property values	Cost to implement
6.5	Institute program to encourage erosion control landscape techniques	Potentially quite useful in controlling runoff	Would kill Fanwort ( <i>Cabomba caroliniana</i> )	Cost and volunteer or consultant effort to develop and advertise the program	Important	Continued from previous task 5.5
6.6	Annual biocidal chemical treatment with Sonar (fluridone)	Annual biocidal chemical treatment with Reward (Diquat)	Would kill Variable leaf milfoil ( <i>Myriophyllum heterophyllum</i> )	Cost. Does not control algal blooms.	High for homeowners with frontage in weed areas	\$35,000-40,000
6.7	Annual draw down to control weeds and address phosphate loading. Begin with a two foot drawdown and increase each year to determine potential impact on shallow wells and allow for equitable remediation for affected homeowners	One of the few methods other than dredging which could potentially stabilize the affects of continuing phosphate loading to the Lake, through natural freezing processes. The shallowness of Lake Boon would potentially increase the effectiveness of drawdown as a mitigation measure	Annual cost. Program needed to compensate those who can not afford to replace shallow wells near the Lake with deep wells	High for homeowners with frontage in weed areas	Very important	Low, but compensation for shallow well owners may raise to moderate

**Estimated Cost:**

\$ 6,000 for monitoring program  
 \$40,000 for herbicide application  
 \$6,000 for monitoring program  
 \$40,000 for herbicide application  
 None

**DEM Share:**

None

Tasks # 7.0 – 7.4

Deliverables:

Task Number	Options	Evaluation	Advantages	Disadvantages	Lake improvement impact & effect on property values	Cost to implement
7.0	Establish LBC Action Committee for Formation of Lake Boon Watershed Management District (LBWM)					
7.1	Move toward establishment of LBWM District with annual management fees. Establish Committee in Year 1. Put LBWM in place by Year 3	Perhaps the only way to guarantee long-term, sound management of the Lake. Without taking this step, effective management actions will not be possible.	Cost of perhaps \$150 per year per homeowner might be vehemently resisted by some Lake Boon residents	Very important	Moderate	
7.2	The Committee will prepare a <i>draft LBWM District Charter</i> for consultation with Lake Boon and Town residents					
7.3	Establish funding mechanism for annual treatment of aquatic weeds through benign chemical or biological treatment by Year 3					volunteer 500 hrs @ \$25/hr = \$12,500
7.4	Establish funding mechanism for annual drawdown. Investigate costs and compensation opportunities for compensation for homeowners whose shallow wells may be affected by Year 3					

Estimated Cost: \$12,500 for developing and promoting LBWM District

DEM Share: None

Non-State Match: \$12,500 for developing and promoting LBWM District from volunteer labor

**Reporting Tasks:** At a minimum reporting will consist of regular six month *Progress Reports* together with:

- annual reports on monitoring results
- *annual LBC and LBA Project Workplans*
- impact report on fluidone treatment after the first year
- impact report on drawdown effects after the first year
- septic hot spot report results
- draft *LBWM District Charter* and six month summaries of Committee deliberations
- *copy of Management Action Plan for Pollution Prevention* and six month summaries of Committee deliberations

All progress reports, 6 month summaries and annual workplans shall cover progress, identify issues and constraints and recommend solutions for the next reporting period. Problems encountered in the previous reporting periods will be reviewed to determine overall progress in resolving issues. Progress toward achievement of results will also be outlined.

#### **V. Project Evaluation: Environmental Indicators**

- Semi-annual Monitoring results for phosphate and hydrocarbon pollutants.
- Quality Assurance Project Plan (QAPP) submissions.
- Semi-annual status reports on *Achievement of Results* under tasks listed above prepared and submitted.
- Cumulative assessment of results and suggested corrective measures in semi-annual status reports.
- Documentation by Digital Imaging Scanning Collaborative (See Below).
- Utilization of existing Septrack program for both Stow and Hudson watershed residences.

All submissions of reports will be done by the hired contractor as stated in the attached orders and conditions by Stow and Hudson Conservation Commissions.

#### **VI. Outreach – Technology Transfer**

The Lake Boon Association has extensive presentation capabilities through the Digital Imaging Scanning Collaborative and the LBA website, which will facilitate sharing images, data and other information with other lake and pond groups in Massachusetts.

In addition, special allowance will be made for preparation of presentations to COLAP, individual Lakes and Ponds associations and others.

Progress and results will be regularly posted on the LBA website.

**Proposed Budget**  
**Lake Boon Watershed Demonstration, Restoration and Protection Project**

Expense Items	EOEA Amount	Non-State Match*	Total Amount
Preparation & printing of educational materials	3,000		3,000
Volunteer labor by DISC 300 hrs @ \$25/hr		7,500	7,500
Volunteer labor by LBA MIS Director 240 hrs @ \$25/hr		6,000	6,000
Volunteer labor for septic monitoring by LBC/Hudson/Stow Joint Committee 225 hrs @ \$25/hr		5,500	5,500
Town Planning Board Consultant for town build out	4,000		4,000
Stow landscape contractor for erosion control	15,000	5,000	20,000
LBC contract for annual monitoring program, 1st year	4,500	1,500	6,000
LBC volunteer 200 hrs @ \$25/hr for covenant campaign		5,000	5,000
LBC contract to Lycott Associates, Inc. for herbicide application, 1st year	58,750	6,250	65,000
Volunteer labor for 319 grant by LBC/Hudson/Stow Joint Committee 100 hrs @ \$25/hr		2,500	2,500
Volunteer labor for Mass Revolving Loan Fund by LBC/Hudson/Stow Joint Committee 200 hrs @ \$25/hr		5,000	5,000
LBC contract for annual monitoring program, 2nd year	6,000		6,000
LBC volunteer labor to develop, demonstrate & assist with vegetative barrier plantings 250 @ \$25/hr		6,500	6,500
Acquisition of vegetative barrier plants		2,500	2,500
LBC contract to Lycott Associates, Inc. for herbicide application, 2nd year	32,500	7,500	40,000
LBC contract for annual monitoring program, 3rd year	6,000		6,000
LBC contract to Lycott Associates, Inc. for herbicide application, 3rd year	40,000		40,000
Volunteer labor for formation of watershed management district by LBC Action Committee		12,500	12,500
<b>TOTALS</b>	<b>169,750</b>	<b>73,250</b>	<b>243,000</b>
<b>*Sources of Non-state Match</b>			
Lake Boon Association	15,250		
Town of Stow	6,250		
Hudson	1,250		
<b>TOTAL</b>	<b>22,750</b>		













