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*Back Bay Fens The Riverway Olmsted Park Jamaica Pond*



THE EMERALD  
NECKLACE PARKS  
*Master Plan*



*"This park system is part of the  
Commonwealth's cultural landscape legacy shaped  
by Olmsted's social and political ethic....  
it is both our duty and privilege to preserve this  
legacy for generations to come."*

BOB DURAND, SECRETARY  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS

**O**n behalf of Governor Paul Cellucci and Lieutenant Governor Jane Swift, the Executive Office of Environmental Affairs and the Department of Environmental Management, I am pleased to present the updated Emerald Necklace Parks Master Plan. Beginning at Back Bay Fens and following the course of the Muddy River through the Riverway and Olmsted Park to Jamaica Pond, this unique chain of parks is one of the finest examples of a linear urban park system in this country.



Designed in the late 19th century by the premier landscape architect, author and conservationist, Frederick Law Olmsted, the original plan for the Emerald Necklace was conceived as a common ground stretching from the heart of the city to the more rural scenery of the suburbs. Envisioned as a cure for the social ills of the time, the park system became a refuge, providing picturesque scenery and passive tranquility. After a century of use, however, the parks deteriorated and suffered from deferred maintenance, accretions and intrusions. Had it not been for the tireless work of passionate park advocates, Olmsted scholars and enlightened public officials in the 1970's and 80's, the Commonwealth may have lost this irreplaceable environmental resource.

The Emerald Necklace Park System in Boston and Brookline reflects the genius of Olmsted as landscape artist, pragmatic planner and social visionary. This park system is part of the Commonwealth's cultural landscape legacy shaped by Olmsted's social and political ethic. The Commonwealth has made an extraordinary commitment to the preservation and protection of the Olmsted legacy not only in Boston and Brookline but also throughout Massachusetts.

The Emerald Necklace Parks Master Plan, completed in 1989 and updated in 2001, represents the Commonwealth's investment in fulfilling Olmsted's commitment of improving the quality of life for all citizens by providing clean, safe, healthy environments. This plan was produced through the collaborative efforts of the Massachusetts Department of Environmental Management, DEM's Statewide Advisory Committee, the Metropolitan District Commission, the City of Boston and the Town of Brookline. It is the product of a decade of planning and extensive consultation with the many individuals and groups who have a special connection to the Emerald Necklace parks. This Master Plan provides an invaluable resource for those who know and love these parks and who understand the need for long-term planning, preservation and protection of the Emerald Necklace. As you read through this updated Master Plan document, you will see the tremendous progress that has been made during the last fifteen years. Historic bridges, shelters and plantings have been restored; intrusions into the park system have been removed; and a private non-profit park partner, The Emerald Necklace Conservancy, has been created.

Even with these accomplishments, there is still much work to be done. Planning is underway to initiate one of the most ambitious and comprehensive historic landscape preservation projects in the nation. Through a partnership with the state, federal government and private sector, Boston and Brookline will embark on a multi-million dollar effort to ensure the long-term preservation of the park system by providing flood control, improving water quality, enhancing habitat and restoring the historic landscape. Through this Master Plan, the same principles that guided Olmsted over a hundred years ago in his design of the Emerald Necklace will provide the framework for decision-making and will guide the restoration of his vision.

The creation of the Emerald Necklace is one of the most significant achievements of Frederick Law Olmsted's long and distinguished career. Through careful adherence to this document, this landscape will embody the vision of the citizenry of the 19th and 20th centuries. As the stewards of the Olmsted legacy, it is both our duty and privilege to preserve Olmsted's legacy for the 21st century.





COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF HISTORIC RESOURCES  
OLMSTED HISTORIC LANDSCAPE PRESERVATION PROGRAM



CITY OF BOSTON



TOWN OF BROOKLINE

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FREDERICK LAW OLMSTED



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*Foreword*



*"For every thousand dollars judiciously invested in a park, the dividends to the second generation of citizens possessing it will be much larger than to the first; the dividend to the third much larger than the second."*

-- Frederick Law Olmsted, *City Parks and the Improved Use of Metropolitan Space*, 1880

Massachusetts has inherited a commonwealth of historic sites, where landscapes both vernacular and designed, have become the critical character-defining core of our communities. The landscapes that have shaped much of this state's cultural landscape legacy have been influenced by the work of many distinguished architects and landscape practitioners, most notably Frederick Law Olmsted. Few individuals have contributed to the Massachusetts landscape so boldly as Frederick Law Olmsted. Citizens all over the Commonwealth experience Olmsted's influence on the Massachusetts landscape. From Boston to the Berkshires, the citizens of the Commonwealth enjoy over 300 public open spaces designed by Olmsted and his successor firm.

The Department of Environmental Management's Olmsted Historic Landscape Preservation Program was an outgrowth of a national awareness of how remarkable the Olmsted firm's contribution to American history and the urban environment had been. Inspired by the scholarship and activity in New York, Hartford, Atlanta, Seattle, Buffalo, and Louisville, a group of Massachusetts open space advocates, design professionals, preservationists, park administrators, business and community leaders founded the Massachusetts Association of Olmsted Parks (MAOP) in 1981. As one of its first projects, the MAOP conducted a survey of ten public parks designed by the Olmsted firm. This public-private partnership involved four major academic institutions, the Frederick Law Olmsted National Historic Site, the Massachusetts Historical Commission, the Beacon Hill Garden Club, the Hubbard Educational Trust and scores of volunteers. The resulting report, *"Olmsted in Massachusetts: the Public Legacy - A Pilot Project for a National Inventory,"* publicized the beauty and perilous condition) of the state's Olmsted parks. The inventory provided a valuable research and preservation tool. It served to raise awareness and stimulate community interest in the preservation of their older parks. The combination of research and advocacy proved to be powerful and resulted in the first bond authorization and appropriation to create the Olmsted Historic Landscape Preservation Program.

The Massachusetts General Court recognized the significance of Olmsted's legacy by authorizing \$15 million through Chapter 723 of the Acts of 1983 for "the study and preparation of plans, if necessary, and for the rehabilitation and restoration of the Olmsted parks in the Commonwealth...." The Act named 12 parks in eight communities including "the Olmsted park system in the city of Boston and the Town of Brookline." In January 1984 the Commonwealth of Massachusetts, through the Department of Environmental Management, initiated the nation's first comprehensive statewide program aimed to restore Olmsted legacy. A second appropriation of \$17 million was authorized through the Open Space Bond Bill of 1987.

This Master Plan represents the Commonwealth's commitment to reclaiming the Olmsted legacy in Boston and Brookline. Through an extensive collaborative process involving local citizens, city, town and state officials, park constituents, Olmsted scholars and preservationists many milestones have been reached. Historic research has been conducted documenting the original design intent, use, appearance and integrity of the parks included in this Master Plan. The Historic Landscape Reports are perhaps most significant in the planning process in that they define the Emerald Necklace as more than just a familiar recreational resource. They set the context for helping people to think about these parks as cultural, environmental and aesthetic resources.

The collaborative process that created the Emerald Necklace Parks Master Plan remains as important as the document itself. The master planning process depended on extensive public outreach and participation to ensure that the resulting document responded to the needs of the park constituencies. For several years, Advisory Committees in both Boston and Brookline worked closely with municipal officials to direct the planning process. (The same process was conducted on a parallel track for Franklin Park in Roxbury/Dorchester.)

Completed in 1989, this Master Plan provides a preservation framework to guide all future planning and action. The Master Plan has been formally adopted by both Brookline and Boston and has been the basis for all permitting and funding of park improvements implemented since 1989. For the last year, DEM staff has been working closely with Boston and Brookline to update the plan to reflect current conditions. As you read through this updated plan, or perhaps as you experience the Emerald Necklace Parks first-hand, you will see both the accomplishments and public investment committed to preserving this significant open space.

So where do we go from here -- What has the experience of the past two decades taught, us? J.B. Jackson writes in his book, *"American Space,"* that Frederick Law Olmsted's fame must rest on his work as one of the great American artists of the nineteenth century. "He created a uniform style where previously there had only been diversity; he perfected a medium and taught a new appreciation of natural beauty." The artistic, environmental and social values that guided Olmsted in the creation of the parks are critical for guiding their preservation. As the current stewards of the Olmsted legacy in Massachusetts, we have learned from this great artist, visionary and social reformer that "For every thousand dollars judiciously invested in a park, the dividends to the second generation of citizens possessing it will be much larger than to the first; the dividend to the third much larger than the second."

Peter C. Webber, Commissioner  
Massachusetts Department of Environmental Management  
April 2001



## EXECUTIVE SUMMARY







## Executive Summary

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This report presents a Master Plan for the preservation and long range management of the four parks that constitute the Muddy River chain of parks of the Emerald Necklace - Jamaica Pond, Olmsted Park, the Riverway, and the Back Bay Fens, designed by Frederick Law Olmsted, Sr., and his associates Charles Eliot, John Charles Olmsted and Frederick Law Olmsted, Jr., in the period from 1878 to 1895.

The Emerald Necklace is a 19th - century linear park system design based on a watercourse and served by parkways. Now entering its second century, it has enormous historical significance. It was the most ambitious combination of landscape architecture, metropolitan area planning and engineering that Olmsted ever completed in any of the cities in which he worked. It was one of the largest public works ever undertaken by the City of Boston and the Town of Brookline. Now, over a hundred years later, the Emerald Necklace parks, along with other Olmsted parks in Massachusetts and elsewhere are showing signs of their age. In 1984, Massachusetts became the first state in the nation to initiate a program to preserve the historic urban parks designed by Olmsted and his sons and their successor firms, and to restore the legacy for the future. That initiative, the **Olmsted Historic Landscape Preservation Program**, was administered by the Department of Environmental Management, with the goal of creating long-term rehabilitation frameworks to guide all future planning, management, maintenance and preservation action on these important components of our heritage.

The Emerald Necklace Master Plan is a balanced, comprehensive and technically detailed park advocacy document that sets forth specific and realistic goals that are to be realized in phases over the near to long-term. The Emerald Necklace Master Plan weighs contemporary uses, existing physical condition, and the current maintenance and management capabilities of its owners, against the historical intent of the park system in order to formulate a realistic strategy for treatment.



Plan 1: Portion of the Emerald Necklace (Boston Parks & Recreation Department, circa 1990).

The **Background for the Plan** summarizes in four parts the information compiled during the Inventory and Analysis stages of the work. **History** covers material on Olmsted and the Emerald Necklace which puts the Boston and Brookline project in the context of his life work and achievements. **Physical Conditions** documents the principal findings of the site inventory and existing conditions. **Contemporary Uses** records the results and conclusions of a User Survey and Community Needs Analysis. **Existing Management and Maintenance** describes the issues raised by management structure and maintenance practices.

The **Master Plan** sets forth a vision for the Emerald Necklace for recovering Olmsted's original concept of a unified system of linked parks by:

- Reconnecting the watercourse;
- Mitigating the adverse impact of physical barriers or, better, eventually eliminating them;
- Removing "breaks" in the parks' circulation and function;
- Improving and diversifying park landscapes;
- Relocating or reorienting incongruous recreational activities;
- Coordinating consistent management practices; and,
- Increasing and enhancing regular maintenance.

The rationale guiding both system-wide and individual park proposals is derived from four perspectives: history, physical conditions, contemporary uses, and management and maintenance. By balancing these four points of view, the values of greatest importance to each segment of the system are clarified and taken into account in decision making. General, as well as specific system-wide recommendations follow, grouped under six headings: Watercourse; Internal Circulation; Parkways; Landscape Composition; Uses, Structures and Facilities; and Management and Maintenance.

- **Watercourse** recommendations include stabilizing abutting slopes that drain into waterbodies; increasing water depths and flows; reducing pollution and reinstating water-edge plantings. This plan does not provide detailed scopes for the proposed watercourse improvements. However, it recognizes that such improvements are essential to the successful completion of the historic landscape restoration initiative.
- **Internal Circulation** proposals emphasize restoring the historic links between parks; improving access; differentiating between routes for faster moving bicycles and joggers and ones for pedestrians; and creating and maintaining a fully functional system of walks, cycling and jogging paths, and drives.
- Suggestions for **Parkways**, which were originally park drives, focus on overcoming the barriers to pedestrian access to and between the parks created by heavy commuter traffic; exploring ways of mitigating the effect of vehicular traffic; and recreating the parkways' scenic qualities.
- **Landscape Composition** proposals are aimed at restoring the richness and diversity of the original plant communities; controlling and eradicating invasive species; and strengthening the parkways' formal avenue plantings on the urban side of the roadway, while enhancing informal plantings on the park side.
- Recommendations for **Uses, Structures and Facilities** are focused on encouraging multiple uses (which was a feature of the original park); expanding recreational programs (through restoring historic buildings and structures, and augmenting management); and providing durable and historically sensitive park furnishings (benches, trash receptacles, drinking fountains, signage, call boxes, and lights). Together these will re-establish the parks' historic ambience, attracting park users and increasing overall security while addressing the problem of non-original structures and/or features by assimilating them into the parks, relocating them, or eventually, over the longer term, phasing them out altogether.



- **Management and Maintenance** proposals stress the development of a unified approach to the management of the Emerald Necklace, coordinating the energies of the City of Boston, the Town of Brookline, the Metropolitan District Commission (MDC), neighboring institutions, and private park advocacy organizations and volunteers; clarifying boundaries and jurisdiction; developing consistent park regulations and policies; removing evidence of vandalism and neglect; and continuing and expanding cooperative programs within the parks.

Many of these system-wide recommendations apply in particular ways to the individual parks:

### **Jamaica Pond**

The plan for Jamaica Pond emphasizes the environmental and scenic qualities of the park with its large water body and former estate landscape. It proposes to regulate the pond's water level; stabilize its banks; create a separate circuit for cyclists/joggers and pedestrians; make traffic modifications to regain lost parkland; enhance access to the Parkman Memorial area, return Parkman Drive to park use, and to improve linkages between parks; reinstate historic plantings throughout the park; rehabilitate the Boathouse; restore Pinebank; and institute other changes that better provide for contemporary uses in more sympathetic ways to the park's intended character.

On the other hand, the master plans for the Olmsted Park and The Riverway recognize that these parks have very high historic value, and that they received extended design attention by the Olmsted firm, evidenced by the substantial documentation.

### **Olmsted Park**

The plan for Olmsted Park is directed to recovering as much as possible of Olmsted's vision of a chain of picturesque pools and ponds along a pretty brook flowing amidst varied scenes of woodland and meadow. Specifically, it proposes to resolve the seepage through Wards Pond's southern bank; repair pond edges; reconstruct elements of the watercourse system - ponds, falls, bubbling brook, and the Leverett Pond inlet; control pollution; upgrade and expand the path system throughout the park; control vehicular access; return Riverdale Parkway, North and South, to park use by eliminating commuter traffic, providing limited parking and separating cycling and jogging routes from those for pedestrians; reinstate historic plantings throughout the park utilizing Olmsted planting plans as much as possible; rebuild historic bridges, stairs and shelters; re-orient the Daisy Field ball diamonds with other modifications of the lighting, planting and grading to achieve a more meadow-like quality; and to eventually remove the MDC skating rink when another facility can be opened in close proximity to the Jamaica Plain neighborhood to recover the second largest meadow in the park.

### **Riverway**

The plan for the Riverway is predicated on the park's historic importance as a link in the Emerald Necklace system. The plan draws attention to the Riverway's extreme vulnerability to changes within and nearby due to its narrow dimensions, and to the extraordinary skills of its designers in creating a picturesque riverside landscape in the heart of a densely settled area of Boston and Brookline. More particularly, the plan proposes to remove invasive water-edge vegetation and stabilize banks; recreate the historic landscape and, eventually, the watercourse in the area of the present

Sears parking lot; suggest strenuous inter-agency efforts to satisfactorily resolve flooding, drainage, pollution and water-quality problems; modify the existing Brookline-side pedestrian path to accommodate separate circulation for cyclists and joggers and pedestrians; improve the cross-path circulation from the Longwood MBTA station across the Chapel Street Bridge to the Boston side; construct a much needed eastside stairway at Longwood Bridge using the historic design as a guide; restore the iron pedestrian bridge over the MBTA tracks at Carlton Street; modify or close the Route 9 ramps at River Road; close the Netherlands Road bridge to vehicular traffic to significantly improve the park's connection upstream and the continuity of its middle section; reconfigure the Park Drive intersection to re-establish the link between the Riverway and the Back Bay Fens; plant the reclaimed park areas at Route 9 and the Sears lot; recreate the historic water-edge and park plantings, utilizing the original plans and plant lists as much as possible; restore the existing historic bridges, steps and shelter (one of only two surviving in the entire park system); renovate the Back Bay Yard maintenance facility, including the installation of historic plantings to help it blend into the naturalistic Riverway landscape.

### **Back Bay Fens**

The plan for the Back Bay Fens accepts the fact that much of Olmsted's original landscape has been changed, and that historic uses have been superseded by intense local recreational demands. The approach recommended is to accommodate these new functions within a recreated riverside park landscape based on the same scenic ideas as the Riverway and Olmsted parks. The plan acknowledges the serious underlying problems of water quality which, because this park is at the downstream end of the system, are magnified, and collectively present the greatest challenge for rehabilitation and management. The plan proposes to improve flows, depths, circulation, and water quality through re-creating an open watercourse in front of Emmanuel College, directing the Muddy River flow through the Back Bay Fens, and urging concerted agency action to control and eliminate Combined Sewer Overflows. It also proposed to remove and control invasive water-edge vegetation and replant the banks with appropriate materials; make new connections and re-establish missing links in the path system; create a complete riverside circuit; improve cross-park circulation, reconstructing The Evansway and possibly adding a fourth bridge to connect the two sides of the northern basin. The plan proposed to convert the original bridle path along the Fenway side of the park to a cycling and jogging route and consider completing it on the west side as well as provide improved access to the park from the historic entrances, particularly from the Charles River at Charlesgate (which was the most important entrance to the Emerald Necklace); consider traffic changes at Brookline Avenue (to allow the open water channel) and, over the long-term, at Charlesgate that would recapture some sense of the historic connection to the Charles River and the Esplanade: recreate an appropriate river-edge landscape, informal park buffers on the park side of the parkways, formal avenue plantings on the city side. In order to respect the continuum of the site it is proposed to assimilate the Fens' later additions, such as athletics, the Rose Garden, the Victory Gardens, and the World War II Memorial into the park landscape and resist further intrusions; restore historic bridges (Agassiz, Fen, Boylston), the historic gatehouses in conjunction with appropriate engineering improvements to the Stony Brook, and the Agassiz Road Shelter (Duck House) as a Park Ranger Station; rehabilitate Clemente Field House; remove the riverside bleachers at Clemente Field and relocate and upgrade the basketball courts; and consider the eventual relocation of the Fire Department Communications Center and its associated parking out of the park.



# Executive Summary

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The Master Plan Implementation categorizes the recommendations into those falling within the Olmsted Program guidelines, those outside the guidelines that could be funded by other agencies, and the remainder which address broader issues that will require further inter-agency investigation, resolution and financing. The question of phasing and priorities is discussed and an objective approach for assigning specific high, medium, and long-range priority to specific projects for Boston, Brookline and the MDC is explained.

These projects, at this point conceptual, are then described park by park, with a summary scope of work accompanied by rough cost estimates. Altogether, the estimated construction costs (in 1988 dollars) for the priority landscape preservation projects listed total \$41.5 million:

•	Jamaica Pond	\$12,150,000
•	Olmsted Park	\$ 8,050,000
•	The Riverway	\$ 9,635,000
•	Back Bay Fens	<u>\$11,665,000</u>
	TOTAL	\$41,500,000

Several projects which are listed in the implementation section have been completed. Actual restoration costs may continue to accumulate due to economic climate, construction industry and the duration of the capital improvement program.

These are estimated gross construction costs, exclusive of contingencies, administration or professional fees. They do not include engineering costs for resolving Combined Sewer Overflows or water quality, traffic costs associated with work not included in this study, or land acquisition costs of critical sites (such as River Road and, perhaps, the area adjacent to Prince Street at Jamaica Pond). They reinforce the magnitude of the undertaking to revitalize the Emerald Necklace, which Olmsted Program and/or respective municipal funding has only began.

## A New Philosophy

In order for the Master Plan for the restoration and future management and maintenance of the Emerald Necklace to be successful, a new philosophy concerning our historic parks has to be embraced. In the course of this endeavor we must:

- **Foster greater appreciation of our historic parks:**

Historic public landscapes demand higher levels of understanding, public awareness and sympathetic treatment than other recreational grounds. The Massachusetts **Olmsted Historic Landscape Preservation Program** recognized this in appointing landscape historians and selecting a landscape consultant team experienced in historic parks and parkway planning. This study confirms the very high regard Olmsted held for the "*Boston work*" and its special place in the historic parks movements in this country.

- **Understand the primary role of the landscape architect:**

Olmsted and his colleagues were instrumental in coordinating engineer-

ing, architecture, planning and horticulture in creating the Emerald Necklace, and in doing so defined the role of the new profession of landscape architecture. It is appropriate that his successors should lead the professional team in developing a plan for its restoration and rebuilding.

- **Respect the value, natural environment and use of the park system:**

Olmsted's skillfully designed Emerald Necklace park system was to read as a "natural" environment within and as a refuge from the city. Every effort should be made to enhance the environmental aspects of the park system. Special attention (see Appendix) should be paid to the Audubon Society's recommendations during the preservation process.

- **Foster a new generation of park managers:**

Historic parks will require new management structures and maintenance staffs with greater horticultural skills in the handling of naturalistic landscapes. The appointment of Park Administrators and "Hort" crews in New York City's Central, Prospect and Riverside parks is evidence of emerging trends. More demands are imposed on park administrators to address contemporary needs in historically sensitive ways, for example, to evaluate original planting plans and plant lists in the light of authenticity, public safety, maintenance and cost.

- **Unify and coordinate management:**

In the case of the Emerald Necklace parks, the coordination of Boston, Brookline, the MDC, abutting institutions and volunteer groups poses a special challenge. The success of this Master Plan depends on ongoing coordination for capital projects and maintenance.

- **Institutionalize public/private partnership:**

Municipal government must continue to be responsible for certain park services and improvements. However, in the current economic climate, the private sector must play an expanded role.

- **Be aware of outside impacts on parks:**

Parks are subject to external events and are inseparable from the city or districts of which they are a part. The Emerald Necklace parks are no exception, having been continuously affected by events outside their boundaries. The Charles River Dam changed the ecology of the Back Bay Fens. Upstream watersheds created flood conditions and pollution. Regional traffic has invaded the parkways and high buildings have broken the tree canopy line. These changes which threaten the future of the Emerald Necklace parks must be recognized and strenuous efforts made to control them.

- **Renew emphasis on passive park use:**

The parks were designed for a broad range of primarily passive uses. The User Survey, a part of this study, emphasized that passive uses are still the predominant public activities in these parks. Passive uses must continue to be the first priority.



- **Respond to contemporary uses:**

Historic parks must serve present and future generations of users. New uses must be considered in light of the parks' historic purposes and should be accommodated in ways that do not violate original purposes. The siting of new facilities, their space-taking and visual impacts, their form and materials all need to be considered with a sensitivity to the original scenic intent and landscape character. Not all new uses or facilities will be accepted.

- **De-privatize public grounds:**

The parks were meant for all. Often in this country parkland has been taken over for a single use by a few users at the expense of the majority. Such privatization of public grounds is contrary to the parks' original purposes. It should be resisted and, where possible, rectified.

- **Access for all:**

Special efforts must provide for the young, disabled and elderly. It is crucial that the parks be accessible to all those individuals who wish to visit and engage in appropriate park activity.

- **Hold the line on traffic:**

In the past, park edges have been taken for traffic or parking - Route 9, Sears lot, Bowker Interchange, the widening of Fenway, Kelly Circle. This plan emphasizes taking back parkland where possible - Sears lot and Kelly Circle - and recommends holding the line on further incursions. Parkways, designed as pleasure routes integral to the parks, have become traffic arteries.

- **Expand park programming:**

A key to the future use, interest and support of the Emerald Necklace is the expansion of park programs - information, exhibits, events, tours, public relations and education. Programming is also the key to rehabilitating currently unused buildings, such as Pinebank, Clemente Field House and the Agassiz Road Shelter. Park programming reinforces capital outlays, security, park use, advocacy and stewardship.

Just as the building of the park system was one of the largest public works ever undertaken by both Boston and Brookline, its rebuilding can be considered no less of an endeavor. Serious problems, such as water quality, which can undermine the entire park system, will require the cooperative dedication of all municipal and state agencies, groups and individuals involved to resolve over time. This Master Plan must be fully endorsed and enthusiastically accepted. Its recommendations for further investigation, resolution and funding of major issues beyond the scope of the Olmsted Program must be diligently pursued.

### A PLAN OF ACTION

Implementation of the Emerald Necklace Master Plan must proceed in phases. First phase projects should recognize and correct major issues of physical deterioration and hazards, and consider critical public needs. The later phases should include those landscape projects requiring inter-agency funding and participation.

Design development and construction has occurred during the initial stages of the Emerald Necklace preservation effort through the use of both Olmsted Program and municipal funds. Continuing progress is dependent upon:

- Institutionalize Emerald Necklace coordination for management, maintenance, funding and operations;
- Establish an Emerald Necklace Foundation or give entity and conducting an outreach program for corporate support and private donations for the restoration and maintenance of the entire park system;
- Hold public review meetings prior to implementation of capital improvement projects;
- Develop uniform park policies, regulations, and standards to guide all maintenance and management decisions based on this report's recommendations.
- Develop improvement projects as prototypes for design solutions;
- Develop new park programs for historic facilities and rehabilitate these facilities to accommodate such activities;
- Develop a vocabulary of historically sensitive park furnishings and signage;
- Initiate as a matter of the highest urgency, a comprehensive water quality investigation and a realistic water quality improvement plan;
- Reconsider all past recommendations in light of newly developed park priorities emphasized in this report, integrate historic landscape concerns into the proposed final solution, and reach conclusions about the best technical solutions consistent with park values, schedules, costs and apportionment;
- Undertake traffic studies in support of the traffic changes recommended. Complete interim at-grade improvements for better linkages between and access to the parks;
- Conduct the necessary feasibility studies to achieve the major mid to long range goals of reclaiming the Sears parking lot, relocate the Boston Fire Communications Center, and develop an alternative skating facility to replace the Kelly Rink in Olmsted Park; and
- Develop appropriate regulatory controls for limiting the heights of buildings within the viewshed of the Emerald Necklace park system, and for phasing out inappropriate land uses adjacent to the parks, such as the River Road triangle and the Sears parking lot.



## INTRODUCTION





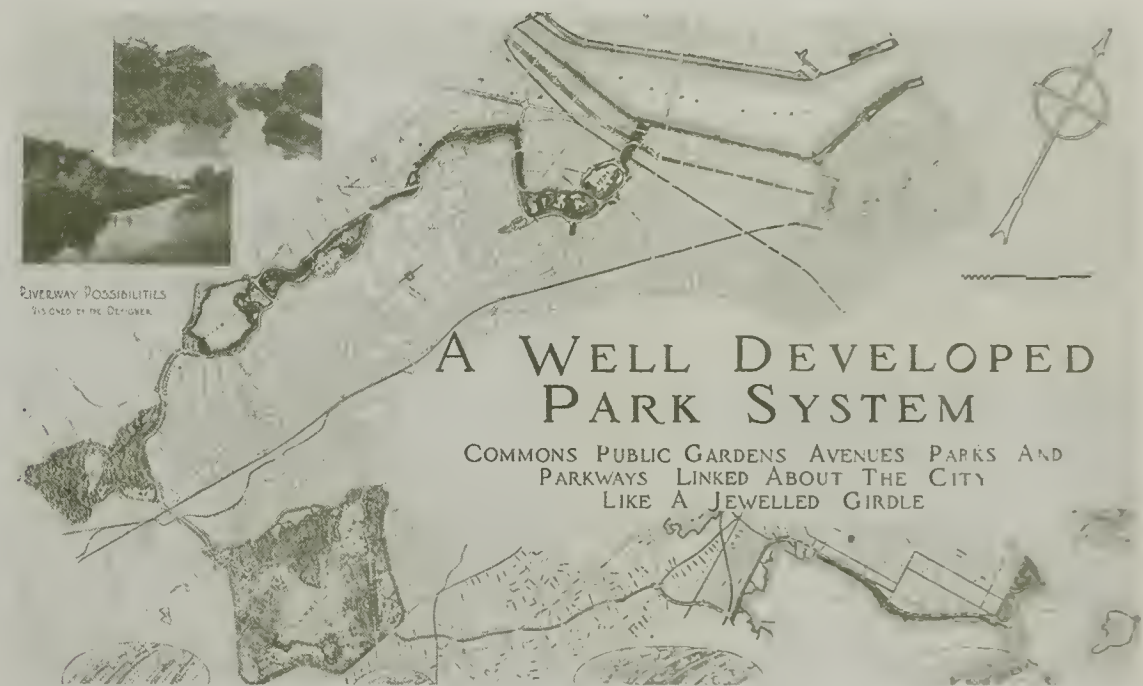


## Introduction

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The Emerald Necklace is a linear park system stretching from the Boston Common to Franklin Park. It was designed by the most outstanding landscape practitioner of his time, Frederick Law Olmsted, Sr., with Charles Eliot, John Charles Olmsted and Frederick Law Olmsted, Jr., in the period from 1878 to 1895. Olmsted's original plan called for a circumferential park system extending from the Charles River all the way to Marine Park in South Boston, overlooking Boston Harbor and its islands. It also included a loop system connecting Brookline and Brighton and incorporating the Chestnut Hill Reservoir. The firm also made recommendations for park development at Copley Square and Parker Hill which were never implemented, and proposed the reforestation of the Boston Harbor Islands.

The central part of the Emerald Necklace that was actually built consisted of five major parks: the Back Bay Fens, the Muddy River Improvement, Jamaica Pond, the Arnold Arboretum, and West Roxbury Park (later renamed Franklin Park). They were linked by an adjacent parkway system to make a five-mile long continuous greenway. It was one of the largest projects ever undertaken by either the City of Boston or the Town of Brookline. Olmsted designed his parks to link to the already established Boston Common, Public Garden, and Commonwealth Avenue Mall.



Plan 2: *A Well Developed Park System* (Landscape Architecture, Stephen Child, 1927).

This report addresses the first three of the original parks and their adjoining parkways, but subdivides the Muddy River into two parts to make the four parks known today:

- Jamaica Pond,
- Olmsted Park (the upper Muddy River),
- Riverway (the lower Muddy River), and;
- the Back Bay Fens.

## CONTEXT

The Emerald Necklace today still reflects much of Olmsted's original design from the Back Bay Fens, along the Muddy River to Leverett, Willow, Ward's and Jamaica Ponds and on to the Arnold Arboretum and Franklin Park. In the early 1970s, citizens from Boston and Brookline became alarmed at the level of park deterioration they observed in their communities. Their advocacy brought to public attention the plight of our urban open spaces, and the historic importance of the Emerald Necklace parks, a legacy which includes over 1,000 acres and about half of Boston's present park system.

While today the original subtle plantings along the water's edge are gone, commuter traffic speeds along parkways designed for pleasure-driving carriages, and municipal maintenance forces are only a fraction of their former size, the Emerald Necklace is still an extraordinary and special place within the city -- a succession of carefully orchestrated views of meadows, woodlands and watercourse which delights park visitors. The parks provide rich recreational opportunities as well, including jogging, fishing, picnicking, softball, gardening, and outdoor theater.



Figure 1: Riverway - Plantings near St. Mary's Church, 1924-25 (FLONHS).

One hundred years ago, civic minded leaders, supported by strong public sentiment, led a park movement that created the Emerald Necklace park system. They foresaw the need for passive green space and natural environmental features, such as stream valleys and upland reservations, in their expanding urban areas. Today's park advocates are driven by the same commitment to nature in the city.



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### THE MASSACHUSETTS OLMSTED HISTORIC LANDSCAPE PRESERVATION PROGRAM

The primary goal established by the state for the Olmsted Historic Landscape Preservation Program was the creation of a Master Plan, a long-term rehabilitation framework which would guide all future planning, management, maintenance and preservation action. To ensure that the state mandate was properly carried out, the Olmsted Program, in 1985, published its “**Guidelines and Criteria for Implementation**” with a statement of five principle objectives:

- “Preserve, rehabilitate and provide a framework for ongoing maintenance of historic landscape features, furniture and structures which have been determined through research and documentation to be integral components of the original design intent, use and appearance;
- Promote community participation, advocacy, stewardship and awareness of historic landscapes, open space heritage, recreational and economic benefits of each park;
- Encourage design solutions which provide for efficient maintenance, enhanced public safety and handicapped accessibility, and improve circulation and separation of pedestrian and vehicular systems;
- Reorganize alterations and additions which represent significant inconsistencies divergent from the original design intent, use and appearance while recognizing community priorities and contemporary recreational needs;
- Develop procedures for protection of abutting lands critical to the character and context of the park to minimize visual and environmental incongruities and intrusions.”



Figure 2: Riverway (Sears Park) - The Olmsted Program emphasized preservation of historic landscape features, structures, and furnishings. circa 1905 (FLONHS).

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In stressing a "long-term rehabilitation framework to guide future planning, maintenance and preservation actions," the Program links preservation of the past with contemporary needs, and extends management and maintenance into the future. The Olmsted Program emphasized the preservation of historic landscape features, structures and furnishings; and also provided for the diverse current needs of the Commonwealth's people.

After nearly a hundred years of use, deteriorated systems and elements require repair or rebuilding through a series of major capital improvement projects. More organized and effective management and maintenance efforts are needed to operate the parks and guide their planning and preservation efforts into the 21st century. This Master Plan addresses the needs of the Emerald Necklace in each of these respects.

### HOW THE MASTER PLAN WAS CREATED

The planning process followed four steps:

#### 1. Inventory

A complete inventory of all aspects of the park system and the individual parks was compiled. This included extensive historical research and documentation, as well as a detailed survey and evaluation of the parks' physical conditions, present-day uses and existing management and maintenance practices. Two separate surveys of the public's current use of the parks and their attitudes and desires toward the Emerald Necklace were carried out.

#### 2. Analysis

Information from the inventory was analyzed in detail to understand how current conditions differ from the original plans and their alterations over time. Changes have affected every part of the parks, because landscapes are dynamic systems and are subject to human intervention. The watercourse has been altered, the vegetation has matured and become less diverse, the parkways have expanded at the expense of the parks, and walks now contend with bicycle and jogging traffic. The parks are used for more kinds of recreation than they were designed to support. All of these factors have modified the historic designs, and, in some cases, dramatically altered them. They pose the major question in park preservation planning - to what extent should contemporary uses and management be guided by historic values, and conversely, how much should the original plans and purposes be adjusted to respond to today's park users and managers?

#### 3. Alternatives

A synthesis was made of the park system's historic function and appearance, current physical condition, present demands, and the management and maintenance capabilities of the park's stewards in a series of alternate plans. First Proposals for each park were prepared as an initial set of ideas designed to generate a full discussion among all interested parties. These were presented at community meetings during the spring and summer of 1987. Community comments and further investigation led to a second round of community meetings in the spring of 1988, where refined Pre-Final Proposals were presented.



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### 4. Master Plan

The final Master Plan and its accompanying Management and Maintenance Plan prepared together, but published separately lists high priority projects that have preliminary consensus, for implementation. This document summarizes all of the planning processes leading to the system-wide and individual park recommendations for formal adoption by the City of Boston, the Town of Brookline, and endorsement by the Metropolitan District Commission and myriad private organizations and institutions. Further public review will guide the final design of projects before they are constructed.

### THE PHILOSOPHY OF THE MASTER PLAN

The Emerald Necklace master planning process considered four separate areas of information for research and analysis:

- history;
- physical conditions;
- contemporary uses; and
- existing management and maintenance.

These four perspectives became “lenses” through which to assess the parks, and brought into focus the principles most important to the planning approach for each part of the park system.

