

## I. Vision Statement

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For over one hundred years, the City of Cambridge has been blessed with a unique, irreplaceable natural resource, Fresh Pond Reservation, that has protected our water supply and contributed immeasurably to the quality of life for our entire community. This group of citizens has been appointed to create a Master Plan that guarantees the preservation of this legacy for future generations.

The Fresh Pond Master Plan expresses the vital importance of protecting and enhancing both the water quality of the Fresh Pond Reservation and its open space and naturalistic character. The Plan embodies a vision and sets a framework for the preservation of water quality, recreational open spaces, natural green spaces, wildlife habitat, and a refuge from hectic urban life.

„ Adopted by the Fresh Pond Master Plan Advisory Committee (April 4, 1998)

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## II. Executive Summary

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### Background

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A sanctuary of upland forests, meadows, wetlands and wildlife on the western boundary of densely populated Cambridge, Massachusetts, the Fresh Pond Reservation surrounds and protects the ancient glacial pond called Fresh Pond. Since 1852, Fresh Pond has supplied drinking water to the City. Over 100 years ago the pressures of commercial development and the threats of pollution pushed the City to successfully petition the Commonwealth to cede control of the pond and its bordering water supply lands to the City. To protect the pond, the Cambridge Water Board in the late 1880s and early 1890s removed many structures, including icehouses, a hotel and roads, and diverted polluted water sources away from Fresh Pond.

The scarred landscape that remained following the conversion of the pond to a terminal reservoir led the Cambridge Water Board to hire the landscape architecture firm of Frederick Law Olmsted from 1894-1909 to restore the Reservoir landscape as a public park with a “wild character.” The Olmsted firm understood over 100 years ago that persistent effort and careful design were required to protect from development our precious watershed and natural open space for the health and enjoyment of all Cambridge citizens.

Following the City’s determination in the 1990s that its aging water treatment plant at Fresh Pond was in need of replacement, a group of citizens working with City officials recognized the need and opportunity to prepare a long term master plan for the whole of the landscape surrounding the Reservoir. In the Fall of 1997, the City Manager appointed an 18-member Fresh Pond Master Plan Advisory Committee (FPMPAC or the “Committee”) of volunteer residents and City officials to develop “a road map for future site improvements”, a plan that would “articulate the vision for the reservation (See Section III). This vision, recognizing the Fresh Pond Reservation as a “unique, irreplaceable resource” and articulating the “vital importance of protecting and enhancing both the water quality of the Fresh Pond Reservation and its open space and naturalistic character” is distilled in the Vision Statement (See Section I) at the beginning of this document and expanded in each topic of this Fresh Pond Reservation Master Plan (FPMP or “The Master Plan”).

The Master Plan is the result of two years of work by the Fresh Pond Master Plan Advisory Committee, including monthly public meetings, hundreds of hours of subcommittee meetings, two special public presentation meetings and solicitation of public comment. The content of this document was developed from extensive ecological data collection and analysis at the Reservation, review of Reservation usage data, relevant law, public discussion

and debate. Multiple drafts of Master Plan policy documents were scrutinized by the Committee and final versions were adopted by consensus (See Section III).

To lend context and to clarify legal jurisdiction issues relevant to the Reservation, this plan briefly describes the ecological, social and legislative history of the Fresh Pond area (See Sections III & IV). A report on the condition of the Reservation's ecosystem and specific landscape improvement plans (See Sections VI, VII, VIII) is followed by related usage policies. Controls on development take the form of a Land-Use Policy (See Section. IX). Facilitating access to all ages and physical abilities and improving the user experience at the Reservation are also key usage policy considerations (See Sections XI, XII, XIII). Achieving the short-term priorities and long-term goals of the Master Plan requires a long-term commitment to improvement, maintenance, public involvement, coordination and oversight (See Sections XIV, XV, XVI).

### Major Fresh Pond Master Plan Recommendations

The major recommendations of the Fresh Pond Master Plan are summarized as follows:

- Adoption, implementation and sufficient funding of integrated, ecological resource management and maintenance policies and practices throughout the Reservation to repair and protect its natural resources.
- Implementation of resource usage policies—consistent with protection of the City's water supply—that offer broad and wide enjoyment by the public.
- Adoption of the Master Plan Land-Use Policy.
- Creation of a Fresh Pond Master Plan Advisory Board of residents and City officials to assist City agencies, boards, commissions and committees in administering the Master Plan.
- Addition of Water Department positions under the supervision of the Watershed Manager to implement the Master Plan; these include a reservation site supervisor, an assistant site supervisor, a watershed protection technician, and an additional ranger.
- An education effort that engages and precisely informs users of conditions and opportunities at the Reservation in a timely fashion and that solicits user involvement.