COMMONWEALTH OF MASSACHUSETTS  
**MASSACHUSETTS SENATE**  
 STATE HOUSE, BOSTON 02139-1053

SENATOR PAMELA P. RESOR  
 MIDDLESEX AND WORCESTER  
 DISTRICT  
 ROOM 413F  
 TEL. (517) 722-1120  
 FAX (517) 722-1089

DISTRICT OFFICE  
 P.O. BOX 1110  
 MARLBOROUGH, MA 01752  
 TEL. (508) 786-3040  
 FAX (508) 786-1969

COMMITTEES:  
 ETHICS, CHAIR  
 NATURAL RESOURCES  
 AND AGRICULTURE, VICE CHAIR  
 TRANSPORTATION  
 SCIENCE AND TECHNOLOGY

July 17, 2001

Commissioner Peter C. Webber  
 Department of Environmental Management  
 251 Causeway Street, Suite 700  
 Boston, MA 02114

Dear Commissioner Webber:

I would like to express my support for the Lake Boon Commission's restoration grant project submitted under the Lakes and Ponds Strategy program offered by DEM.

Lake Boon is one of the commonwealth's historic natural lakes and is shared by two communities, namely Hudson and Stow. The Lake Boon Commission (LBC) is taking a holistic approach to the long-term maintenance and preservation of the lake. However, in order to preserve this historic water area, it must be restored. As you are aware, Lake Boon is infested with an overgrowth of vegetation. The main goal of LBC is to establish Lake Boon as a water-management district. Some of the practices the commission would like to implement include: establishing Lake Boon as a water district, public education programs, changes in town by-laws, and the extension of town water/sewer to the lake community. The LBC has local government and community support for these actions. The Commission plans to set up community action boards working with both towns on several issues facing the lake including eliminating the weed infestation. Long-term studies will be put in place to study not only what is occurring at the Lake during treatment but follow-up studies will be conducted to measure the effects of the treatment on the wildlife, water quality and environment. The hope of the LBC is with its watershed management plan in place, it could serve as a role model and its actions be replicated in other lakes and ponds in the commonwealth.

If I can be of any further assistance on this issue, feel free to contact me. I look forward to hearing the results of the Lakes and Ponds Strategies Initiative project.

Sincerely,

Pamela P. Resor  
 State Senator



*The Commonwealth of Massachusetts*

HOUSE OF REPRESENTATIVES  
STATE HOUSE, BOSTON 02133-1054

REP. PATRICIA A. WALRATH  
3RD MIDDLESEX DISTRICT  
BOLTON - HUDSON  
LANCASTER - SHIRLEY - STOW

DISTRICT OFFICE:  
TEL. (978) 897-9088

Chairman  
Committee on  
Long Term Debt and  
Capital Expenditures  
ROOM 466, STATE HOUSE  
TEL. (617) 722-2017

Robert Durand, Secretary  
Executive Office of Environmental Affairs  
100 Cambridge Street, Suite 2000  
Boston, MA 02202  
July 18, 2001

Dear Secretary Durand:

I am writing to express my strong support for the application being submitted by the Lake Boon Commission (LBC), Friends of Lake Boon, and the Lake Boon Association for a Lakes and Ponds Demonstration Grant of \$100,000 for each of three years. The money would be used to further the work that was indicated by two former studies regarding the weed problem in Lake Boon. This includes a drawdown of the water and use of herbicides to control the current rampant weed growth in the lake.

The majority of the money would be used to develop a long-term plan, which would include development of a water management district for the Lake Boon Area. Part of the plan would likely include bringing up to Title 5 standards septic systems of lakeside properties even though the properties weren't being sold.

The Lake Boon Association has set aside \$16,000 towards this project. In kind contributions from the Stow and Hudson residents who are part of the LBC, Friends of Lake Boon, and the Lake Boon Association are planned to be part of the required match.

Please give every consideration to this grant application. I am looking forward to hearing your decision.

Sincerely,

PATRICIA A. WALRATH  
State Representative



July 19, 2001

Lake and Pond Program Manager  
Department of Environmental Management  
251 Causeway Street, Suite 700  
Boston, MA 02114

Dear Program Manager:

On behalf of the Lake Boon Commission, I am writing this letter of support for this grant proposal. The Lake Boon Commission has spent a great deal of time studying the ongoing eutrophication process of Lake Boon for a number of decades. The Commission has also sponsored consultants and experts in the pursuit of accurate data. The conclusions according to past and present studies indicate Lake Boon has reached a critical point whereby inaction is no longer an option. We support this grant because it offers a real opportunity for real restoration. This grant, coupled with the present high level of commitment of Lake residents, civic groups and townships, will assuredly bring a successful restoration project to fruition.

The time for action is now and this grant can be the impetus for a long term self-sustaining lake management program. The results for the residents of Stow and Hudson, as well as the general public, will offer a continued opportunity to experience a positive watershed environment for multiple recreational advantages. We look forward to working with the Commonwealth in a cooperative effort for the betterment of the environment for all.

Sincerely,

John C. Toole  
Chairman



## LAKE BOON ASSOCIATION

*Lake Boon Improvement Association, Inc.*

*Don Hawkes, President*  
562-6630  
[Lakeboonassociation@yahoo.com](mailto:Lakeboonassociation@yahoo.com)

*John (JT) Toole, Vice President,*  
562-7582

*David Gray, Treasurer*  
562-6843

*Linda Gelpke, Secretary*  
562-3535

Visit our Website at: <http://townonline.koz.com/visit/lakeboon>

July 19, 2001

Lake Boon Commission  
c/o John C. Toole – Chairman  
34 Pine Point Road  
Stow, MA 01775


Dear Commissioners:

On behalf of The Lake Boon Association we want to express our support of the DEM grant proposal to help with funding a comprehensive lake management program. The Association has worked on and off over many decades at finding ways to combat the increasing aquatic weed, erosion and pollution problems of the Lake. Over this time we have raised over \$15,000 earmarked for lake restoration and management.

While these problems are still getting worse, we recognize that now is a very opportune time to focus our actions. The Association is becoming more active, with higher membership (over 130 families), greater meeting participation, more comprehensive and educational newsletters, a dynamic web site and increasing volunteer levels for fund raising and special projects.