As noted above, each of the four parks has a different emphasis within the system. Jamaica Pond at the upper end is a natural feature incorporated into the parks, to be protected for its ecological and scenic qualities. The Muddy River section from Ward’s Pond downstream to the Back Bay Fens received the most intensive manipulation by Olmsted, and apart from the transportation-related changes at each end, still reveals much of Olmsted’s intent. This section offers the greatest opportunities for historic restoration. The Back Bay Fens lost its original saltwater marsh quality in 1910 when the Charles River was dammed, and has been adapted for active recreational use, making functional considerations a priority.

The individual features within the four parks suggested a range of preservation response. For example, the Allerton Street entrance to Leverett Pond in Olmsted Park was an original park entrance and the Olmsted plans and plant lists survive. It has a high potential for an accurate historical restoration to its original condition. In the Clemente Field area of the Fens, however, modern recreational facilities have been added and very little remains of the original design, so that current use rather than original design determines the planning approach.

The highlights of the four-perspective analysis and synthesis process are summarized below.

### THE HISTORICAL PERSPECTIVE

Olmsted wrote in 1880, *“The policy now suggested for Muddy River would look to the preservation of the present channel with certain modifications and improvements adapted to make it permanently attractive and wholesome...and an element of constantly increasing advantage to the neighborhood. The result, would be a chain of pleasant waters, including the four closely adjoining ponds*

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*... all of natural and in some degree picturesque outline, with banks wooded and easily to be furnished with verdure and foliage throughout."*

— Frederick Law Olmsted, "Suggestions for the Improvement of the Muddy River," Sixth Annual Report of the Board of Commissioners of the Department of Parks for the City of Boston for the Year 1880.



Figure 3: Olmsted Park - Bridge at Willow Pond in winter, circa 1920 (Boston Public Library Print Room).

The promenades were to be an unbroken "*pleasure route*" following the meanderings of the river and connecting the city with neighboring communities and the countryside. As in many of Olmsted's other parks, the circulation systems was designed with a separate path for pedestrians, the "*ride*" for equestrians, and the "*drive*" for carriages. But, unlike his typical country parks, the Emerald Necklace was linear, and its parkways, bridle paths and walks had to be compressed into a narrow corridor. They connected city and suburb, and although they were an integral part of the river park system, general, non-park traffic also needed to be accommodated. As the following quotation shows, Olmsted hoped that non-park traffic would not create a conflict.



Figure 4: Boston Park Commission Preliminary Study for a Parkway, 1876 (FLONHS).



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*"...The indirect course of the park-way following the river bank, would prevent its being much used for purposes of heavy transportation. It would thus, without offensive exclusiveness or special police regulation, be left free to be used as a pleasure route.*

*The Brookline Branch Railroad and the drive of the parkway, where they come nearest together, would be 200 feet apart, and there would be a double screen of foliage between them.*

*Taken in connection with the mall upon Commonwealth Avenue, the Public Garden and the Common, the parkway would complete a sure route from the heart of the city a distance of six miles into its suburbs. These older pleasure-grounds, while continuing to serve equally well all their present purposes would, by becoming part of an extended system, acquire increased importance and value."*

— Frederick Law Olmsted, "Suggestions for the Improvement of the Muddy River," Sixth Annual Report of the Board of Commissioners of the Department of Parks for the City of Boston for the Year 1880.

Olmsted described the visual impression he sought as follows:

*"Back Bay - Scenery of a winding, brackish creek, within wooded banks: gaining interest from the meandering course of the water; numerous points and coves softened in their outlines by thickets and with much delicate variety in tone and color through varied, and, in landscape art, novel, forms of perennial and herbaceous growths, the picturesque elements emphasized by a few necessary structures, strong but unobtrusive.*



Figure 5: Back Bay Fens - "The Fens, Southwesterly Side of Agassiz Bridge" (Boston Parks Dept. Report, 1901).

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*Muddy River (the Riverway) - The natural sequence upon slightly higher ground to the last in following up a fresh watercourse bordered by passages of rushy meadow and varied slopes from the adjoining upland; trees in groups diversified by thickets and open glades.*

*Upper Valley of Muddy River (Olmsted Park) - A chain of picturesque fresh-water ponds, alternating with attractive natural groves and meads, the uppermost of these being -*



Figure 6: Riverway - "Chapel and Bridge," circa 1898 (Cynthia Zaitzevsky Collection).



Figure 7: Olmsted Park - Ward's Pond, circa 1910 (BPL Print Room).



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*Jamaica Pond - A natural sheet of water, with quiet, graceful shores, rear banks of varied elevation and contour, for the most part, shaded by a fine natural forest-growth darkening the water's edge and favoring great beauty in reflections and flickering half-lights. At conspicuous points numerous well-grown pines, happily massed, and picturesquely disposed."*

— Frederick Law Olmsted, "Suggestions for the Improvement of the Muddy River," Sixth Annual Report of the Board of Commissioners of the Department of Parks for the City of Boston for the year 1880.



Figure 8: Jamaica Pond - View across pond, circa 1925 (Leon Abdalian, photographer, BPL Print Room).

The key words for each park conveyed the kind of landscape scenery intended. For the Back Bay Fens it was a picturesque salt stream winding between wooded banks, punctuated by a few handsome structures. The lower Muddy River (today's Riverway) was a fresh watercourse meandering through rushy meadow. The upper valley of the Muddy River (today's Olmsted Park) interspersed picturesque fresh-water ponds with groves and meadows. Jamaica Pond, a smooth sheet of water, was rendered deep and mysterious by the forest shade dappling its edges.

What has survived of this vision of a "chain of waters," a "pleasure route" with "distinctive landscapes"? As one looks at the Emerald Necklace today, it is easy to overlook the genius that went into designing a landscape more dramatically natural than nature itself. In 1879, when Olmsted was hired to prepare a design for the park system, the Back Bay Fens was a foul smelling tidal flat, the Muddy River was a marshy creek, Leverett Pond was a fraction of its current size and Jamaica Pond was ringed with private estates. Olmsted worked with other members of his firm and with contractors and park department personnel to transform these unconnected features into a linear park system joined by a continuous waterway. Subsequent events, in particular the construction of the Charles River dam in 1910.

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changed the salt water Fens into a fresh water estuary. Frederick Law Olmsted's stepson John Charles Olmsted responded by suggesting that the Riverway landscape be extended downstream. But changing social styles and priorities swayed later park managers and designers, and in the mid-1920s, Arthur Shurcliff oversaw the re-design of the Back Bay Fens, by introducing recreational facilities and formalizing the design to complement the new Museum of Fine Arts.

Yet many landscape architects, historians and preservationists consider the Emerald Necklace to be Olmsted's greatest masterpiece. Indeed, Olmsted, too, near the end of his life, wrote of the "*Boston work*" as being the most important in his career. In recognition, the entire Emerald Necklace is listed on the National Register of Historic Places, and all but the Arnold Arboretum have also been designated as Boston Landmarks. Historic values must be weighed in concert with the various competing considerations to achieve a balanced preservation effort. Therefore, in every case, the plan recommends an approach to design which reinforces and maintains the legacy of the park landscape.



Figure 9: Riverway - Island Bridge at Brookline Avenue (Pressley Associates, 1986).



Figure 10: Riverway - Restoration of the Island Bridges at Brookline was an Early Action Project completed under the DEM Olmsted Program (Pressley Associates, 1988).



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## THE EXISTING CONDITIONS PERSPECTIVE

In 1986, after a century of intensive use, most of the Emerald Necklace exhibited signs of natural decline, change, overuse, abuse and deferred maintenance. Much of this is to be expected - ponds and streams silt up, banks erode and trees mature and out-compete the fragile understory. Structural systems wear out, drainage systems malfunction, drives and walks deteriorate, and the original furnishings wear out and are replaced with whatever is available.

The park system's existing conditions were carefully documented from field surveys in 1986 and 1987, as part of the inventory stage of this study, and are described in this report. The surveys revealed a wide range of problems involving the park's waterways, vegetation, circulation system, structures and furnishings.

Many of the Emerald Necklace's most pressing problems, such as water pollution and stagnation, traffic and incompatible land uses, originate outside park boundaries and jeopardize its survival. A hundred years' failure to resolve periodic inflow of raw sewage through combined sanitary and storm sewer overflows (CSOs) has produced very serious conditions in the Back Bay Fens. Traffic incursions at Route 9, Park Drive (near the old Sears parking lot), and Charlesgate (the Bowker Interchange to Storrow Drive), have effectively destroyed the park system as a continuous open greenway. Land-use conflicts, such as at River Road at the upper end of the Riverway (a problem not addressed in 1891), and the more recent construction of tall buildings adjacent to the park system, such as Jamaica Towers, threaten the Emerald Necklace's serenity.

These regional problems are to be resolved through concerted inter-agency collaboration. Park values can play an important role in establishing public awareness of the issues and can provide the initiatives for action, just as public health concerns and an aroused citizenry gave the impetus for the original design and engineering of the Emerald Necklace parks.

Park rehabilitation projects such as those that will restore eroded riverbanks and hillsides, remove invasive vegetation, and rebuild and repair original walks and historic structures are, perhaps, the most important initiatives proposed by this preservation plan. But these improvements will have little lasting effect unless a concerted effort is made to resolve all past and current causes of park deterioration, and the master plan is fully embraced by the public and park owners as a tool to protect the parks from future negative impacts.

## THE CONTEMPORARY USES PERSPECTIVE

*"We want a ground to which people may easily go after their day's work is done, where they may stroll for an hour, seeing, hearing and feeling nothing of the bustle and jar of the streets... We want the greatest possible contrast with the streets and shops and rooms of the town."*

— Frederick Law Olmsted, Public Parks and the Enlargement of Towns, 1870.

The basic premise of the Emerald Necklace as a refuge for all from the city is as valid today as it was a hundred years ago.

When Olmsted wrote the above passage regarding Brooklyn's Prospect Park, he described "the driving room, riding room, walking room, sitting room, skating, sailing and playing room."

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One of the most remarkable achievements of his plans is their provision for all these activities, separating or combining them in ways that accommodate many people without losing the park's tranquil quality.

Contemporary uses are not altogether different from the uses of Olmsted's day. Information about the community's use and perception of the Emerald Necklace was gathered as part of extensive public participation in the planning process. This was augmented by a User Survey, with observations of activities within the parks, and telephone interviews with a representative sample of households near the four parks. The survey showed a high level of awareness of the "Emerald Necklace" name and a generally positive image of the parks. The results illustrated the prevalence of passive and unstructured recreational uses such as walking, sitting/relaxing, sunning, feeding ducks and picnicking; they also documented active uses such as jogging, cycling, and playing and watching sports.



Figure 11: Jamaica Pond - A variety of user activities (Pressley Associates, 1988).

In the User Survey and at community meetings, there was a strong interest in reconnecting the parks and reinforcing them as a continuous system. Although access to the parks was seen to need improvement, the public did not feel that parking encroachments into parkland were acceptable. There was an overwhelming mandate to reclaim the Sears parking lot at the lower end of the Riverway and to begin the long-term re-planning of the Route 9 and Bowker interchanges that will restore continuous pedestrian access throughout the system.

No conflict need exist between most active and passive types of recreation. In the past, exertive activities did not detract from the overall landscape character of a naturalistic country park. People were meant to play actively in meadow and woodland settings. Today's bird watchers can have wooded areas with fruit-bearing trees and shrubs, and ball players can play on fields which also "read" as meadows.

The User Survey and community meetings confirmed public interest in educational programs. Environmental education was one specific suggestion, and action is already being taken: educational programming, re-established by the Boston Parks & Recreation Department in the summer of 1987, brought back such activities as fishing lessons, concerts and sailing to Jamaica Pond, and an expanded interpretive



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program which included Park Ranger-led tours of the entire Emerald Necklace. The Boston Parks Partners also present educational programs and other events in the parks. Serving a very broad constituency was and is the parks' greatest purpose.

### THE MANAGEMENT AND MAINTENANCE PERSPECTIVE

*"It will not, I trust, be thought beyond my duty if I point out a circumstance which appears to me to be operating as yet not a little to the disadvantage of Boston.*

*It is that the Boston of today is largely made up of what were formerly a number of distinct local communities, each habituated to regard its public affairs from an independent point of view, and sometimes in a spirit of competition and jealousy towards the others."*

— Frederick Law Olmsted, Seventh Annual Report to the Commissioners of the Department of Parks for the City of Boston for the Year 1881.

Olmsted foresaw the problems inherent in divided management. The subdivision of the Emerald Necklace Parks and parkways among Boston, Brookline and the Metropolitan District Commission has resulted in incongruent methods of management and maintenance. For example, the Town of Brookline maintains its side of the Riverway and Olmsted Park with turf rather than with the historically appropriate groundcover maintained on the Boston side.

Maintenance and security go together as major concerns of park users. Past neglect and the lack of educational outreach has contributed to misuse and abuse, especially in less heavily used areas of the parks. The institution of regular maintenance can successfully reclaim many areas. Positive action has already been taken. DEM has funded Early Action projects and a dedicated Capital Projects Crew to initiate vegetative restoration; Boston Parks and Recreation has established a separate "Olmsted District" Maintenance Unit to centralize responsibility for maintaining the Emerald Necklace. Park Ranger and Park Partners Programs, established in Boston in the mid-1980's, created a "presence" that deters undesirable activities.



Figure 12: Park Rangers offer assistance and information (Terri Davis, photographer, circa 1994).

### **Treatment Standards**

The Secretary of the Interior is responsible for establishing professional standards in providing advice on the preservation and protection of all cultural resources listed or eligible for listing on the National Register of Historical Resources. To facilitate this mandate, the Secretary of the Interior Standards for Historic Preservation Project were developed in 1976. In 1992, the Standards were modified to address historic landscape preservation projects. This revised set of treatment standards are intended to assist in making sound preservation decisions. The four treatments are listed below. All projects carried out in the Emerald Necklace Park System must comply with the Secretary's Standards.

**Preservation:** the act or process of applying measures necessary to sustain the existing form, integrity, and material of a historic property. Includes initial stabilization work, where necessary, as well as on ongoing preservation maintenance and repair of historic materials and features.

**Rehabilitation:** the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.

**Restoration:** the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by removing features from other periods in its history and reconstructing missing features from the restoration period.

Still, increased funding is required to bring staffing to ideal levels; training is needed to impart to new employees the requisite skill and sensitivity for managing and maintaining a naturalistic landscape. Through subdividing the landscape into "types" or zones, maintenance operations can be individualized: differential cuttings for various turf areas can be defined; appropriate maintenance for different shrub species can be established; an attack can be mounted on invasive species for control and eventual eradication; tree surgery to stabilize the remaining specimens can be initiated; and regeneration of the woodlands, principally by natural means complemented with selective new planting, can be programmed over time.

In addition, policy and administrative issues, such as the creation of guidelines for special events, park regulations and standards, and permitting procedures are needed. They should be addressed cooperatively among jurisdictions.

New approaches to maintenance have to be developed to ensure that available resources between the various agencies and groups are used as effectively as possible. Part of this delineation of responsibility may involve the adjustment of MDC, Boston and Brookline park jurisdictions.

### **PRINCIPLES OF PRESERVATION ACTION**

The process of viewing the parks from four perspectives - history, existing conditions, contemporary uses, and management and maintenance - allowed the relative importance of each to be evaluated on an area-by-area basis. In balancing priorities, the plan sought for correlations and identified conflicts. Correlations were found when historic, conditions, use and management factors were all in agreement. For example, there was little dispute that Agassiz Bridge in the Fens, or the two original bridges leading to the island in the Riverway, should have a high priority for restoration.

More often, the factors represented different shades of opinion or were in disagreement. The Pinebank House at Jamaica Pond rated very high from a historical viewpoint, yet it is in seriously deteriorated condition, currently unused, and a management headache. The scale was finally tipped in favor of restoring the house and its terraces due to its historical value as a remnant of the last remaining estate, provided that a 24-hour use program could be developed and that Boston would assume the maintenance obligation.

In arriving at a balanced view, the plan identified three distinct treatments for restoration: historical, sympathetic, and adaptive.

#### **1. Historical Restoration**

Often called "restoration" (such as in a work of art or a building), this involves, in the park landscape, the attempt to create as accurately as possible the original design intent, requiring close adherence to period style, materials, vegetation and construction.

Opportunities in the Emerald Necklace for an accurate historical restoration exist when:

- Clear documentation of the design and intent exists;
- The area is limited in size and special in nature;
- The restoration supports a contemporary park use;



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### Treatment Standards cont.

**Reconstruction:** the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.

- It can be achieved at a reasonable cost; and,
- It provides for a significant public benefit.

Some examples of elements that are candidates for historical restoration are:

- Most of the original vehicular and pedestrian bridges, such as the Agassiz, Longwood, Fen, Chapel Street, Riverway island area and the Olmsted Park footbridges;
- Original shelters;
- The exteriors of Pinebank and the Boathouse/Bandstand at Jamaica Pond:



Figure 13: Riverway - Restoration of the Bridle Path Bridge was completed in 1999 (Pressley Associates, 1999).



Figure 14: Back Bay Fens - Former island in the Muddy River near Avenue Louis Pasteur, circa 1900 (FLONHS).

## 2. Sympathetic Restoration

This is the action of working “in the spirit of the original design.” It has been called “interpretive” or “impressionistic.” Sympathetic restoration will re-create the scenic effects of the original, and may use modern materials, plants and construction methods.

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Sympathetic Restoration is appropriate and should be considered where:

- When clear documentation does not exist or has not been found, for instance when plans, plant lists, sections, details, and so on, are not available;
- Where plans and details may exist, but their strict replication would be much more costly and less suited to contemporary needs;
- An approximate restoration “in the spirit of the original” would achieve the major preservation objectives.

Examples where this approach is suggested are:

- Much of the Jamaica Pond shoreline;
- Both river banks and the parkway edges of Olmsted Park and the Riverway, and some other stretches;
- The Sears parking lot and new watercourse downstream of the Sears lot;
- The Museum of Fine Arts lagoon area in the Fens.



Figure 15: Riverway - Former Sears and Roebuck parking lot reclaimed as parkland (Alex S. MacLean, photographer, Landslides Inc., 1998).

A detailed example of this approach is:

- **Parkway vistas along Olmsted Park and the Riverway**

On the Boston side of the Olmsted Park and the Riverway the parkway was meant to offer glimpses into the parks at measured intervals. In Olmsted's day, the vistas were scaled for the speed and height of carriages. Today's automobiles are lower and faster. Many of the original openings would not be effective today. But, the user study indicates that the views people experience from their automobiles are among the primary reasons people use the parkways — pleasurable views of trees and greenery during an otherwise stressful commute. Most vistas give drivers a general park view. But, at selected stopping places there is a special view (an opening on the inbound Jamaica way at Willow Pond Road would reveal Daisy Field and the upper end of Leverett Pond). At the other end in the opposite direction, the Huntington Avenue (Route 9) overpass could offer a long southward view down the pond and beyond. Since few historic plans for



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the Boston side have been found, a sympathetic restoration approach was devised, stylistically consistent with the Olmsted plans, but forming broader openings and longer “pictures” scaled to an automobile’s height and cruising speed. Lower height and longer openings are also important to emphasize security and safety for park users.

### 3. Adaptive Restoration

The historically sensitive renovation of a building or a landscape that is radically changed from the original design, intent, use or appearance to serve uses that are markedly different and address conditions that are altogether dissimilar can be described as adaptive restoration. Here, there is little original design to restore and/or interpret; but there is a landscape character to be maintained. Adaptive landscapes can accommodate new uses while preserving the “look” and “feel” of the original scenic composition.

Adaptive Restoration is sometimes the only feasible option, and should be considered where:

- Conditions are so changed from the original that both Historical or Sympathetic Restoration are impractical;
- Contemporary uses are dramatically different, rendering the original design unsuitable or inappropriate;
- The adaptation can be done in ways that are not out of character or incongruous with the historic image and intent, i.e., it can be done in historically sensitive ways.

Places where adaptive restoration would be useful are:

- Much of the middle and lower Fens;
- The interior of the Clemente Field House, and athletic field, track and bleachers in the middle Fens;
- The sports facilities at Daisy Field and the Natural History Pools area (MDC Rink) in Olmsted Park;
- The Bowker and Route 9 Interchanges.



Figure 16: Back Bay Fens - Stonefaced bridges at Museum of Fine Arts in the spirit of the Riverway’s Chapel Street Bridge (Pressley Associates, 1997).

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All three levels of preservation action should be considered during the restoration of the Emerald Necklace. Hence, projects can be developed along a range of appropriate solutions.

## GENERAL GOALS OF THE PLAN

Fulfillment of the general goals below is essential to the successful realization of the Massachusetts Olmsted Program.

### **Nature in the City**

Olmsted created parks comprised of large expanses of woodland, meadow and water in which wildlife could thrive and be protected from intense human intervention. He designed the parks to contrast as much as possible with the urban surroundings. Today, many areas have become indistinct from the city. Each distinctive landscape type, and the water bodies and courses, are ecological niches -- valuable parts of a total environment. Improved ecological values must be factored into capital and maintenance activities.

### **A Linked Park System**

Although each park is unique, all are part of a linked system, following a watercourse and joined by parkways. The continuity of the system has been interrupted by filling and piping parts of the river, and by insensitive parkway improvements. Reinforcing the continuous watercourse and reconnecting circulation through the parks and between the parks is very desirable.

### **Historic Design Sensitivity**

The Emerald Necklace illustrates Olmsted's design ideas at the height of his professional career. Master Plan projects shall be faithful to these ideas while recognizing current needs and resources.

### **Use of the Parks**

Public parks are democratic grounds. A broad spectrum of local and regional uses compatible with the parks' historic nature is to be accommodated within the naturalistic landscape. Uses that are incompatible or inconsistent with the parks' historic character are to be phased out. Where parkland has been taken over for a single use by a few users, at the expense of the majority, a balance will be recovered. Privatization of public land will be resisted. Diversification and multiple uses will be encouraged. Special needs of park users, such as the elderly and disabled, will be accommodated.

### **Safety and Security**

Both the perception and the actuality of greater security are important to all park users. The following program is recommended:

- Park Rangers on foot and horseback who provide a friendly and informative uniformed presence, and
- Boston and Brookline Police patrols.



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Design implications of security issues, such as access, circulation, lighting, and planting must also be addressed.

### Quality Maintenance

Ongoing maintenance of the Master Plan's completed projects is an essential part of the Olmsted Program. Maintenance depends partly on funding, and partly on staffing and training for the specialized skills and sensitivity required to manage a picturesque landscape in the "natural" style.

### Public Education

Greater public understanding of the historic and environmental value of the Emerald Necklace parks is critical to their future. A complete program of information, exhibitions, tours, public relations and educational programs is to be developed as the Master Plan improvements are carried out.

### Unified Management

The Emerald Necklace should, to the greatest extent possible, be managed as a unified system, rather than as separate parks or as opposite sides of a river. Cost and equipment sharing and other cooperative measures should be considered when ever possible.



Figure 17: Riverway - Vegetation along the Muddy River looking upstream from Brookline Avenue, 1915 (FLONHS).

# Introduction

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## Initial Improvements and Priorities

As part of a phased implementation program, a sequence of funding cycles for capital improvements and for strengthening park management is to be established. Initial projects must address a broad range of improvements, particularly those in which dereliction impairs public security and enjoyment of the parks. Other projects will address historic and authentic features and structures which would be lost without prompt intervention. Non-historic and unauthentic features and structures that are functional will remain for their useful life or until their function is fulfilled elsewhere. To the greatest extent possible, such features and structures will be phased out eventually. Phasing must consider available funding and changes in needs.

## Use of the Parkways

The parkways were conceived as pleasure drives -- an integral part of the park system design. They afforded leisurely, scenic travel through the city that differed from travel on commercial streets. Current use of the parkways as primary commuter routes carrying high traffic volumes denies this original intent. The Master Plan should seek to ameliorate the effects of these volumes by redesigning key intersections to return parkland to the parks, by considering pedestrian and bicycle access that has been made hazardous by vehicular traffic, by reconsidering scenic views into the parks from the parkways, by selectively screening the parks with buffer vegetation, and by urging roadway improvements that will reduce parkway traffic volumes and speeds.

## The Big Picture

The rejuvenation of a 100-year-old park system must address issues of water quality, regional traffic and land use beyond the current scope of the Olmsted Program. The resolution of these issues and the implementation of the plan will require the commitment of all municipal and state agencies, groups and individuals involved. To the fullest extent possible, the Master Plan must address the needs and concerns of all these parties.



BACKGROUND FOR THE PLAN



*Background for the Plan*



### OLMSTED THE MAN

*by Charles Beveridge*



Figure 18: Frederick Law Olmsted, circa 1890 (FLONHS).

Frederick Law Olmsted, Sr. dominated the landscape design profession in the United States for nearly forty years in the late 19th century, founded a firm- after 1883-1898 based in Brookline, Massachusetts, ranked first in number of commissions and national influence until the time of the Second World War. Olmsted's park designs included Central Park, Morningside and Riverside parks in New York, Prospect Park in Brooklyn, Mount Royal in Montreal, Belle Isle in Detroit, and the South Park of Chicago. He and his partners planned the park systems of Buffalo, Rochester, Louisville, and Boston.

At other times during his career, Olmsted was the first chairman of the first commission in charge of Yosemite National Park, and he led the campaign for a scenic reservation at Niagara, for which he and his former partner Calvert Vaux drew up the plan. He planned the U.S. Capitol grounds and West Front Terrace in Washington and was site planner for the great World's Columbian Exposition of 1893 in Chicago. He planned numerous campuses of educational institutions, including Stanford University, the Lawrenceville School, and Washington University in St. Louis. Olmsted also designed many residential suburbs and subdivisions, including a dozen in Boston/Brookline area.

In the early twentieth century, under the leadership of his stepson, John C. Olmsted, and his son, Frederick Law Olmsted Jr., Olmsted's firm greatly expanded its work, planning large park systems for Buffalo, Baltimore, Seattle, and the Chicago South Park Commission. Despite the wide geographical range of the firm and the number of projects carried out by Olmsted and his sons, a total of more than three thousand, the public parks of metropolitan Boston constituted the firm's single largest and most important professional undertaking. For Olmsted, the Boston Park system, along with the scenic reservations of the Metropolitan District Commission, represented a final crucial opportunity to create a varied and unified park system effectively linked by parkways and boulevards.



Plan 3: Sketch Map of Buffalo showing Olmsted's park system plan for the city circa 1870's (Dumbarton Oaks).

The metropolis of New York, where he lived and planned for nearly twenty years, had seemed to offer that opportunity. But while Olmsted did create major park designs there, in the form of five parks and a few smaller playgrounds and squares, he was not able to oversee the planning of a connecting system of parkways and avenues that would make an uninterrupted circuit from Coney Island to Upper Manhattan, as he had proposed. Moreover, park-making in New York was episodic and far from comprehensive in scope. This meant that Olmsted never had the opportunity to design the whole range of recreational facilities that he felt the residents needed. This limited his role to that of designer of large parks and also occurred in the cities of Montreal, Detroit, and Chicago.

### A Systematic Approach

Before Olmsted began his work in Boston/Brookline, the only city to employ him to plan a comprehensive park system was Buffalo. There, in 1868, in the north section of the city, Olmsted and his partner Calvert Vaux began to create their first set of carefully differentiated yet fully connected public recreation grounds.

The 450-acre Delaware Park provided the setting for one of Olmsted's great pastoral landscapes of rolling meadow and scattered groves of trees, and also contained a lake for other scenic effects and boating.

Southeast and southwest from Delaware Park ran classic examples of the "parkway" that Olmsted developed, a series of ways for different kinds of traffic, separated by medians with grass and trees, and including a smooth roadway for the rapid movement of carriages from which slow-moving carts and wagons were excluded. In such parkways, Olmsted utilized the newest engineering technology to facilitate rapid and pleasant travel by private vehicles through the city from park to park. One parkway's terminus was the public recreation ground, "*The Parade*", which included a military drilling field, refectory, and a large complex of children's play facilities. The other parkway carried travellers towards the Lake Erie shore and "*The Front*," a water gate to the city at the confluence of the Erie Canal and the lake, with provision for sports, music, and ceremonial gatherings.

Until he began work in Boston, the north parks of Buffalo were the extent of Olmsted's park-system design experience. He would go on in the late 1880s to add a southern system in Buffalo, and to begin multi-element systems in Louisville, Rochester, and Milwaukee. But by that time his predominant concern was the system of parks, recreation grounds, parkways, and scenic reservations that his firm was evolving in the Boston area.

### An Emphasis on Water

By the 1880s, Olmsted had attempted other kinds of planning, with limited success, and the Boston/Brookline park system offered a welcome opportunity to realize them. Since early in his career he had sought to have communities preserve the courses of streams for recreational purposes rather than to neglect them, and then later bury them in sunken culverts and build over them. As early as 1866, Olmsted had urged that the University of California at Berkeley reserve the canyon of Strawberry Creek as park land both within the campus and in hills above, an arrangement still in force today. In Albany, New York, in 1868, he and Vaux proposed a park system based on reservation of watercourses running through the city to the Hudson; while in his 1870 regional plan for Staten Island, Olmsted proposed to create a series of recreation grounds along floodplains of streams, providing for



both recreational needs and flood control. Likewise, in 1870 he drafted a comprehensive proposal to preserve the course of the Park River within his native city of Hartford, Connecticut. Neither of the last two proposals were adopted.

During his professional career, Olmsted often tried to convince cities to utilize their waterfronts for recreation as well as commerce. In the 1860s he succeeded in creating Ocean Parkway in Brooklyn, linking Prospect Park with Coney Island. The mile of lake frontage of Jackson Park in Chicago, with proposed boating lagoons inland from the sand dunes, gave him the hope of creating the "*greatest water-park in the world*." Seaside Park on the Sound in Bridgeport, Connecticut (1868), and the Front in Buffalo complete the list of waterside parks created by Olmsted prior to 1876. In later years, he failed to convince the city of Buffalo to create a large water-park on its south side, connected to the city by an interior canal and levee for carriages and horsecars, while the development of Jackson Park in Chicago and Lake Park in Milwaukee began only in the last year or two of his practice.

The episodic nature, and frequent partial or minimal realization of his ideas, made the opportunity of planning the Boston park system all the more important to Olmsted. After years of frustration in New York, culminating with his being fired



Figure 19: Buffalo Park System - C. Vaux, Gala Water Bridge, 1874 (Buffalo and Erie County Historical Society).

from the Parks Department due to Tammany Hall's resurgence under "Honest John" Kelly, Olmsted looked forward to working with the sympathetic Boston Park Board, a group that suffered little of the political intrigue and patronage politics that suffused the New York parks scene.

### Olmsted's Work in Boston and Brookline

During the twenty years he was involved with Boston's and Brookline's parks, Olmsted was able to create a varied yet unified system with the whole range of elements that he felt a proper recreation system should contain. In Franklin Park he created one of his four great parks, containing both an open landscape of rolling

hills and scattered trees and the enclosed and rocky “*passages of scenery*” of the Wilderness. There, in the Playstead and Greeting he showed how completely active sports and festive activities could be screened from the quiet expanses of the “*country park*,” while in the structures he designed for the park, particularly the Playstead Overlook shelter and the picnic structures on Schoolmaster Hill, he demonstrated how fully architecture could be, and should be, hidden in the landscape of a great park devoted to the experience of expanses of scenery. In the Arnold Arboretum, Olmsted helped to create a major institution for the scientific display of plant materials (something he sought to do in every region of the country) to help identify hardy plant materials and to discover the potential richness of palette that region could use in landscape design.

At Marine Park, Copp’s Hill and Wood Island Park, he began the creation of parks that utilized Boston Harbor as a recreational resource, while in his eloquent proposal of 1885 concerning the reforestation of the islands of Boston Bay he recognized the potential for recreation and scenery of the whole body of water between Nahant and Nantasket.

Olmsted also wished to provide a variety of athletic facilities for the different parts of the city, and began the process with three sites that combined excellent scenic qualities with provision for active sports. These were Charlestown Heights, Wood Island Park with its field house and playing fields, and, most unique, Charlesbank with its gymnastic facilities for men, women, and children, the first comprehensive provision of such recreational resources in the nation.



Figure 20: Charlesbank - Exercise class at the men’s gymnasium, circa 1899 (A History and Description of Boston’s Metropolitan Parks).

In later years of his practice, Olmsted, with his protege and partner Charles Eliot, turned his attention to reserving outlying areas of scenic value. Some of these, like the valleys of the Charles and Mystic rivers, carried inland the concern for access to the water that Olmsted had displayed in his proposals for Boston Harbor; others preserved heights of land, such as the Blue Hills, and rugged areas of rocky outcroppings and ponds, such as Lynn Fells and Lynn Woods.

Some of the elements of Olmsted’s park system for Boston have disappeared, such as Wood Island Park and Charlesbank. Others, like the reforestation of the harbor and the completion of the Dorchesterway connecting Franklin and Marine parks along Columbia Road remain to be begun, and may find a champion in current planning. A number of others, most notably Marine Park, are now under the jurisdiction of the MDC and may be restored and revived through programs of that agency.



### The Parks in this Master Plan

The parks included in this Master Plan, Jamaica Pond, Olmsted Park, Riverway, and the Back Bay Fens have a special significance for the City of Boston and Town of Brookline, as well as in Olmsted's career. They are symbolically shared, for much of their length, by the city to whose parks Olmsted devoted so much of his later career, and by the town where he found the domestic and suburban residential amenities that he never found in New York.



Figure 21: Back Bay Fens - Muddybrook at the Hotel Somerset, circa 1910 (BPL Print Room).



Figure 22: Back Bay Fens - The Fenway, 1897 (Paul Franklin Johnson, photographer, BPL Print Room).

The water bodies from Jamaica Pond to the Charles are the most extensive and ambitious “*passage of scenery*” that Olmsted attempted in any of his public parks. Their parks contain the most complex system of ways he ever designed, combining major landscape elements with efficiency and amenity. At the same time, the Back Bay Fens and the “*Muddy River Sanitary Improvement*” (as he called what is now referred to as the Riverway and Olmsted Park) was the most ambitious undertaking in sanitary engineering that Olmsted saw realized in any of the cities in which he worked.



Figure 23: Riverway - Boston Park System Muddy River Improvement. View upstream towards the Longwood Avenue Bridge in 1920, twenty-eight years after construction (American Landscape Architecture, 1924).

Over the years, important links in the chain have been obliterated, most notably by the intrusion of the Sears parking lot and the Route 9 Overpass. Other parts have suffered from neglect and lack of regular maintenance. The damming of the Charles River and the resultant separation of the Fens from its source of tidal salt water flow, as well as later filling projects, have introduced different scenery, scale, and activities from those for which the Fens were originally designed.

Today, a century after park construction began, it is time for Boston and Brookline to address key planning questions. How can park managers remove certain features, integrate others into the system, and re-establish connecting links that have been lost? The proposals of the present Master Plan offer answers, showing how the two municipalities can recapture a nationally significant resource that has been significantly diminished with the passage of time. Moreover, the document's carefully developed restoration and maintenance initiatives will ensure the preservation of Boston and Brookline's Olmsted-designed Emerald Necklace through the next century of its life.



### THE "EMERALD NECKLACE": AN HISTORIC PERSPECTIVE

by Cynthia Zaitzevsky

In 1893 Frederick Law Olmsted wrote to his partners, John Charles Olmsted and Charles Eliot: *"Nothing else compares in importance to us with the Boston work...I would have you decline any business that would stand in the way of doing the best for Boston all the time."*

Clearly Olmsted, then near the end of his career, considered the Boston parks an essential part of his legacy to the nation. Equally evident is the impact of Olmsted efforts on the City of Boston. For a community with such historically significant but relatively small spaces as the Common, it became in a few decades the possessor of one of the greatest park systems in the country.

