

Warner's Pond Management Committee – Background Information
Massachusetts Adaptive Pond Management Plans

Adaptive Pond Management Plans

What Is a Pond Management Plan?

A pond management plan is a structured approach to:

- ✓ Define goals for the resource (e.g., Town-owned Warner's Pond)
- ✓ Identify actions to achieve those goals
- ✓ Monitor progress over time
- ✓ Adjust strategies and pond management methods as needed

Adaptive Pond Management Plans

Is there guidance for creating a Pond Management Plan in Massachusetts?

Yes. In 2025 Massachusetts released draft official guidance for lake and pond management - the Massachusetts Guide to Lake Management (MassGLM) – 2025 Draft. The actual title of the guide is “The Massachusetts Guide to Algae and Aquatic Plant Management”.

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What is the 2025 Draft Massachusetts Guide to Lake Management?

The draft guide was developed by the state's Department of Conservation and Recreation (DCR). It updates and replaces older guidance from the early 2000s and combines the former:

- Massachusetts Generic Environmental Impact Report (GEIR)
- Massachusetts Practical Guide to Lake Management

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What is the purpose of the 2025 Draft Massachusetts Guide to Lake Management?

The draft guide was developed to:

- Guide lake and pond managers, municipalities, and owners
- Create consistent lake management practices statewide
- Provide technical methods for algae and vegetation control
- Emphasize building comprehensive management plans

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What are the components of a plan prepared in accordance with the 2025 Draft Massachusetts Guide to Lake Management?

The components of a pond management plan developed in accordance with the Guide would typically include the following. Please read the MA Guide for details.

- Problem Identification
- Waterbody Characterization
- Watershed Assessment
- Water Quality & Biological Data
- Diagnosis of Causes
- Management Goals & Objectives
- Evaluation of Management Alternatives
- Selected Management Strategy
- Implementation Plan
- Monitoring Plan
- Regulatory & Permitting Considerations
- Public & Stakeholder Engagement

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Are there examples of pond management plans in Massachusetts?

Yes. There have been hundreds of pond and lake management plans developed in Massachusetts since the 1980s.

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Are there examples of pond management plans in Concord?

Yes. The “White Pond Watershed Management Plan” developed for the Town of Concord Division of Natural Resources (DNR) by ESS Group, Inc. (2013–2014) is an example and is available on-line.

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Have pond management plans been developed for Warner's Pond?

Yes. Two pond management plans were developed for the Town for management of Warner's Pond. These are available on the Task Force and Pond Management Committee websites.

Adaptive Pond Management Plans

What is an “Adaptive” Pond Management Plan?

Adaptive pond management plans are essentially the same as other pond management plans. The difference is that they utilize Adaptive Management as a pond management strategy and approach. The Committee has been charged with using an Adaptive Pond Management approach and developing an Adaptive Pond Management Plan.

Adaptive Pond Management Plans

What is an Adaptive Management approach?

Adaptive Management is an **iterative** process for decision-making under uncertainty*, where management actions are treated as “experiments” and adjusted based on monitoring results.

*Uncertainty about both: a) existing pond processes and conditions; and b) whether or not different strategies, approaches and methods will be successful

Pond Adaptive Management Plans

Is this different than standard Pond Management Plans?

No. It fits very well within Massachusetts guidance for pond and lake management plans. And while the Massachusetts 2025 Guide does not have a specific section for adaptive management it is implicit in many steps and sections presented in the Guide. Adaptive Management is just a specific type of management strategy and approach, within the context of an overall pond management plan.

Adaptive Pond Management Plans

What should the Committee focus on relative to establishing pond management goals and expectations?

An important step for the Committee is to develop the “high-level pond management goals”. Per the Committee charge, these include goals and objectives for both: ecological health of the pond; and 2) recreational improvements of the pond assets. The development of these goals will include stakeholder outreach by the Committee.

- **High-level goals:** These state the “vision” or desired end condition. For example, a high-level goal could include providing a navigable paddle way along the eastern side of the pond. The specifics of this goal would come about through stakeholder outreach and an understanding of the pond conditions. An example of the high-level goal could be...”Provide safe, accessible paddling within the eastern portion of the pond with several defined landing/departure points.”

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How does the Committee establish the “high-level” pond management goals?

1. Stakeholder outreach along with summarizing stakeholder and Committee expectations is the first step.
2. The Committee members obtaining at least a general understanding of the pond conditions and ecological health issues is the second step. There is substantial information available including two previous pond management plans as well as the results of implementation of previous management methods and detailed MA guidance.
3. The third step is for the Committee to deliberate and formally identify and describe all of the “high-level” pond management goals.

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What happens after the Committee develops the “high-level” pond management goals?

Once the high-level goals are established and the Pond Management Consultant is on-board, the next step for the Committee is to discuss with the Pond Management Consultant whether or not additional data is needed.

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What else happens after the Committee develops the “high-level” pond management goals?

The next step for the Committee is to review the Pond Management Consultant’s preliminary findings and recommendations as to how to achieve the “high-level” goals and work with the Consultant to develop:

- **Functional goals:** Functional goals describe how the system would work in achievement of the high-level goals.
- **Specific objectives:** Specific objectives define the quantitative objectives to be achieved.

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What happens after the goals and objectives are developed?

After the “High-Level’ Goals, Functional Goals and Specific Objectives are defined, then the next step is for the Consultant to recommend to the Committee the alternative pond management methods to achieve these goals and objectives and to define the metrics to be monitored.

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What are the management alternatives typically available?

Management alternatives focus on preventing, managing, or reversing eutrophication (using methods currently allowed under MA regulations and that have proven reliable) through management of a) nutrients; and/or b) higher plants. Specific methods are presented in the MA Guidance.

Pond Adaptive Management Plans

How do you decide if the management approach and method was “successful”?

Defining and communicating the specifics of “success”, in advance of implementation, is extremely important to avoid misconceptions and disappointment on the part of stakeholders and the public later on. There are several levels with defined “success”:

1. First, is the adaptive management process itself working? That is, is the Committee able to successfully test approaches and methods to achieve pre-defined goals and objectives; adapt based on observations; and when an approach and method is effective, programmatically scale up into long-term pond management. This definition of success is sometimes hard to understand in that a “failed” experiment could still be a successful step in adaptive pond management.

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How do you decide if the management approach and method was “successful”?

2. Second, success is evaluated based on... what does the monitoring determine relative to the specific metrics? Were specific targets achieved? If not, what were the likely reasons. Should another method be tried?

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How do you decide if the management approach and method was “successful”?

3. The third level of success is... are the specific objectives and functional goals achieved? And at an acceptable cost? This level of success may take several seasons to evaluate.

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How do you decide if the management approach and method was “successful”?

4. The fourth (and highest) level of success is longer term (at least 5 to 7 years)... are all of the adaptive management methods, collectively and over time, maintaining or even improving the ecological health of the pond? Is the pond serving the needs of the stakeholders? Is the cost to the Town acceptable?

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Next Steps for the Committee?

The next steps for the Committee could be:

1. Identify the Committee tasks that need to be completed, along with roles and responsibilities and schedule (Gantt Chart).
2. Establish the “High-Level” Goals, including stakeholder outreach.
3. Develop the scope of work and RFP for the Pond Management Consultant and initiate the bid and award process.