The lake community is becoming more knowledgeable and motivated to take action to correct the rapid cultural eutrophication occurring in our backyards. If we can make important elements of the proposed plan affordable, we should have wide support among the lake community. We fully support your work in this regard.

Sincerely,

  
David M. Gray  
Treasurer



## Friends of Lake Boon, Inc.

Friends of Lake Boon  
Roger Duchesneau, Treasurer  
98 North Shore Drive  
Stow, MA 01775  
(978) 668-0794  
rogerd@leee.org

July 19, 2001

Lake Boon Commission  
John C Toole, Chairman  
34 Pine Point Rd.  
Stow, MA 01775

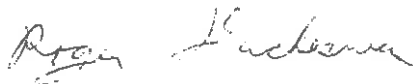
Dear Mr. Toole:

On behalf of the Friends of Lake Boon (FLB), I am writing this letter in support of the Lake Boon Commission's efforts to secure a demonstration grant from the Massachusetts EOE. Lake Boon is borderline Eutrophic and as such needs a lot of help.

FLB was founded in 1997 as a non-profit organization for the explicit purpose of addressing the water-quality problems of Lake Boon. Since that time, FLB has been the driving force behind the successful procurement of two separate grants through the Massachusetts DEM Lakes and Ponds Program for the purposes of conducting several studies of Lake Boon: an updated diagnostic/feasibility study followed by a wildlife habitat assessment and drawdown evaluation study.

These studies have provided the foundation from which the Lake Boon community, under the current direction of the Lake Boon Commission, can move forward with specific programs to provide real and measurable improvements to Lake Boon. FLB strongly supports these initiatives and encourages the EOE to provide this demonstration grant to the Lake Boon Commission. With this assistance, great strides can be made toward addressing the water-quality problems at Lake Boon and protecting this resource for future generations.

Sincerely,



Roger Duchesneau, Treasurer  
Friends of Lake Boon, Inc.

# D I S K

82 Pine Point Rd, Stow, MA 01775, (978) 562-9839, "Lhalprin@ma.ultranet.com"

To: Lake and Pond Watershed Demonstration, Restoration and Protection project.  
From: DISC (Digital Image Scanning Collaborative)  
Date: July 18, 2001  
Subject: Urge grant support to the Lake Boon Drawdown Project.

Dear Sirs,

DISC was formed by a collaboration of local Historical Societies (the towns of Hudson, Stow and Maynard) and the Lake Boon Association in order to preserve our archive images by digitizing them and storing them onto CD's. Its second focus is to record today's history in order to have a visual record of today's activities for use by future historians. Our local industry and banks have been very generous by sponsoring us and have made it possible to obtain very good computers, scanning equipment and software in order to accomplish our tasks. Our equipment is located primarily in the Hudson Historical Society's museum in the Hudson Town Hall.

One of the proposed tasks for DISC is to record photographically the drawdown of Lake Boon and of all the other efforts to remove or reduce the weed congestion present in Lake Boon. The results of this photographic record will not only be used in any reports when appropriate, but will also be shared with any other lake communities that might be interested in following similar procedures to reduce their weed problems.

We look forward to assisting the Lake Boon Association and Lake Boon Commission with photographic support towards its weed reduction efforts and strongly urge that the Lake and Pond Watershed Demonstration, Restoration and Protection project also provide support with a grant to assist this effort.

Yours truly,

*Lewis H. Halprin*

Lewis H. Halprin, DISC chairman

Sherry Zitter  
116 Barton Rd.  
Stow, MA 01775

July 19, 2001

Mr. John Toole, Commissioner  
Lake Boon Commission  
Stow and Hudson, Massachusetts

Dear J.T.:

The following is a summary of Massachusetts DEP matching funds grant information I have gathered and projects subsequently in process vis-a-vis the Lake and Pond Watershed Demonstration, Restoration and Protection project grant for which L.B.C. is currently applying.

There is a lot more information both on the various websites and from the helpful staff at DEP; however, this is as far as I have gotten at this point. I will continue to gather information over the next several weeks and send you and our committee periodic progress reports.

#### **Section 319 NonPoint Source Program:**

First, the Section 319 Nonpoint Source (NPS) Pollution Grant program holds several possibilities for us. This program includes funding for watershed resource restoration, demonstration and inlake projects. Jane Pierce, Section 319 RFR coordinator, told me on 7/18/01 that these grant projects may include in-lake control of weeds and longterm prevention (such as stormwater controls, help in changing zoning bylaws to reduce impervious pavement and better control sediments and erosion in new construction).

Ms. Pierce told me Section 319 issues RFR's in March and funds in May of each year. Awards generally range from \$50,000 - \$250,000, but there is no formal limit. This grant requires a 40% non-Federal match of cash or in-kind, which the Watershed Demonstration, Restoration and Protection project grant would fulfill if it were awarded to LBC.

Ms. Pierce referred me to Brian Duvall of the DEP Central Regional Office to help LBC develop a competitive Section 319 grant proposal. I have been in contact with Mr. Duvall and he is eager to begin working with our citizen group.

-over-

**Section 604b, Water Quality Management Planning program:**

Section 604b of the Federal Clean Water Act funds grants for watershed based NPS assessment type projects to provide diagnostic information. Cities and towns are eligible to respond to RFR's. Eligible activities include assessment of local water quality protection measures, assessment of local environmental awareness and concerns, water quality assessment, water quality source protection planning. Matching funds are not required but do enhance an application proposal. In 1991-1997, a range of \$20,000 - \$165,000 was awarded to grantees.

Grantees included a NPS Assessment in the Westfield river Watershed, including estimation of NPS pollutant loadings (\$56,000 total; \$44,000 from the EPA); an assessment of existing and projected nitrogen loading in Great Pond on Martha's Vinyard, which determined nitrogen loading limits, provided integrated watershed management strategies, and offered 2 comprehensive management scenarios for water quality improvement for public consideration (\$44,000 total, \$33,000 by the EPA) and a handful of other projects that overlap with our community's concerns.

**Section 104b (3), Water Quality and Wetlands Program:**

This program insures safe water quality, including reducing, eliminating and/or controlling NPS discharges to surface and ground water. RFS are issued annually; organizations must have a Mass. Executive Office of Environmental Affairs (EOEA) co-sponsor for the project.