#### Topographical Development of Boston

It is hardly surprising that Boston, compared with New York, Brooklyn, Buffalo, and Chicago, was rather slow to establish a large city park. Confined since the Colonial period to a narrow peninsula, the city was unable to encompass a "central" park of several hundred acres. Between 1868 and 1873, however, Boston was enlarged many times over by the annexations of several adjacent cities and towns: Roxbury, Dorchester, West Roxbury, Charlestown and Brighton. This dramatic expansion, which occurred primarily to the southwest of the older part of the city, made possible Olmsted's Boston park system. It also necessitated his distinctive design solution; a "necklace" of parks fanning out from the central city, with the large 500-acre, pastoral park located in the still rural but relatively remote section of West Roxbury. At first called West Roxbury Park, its name was changed to Franklin Park when the prospect of funds from a Benjamin Franklin family trust arose in 1885. This disposition of parks was in sharp contrast even to such consciously designed "systems" as those in Buffalo and Brooklyn, where more spacious municipal boundaries allowed a large park in the center of the city, connected by parkways to smaller satellite spaces in outlying areas.

#### Social and Political Context

Like these other cities, Boston had felt the brunt of a greatly increased population, especially since it was one of the cities most affected by the first wave of Irish immigration in the 1840s and 1850s. Boston itself was not a major industrial center like Lowell and Lawrence, the two biggest textile cities in Massachusetts, or like Lynn, with its concentration of shoe factories. Nevertheless, it had many smaller industrial complexes, enjoying much of the new immigrant labor.

Immigration also affected established residential patterns. As the new arrivals crowded into existing housing, elegant new neighborhoods were built on fill in the South End and Back Bay. Increasingly, Boston also became a transportation hub, as proliferating railroad lines crossed the Charles River and the flats of the Back Bay to imposing new railroad terminals.

A geometrically growing population put a great burden on Boston's limited physical resources. By the 1860s, numerous cholera epidemics and outbreaks of malaria had caused great concern for public health and eventually forced the city to build a new sewer system.

### The Park Movement

Boston's park movement began in 1859 and at first was largely a matter of civic pride. In that year the city held a competition to redesign the Public Garden, then a rather unkempt 25-acre parcel at the foot of the Common near the new residential Back Bay. The competition, which was won by local architect George Meacham, was not entered by Olmsted and his then partner Calvert Vaux. At the time, Boston citizens bemoaned the fact that they had no larger piece of land available to meet the challenge of New York's Central Park, Philadelphia's Fairmount Park, or Baltimore's Druid Hill.



Plan 4: Plan for the Boston Public Garden by George F. Meacham, 1859 (Ballou's Pictorial Drawing Room Companion).

Ten years later, the city had begun annexations, and public health and social issues had become cause for even more intense concern. In 1869, the first of several rounds of hearings was held, and public space schemes of almost utopian scale were proposed. A bill was passed by the Massachusetts legislature that would have allowed for parks in the entire metropolitan area, but this bill failed by a narrow margin in a public referendum. In 1875, after another series of hearings, a new bill was passed and this time it received public approval. The new bill established a municipal rather than a metropolitan commission, although communities directly adjacent were empowered to appoint commissions, take land and lay out parks in cooperation with Boston. Of the many cities and towns that might have taken advantage of this provision, Brookline was the only one to do so.

The first three Boston Park Commissioners were Charles H. Dalton, William Gray, Jr., and T. Jefferson Coolidge. Of the three, Dalton had the longest tenure and was responsible for guiding the commission in its first decade. Further, he had previous connections with Olmsted, as he was chairman of the building committee of McLean Hospital in Belmont in the early 1870s, when Olmsted was designing the grounds. Dalton had also been active in the United States Sanitary Commission during the Civil War and must have known Olmsted, who was then Executive Director.



In 1875 and 1876, the new commissioners held still more hearings and visited every site in the city that had been proposed for a park. It soon became apparent to them that their main park could not be a "central" park and that West Roxbury was the most promising site. During all of the hearings, there had been much agitation for a "water" park on the Charles River and another one in part of the Back Bay. All of these were part of the commissioners' original park system scheme (1876). In between the "water" parks and the West Roxbury park, they strongly urged the inclusion of Jamaica Pond and a park on Parker (now Mission) Hill in Roxbury. Olmsted was not yet retained in an official capacity, although he drove through the sites with Dalton on two occasions. Dalton was the author of the commission's 1876 report, and he acknowledged Olmsted's assistance on "the general scheme, rather than upon the minor details."

In spite of great public support for the commissioners' recommendations, it was not until 1877 that the city appropriated funds -- and then only \$450,000. But this was enough for the board to begin purchasing land in the Back Bay. Rather than hire Olmsted or anyone else to lay out the park, they followed the customary practice of the day and held a competition. Olmsted did not enter the competition and, when asked by the commissioners, refused to help judge the entries, saying that he did not wish to place himself in a "leaky boat" with them. Dalton, Gray, and Coolidge were dismayed by the entries, which were also ridiculed in the press. (Unfortunately, none of these has survived.) They awarded Herman Grundel, a local florist, the \$500 premium but did not want to use his plan. Instead, they went back to Olmsted and asked for his advice.

### The Back Bay Fens

Olmsted soon realized that an ornamental treatment of this site would be completely inappropriate, and he persuaded the Commissioners to change the name from Back Bay "Park" to Back Bay Fens, more descriptive of his final design solution. He and John Charles Olmsted worked out some alternate preliminary plans, one of which was accepted by the Commissioners, but Olmsted himself had misgivings and did not want to proceed with detailed design without first consulting the City Engineer and the Superintendent of Sewers, neither of whom had been brought into the Park Commissioners' deliberations before.



Plan 5: Back Bay Fens - 1887 Map. Lithograph (FLONHS).

Because of the burgeoning populations of Boston, newly annexed Roxbury, and neighboring Brookline, the site of the Back Bay Fens had become an outlet for great quantities of sewage. It also had to store the flood waters of Stony Brook (by then wholly enclosed in a culvert) and Muddy River, and its water had to be regulated by gate houses. At that time the Charles River was still tidal, and the flow into the river had to be controlled as well.

In his discussions with Olmsted, Joseph P. Davis, the City Engineer, at first maintained that a utilitarian water basin with high retaining walls and little planting was the only possible solution. Eventually, Olmsted and Davis were able to reach a solution that fulfilled all of the engineering requirements but that also preserved the space as a landscaped oasis at the far end of the built up part of the Back Bay.

What Olmsted did was to recreate the salt marsh that had occupied the Back Bay in the Colonial period but that had become polluted: truly a remarkable landscape concept in an era when exotic plants bedded out in ornamental patterns were the norm. It was not a strictly “natural” salt marsh, of course, since he provided drives and walks on both the Fenway and Audubon Road sides and also the first link in the bridle path that eventually connected all of the parks. In Olmsted’s adopted design (1879), most of the site was taken up by two large basins (the north and south) with marsh grasses that could be flooded with salt water when necessary. Around the edges were carefully planned groupings of salt-resistant shrubs, and near the drives were the park’s only ornamental trees, both native and exotic varieties, chosen by William L. Fischer, Olmsted’s Assistant Landscape Gardener for the Boston parks.



Figure 24: Back Bay Fens - View from Boylston Street Bridge in 1895 (Boston Parks Dept. Report, 1896).

The salt marsh grasses and many of the shrubs could not be obtained from nurseries and had to be grown from seed or transplanted. Beacon Entrance, a narrow strip between the Charles River and the northern basin, was the site of the first planting. Most of the plants did not survive, but a second planting was successful.





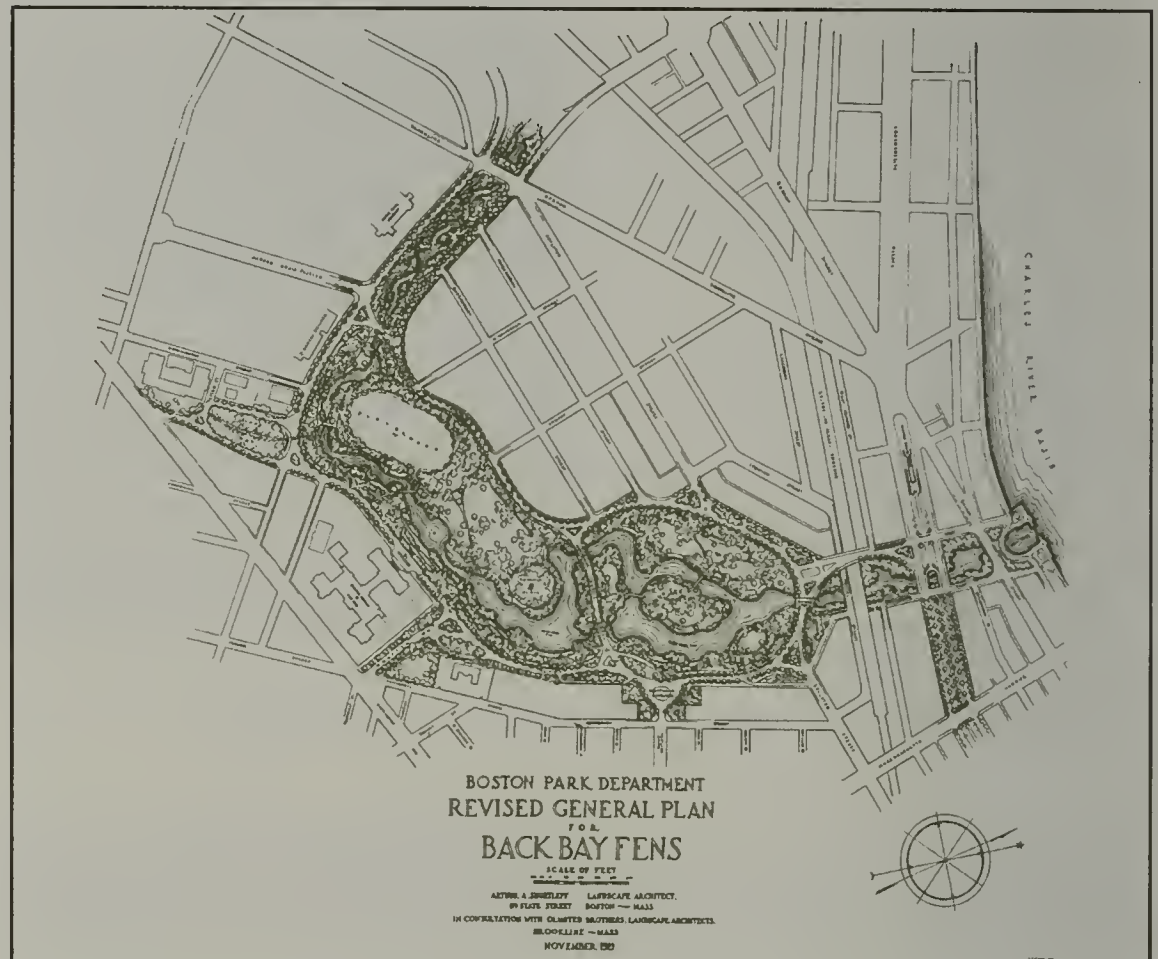
Figure 25: Back Bay Fens - Beach north of Agassiz Road on shore walk (Boston Parks Dept. Report, 1893).



Figure 26: Back Bay Fens - A cove in 1894 (City of Boston, Doc. No. 25-1895).

Several bridges and a gate house were necessary at the Back Bay Fens, and Olmsted persuaded the commissioners to retain Henry Hobson Richardson to collaborate with him on the design of the Boylston Street Bridge and the Stony Brook Gate House, both of which remain. After Richardson's death in 1886, John Charles Olmsted designed the Agassiz Bridge and Fen Bridge. The former in particular is an important scenic element in the park.

In 1910 the Charles River was dammed, completely changing the ecology of the Fens from salt water to fresh. Several other changes occurred in the first decades of the 20th century, including the redesign of the southern basin near the Museum of Fine Arts by Arthur A. Shurtleff. Nevertheless, much of Olmsted's design is still evident, and the Fens is today one of the most heavily used parks in the Boston system.



Plan 6: Back Bay Fens - Arthur A. Shurtleff Plan, 1921. Lithograph (BPRD).

### The Riverway and Olmsted Park

The inclusion of what was originally called the Muddy River Improvement, on the boundary between Boston and Brookline, was a logical outgrowth of the Back Bay Fens design. This site had not been part of the commissioners' 1876 plan but was added partly because of Brookline residents' concern about the increasing pollution of the Muddy River. Their concern was shared by Olmsted, and the Muddy River was included as a more logical link than Parker Hill between Jamaica Pond and the Back Bay Fens. (In the 1890s studies were made by the firm for an additional park on Parker Hill, but these were never implemented.)

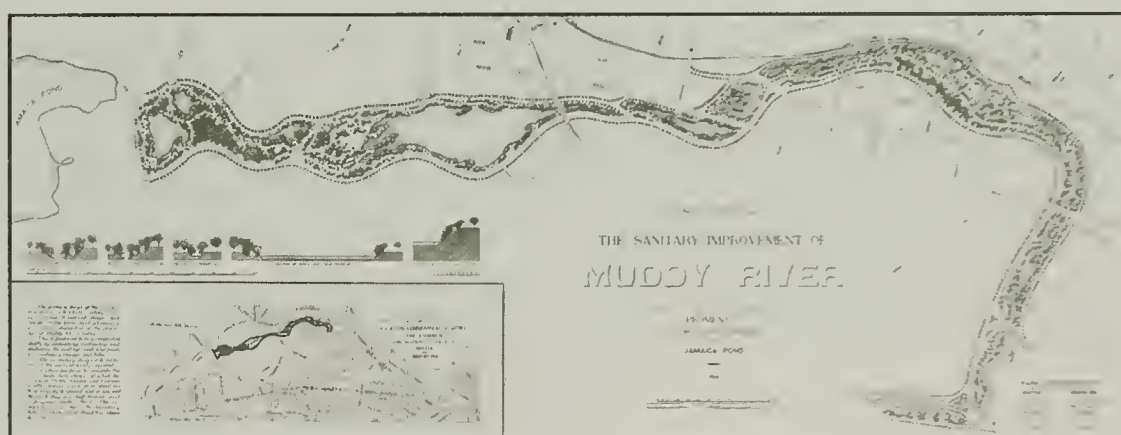
In 1880 Brookline established its own Park Commission. The first members were Theodore Lyman, Francis W. Lawrence, and Charles Sprague Sargent, also Director of the Arnold Arboretum, who served on the Brookline Park Commission until his death in 1927.

Although linked by a common waterway, the Muddy River Improvement from the beginning fell into two distinct topographical units. It is only in recent years, however, that these have been considered two separate parks: the lower, narrower section between Brookline Village and the Back Bay Fens now called the Riverway and the broader segment, including Leverett, Willow and Wards Ponds, now referred to as Olmsted Park. Olmsted Park is directly adjacent to Jamaica Pond.

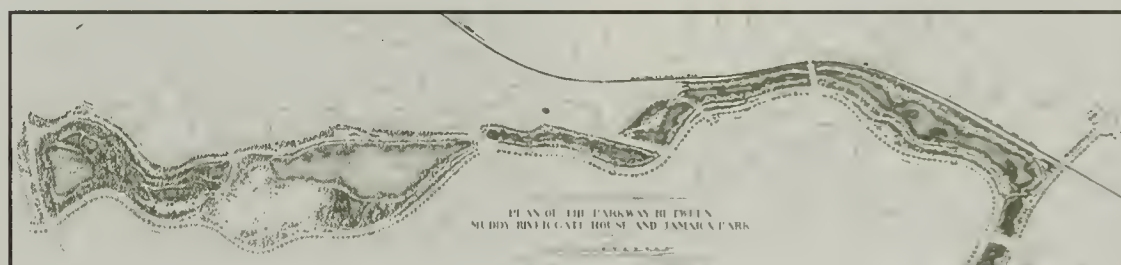


The lower valley of the Muddy River (now the Riverway section) had originally been a tidal salt marsh creek. As dams and railroad causeways were built across the Back Bay, the free motion of water was restricted, affecting not only the Back Bay itself but the water farther upstream in the Muddy River, which stagnated and became polluted. Similarly, the large salt marsh in the Olmsted Park section near Brookline Village turned brackish and became a breeding ground for malarial mosquitos.

In 1880 Olmsted resumed his discussions with the Boston City Engineer (then Henry Wightman) about the future of Muddy River. The two determined that the river would become the fresh-water equivalent of the Back Bay Fens. By keeping the water in the Fens entirely salt and that in the Muddy River entirely fresh, the unhealthy brackish condition could be avoided. There was no need for a storage basin at this site, but the swamp near Brookline Village was turned into a large fresh-water pond (Leverett Pond).



Plan 7: General Plan for the Sanitary Improvement of the Muddy River by F. L. Olmsted, 1881. Lithograph (FLONHS).



Plan 8: Olmsted's revised plan for the Muddy River Improvement as published in 1892. Lithograph (FLONHS).

In the case of the Fens (as had also been true at Central Park), the location of the park had already been selected, the land purchased, and the boundaries determined before Olmsted was officially involved. By contrast, at the Riverway and Olmsted Park, Olmsted had considerable input into all of these decisions. Early in the design process, he realized that the existing line of the Muddy River was too irregular for successful landscape treatment and would have to be changed. This choice necessitated legislation to change the boundary between Boston and Brookline. In 1889 the boundaries of Olmsted Park were significantly enlarged to include a chain of pools intended for exhibits by the Boston Natural History Society, a meadow on the Boston side, and a more desirable alignment of the parkway (Jamaicaway).

At the Fens, Olmsted created an entirely man-made park, even though he reintroduced a salt marsh where one had originally existed. Because of the change in the stream and the massive recontouring of its banks, the same was true at the Riverway, although it proved possible to save a few old trees on the Boston side. Leverett Pond in Olmsted Park is also man-made, but from this point up to Perkins Street near Jamaica Pond, many existing features: trees, the glacial terrain, Willow Pond and Wards Pond were preserved.



Figure 27: Riverway - Construction photograph, circa 1892 (FLONHS).

Bridges are the dominant architectural feature of the Riverway and Olmsted Park. In 1890 the first were designed: two small footbridges leading to the island near Netherlands Road in the Riverway. As was his usual practice, John Charles



Figure 28: Riverway - The original wooden Longwood Avenue Bridge on the Brookline Parkway, circa 1895 (Brookline Public Library).

Olmsted did the preliminary studies for these bridges. The final plans were done by Shepley, Rutan and Coolidge, successors to H.H. Richardson, following John's



designs closely except for the change (made under considerable pressure from the Brookline Commissioners) from boulder construction to ashlar masonry. This proved to be the pattern throughout the Muddy River Improvement, from the imposing Longwood Avenue Bridge to the diminutive footbridge over the cove at Leverett Pond. Only the small footbridges near Wards Pond and Willow Pond (most of them associated with the natural history pools) were built of boulders.



Figure 29: Riverway - Longwood Avenue Bridge, perspective by Shepley, Rutan and Coolidge, Consulting Architects, 1895 (City of Boston, City Doc. No. 25-1895).



Figure 30: Riverway - Longwood Avenue Bridge, 1901 (FLONHS).

The Riverway and Olmsted Park are the only parks in Boston and among the few of Olmsted's in the nation where a virtually complete record survives of the original planting plans. Most of the trees used were native to New England and grew naturally along its river banks, although Olmsted added a few foreign species where the effect would not be noticeably exotic. By modern standards, the planting was extraordinarily dense, although it was anticipated that there would be considerable thinning later on. Some majestic long-lived trees, including several varieties of American oak, survive from this planting, but the shrub layer is gone.

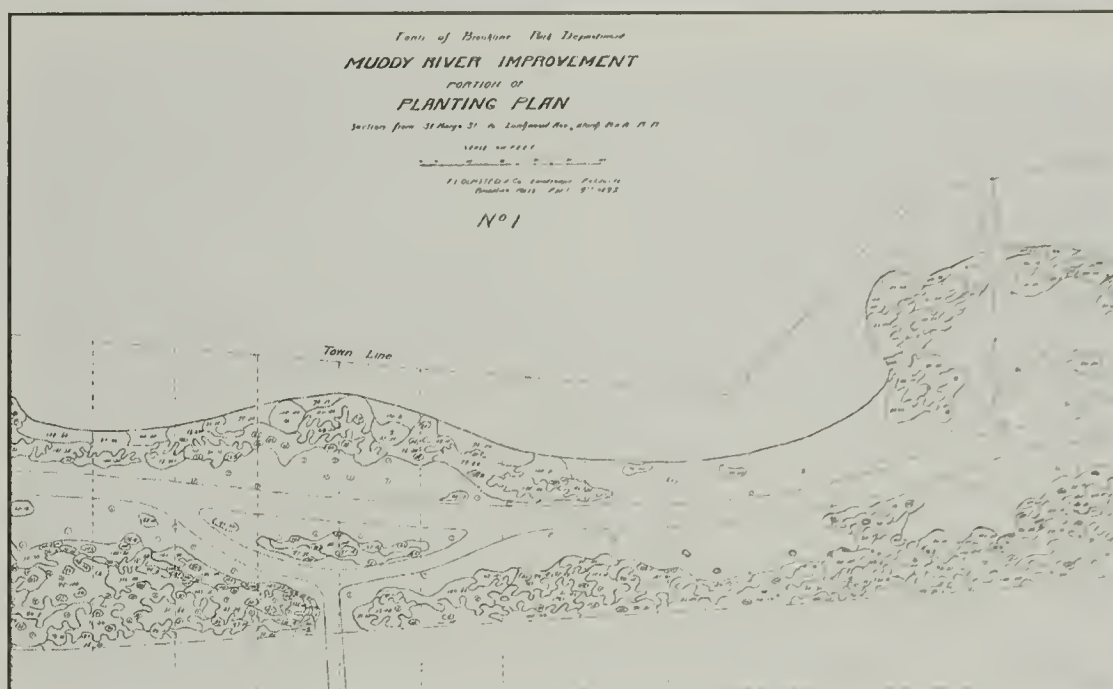


Figure 31: Riverway - Longwood Avenue Bridge with planting, circa 1890's (BPL).

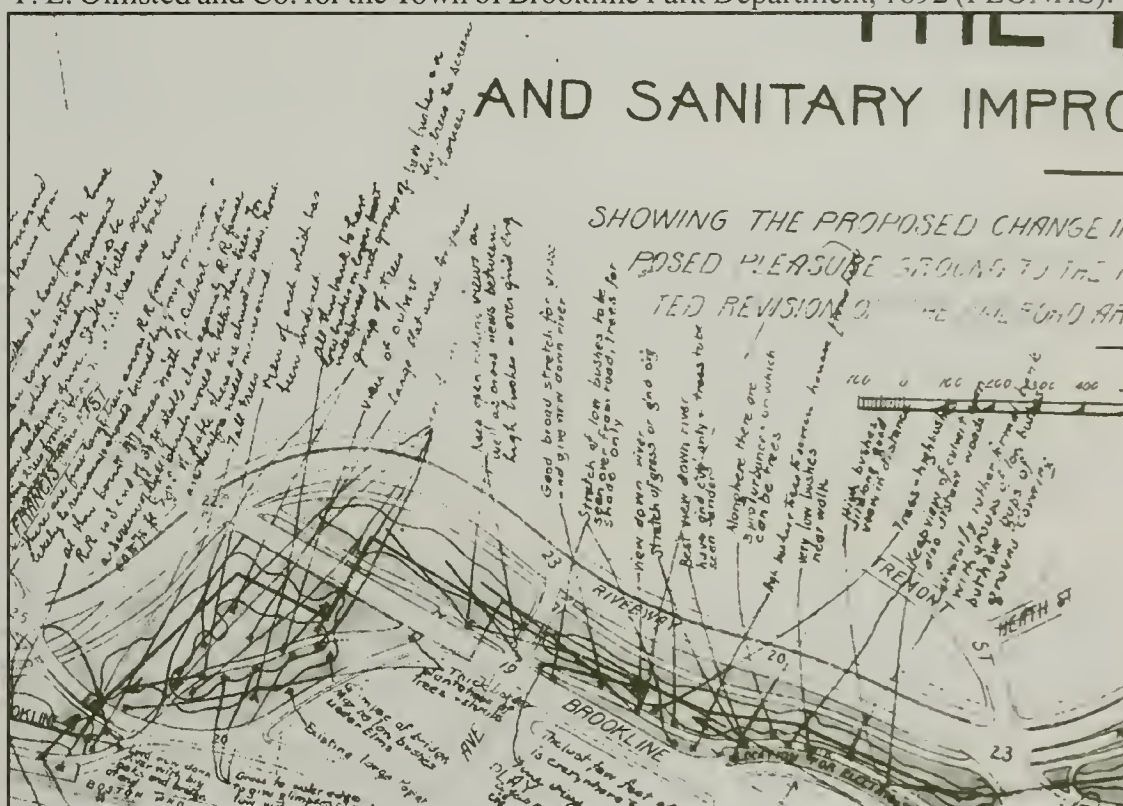


Figure 32: Riverway - Planting along path, circa 1907 (Thomas Ellison, photographer, (FLONHS).





Plan 9: Riverway - Muddy River Improvement Portion of Planting Plan No.1 by F. L. Olmsted and Co. for the Town of Brookline Park Department, 1892 (FLONHS).

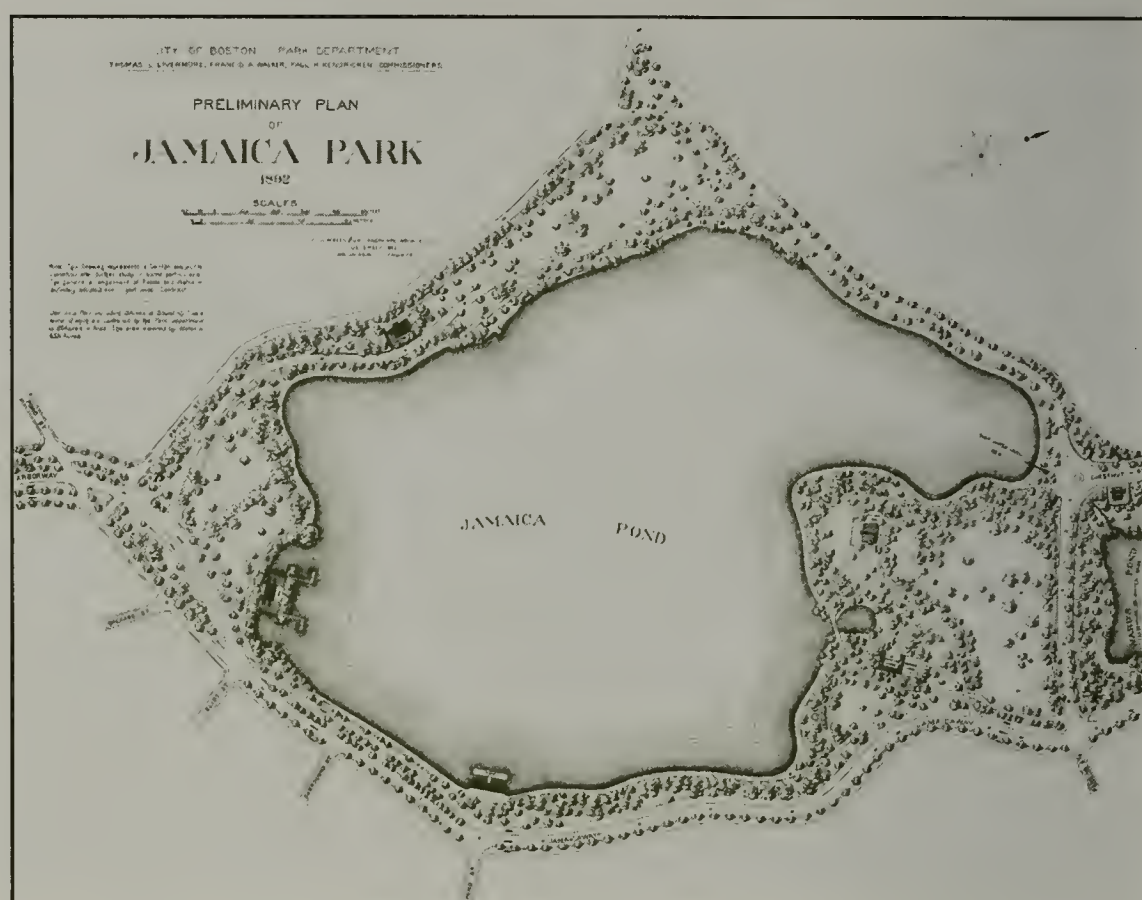


Plan 10: Riverway - Planting notes by H. H. Blossom on general plan, circa 1915 (FLONHS).

Except for the Sears parking lot, once the first link of the Riverway, and the 1930s Huntington Avenue Overpass (at Route 9), the Riverway and Olmsted Park have suffered few massive intrusions and have much potential for rehabilitation.

## Jamaica Pond

At all of the park hearings, Jamaica Pond, the largest natural body of fresh water in Boston, was energetically proposed for a park. In the 18th and early 19th centuries, the pond was popular as a summer resort, and many fine houses with spacious grounds were built on its shores. About a quarter of the frontage along Pond Street had always been kept open to the public for boating and fishing, and, in winter, it was crowded with ice skaters.



Plan 11: Jamaica Pond - Preliminary Plan by F. L. Olmsted and Co., 1892. Lithograph (FLONHS).

There was a more utilitarian aspect to Jamaica Pond, however. In early years, it was one of the sources of Boston's drinking water, and by the time the site was taken for a park, two large ice houses had been built between Pond and Prince streets. Although the natural beauty of Jamaica Pond was the most frequent argument used for its inclusion in the park system, there was also great concern about contamination from the commercial ice cutting.



Figure 33: Jamaica Pond - Pre-construction view at Pond Street, circa 1892 (BPL Print Room).





Figure 34: Jamaica Pond - Pre-construction view of Old Boat House, circa 1892 (BPL Print Room).

In contrast to the Fens, the Riverway, and the Leverett Pond section of Olmsted Park, no massive reshaping of land or water was necessary to make Jamaica Pond into a park. All but one of the summer houses were removed, including that of historian and rose specialist Francis Parkman, and a walk was built around the pond. Some filling was done at the southwest corner to allow room for the Jamaicaway. Although the boundary plantations of the summer estates were removed, the former owners' specimen trees were kept, and some remain in the park today. As at the Muddy River, extensive shrub plantings were made, especially near the circumferential path.



Figure 35: Jamaica Pond - Pre-construction view across pond, circa 1892 (BPL Print Room).



Figure 36: Jamaica Pond - Jamaica Pond - Pre-construction view of Ice Houses, circa 1892 (BPL Print Room).

“Pinebank”, the Edward Newton Perkins house designed in 1870 by Boston architect John H. Sturgis, was saved for use as a refectory. The third house built by the Perkins family on the pine-covered peninsula that juts out into Jamaica Pond, “Pinebank” is an important monument in American architectural history. Directly modeled on European examples, it was one of the first buildings in this country to make use of molded brick and terra cotta and to include elements of Queen Anne style then coming into favor in England.



Figure 37: Jamaica Pond - The Edward Newton Perkins House, the third Pinebank, built in 1870. Sturgis and Brigham, Architects. Photograph, 1893 (City of Boston Doc. No. 24-1894).





Figure 38: Jamaica Pond - Skating, circa 1920's (Leon Abdalian, photographer, BPL Print Room).

Occupying a conspicuous site on the Jamaicaway at the entrance to Jamaica Pond, the Boathouse and Bandstand were designed by William Austin in the early years of the 20th century. From the same period is the Francis Parkman Memorial by Daniel Chester French.

### Parkways

The Fens, Riverway, Olmsted Park, and Jamaica Pond are contiguous. In addition, a parkway runs along all four on the Boston side. Olmsted took great pains with the nomenclature of this element of the system: thus, although it is really a single parkway, the name changes according to the park to which it runs adjacent: Fenway, Riverway, and Jamaicaway. At the southern end of Jamaica Pond, the Arborway connects the pond with the Arnold Arboretum. Originally, another link of the Arborway connected the Arboretum with Franklin Park. Although the street still exists, its park-like features have been obliterated by a concrete overpass.

It was Olmsted's wish to have a similar link between Franklin Park and Marine Park in South Boston. In the early 20th century, the Dorchesterway and the Strandway (now Day Boulevard) were constructed near Marine Park. There was insufficient undeveloped land for a parkway between Franklin Park and the Dorchesterway. Instead, Blue Hill Avenue was widened into a boulevard, but commercial traffic could not be excluded, as was always the case with a parkway.

Today, because they are overcrowded with automobile traffic, the parkways are considered antithetical to the parks. It is important to realize that, especially in the case of the Fenway, the Riverway, and the Jamaicaway, they were meant to be *integral* with the parks. Olmsted planned orderly sequences of progression along the parkways by carriage, foot, and on horseback, and he intended drivers, pedestrians, and equestrians alike to experience the parks as they passed through them. This experience has been compromised in recent years, but mechanisms to control

traffic and improve pedestrian and bicycle access should help re-unite the parkways with the parks.



Figure 39: Jamaica Pond View of Jamaicaaway at Kelly Circle with informal trees (interior) and formal trees (exterior), September 1916 (H. Perkins, photographer, (FLOHNS).



Figure 40: Back Bay Fens: Agassiz Road connecting the Fenway to Park Drive circa 1900's (BPL Print Room).

The Emerald Necklace parks and parkways are among the crowning achievements of Olmsted's last years and rank with his most important works throughout the country. In these four parks that share a common water course, Olmsted made innovative decisions in the areas of engineering, architecture, planning and plant materials. To a small water-locked colonial city, he left a legacy of landscaped spaces that formed a seamless web with its newly acquired suburbs.



*The physical conditions assessment was conducted and documented in 1986. Changes are documented in the Master Plan and Master Plan Implementation Sections.*

The Emerald Necklace came into being through the vision of its designer, who saw it as a way to solve the engineering problems of drainage and flood control and the social imperatives of providing recreation opportunities for the expanding metropolis. Olmsted foresaw that such a comprehensive approach embraced planning, engineering and architecture and that, to bring the disciplines together to create the best solution, needed the unifying instincts of the new profession of landscape architecture.

Thus the Emerald Necklace parks today consist of land and water features, engineering structures and public buildings as well as plantings designed to bring the whole together into a consistently harmonious design.

This section of the report documents the principal findings of an inventory of site conditions at the Emerald Necklace parks. The park system comprises about 190 land acres on either side of a waterway of about 100 acres.

For the purposes of this inventory of existing physical condition, the parks were divided into their:

**Natural Elements**, such as soils, water and vegetation; and  
**Built Elements**, such as structures, pavements and furnishings.

Conducted in the fall of 1986, the survey was performed by trained teams of landscape architects and planners, with the specialized assistance of a restoration architect, civil, structural and traffic engineers, an objects conservator, a water quality consultant, a horticulturist and arborist, a user consultant and a consultant in landscape management and maintenance.

The survey identified each feature and rated its physical condition on a four-point scale from excellent (0) to poor (3):

- 0 =     An element in excellent condition, either new or recently rehabilitated, fully functional, and requiring no attention in the near future;
- 1 =     An element in good condition requiring a normal level of maintenance, but suffering from minor impairment of function;
- 2 =     An element in fair to poor condition with significant impairment of intended function that requires high priority maintenance levels. Salvageable through intensive effort and/or capital expenditure. Categorized as rehabilitation or repair;
- 3 =     An element in very poor condition, requiring complete reconstruction, re-creation or replacement, with seriously impaired or hazardous function. An unsalvageable element, to be removed or replaced through capital expenditure. Categorized as reconstruction or rebuilding.

Twelve comprehensive drawings were generated documenting natural elements, soils and water (drawings #5-8); vegetation (drawings #9-12) and built elements (drawings #13-16). They are on file with the Boston and Brookline park departments.

### SOILS AND WATER

Soils and water are indivisibly linked: eroded soils cause siltation of water bodies and a loss of medium in which plants can grow. Rehabilitation of the existing soil condition can lead to an improved water quality.

The century-old soils of the parks seem to be in remarkably good condition, but the survey identified many significant cases of local deterioration. Soil problems manifest themselves through undercuts in banks along waterways or around waterbodies, erosion of bare hillsides or sloping areas, compaction due to vehicles, uncontrolled foot traffic, drainage system malfunctions and rubbish dumps. In most cases, they are rated minor or moderate (Category 1 or 2) and can be corrected by rehabilitation and improved management of woodlands and playing areas. However, substantial rehabilitation efforts are needed to make up for several decades of deferred upkeep.

