

X. Fresh Pond Reservation Education Policy

A. Introduction

Key to the public's understanding of, and positive involvement with, the mission of this Fresh Pond Master Plan is a continuing education effort that reaches Cambridge residents, rate payers, City employees, school children from all parts of the City, workers and visitors to the Reservation.

Restoration, repair and improvement projects within the Reservation, as well as permitting, regulation and enforcement of ordinances, offer continuing on-site opportunities for education of the public and City employees.

Education about the Reservation must be grounded in scientifically-precise, historically-accurate information. It must be presented in language and in a format that engages and informs the intended audience in a timely fashion. A Fresh Pond Educational Plan must have clearly defined educational goals and priorities, along with adequate resources to maintain it.

Education efforts must put the Master Plan's mission and its Land-Use Policy within the broader and inter-related issues of public health and environmental health.

Science education efforts actively coordinated by the Water Department should focus initially on two groups—City employees, particularly those whose work relates to the Reservation, and public school children across the City. In addition to continuing its direct delivery of water supply education to the public schools and to the general public through water works tours, the Water Department should take the lead in developing high-quality watershed education materials.

Water supply and water treatment education should be presented within the context of the entire system, including natural and artificial distribution and drainage systems. Watershed and ecosystem education should make clear the inter-relationships of land-use, hydrology, water quality, vegetation health and diversity, wildlife habitat and soil quality.

Water Department materials — such as permanent and temporary signage, brochures, maps, news releases, self-guided tours and web pages, and posted rules and regulations — are key components in educating the community. These materials must be scientifically precise, professionally written, designed and edited, audience-appropriate, visually effective, easy to locate and up-to-date. Materials dealing with wetlands education, wetland regulations and Community Gardens should be developed jointly with the Cambridge Conservation Commission Executive Director. Materials explaining the golf course environment should be jointly developed with the Recreation Division.

**B. Water Department Roles and Responsibilities:
Direct Delivery of Education Services and Information**

1. Establishing a Broad Environmental Context

Water Department personnel and monetary resources should be directed first to those education projects that explicitly support its mission to deliver the highest quality and sufficient quantity of drinking water to the City of Cambridge.

The Water Department has been and should continue to be directly responsible for delivering water supply education to the public. These educational tasks have included and should continue to include treatment plant tours, brochures, portable displays, maps, watershed tours, web pages, supervision of interns doing water testing, appropriate signage, and City-wide events helping school children and adults understand the Cambridge water supply.

Water supply/water treatment education should be delivered within the context of the entire system that affects its quality, quantity and cost. This watershed support system includes the natural and artificial distribution and drainage systems, of which the Reservation and its upcountry contributing reservoirs and wetlands in Weston, Lexington and Waltham are key components.

The “watershed protection approach strategy,” as practiced by the Cambridge Water Department and promoted by the US Environmental Protection Agency (EPA), should be a recurring educational theme in teaching about Fresh Pond and its upcountry reservoirs. Fresh Pond watershed ecosystem education should include explanations of, and the interconnections between, land-use policies, vegetation, wildlife habitat, soils, slopes, water flows and human use.

It should become common knowledge that the City of Cambridge and its water supply system lie within two major watersheds — the Charles River and Mystic River Watersheds. It should become common knowledge also that according to the EPA, “protecting and restoring aquatic ecosystems” is “protecting human health” and “that many water quality and ecosystem problems are best solved at the watershed level rather than at the individual water body or discharger level.”

New educational materials and a revised and expanded web site are essential to support the delivery of this information (See Education Materials section, below).

2. Internships and Co-op Students

The Water Department has employed college co-op students and high school and college age interns interested in careers in the water supply field to work in the upcountry watershed. These programs should continue to be provided. Sufficient resources should

be provided to expand these programs to the Fresh Pond Reservation, offering internships to Cambridge Rindge and Latin High School students. Job descriptions detailing tasks, skills and commitment required for supporting the Water Department's mission at the Reservation should precede any recruitment or selection of interns. To support this mission, given sufficient resources and support from teachers, a curriculum unit for doing water quality study of upcountry water, Fresh Pond and City tap water should be developed.

3. Monitoring Activities

Fulfilling the mission of the Fresh Pond Master Plan will require ongoing monitoring of the Reservation's small water bodies, vegetation and wildlife. The Fresh Pond Natural Resource Inventory provides a base-line for education on these issues and monitoring changes. Setting up a process to oversee ongoing monitoring and recording of such data and making it easily accessible to Water Department personnel and the public is a high priority. The reporting and recording process should be simple, direct and understandable to any educated lay person.

Training workers, including those under contract, at the Reservation to be attuned to these issues and sensitive areas and to function as informal monitors and reporters as they go about their work will increase their cost effectiveness while giving them a greater sense of purpose and responsibility as they perform their duties. Requiring that on-site workers be informed of the ecological context, preferably with written instructions, will also reduce the possibility of creating expensive ecological mistakes.

Where informed volunteers can improve and extend the monitoring process without creating a counter-productive burden on Water Department staff, they should be encouraged.

4. Volunteers

The Water Department does not directly train volunteers to engage in education or monitoring activities at the Reservation. Given sufficient resources, the Water Department should focus first on developing a plan to recruit and use knowledgeable volunteers whose expertise supports the mission of the Water Department and the Fresh Pond Master Plan. Such knowledgeable volunteers can and should be encouraged to educate others. The Water Department should oversee the creation of a database of these volunteers and make public a list of volunteer experts, their skills and availability.

Once these volunteer plans are in place, more direct involvement with volunteer training can be considered, if funding and qualified supervisory personnel are available.