Recent funded projects include a \$44,000 grant for outreach to promote the TMDL (total maximum daily loading) strategy statewide, which adapts a watershed survey from Maine to provide guidance to lake commissions to locate, identify and control sources of pollution and develops a fact sheet to explain the TMDL process to watershed residents, among other tasks. Also recently funded was a \$45,000 grant to Martha's Vinyard to assess water quality of 2 ponds, determine their nutrient loading limits, including projected buildout loading levels impact on the ponds. It recommends options to decrease nitrogen loads through by-law revisions, easement acquisitions and pond opening cycles. A few other grantees also have some overlap in content with our goals.

**Research and Demonstration program:**

This program (authorized by section 38 of Chapter 21 of MGL) conducts studies to "insure cleaner waters in the...lakes and ponds of the Commonwealth." emphasis is on funding a wide variety of projects,

including groundwater and surface water pollution, water supply protection, toxicity assessment, development and assessment of innovative and alternative wastewater treatment technologies, and lake restoration.

Proposals can be submitted any time. After a proposal is approved, funding is then sought for it.

### **Septic Management State Revolving Loan Fund program:**

Joe McNealy, the financial director of the revolving loan fund, is working with me on how the goals of this program intersect with ours. Low-interest loans are given to municipalities to improve individual septic systems for water quality improvement. Grants are given to towns that create a Septic Management District around the watershed, where local Boards of Health inspect septic systems several times per year (on average, each homeowner's system is inspected every 7 years, and they are exempt from the time of transfer requirements of Title V). Money is lent to homeowners to fix ailing septic systems. DEP gives the town funding to hire experts to train boards of health to do the inspection, to market this concept to neighbors and to the Town(s) in order to change necessary by-laws. Also, DEP pays to pump waste from the area and/or to develop innovative solutions to wastewater problems (e.g. they can help with creating multi-family systems or to move systems when needed).

This is the largest SRF program, and there is no limit on funds granted. Applications are taken on a rolling basis.

### **Drinking Water State Revolving Fund program:**

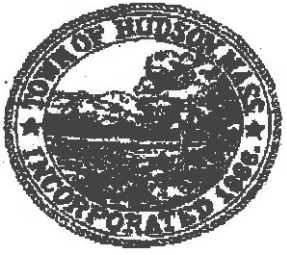
Eligible projects for this SRF program are capital expenses, such as new or upgraded drinking water facilities, or consolidation/restructuring of water systems.

Timelines require that local appropriations occur by June 30 and loan applications are filed on or before October 15. DEP issues PAC within 2 months, and the project begins within 6 months.

This program will fund well projects, including multi-family wells where necessary. (Note: a well serving over 26 families is considered a public water source, and this project would fund piping around the lake, assuming homeowners gave permission to pass through non-public roads, to create a public water system).

Hope this information is helpful in your grant application process.





**TOWN OF HUDSON, MASSACHUSETTS**  
**Conservation Commission**  
Town Hall, Hudson, Massachusetts 01749

*Martin Moran,*  
*Chairman*

July 11, 2001

John Toole, Chairman  
Lake Boon Commission  
34 Pine Point Road  
Stow, MA 01775

VIA Fax: (617) 536-7480

Dear Mr. Toole:

After much review of the Notices of Intent submitted by Mr. Lee Lyman on behalf of the Lake Boon Commission, the Hudson Conservation Commission voted, at its meeting on July 5, 2001, to issue two orders of condition. Please note the attached special conditions for each order.

The Commission will sign the orders at its next meeting on July 19, 2001. In the meantime, please accept this letter as official notice of approval.

If you have any questions, please do not hesitate to contact me at (978) 562-9963.

Sincerely,

Jennifer L. Burke  
Board & Committee Coordinator/Planning Assistant

JLB/jlb

**Special Conditions for the Herbicide/Algaecide Management of Lake Boon**

The Commission grants this three-year Order of Conditions to the Lake Boon Commission (LBC) in accordance with the management plan dated March 15, 2001 that was submitted as part of the Notice of Intent. The special conditions are as follows:

1. Only US EPA registered and state-approved herbicides and algaecides are permitted to be applied to Lake Boon. A licensed professional must apply the herbicides.
2. All licenses and applicable permits must be obtained prior to treatments.
3. LBC shall notify the residents of Lake Boon of the treatment dates at least seven days prior to the treatment. The notification will be published in the local newspapers. Posters are to be erected along the shoreline the day of the treatment with the water-use restrictions.
4. A survey of existing aquatic plants shall be conducted prior to the draw down to establish baseline vegetation conditions. The survey must be repeated annually to document the effectiveness of the herbicide treatments.
5. Water quality analysis shall be conducted downstream to document the presence/absence of any herbicides applied. Samples must be collected before, during, and after the herbicides have been applied to ensure that the herbicides are not migrating downstream. The water samples must be analyzed for any herbicides/algaecides applied.
6. The LBC shall provide the Hudson Conservation Commission with an annual report summarizing the herbicide application activities each year. The report must be presented at a public meeting in Stow and in Hudson held in April of each year. The annual report shall be submitted to the Hudson Conservation Commission no less than two weeks prior to the April public meeting. At a minimum, the report must include the following information:
  - a. Quantities and identity of the specific herbicides applied.
  - b. Dates, times, and duration of each herbicide application.
  - c. Results of the pre- and post-application aquatic plant surveys depicted in a map and narrative form for each year.
  - d. Results of the water quality-sampling program.
  - e. An evaluation of the effectiveness of the herbicide application program.
  - f. A management plan with recommendations for herbicide application the following year identifying specific target weeds and areas of impact.
7. This Order does not relieve LBC of the necessity to comply with other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
8. LBC must submit a Watershed Management Plan to the Conservation Commission, the Board of Selectmen, and the Board of Health for each town by September 15, 2001. The Plan must include specific proposals to improve watershed management practices by residents within the watershed of the lake. Approaches may include the creation of a water district, public education and outreach, changes in town bylaws, and the investigation of sewer upgrade options/programs. The Plan must also include a schedule for the implementation of any proposed activities.
9. The Order of Conditions will expire in three years; however, each year's herbicide program will not be applied until approved by the Conservation Commissions. The Commission has the right to modify the Order of Conditions after public notice and a public hearing, based upon the results of the herbicide application. The Commission will consider extending this Order of Conditions for a specific time period upon receipt of a request for extension thirty days prior to the expiration date.

10. LBC shall indemnify and save harmless the Commonwealth of Massachusetts and the Hudson Conservation Commission against all suits, claims, or liability of every name and nature arising at any time out of or in consequence of the acts of the Hudson Conservation Commission in the performance of the work covered by this permit and/or failure to comply with the terms and conditions of this permit whether by itself or its employees or subcontractors.