Siltation of water areas has advanced throughout much of the system. It is especially evident through parts of Olmsted Park, the Riverway, and Fens where stretches of the watercourse have filled with sediments from 18 inches to as much as 12 feet (according to a 1988 study by the Massachusetts Water Resource Authority: MRWA), and invasive *Phragmites australis* (Common Reed) growth has spread widely.

The “*sanitary improvement*” originally proposed for the Emerald Necklace was intended to mitigate gradual deterioration. Combined sanitary and storm sewers were designed to overflow into the Muddy River and Back Bay Fens basins enroute to the Charles River, to alleviate the periodic flooding of adjoining residential areas. Carefully graded and planted banks transformed the drainage channel into a winding waterway. Originally, there was a balance between *outflows* that ran into the Charles River by the Muddy River conduit (via the Muddy River Gatehouse) and *inflows* from the Charles River which flushed out the system.

The original system apparently worked as intended, but increasing runoffs after the construction of the Charles River Dam in 1910 disrupted the balance. Today, the Emerald Necklace is plagued by pollution from many sources, such as: Combined Sewer Overflows (CSOs) running into the waterways during heavy rainfalls, illegal sanitary/storm sewer cross connections, and leaking underground fuel storage tanks. CSOs, the subject of a long-range reconstruction effort by the MWRA, have polluted Boston Harbor and its surrounding tributaries for over a century. The most acute pollution problem in the Emerald Necklace is the CSO at the Stony Brook Gatehouses in the Fens, near the Museum of Fine Arts. The diversion of the Muddy River Conduit to the Charles River reduces the flow in the Fens to almost nothing. Also, the existing conduits are now believed to be under-capacity and therefore contribute to the periodic flooding in the Riverway and Olmsted Park upstream. A number of studies have assessed soils and water problems. The technical solutions seem adequate, but do not show sufficient sensitivity to the historic values in the parks.





Figure 41: Back Bay Fens - Aerial view of park before Victory Gardens and establishment of Phragmites, circa 1935 (Fairchild Aerial Survey Inc.).



Figure 42: Back Bay Fens - Phragmites are prevalent along the river bank by May 1983 (Alex S. MacLean, photographer, Landslides, Inc.).



Figure 43: Back Bay Fens - By April 1997, the Phragmites have taken over many more portions of the river bank (Alex S. MacLean, photographer, Landslides, Inc.).

### Jamaica Pond

Here, the major soil problems were associated with the water's edge. The size of the pond allows deteriorating wave action which necessitates edge reinforcement with cut stone blocks, boulders and intermittent wooden retaining walls. The blocks have worn well but invasive shrubs have colonized the joints. The boulder areas have suffered much more, and require repair. The wooden retaining walls on the west side of the pond are sound but unsightly, requiring new fill and bank replanting. The unreinforced areas are also in need of some repair, most noticeably at the "beach" locations where lowered water level and overuse has resulted in extensive erosion and compaction.



Figure 44: Jamaica Pond - Edge deteriorated by swale action at "beach" location at Perkins Street (Pressley Associates, 1998).



Figure 45: Jamaica Pond - Jogger contributing towards worn path along pedestrian path (Pressley Associates, 1998).



Erosion is also evident on the short steep banks around the pond, particularly below Pinebank, where soil compaction by vehicles is also a serious problem. Jogging and other heavy uses of the lower path around the pond have compacted the path edge and created an almost continuous strip of bare earth. Areas beside the Jamaicaway and at the Arborway Circle are similarly compacted. People fishing have worn other pondside bare spots south of the Boathouse.



Figure 46: Jamaica Pond - Boathouse with block retaining wall (Pressley Associates, 1983).

The water in the pond appears to have excellent transparency and there is relatively little weed or algae growth around the margins. Jamaica Pond was last sampled in 1974, when water quality at the outlet station to Ward's Pond was much better than in the downstream station. The pond's water outflow control mechanism was repaired in 1989, which reestablished control of the water level. Jamaica Pond is a natural "kettle", circular, very deep (53 feet at its deepest point).



Figure 47: Jamaica Pond - Boulder edge along the pond (Karen Sparacio, photographer, 1999).



Figure 48: Jamaica Pond - Boulder and wood retaining walk along eastern interior path (Walmsley & Co. Inc., 1987).

According to the “*Muddy River Quality Improvement Plan*” prepared by Metcalf & Eddy in September, 1990, there are sixteen storm drain lines that empty into Jamaica Pond and one inlet from Sargent’s Pond in Brookline. These numerous submerged storm drains discharging into the pond are discussed under “Built Elements.” Because they are submerged, the drains do not flow freely during rainstorms, resulting in overflow in the park and nearby which creates erosion problems in shoreline areas.

Jamaica Pond, the largest water body in the Emerald Necklace, requires extensive repair to its edges. Its water level has been historically lower than intended.



Figure 49: Jamaica Pond - The largest water body in the Emerald Necklace Park System (Pressley Associates, 1998).



### Olmsted Park

The steep and diversified topography of this park has resulted in several eroded hillsides. Daisy Field has large areas of vehicular compaction, and there is a large washed-out gully at the west edge of the field where it joins Leverett Pond. Several abandoned walks in the remote woodland of the Boston side show severe trail erosion. There were several rubbish dumps on the Boston side.



Figure 50: Olmsted Park - Soil compaction by vehicles at Daisy Field (Pressley Associates, 1987).

Ward's Pond, the park's southernmost waterbody, is much smaller and shallower than neighboring Jamaica Pond (2.5 acres compared to 64.3 acres) and is only 6.5 feet deep. Its shallowness invites eutrophication and abundant aquatic plant growth.



Figure 51: Olmsted Park - Over-abundant aquatic plants and eutrophication at Ward's Pond (Walmsley & Co. Inc., 1986).

Seepage, probably from Jamaica Pond, and associated slope sloughing occurs in an area approximately 100 feet long along the southern edge of the pond. This has rendered the walking path impassable in this area, and has spawned an extensive area of wetland vegetation. The presence of wetlands, which are now under strict environmental protection, will make the process of pond edge and path restoration difficult. A channelization of this seepage is required to contain the flow, and ensure the long-term survival of a restored path system. This problem is not a new one. John Charles Olmsted reported seepage at Ward's Pond in 1910. He attributed it to a lowering of the level of Jamaica Pond, and proposed to correct it by constructing a swale at the bank adjacent to Ward's Pond.

Willow Pond encompasses 0.7 acres with a maximum depth of 6 feet. It is fed by Ward's Pond and a stream that drains Spring Pond next to the MDC's Sergeant Peter Kelly Skating Rink (MDC Rink) which has since been removed. When surveyed, Willow Pond was covered with a light brown oily film, with what appeared to be absorbent pads and an oil containment boom adjacent to the inlet. Debris floated in the pond and in the stream flowing into it, and the trash rack at the outlet was heavily clogged. Water clarity was poor. A continuing problem is the seepage of petroleum products from the ground on the Brookline side of the pond.

At Leverett Pond (9.4 acres with a depth up to 5.5 feet), the gabion cribs (allowing grassy banks to extend to the water's edge) on the Brookline side appeared to be stable. Deposits from the Village Brook conduit near the outlet of Leverett Pond have created a small, barren offshore island. Its effect on water quality may be limited because it is so close to the outlet. At the time of documentation, a film of oil had been left on the grass, a product of recent flooding.



Figure 52: Olmsted Park - Gabion cribs on Brookline side of Ward's Pond prior to invasive vegetation (Walmsley & Co. Inc., 1986).

With its several ponds, Olmsted Park's water edge problems are numerous. Storm drain conduits from both Boston and Brookline periodically discharge oil, sewage, and other pollutants into the waterway, causing a significant adverse effect on





Figure 53: Olmsted Park - Currently, gabions have invasive plants that have self-seeded (Jon Crispin Photography, 1999).



Figure 54: Olmsted Park - Barren island created by discharge from Village Brook conduit in Leverett Pond (Jon Crispin Photography, 1999).

overall water quality. Soil erosion is serious. Vehicular compaction at Daisy Field has impacted a large area next to Willow Pond Road.

### The Riverway

Cut stone reinforcement was used in the narrow stream section from Route 9 north to its entrance and exit ramps at River Road as part of the 1936 Huntington Avenue (Route 9) Overpass construction. It appears sound, though overgrown and blocked by debris. Elsewhere downstream, banks are undercut on both sides of the river, and several show bare grass slopes, drainage malfunctions or overuse. Bare spots line the grass parkway edges. There is vehicular compaction around the park maintenance building at Boston's Back Bay Yard on Park Drive.



Figure 55: Riverway - Undercut banks (Jon Crispin Photography, 1999).



Figure 56: Riverway - Drainage and erosion along path (Pressley Associates, 1998).

The Muddy River conduit, under Brookline Avenue, directs flow to the Charles River from a diversion structure under the Sears parking lot. In 1990, the Boston Water and Sewer Commission investigated the two conduits under the Sears parking lot, and found that the conduits were free of debris.

The narrowest stretches of the Riverway exhibit some of the worst erosion and siltation present in the Emerald Necklace. As in Olmsted Park, periodic storm drain-related pollution from both Boston and Brookline has reduced water depth and impaired water quality. Studies of this park show extremely degraded water conditions.





Figure 57: Riverway - Degraded water conditions (Pressley Associates, 1999).

### **Back Bay Fens**

The Back Bay Fens is plagued by the rampant spread of a single aquatic plant species, *Phragmites* or Common Reed. Parts of the water course have been culverted and covered over - below Brookline Avenue and above Higginson Circle at Avenue Louis Pasteur (Fen Bridge) in front of Emmanuel College. Additionally, there are extensive areas of soil compaction north of Emmanuel, at Clemente Field and at the Victory Gardens side of the Northern Basin. Vehicular compaction is evident around the Boston Fire Alarm Headquarters.



Figure 58: Back Bay Fens - *Phragmites* invasion (Karen Sparacio, photographer, 1999).





Figure 59: Back Bay Fens - Watercourse culverted at Avenue Louis Pasteur (Topo-Metrics, Inc., 1985).

At Charlesgate, water edges have been reinforced with stone blocks but the areas beneath the elevated Bowker Interchange show little or no vegetative cover due to continuous shading and road salt spray.

As a result of the impoundments upstream, flow in the Back Bay Fens is extremely sluggish, leading to high turbidity, low dissolved oxygen, and anaerobic decomposition. This combination results in periodic odor problems. The water quality test results from a 1974 Massachusetts Department of Environmental Quality Engineering (now Department of Environmental Protection) study showed extremely degraded conditions in the Back Bay Fens, while a 1980 test showed significant improvement.

The Back Bay Fens exhibit the effects of poor water circulation, siltation, pollution, and extended colonization of water edge and bank areas by invasive aquatics. Soil compaction is extensive.



Figure 60: Back Bay Fens-Soil compaction at Evansway (Pressley Associates, 1999).



### VEGETATION

The four parks contain approximately 55 acres (29%) of forest, and about 112 (59%) of turf. The largest areas of woodland are in the upper parks, Jamaica Pond and Olmsted Park. The largest grass areas are in the Fens, where the former marsh was filled in for recreation in the early 20th century. The original plantings were diverse: canopy trees, understory trees, shrubs, and groundcovers; salt-tolerant grasses and wildflowers in the Back Bay Fens. Plant lists survive for the Brookline side of the Muddy River and the old Beacon Street Entrance to the Fens (now Charlesgate), but it is not known how completely they were followed.

A list of plants Olmsted intended to use in the Emerald Necklace parks indicates his preferences in several categories. Among the forest trees the majority were Oaks, Maples, Elms, Beech and Oriental Plane. The few evergreen trees included Eastern Red Cedar and Juniper. Flowering and understory plants featured Gray Dogwood, Sumac, Virginia Rose, Summersweet, Honeysuckle, Privet, Barberry and Dwarf Gray Willow. Yellowroot was prominent in the forest groundcover, and the woods appear to have been full of berry bushes. Although most of the plants which have become invasive are not listed among the original species (Phragmites, Buckthorn and Japanese Knotweed do not appear), Olmsted called for a few River Birch, an invasive plant today.

Much of the original diversity has been lost, particularly the understory trees shrubs and wetland plants. The resulting tree population is fairly evenly aged. The preponderance of mature trees indicates that older trees are not being replaced by natural regeneration.

In many instances, the designers' scenic intentions have been compromised. Olmsted's intended views are obscured by overly mature growth, and picturesque groupings of trees along waterways have been lost. In addition, the carefully orchestrated "framing" of park scenes from the parkways, and the "screening" of unwanted features such as the MBTA tracks on the Brookline side of the Riverway, no longer exist.

Declining plant communities have been invaded by fast-growing species: stands of Japanese Knotweed and Common Buckthorn have proliferated in the woodlands; young River Birch and other trees and shrubs have colonized pond and river edge areas; and Phragmites have overrun the river bed and its banks.

### Jamaica Pond

Jamaica Pond boasts nearly 11 acres of forest cover, the second largest in the system. In this park Olmsted saved most of the existing trees, and did much less planting. As a result many trees here are impressively large -- 350 are over 31 inches in caliper. However, nearly half of them are in poor to very poor condition. This is an overly mature and declining landscape.

Jamaica Pond also has many newer trees. These are not all consistent with the Olmsted plant lists. Flowering species, evergreen and focal specimen trees (more than 200) and newly developed strains and cultivars have been used.

Although aquatic weeds are not a problem here, trees such as River Birch are prevalent along the water's edge, obstructing views, obscuring intended scenic effects, and dislodging the stone edge which protects the pond from bank erosion

and siltation. Jamaica Pond's old trees are among the glories of the park system, but they are not replacing themselves. Invasive River Birch along the water's edge must be thinned to restore original effects and maintain the stone edge which protects the banks.



Figure 61: Jamaica Pond - Historic photograph of pond edge with open views, circa 1900 (BPL Print Room).



Figure 62: Jamaica Pond - Invasive River Birch obstructing views (Jon Crispin Photography, 1999).

### Olmsted Park

Olmsted Park has the most forest cover in the system (17 acres), mostly on the Boston side of the park. Most trees are mature, and over 50% are in poor to very poor condition. However, introduced flowering, evergreen and focal trees are not as prevalent (with a combined total of only 51, of which 40 are evergreen).

Invasive herbaceous plants cover 3.5 acres. Japanese Knotweed is a problem on the west-facing slopes along the Boston side of the park, and a large stand located beside the Ward's Pond outfall to the Babbling Brook and Willow Pond.

As at Jamaica Pond, Olmsted Park's forests are declining. Invasive woodland and water edge species have overtaken several areas.





Figure 63: Olmsted Park - Ward's Pond woodland, circa 1900 (BPL Print Room).



Figure 64: Olmsted Park - Invasive woodland and water edge species have overtaken several areas at Ward's Pond (Jon Crispin Photography, 1999).

### The Riverway

Most of the Riverway's eight acres of forest landscape is mature trees, but over 70% of them are in poor or very poor condition. As in Olmsted Park, much is shady forest on the Boston side of the park.

The flowering, canopy and evergreen trees are of almost the same size and distribution as those in Olmsted Park, and invasive herbaceous materials cover 3.4 acres.

The lower end of the Riverway was lost in 1954 when the City conveyed a culvertized portion of the watercourse to Sears Roebuck for use as a parking lot. Even though the Sears store closed in 1988, this portion of the watercourse remains a parking lot. (Returned to Boston and parking was removed in 1998).



Figure 65: Riverway - Water edge vegetation has aquatic and upland plantings, 1924-25 (Thomas Ellison, photographer, FLONHS).



Figure 66: Riverway - Water edge plantings at the Longwood Avenue Bridge have been lost (Jon Crispin Photography, 1999).

The Riverway's forests are smaller in area and their overall condition is among the poorest in the system. As the narrowest park, the gradual, but systematic replacement of its declining canopy trees is critical to the park's survival, and must begin as soon as possible. As in Olmsted Park, invasive species must be brought under control.

### **The Back Bay Fens**

The Back Bay Fens is the system's most radically altered landscape, bearing little resemblance to the original saltwater Fens. It has the least forest area (only 3 acres) and the most ornamental trees (predominantly flowering), invasive aquatics and herbaceous materials. It has the only formal flower garden in the Emerald Necklace, as well as 6 acres of Victory Gardens.





Figure 67: Back Bay Fens - The Rose Garden by Arthur A. Shurcliff, circa 1930 (FLONHS).



Figure 68: Back Bay Fens - A view in the Victory Gardens (Jon Crispin Photography, 1999).

The condition of its mature canopy growth is the worst in the system, with 75% of nearly 1,200 trees over 21 inches in caliper categorized as poor to very poor.

Of the 3.9 acres of invasive herbaceous materials, *Phragmites* is the greatest problem. Extensive flooding in 1996 and 1998 illuminated the flood hazard potential of the Fens and that the *Phragmites* contribute to the problem. It is particularly prevalent in the northern end of the park, where it has the greatest adverse impact on the park's security, use and appearance.

The Back Bay Fens has the most disturbed landscape in the Emerald Necklace at almost every level. The large trees dating from its conversion to park in the early twentieth century are in the worst condition of any park. Invasive *Phragmites* is the most extensive.

### STRUCTURES

The Emerald Necklace parks were embellished with many special buildings and bridges, most of which survive today. Several buildings, such as the gatehouses at Park Drive and Brookline Avenue, the Fens and Charlesgate had engineering functions. Some bridges, such as Boylston Street, Longwood and Brookline Avenue were imposing structures, while others, such as the pedestrian bridges in the Riverway and Olmsted Park, were intimate in scale, similar to the viewing shelters and overlooks.

There are many smaller drainage structures, some original and others built more recently. Several monuments and memorials have been added, as have several large buildings, such as the Boston Fire Alarm Headquarters and the Metropolitan District Commission's Sergeant Peter Kelly Rink. And massive new bridges for the Huntington Avenue Overpass (1936) and Bowker Interchange have been constructed.

### Jamaica Pond

Jamaica Pond has three remaining structures of cultural and/or historic importance: Pinebank, the Boathouse and its associated Bandstand.

The F. L. Olmsted 1892 Preliminary Plan for Jamaica Park called for the removal of all but two houses. Although the Robert Morse house was demolished early in the park's history, the Edward Newton Perkins house, Pinebank, survives today. Completed in 1870, Pinebank was the third mansion on its site, and is the only building that pre-dates the park. Pinebank is in an extremely deteriorated condition. The mansion has been so severely damaged inside and out that its restoration will be a costly undertaking. Nevertheless, it is an extremely important architectural reminder of the old Jamaica Plain estate era. A consultant investigation has been prepared for the City of Boston as a result of this initial evaluation.



Figure 69: Jamaica Pond - Pinebank is currently a fenced ruin (Pressley Associates, 1998).



The Jamaica Pond Boathouse and Bandstand, labeled as a Sanitary Building and Shelter Building on a 1915 Olmsted Brothers plan, was designed by William D. Austin, a local architect and constructed in 1911-12. The Boathouse has a Boston Park Partners Program and boat-rental concession in front, with rest rooms. In 1977-78, fire damage to the Boathouse roof was repaired as part of a Heritage Conservation and Recreation case study. In 1990, the City of Boston undertook the full restoration, interior and exterior, of both the Boathouse and the Bandstand.



Figure 70: Jamaica Pond - Boathouse and Bandstand designed by William D. Austin, circa 1920 (FLONHS).



Figure 71: Jamaica Pond - Boathouse and Bandstand (Jon Crispin Photography, 1999).

Jamaica Pond has three minor structures, all in good to fair condition: The Parkman Memorial, a fountain associated with the Boathouse, and the Hancock Steps.

The Parkman Memorial was designed and built between 1897 and 1907. Designed by Henry Bacon with sculpture by Daniel Chester French, the monument requires minor cleaning, repointing, recaulking and some stone replacement. A bronze portrait plaque of Parkman has been removed.

The Boathouse Fountain (ca. 1920) has a malfunctioning plumbing and drainage

system, requires stripping and repainting and the replacement of some missing sections.

The Hancock Steps were taken from the upper garden terrace of the John Hancock House on Beacon Street (demolished in 1863). They should be reset and cleaned. Some upper level risers must be replaced, and encroaching earth must be excavated.



Figure 72: Jamaica Pond - Hancock steps (Pressley Associates, 1999).

The Jamaica Pond watergate and Ward's Pond inflow and bypass are important drainage structures. The water level in Jamaica Pond is controlled by an underground chamber with two brick weirs built in approximately 1906. The inflow to this chamber from Jamaica Pond is from an 18" iron pipe and the outflow is through a 4' x 3' brick culvert. A secondary outflow bypasses the weirs to lower the water level in the pond. In 1990, the Boston Parks and Recreation Department repaired the controlling chamber by removing the brick weirs and replacing them with removable, wooden batter boards, and repaired the gate valve to the 8" bypass line.

### Olmsted Park

Olmsted Park has one large, contemporary building, Kelly Rink, with its associated parking lots and entrance walks. It is the most incongruent and intrusive building in the Emerald Necklace. The park also has three major ponds, six historic pedestrian bridges crossing the watercourse joining its three major ponds, a stone retaining wall and several drainage structures.

Now over 20 years old, Kelly Rink's office and locker room section is reasonably well maintained, but the mechanical systems are out-of-date and in only fair condition. (Kelly Rink was removed in 1997).

The granite stone bridges are generally in fair to good condition, except for the puddingstone footbridge at Ward's Pond on the Brookline side, which was well hidden by overgrown vegetation. The other bridges need minor masonry repair, graffiti and iron stain removal (Cumberland Avenue, Ward's and Willow Pond bridges) and resetting and repointing of stones (Inlet Bridge). Recent mortaring efforts appear inconsistent with the historic joints in size, shape and color.



The Willow Pond and Ward's Pond footbridges were restored in 1983-84 through a grant from the George B. Henderson Foundation, to the Massachusetts Association For Olmsted Parks.



Plan 12: Olmsted Park - Enlarged area of seven "Natural History" pools from the Plan of the Parkway between the Muddy River Gate House and Jamaica Park. 1892. Lithograph (FLONHS).



Figure 73: Olmsted Park - The former Metropolitan District Commission Kelly Rink (Pressley Associates, 1987).

The retaining wall along the Jamaica way requires substantial repointing and resetting and extensive clearing of undergrowth.

Drainage structures in Olmsted Park are an important part of its complex design history. Seven "Natural History" ponds were created between Ward's and Willow ponds in 1893 for Natural History Society educational programs. They were filled in during the last years of the 19th-century. Spring Pond is fed from a spring along its southerly edge which may also have fed a now-filled-in stream. The spring has cut and eroded a ditch (35' long, 6' wide, 3' deep) at the southern bank and caused considerable siltation. Further investigation is recommended prior to initiating remedial action.



Figure 74: Olmsted Park - Reconstructed Babbling Brook streambed, now dry and overgrown (Pressley Associates, 2000).



Figure 75: Olmsted Park -Sediment island in Leverett Pond at Village Brook outfall (Pressley Associates, 2000).

Olmsted intended Willow Pond to divert wet-weather flows downstream to Leverett Pond to prevent stream bank erosion. In the 1960, the U.S. Army Corps of Engineers reconstructed the stream bed with granite curbing and blocks. Now the clogged overflow pipe spills the entire flow through the 48" conduit. The streambed is dry and heavily overgrown. The bridge/overflow appears to be in good condition.

The Village Brook drainage system enters the western edge of Leverett Pond some 200' upstream from the outflow culvert to the Muddy River. The contemporary headwall and wingwall are in excellent repair. A deposit of stone and gravel,



probably created by storm-sewer scouring during heavy rainfalls, forms an island 80' beyond the culvert.

### The Riverway

The Riverway contains a rich assemblage of original bridges, stairs, and one of only two surviving park shelters (the Duck House in the Fens being the other). In addition, the Huntington Avenue Overpass, the Back Bay Maintenance Yard and two major drainage structures post-date the park's inception.



Figure 76: Riverway - Bridle Path Bridge after restoration (Karen Sparacio, photographer, 1999).

The iron Carlton Street Bridge, currently closed to the public, is in need of extensive rehabilitation. The other bridges are in better condition. They are: the Longwood Bridge (and its associated staircase on the Brookline side), the Chapel Street Bridge with its arches over the watercourse and bridle path (with integral stairs and a shelter building), the bridges at Netherlands Road, Brookline Avenue, the ramps to Route 9, and two pedestrian bridges to the island area.



Figure 77: Riverway- Huntington Avenue overpass (Route 9), 1936 addition (Jon Crispin Photography, 1999)



Four structures, the Longwood and Netherlands Road bridges, the Brookline Avenue Bridge and the ramps to the Huntington Avenue Overpass, carry heavy traffic and are in good condition. The pedestrian portion of the Brookline Avenue Bridge has had stones removed. The most ornate bridge in the park system, the Chapel Street Bridge, appears basically sound, but it needs repair and resetting of stone and resurfacing for both of its arches. Its associated round shelter overlook requires replacement of its spirally designed roof, some stone resetting, and the reconstruction of its interior floor decking.



Figure 78: Riverway - Shelter and tool shed, circa 1919 (BPL Print Room).



Figure 79: Riverway - Shelter and tool shed after rehabilitation (Jon Crispin Photography, 1999).



The Huntington Avenue (Route 9) Overpass has been maintained fairly well.

There are two drainage structures in the Riverway. A 500 foot long culvert and stream from Route 9 to Brookline Avenue appears in good condition. It shows evidence of recent oil pollution, perhaps from a 1988 oil spill in Leverett Pond. The Massachusetts Executive Office of Environmental Affairs [EOEA] is monitoring pollution sources and recommending corrective action.

The 400' long stream section here is 10' wide at the bottom and is heavily clogged with debris. Downstream of the bridge carrying the Route 9 ramps, it flows through a densely vegetated area which includes pockets of stagnant water. Debris should be removed first, then further study should be given to dredging.

The Riverway's second drainage structure is the outflow under the Sears parking lot. Here, the Muddy River enters two 6' diameter culverts and flows to the underground portion of the Brookline Avenue Gatehouse. It is combined with a Brookline Avenue Overflow Structure, which allows high flows to enter the upper Fens, serving when needed as a hydraulic flow relief to the Muddy River conduit. The condition and operations of such underground systems are beyond this study's scope, and are now under investigation by the MWRA in conjunction with their court-mandated Boston Harbor cleanup, and by the Boston Water and Sewer Commission's ongoing upgrading of lines citywide.

The Riverway's original bridges, stairs and shelter are eloquent testimonials to the designers' skill. Major drainage disruptions at each end of the park will require major rehabilitation work.



Figure 80: Riverway - Stairs connecting the Bridle Path and Chapel Street Bridges (Karen Sparacio, photographer, 1999).

### **Back Bay Fens**

The Back Bay Fens has the greatest number of buildings, and three of the most significant original bridges, Boylston Street, Agassiz and Fen, in the Emerald Necklace system. It has the original Stony Brook Gatehouses and the Fens Gatehouse at Charlesgate, and contains a number of memorials and monuments.

Boylston Street Bridge, which carries heavy traffic, has always been well maintained. Only minor repointing and graffiti removal is needed at this time. Agassiz Bridge was restored to eradicate minor cracks, replace capstones and accomplish minor repointing and graffiti removal, and the north viewing bay was severely damaged by a car in 1988. Full restoration of the bridge, including understory plantings, was completed in 1988. The south headwall of Fen Bridge is intact, but many places need mortar fills and the removal of vegetation and graffiti. The north headwall was believed buried when the watercourse in front of Emmanuel College was culvertized in 1955-56. Its condition is, at this time, unknown.



Figure 81: Back Bay Fens - The Boylston Street Bridge by H. H. Richardson, 1901 (FLONHS).



Figure 82: Back Bay Fens - Stone bridge at Audubon Road (Park Drive), 1898 (James G. Langdon, photographer, FLONHS).





Figure 83: Back Bay Fens - Agassiz Bridge (Pressley Associates, 1989).

Two small pedestrian bridges built in 1978 below the Museum of Fine Arts need only minor painting, pointing, and replacement paving.

The Agassiz Road Shelter (the Duck House) has been severely fire damaged and some of the roof had caved in.



Figure 84: Back Bay Fens - Duck House (Jon Crispin Photography, 1999).

Roberto Clemente Field House has been extensively vandalized and defaced, and is currently unused. The Clemente Field bleachers are in good condition, and are well equipped with seats and railings.



Figure 85: Back Bay Fens - The Clemente Field House (Karen Sparacio, photographer, 1999).

The Boston Fire Alarm Headquarters is a massive building with historic masonry walls apparently sound except for some surface staining. Its exterior terraces and walls are in poor condition. The Mother's Rest Shelter requires minor upkeep and repainting.



Figure 86: Back Bay Fens - Fire Alarm Headquarters (Walmsley & Co. Inc., 1986).

All the memorials and monuments except for the World War II Memorial were in fairly good condition. Most needed minor cleaning and graffiti removal. The World War II Memorial, a major feature, had been vandalized: plaques were missing, stone retaining walls and pavements settled, base pedestals damaged and seats in need of repair or replacement. The rehabilitation of the World War II Memorial and the construction of the Korean and Vietnam Memorials was completed in 1990 through a project funded by the Boston White Fund. In contrast, the nearby Rose Garden fountain and monuments have been continually well maintained.



The Stony Brook Gatehouses (Nos. 1 & 2) have granite masonry walls in good condition. These original engineering structures allowed Stony Brook to discharge into the Lower Fens (then a coastal marsh) and enter the tidal Charles River. Gatehouse Number 1 was built in 1905 by H. H. Richardson's successor firm. The design replicated the smaller 1882 Richardson Gatehouse, which was moved to a new foundation over the Stony Brook Conduit in 1905.



Figure 87: Back Bay Fens - Stony Brook Gatehouse (Jon Crispin Photography, 1999).

Construction on the Charles River Dam began in 1908 and was completed in 1910. The dam halted tidal action, destroyed the salt water environment and established a permanent fresh water basin. Today the Fens is a stagnant backwater and the gatehouses discharge CSOs from the Stony Brook conduits, contributing to a problem almost a hundred years old. The engineering controls have been subject to frequent remodelling but much of the mechanism is antiquated or in disrepair.

The last gatehouse at Charlesgate is the Fens outlet to the Charles River. It is beneath the 1960s Storrow Drive/Charlesgate (Bowker) Interchange. Smaller than the Stony Brook Gatehouses, it is more elaborate and monumental. Like the two gatehouses upstream, its equipment is not fully operable. Debris, including floating sludge and grease, is periodically removed by the MDC.



Figure 88: Back Bay Fens - Charlesgate Gatehouse (Pressley Associates, 1987).

Most of the structures in the Fens, both old and new, require extensive repair and rehabilitation. Work on recently vacant buildings, such as the Agassiz Road Shelter and Clemente Field House, as well as work to repair the drainage control functions at the gatehouses, will require major capital expenditures.

### CIRCULATION AND FURNISHINGS

The condition of the paths and park roads which make up the Emerald Necklace circulation network leaves much to be desired. Park drives such as Riverdale Parkway in Olmsted Park and Prince Street at Jamaica Pond need repair, the bridle path was abandoned for many years, and the condition of the pedestrian paths ranges from poor on the Boston side of the Riverway to good around Jamaica Pond and the Fens.

There are interruptions between the parks in the Emerald Necklace system, particularly at the Route 9 and Bowker Interchanges. At Olmsted Park, access to Ward's Pond from Perkins Street is restricted to the east side. At the Riverway, access to the park from the east side of Longwood Bridge is inadequate, and the decorative iron Carlton Street Bridge (over the MBTA tracks) is closed.

In the Fens, the Evansway Bridge has been left incomplete since its restoration was discontinued due to lack of funds in 1981. In the Fens, a severely deteriorated path system in the northern section has contributed to user insecurity and the subsequent abandonment of the river.



Figure 89: Back Bay Fens - Evansway Bridge was removed in 1981 and was not restored due to reduced property taxes (Charles Beveridge).

Throughout the Emerald Necklace, curbs, stairs, walks and fences need repair or replacement. Many of the smaller park "destinations" (such as shelters and overlooks) which gave meaning and pleasure to movement through the park are missing.

Most park furnishings have also suffered over time. Older walk lights have not been maintained, particularly in the more remote sections. They have been replaced by newer models which are in various conditions. Flood lights have appeared at Daisy Field in Olmsted Park and at Clemente Field in the Fens. Historic benches are almost totally absent; concrete and wooden benches, as well as the "Emerald Necklace" design have been introduced. Many of these are in need of repair.





Figure 90: Jamaica Pond - Wooden benches and water fountain at the Perkins Street entrance (FLONHS).



Figure 91: Olmsted Park - Riverdale improvements with standard furnishings (Jon Crispin Photography, 1999).

Circulation and furnishings were an essential part of the historic parks' success and they are critical for the greatest enjoyment of today's users.

### **Jamaica Pond**

Because of heavy use, the circulation system at Jamaica Pond has been well maintained. Relatively minor capital expenditures could restore it to maximize safety, attractiveness and usefulness.

Perkins Street, west of the Jamaica way, was recently resurfaced by the MDC, and a new bike path along the bridle path alignment was constructed along its northern edge from the Jamaica way to Chestnut Street. The drive at Pinebank House is in fair condition, and the single walk in the Parkman Memorial area has been aban-





Figure 92: Olmsted Park - Path at Leverett Pond (Boston Parks Dept. Report, 1897).

done. The several staircases in the Pinebank area require complete rehabilitation, with special attention given to the historic Hancock Steps. Conversely, most of the stone and wood retaining walls on the west side are in good condition.

The condition and the level of the lighting at Jamaica Pond is highly variable. The heavily trafficked Jamaicaway has well-maintained, but modern, street lights. The 700' long driveway to Pinebank has two working floodlights and one dysfunctional reproduction Boston Park Post. Similar historic fixtures are located along the pedestrian path on both sides of the Boathouse and Bandstand, and are mostly operational. The west and south sides of the pond have five floodlights. The exercise stations around the pond have been systematically removed as they fall into disrepair.



Figure 93: Jamaica Pond - Pedestrian path on Jamaicaway side (Walmsley & Co. Inc., 1987).



### Olmsted Park

The Jamaicaway, Pond Street, Chestnut Street and the Route 9 overpass and ramps have surfaces and street lights in good to excellent condition. Those of Riverdale, Parkway and Willow Pond Road rate “fair” to “very poor.” In the upper park, around Ward’s and Willow ponds, and the Kelly Rink area, walks are in very poor condition or abandoned. The great staircase descending from Jamaicaway to Ward’s Pond is in poor condition, with much stone displacement and several missing steps. Other stairs in this section were virtually lost in the overgrown forest north and east of the pond. Staff and members of the Appalachian Mountain Club’s Youth Opportunities Program rediscovered and reset several sets of steps in this area. The wall along the north side of Perkins Street, however, is in good condition, having recently been repointed.



Figure 94: Olmsted Park - Ward’s Pond stairs, circa 1915 (Leon Abdalian, photographer, BPL Print Room).

The bridle path along the Jamaicaway side was in very poor condition, and unused for many years. In 1989, it was reconstructed as a bikeway in conjunction with the improvements at Jamaica Pond. The stonedust walks on the Boston side of Leverett Pond and around Daisy Field were also improved at the time. The walk on the Brookline side of the pond has been reasonably kept up.

Furnishings tell a similar story. Old, remnant walk lights in the upper park have long since ceased to work and are of historic interest only. Even the newer floodlights on the Brookline side of Leverett Pond are in poor and very poor condition. A few wooden benches in this segment are kept in reasonable repair. The Allerton Street entrance has concrete steps (in fair to poor condition) that led to a circular walk that no longer exists.

On the Boston side, the only park lights are the high-mast floods illuminating Daisy Field, which are all well serviced. A metal transformer enclosure in the same area has recently been improved with a new chain link fence and gate as well as understory plantings at its perimeter.



Figure 95: Olmsted Park - Bikeway along Jamaica Way (Jon Crispin Photography, 1999).



Figure 96: Olmsted Park - Allerton Overlook at Leverett Pond, restored in 2000. (Jon Crispin Photography, 1999).



Figure 97: Olmsted Park - High-mast floodlights illuminate Daisy Field (Jon Crispin Photography, 1999).



### The Riverway

The walkways along the parkway and its cross streets are all well maintained pavements. But the park walks show many signs of neglect, particularly on the Boston side. From Park Drive to Route 9 walks rate "fair" to "very poor." The Brookline side is somewhat better in the Longwood section, but the island area looks all but abandoned. The frequently used Chapel Street crossing is in poor condition.