### Fresh Pond Reservation Natural Resource Management Policy

An extensive Fresh Pond Reservation Natural Resource Inventory was recommended by the Committee and approved by the City in the Spring of 1998. This scientific inventory was conducted in the summer of 1998 by Rizzo Associates and results were presented to the public in October of 1998. Subsequently, a Fresh Pond Reservation Natural Resource Stewardship Plan was presented to the public in November of 1998. These sources along with additional water resources data form the basis of the Natural Resource sections of the Master Plan. Addressing the challenge of managing a complex ecosystem, these sections

present general recommendations and site-specific recommendations for cost-effective long-term ecological care of the Reservation's many and varied natural resources. Addressed as distinct categories are shorelines, forests, meadows, wetlands, landscaped/maintained areas, developed areas, small water bodies, streams & channels, wildlife & wildlife habitat, and notable natural assets, such as unique or special trees & groves and numerous species of birds (which include several endangered and threatened species).

Among the conditions threatening the health of the Reservation's natural resources are shoreline and slope erosion; unchecked growth of invasive plant species; lack of forest understory vegetation; inadequate replacement planting of desirable species; degraded and compacted soils; stressed trees and wildlife habitat; poor drainage along golf course fairways, pathway edges and slopes; eroded and redundant pathways and trails; stream siltation; inadequate vegetated buffers along lawns and fairways; and inadequate resources to monitor and manage these problems.

A priority of The Master Plan is to protect wetlands and shorelines in the Reservation and to restore wetland functions to appropriate areas, especially on the golf course. A key recommended management technique is bioengineering to repair eroded slopes and shorelines. Bioengineering methods involve removal of invasives followed by the use of natural biodegradable materials and the planting of select, native species of trees, shrubs and ground covers to stabilize soils and improve natural water filtration. Such cost-effective, state-of-the-art methods protect the reservoir while preserving the Reservation as an "urban wild" for all citizens to enjoy (See Section VII).

Priorities for implementing specific design, planting and management plans for individual sites are based on the following criteria: (1) threat to reservoir water quality; (2) severity of deterioration; (3) uniqueness and ecological value; (4) level of visibility; (5) aesthetic value and level of use; and (6) relation to other capital improvements.

Highest priority is currently given to the following sites: (1) Water Treatment Plant grounds (currently under construction); (2) Kingsley Park (linked to the construction site; seriously eroded lawns and slopes); (3) Weir Meadow, Lawn & Pine Grove (currently awaiting second stage of water treatment plant construction related work); (4) Glacken Slope/Glacken Field (major erosion, exposed tree roots, compacted poor soil on slope; eroded playing fields and worn courts); (5) Little Fresh Pond- golf course irrigation pond (seriously eroded, hazardous shoreline; erosion is undercutting Perimeter Road, which is in need of resurfacing with porous pavement); and (6) Golf Course - South Section (serious flooding from stormwater system; maintain specimen trees and protect understory plantings; repair eroded slope below club house).

High priority is given to the following sites: (1) Golf Course - North Section (stream channels and wetlands poorly serving course drainage function and lacking healthy, diverse vegetation; maintenance of historically and aesthetically significant specimen trees and protective understory plantings as unmowed buffer; North Pond wildlife habitat and shoreline in need of wetland buffer expansion and natural erosion control measures); (2) Old Field and Birch Grove (biologically rich habitat threatened by invasive species and in need of improved

access for ecology study by school groups; (3) Black's Nook (key open-water and wetland wildlife habitat and restored woodland grove for school nature study; unique aesthetic natural resource; suffering severe environmental stress from invasive vines, invasive wetland plants and poor access design); (4) Neville Manor Site (landscape management required in conjunction with planned conversion of Neville Building to assisted living, and construction of new nursing home, parking areas, new youth soccer field, and restoration of remainder of site to natural areas under control of Water Department); (5) Beech Grove & Community Garden (erosion, invasive plants and access problems); (6) Lusitania Field (currently construction staging area denuded of vegetation; to be rehabilitated as a natural area following end of construction); (7) Bikeway Corridor (currently under construction; in need of significant landscape improvements in accordance with the Stewardship Plan).

## **Fresh Pond Reservation Usage Policies**

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Policies for usage of the Fresh Pond Reservation include (1) a Land-Use Policy, (2) an Access Policy, (3) a Recreation Policy, (4) a Facilities and Services Policy, and (5) an Education Policy.

### **Land-Use Policy**

Protection of the Reservation will depend on informed public review, discussion and evaluation of all plans and proposals for use and management of the land. To ensure that the entire Reservation receives effective, long-term protection, a strong Fresh Pond Reservation Land-Use Policy is essential. The Fresh Pond Reservation Land-Use Policy consists of public review, discussion and evaluation provisions, general land-use provisions and special land-use provisions.

The general land-use provisions which apply throughout the Reservation cover: (1) Undeveloped Natural Areas, (2) Green Vegetated Open Space, (3) Alteration of Existing Structures, (4) Replacement Structures, (5) Open Space Restoration, (6) Approved Plant Materials, (7) Outside Lighting, and (8) Donations, Memorials and Monuments. The special land-use provisions apply to Glacken Field; to the Municipal Golf Course and clubhouse; to the current Neville Manor site and the two sites into which it will soon be divided; and to Lusitania Field and the Community Gardens.