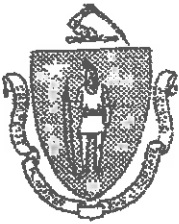


### Special Conditions for Lake Boon Lake Level Draw Down

The Lake Boon Commission (LBC) can institute a phased draw down of Lake Boon in accordance with the management plan dated March 15, 2001 that was submitted with the Notice of Intent. The special conditions are as follows:

1. LBC shall develop and present a draw down plan to provide the residents of Lake Boon, specifically those that will be affected by the draw down, with water for domestic purposes during the draw down. This plan shall also be submitted to the Stow and Hudson Conservation Commissions, Boards of Health, and Boards of Selectmen. The plan must specify the time in which impacted residents will be supplied with an alternative source of water for domestic use.
2. LBC shall notify the Hudson Conservation Commission, and provide public notice in the local newspapers at least two weeks prior to the commencement of draw down and when the refilling process will begin.
3. A survey of existing aquatic plants shall be conducted prior to the draw down to establish baseline vegetation conditions. The survey must be repeated annually to document the effectiveness of the draw down.
4. Water quality samples must be collected before, during, and after each draw down phase to evaluate downstream impacts. Samples must be analyzed for turbidity, total suspended solids, and nutrients including, but not limited to, nitrogen and phosphorous.
5. Bordering wetland vegetation and streams must be evaluated for potential impacts due to the draw down. Potential downstream impacts should be evaluated during the initial draw down and throughout the periods of lowered water levels.
6. LBC shall provide the Hudson Conservation Commission with an annual report summarizing the draw down activities. The report must be presented at a public meeting in Stow and in Hudson held in April of each year. The annual report shall be submitted to the Hudson Conservation Commission no less than 2 weeks prior to the April public meeting. At a minimum, the report must include the following information:
  - a. Dates of the draw down and re-fill of the lake.
  - b. Results of a pre- and post-draw down aquatic plant survey depicted in a map and narrative form for each year.
  - c. Document any wells that are affected by the draw down, what action was taken to improve the situation, and the effectiveness of the remedy.
  - d. Results of the water quality-sampling program.
  - e. An evaluation of the effectiveness of the draw down.
  - f. Recommendations for draw down procedures for the following year.
7. LBC shall provide assistance to those residents that request help in solving their long-term water supply problem.
8. LBC must clearly demonstrate the absence of rare wildlife species or that a draw down will not adversely affect the habitat.
9. LBC must retain the services of a professional civil/structural engineer to evaluate the structural integrity of the dam to verify that the dam can withstand the draw down. Additionally, if the dam has been previously licensed under M.G.L. Ch. 91, a permit must be obtained for the draw down. The Office of Dam Safety shall be contacted for approval prior to the draw down.
10. This Order of Conditions does not relieve LBC of the necessity to comply with other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.

11. LBC must submit a Watershed Management Plan to the Conservation Commission, the Board of Selectmen, and the Board of Health for each town by September 15, 2001. The Plan must include specific proposals to improve watershed management practices by residents within the watershed of the lake. Examples of some potential approaches may include the creation of a water district, public education, changes in town bylaws, extending town sewer services and/or upgrading existing private sewer systems. The Plan must also include a schedule for the implementation of any proposed approaches.
12. The Order of Conditions will expire in three years; however, the Hudson Conservation Commission will have the right to modify these special conditions after public notice and a public hearing. The Hudson Conservation Commission will consider extending this Order of Conditions for a specific time period upon receipt of a request for extension thirty days prior to the expiration date.
13. LBC shall indemnify and save harmless the Commonwealth of Massachusetts and the Hudson Conservation Commission against all suits, claims, or liability of every name and nature arising at any time out of or in consequence of the acts of the Hudson Conservation Commission in the performance of the work covered by this permit and/or failure to comply with the terms and conditions of this permit whether by itself or its employees or subcontractors.



**Massachusetts Department of Environmental Protection**  
 Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

299-316  
 Provided by DEP

**A. General Information**

**Important:**  
 When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



From:

Stow Conservation Commission  
 Conservation Commission

This issuance is for (check one):

- Order of Conditions
- Amended Order of Conditions

To: Applicant:

Lake Boon Commission c/o Conray Wharff  
 Name  
16 Gately Avenue  
 Mailing Address  
Hudson MA 01749  
 City/Town State Zip Code

Property Owner (if different from applicant):

Commonwealth of Massachusetts  
 Name  
 \_\_\_\_\_  
 Mailing Address  
 \_\_\_\_\_  
 City/Town State Zip Code

1. Project Location:

Lake Boon Stow  
 Street Address City/Town  
 \_\_\_\_\_  
 Assessors Map/Plat Number Parcel/Lot Number

2. Property recorded at the Registry of Deeds for:

County	Book	Page

Certificate (if registered land)

3. Dates:

Date Notice of Intent Filed	Date Public Hearing Closed	Date of Issuance
<u>2/28/01</u>	<u>4/24/01</u>	<u>7/10/01</u>

4. Final Approved Plans and Other Documents (attach additional plan references as needed):

Title	Date
<u>See Attached</u>	

5. Final Plans and Documents Signed and Stamped by:

\_\_\_\_\_  
 Name

6. Total Fee:

n/a  
 (from Appendix B: Wetland Fee Transmittal Form)



Massachusetts Department of Environmental Protection  
 Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

**299-316**  
 Provided by DEP

**B. Findings**

Findings pursuant to the Massachusetts Wetlands Protection Act:

Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act. Check all that apply:

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Public Water Supply             | <input checked="" type="checkbox"/> Land Containing Shellfish | <input checked="" type="checkbox"/> Prevention of Pollution        |
| <input checked="" type="checkbox"/> Private Water Supply | <input checked="" type="checkbox"/> Fisheries                 | <input checked="" type="checkbox"/> Protection of Wildlife Habitat |
| <input checked="" type="checkbox"/> Groundwater Supply   | <input checked="" type="checkbox"/> Storm Damage Prevention   | <input checked="" type="checkbox"/> Flood Control                  |

Furthermore, this Commission hereby finds the project, as proposed, is: (check one of the following boxes)

**Approved subject to:**

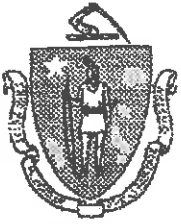
- the following conditions which are necessary, in accordance with the performance standards set forth in the wetlands regulations, to protect those interests checked above. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.