Figure 98: Riverway - Carlton Street Bridge over the MBTA tracks has not functioned for many years (Pressley Associates, 1986).

Even the pedestrian walks paralleling streets and bridge crossings are often ill-maintained. The Brookline Avenue Bridge walks have deteriorated, along with the integral stone benches which were a unique part of its design. The parkway sidewalk is poorly maintained, with the exception of a recently improved stretch from Longwood Avenue north to Brookline Avenue. The bridle path is "very poor" throughout and, in some cases, such as either side of Longwood, it has been lost to road widening.



Figure 99: Riverway - Bridle path along Riverway in very poor condition (Pressley Associates, 1997).



Figure 100: Riverway - Brookline Avenue Bridge benches and planters (Pressley Associates, 1997).

Fences and guard rails at the Route 9 end of the park are in poor condition. New guard rails along the park side of the parkway are decently maintained. Street lights along the parkway and the other cross streets are well serviced. Floodlights on both sides of the park are not. Temporary lights have been introduced to the island area for security.

There are a few benches on both sides of the river, some historic models on the Brookline side and concrete ones on the Boston side, in reasonable repair.

### **Back Bay Fens**

Unlike the two middle parks, the Back Bay Fens' roadway surfaces and park furnishings are among the best in the system, due to a rehabilitation plan carried out in 1982 by MDC in conjunction with the Boston Redevelopment Authority and Fen Pac.

All of the rehabilitation effort was directed to the perimeter parkways and to the improvement of pedestrian access, leaving the park interior to receive little attention. Many of the recent improvements added appropriate and highly durable granite curbs and crosswalks. Elsewhere, new concrete sidewalks and street lights, still in excellent condition, are "city" materials and objects which do not belong in the Emerald Necklace park landscape.



Figure 101: Back Bay Fens - Concrete walk with granite curbs and granite block crosswalk along Park Drive (Jon Crispin Photography, 1999).



Two stone footbridges rebuilt in the Fens lagoon area in 1978 are in good condition and are similar to the Chapel Street Bridge and new bridges constructed on the Esplanade. Much of the Fens' perimeter, and some sports facilities, such as the Clemente Field bleachers and track, have been put into excellent shape, but show some lack of sensitivity to the park's historic image and character.

All the pavements of perimeter and cross streets and associated sidewalks rebuilt under the MDC Plan are rated good to excellent. Park walks and features that were not part of the plan are in variable condition, and many require major repair. The Fenway walk on the park side from Brookline Avenue to the Museum of Fine Arts is stonedust with granite cobble edging. But the river walk in the same stretch is non-existent or in very poor condition. The Northern Basin shows the worst neglect: the river side of the Victory Gardens, the area surrounding the Boston Fire Alarm Headquarters and the Mother's Rest area.

The existing lights show a great range of condition throughout the Fens, from regularly serviced street lights and flood lights at Clemente Field and historically derived pedestrian lights in the Rose Garden area, to non-working flood lights in the Victory Gardens and Mother's Rest areas.



Figure 102: Back Bay Fens - Mother's Rest (Pressley Associates, 1986).



Figure 103: Back Bay Fens - Mother's Rest, Rehabilitated in 1998. (Karen Sparacio, Photographer, 1999).

Benches include ornamental stone models in the Rose Garden and utilitarian bleachers at Clemente Field, both in good condition. The stone benches at the World War II Memorial have been recently repaired, and the wood and concrete benches seen intermittently throughout the park are in widely varying condition.

At Charlesgate, efforts to improve the ground below the Bowker Interchange has led to strangely geometrical walks, a balustraded section of the river, and rings of benches and lights in a vain effort to redeem the park connection. This area needs a great deal of attention. There is still no pedestrian access from the Charles River to the Fens, the historic gateway to the Emerald Necklace.



Figure 104: Back Bay Fens - Park area below the Bowker Interchange at Charlesgate (Jon Crispin Photography, 1999).

### Summary of Circulation and Furnishings Conditions

The various paving surfaces and furnishings in the parks represent a patchwork of intermittent, unrelated efforts to arrest the decline of the Emerald Necklace park system and its related parkways. City streets and lights taken over by the MDC have been generally well maintained in a physical sense, although sensitivity to the original design intent has been a low priority. Park paths and furnishings have been neglected, particularly in Olmsted Park and the Riverway. The more heavily used Jamaica Pond and Back Bay Fens have had some rehabilitation activity in response to the most pressing needs, but this work, as well, has not given high priority to consistency or historic appropriateness.

Most of all, this record illustrates that there is no common standard of paving materials, no vocabulary of furnishings, and no policy governing the alignment of walks or the placement of lights, benches, trash receptacles, drinking fountains, telephones or signs throughout the parks. This lack of coordination is evidence of the larger problem of fragmented management and absence of a consistent overall maintenance approach.



The contemporary uses assessment was conducted and documented in 1986. Improvements since 1986 are documented in the Master Plan and Master Plan Implementation Sections.

Olmsted's design for the Emerald Necklace was conceived out of his strong social commitment to provide for all the people's healthful recreation. Engineering, traffic, horticulture and landscape were all directed towards this single end - a people's park, a refuge and escape from the city, a sylvan world of water, greensward and woods.

The park's original purpose is valid today. But there have been dramatic changes in recreational preferences, and people's use of their leisure time in an urbanized world is constantly evolving

Some of these changes can be observed by visiting the parks at different times and seasons. One notices conflicts between fast-moving cyclists, joggers, skateboarders, and other park uses unforeseen in Olmsted's day, and the pedestrians around Jamaica Pond. One sees ballplayers, Rose Garden aficionados and Victory Gardeners in the Fens enjoying activities that were not possible when the park was a marsh. One becomes aware of the impacts of automobile traffic, unthought of when the parks were constructed. And one can readily see that some parts of the park are under used, because of their present condition, isolation or difficulty of access.



Figure 105: Jamaica Pond - Conflict along heavily trafficked Jamaica Pond perimeter walk between "passive" strollers and "active" bikers and joggers (Walmsley & Co. Inc., 1986).

Public hearings and community meetings provided forums for people to express interest in the parks and to tell how they used them. Each park has its own strong constituency of users, yet a surprising number of people appreciated the Emerald Necklace as a system. They understood the continuity of the belt of parks that contributes open space, water and woodland to Boston and Brookline, and they regretted the serious interruptions in its continuity. Some active groups strongly expressed opinions that didn't always reflect the ideas of the majority of users.

In an effort to understand the contemporary uses and public perception of the Emerald Necklace parks, a Community Survey and User Analysis was included in this planning process. The full text by People, Places & Design Research, Inc., is at the office of Boston Parks Department and Town of Brookline Town Hall. The survey methodology, interpretation, and findings are discussed below.



Figure 106: Back Bay Fens - Gardening in the Victory Gardens (Jon Crispin Photography, 1999).

The methodology was threefold: to relate the Emerald Necklace to comparable urban parks in the United States, to make systematic observations of people in the parks and to conduct telephone interviews with a representative sample of households in the parks' adjoining neighborhoods. The study used 170 interviews of park users at Jamaica Pond and Olmsted Park to supplement the findings of a Simmons College Undergraduate Management Field Study of nearly 1,000 park users in the Riverway and the Back Bay Fens. The random telephone interviews conducted by People Places & Design Research covered nearly 200 households and nearly 300 residents, including students, families, singles, adult couples and elderly people. The survey was carried out in tandem with the inventory of physical conditions in the fall of 1986.

One of the first findings was that over two-thirds of park users in both Boston and Brookline recognized the Emerald Necklace name. Further, there was a strong interest in the parks' history, in both Boston and Brookline. This interest indicates opportunities for more educational and interpretive programs in the parks, better signage and more promotional literature.

Although people were aware of the Emerald Necklace as a park system, over half the park users thought of the parks as separate entities. However, there was considerable interest in changing this perception, as nearly two-thirds of the sample thought more effort should be made to reconnect the parks and treat them as a continuous system. Over half reported using more than one park, with Jamaica Pond the most commonly used. Among people who use the parks for cycling, nearly 80% used more than one park.

Survey results showed that park users have an overwhelming preference for passive and unstructured uses such as picnicking, sitting and relaxing, sunning, feeding ducks, fishing, and so on. In particular, the Emerald Necklace Parks survey validated the findings of other urban park user surveys, stressing passive occupations and activities. The survey also documented active uses, such as cycling, jogging, and playing and watching sports.



There were interesting differences between the four parks:

At **Jamaica Pond**, strolling was second to jogging as the most common activity, with cycling a strong third followed by sitting and relaxing. Fourteen separate activities were mentioned, more than at any other park, indicating a diversity of use that has been important since the beginning. Boating is unique to Jamaica Pond, which also has the greatest number of people fishing. Conflicts between cyclists and other users was a major problem.



Figure 107: Jamaica Pond - Boating at Jamaica Pond (Pressley Associates, 1999).

**Olmsted Park** had too few responses in this study to make a reliable activity profile. It is the least used of the parks, particularly in its interior wooded areas. Observations and previous studies (such as that by the Friends of Leverett Pond, 1984) show that walking, jogging and hiking on the Pond Street/Riverdale Parkway corridor, and watching and participating in active sports are the most frequent activities at Daisy Field.



Figure 108: Olmsted Park - New bike/jogging trail and new pedestrian walk, and parking at Riverdale (Jon Crispin Photography, 1999).



Figure 109: Riverway - Pedestrian path at Longwood Avenue Bridge (Pressley Associates, 1987).

The **Riverway** is the least “developed” of the four parks. People here enjoy passive activities, with walking and jogging the most common, followed by cycling and sitting and relaxing. This is, primarily, a park for leisure and moderate exercise.



Figure 110: Back Bay Fens - Basketball courts (Boston Parks Department 1990's).

The **Back Bay Fens** is the most “developed” of the four parks. It contains ball fields with backstops, basketball courts, bleachers and lights, a World War II Memorial, Rose Garden and Victory Gardens. Even so, walking was the most common activity, with sports spectating and participation second, and sitting and relaxing third. Other forms of passive recreation were evident, including gardening, sunning, picnicking and visiting the Rose Garden. Jogging, cycling and frisbee playing were active recreational pursuits in a non-organized format.



Over 80% of local residents used the parkways for commuting and other functional driving. About half of them (40%) reported using the parkways for pleasure driving. The great majority (85%) thought the scenic quality was satisfactory. As the experience of driving Jamaicaway, Riverway and Fenway takes only a few minutes at moderate speeds of 35-50 mph, most people were responding to the pleasure of gently curving tree-lined streets.



Figure 111: Back Bay Fens - Fenway tree-lined drive near Emmanuel College (Pressley Associates, 1987).

Over 25% of park users felt that access to the park is impaired by parkway traffic, and nearly 30% said that the parkways made it difficult to walk and cycle in the parks. These numbers are substantial enough to indicate that access is a significant problem. Nearly 90% of the surveyed users were opposed to accommodating additional parking on park land.

Security is a common concern, especially in the Back Bay Fens and in less heavily used areas of the park system. A stronger police presence and better lighting were suggested; these are among the strongest recommendations in most park studies.

In both the user study and at community meetings, there was a strong interest in reconnecting the parks: 90% of respondents wanted to reconnect the walkway, jogging and cycling paths among the parks, nearly 75% wanted to reconnect the waterways among the parks, and nearly 60% wanted to regain the Sears lot as parkland. The suggestion of developing a park education center at Jamaica Pond was favored by nearly 60%.

Only around 30% of survey respondents favored phasing out Kelly Rink, although this reluctance probably reflects residents' concern about losing a maintained facility, with no replacement or substitute.

Few respondents had strong opinions on the removal of the War Memorial and Rose Garden from the Back Bay Fens. Few people objected, but neither did they see the value of relocating these features elsewhere within the park system.

### SUMMARY

Most people have a high level of awareness of the Emerald Necklace and have a generally positive image of the parks.

The many rounds of community meetings that were part of the planning process publicized the DEM's Olmsted Program and engendered widespread interest and support. User responses also helped to establish some principles to guide planners in forming recommendations:

**People like the multi-use character of the parks.** Although passive activities are favored by the vast majority, including many of those individuals who use the parks for more strenuous activities, active recreation should also be accommodated.

**The reconnection of the parks as a continuous land and water system has near unanimous support.** Therefore, a primary objective of the Master Plan should be the joining of the walking, cycling and jogging paths between the parks and improving people's access to the parks. Improved park access should reduce the difficulty of crossing parkways, and park land should no longer be taken for parking.

**The parkways are regarded as integral to the parks,** but a significant number of park users indicated that traffic should be buffered from the parks' interiors. The major concern with safety and security suggest more visual openness, but scenic quality must not be sacrificed for it. A stronger police presence and better lighting of heavily used routes is recommended.

**People want more, not fewer, opportunities to enjoy the parks.** This does not mean that more facilities should be built, but that a rich array of programs and events should be devised to appeal to the broadest cross section of the community. When facilities are removed or relocated, the rationale for such changes must be made clear, and each removal should be balanced with some new opportunity for enjoyment in the parks.



Figure 112: Jamaica Pond - Children picnicking (Pressley Associates, 1989).



The Emerald Necklace was originally commissioned by two municipalities: the City of Boston and the Town of Brookline. In 1956, The Metropolitan District Commission (MDC) took over the parkways and some park lands (such as the Kelly Rink area in Olmsted Park). In addition, there are “privatized” areas, such as the World War II Memorial and the Victory Gardens, which are managed and maintained independently. Discounting these, the four parks comprising the central core of the Emerald Necklace are presently operated by three authorities:

**Boston** operates by far the largest increment of about 230 land and water acres in all four parks.

**Brookline** manages and maintains about 30 land and water acres of the west bank of Olmsted Park and the Riverway.

The **Metropolitan District Commission (MDC)** is responsible for about 30 acres in all four parks, in addition to the acreage encompassed by the parkways themselves.

Since the 1940s and 1950s, private organizations have become increasingly involved with specific pieces of the park system.

Local “Friends” groups, including Friends of the Muddy River, Friends of Leverett Pond and the ROW Coalition, institutions and member organizations of the Boston Park Partners Program have contributed volunteer clean-up crews, funds and studies. The Fenway Garden Society has established itself in the Lower Fens. The rights to the World War II Memorial area have been acquired by The White Fund, although Boston’s Department of Parks and Recreation is still responsible for its routine upkeep.



Figure 113: Back Bay Fens - War memorials (Jon Crispin Photography, 1999).

The subdivision of management that has existed since the creation of the Emerald Necklace has persisted for a hundred years. With the addition of the MDC and myriad private groups this situation has further proliferated to create the disparate management responsibilities that exist today. This fragmentation of authority over the management of a park system is unique to the Emerald Necklace.

A major factor affecting the condition of urban parks throughout the United States has been declining funds available for park operations and upkeep. In the late 1970s and early 1980s, reduction in park department staffing and funding finally led to an aroused citizenry protesting the cuts and volunteering help, in many ways creating the political climate in which the Olmsted Program initiative was born.

Maintenance concerns were voiced at public hearings and community meetings held during 1987 and 1988 in conjunction with this study. The master planning process provided an opportunity to evaluate the existing management and maintenance situation. It was not done to be critical or to blame, but to try to understand the current levels of maintenance activities, standards and operations in the parks that determine their present condition. This aspect of the study was performed by landscape management specialists, Cobham Resource Consultants, of Oxford, England, in the late summer and fall of 1986. Their complete findings are reproduced in a separate volume (at Boston Parks Department and Brookline DPW) however, the more important results are summarized on the following pages.

### THE EXISTING SITUATION AND PROBLEMS

In 1986, the first and obvious problem of the Emerald Necklace was the absence of a cooperative management focus. There is no unified overseeing organization. Consequently, Boston, Brookline and the MDC have come to feel the effects of their divergent management objectives, maintenance standards, maintenance resources, capital improvement projects and technical solutions to maintenance problems. In practice, these manifest themselves as differences in user activities, in path surface materials, frequency of grass cutting, frequency of trash pick-up, use of voluntary labor and in various other ways. The Brookline side of the Muddy River throughout the Riverway and Olmsted Park had a more manicured look than the Boston side, which was more overgrown. Actually, the scenic image desired by the designers was somewhere between the two extremes, "*a natural growth slightly refined by art*" (John Charles Olmsted in 1893). The MDC parkways and bridges are maintained at a high level while the pedestrian elements associated with many of the same bridges have been allowed to deteriorate.

In 1986, a second problem was insufficient maintenance funds. Since Proposition 2 1/2 in the late 1970's, which limited property tax revenues, parks departments have suffered from increasing demands in the face of decreased and diluted municipal resources. The net result has been a level of maintenance insufficient to prevent parts of the park system from deteriorating. Because parks have been starved of maintenance money, maintenance planning has been curtailed. Consequently, when infusions of funds have occurred, they have been spent to deal with "crisis" conditions, or have funded one-time capital improvements to address a possible danger or save a particular feature. Unfortunately, this approach does not address the larger, long-term problem of establishing maintenance continuity over time. The rejuvenation of neglected woodlands and shrub areas should be gradual, starting with the worst areas. Capital improvements under this Master Plan presume a commensurate expenditure for management, maintenance and restoration.

In 1986, a third area of concern has to do with the current lack of resources to hire and train the skilled and sensitive horticulturists, arborists and landscape architects needed to maintain historic naturalistic landscapes. The technical problems associated with improved maintenance are relatively straightforward to solve. However, improved technical operation requires an enthusiastic, well-trained staff with continual in-service training.



Finally, there is the need for a unified plan which will coordinate the efforts of Boston, Brookline, the MDC and private organizations into a concerted operation.

#### 1986 SURVEY FINDINGS

The Management and Maintenance team not only observed the condition of the parks' landscapes and water bodies, but also met with the park staffs of Boston, Brookline and the MDC as well as the DeLeuw Cather Company, consultants to Boston and Brookline. The park maintenance survey identified 20 different landscape categories (some of which were subdivided) which are documented in Exhibits 17 - 20, available on file at the respective park departments.



Figure 114: Jamaica Pond - Trees over grass (Pressley Associates, 1998).

**Grass** covers about 112 acres (59%) of the four parks' 190 land acres. During the initial walkover in 1986, mowing appeared to be intermittent, particularly in Boston, although the city's attention to turf maintenance has increased dramatically since then. Grass areas were not picked for trash and debris prior to mowing, which at times caused damage to already scarce equipment. Bare spots in grassy areas were ignored, and some newly planted trees had been poorly located, adding to the number of mowing obstructions. Some areas looked as if they would benefit from fertilizer, and Clemente Field appeared to suffer from poor drainage and compaction problems. There appeared to be no regular program of over-seeding badly worn grass areas, although this situation has been rectified in Boston, which has helped tremendously. There were also many eroded path edges receiving little or no care.

**Shrub** areas, which cover only two or three acres (less than 2%), are limited to the Rose Garden, hedges and remnants in woodland areas. It was apparent that many ornamental species had disappeared and much of the diversity has been lost. Most of this is the result of previous clearing policies to improve visibility in woodland areas, although age and lack of natural regeneration can be blamed in part. Mature, canopy trees crowd out new seedling growth in competition for light, moisture and nutrients. The customary practice of coppicing, or periodically cutting shrub growth back to ground level, can also be blamed for the lack of regeneration. Such a practice, done regardless of species, location or growth habit, has long-term negative effects on the ecological health of a forest. Some shrub areas are over-





Figure 115: Back Bay Fens - Clemente Field “grass area” (Jon Crispin Photography, 1999).

grown and need cutting back to rejuvenate their root stools. But thereafter, a more selective pattern of pruning must be established. Overall, the feeling is that there is a need for increased emphasis on shrubs, particularly in the Fens.

The survey indicated that many of the trees outside woodland and shrub areas were declining and that some were potentially hazardous to the public. This problem was, for the most part, rectified by a summer windstorm in 1986. The balance of the hazardous growth was removed during Olmsted Program funded Early Action pruning projects in 1987. Generally, the majority of the park system's original trees are fully mature, and therefore susceptible to diseases, pests, and physical damage. The majority of recent tree plantings have been of shorter-lived ornamental species. There is an urgent need for a regular, annual canopy tree-planting program (as distinct from a large-scale “crash” program over a short period) in order to establish an unevenly aged tree distribution. There is also an



Figure 116: Back Bay Fens - Rose Garden “shrub area” (Jon Crispin Photography, 1999).



urgent need for felling and remedial tree work throughout the entire Emerald Necklace.

**Woodlands** covering about 55 acres (29%) repeat many of the problems of the tree population elsewhere. The woodlands were all established around the same time and are now approaching maturity together. However, in some cases, due to the demise of a canopy tree, natural regeneration has started in small clearings. Such conditions emphasize that woodlands management should be gradual. Selective thinning will maximize the value of mature trees while introducing age diversity into the woodlands.

**Understory** provides wildlife cover and visual screening, and its management is a critical issue. In the larger woodland areas in Olmsted Park, there is an opportunity for a variety of treatments varying from "natural" woodland to open parkland. A major problem throughout the parks, particularly in woodland areas, were the invasive stands of Japanese Knotweed. An immediate and vigorous program of knotweed control and eradication is needed to stem its further spread. Over the past few years, regular mowing has reduced the plant's vigor. Trash and dumping have been serious problems in parts of Olmsted Park and the Riverway.



Figure 117: Jamaica Pond - Pinebank understory needs to be reestablished (Pressley Associates, 1998).

At the **water's edge**, the relationship between vegetation and water was far from satisfactory. Probably due to the difficulty of mowing close to the water's edge, many pond and river banks now exhibit an overgrowth of invasive shrubs and trees. This may be desirable in some places, but it interferes with water views, contradicting the original scenic intent. Such areas need to be clearly defined and the vegetation removed to reinstate the grass/water relationship and restore the intended views.

Compounding this problem is the presence of Phragmites throughout the water system. Often, it occurs only in small quantities; but elsewhere, specifically





Figure 118: Riverway - Knotweed at water's edge obscures views of water (Pressley Associates, 1999).



Figure 119: Back Bay Fens- Phragmites invasion (Karen Sparacio, photographer, 1999).

downstream and in the Fens, Phragmites has overrun the banks, colonizing both the water margins and the low-lying land onshore. This invader actually produces new land by trapping silt, and has obliterated a large percentage of the Muddy River and Fens watercourse since 1975. The solution is likely to be a careful combination of physical removal and chemical treatment. The removal operation should also include dredging to establish a water depth that will prevent recolonization. All options for removal and control should be thoroughly evaluated.

**Paths and roadway surfaces** in the park system exhibit a range of treatments and maintenance levels, from periodic in the Fens to total abandonment in the remote areas of Olmsted Park. There are many different surfaces utilized for practical reasons, such as susceptibility to erosion, level of use, or the necessity for emergency vehicle access.





Figure 120: Olmsted Park - Riverdale Parkway and pedestrian path at Leverett Pond (Pressley Associates, 1997).

### SUMMARY OF EXISTING SITUATION AND PROBLEMS

Overall, the 1986 survey revealed:

#### **A disappointingly low level of maintenance:**

Despite serious budget cuts which, in part, precipitated the Olmsted Program, there is a need to develop a regular, sustained maintenance program. Since the Olmsted Program was initiated, tremendous improvement has been seen in most areas of the Emerald Necklace, particularly in Boston, due to Boston's renewed commitment to funding both the necessary manpower and equipment to maintain these parks. Much still needs to be done, and the current resurgence of interest needs to be maintained over time in order to fully restore the parks to their former glory. But, as only a few years of attention has shown, many areas of the Emerald Necklace could be successfully reclaimed and restored by the introduction of a regular maintenance program.

#### **An uneven allocation of resources:**

While overall maintenance levels are improving, there is still some variability in both the frequency and quality of maintenance in the park system, reflecting the resources available and the way they are allocated by the parties responsible for the maintenance of a respective park segment. The 30 acres of land that Brookline has under its jurisdiction have the equivalent of nearly 250 person-days (labor plus supervision) of necessary maintenance per year, roughly equivalent to 1 full-time person-year. In contrast, the middle Fens (the Rose Garden, Clemente Field and Memorial area) have about 625 person-days for about 10 acres (2.84 person years), and the remaining 220 land acres in Boston receive only 50-60 person days. A more even distribution of maintenance staff has been seen since the initial survey with deployment of a dedicated horticulture crew, but resource allocation will continue to be a major issue in ensuring the future continuity of use and condition of the Emerald Necklace park system.

### **Inadequate patrol and surveillance:**

The concentration of Boston's resources on the middle Fens and Jamaica Pond has resulted in a low staff presence elsewhere in the system. Additional Park Rangers could adequately handle normal situations in the parks; however, mounted municipal patrols should be made available to handle more serious problems.

### **SUMMARY OF OBJECTIVES**

The primary management and maintenance objectives distilled from the surveys and discussions are listed below:

#### **Management:**

- Create an overall framework to manage the Emerald Necklace as one park system;
- Secure the necessary annual maintenance funds, ideally from public and private sources, to establish a maintenance endowment;
- Coordinate local users to fully utilize the large resource of voluntary help and fund raising;

#### **Maintenance:**

- Restore grass areas, establishing regular maintenance and defining differential cutting areas;
- Rejuvenate shrub areas, establishing regular maintenance, appropriate to the species;
- Regenerate the woodland areas, principally by natural means supported by some planting;
- Standardize walk paving materials so that edge erosion ceases to be a problem. Introducing a more "natural" walk surface;
- Remove most of the woody species which have colonized the water sides. Restore the pond and river banks to permit mowing to the edges, thereby preventing a recurrence of the problem;
- Control and eventually eliminate Japanese Knotweed;
- Control Buckthorn in the woodland understory;
- Remove Phragmites and subsequently control regrowth;
- Establish a major program to remove dead and diseased trees and a program of tree surgery to stabilize the remaining specimens;
- Introduce a regular annual program of planting and maintaining around 1% of the total number of desired trees outside the woodland areas;
- Improve water quality through resolving point source pollution and reducing non-point source pollution with erosion control, shoreline stabilization, dredging and drainage repairs;
- Reduce costs by introducing more cost-effective maintenance systems, such as considering the judicious use of chemicals for weed control, and the use of growth retardants to control turf growth in hand mown areas.



THE MASTER PLAN



# *The Master Plan*



CONCEPT AND VISION

*"The main distinctive characteristic of the Boston municipal system is its design as a series of parks, each possessing an individual landscape character and special recreative functions, united by a chain of drives, rides and walks, forming a grand parkway of picturesque type... reaching from the heart of the city into the rural scenery of the suburbs."*

*- Olmsted, Olmsted and Eliot Landscape Architects, Plan of Portion of Boston Park System from Common to Franklin Park, 1894.*

The Emerald Necklace is the most complete 19th - century realization of a linear park system. While Olmsted had proposed systems in Brooklyn (1866-1873) and Buffalo (1868-1876), none were as extensive as the Emerald Necklace. Because of its rarity and consequent significance as a unified system, the recommendations set forth in this plan are intended to reinforce Olmsted's original concept of a unified system of linked parks through the following actions:

- Re-establish the visible continuity of the watercourse, to restore the character of the original intent of a "chain of pleasant waters."
- Strengthen the linkages between the parks to recapture much of the possibility of uninterrupted movement through them.
- Reintegrate the parkways as a primary circulation element in and among the parks, as scenic pleasure routes.
- Reinforce unity, variety, and health of vegetation. Express "distinctive" landscapes of the upland forests, "alternating groves and meads" of the middle section and the lowland landscapes of the Fens, which were once a marsh but, now, a landscape bordering a "winding, meandering water-course."
- Enrich the wildlife supporting capacities of the park system.
- Accommodate the widest range of recreation needs, for the broadest constituency of users, that are not inconsistent with the Emerald Necklace's unique character as a passive, water related, linear park.
- Coordinate the energies of Boston, Brookline, the MDC, institutions (both within the parks and abutting) and volunteer groups into a cooperative public/private restoration and preservation effort.
- Strongly support the improvement of water quality in the Muddy River as a concerted public/private effort.



Plan 13: Plan of the park system from the Common to Franklin Park. 1894. Lithograph, Olmsted, Olmsted and Eliot (FLONHS).

### RATIONALE

The rationale behind the system-wide plan and proposals is based on the four perspectives described in the Introduction: history, physical conditions, contemporary uses, and management and maintenance.

Interpreting the park system in this way brings into focus the values of greatest importance to each segment of the system, as well as to the individual parks.

In restoration plans for any of the great parks created in Olmsted's era, historic values are of utmost importance, but they are not absolute. Considerations of history have to respond to contemporary uses, management approach, maintenance capacity, and the ebbs and flows of various funding sources. Nevertheless, the principles of historically appropriate and sensitive designs must guide all decisions.

The correction of sub-standard conditions must be addressed immediately, especially where public security is at issue or the enjoyment of the parks is compromised. Efforts also must be concentrated where historic structures or features could be lost without prompt intervention. This is an on-going program, steadily returning the parks to a fully functioning condition.

Provision for contemporary recreational uses must include improved access to the parks, augmented facilities and expanded programs. While maintaining their special quality as a passive oasis in a densely populated urban area, the parks must serve current and future generations to the fullest extent practicable, and provide special consideration for the elderly and disabled. Diversification and multiple uses are encouraged within the historic landscape's capacity to accommodate them. Where existing uses appear to be incompatible with a park's historic purposes, efforts should be made to relocate those uses. If relocation is deemed impossible, an attempt should be made to soften their impact through buffer planting, re-siting or screening, to make them less conspicuous and disruptive.

Finally, a coordinated maintenance operation and a fuller educational outreach program must be developed.

The balance between historic and contemporary values is not simple to achieve. Yet it is essential that a balance be maintained. The genius of the original plans was in its provision for exertive/active recreation, gregarious/neighborly recreation and passive/contemplative/restorative recreation by separating and differentiating them so that many group and individual activities could occur simultaneously without intruding on one another. The Master Plan, system-wide and for each park, endeavors to do the same, within the context of the pastoral and picturesque landscape of the original scheme.



### System-Wide Projects Update

The following projects have been initiated or completed since 1989 and are listed in chronological order:

In 1988, the Boston Parks and Recreation Department (BPRD) developed an Emerald Necklace Sign System Plan through funding by the State. (\$21,000)

In 1998, a feasibility study on the improvement of water quality for the Muddy River was completed and funded by the Army Corps of Engineers, by a Congressional appropriation. (\$500,000)

In 1998, BPRD, Boston Water & Sewer Commission (BWSC) and the Town of Brookline developed a comprehensive plan for the Muddy River which complements the existing BWSC improvement plan for the Stony Brook basin.

Restoration of the Bridle Path and Chapel Street Bridges, Brookline Avenue and cove bridges and supporting planting was completed in 1998 through funding by the DEM, Olmsted Historic Landscape Preservation Grant Program and a grant from the Massachusetts Historical Commission. (Approx. \$900,000)

In January of 1999, an Environmental Notification Form (ENF) for the Emerald Necklace Environmental Improvements Master Plan, Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement was submitted to the Massachusetts Environmental Protection Agency (MEPA) by the Boston Parks and Recreation Department and the Brookline Department of Public Works as proponents. The Plan was devel-

The Master Plan recommendations discussed in this section apply to the Emerald Necklace park system as a whole. However, for purposes of clarity there is some necessary repetition of the system-wide issues in the sections of the plan dedicated to the individual parks.

Specific recommendations for the system as a whole, as well as individual parks, are listed under the six headings introduced at the start of this section, namely:

- **Watercourse**
- **Internal Circulation**
- **Parkways**
- **Landscape Composition**
- **Uses, Structures and Facilities**
- **Management and Maintenance**

### Watercourse

The Muddy River watercourse is the foundation of Olmsted's design for the Emerald Necklace park system, and the keystone to the pre-eminence of the Emerald Necklace park system. Improving water quality and re-establishing a clean, visibly continuous watercourse from Jamaica Pond to the Charles River is a prime objective of the Emerald Necklace Master Plan. However, the implications of this objective extend far beyond the boundaries of the Emerald Necklace and of this plan, and must be achieved by parks management agencies in concert with the external agencies involved.



Figure 121: Riverway -Lower island below St. Mary's Church, 1907 (FLONHS).

oped by Jason M. Cortell and Associates, Inc., Environmental Consultants, and Pressley Associates, Inc., Landscape Architects. The scope of the ENF is consistent with the recommendations outlined in this Master Plan. In 2001, Boston & Brookline estimated this work to be approx. \$92 million.

An Environmental Impact Report/ Environmental Assessment for the Emerald Necklace Environmental Improvements Master Plan - Muddy River Restoration Project will be submitted to MEPA in 2001 by the Boston Parks and Recreation Department and the Brookline Department of Public Works as proponents. The Plan is being developed by CDM, Inc., Jason M. Cortell and Assoc., Inc., Pressley Assoc., Inc., Vanasse Hangen Brustlin, Inc., and LEC Environmental Consultants, Inc. (Jamaica Pond not included).

- **Stabilize slopes and areas that drain into water bodies to reduce erosion and siltation**

In many places throughout the system where banks are undercut and abutting lands are bare, unvegetated areas drain to water bodies, causing erosion and siltation. In some cases, large gullies have resulted, such as west of Daisy Field in Olmsted Park. Slopes must be enhanced with new fill and regraded, the bank edge reinforced, and the surface revegetated. New drainage structures should be added where needed. This action, based on existing physical conditions, will help maintain the character of Olmsted's slopes and ponds. The work must be done in order to maintain the health of the water bodies.



Figure 122: Jamaica Pond - Pond bank needs stabilization and revegetation (Pressley Associates, 1997).

- **Increase water depth and remove contaminated deposits by dredging.**

With the exception of Jamaica Pond, water depths throughout the systems are insufficient, deteriorating markedly downstream. Shallow depths cause turbidity, reduce Biological Oxygen Demand (BOD) and encourage invasive aquatic growth. The problem is magnified by pollution and its associated nutrient-rich sediments.

The physical conditions perspective leads to the recommendation that dredging techniques be developed that limit damage to these park landscapes abutting water bodies and their indigenous wildlife. Dredging will re-establish the contours of the original Olmsted landscape, and will improve the water quality throughout the park system. Where necessary, aeration devices should be considered to improve dissolved oxygen levels. Prior to initiating this project, the problem of disposal of contaminated dredge deposits must be resolved.

- **Identify and resolve all point source pollution.**

Petroleum spills and illegal sanitary waste hookups to storm sewers continue to pollute the watercourse. Other pollution sources are unknown and will require tracking and further investigation. The problem is aggravated by combined sewer overflows (CSOs). During periods of heavy rain, these conduits channel runoff



toward the Charles River and Boston Harbor. While in the past the system was adequate, in periods of heavy rainfall conduit capacity is now exceeded. This situation is tied to the much larger problem of Boston Harbor pollution.

Efforts shall be made by Boston and Brookline in conjunction with the Massachusetts Water Resource Authority (MWRA) and other appropriate agencies to address these problems of pollutants and storm runoff.

Olmsted himself regarded the park system as an essential component in the abatement of water problems associated with the Muddy River and the Back Bay Fens. Water pollution abatement and parks maintenance have been interconnected since the conception of the system. The MWRA is mandated to correct problems of this nature, and has on-going studies in progress.

The Massachusetts Executive Office of Environmental Affairs (EOEA) contracted with the engineering firm of Metcalf & Eddy to develop an action plan for the restoration of the Muddy River system. A recent Boston University study has documented pollution sources along the Muddy River.

- **Improve flow throughout the parks by reconnecting water systems from Jamaica Pond to the Back Bay Fens for continuous flow.**

The originally intended hydrologic characteristics of the Muddy River watercourse were altered with the 1950's installation of the dual 72" conduits presently under the Sears parking lot. Periodic upstream flooding indicates that flow may be inhibited by the presence of these conduits and their associated sediments. The physical reconnection of the entire Muddy River/Fens watercourse should ameliorate these problems by improving flow and aeration. The re-establishment of a continuous open waterway will also help restore the appearance and continuity of the Emerald Necklace. All proposals affecting flows in the Muddy River and Fens must contribute to the re-establishment of the originally intended characteristics of the Emerald Necklace watercourse.