The Land-Use Policy states that "every opportunity will be taken to return land currently under hard surfaces to green vegetated open space, e.g., by removal of unneeded structures, parking spaces and paved roads and paths, and by relocation of utility yards to sites outside the Reservation."

### **Access Policy**

The design and management of the Fresh Pond Reservation pathway system should permit appropriate educational and recreational use and allow access to necessary maintenance and emergency vehicles in a manner that protects the Reservation and the water supply from degradation. A comprehensive redesign plan for the whole system of pathways should be drawn up and implemented according to the priorities for action

established in The Master Plan. Among the existing pathway conditions needing redress are erosion of pathway surfaces, inadequate handicapped accessibility, erosion and compaction of paths, pathway edges and hillsides, and redundant eroded pathways that threaten vegetation, wildlife habitat and the user experience. The Stewardship Plan presents a number of “inexpensive and innovative techniques to improve and redefine the Reservation’s pathways to minimize ecological disturbance while maximizing the aesthetic experience of walking them.”

Principal entrances, primary pathways and parking areas within the Reservation should facilitate access for all, and particularly for under-served populations such as the elderly, small children and persons with disabilities. Generally, the rule that should be enforced is that slower-moving users, and pedestrians in particular, have the right of way on the Perimeter Road and all other Reservation pathways. The Reservation should continue to include a small number of unmarked, unobtrusive trails intended for foot traffic only.

### **Recreation Policy**

The recreation activities offered within the Reservation’s boundaries must be governed by the Reservation’s primary function as public drinking water supply lands and as the only City-owned parkland of size with a wild character. Among the wide variety of active and passive recreation activities available in season and year-round to all ages are walking in the relative quiet of an urban wild; observing and studying plants and wildlife; jogging, running, sledding, cross-country skiing; golf at the Municipal Golf Course; soccer, softball, tennis and basketball at Glacken Field; and, for qualified Cambridge residents, walking a dog off-leash.

Given sufficient resources and protected buffers, three key areas should continue to serve as sustained active recreational use areas: Glacken Field, the Perimeter Road, and the Municipal Golf Course. The planned youth soccer field adjacent to the Neville site will add a fourth active recreation area.

To better manage the Reservation for the health, safety and convenience of all who come to the Reservation, a clearly defined and updated permitting process is needed for large group recreational activities, including adult road races, school cross-country running meets, walkathons and other charity events, and for large group picnics and parties. The permitting system should be designed to minimize conflict among authorized activities and to protect all visitors, the water supply, and the Reservation landscape. In addition, a medallion program is proposed for Cambridge dog owners who wish to walk their dogs off-leash at the Reservation.

### **Public Facilities and Services Policy**

Public Facilities supplied at the Fresh Pond Reservation should be managed to convey a clear sense of the nature of the Reservation as a water supply land and as an urban wild while also supporting important opportunities for recreation and education. Public facilities covered by The Master Plan consist of buildings, areas of buildings, other structures such as fences and protective barriers, and above-ground park furnishings (or

public infrastructure) such as signs, seating, outdoor lighting, rest rooms, drinking fountains, trash receptacles, bulletin boards, bicycle racks and police call boxes.

All major identification, information, regulatory and commemorative signs and all secondary outdoor signs should be of a special unique and consistent design to establish that parts of the Reservation are parts of a whole, a landscape owned by the citizens of Cambridge for the protection of their drinking water and for the enjoyment of the public. Portable signs and temporary fixed signs should be used as key public information resources for safely managing permitted events and for clearly explaining to the public the need for and the nature of maintenance, restoration, and redesign projects.

Fencing and protective barriers within the Reservation should offer the least intrusive appearance, harmonizing with the natural aesthetics of the landscape while meeting reasonable long-term cost, durability and barrier requirements. Because Fresh Pond is our public water supply, the perimeter fence is higher than average park fences. The Reservation's users must look through or beyond the shoreline fence to enjoy the centerpiece of our only park with a wild character—the Pond, its coves and shoreline. Pond fencing should minimize the visual barriers between the users and the resource.

### **Education Policy**

Also key to the implementation of The Master Plan is a Fresh Pond Educational Plan that contains clearly defined educational goals and priorities, along with adequate resources to implement it. Water supply and water treatment education should be presented within the context of the entire system. Water Department materials such as permanent and temporary signage, brochures, maps, news releases, self-guided tours and web pages, posted rules and regulations are essential components in educating the community.

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 also take the lead in developing high-quality watershed education materials. 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 from across the City. Education resources to support elderly and adult education activities and materials to illustrate the golf course-related ecosystem and Fresh Pond history are also needed. Along with being scientifically precise, professionally written and historically accurate, education information must engage and inform the intended audience in a timely fashion.

### **Master Plan Implementation**

Planning phases and action steps for the main recommendations and priority projects of the Master Plan will succeed only with a commitment to both funding the projects and funding an operating budget for adequate staff and long-term maintenance. Various sections of the Master Plan are designed to function as stand-alone training resources for staff and as policy and background documents for the Advisory Board and interested

citizens. As a result, each Master Plan section supplies (and may repeat from other sections) the context for its recommendations.

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