**Denied because:**

- the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations to protect those interests checked above. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect these interests, and a final Order of Conditions is issued.
- the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).

**General Conditions (only applicable to approved projects)**

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

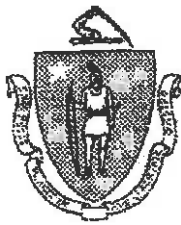
DEP File Number:

299-316  
Provided by DEP

**B. Findings (cont.)**

4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
  - a. the work is a maintenance dredging project as provided for in the Act; or
  - b. the time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order.
6. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.
7. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
8. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to this Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
9. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,

"Massachusetts Department of Environmental Protection" [or, "MA DEP"]  
"File Number 299-316"
10. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before DEP.
11. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
12. The work shall conform to the plans and special conditions referenced in this order.
13. Any change to the plans identified in Condition #12 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
14. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.



# WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

## B. Findings (cont.)

- 15. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.
- 16. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
- 17. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

Special Conditions (use additional paper, if necessary):

---



---



---



---

### Findings as to municipal bylaw or ordinance

Furthermore, the \_\_\_\_\_ hereby finds (check one that applies):  
Conservation Commission

- that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw specifically:

Name \_\_\_\_\_ Municipal Ordinance or Bylaw \_\_\_\_\_

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.

- that the following additional conditions are necessary to comply with a municipal ordinance or bylaw, specifically:

Name \_\_\_\_\_ Municipal Ordinance or Bylaw \_\_\_\_\_

The Commission orders that all work shall be performed in accordance with the said additional conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.

**ORDER OF CONDITIONS #299-316**  
**Lake Boon –Drawdown**

**Plans Submitted With Notice of Intent:**

- “Lake Boon, Hudson & Stow, Massachusetts, Lake Level Drawdown Study” dated December 28, 2000 prepared by Lycott Environmental, Inc.
- “Visual Inspection – Boons Pond Dam, Stow, MA” dated January 5, 2001 prepared by Goldsmith, Prest & Ringwall, Inc.
- “Table A-1 Lake Boon Drawdown Calculations” submitted with Notice of Intent on 2/28/01.
- “Lake Boon Well Surveys” prepared by Lycott Environmental, Inc. submitted with Notice of Intent on 2/28/01.

**Findings:**

The Stow Conservation Commission (SCC) has carefully considered the Notices of Intent (NOI) filed by the Lake Boon Commission (LBC) directed at improving water quality, aesthetics and recreational opportunities in Lake Boon through the elimination of nuisance vegetation that currently infests many areas of the lake. Throughout the review process, the applicants, the applicant's consultant and Lake residents regarding both the drawdown and chemical approaches to lake management provided considerable information. In addition there was close coordination with the Hudson Conservation Commission (HCC) who was reviewing similar Notice of Intents for treatment of portions of the Lake within the Town of Hudson. While there was strong support for the various approaches, there was no clear consensus for either approach. Of all issues discussed, the only seemingly unanimous opinion was that the Lake is in danger of being overwhelmed by weeds and that all parties support restoration of this valuable resource.

Within this context, the SCC also recognizes the potential near and long-term adverse impacts of the lake management remedies. In particular, there is a real potential for wells to dry up during drawdown and many residents have expressed public health concerns regarding the chemical application. Accordingly, the SCC met with the Stow Board of Selectmen and Board of Health to discuss the broader town-wide issues associated with the project. As a result of that joint meeting, it was agreed that prior to the implementation of either lake management approach an additional community public hearing be held to solicit wider input from Lake residents regarding potential advantages and disadvantages of the project. It was further agreed that if it were the consensus of the residents and the boards that the proposed management approaches were not appropriate or additional study was warranted, the project would not proceed as proposed.

Lastly, the SCC strongly supports the need to restore this resource and eliminate nuisance vegetation. However, this effort should not be a single limited initiative. Rather, the Town of Stow should work with each of the lake associations and with the Town of Hudson to develop a multifaceted, long-range watershed approach to lake management. This should include evaluation of innovative approaches, new technologies and longer-term, less invasive measures.

**Special Conditions for Lake Boon Lake-Level Drawdown**

The Lake Boon Commission (LBC) can institute a phased drawdown of Lake Boon in accordance with the management plan that was submitted with the Notice of Intent. The special conditions are as follows:

1. The LBC shall develop and present a drawdown plan to provide the residents of Lake Boon, specifically those that will be affected by the drawdown, with water for domestic purposes during the drawdown. This plan shall also be submitted to the Stow and Hudson Conservation Commissions, Boards of Health, and Boards of Selectmen. The plan must specify the time in which impacted residents will be supplied with an alternative source of water for domestic use.

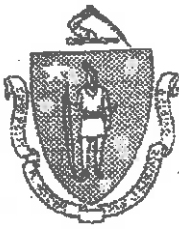
2. The LBC shall notify the Commission, and provide public notice in the local newspapers, at least two weeks prior to the commencement of drawdown, and when the refilling process will begin.
3. A survey of existing aquatic plants shall be conducted prior to the drawdown to establish baseline vegetation conditions. The survey must be repeated annually to document the effectiveness of the drawdown.
4. Water quality samples must be collected before, during, and after each drawdown phase to evaluate downstream impacts. Samples must be analyzed for turbidity, total suspended solids, and nutrients such as nitrogen and phosphorous.
5. Bordering wetland vegetation and streams must be evaluated for potential impacts due to the drawdown. Potential downstream impacts should be evaluated during the initial drawdown and throughout the periods of lowered water levels.
6. The LBC shall provide the Stow Conservation Commission with an annual report summarizing the drawdown activities. The report must be presented at a public meeting in Stow and in Hudson held in April of each year. The annual report shall be submitted to the Stow Conservation Commission no less than two weeks prior to the April public meeting. At a minimum, the report must include the following information:
  - a. Dates of the drawdown and re-fill of the lake.
  - b. Results of a pre- and post-drawdown aquatic plant survey depicted in a map and narrative form for each year.
  - c. Document any wells that are affected by the drawdown, what action was taken to improve the situation, and the effectiveness of the remedy.
  - d. Results of the water quality-sampling program.
  - e. An evaluation of the effectiveness of the drawdown.
  - f. Recommendations for drawdown procedures for the following year.
7. The LBC shall provide assistance to those residents that request help in solving their long-term water supply problem.
8. LBC must clearly demonstrate the absence of rare wildlife species or that a drawdown will not adversely affect the habitat.
9. LBC must retain the services of a professional civil/structural engineer to evaluate the structural integrity of the dam to verify that the dam can withstand the drawdown. Additionally, if the dam has been previously licensed under M.G.L. Ch. 91, a permit must be obtained for the drawdown. The Office of Dam Safety shall be contacted for approval prior to the drawdown.
10. This Order of Conditions does not relieve LBC of the necessity to comply with other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
11. LBC must submit a Watershed Management Plan to the Conservation Commission, the Board of Selectmen, and the Board of Health for each town by September 15, 2001. The Plan must include specific proposals to improve watershed management practices by residents within the watershed of the lake. Examples of some potential approaches may include the creation of a water district, public education, changes in town bylaws, extending town sewer services and/or upgrading existing private sewer systems. The Plan must also include a schedule for the implementation of any proposed approaches.
12. The Order of Conditions will expire in three years; however, the Stow Conservation Commission will have the right to modify these special conditions after public notice and a public hearing. The