Figure 123: Riverway - Gatehouse at Brookline Avenue, circa 1905 (J. G. Langdon, photographer, FLONHS).

Both existing conditions and historical perspectives inform these recommendations. A concerted effort should be made to develop a drainage proposal that treats the Muddy River and Stony Brook basin as parts of a single system, that favors historic solutions to flow problems, and that considers the reconstruction of historic structures, such as the Brookline Avenue Gatehouse and the old parkway bridges at the old Sears parking lot site. Of course, a plan that addresses existing conditions and future needs must be balanced against such historical sensitivity.

- **Reinstate historic water edge treatment, regaining intended scenic qualities by removing invasive plants, particularly knotweed and Phragmites.**

The edges of water bodies have been eroded and their character changed over time. The scenic “framing” of water views that Olmsted planned has been obscured by overgrowth of plant materials.



Figure 124: Jamaica Pond - Path and stabilizing bank vegetation, circa 1905 (FLONHS).

Invasive plants must be removed and their recurrence controlled throughout the system, especially in the Back Bay Fens. Additionally, Olmsted’s highly varied and articulated water edges should be reinstated, enhancing the visual quality of the parks tremendously. Both stability and aesthetics should be considered. River and pond edges were meant to be “soft,” but in practice they need to be subtly reinforced, especially as flows are improved. Jamaica Pond may require a highly durable edge treatment due to periodic wave action. Alternative edge treatments should be explored, tested and evaluated for durability as well as historic sensitivity.

As water bodies are restored throughout the system, the historic “framing” of water views, where walks come to the water at overlooks or beaches, shall be carefully considered in replanting water edges. A balance must be struck between



the efforts to be consistent with the original planting plans, where vegetative material was installed in expansive, densely planted stands, and now-costly shrub massings, which require special care and skilled maintenance. The installation of understory shrubs, which increases the sense of enclosure in the parks, and which is a strong element in the design concept for the original park system, needs to be carefully addressed to ensure good visibility for security reasons.



Figure 125: Olmsted Park - Spring Pond, February 1920 (Leon Abdalian, photographer, BPL Print Room).

### Internal Circulation

Uninterrupted linear circulation through the parks is essential for the Emerald Necklace to function as a system. A primary goal of this plan is to restore lost linkages to the fullest extent possible, while a secondary goal is to reconcile user conflicts in the more heavily populated parks at each end of the system, Jamaica Pond and the Back Bay Fens.

- **Provide better access to the park for all people, including those with limited mobility.**

At present, the heavily traveled parkways are a major barrier to park access. Both traffic volumes and speed make movement from the community to the parks restrictive and hazardous at many points.

Because contemporary use pits pedestrians against vehicular traffic, recommendations must ensure safety for all users. Initially, crosswalks and signalization could be provided as in much of the recently improved Back Bay Fens. Longer range improvements could include traffic island refuges, coordinated signal timings, and intersection modifications that balance the needs of park users and commuters. Access must be provided for cyclists, joggers, and pedestrians, with special regard for the elderly and those with special needs.



Figure 126: Jamaica Pond - Eliot Street Crossing without crossing light at Jamaica Way and Kelly Circle (Jon Crispin Photography, 1999).

- **Control vehicles within the parks by restricting parking to designated areas. Define maintenance, security and emergency routes and access regulations.**

There is currently little parking available for park users arriving by car, as well as no designated routes for authorized vehicles. Unregulated parking and vehicular movement cause problems such as turf damage, compaction and erosion, and interfere with appropriate park use. At Daisy Field, uncontrolled parking on parkland was rectified by the construction of an Olmsted Program-funded parking area in 1988. However, whenever possible, future attempts should be made to establish user parking without giving up park land. Park roads and adjacent streets should be used whenever possible to absorb parking.



Figure 127: Olmsted Park - A portion of Riverdale Parkway adapted to parking use (Pressley Associates, 1996).



The integrity of the historic landscape and its buildings should be protected to the greatest extent possible by the establishment of small, inconspicuously located parking areas, if street parking is not readily available. Permitting and parking controls for special events should be considered. To control unwanted automobile access, granite curbs and historically sensitive bollards should be introduced as barriers.

- **Redefine the circulation system to provide two separate system-wide circuit routes, one for pedestrians and one for cyclists and joggers.**

There is conflict, especially in the more heavily used parks at each end of the system, Jamaica Pond and the Back Bay Fens, between faster-moving cyclists, joggers, skate-boarders and roller-skaters, and slower moving pedestrians. Movement patterns in the parks have changed over time, rendering the original circulation systems inadequate to current uses.



Figure 128: Jamaica Pond - Pedestrians, jogger and cyclists sharing the same path at the Jamaica Pond Boathouse (Walmsley & Co., Inc., 1987).

Where advisable, the obsolete bridle path system can be reused as a cycling and jogging path, leaving the walks for pedestrians. Where the transformation of bridle path to bicycle path is not advisable, the bridle path should be permitted to revert to park land. This solution honors historic routes while resolving use conflicts, and adds passive parkland to the Emerald Necklace. Biking and jogging routes, identified by symbol-signs, will have smooth, asphalt surfaces that provide good riding and are still resilient enough for running. Pedestrian routes, if at all possible, will be stonedust, or, at heavily used Jamaica Pond, stonedust over asphalt, creating a surface which is comfortable for pedestrians and appropriate to Jamaica Pond's intended scenic quality, while at the same time, less appealing to cyclists.

- **Reinforce the cycling and jogging circuit routes within each park and the linkages between them.**

There are currently no designated cycling or jogging circuit routes within or linking the parks. Such paths could encourage increased use from abutting neighbor-



hoods, and would significantly strengthen the integrity of the intended system linkages. Circuit routes are possible in all parks except the Riverway, where the parkway has been widened and has further constricted the narrowest southern section. Therefore, the newly constructed cycling and jogging route should follow the eastern edge of Jamaica Pond, Olmsted Park, and the Back Bay Fens, and the western edge of the Riverway, first step in restoring the continuity of the Emerald Necklace's intended linear circulation system.

At-grade connections made between the parks should improve system linkages, with close attention paid to resolving conflicts with cross-street traffic.



Figure 129: Jamaica Pond - Bikeway along Jamaicaway (Jon Crispin Photography, 1999).

- **Repair and reconstruct paths, steps, and bridges throughout the system.**

Many paths are in poor condition, and users are unable to get to the more remote areas of the parks. Historic steps and path connections in Olmsted Park have disappeared or are overgrown, but many such elements are intact. Elsewhere, independent "desire lines" have replaced the original paths. These should be evaluated when reconstructing the circulation system.



Figure 130: Jamaica Pond - Steps at Perkins Street (Pressley Associates, 1998).



The redefinition of the pedestrian path system to reflect the historic design as well as contemporary needs will encourage greater activity throughout the entire park system, particularly in the less frequently used areas, while helping to reduce conflicts in high use areas.

### Parkways

Olmsted planned curvilinear parkways partly to discourage commercial transportation. Today, the traffic flow that exists in and around the parks is tied to regional growth and transportation problems that cannot be fully addressed by this Master Plan. Proposals for parkway and cross-street changes must be verified and refined by detailed engineering data prior to project implementation. However, the proposals made here raise important issues and reflect neighborhood concerns.

To the greatest extent possible, parkways should be reintegrated into the parks.

- **Explore ways of reducing traffic volume and speed on the parkways, especially at peak park use times. Consider closing sections on weekends, and on holidays for special events.**

Unrestricted traffic movement through the parks is an impediment and a hazard to users. Regional traffic planning should seek ways to reduce the volume and speed of parkway traffic and develop alternative routes.

Parkways, such as Parkman Drive at Jamaica Pond, could be closed to through traffic on weekends and holidays in the same way Memorial Drive in Cambridge and Chickatawbut Road in the Blue Hills Reservation have been successfully closed. The potential for partial or total closings should be studied for all parkways and park drives to enhance the intended passive serenity of the parks, especially on summer weekends, holidays, and for special events.

- **Restore, to the greatest extent possible, the intended scenic views of the parks from the parkways by recreating "framed" viewsheds at certain locations where the safety of the driver, park user, and the serenity of the park system can be ensured.**



Figure 131: Olmsted Park - Ward's Pond from Jamaica Way looking northwest to Chestnut Street and Pond Avenue, Sept. 2, 1901 (FLONHS).

Further study should be given to the advisability of framing views for parkway users. Attempts to draw the attention of a parkway driver to park scenery could compromise the safety of both parkway and park users. The sense of driving along tree-lined parkways may be enough to provide a pleasurable experience for parkway users.

Parkway views must be balanced along with issues of safety and maintenance as well as aesthetics. Efforts shall be made to enhance the views available from the parkways at signalized intersections, such as inbound on Jamaica Way at Willow Pond Road. Concurrent with this work, low shrub plantings should be installed in carefully designed masses along the park edge to begin the process of restoring the sanctuary that Olmsted intended for his park users.

### Landscape Composition

The richness and diversity of the park landscapes have been impaired over time. Through careful thinning, replanting, and skilled landscape management, the parks can be sensitively returned to health and stability.

In some cases, adjacent land development, such as the light industrial and commercial complex along River Road at the southern of the Riverway, impact the enjoyment of the parks. Also, the addition of high-rise buildings that have broken the tree canopy line have ended the visual separation of "park" and "town." This separation should be reinforced.

- **Reinstate scenic qualities of the parks as originally intended, using a historic palette of plant materials.**

Because the palette of plant materials in the parks has changed over time, the intended scenic qualities have been diminished along with the original diversity of vegetation and wildlife. Historically sensitive replanting should be undertaken, balanced against the availability, cost, maintenance requirements and hardiness of the species involved. Historic species should be utilized to the greatest extent feasible, and historic layouts followed where contemporary needs are served and costs are reasonable. Significant public benefits will, in that way, be achieved.



Figure 132: Riverway - View above Longwood Bridge in early May, 1920 (FLONHS).



In certain areas, original scenic qualities should be respected by using contemporary materials that are compatible, and that satisfy current uses and maintenance capabilities. All plantings, whether from Olmsted's plant lists or sympathetic redesigns, must be installed to achieve Olmsted's intended "effect," or sensitively modified as necessary to ensure security.

- **Stabilize and enrich soils on eroded hillsides.**

On eroded hillsides and banks, soils require stabilization and enrichment. These improvements must be coordinated with slope re-vegetation and the redesign of interior circulation routes.

- **Control and eradicate invasive species throughout the park system.**

Invasive species are a problem throughout the system: River Birch around Jamaica Pond, Common Buckthorn and Japanese Knotweed in the woodlands, Common Reed in Olmsted Park, the Riverway and particularly in the Fens. The invasive species should be eradicated and then replaced with suitable plant materials.



Figure 133: Riverway - Japanese Knotweed at Netherlands Bridge (Pressley Associates, 1985).

- **Initiate a systematic forestry management program with a mission to increase forest health and ecological diversity.**

Over the past century, there has been a significant loss of understory, a reduction of shrub areas, and a tendency towards even-age stands in the woodlands. This tendency towards simplification and monoculture is poor from every viewpoint, scenically and ecologically, but especially in terms of increasing the forest's susceptibility to disease and pest infestations, and for inhibiting the potential regeneration of desirable plant communities.

A systematic program of forest management that includes thinning of mature canopy trees and a replanting plan that is diverse in species, as well as historically sensitive, will enhance the long-term health of the forest, and the wildlife habitat that currently exists. Special attention should be given to the Massachusetts Audubon Society's recommendations that are included in the Appendix.



Figure 134: Olmsted Park - Riverdale woodland management (Jon Crispin Photography, 1999).

- **Strengthen formal parkway planting along the urban edge and informal plantings at the park edge.**

The plantings beside the parkways, once formal on the city-side and informal on the park-side, have deteriorated. The formal side is old and has been badly damaged by vehicular traffic due to the widening of the parkways. The informal side is thin. Both are unhealthy and in a state of decline. Because these plantings are integral to the historic park landscape, they should be restored to their original character and good health. City-side avenues, because of their regular tree size and form, should be replanted in sections when two-thirds of their tree population are dying, diseased or short-lived. In this way, some continuity in formal plantings may be achieved. The often-discussed replacement method of “every other” or “every third” tree does not result in the intended consistency in avenue tree size.

Park-side plantings were meant to insulate the park from the city, except where views into and out of the park were needed. As well as replacing canopy trees, their management should include the establishment of understory and shrub layers as originally intended, with appropriate setbacks at paths, intersections and entrances for safety and security.

#### Uses, Structures and Facilities

Diversity of use was a primary feature of the original parks, and this plan should continue to emphasize the broadest range of recreational use that is not inconsistent with the parks’ unique character as refuge and escape from the city.

- **To the greatest extent possible, provide for the maximum flexibility of use which is still sensitive to the historic intent of the park system.**

Enjoyment of the parks is hampered to some extent by inflexible facilities and spaces that are not suited to multiple uses. The parks should provide for a wide



range of recreational activities, from active to passive recreation, consistent with their intended purpose as refuge and escape from the city.

Olmsted saw the parks as adaptable spaces, capable of accommodating a wide range of activities of varying degrees of formality. His original plans included few single-use spaces, but many places where users could enjoy a variety of activities.



Figure 135: Jamaica Pond - Designated fishing area (BPRD, 1990).

Active recreation should include cycling and jogging on specific routes, boating on Jamaica Pond, free play (such as frisbee, kite flying, catch, pick-up games) in meadows and fields, organized baseball and soccer in designated areas where fences, lights, backstops and infields can be located towards the edges of open areas rather than in the middle.

Neighborly recreation should be encouraged, including use by small and large groups for local pick-up or organized games, picnicking, walking, attending outdoor theatre and other performances, participating in environmental and park history education sessions, and park tours.



Figure 136: Jamaica Pond - Music event (Pressley Associates, 1988).

Passive and contemplative recreation must allow for individual enjoyment of the parks for strolling, sitting, or simply enjoying the scenery.



Figure 137: Jamaica Pond - Mother and child at water's edge (BPRD, 1997).

Certain activities are incompatible with park landscapes. Experience in Central Park has proven rock concerts to be damaging, just as mountain bikes have been a menace in Franklin Park. Other activities, such as RV camping, would also be difficult to accommodate within the parks' historic mandate.

The encouragement of adaptable uses of varying degrees of formality for all citizens was an essential part of the original social program as democratic public grounds. The same openness should be maintained today to ensure accessibility to all users.

- **Assimilate existing facilities which are not in character with the landscape through plantings and sensitive reorientation, or relocate them.**

From the standpoint of historic integrity, large, formalized recreational facilities such as Kelly Rink in Olmsted Park, are among the "incompatible uses" previously noted. However, as indoor ice-skating is still a popular activity, efforts should be made to provide for it elsewhere within the community prior to taking action for the eventual closing and removal of the present facility.

Through the combined lobbying efforts of the City of Boston and the Town of Brookline, the Kelly Rink was removed in 1997 by the MDC with the proviso for construction of a new skating facility on another site in Jamaica Plain.

Other established sports facilities that cannot currently be relocated elsewhere with equal or better access to the community should be retained. However, they should be assimilated into the park landscape through buffer planting and re-siting of facilities, such as the relocation and repainting of the lightposts at Daisy Field.

Other incompatible uses, such as the Boston Fire Alarm Headquarters in the Fens, should be eventually removed.





Figure 138: Back Bay Fens - Daisy Field floodlights and backstop (Pressley Associates, 1987).

The Victory Gardens in the Back Bay Fens are not part of either Olmsted's or Shurcliff's design concept for that park, but the gardens have been established for over forty years, or nearly half the life of the park. They can be better integrated into the park through boundary adjustments, entrance improvements, low screen planting and path realignment.

Further encroachment on the parks by buildings, facilities or uses which serve a few at the expense of the majority should not be allowed.

While current needs and uses call for the repair and/or rehabilitation of most of the extant structures within the Emerald Necklace, the appropriateness of introduced structures must be reassessed periodically to determine the feasibility of their eventual removal and/or relocation. The location of any additional structural elements in the park system, especially the placement of memorials and monuments, shall be strongly discouraged.

Incompatible uses or facilities that can not yet be phased-out or relocated will be carefully redesigned and assimilated into the historic landscape. This action will simultaneously improve the parks' appearance, enhance their historic character and please the majority of park users.

- **Improve recreational opportunities for walking, cycling, jogging, boating, picnicking, theatre, free-play in open areas, softball, sledding, sitting, watching, nature study, contemplation, and other forms of scenic enjoyment.**

While the parks were originally intended for a variety of activities, opportunities for many historic pleasures have disappeared. While all the above-cited activities currently take place, conditions for multiple uses could be made better by separating competing uses, providing a fully functional circulation system and rehabilitating the key structures, such as Pinebank and the Boathouse/Bandstand complex at Jamaica Pond.

- **Relocate or modify sports field lighting to make it less visually intrusive.**

High-mast sports field lighting disrupts the parks' tranquil beauty and is certainly inconsistent with their historic nighttime appearance. Reducing the number of masts, relocating the remaining ones toward the woodland edges of the sports fields and coating them with flat black paint will make the field lighting less intrusive. It will still provide sufficient light for safe evening athletic events.

- **Restore existing historic buildings, shelters, steps, bridges and other structures. Program uses for buildings and increase overall security.**

Some historic structures are in dangerously poor condition and may be lost if not attended to soon. Their deterioration and loss would detract significantly from the historic significance of their regions of each park. All historic structures, such as Pinebank and the round Riverway shelter overlook should have priority attention for restoration or reconstruction. The other incidental structures, such as the bridges and stairs, that contribute to the incredible richness and variety of the Olmsted landscape, should also be incrementally repaired or reconstructed.



Figure 139: Riverway - Restoration of Bridle Path Bridge and plantings as completed in 1999 (Jon Crispin Photography, 1999).

Major structures must be programmed for park activities and ideally should have resident caretakers. Overall security needs to be improved by selective and appropriately designed night lighting, better surveillance and by locating understory shrubs away from buildings to enhance visibility.

Attention to the condition of existing historic structures will improve the historic appearance of the parks and contribute to park security.



- **Selectively recreate scenic structures, bridges and steps where these serve a modern need and as maintenance capabilities are augmented.**

Many scenic structures and other built elements have disappeared over time, leaving their places blank and their functions unfulfilled. Because buildings and structures were an integral part of the parks' original design, all rehabilitation or replacement should follow historic guidelines regarding their materials and design. All must serve a modern need or they will be under-utilized and become targets for vandalism.

The re-creation of scenic elements and subsequent maintenance of them can improve use of the park and enhance security and image.

- **Recreate scenic shelters from historic photographs in those cases where their presence will not create a security hazard or severe maintenance problems.**

Most of these delightful landscape structures have disappeared from the Emerald Necklace landscape, depriving the park of some of its historic character and users of sheltered spots for rest and relaxation. When the shelters are recreated they should replicate the appearance shown in historic photographs. Because each is a small, self-contained structure, the shelters provide ideal projects for private donors. Or, they could be built by a new Park Department in-house design/build team similar to ones activated in Central Park in New York. These scenic shelters would contribute significantly to the historic appearance of the parks, and would add to users' enjoyment of views and walks.



Figure 140: Jamaica Pond - Pinebank shelter, circa 1892 (BPL Print Room).

There is currently no consistency in the existing Emerald Necklace park system furnishings. Those that have been installed, most recently in the Back Bay Fens, have designs that are totally out of character with a passive naturalistic park. Research and remnant furnishings provide good examples. Authentic details can add immeasurably to the overall character of the historic landscape.

With construction of the Emerald Necklace bikeway in 1989, the BPRD instituted a bench standard which has been used by the Town of Brookline and the City of Boston in subsequent capital projects, including the 1998-2000 Riverway, Riverdale, and Back Bay Fens Mother's Rest improvements.

- **Develop a consistent, historically sensitive park vocabulary of light standards, benches and other furnishings.**

The visual continuity and historic character of the park is marred by the variety of light fixtures, benches and other furnishings currently in use. There are remnant historic lights on the park's west side, newer floodlights in the Pinebank area (including a non-working specimen at the southern end), and a new generation of Boston Post Lights along the east side, as well as north and south of the Boat-house and Bandstand. Similarly, there is a concentration of benches at the Boat-house/Bandstand complex, and only a few elsewhere. Signage is non-existent. A "park" vocabulary of site furnishings, compatible with the previously discussed system-wide guidelines, should be developed to meet the needs of this park: a park bench (the Victorian reproduction installed in 1988), a park fence, a park trash receptacle, park emergency telephones, Boston Post Lights for interior paths and park drives, and the MDC Historic Pendent Light for the parkways. All other necessary fixtures, such as drinking fountains, should be carefully designed and located to reflect the Emerald Necklace's historic character, and judiciously added, so as not to clutter or disrupt the historic landscape's design integrity. Above all, they should be designed and fabricated for durability and low maintenance, but with strong sensitivity to the naturalistic character of the Emerald Necklace.



Figure 141: Jamaica Pond - Water fountain at the boathouse, circa 1925 (FLONHS).





Figure 142: Riverway - Historic bench at Bridle Path Bridge near Audubon Road and Brookline Avenue, circa 1900 (FLONHS).



Figure 143: Olmsted Park - Emerald Necklace bench standard at Riverdale Parkway (Jon Crispin, 1999).

- **Create a historically sensitive park signage system which includes orientation, interpretive and regulatory signs.**

The first phase of identification signs were installed in 1991 in Boston and in 1998 in Brookline, according to the 1988 Emerald Necklace Sign System Plan.

The Emerald Necklace park system needs signs to guide today's traffic and activities. This signage must be compatible with the landscape and structures and furnishings. Research has revealed historic prototypes compatible with these park settings. Signage in other urban historic parks has been evaluated. Proper attention to message and design will allow necessary signs to enhance rather than detract from the parks' naturalistic quality.

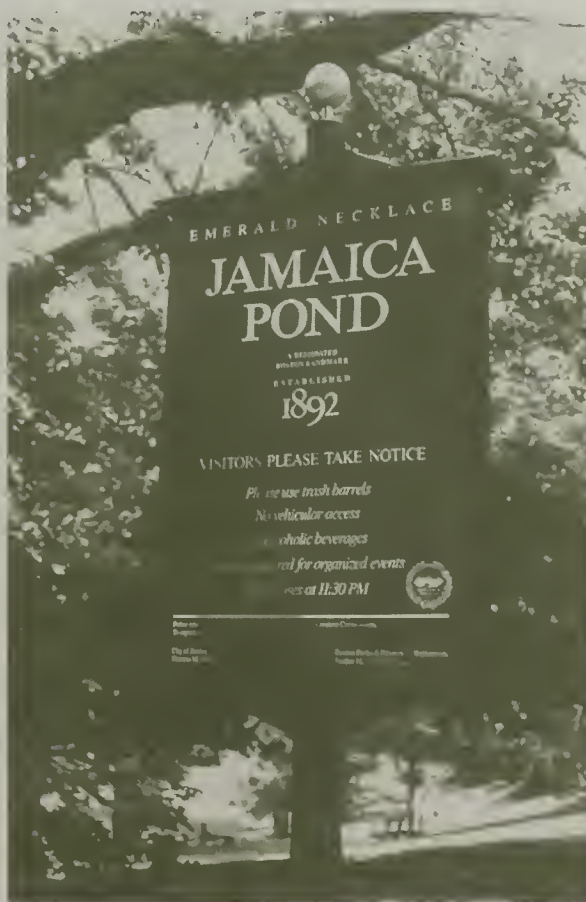


Figure 144: Jamaica Pond - New Emerald Necklace signage (BPRD, 1999).

Since 1990, BPRD has installed a phone at Jamaica Pond Boathouse/Bandstand and at the Back Bay Fens Victory Gardens.

- **Provide call boxes or telephones at key locations to increase security.**

There are presently no communication devices accessible to park users for emergencies. Those that are installed should be carefully designed to reflect the historic character of the parks, and must be carefully sited, close to park entrances or at important interior destinations. The emergency telephones will provide enhanced park security and will make it easier for police to respond to problems.

- **Replace existing modern light fixtures with historically sympathetic light fixtures along parkways. Install historically sensitive lighting within park boundaries only on major cross streets, and on paths leading to intensively programmed evening activity sites. Remove all lighting from interior park areas if not programmed for evening activities.**

At present, lighting in the parks contributes neither to their historical character nor to their safety. While lighting could not and should not be installed everywhere in the parks, in certain locations such as around the park perimeters, on parkways and on drives, walks and well-used cross-routes, lighting of an appropriate appearance must be provided. Along parkways, lights should be mounted at about 25 feet in height with the MDC historic pendent lights. Selected pedestrian walks should be lighted with the historic Boston Post with acorn fixtures mounted at about 15 feet in height.

In many areas of the park system lighting is not recommended, as it could encourage people to enter the park interior after dark where their personal safety cannot be reasonably assured. The practice of using above-ground electrical trunk boxes should be reviewed by Boston, Brookline and the MDC. A policy for underground installation of all replacement or additional utilities should be developed and implemented.



Figure 145: Back Bay Fens - Historic post light fixture, circa 1900 (BPL Print Room).



Figure 146: Olmsted Park - Ward's Pond historic pendent light fixture, circa 1915 (Leon Abdalian, photographer, BPL Print Room).





Figure 147: Jamaica Pond - Current Boston post light (Pressley Associates, 1990).



Figure 148: Current pendent light (Pressley Associates, 1990).

- **Use durable materials for all repair and reconstruction of structures, surfaces and furnishings while concurrently being sensitive to historic design intent and global ecology.**

Many recent repairs to park features have been undertaken in materials that are easy to vandalize or susceptible to early deterioration under current use conditions. All materials considered for use in the parks should be evaluated for their long-term durability and ease of maintenance. Usually these considerations will result in materials that are consistent with the originals: stone curbs are better than concrete, cast iron is better than anodized aluminum for light standards. The hardest woods, that can be acquired without negatively affecting the earth's rain forests, should be used for benches and shelters. Metal and/or wood are the materials of choice for signage.

## Management and Maintenance

An essential accompaniment to the Master Plan is a comprehensive management approach which coordinates and expands park programs, security and maintenance.

- **Develop and implement a comprehensive park management and maintenance program, including use of specially trained crews with expertise in naturalistic landscapes.**

There has never been a unified approach to the management of the Emerald Necklace that coordinates Boston, Brookline, the MDC, institutions and other voluntary organizations into one operation. A jointly appointed management advisory organization could assist with policy-making decisions to direct funds to needed areas, augment equipment (such as the joint purchases of specialized equipment for Phragmites removal), expand management staff, and train specialized horticultural crews in woodland and waterside management of naturalistic landscapes. Such a management policy could result in a more consistent maintenance program than is now observed in the parks, and in savings in operations costs as well.

In 1998, the BPRD, Brookline DPW, and MDC signed a "Memorandum of Understanding" with the objective of institutionalizing coordinated system-wide clean-ups and sharing resources for a non-traditional maintenance crew.



The Emerald Necklance Conservancy was established in 1997 as a public-private partnership and a non-profit organization. It is committed to creating programs and providing funding to supplement public sector investment in the park system. The Conservancy engages neighborhood residents; business, government, institutional and civic leaders; parks and environmental advocates, scholars and other interested citizens in order to restore, maintain and promote the six parks stretching from Franklin Park to the Back Bay Fens.

In addition to building collaborations among Necklance-related organizations and interests, the Conservancy undertakes advocacy, education, and constituency-building initiatives. These efforts --along with Conservancy-sponsored restoration, maintenance and public access improvement projects --ensure the preservation and protection of the Emerald Necklance for future generations.

Following Olmsted's vision of "Park Keepers" as official stewards, the Massachusetts Association for Olmsted Parks (MAOP) initiated a pilot Park Ranger program in Boston in 1982. In 1983, the ranger program expanded to include the entire Emerald Necklance, offering assistance, information and educational programs to park users. The program is funded by the City of Boston and private contributors.

- **Review and clarify boundaries and jurisdictions as needed.**

At the present time, jurisdictional boundaries do not always match agency capabilities. For example, while the MDC currently maintains parkways and a 25 foot wide strip of park edge, it would make more sense to have MDC responsible for parkside curbs, traffic control devices and lights, with Boston and Brookline resuming control of all park landscape. Part of a joint management program will, likely, require clarification of jurisdictional boundaries and responsibilities: between Boston and Brookline, between Boston and the MDC, and between organizations such as the Fenway Garden Society and the Boston Parks and Recreation Department. This reapportionment of responsibilities and jurisdiction will make for more efficient operation and maintenance, and ensure that each management agency makes the best use of its skills.

- **Work closely with the police departments, other agencies and community groups to increase park safety.**

There is insufficient security and law-enforcement presence in the parks at this time. A stronger park department staff presence needs to be maintained in the parks, in addition to an expanded role for the Boston, Brookline and Metropolitan Police Departments for security. Park Rangers on horseback should function as a security and park regulation enforcement patrol, while mounted Boston and Brookline police patrol the parks for major infractions. This will result in a decrease in park crime and an increase in user safety.

- **Continue the Park Ranger program and expand cooperative public/private programs within the parks.**

The public sector cannot do everything in the parks given realistic budget considerations for cities and towns. Park Rangers can be used for information and interpretation on a daily basis. Volunteer participation by institutions and community groups shall be encouraged and integrated with the overall operation. Successful initiatives such as the Boston Park Partners shall be continued and expanded. Community stewardship is essential for long-term preservation of the Emerald Necklance.



Figure 149: The Boston Park Rangers at the program's inception (BPRD, 1983).



- **Remove trash and other evidences of vandalism.**

Garbage dumping, graffiti, and other types of vandalism in the Emerald Necklace have occurred due to a lack of public environmental education and an entrenched perception that no one really cares about the parks. Vandalism of this type has been found to significantly decrease if cleaned-up as quickly as it occurs. A bridge and monument graffiti-removal program should be launched. Penalties for illegal dumping should be reviewed and enforced. Cleared dumping areas must be replanted and the possibility of future illegal access controlled. A clean, well maintained park system will project a positive image to the user public and, consequently, will be much less subject to future vandalism.

- **Develop consistent park regulations and standards.**

It is essential to develop policies to govern activities and to issue permits so that park facilities are fairly used and overuse is avoided.

- **Adopt a policy on public art and memorials which discourages their siting inside the naturalistic parks, and implement design solutions for existing monuments and memorials to better integrate them into the Emerald Necklace landscape.**

Olmsted felt that monuments were inappropriate for passive naturalistic landscapes.

Some of the monuments in the Emerald Necklace park system have been in place for over 50 years, the greatest concentration of these located in the Back Bay Fens. Plans should be developed to enhance their landscape treatments to help them blend into the naturalistic landscape, and separate them from the more recreationally-oriented areas of the park system. No new monuments or memorials should be placed within any of the Emerald Necklace parks.



Figure 150: Jamaica Pond - Francis Parkman Memorial erected 1906 (BPL Print Room).

*"To create a real memorial park is a fine thing, to create a suitable park as a setting for a memorial is a fine thing, to create a memorial in an existing park in such a way as to complete and suitably enrich the original design of the park is a fine thing; but to steal a site for a memorial by intruding on a park which is complete as it stands and which is better as a park without the memorial does no real honor to that for which it is so unscrupulously memorialized."*

- Frederick Law Olmsted, Jr. "An Address Delivered at the Tenth Annual Convention, The American Federation of Arts, War Memorial Session, May 15, 1919." In The American Magazine of Art, September, 1919.



Figure 151: Back Bay Fens - Japanese Manpukusi Temple Bell placed 1953 (Walmsley & Co. Inc., 1986).



Figure 152: Back Bay Fens - Sinking Ship Monument placed 1947 (Walmsley & Company, Inc., 1986).



BACK BAY FENS







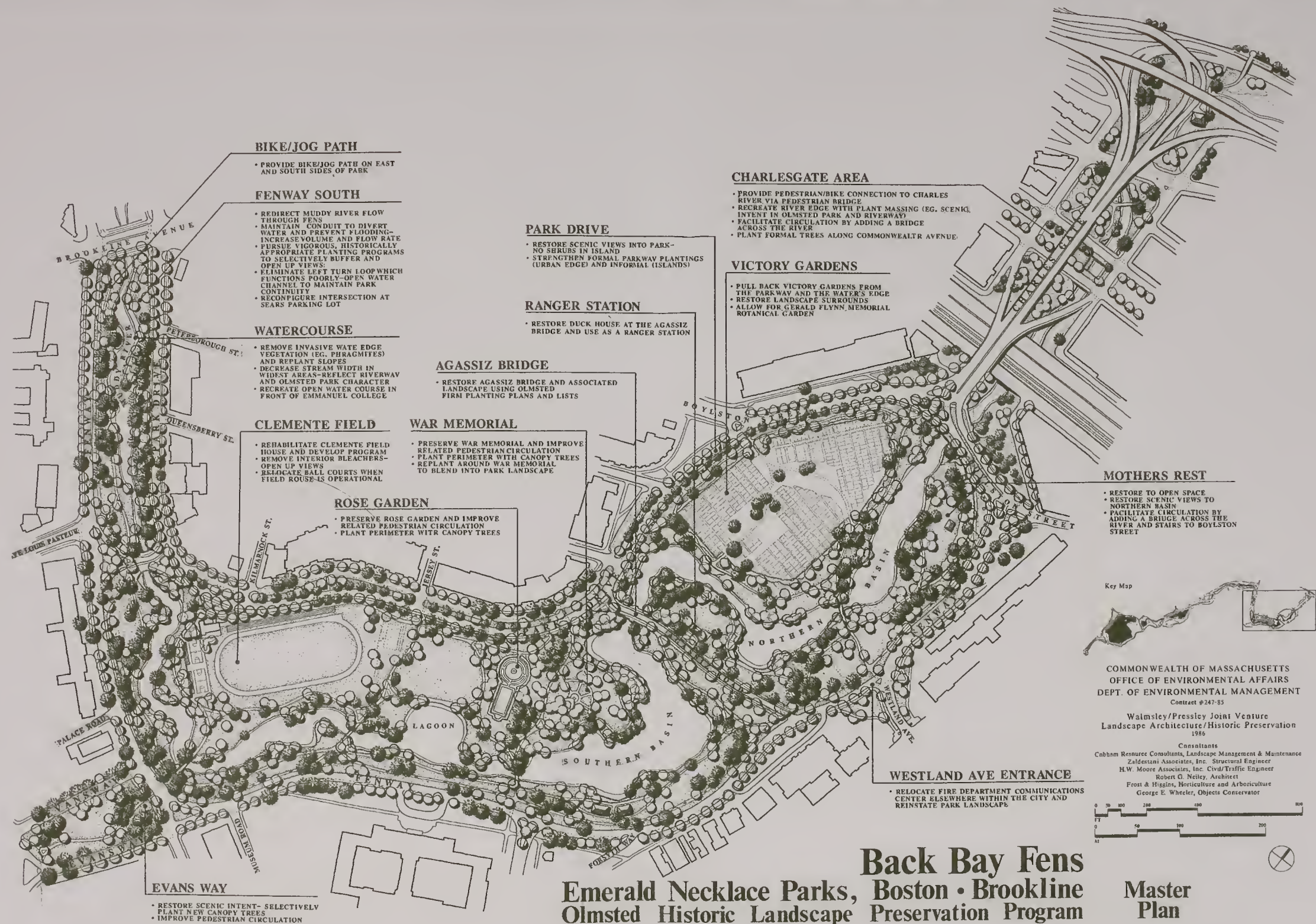


Figure 14: The Back Bay Fens - Master Plan (Walmsley/Pressley Joint Venture, 1986).





Back Bay Fens Projects Update

A major pruning effort took place in 1987-1988 by the City of Boston as an Early Action Project through funding by the Department of Environmental Management (DEM), Olmsted Historic Landscape Preservation Project (\$133,500).

During 1987-1990, the WWII Memorial was restored and the Vietnam and Korean Memorials were installed though funding by the White Fund (\$817,000).

The Olmsted Landscape Crew was created in 1988-89 by the City of Boston through state funding (\$32,000).

Restoration of the Agassiz Bridge was completed in 1989 as a Boston Early Action Project through funding by the DEM, Olmsted Historic Landscape Preservation Project (\$134,000).