**C. Water Department Roles and Responsibilities:
Indirect Delivery of Education Services and Information**

1. Cambridge Public Schools and the Maynard Ecology Center

The Water Department should support City-wide public school education at the Reservation with scientific watershed materials and permitted group access to designated ecosystem study areas in the Reservation.

The Water Department should continue its Cambridge public school outreach program with water week activities in the schools, water plant tours and educational displays at the water treatment plant. In addition, the Water Department should consider offering occasional teacher-only demonstration and discussion sessions to explore with Cambridge public school science teachers how student visits to the new Water Treatment Plant and to Fresh Pond water supply areas could enhance science education.

Ecosystem information supplied to teachers should be age-appropriate and reviewed by the Conservation Commission Executive Director. Up-to-date sets of all Fresh Pond education materials developed by the Water department should be maintained at the Maynard Ecology Center. A section of the Water Department web site should be devoted to resources and activities designed to encourage Cambridge school children to learn about and explore their watersheds. Given adequate funding, display of or links to student work related to Fresh Pond should be displayed on, or accessible via, the Water Department web site.

Schools should be encouraged and given easy access to the growing Water Department database of volunteer experts.

The Cambridge Rindge and Latin High School Science Department should be encouraged to recommend students for Water Department internships.

The Water Department should also identify what areas of the Reservation are open for educational use, when, for what size of group and with what kind of supervision. For example, some areas might be closed seasonally to groups from primary schools, in order to protect nesting birds or tender plants, but these same areas might be open to adult groups.

The Water Department should develop an “Educators Rules and Guidelines at Fresh Pond Reservation” document that includes appropriate language from the Master Plan describing the Water Department’s overall mission and educational mission, and should identify the types of programs and activities which the Water Department can support and those which must be restricted or prohibited due to their impact on the Fresh Pond ecosystem. For example, the Water Department should state that permission will be granted for the taking of water samples from Black’s Nook, but will not be granted for the taking of plants.

2. Permitting

The Water Department should also prepare materials for educators and for all groups giving a rationale for its permitting process and explaining it. To protect the Reservation, the Water Department should require that educators request a permit describing what they propose to do in appropriate detail. The Water Department should distribute its permitting materials at least annually to groups and institutions that come regularly to the Reservation, such as private secondary schools, adult education centers and environmental science departments of local universities.

3. Support of Elderly and Adult Education Activities

The Water Department should extend direct and indirect programs for the elderly and other interested citizens to the level that resources allow.

4. Golf Course Related Ecosystem, Cultural and Historical Education

In cooperation with the Recreation Division, the Water Department should design and develop appropriate written materials for distribution to golfers and signs for use on the Municipal Golf Course. At minimum, the written materials should briefly describe the history of the Reservation as a whole and provide an environmental rationale for golf course management practices, for course rules and regulations, and for current and upcoming improvements. The signs should identify important natural areas and announce and explain course improvements.

Brochures or leaflets should be developed and distributed on a regular basis to all homeowners whose properties abut the Reservation. These materials should explain planting, restoration, surveying and drainage projects along their boundaries with the Reservation. The materials should also explain the scientific rationale for the projects and encourage homeowners to avoid plantings that can invade and degrade the Reservation ecosystem and golf course and recommend plantings that support a healthy, attractive Reservation.

D. Education Material: Design, Guidelines and Dissemination

To preserve the quality of the Reservation's natural green spaces as places of "refuge from hectic urban life" and places of discovery for children, fixed educational signage should be restricted to developed areas (buildings and parking lots) except for areas undergoing renovations where temporary signage should be used.

Information provided to be used within natural areas should be personal and portable: such as maps, self-guided tours, multiple brochures on the Reservation's plant and animal life, drinking water protection, understanding wetlands and watershed protection, cultural and historical landmarks, rules and regulations.

Standard templates and a style guide for all paper and electronic documents should be developed with the assistance of a professional editor and graphic designer. Every public document created by or for the Water Department should follow the guidelines. Among the key requirements for a style guide and graphic template are the following:

1. Attribution

If the Water Department creates, commissions or distributes a document, the Water Department must be cited and its role defined. Copyrights must be acknowledged. Contact information, including address and phone number, must be listed. Quoted material must be marked as such and the author and document indicated.

2. Readability

The layout, size and style of type must be easy to read and follow for the intended audience and purpose. Background colors or illustrations should not impair readability. For example, the headline size and design of a posted notice for walkers must be easy to read at a distance of 15 feet.

3. Timeliness

Documents must be dated to indicate the last time they were updated and the date of any source materials. Notices and supporting documents must be distributed to interested parties with adequate time to read and respond.

4. Maps/Illustrations

Maps are a key educational tool for guiding users at the Reservation. Adequate resources should be made available to produce several high-quality map designs that effectively illustrate key areas and topics at the Reservation in a brochure format. Important maps are ones that delineate trails, recreation areas and habitats, rules and guidelines. Others should illustrate seasonal features, vegetation areas, and topography. Still others should illustrate and locate the cultural history of the Reservation.

Illustrations on documents and web pages should serve to explain or support the text of a document and sources of illustrations and maps should be indicated.

5. Web Site Guidelines

The Water Department web site should be simple to navigate, easy to search, with a consistent and efficient design. Performance should be adequate for users accessing the site from ordinary computers, standard computer screens, and standard modems. Graphics integrated with text should be small in size, quick to load, and informative. Updating web site information should be easy to manage for a non-technical editor. Templates should be used for efficient updating and a consistent appearance. Complex graphics and overly long pages should be avoided. For documents that are intended to be printed out, text-only versions should be provided.

E. Educators Who Contributed to this Document

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