Stow Conservation Commission will consider extending this Order of Conditions for a specific time period upon receipt of a request for extension thirty days prior to the expiration date.

13. LBC shall indemnify and save harmless the Commonwealth of Massachusetts and Stow Conservation Commission against all suits, claims, or liability of every name and nature arising at any time out of or in consequence of the acts of the Stow Conservation Commission in the performance of the work covered by this permit and/or failure to comply with the terms and conditions of this permit whether by itself or its employees or subcontractors.





**Massachusetts Department of Environmental Protection**  
**Bureau of Resource Protection - Wetlands**  
**WPA Form 5 – Order of Conditions**  
**Massachusetts Wetlands Protection Act M.G.L. c. 131, §40**

DEP File Number:

299-316  
Provided by DEP

---

### **C. Appeals**

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate DEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Appendix E: Request of Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act, (M.G.L. c. 131, § 40) and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.

---

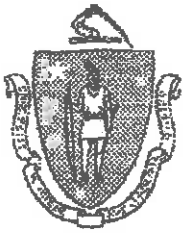
### **D. Recording Information**

This Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on Page 7 of Form 5 shall be submitted to the Conservation Commission listed below.

---

Stow Conservation Commission  
Conservation Commission





**Massachusetts Department of Environmental Protection**  
**Bureau of Resource Protection - Wetlands**  
**WPA Form 5 – Order of Conditions**  
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

299-317  
 Provided by DEP

**A. General Information**

**Important:**  
 When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



From:

Stow Conservation Commission  
 Conservation Commission

This issuance is for (check one):

- Order of Conditions  
 Amended Order of Conditions

To: Applicant:

Lake Boon Commission c/o Conray Wharff  
 Name  
16 Gately Avenue  
 Mailing Address  
Hudson MA 01749  
 City/Town State Zip Code

Property Owner (if different from applicant):

Commonwealth of Massachusetts  
 Name  
 \_\_\_\_\_  
 Mailing Address  
 \_\_\_\_\_  
 City/Town State Zip Code

1. Project Location:

Lake Boon Stow  
 Street Address City/Town  
 \_\_\_\_\_  
 Assessors Map/Plat Number Parcel/Lot Number

2. Property recorded at the Registry of Deeds for:

County Book Page  
 \_\_\_\_\_  
 Certificate (if registered land)

3. Dates:

2/28/01 4/24/01 7/10/01  
 Date Notice of Intent Filed Date Public Hearing Closed Date of Issuance

4. Final Approved Plans and Other Documents (attach additional plan references as needed):

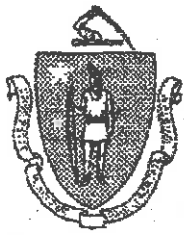
See Attached  
 Title Date

5. Final Plans and Documents Signed and Stamped by:

\_\_\_\_\_  
 Name

6. Total Fee:

n/a  
 (from Appendix B: Wetland Fee Transmittal Form)



**Massachusetts Department of Environmental Protection**  
 Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

299-317  
 Provided by DEP

**B. Findings**

Findings pursuant to the Massachusetts Wetlands Protection Act:

Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act. Check all that apply:

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Public Water Supply             | <input checked="" type="checkbox"/> Land Containing Shellfish | <input checked="" type="checkbox"/> Prevention of Pollution        |
| <input checked="" type="checkbox"/> Private Water Supply | <input checked="" type="checkbox"/> Fisheries                 | <input checked="" type="checkbox"/> Protection of Wildlife Habitat |
| <input checked="" type="checkbox"/> Groundwater Supply   | <input checked="" type="checkbox"/> Storm Damage Prevention   | <input checked="" type="checkbox"/> Flood Control                  |

Furthermore, this Commission hereby finds the project, as proposed, is: (check one of the following boxes)

**Approved subject to:**

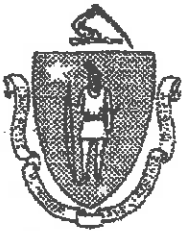
- the following conditions which are necessary, in accordance with the performance standards set forth in the wetlands regulations, to protect those interests checked above. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.

**Denied because:**

- the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations to protect those interests checked above. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect these interests, and a final Order of Conditions is issued.
- the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).

**General Conditions (only applicable to approved projects)**

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.



## WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

### B. Findings (cont.)

4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
  - a. the work is a maintenance dredging project as provided for in the Act; or
  - b. the time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order.
6. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.
7. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
8. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to this Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
9. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,

"Massachusetts Department of Environmental Protection" [or, "MA DEP"]  
"File Number 299-317"
10. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before DEP.
11. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
12. The work shall conform to the plans and special conditions referenced in this order.
13. Any change to the plans identified in Condition #12 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
14. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.



# WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

## B. Findings (cont.)

- 15. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.
- 16. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
- 17. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

Special Conditions (use additional paper, if necessary):

---



---



---



---

### Findings as to municipal bylaw or ordinance

Furthermore, the Conservation Commission hereby finds (check one that applies):

- that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw specifically:

Name \_\_\_\_\_ Municipal Ordinance or Bylaw \_\_\_\_\_

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.

- that the following additional conditions are necessary to comply with a municipal ordinance or bylaw, specifically:

Name \_\_\_\_\_ Municipal Ordinance or Bylaw \_\_\_\_\_

The Commission orders that all work shall be performed in accordance with the said additional conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.