The first phase of the Emerald Necklace standard signage was installed in 1989-1990 through funding by the Parkman Fund (\$12,089).

The Duck House was re-roofed in 1990 through funding by the City of Boston (\$35,000).

Victory Gardens fencing and planting was completed in 1993 through funding by the state and the Parkman Fund (\$118,653).

The Clemente Field House stabilization was completed in 1993 through funding by the City of Boston (\$30,000).

The Johnson Memorial Gates restoration and lighting was completed in 1993 through funding by the Johnson Memorial Trust (\$30,000).

CONCEPT AND VISION

*“Back Bay - Scenery of a winding, brackish creek, within wooded banks; gaining interest from the meandering course of the water; numerous points and coves softened in their outlines by thickets and with much delicate variety in tone and color through varied, and, in landscape art, novel, forms of perennial and herbaceous growths, the picturesque elements emphasized by a few necessary structures, strong but unobtrusive.”*

-- Frederick Law Olmsted, City of Boston Sixth Annual Report 1880.

The Back Bay Fens is the oldest of the four parks in the Emerald Necklace, started in 1878, and it is the one most changed from its original form. In fact, the historic features of Olmsted’s original plan are limited to a few stretches of watercourse in the vicinity of several bridges, the bridges themselves (The Boylston, Agassiz and Fen Bridges) and some areas along the parkway perimeter of the Fenway and Park Drive. The park that remains has been dramatically altered, primarily due to the construction of the Charles River Dam, which, in 1910, transformed the original salt water marsh into fresh water. The approach recommended in this Master Plan is to recreate a riverside landscape based on the same scenic ideas as the Riverway and Olmsted Park. This approach is described in the Introduction as “adaptive” restoration, which, in the Back Bay Fens, dictates the adaptation of the landscape to fresh water conditions for current uses in ways that are historically sensitive to the design of the other parks in the system.

Improvements made in the Back Bay Fens must address water quality. Until this aspect of the Fens, and the park system as a whole, is brought up to a reasonable standard, it is unrealistic to expect a completely successful major landscape restoration or park-use enhancement project. Because this park is at the downstream end of the system, water quality problems converge upon it so that today it presents the greatest challenge for rehabilitation and management. The Muddy River must be redirected to flow through the Fens, recreating the open watercourse where it has been interrupted. The system-wide recommendation for a regional drainage study that considers the requirements of the historic parks has special significance for the Back Bay Fens, where pollution and siltation have been a problem for more than a century. Phragmites and other invasive vegetation is to be removed, and the river banks stabilized.

The park landscape design shall be guided by Olmsted precedents set in the other parks in the Emerald Necklace system, blended sensitively with the post-1910 J. C. Olmsted suggestions and Arthur Shurcliff designs of the 1930s. Contemporary uses, long established but not original to the park, are to be made more harmonious with the naturalistic landscape. For example, playing fields are to be fitted into open meadows and edged by informal stands of trees, buildings made subordinate to their settings, formal elements and sports areas absorbed within the continuity of the naturalistic landscape (or relocated), land uses oriented to the river, and buffer plantings installed on both sides of the perimeter parkways. Appropriate plantings will re-create river edge scenery, buffer the park from urban surroundings and line the parkways in the Olmstedian manner.

A fully functional internal circulation system is to be re-established, creating a segment of the continuous cycling and jogging path that threads through the system along the old bridle path, re-configuring the walkways, improving



## The Master Plan

### Back Bay Fens Projects Update, cont.

The Japanese Bell restoration was completed in 1993 through private funding. (\$3,600)

The Clemente ballfield was renovated in 1995 through City of Boston funding. (\$250,000)

In 1996, the Boston Water and Sewer Commission brought the original weirs at Brookline Avenue and Park Drive to operable condition.

The restoration of the Mother's Rest play lot was completed in 1998 through funding by the City of Boston's Office of Capital Planning. (\$293,760)

In 1998, a pilot project to test the success rate of black plastic mulching for phragmites control was funded by the City of Boston's Office of Capital Planning. (\$288,000)

The "Connecting the Corridors: The Emerald Necklace/Southwest Corridor Connector" proposal (1997) suggests a bikeway system in the Back Bay Fens connecting to the Southwest Corridor Park and other Emerald Necklace bike paths. The project will also rehabilitate the pedestrian path system and restore planting. Funding was secured in 1999 through a federal grant from the Intermodal Surface Transportation Efficiency Act (ISTEA) (\$1,407,341) with matching funds from the City of Boston.

The Boston Water and Sewer Commission (BWSC) has budgeted over \$6 million for the cleaning and repair of the new Stony Brook conduit. Work is scheduled for completion in 2000. The old 1898 Stony Brook conduit cleaning contract of \$1.9 million was completed in 1999.

## The Back Bay Fens Plan

pedestrian links with the adjacent community at park entrances (especially at the Charles River), and adding new bridges and steps to facilitate circulation in the Victory Gardens and Mother's Rest areas.

Historic buildings are to be restored: the Olmsted-planned Agassiz Road Shelter (Duck House) will be reused as a Ranger station, the Olmsted and Richardson gatehouses shall be retained and the Clemente Field House will be utilized for park programs.

Historic bridges are to be reconstructed and replaced.

The result of the improvements outlined in the Master Plan will be a much revived Back Bay Fens, with healthy environmental conditions for the first time in a century and with active uses harmonized with the landscape.

The rehabilitated Fens will not look much like Olmsted's park. Physical conditions have changed far too much for such a restoration to be feasible, or even desirable. But it will incorporate, to the greatest extent possible, the same design philosophy that created the other parks in the Emerald Necklace park system, and will partake of the same architectural and landscape vocabularies.



Figure 153: Back Bay Fens - Olmsted's Fens, circa 1900 (Frances Loeb Library HGSD, Visual Services).

One of the greatest delights for park users, especially those who remember the time before the Massachusetts Turnpike Extension was built, will be entering the Emerald Necklace from the Charles River Esplanade once again, re-experiencing the continuous stretch of water and greenway that connect the oldest part of the city with the residential suburbs. On fine days in this, the most popular of all the system's parks, people will be everywhere, walking, reading in the shade, sailing toy boats on the lagoon, running around the track in Clemente Field, tending their Victory Garden plots, or playing games of pickup softball. Cyclists and hikers will gather here to begin long rides through the length of the Emerald Necklace, and bird watchers to start off on their own expeditions. In this large and active park, there will be room for everyone and every pastime, with no use conflicts and no harsh intrusions on the landscape of woods, fields and water.



### RATIONALE

In order to attain the goals established for the Master Plan project, the Back Bay Fens needs improvements in every aspect. Water quality is extremely deteriorated, due to poor river flow, CSOs, pollution and siltation. Invasive plants have colonized the river edges, attracting more sediment.

Access to the Fens, and to the entire system, has been severely limited by roadway construction: the Massachusetts Turnpike, Bowker Overpass, Storrow Drive, and the Sears Rotary, in particular. Linkage with the Riverway is poor and intrapark circulation does not serve current use patterns.

There is no consistent approach to the park landscape, a confusion that has existed since the construction of the Charles River Dam eliminated the salt marsh park early in the 20th century. Formal areas sit uncomfortably within the broader landscape, sports facilities are harshly placed and spoil the naturalistic character of whole sections of the park, and many plant massings and views are missing today.

Important historic structures (bridges, gatehouses and Duck House) are in need of restoration, structures that do not contribute to the historic quality of the park should be removed, and improperly constructed bridges should be rebuilt for consistency with the design intent for the park.

All of this work is essential to re-establish a special character for the Back Bay Fens and to better serve the heavy uses which the park will continue to support. This park requires the strongest and most carefully designed rehabilitation effort in the Emerald Necklace system. Because of the drastic changes between the original form of the park and its present state, solutions must follow Olmsted precedents set in the three upstream parks.



Figure 154: Back Bay Fens - H. H. Richardson Bridge with Poplars prior to construction of dam, circa 1902 (Northeastern University Archives).

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**SPECIFIC BACK BAY FENS RECOMMENDATIONS****Watercourse**

The 1999 ENF proposes dredging in the Back Bay Fens and Charlesgate to remove accumulated sediment and invasive plant material. The ENF also proposes wetland mitigation, installing flood control systems, implementing a water quality monitoring program, improving water quality, and restoring historic plantings.

- **Remove Phragmites and other invasive water edge vegetation and replant slopes with appropriate plant materials.**



Figure 155: Back Bay Fens - Invasive Phragmites (Pressley Associates, 2000).

Invasive plants have colonized the edges of the watercourse and desirable plantings have been lost. To restore proper environmental quality, banks must be reshaped and established at water level. Gabion cribs have been used successfully elsewhere in the system and are appropriate here. Grassy banks sloping to the water should be interspersed with trees and shrubs arranged to make openings and closings along the river bank as at the Riverway and Olmsted Park, based on an interpretation of the original plans and plant lists. It is essential that a consistent landscape character, scale, special definition, views and vistas be maintained to the fullest extent possible. Once the remedial work has been completed, maintenance may be periodic. The resulting watercourse will be consonant with the upstream sections in the other parks.

- **In conjunction with the Sears lot reclamation, redirect Muddy River flow through the Fens to increase water circulation and flow rate. Maintain Muddy River conduit to Charles River to divert water during heavy rainfall to mitigate flooding.**

The present culvertizations and redirections in the flow of the Muddy River cause flooding, stagnant water and other poor water conditions throughout the park system. This recommendation is part of a proposal for the Riverway and Olmsted Park, upstream of the Fens, which includes other recommendations for re-creating an open watercourse in the area occupied by the Sears lot. It also suggests that consideration be given to resurrecting the Muddy River Gatehouse at Brookline Avenue to house water controls. At present, engineering studies do not contemplate replacing conduits with open waterways or rebuilding a historically appropriate gatehouse. Nor do the engineering solutions consider park purposes. It is



highly important that **engineering and landscape are resolved together**, as Olmsted successfully did during the original Emerald Necklace design and construction.

- **Reconfigure watercourse to create better flow and reflect Riverway and Olmsted Park character.**

The watercourse in the Back Bay Fens has lost its historical character through sequences of alterations over time. It should be reconfigured so that it is consistent with the watercourse in the upstream parks. When this is done, Olmsted's "*meandering watercourse...(with) numerous points and coves*" will be legible once more.

- **Recreate open watercourse in front of Emmanuel College, east of Brookline Avenue, and opposite Avenue Louis Pasteur (Higginson Circle).**



Figure 156: Back Bay Fens - Watercourse in front of Emmanuel College should be recreated (Topo-Metrics, Inc., 1985).

In these southern sections of the park the watercourse has been diverted underground through a culvert. A left-turn loop should be eliminated at Brookline Avenue, and the west headwall of the historic Fen Bridge, believed to be still intact, should be reopened. These improvements will give a tremendous boost to efforts to achieve a continuous open watercourse and could enhance the further development of wildlife habitat and improved water flows and quality.

- **Urge cooperative interagency efforts to modify plans for controlling CSOs, restoring flows and improving water quality, in order to follow National Register and Boston Landmark criteria for the Back Bay Fens.**

This system-wide recommendation has special validity in the Back Bay Fens. Water quality here is so poor that it must be improved before other projects are

undertaken, and some engineering studies call for solutions that are unacceptable in the historic park system. While the studies (1973, 1980, 1985) outline plans to reduce CSO discharges by 100% except in wet years, remove sludge deposits, restore flows and achieve Class B water quality standards in the Fens basin, they involve the demolition and reconstruction of Gatehouse No. 1 (1905).

The most recent plan (1985) by the Massachusetts Water Resources Authority (MWRA) recommends an alternative that does not meet the mitigation standards in the Section 106 Case Study Report, which reviews the environmental impacts of the engineering recommendations. The CSO Recommended Plan must be reconsidered and an alternative developed that satisfies the minimum environmental impacts established by the 106 Case Study -- and that respects the historic gatehouses and their surroundings.

## Internal Circulation

In 1998, the City of Boston installed a new stairway up to Boylston Street from Mother's Rest. The handrail design was derived from Olmsted's rail designs at Niagara Falls.

- **Facilitate pedestrian circulation in Victory Gardens and Mother's Rest areas by adding a bridge across the river and steps up to Boylston Street at Mother's Rest. Develop a riverside walk on the west bank in conjunction with an existing through walk across the Gardens.**



Figure 157: Back Bay Fens - New stairway with handrail at Mother's Rest (Karen Sparacio, photographer, 1999).

In the past it has been virtually impossible to cross the park from the Victory Gardens, pass Mother's Rest and exit at Boylston Street. The path, bridge and steps will reconnect the two sides of the northern basin. This project, in conjunction with the river reclamation and the relocation of the Boston Fire Department Communications Center (1925), will reopen a third of the Fens to active, public use.

- **Reconfigure interior walk system as needed to facilitate circulation.**

The Fens is missing many links in its path system and it does not have a complete riverside circuit. This recommendation will complete missing links and make new connections, following the original picturesque forms, and replacing straight paths with meandering ones for added user delight. It would realign paths to match



In 1999, ISTEA grant initiated development of a proposed bikeway at the Back Bay Fens to connect with the Southwest Corridor Bikeway System.

pedestrian crosswalks, providing a complete riverside circuit on both banks (with the single exception of the Park Drive side above Fen Bridge). The riverside path is to include overlooks in their historic locations where paths extend to the water edge. The walk system is also to have a curvilinear perimeter circuit, as full as possible, inside the present sidewalks on the west side and along the converted bridle path on the east side. Historically sensitive surfacing materials, such as stonedust or gravel-coated bitumen, are to be used throughout.

- **Convert original bridle path along the Fenway side of the park to a cycling and jogging route. Consider completing the circuit on the west side by converting existing sidewalks to Higginson Circle (Fen Bridge).**

The cycling and jogging path recommended for the three upstream parks must be extended through the Back Bay Fens, and the unused bridle path offers an ideal opportunity for the path here as it does in the other parks. The completed route will be 4.5 miles long and will extend from the Charlesgate entrance to the Back Bay Fens all the way to Jamaica Pond. If the westside sidewalks are converted (by repaving them with a smooth bituminous surface appropriate to fast-moving use), the cycling and jogging circuit of the Fens would be easily accessible to the adjacent neighborhood.

- **Provide improved pedestrian connections at historic entrances: Evansway, near the Gardner Museum (the old Huntington Entrance) and at Westland Avenue.**



Figure 158: Back Bay Fens - Johnson Memorial Gates at Westland Avenue, built 1902-1903. Guy Lowell, Architect. (Society for the Preservation of New England Antiquities).

Parkway traffic now severs access to the park at several historic entrance points, and there are not enough bridges to allow crossings to the park at important points, such as at Evansway, where the historic pedestrian bridge should be rebuilt. Providing pedestrian entrances with associated bridge crossings will respect the historic character and strengthen links to the adjoining communities.

- **Provide a pedestrian connection to the Charles River at Charlesgate.**

One of the most important entrances to the Emerald Necklace was lost when the highway interchange was built at the Charlesgate connection to the Charles River Esplanade. This recommendation reconnects the Fens to the Charles River using the eastern sidewalk of a Bowker Overpass and ramp to Commonwealth Avenue, crosswalks at Commonwealth Avenue and Beacon Street, a bridge over the Muddy River, and a new pedestrian bridge over Storrow Drive near the MDC Fens Gatehouse, following curvilinear alignments wherever possible. This will provide an interim pedestrian connection to the Charles River, further extending the intended linear continuity of the Emerald Necklace system.



Figure 159: Back Bay Fens - Charlesgate at Commonwealth Avenue as designed by Arthur Shurcliff, circa 1924 (The Bostonian Society).

### Parkways

- **Eliminate left-turn loop at Brookline Avenue and recreate open water channel to maintain park continuity.**

The left-turn loop at Brookline Avenue has obscured the watercourse east of Brookline Avenue in front of Emmanuel College. Eliminating the loop would require left turns to be diverted approximately 1,000 feet to Avenue Louis Pasteur (Higginson Circle), and would result in a more continuous watercourse.

- **Urge long-range reconfiguration of Bowker Interchange/Storrow Drive corridor at Charlesgate.**

This former entrance to the Emerald Necklace from the Charles River promenade has been cut off by highway construction. A regional traffic study should investigate alternative modes and routes to decrease traffic volumes through the park system. It would propose alternatives to the present Charlesgate configuration which would recapture some of the ease and pleasure of the old connections to the Charles and to the old Beacon Street and Commonwealth Avenue bridges, and would remove the massive overpass structure. These improvements would greatly improve access to the Emerald Necklace, and connect it to other parks in the metropolis.





Figure 160: Back Bay Fens - Bowker Interchange at Storrow Drive (Topo-Metrics, Inc., 1985).

#### Landscape Composition

- **Pursue vigorous, historically appropriate planting program to buffer the park from the urban surroundings while opening up views within the park.**

The Fenway and Park Drive edges are inconsistent with the parkway edge treatments established in the three upstream parks. While some remnants of the original plantings survive, the rest date from the Shurcliff era or later. Replanting of the park edges should follow the modified parkway treatment seen at the Riverway and Olmsted Park. Naturalistic plantings should surround Clemente Field and the Victory Gardens, and encircle the meadow area in front of the Museum of Fine Arts, the “grove” proposed for the War Memorial, and the Agassiz Road Shelter (Duck House). The plantings will help screen views of urban surroundings and structures without compromising security.

- **Recreate river edge scenery with plant massing similar to that utilized by the Olmsted firm in the Riverway and Olmsted Park, and create historic “beaches” where paths extend to the water’s edge.**

The river edge landscape in the Back Bay Fens is inconsistent with treatments elsewhere in the park system. Because it was not originally part of the Olmsted design, the river edge treatments will require adaptation emphasizing the Olmsted technique of providing cross views, framed by vegetation masses, revealing the “few, necessary structures, strong but unobtrusive” of Boylston, Agassiz and Fen bridges, and featuring overlooks where paths come to the water’s edge as “beaches”, paved extensions or grassy shores. This restoration is an essential part of the creation of a continuous watercourse (with continuous edge treatment) through the Emerald Necklace system.



Figure 161: Back Bay Fens - Beach north of Agassiz Bridge on Shore Walk (Boston Parks Dept. Report, 1893).

- **Reinforce formal tree line along urban parkway edges and informal massing on park side of parkways.**

This is a park-specific application of a system-wide recommendation. It is particularly significant at historic entrances (such as Evansway) and at planted islands (such as those along Audubon Parkway) where the recommended treatment is similar to that of Riverdale Parkway in Olmsted Park. This historic distinction will help re-integrate the parkways with the park, redefining their edges and reinforcing their original buffering function.

#### Uses, Structures and Facilities

- **Recreational opportunities in the Back Bay Fens should include basketball, baseball, track and gardening, in addition to the system-wide uses and the passive activities available in all the parks.**

Some well-established uses such as athletics, the Rose Garden, and the Victory Gardens are not original components of the park's program. They should nevertheless be continued because of their established popularity and the strong cultural appeal of the two gardens. It is very important for these uses to be integrated into the passive park design, connected into the park's circulation, and absorbed within the park's overall naturalistic scenery of meadow, trees in grass and woodland.

The Agassiz Road Shelter (Duck House) was re-roofed in 1990, but awaits a new use.

- **Restore Agassiz Road Shelter (Duck House) and use as a Park Ranger station.**

This historic building (from an original sketch by Olmsted, Olmsted and Eliot, 1897) has become seriously deteriorated due to vandalism and neglect. As a historic structure it will enhance the Olmstedian character of the park, and could house an integral park function as well, the Boston Park Rangers, as part of the Emerald Necklace management and maintenance reorganization.



## The Master Plan

The 1993 installation of perimeter fencing serves to contain the garden area within the perimeter pathway.

In 1998, a new play structure and environs were completed. The shelter was removed.

In 1989, the Korean and Vietnam Memorials were added by the White Fund and the existing war memorials were restored, though the proposed pathways and plantings were not completed.

## The Back Bay Fens Plan

- **Working with the Fenway Garden Society, pull the Victory Gardens back from the parkway and the water's edge, improve drainage, and restore landscape in the surrounding area.**

The Victory Gardens in their present location look incongruent with the naturalistic character of the park, and they interrupt access to the watercourse. Because they constitute an important legacy and contemporary use, it is important to integrate them comfortably into the restored park. According to this Master Plan, and as approved during a 1989 field meeting with the leadership of the Fenway Garden Society, the gardens will be pulled away from the parkway and the water's edge, surrounded by a fence and low shrubberies, and given defined entrances. Low areas will be addressed to improve drainage, although no fill can be added within 100 feet of the water's edge. The existing cross routes for visitors will remain, as will open picnicking areas within the gardens. There may be some internal reorganization using uniform fencing. Appropriate health regulations must be enforced. These improvements will result in better integration of the Victory Gardens into the park, improved access to the river, reopened views to Agassiz and Boylston Bridges, and a new cross route from Westland Avenue.

- **Repair play equipment at Mother's Rest, retain shelter.**

The Mother's Rest area contains a circa 1921 shelter, which is in need of minor restoration, and should remain to serve park users. The existing wooden play equipment needs minor repair and ought to be consolidated so that the area will be more attractive to neighborhood families.

- **Construct missing bridge at Evansway and a new bridge at the Victory Gardens.**

Two bridges were constructed in 1979 near the Museum of Fine Arts, and bridges are needed at Evansway and the Victory Gardens. The bridges at the Museum of Fine Arts (the lagoon bridges) and the Evansway Bridge were originally designed by Arthur A. Shurtleff (Shurcliff) as wooden bridges. Olmsted did not have pedestrian bridges in his design for the Fens. In 1979, two stone bridges were constructed at the Lagoon, and a temporary wooden bridge in the style of the original was constructed at Evansway. The stone arch bridges with metal railings were modeled on the Chapel Street pedestrian bridge in the Riverway. In 1980, the wooden Evansway Bridge was removed and a new stone arch bridge with metal railings was under construction when city budget cuts stopped the project. New bridges to be built at Evansway and the Victory Gardens should strengthen the historical character of the Back Bay Fens and help to integrate it into the larger system.

- **Resist new memorials and restore existing World War II memorial, planting surroundings as a "grove" to make more compatible with the overall park landscape.**

The World War II memorial is inconsistent with Olmsted's philosophy on memorials in parks (he did not favor them in the naturalistic landscapes he preferred). This Master Plan recommends that the memorial remain in place and its surroundings be planted with a grove of trees and laid out with a walk beside the river. This treatment will afford views of the Agassiz Bridge and blend the memorial into the park landscape.

- **Plant trees in informal groupings around the Rose Garden to absorb it into the park landscape. Make a new entry off Park Drive.**

The Shurcliff-designed Rose Garden looks too formal to be harmonious with the Olmstedian park landscape, but it is a well-loved floral addition to the Fens. Trees should be planted in informal groupings around it, and its entrance should be redesigned to permit direct access off Park Drive. These improvements will soften the garden edge when viewed from within the park, make it more easily accessible, and create an even more intimate garden atmosphere.



Figure 162: Back Bay Fens -Fenway Rose Garden, after 1934 (Leslie Jones, photographer, BPL Print Room).

The Boston Water and Sewer Commission (BWSC) has scheduled gatehouse restoration for 2001-2002. Work will include roofing, masonry repointing, and a new gate mechanism.

- **Restore Historic Gatehouses.**

These generally sound and significant early buildings (designed in 1882 and 1905 by J. C. Olmsted, H. H. Richardson and the successor firm of Shepley, Rutan and Coolidge) should be used as part of a system-wide water quality improvement plan. Their restoration should be an integral part of the previously recommended engineering improvements to the Stony Brook.



Figure 163: Back Bay Fens - Gatehouse (Jon Crispin Photography, 1999).



An extensive outreach effort between 1993-95 identified no new uses or users for the Clemente Field House. During this time irreversible weather damage had deteriorated the building beyond reasonable rehabilitation costs. The building exceeds BPRD operational capacities and is scheduled to be removed, being replaced by a small electrical housing structure.

- **Rehabilitate Clemente Field House and program for park use, considering possible concession and Park Department offices.**

The Clemente Field House (built 1928-29) is not presently in use. Current uses of the park would be enhanced by its renovation as a park facility. Such work should occur concurrently with the rehabilitation of Clemente Field and reorientation and reconstruction of the basketball courts. The opening of a formal park program facility in the heavily used Fens would be an important addition to Boston's upgraded Emerald Necklace management and maintenance effort.

- **Remove riverside bleachers at Clemente Field and relocate basketball courts to south end of field when Field House is rehabilitated to open up views of the park interior.**

Clemente Field's bleachers and other athletic facilities take up more room than necessary and they obstruct views into the park from Park Drive and neighboring streets. Both the park's historic character and current uses are served by the removal of the riverside bleachers and consolidation of the sports facilities, which will free up the park interior and the large open meadow in front of the Museum of Fine Art. The work will also allow a continuous river walk in a naturalistic park landscape, incorporating cross-park circulation and vistas, uniting both sides of the park.

- **When no longer serving a useful function, relocate the Fire Department Communications Center and associated parking, and reinstate park landscape.**

The Fire Department Communications Center is visually intrusive and houses a non-park-related function. Its relocation out of the park is essential to the recovery of the Fens' southern basin, and the restoration of the park's historic character.

- **Rehabilitate or reconstruct Agassiz, Fen, and Boylston bridges.**

In 1989, Agassiz Bridge was restored.

These splendid historic bridges are in need of rehabilitation and reconstruction. Integral with the original landscape, the Boylston Bridge was designed by H. H.



Figure 164: Back Bay Fens - Agassiz Bridge restored under the DEM Early Action Projects in 1988 (Pressley Associates, 1988).

Richardson and the others by engineers working with J. C. Olmsted. Restored, they will add immensely to the historical significance of the Back Bay Fens.



Figure 165: Back Bay Fens - Agassiz Bridge, circa 1925 (BPL Print Room).



THE RIVERWAY



# *The Riverway*





The Riverway  
Emerald Necklace Parks, Boston • Brookline  
Olmsted Historic Landscape Preservation Program  
Master Plan

Plan 15: The Riverway - Master Plan (Walmsley/Pressley Joint Venture, 1986).





CONCEPT AND VISION

*“Muddy River - a fresh water course bordered by passages of rushy meadow and varied slopes from the adjoining upland; trees in groups diversified by thickets and open glades.”*

-- Frederick Law Olmsted, City of Boston Sixth Annual Report 1880.

*“Except where the valley is now narrowest, it would be reduced in width by artificial banks, so that the river with its shores would everywhere have a general character, resembling that which it now has near Longwood Bridge, only that its water would be kept at a nearly uniform level, and guarded from defilement by intercepting sewers and otherwise. The Brookline margin would be the broadened base of the present railroad embankment, bearing a woody thicket. The opposite on Boston bank would have an elevation above the water of ten feet, rising where the natural bank is used to twenty feet. Upon this will be laid out a public way ninety feet wide in continuation of that now forming along the Back Bay Basin, divided like that into foot, carriage, and saddle courses, and designed to serve as a public promenade along the river bank, as well as a trunk line giving an element of continuity to the street system of the neighborhood.”*

-- Frederick Law Olmsted, City of Boston Sixth Annual Report 1880.

*“...What we should like is [that] five or ten years hence a stranger, looking into the valley, might suppose that it bore a natural growth slightly refined by art, and that openings through this natural growth had been made for drives, rides, and walks.”*

*“...It is absolutely essential that although the work is for the present under two municipalities and under the control of two park commissions acting independently of one another, that it should, to the public eye, be one work. Landscape unity between the two sides of the valley must be secured.”*

*“...What is required is such general similarity in the character of the vegetation as is sure to be found naturally occurring on each side of a meandering stream and on the opposite sides of a winding valley.*

-- John Charles Olmsted, letter to W.L. Fisher, October 13, 1893.

The Master Plan must preserve and strengthen existing design elements and address the serious problems of traffic, land use, flooding and water quality that have compromised the park and tended to subvert and isolate it from the rest of the Emerald Necklace.

### Riverway Projects Update

A major pruning effort took place in 1987-1988 by the City of Boston and the Town of Brookline as an Early Action Project through funding by the Massachusetts Department of Environmental Management (DEM), Olmsted Historic Landscape Preservation Program (\$133,500).

The Olmsted Landscape Crew was created in 1988-89 by the City of Boston through state funding (\$32,000).

The restoration of the Island Bridges was completed in 1988 as a Town of Brookline Early Action Project as funded by the DEM, Olmsted Historic Landscape Preservation Program (\$142,175).

The first phase of the Emerald Necklace standard signage was installed in 1989-1990 through funding by the Parkman Fund (\$12,089).

Between 1989-2001, over \$2.6 million in funding was provided by the Brookline Department of Public Works for removal of illicit cross connections and improvements to the stormwater system.

The Round House Shelter was re-roofed in 1990 through funding by the City of Boston (\$35,000).

The Back Bay Yard building rehabilitation was completed in 1998 through funding by the City of Boston (\$551,000).

In 1998, the former Sears parking lot was transferred to City of Boston Parks Department ownership. The Sears Roebuck Company bore the

In order to meet the goal of improved environmental quality, it is recommended that the Sears lot be reclaimed and restored, Park Drive be reconfigured and the Route 9 off-ramp be eliminated. Crossing signals for the on-ramp will help link the Riverway with Olmsted Park for the present. The Master Plan recommends that Netherlands Road Bridge be closed to traffic and converted to park use. Here, as elsewhere in the system, the plan recommends actions to improve water quality: to eliminate Combined Sewer Overflows (CSOs) and cross-over connections, to control pollution, to achieve better water depth by dredging, and to remove invasive vegetation.

Toward the goal of historic design sensitivity, the plan proposes preserving and strengthening surviving original design elements. The Master Plan favors a return to the original plantings, adapting the voluminous documentation from the design era and the early days of park use.

Re-creations of lost landscape elements are to be as close to the originals as possible, with special regard for scenic views, spatial organization and the rhythmic sequences Olmsted intended. In determining whether a particular element should be a "historic" or a "sympathetic" restoration, considerations of use, cost and maintenance are weighed. The Master Plan also recommends that the Boston and Brookline sides of the park be restored together and that maintenance efforts be coordinated (a goal which has been difficult, if not impossible, to attain from the park's earliest days).

The ultimately restored Riverway will resemble Olmsted's original intent very closely in the middle segment (from the Park Drive realignment to the southern crossing of Brookline Avenue). The two ends, more seriously damaged by traffic, land use changes and the historic problems of flooding and water quality, will be drawn more strongly into the park, with links to the adjoining parks re-established at each end.

This Master Plan proposes several interpretations of the original design intent. The present paved pedestrian path on the Brookline side of the river will become part of the newly established cycling and jogging path, which in the rest of the system will be following the route of the original and now obsolete bridle path. Some modification to the present path, such as changes in surface treatments and separation of ways, may be necessary to ensure that cycling and jogging traffic do not conflict with pedestrian use. The establishment of this continuous route throughout the Emerald Necklace park system fulfills a recommendation for a separate bicycle path made by Charles Eliot in 1896. A set of steps to be added to the Boston side of the Longwood Bridge was part of the original design, albeit a part that has remained unfinished for over a century, and one that now responds to current use patterns. The closing of the Netherlands Road Bridge to vehicular traffic will reintegrate the southwestern segment with the main body of the park. And while recommendations urge the restoration of original plantings and scenic landscape treatments, the massing and choice of plant materials will reflect current maintenance capabilities and security requirements.

When the restoration is complete, the Riverway will again be a naturalistic corridor park, focused on its curving watercourse and verdantly distinct from the dense urban fabric around it. Cyclists, joggers and automobile travelers will be able to enjoy peaceful water views, trees and massed understory shrubs similar to those in place in the early 20th century. More passive in use patterns than its neighbors in



### Riverway Projects Update, cont.

cost of removing the parking lot and creating a lawn area as part of the re-development of the former Sears building by a new owner.

Restoration of the Bridle Path and Chapel Street Bridges and supporting planting was completed in 1998 through funding by the DEM Olmsted Historic Landscape Preservation Program and a grant from the Massachusetts Historical Commission. DEM (\$900,00) MHC(\$150,00).

Restoration of the stonedust path and planting from Park Drive to Netherlands Road was completed in 1999 through funding by the City of Boston's Office of Capital Planning (\$159,120).

the system and more intensely designed (for all its naturalistic appearance), the Riverway will provide a welcome green landscape for park and parkway users alike.



Figure 166: Riverway - View above Brookline Avenue in 1904, twelve years after construction in 1892 (FLONHS).



Figure 167: Riverway - Two islands below St. Mary's Street looking downstream from footbridge below Longwood Bridge, 1907 Thomas W. Sears, photographer, FLONHS).

### RATIONALE

Of all the parks, the Riverway can offer the most complete experience of refuge from the city. Because it is narrow, the park's illusion of "rus in urbe" is extremely vulnerable to changes within and near its borders. The park is beset by serious underlying problems that have led to a discontinuous waterway, poor internal circulation, altered and impoverished landscape and generally deteriorated park conditions. While in the long midsection of the park, Olmsted's original intent can still be seen and understood, changes at both ends have tended to isolate the Riverway from the rest of the Emerald Necklace system.

Many of the improvements recommended by the Master Plan are intended to improve the park’s physical conditions. The restoration of the water system, its edges, flows, features and associated landscape -- including the reclamation of the Sears lot and return of the river at that site to an open waterway -- will considerably strengthen the Riverway’s central feature, its watercourse.

SPECIFIC RIVERWAY RECOMMENDATIONS

Watercourse

- **Remove invasive Phragmites and water-edge vegetation, and stabilize banks with appropriate plantings.**

Banks on the Brookline side have been stabilized with stone-filled gabion cribs with tops at or below water level similar to those in Olmsted Park. Grassy banks should slope to the water and be interspersed with massed trees and shrubs. Reference to original plans and plant lists should be a starting point in the redesign. The historic landscape character, scale, space definition, views and vistas must be maintained to the fullest extent possible. Restoration of the riverbanks will enhance the scenic quality of the park.

The Emerald Necklace Environmental Improvements Master Plan ENF (1999) calls for day-lighting the watercourse and increasing the culverts under the roadways, which will help alleviate flooding upstream.

- **Recreate historic landscape and watercourse in area occupied by Sears and Roebuck parking lot.**

When the northernmost portion of the Riverway was sold to Sears and Roebuck in 1955 to make way for a parking lot, the area lost the last remnants of its original connection to the Back Bay Fens. The open watercourse that originally ran through that site had already been diverted through underground conduits during the early 1940s period. This created an artificial constriction at the mouth of the Muddy River water course which has caused periodic upstream flooding ever since. The Master Plan recommends that the Sears lot be reclaimed as parkland and the open watercourse restored.



Figure 168: Riverway - “Bridle Path Bridge near Audubon Road,” circa 1900 (FLONHS).





Figure 169: Riverway - Parking lot on parkland at the Sears Roebuck Building (Pressley Associates, 1986).



Figure 170: Riverway - Restoration of the Sears Roebuck parking lot to incorporate it into the Emerald Necklace Park former System (Karen Sparacio, photographer 1999).

As a prerequisite to the implementation of this project, recent engineering studies recommend a new water-flow control building in the vicinity of Park Drive, similar in function and location to the one that was built during the original construction of the Riverway. It is extremely important that the engineering and landscape issues be resolved together. Perhaps a building similar in exterior design to the original Muddy River Gatehouse at Brookline Avenue could be constructed to accommodate the water control mechanisms. An historically sensitive design is imperative, as the construction of anything else would be a major visual intrusion on the restored park landscape. This “taking back” of a lost segment of the Emerald Necklace may have important flood control benefits, as well as scenic and functional ones. It reconnects the Riverway to the Fens, and in doing so, repairs one of the worst physical breaks in the Emerald Necklace chain.

The proposed scope of work of the Emerald Necklace Environmental Improvements Master Plan ENF (1999) for the restoration of the Muddy River from Ward's Pond to the Charles River includes mitigating flood hazards, improving water quality, historic landscape preservation, and enhancing habitat.

In an effort to improve access and pedestrian circulation, the City of Boston and the Town of Brookline restored the Chapel Street and Bridle Path bridges in 1998 and the stone dust pedestrian path from Park Drive to Netherlands Road.