**ORDER OF CONDITIONS #299-317**  
**Lake Boon – Herbicide/Algaecide Treatments**

**Plans Submitted With Notice of Intent:**

- “Lake Boon, Hudson & Stow, Massachusetts, Management Plan” prepared by Lycott Environmental, Inc. and submitted 2/28/01 with Notice of Intent.

**Findings:**

The Stow Conservation Commission (SCC) has carefully considered the Notices of Intent (NOI) filed by the Lake Boon Commission (LBC) directed at improving water quality, aesthetics and recreational opportunities in Lake Boon through the elimination of nuisance vegetation that currently infests many areas of the lake. Throughout the review process, the applicants, the applicant's consultant and Lake residents regarding both the drawdown and chemical approaches to lake management provided considerable information. In addition there was close coordination with the Hudson Conservation Commission (HCC) who was reviewing similar Notice of Intents for treatment of portions of the Lake within the Town of Hudson. While there was strong support for the various approaches, there was no clear consensus for either approach. Of all issues discussed, the only seemingly unanimous opinion was that the Lake is in danger of being overwhelmed by weeds and that all parties support restoration of this valuable resource.

Within this context, the SCC also recognizes the potential near and long-term adverse impacts of the lake management remedies. In particular, there is a real potential for wells to dry up during drawdown and many residents have expressed public health concerns regarding the chemical application. Accordingly, the SCC met with the Stow Board of Selectmen and Board of Health to discuss the broader town-wide issues associated with the project. As a result of that joint meeting, it was agreed that prior to the implementation of either lake management approach an additional community public hearing be held to solicit wider input from Lake residents regarding potential advantages and disadvantages of the project. It was further agreed that if it were the consensus of the residents and the boards that the proposed management approaches were not appropriate or additional study was warranted, the project would not proceed as proposed.

Lastly, the SCC strongly supports the need to restore this resource and eliminate nuisance vegetation. However, this effort should not be a single limited initiative. Rather, the Town of Stow should work with each of the lake associations and with the Town of Hudson to develop a multifaceted, long-range watershed approach to lake management. This should include evaluation of innovative approaches, new technologies and longer-term, less invasive measures.

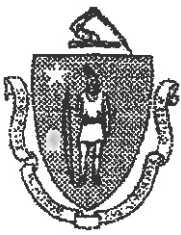
**Special Conditions for the Herbicide/Algaecide Management of Lake Boon**

The Commission grants this three-year Order of Conditions in accordance with the management plan that was submitted as part of the Notice of Intent. This order can be extended in three-year increments, for an indefinite period of time. Extension requests are to be submitted to the Commission thirty days prior to the expiration date. The special conditions are as follows:

1. Only US EPA registered and state-approved herbicides and algaecides are permitted to be applied to Lake Boon. A licensed professional must apply the herbicides.
2. All licenses and applicable permits must be obtained prior to treatments.
3. The LBC shall notify the residents of Lake Boon of the treatment dates at least seven days prior to the treatment. The notification will be published in the local newspapers. Posters are to be erected along the shoreline the day of the treatment with the water-use restrictions.

4. A survey of existing aquatic plants shall be conducted prior to the drawdown to establish baseline vegetation conditions. The survey must be repeated annually to document the effectiveness of the herbicide treatments.
5. Water quality analysis shall be conducted downstream to document the presence/absence of any herbicides applied. Samples must be collected before, during, and after the herbicides have been applied to ensure that the herbicides are not migrating downstream. The water samples must be analyzed for any herbicides/algicides applied.
6. The LBC shall provide the Stow Conservation Commission with an annual report summarizing the herbicide application activities each year. The report must be presented at a public meeting in Stow and in Hudson held in April of each year. The annual report shall be submitted to the Stow Conservation Commission two weeks prior to the April public meeting. At a minimum, the report must include the following information:
  - a. Quantities and identity of the specific herbicides applied.
  - b. Dates, times, and duration of each herbicide application.
  - c. Results of the pre- and post-application aquatic plant surveys depicted in a map and narrative form for each year.
  - d. Results of the water quality-sampling program.
  - e. An evaluation of the effectiveness of the herbicide application program.
  - f. A management plan with recommendations for herbicide application the following year identifying specific target weeds and areas of impact.
7. This Order does not relieve LBC of the necessity to comply with other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
8. LBC must submit a Watershed Management Plan to the Conservation Commission, the Board of Selectmen, and the Board of Health for each town by September 15, 2001. The Plan must include specific proposals to improve watershed management practices by residents within the watershed of the lake. Approaches may include the creation of a water district, public education and outreach, changes in town bylaws, and the investigation of sewer upgrade options/programs. The Plan must also include a schedule for the implementation of any proposed activities.
9. The Order of Conditions will expire in three years; however, each year's herbicide program will not be applied until approved by the Conservation Commissions. The Commission has the right to modify the Order of Conditions after public notice and a public hearing, based upon the results of the herbicide application. The Commission will consider extending this Order of Conditions for a specific time period upon receipt of a request for extension thirty days prior to the expiration date.
10. LBC shall indemnify and save harmless the Commonwealth of Massachusetts and Stow Conservation Commission against all suits, claims, or liability of every name and nature arising at any time out of or in consequence of the acts of the Stow Conservation Commission in the performance of the work covered by this permit and/or failure to comply with the terms and conditions of this permit whether by itself or its employees or subcontractors.





## WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

### C. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate DEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Appendix E: Request of Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act, (M.G.L. c. 131, § 40) and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.

### D. Recording Information

This Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on Page 7 of Form 5 shall be submitted to the Conservation Commission listed below.

Stow Conservation Commission  
Conservation Commission



**Massachusetts Department of Environmental Protection**  
 Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

299-317  
 Provided by DEP.

**D. Recording Information (cont.)**

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

Stow Conservation Commission  
 Conservation Commission

Please be advised that the Order of Conditions for the Project at:

Lake Boon 299-317  
 Project Location DEP File Number

Has been recorded at the Registry of Deeds of:

County	Book	Page

for:

Commonwealth of Massachusetts  
 Property Owner

and has been noted in the chain of title of the affected property in:

Book	Page

In accordance with the Order of Conditions issued on:

7/10/01  
 Date

If recorded land, the instrument number identifying this transaction is:

   
 Instrument Number

If registered land, the document number identifying this transaction is:

   
 Document Number

   
 Signature of Applicant