- **Urge interagency cooperative efforts to satisfactorily resolve flooding, drainage, sedimentation, pollution, and water quality problems.**

This system-wide recommendation has specific significance to the Riverway, where the watercourse is the chief linking feature. The water quality issue should be resolved through a regional drainage plan that respects the historic parks and protects their environmental values.

### Internal Circulation

- **Improve the pedestrian connection from the Longwood MBTA Station to and across the park by way of the Chapel Street Bridge.**

This cross route is heavily used by pedestrians arriving or departing the Longwood MBTA Station. It will be made safer and more attractive by repairing the Chapel Street Bridge/Shelter complex, and by adding appropriately scaled historic lights.

- **Add historically sensitive stairs for access to the park on the east side of Longwood Bridge.**

Longwood Bridge is an important route crossing the midsection of the park. A staircase on the eastern side, which was part of the original bridge design but never completed due to funding issues, can now be constructed to serve the current demand for park access from the Boston side of the park. Since the original design is known, the stair should ideally reflect the original layout and materials, although careful attention should be given to current preservation standards that require new construction to be substantively different from the original, so that there is no confusion as to historic integrity. However, it could be argued that the building of the eastern Longwood Bridge stairs is a substantially delayed construction phase of an original design. A compromise solution might be a dated plaque



Figure 171: Riverway - Chapel Street Bridge and landscape restoration (Karen Sparacio, photographer, 1999).



prominently displayed on the new staircase. Historic restoration will be costly, but the Longwood Bridge is such a significant architectural feature that its design must be respected. The new stairs will allow the compacted, eroded desire lines adjacent to the bridge to be revegetated.

- **Restore the Carlton Street pedestrian bridge over the MBTA tracks to re-establish pedestrian access to the park.**

A committee has been established by the Brookline Board of Selectmen to study the feasibility of restoring the Carlton Street Footbridge.

At present, the MBTA tracks on the northwest edge of the Riverway are a lengthy barrier to park access from the Brookline side. A pedestrian bridge over the tracks at Carlton Street will enhance use of the Longwood section of the park by making it accessible from Brookline.

- **Modify the present Boston pedestrian path to accommodate separate cycling/jogging and pedestrian paths to ensure the establishment of the system-wide dual circulation system.**

Due to the physical breaks at the Sears parking lot and at Route 9, the Riverway no longer functions well as a link in the Emerald Necklace park system. The creation of a continuous dual circulation system in the Riverway, through the modification of the presently paved pedestrian path in Boston, will help re-establish the park's physical connection to the Fens and Olmsted Park. Although the other parks in the system will be using the old bridle path on the Boston side for their cycling and jogging routes, such a route is not currently feasible in the Riverway because of space limitations, especially at the southern end, where parkway widening and overpass construction have further constricted the park. Consequently, circuit routes, like those planned in the other park segments, are also difficult to implement in the Riverway.

### PARKWAYS

- **Close Netherlands Road and bridge to vehicular traffic.**



Figure 172: Riverway - Netherlands Road Bridge should be closed to vehicular traffic (Topo-Metrics, Inc., 1985).



In 1995, the Metropolitan District Commission and the Massachusetts Department of Public Works (now the Massachusetts Highway Department) completed a rehabilitation of the Riverway overpass and access ramps. In 1996, the MDC designed a pedestrian activated light and cross walk for Route 9. Installation is anticipated in the future.

The midsection of the Riverway, the most intact portion of the park, is disrupted by Netherlands Road and its bridge. This traffic link seems to be unnecessary with Brookline Avenue immediately upstream. When the bridge is closed, park users can move through much of the park without crossing a street. This will enhance the park's appeal and restore some of its peaceful historic character. The closing of Netherlands Road should be confirmed through a process of trial closings, and/or traffic studies.

- **Modify Route 9 ramps to facilitate safe crossing by pedestrians and cyclists.**

Route 9, the severing connection between Olmsted Park and the Riverway, is a hazard to park users moving between the two parks as well as to people entering the Riverway in its vicinity.

An interim improvement would eliminate the present off-ramp for southbound Jamaicaway traffic to River Road, diverting cars to Brookline Avenue at an earlier point. An at-grade, signalized crossing should be provided to Olmsted Park.

A full solution to the Route 9 problem requires further investigation. In one alternative explored in the 1930s, Route 9 overpassed the Riverway parkway with far less impact on the Emerald Necklace than the present configuration.

Studies should determine whether all of the entrance and exit ramps are necessary. If the interchange cannot be reconfigured as suggested in the 1930s, then some segments of ramp might be closed and removed to allow the river and a combined pedestrian and cycling and jogging path to pass under Route 9. This could be accomplished with a new bridge, incorporating a modified version of the existing north headwall, emerging in an enlarged area beside River Road. In the interim, a carefully conceived crossing of Route 9 for both pedestrians and cyclists is needed immediately adjacent to the Brookline side of the Route 9 Overpass. A resolution to the Route 9 problem is essential to the reconnection of the Emerald Necklace park system.



Figure 173: Riverway - Route 9 ramps should be modified to facilitate safe crossing (Topo-Metrics, Inc., 1985).





Figure 174: Riverway - View of stone bridge over Route 9 (Pressley Associates, 1986).

The 1999 ENF proposes restoring the natural flow of the Muddy River by dredging, removing invasive vegetation and restoring historic plantings. The ENF also proposes restoration of the historic Olmsted landscape within the reclaimed parkland at the former Sears parking lot.

- **Reconfigure intersection at Sears parking lot in conjunction with reconstruction of historic landscape and bridges.**

The linkage between the Riverway and the Back Bay Fens is poor, obstructed by the Park Drive intersection at the Sears parking lot. The existing conditions perspective demands that Park Drive at the downstream end of the Riverway be re-examined when the Sears lot is reclaimed, and the whole area comprehensively replanned, in conjunction with the re-created waterway, to provide better linkages between the Riverway and the Back Bay Fens.

#### Landscape Composition

- **Remove invasive vegetation and recreate historic parkland landscape in the segment between Brookline Avenue and Route 9.**

This part of the park is so overgrown that it is virtually impassable. Vegetation should be cleared and the Route 9 off-ramp at River Road removed.

- **Reclaim area presently occupied by Sears parking lot as parkland and reinstate naturalistic plantings.**

The Sears parking lot and its accompanying alterations of the watercourse has had a deleterious effect on water quality as well as on the Riverway's historic landscape and use patterns. The land itself should be reclaimed as an integral part of the improvements related to the watercourse and traffic modifications. This transitional link was never planted as profusely as the rest of the Riverway. But historic photographs convey the scenic effects intended and should allow for an "sympathetic" restoration with the appropriate landscape character. Reclamation of this significant parcel of parkland will have wide-ranging positive effects on the Riverway, its water quality and its connections with the Back Bay Fens.

- **Recreate ornamental shrub massing and meadow scenery at the water's edge and islands (including island between Brookline Avenue and Netherlands Road) utilizing historic views and planting plans.**



Figure 175: Riverway - Boston Park System Muddy River Improvement. View upstream from the Longwood Avenue Bridge in 1920, twenty-eight years after construction (Thomas Ellison, photographer, FLONHS).

The lush landscape character of the river's edge and islands has virtually vanished, the original varieties replaced almost everywhere by invasive species. The original plant masses and scenery should be re-created, using the original plans and historic photographs as a guide. In this instance, an "historic" restoration should be attempted, to the extent that use, cost and management can justify the efforts required. A prototype area should be designed to resemble the original as closely as possible, to determine how much accuracy is desired and is reasonable. Then, the rest of the areas should be assigned their proper priorities. This restoration will contribute significantly to the historic quality of the park landscape, and will help screen unattractive views.

- **Selectively open up views from bridges and at the scenic shelter for improved security.**

Overgrown shrubs and small trees block views from the bridges and pose a safety hazard because they prevent surveillance. Selective opening of views will improve park appearance and security, and will also facilitate maintenance. The bridges and shelter will once again be attractive places from which to view the river and its land features, fulfilling their original park purpose.

#### Uses, Structures, and Facilities

- **Restore existing historic bridges, steps and shelter.**

These functional original structures are in deteriorated condition and should be restored. They are the only structures in the Riverway (except for the Back Bay Yard park maintenance complex), and they were important for circulation and landscape composition. The restoration of the shelter will be especially rewarding, and should be carried out in conjunction with the walk and bridge improvements

The Round House Shelter was re-roofed in 1990.



nearby, and the opening up of park views. A signalized pedestrian crossing should be installed on the parkway adjacent to the shelter to ensure safe crossing. The result will be better accessibility to and circulation through the park.



Figure 176: Riverway - Bridle Path Bridge, circa 1919 (BPL Print Room).



Figure 177: Riverway - Bridle Path Bridge and plantings restored (Jon Crispin Photography, 1999).

The Back Bay maintenance facility restoration was completed in 1998.

- **Renovate Back Bay Yard buildings and retain as maintenance facility.**

This functional single-story brick complex at the northern end of the Riverway needs renovation. While not original to the Emerald Necklace, it is an early

addition and is relatively small and unobtrusive to the park landscape. It can be made less conspicuous through the use of buffer plantings, sensitive renovation, and improved furnishings. The result will be a more integrated park structure and useful maintenance facility.



Figure 178: Riverway - Back Bay Yard after rehabilitation (Karen Sparacio, photographer, 1999).



OLMSTED PARK



# *Olmsted Park*





Olmsted Park  
Emerald Necklace Parks, Boston • Brookline  
Olmsted Historic Landscape Preservation Program

Master  
Plan

Plan 16: Olmsted Park - Master Plan (Walmsley/Pressley Joint Venture, 1986).





# The Master Plan

# The Olmsted Park Plan

## Olmsted Park Projects Update

A major pruning effort took place in 1987-1988 by the City of Boston and the Town of Brookline as an Early Action Project through funding by the Department of Environmental Management (DEM), Olmsted Historic Landscape Preservation Program (\$135,000).

The Olmsted Landscape Crew was created in 1988-89 by the City of Boston through funding by the DEM Olmsted Historic Landscape Preservation Program (\$32,000).

Bike path construction (in conjunction with Jamaica Pond), pedestrian path renovation and parking lot construction at Daisy Field was completed in 1989 through funding by the DEM, Olmsted Historic Landscape Preservation Program (\$305,594).

Minor restoration of Olmsted planting was completed in 1989 by the City of Boston through private funding (\$8,000).

The first phase of the Emerald Neck-lace standard signage was installed in 1989-1990 through funding by the Parkman Fund (\$12,089).

The Appalachian Mountain Club volunteered pathway maintenance in 1991, 1992, and 1993 (\$5,000).

The Metropolitan District Commission (MDC) Kelly Rink and parking lot was removed in 1997.

A new bike and pedestrian pathway system and planting was installed from Chestnut Street to Willow Pond Road by the Town of Brookline in 1997 as part of Riverdale Phase I (\$300,000).

## CONCEPT AND VISION

*“Upper Valley of Muddy River -- A chain of picturesque fresh-water ponds, alternating with attractive natural groves and meads.*

-- Frederick Law Olmsted, City of Boston Sixth Annual Report 1880.

*From Tremont Street, southwardly to Jamaica Pond, the waters widen out into pools and ponds, connected by a rapid brook, and, besides the scenery a more varied Parkway, the road on the Boston side has been named Jamaica-way, thus, indirectly, by change of name, recognizing the change of landscape character. The public way on the Brookline side is named Brookline Road, the use of the word ‘road’ being appropriate to its rural character.”*

-- Frederick Law Olmsted, Town of Brookline, Reports, 1889-1890.

The recommendations made in this section of the plan contribute toward the fulfillment of a number of the goals established during the planning process. Environmental quality will be improved by resolving the historically problematic seepage at Ward’s Pond along Perkins Street by collecting and channeling the flow under a small new pedestrian bridge adjacent to the pond. In this way, the disruption to the existing wetlands in the area will be kept to a minimum, and will continue to be an asset to the area. The repair of Leverett Pond’s eastern edges will also contribute to the health of the park environment. Like the other parks in the Emerald Necklace system, Olmsted Park’s pollution and sedimentation problems must be addressed in the context of a regional watershed improvement initiative that will include dredging, stabilizing banks and regulating water level fluctuations and quality.

Because so much original and early documentation exists for Olmsted Park, in the form of descriptions, surveys, plans and photographs, many of the recommendations made in this section will lead to restorations of original features and character, especially when those restorations will contribute to modern enjoyment of the park. A number of recommendations relate to the renovation of the water system, its ponds, edges, flows, features and associated waterside landscape, reducing local erosion and siltation and replacing many historic elements. Recommended historic restorations along the watercourse include the reconstruction of the “Natural History” pools, the string of small ponds, brooks, waterfalls and bridges that once ran beside Riverdale Parkway downstream from Ward’s Pond.

The picturesque landscape will be recalled through the recreation of grassy banks and historic plantings on the slopes of Ward’s Pond and through the reinstatement of plantings on the banks and islands of Leverett Pond. Scenic views planned by Olmsted will be recaptured throughout the park.

The product of the recommendations for Olmsted Park will be an improvement of environmental conditions, a return of much of the historic character of the park and enhanced opportunities for recreation. The park will continue to look and function somewhat differently from the Olmsted era, reflecting current use patterns and modern traffic conditions. The Huntington Avenue Overpass at Route 9 is a major disruption in the linear park circulation system, and must be worked into a plan to link Olmsted Park with the Riverway. Pedestrians wishing to make that connection

Olmsted Park Projects Update, cont.  
Rehabilitation of the Leverett Pond shoreline at the Daisy Field outlet and installation of a boardwalk at Ward's Pond was completed in 1998 through funding by the City of Boston's Office of Capital Planning (Approx. \$216,000).

Restoration of the Brookline Avenue Bridge and the Cove Bridge with supporting planting was completed in 1998 through funding by the DEM Olmsted Historic Landscape Preservation Program and a grant from the Massachusetts Historical Commission. DEM (\$900,000) MHC (\$150,000).

Riverdale Parkway Phase II & III conversion to a bikeway, restoration of Allerton Overlook, and improvements to the pedestrian path and plantings were completed in 2000 through funding by the DEM and the Town of Brookline (Approx. \$400,000)

In 1997, a close analysis of bank seepage along the southern edge of Ward's Pond (Perkins Street) revealed that diversion to one point was infeasible and too disruptive to the wetland. As an alternative, a boardwalk was installed in 1998 using a technology which minimizes construction impacts and preserves existing wetland plants and habitat.

must be assured a safe crossing. Riverdale Parkway was designed as a park drive for carriages, and this Master Plan recommends that it become a cycling and jogging path, as pedestrian and cyclist use is more consistent with a relaxed park atmosphere than is automobile traffic. Kelly Rink, which occupies a site that Olmsted carefully designed as a lowland meadow with a pond, provides a winter recreational activity that is currently unavailable elsewhere in close proximity. It can, for the time being, be densely screened with plant materials to reduce its negative visual impact on the naturalistic landscape.

When park restoration is done, Olmsted Park will again be an inviting refuge from the built-up city around it. A visitor will find it an interesting world of water, bubbling in the brook, rushing over little falls and pooling still and smooth in the several ponds. Daisy Field, as much a meadow as a ballfield, will offer a grassy expanse with open views of Leverett Pond. There, gravelly beaches and sandy islands will vary the smooth green plane of the water. In the woods, increased numbers of birds and small animals will build their homes again.

### RATIONALE

Olmsted Park is extensively deteriorated, and it suffers from separate maintenance and management actions on the part of Boston, Brookline and the MDC. Despite its serious problems, this park offers a great opportunity for revitalization because of its size and breadth, the range and arrangement of land and water areas, its division into woodlands, park and meadow, edged by formal promenades, and because of the extensive documentation of Olmsted's design intent.

Environmental conditions in the park suggest a need for improvement of the water system, including the restoration of a number of original ponds. This Master Plan recognizes that a major reconstruction of water quality must be undertaken in the context of a regional plan that considers the parks within their broader drainage area.

In order to return Olmsted Park to a condition closely resembling Olmsted's original vision, an ambitious program of replanting, selective removal and long-term management is proposed to restore scenic views and historic plantings. Attention must also be given to mitigating the adverse effects upon the park's historic quality of serious encroachments such as the Huntington Avenue Overpass, Kelly Rink and the constant presence of parked and moving cars along Riverdale Parkway.

### SPECIFIC/OLMSTED/PARK/RECOMMENDATIONS

#### Watercourse

- **Resolve Ward's Pond southern bank seepage by directing flows to one area and building a small pedestrian bridge over the directed flow.**

There has been seepage below Perkins Street for many years. A concern for environmental quality suggests that the problem can be turned into an asset by collecting the water at a single point and introducing a small pedestrian bridge where the walk is currently waterlogged. The resulting pool will be less plagued with invasive vegetation, easing maintenance responsibilities.

- **Repair Leverett Pond edges, predominantly on the east side, as needed.**





Figure 179: Olmsted Park - Ward's Pond boardwalk, south side (Karen Sparacio, photographer, 1999).

A large washout below Daisy Field on the Boston side needs to be stabilized and reshaped. Both historical and environmental perspectives recommend that it be repaired to match the Brookline side, where gabion cribs are invisibly placed with their tops at water level. Localized undercutting of banks, mostly due to intensified flow rates during periodic storm events, can be corrected by restoring the watercourse edge to its historic contours.

- **Reconstruct small ponds below Ward's Pond to partially regain the water features indicated on historic plans and to replicate wetlands displaced at Ward's Pond during the path construction project.**

The area below Ward's Pond is presently a transitional marshy meadow, once the site of a series of small ponds that followed a curvilinear course before resolving into a picturesque stream. The ponds are prominently featured on the historic plans, and a primary design element in Olmsted's vision for the park. Respect for the integrity of Olmsted's design suggests that they be reconstructed. It is thought that they disappeared because of the low water level at Jamaica Pond, and subsequent inconsistent flows which affected the level in Ward's Pond, and thus deprived the smaller, downstream ponds of water.

These ponds are a thoroughly characteristic Olmsted feature and their reconstruction merits serious consideration, although, without further study regarding their long-term survivability, maintenance requirements, ecological impact, and potential use, it is unclear to what extent the original plan can and should be followed.



Figure 180: Olmsted Park - View of pond, circa 1900 (Frances Loeb Library, Harvard Graduate School of Design, Visual Services).

- **Reconstruct historic waterfalls, bridges and Babbling Brook.**

The Babbling Brook between Ward's and Willow ponds is now indistinguishable. It should be cleared of vegetation and debris, and have edges defined to enhance both water-flow and scenic quality. The restoration design should be based on historic plans and photographs.



Figure 181: Olmsted Park - Bridge at bubbling brook, circa 1920 (Leon Abdalian, photographer, BPL Print Room).





Figure 182: Olmsted Park - Granite stone bridge at Leverett Pond cove inlet, circa 1900 (Frances Loeb Library, HGSD, Visual Services).

Partial dredging of the Leverett Pond inlet was completed in 1998 as part of the Cove Bridge restoration. Full restoration is envisioned as a long range goal. The 1999 ENF proposes dredging the entire pond, restoration of the historic inlet and pond banks on the Boston side, and replanting of the island banks on the Brookline side.

- **Restore the historic Leverett Pond inlet.**

An inlet, located adjacent to the stone bridge on the Boston side of Leverett Pond, and an important detail in Olmsted's picturesque design for the northern end of the park, has disappeared due to a drop in water level since the park's inception, and the subsequent eutrophication of the original inlet site. Old photographs show Leverett Pond flowing under the stone bridge into a bowl-shaped hollow. This feature should be recreated, even in a modified form, after a study of the feasible maximum water level that can be attained in Leverett Pond without danger of localized flooding. Such a study should be part of the system-wide hydraulic study and action plan being developed for the Executive Office of Environmental Affairs by the engineering firm of Metcalf & Eddy. The recreated inlet will contribute to the historical quality and scenic richness of Leverett Pond, and it will provide a place for model boating, fishing and ice-skating.

- **Restore the three surviving "Natural History" Pools following historic plans, rebuilding related falls and bridges.**

The construction of Kelly Rink in the 1960s obliterated a large meadow and several of the Natural History Pools. Restoration of the History Pools will be an essential part of reclaiming the meadow after Kelly Rink is phased out.

The 1999 ENF proposes implementation of Best Management Practices (BMP's) for drainage at the sediment island that has formed at the mouth of the Village Brook drain and other drainage issues within the watershed.

- **Identify and control point source sedimentation and water pollution. Relate to area-wide studies of flood-control, storage, and flow to determine a regional drainage plan that respects the historic parks and protects and enhances their ecological value. Restore historic watercourse alignment and water depth, and improve and maintain water quality.**

In 2000, a study revealed that the water quality in Olmsted Park is in fair condition.

Water quality in Olmsted Park is a problem from Ward's Pond downstream. The solution is beyond the scope of this study but is essential to the long-term health and stabilization of the water system in the park and downstream. Local improvements will check erosion and stabilization within the park, but problems in the watershed draining into the system require a regional drainage plan and control of pollution.

### Internal Circulation

- **Build new stairway and path northeast of the Chestnut and Perkins street intersection to provide better pedestrian access to Ward's Pond.**

Access to Ward's Pond from the Chestnut and Perkins street intersection and linkage between Jamaica Pond and Olmsted Park are extremely difficult at the present time. From the standpoint of optimal park use, a new stairway and path located next to the original rock "cataract," west of Ward's Pond should be constructed. While not part of Olmsted's original plan for the park, it will improve access to the pond from the adjacent Brookline neighborhood, as well as the park-to-park linkage that is so crucial to the success of these parks as a linear system. This improvement will enhance rather than diminish the historically intended quality of the area.

- **Upgrade and expand path system throughout the park.**

Several of the originally constructed pedestrian paths and staircases, especially those in the southern section of the park, have been abandoned and are overgrown with vegetation. Others are in very poor condition due to erosion and/or deferred maintenance. A fully functional circulation system incorporating lost or deteriorated historic elements, combined with new links following contemporary desire lines, is a prime objective.



Figure 183: Olmsted Park - "Ward's Pond looking west," August 6, 1904 (FLONHS).



**Build cycling and jogging path along the eastern edge of park on the route of former bridle path.**

The Emerald Necklace's former bridle path can again be utilized as a moderate speed park pleasure route by transforming the now abandoned circulation system into a cycling and jogging path. This action will strengthen Olmsted's intended physical linkage of the park system, and will encourage current park users to venture beyond their typically used areas, and attract a new park constituency. The circuit can be completed on the west side by utilizing Riverdale Parkway.



Figure 184: Olmsted Park - Bikeway on former bridle path (Pressley Associates, 1997).

A sensitively designed parking area completed in 1989 successfully controls vehicular access around Daisy Field and the northern section of the park.

- **Control vehicular access in the park, especially at the Daisy Field area.**

Vehicles used to be able to drive unrestrained into the Daisy Field area, and other sections of the park. Consequently, vegetative damage, soil compaction and dumping were major problems in Olmsted Park, especially in more remote areas.

- **Provide links to neighborhoods.**

Place non-signalized crosswalks at 33 Pond Avenue (Brook House), Allerton Street, Cumberland Avenue, Highland Road, and Jamaica Road to encourage neighborhood use of Olmsted Park and reduce traffic speed on Pond Avenue.

### Parkways

The Town of Brookline removed Riverdale Parkway, installed bike and pedestrian paths, restored planting, and constructed small gated parking areas from 1997-2000 (Approx. \$700,000).

- **Redesign Riverdale Parkway from Chestnut Street to Washington Street (Route 9) for use by pedestrians, joggers and cyclists. Eliminate motor vehicle access.**

A former carriage route, today's Riverdale Parkway cannot withstand heavy volumes of local and Boston metropolitan commuter traffic at speeds up to 5 times faster than originally envisioned. It has become a major intrusion on the park, and has effectively cut off a high percentage of usable park space in Brookline from park users. In conjunction with the intersection changes recommended below, Riverdale Parkway should be converted into a separate cycling and jogging path and walk for strollers, with small parking areas (15-20 cars) at both the Route 9 and Chestnut Street ends.

Modifying Riverdale Parkway to accommodate non-vehicular traffic will result in dual circulation routes for cyclists/joggers and pedestrians that work in a fashion similar to Olmsted's original park drives. The action will also nearly double the amount of usable park area on the Brookline side of Olmsted Park, and still provide for park visitors arriving by automobile.



Figure 185: Olmsted Park - Riverdale Parkway under construction, early 1890's (Brookline Public Library).

- **Close crossover connectors between Pond Avenue and Riverdale Parkway.**

Crossovers at 33 Pond Avenue, 99 Pond Avenue, and Cumberland Avenue serve no purpose. These crossovers should be eliminated. New pedestrian paths should be provided at 33 Pond Avenue and Cumberland Avenue to coincide with new crosswalks to be provided on Pond Avenue.





Figure 186: Olmsted Park - Riverdale bikeway and pedestrian path completed in 1997 (Jon Crispin Photography, 1999).

In 1996, the MDC designed a pedestrian activated light and cross walk for Route 9. Installation is anticipated in the future.

Brookline removed the guardrails during the Riverdale Parkway rehabilitation in 1997.

- **Facilitate safety for pedestrians and cyclists crossing Route 9 ramps.**

The heavily traveled Route 9 constitutes a hazard to pedestrians and cyclists entering Olmsted Park. Ensuring their safety will require a designated crossing with coordination of signalization controls throughout this stretch of Route 9.

- **Remove guardrail on Riverdale Parkway at Willow Pond. Replace guardrail between Willow Pond Road and Leverett Pond with historically sensitive materials.**

The guardrail at Willow Pond will become obsolete when Riverdale Parkway is closed to vehicular traffic. It should be removed to help restore the park's aesthetic quality. However, since Willow Pond Road will continue to be open to vehicles, the present guardrail between it and Leverett Pond should be modified to better blend with the naturalistic landscape.



Figure 187: Olmsted Park - Guardrail removed at Willow Pond (Jon Crispin Photography, 1999).

Landscape Composition

- **Recreate historic plantings on slopes at Ward's Pond utilizing historic views.**

The slopes toward Ward's Pond have lost their historic treatment and as a result the scenic quality intended for the pond is no longer apparent. Grassy banks should be planted in the two locations shown on the historic plans, following the 1915 advice of J. C. Olmsted. Rhododendron plantings advised at the same time should also be made, framing pleasant views and screening less appealing vistas. Gravel beaches are recommended where walks approach the water. In re-creating historic plantings and scenic compositions, careful reference should be made to the Olmsted recommendations and period photographs (such as those of Leon Abdalian recording the south portion of Olmsted Park from 1916 to 1938). The result will be a much more picturesque environment for Ward's Pond and a return to its original scenic character.



Figure 188: Olmsted Park - View of Ward's Pond looking south, circa 1900 (BPL Print Room).



- **Reinstate historic plantings on Riverdale Parkway banks and islands, utilizing Olmsted planting plans as much as possible.**

Riverdale Parkway has lost much of the plantings that once made it a beautiful carriage drive. Now that it is to be returned to park use as a cycling and jogging path, its landscape should be restored with reference to Olmsted layouts, details and plant species lists. (The extent to which these plans can be followed depends on site conditions, but the historic approach should be followed as fully as possible.) As at Ward's Pond, beach areas may be treated as grassy banks or overlooks, depending on each local condition. The restoration of the islands will add to the scenic interest of the Parkway and provide wildlife sanctuaries as well.



Figure 189: Olmsted Park - View from Allerton Overlook over Leverett Pond, circa 1900 (Brookline Public Library).

In 1999, the Town of Brookline restored the Allerton Overlook, including the entrance, pathways, and planting. This portion was funded by the DEM Historic Landscape Preservation Grant Program and completed in conjunction with the Riverdale Parkway rehabilitation (\$100,000).

- **Reinstate scenic views at Leverett Pond, including the Allerton Street overlook.**

The visual organization around Leverett Pond has disintegrated, and many scenic views that Olmsted planned have been lost. These views are all fairly well documented, permitting a "historic" restoration in many cases and a "sympathetic" restoration elsewhere. The reinstated views include an opening in the trees at the southern end of the pond at its transition to Daisy Field, and a reconstructed viewing shelter on Nickerson Hill at the head of the pond - both done in conjunction with the reorientation of the Daisy Field backstops. Another view is provided by the rather formal Allerton Street overlook. With its semicircular walks descending to Riverdale Parkway, it could be accurately restored as a special historic park entrance. The results will restore much of the picturesque quality.



Figure 190: Olmsted Park - Allerton Overlook (Jon Crispin Photography, 1999).

#### Uses, Structures and Facilities

- **In consultation with appropriate league officials, reorient and refurbish Daisy Field ball diamonds, and paint and screen backstops and light poles to reduce their visual impact on park.**

The ballfields, backstops and floodlights at Daisy Field diminish the meadow-like quality that Olmsted sought for that location in Olmsted Park. The ball diamonds should be reoriented so that the backstops and first base/right field line aligns with the forest on the eastern edge of the meadow. The light poles should be painted flat black and should be re-sited to the field's edges out of the view, reducing their visual impact while still servicing night-time games.

- **Control Daisy Field ballfield lighting to ensure that it does not affect surrounding residential neighborhoods.**

The ballfield lights at Daisy Field protrude above the canopy trees surrounding the fields and, therefore, can be clearly seen from surrounding residential neighborhoods. The lights should be shielded to illuminate only the playing field so that night games are not bothersome to residents living near the park. In addition, timers should be installed on the system that turn off the lights after 10:00 p.m. The ballfield lights should not be used at all during the off-season (November to April), except for special events.

Construction of the Ward's Pond boardwalk in 1998 has proved successful in improving circulation and accessibility.

- **Restore existing bridges and stairs, and recreate additional bridges and steps to facilitate circulation in Ward's Pond area.**

Circulation around Ward's Pond has been interrupted by wet perimeter conditions and the deterioration of bridges and stairs in the vicinity. Existing features should be restored, and some new ones built as part of overall circulation improvements and the restoration of water features. These recommendations must be coordinated with drainage corrections and the replanting of the pond's surroundings. The result will be an area of Olmsted Park made much more interesting and accessible than it is now.



The 1999 ENF proposes the recreation of open meadow at the former MDC Kelly Rink site.

- **As soon as an acceptable replacement indoor skating facility for Jamaica Plain residents is established, begin steps for the eventual closing and removal of the MDC's Kelly Rink, and the reinstatement of the original open meadow adjacent to Spring Pond. Until that time, adequately maintain the existing rink to provide skating during the winter months.**

The massive Kelly Rink is probably the most visually intrusive structure in the Emerald Necklace park system. The skating rink and its parking area should be removed when a new facility is opened in close proximity to the Jamaica Plain neighborhood, and Spring Pond (named for an existing spring) re-established on the site. Until that time the rink should continue its typical winter operating schedule, and attendant issues, such as the periodic ammonia brine discharge, should be addressed. Opportunities for outdoor ice-skating should be created where possible, such as at the re-created Leverett Pond inlet. The removal of Kelly Rink and its parking lot, and the re-establishment of the pond would restore the second largest meadow in Olmsted Park.



Figure 191: Olmsted Park - Kelly Rink (Walmsley & Co., 1986).



Figure 192: Olmsted Park - Restoration of parkland after removal of Kelly Rink (Karen Sparacio, photographer, 1999).



Figure 193: Olmsted Park - View of meadow “looking west across Playstead (a.k.a. Daisy Field) near Ward’s Pond,” circa 1916 (FLONHS).

- **Recreate scenic shelters.**

Olmsted’s carefully sited scenic shelters have disappeared from Olmsted Park and were once extremely important features of the Emerald Necklace’s picturesque landscape character. One stood on the hill north of Ward’s Pond, one at the head of Leverett Pond, and one on the eastern side of Leverett Pond. These should be recreated when the park has sufficient use and a maintenance operation sufficient to keep them.

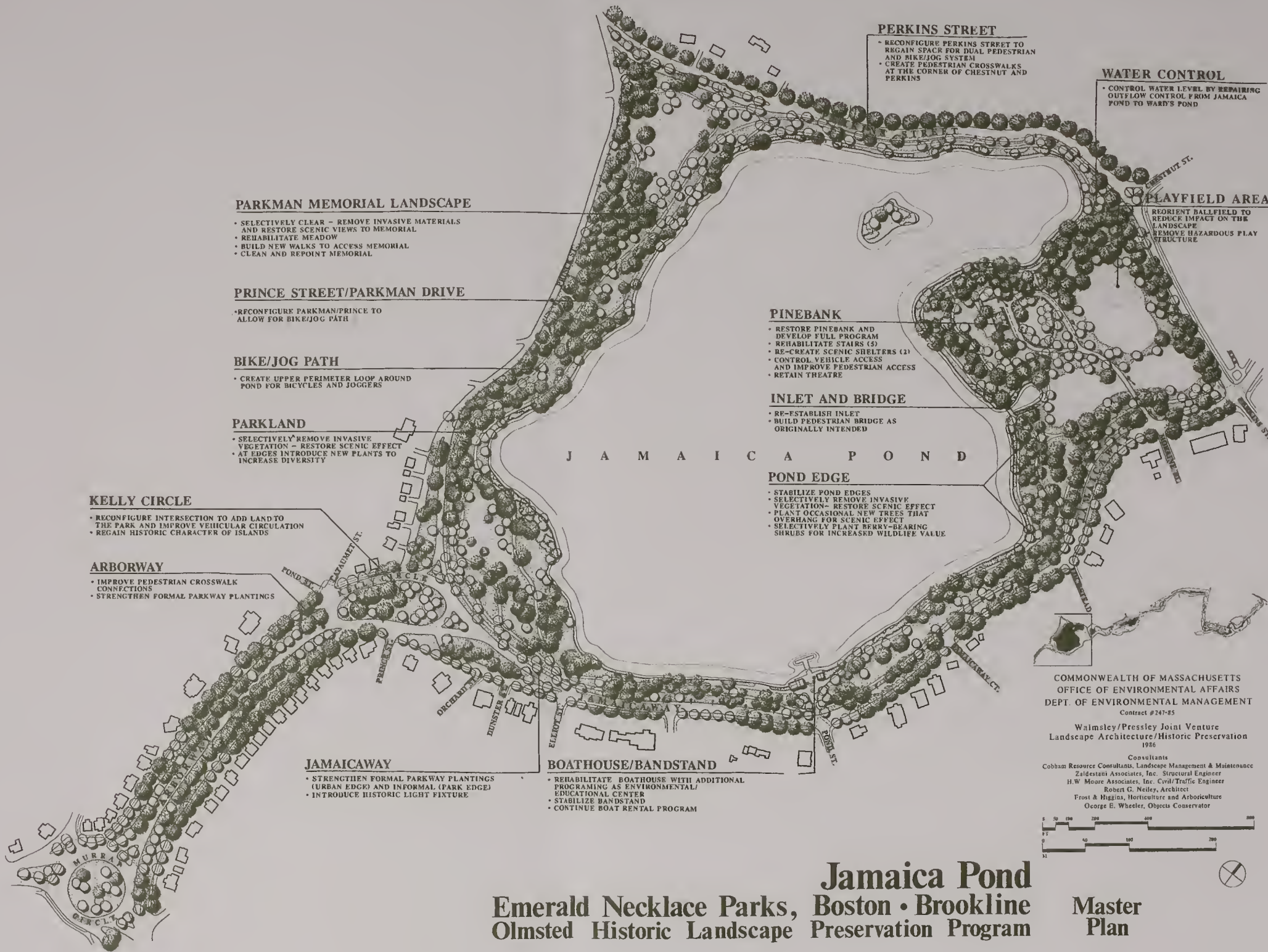


JAMAICA POND



# *Jamaica Pond*





**Jamaica Pond**  
**Emerald Necklace Parks, Boston • Brookline**  
**Olmsted Historic Landscape Preservation Program**

**Master Plan**

Plan 17: Jamaica Pond - Master Plan (Walmsley/Pressley Joint Venture, 1986).





## The Master Plan

### Jamaica Pond Projects Update

A major pruning effort took place in 1987-1988 by the City of Boston as an Early Action Project funded by the Department of Environmental Management (DEM), Olmsted Historic Landscape Preservation Program (\$133,500).

The Olmsted Landscape Crew was created in 1988-89 by the City of Boston through state funding (\$32,000).

In 1989, a bikeway was installed at Jamaica Pond in conjunction with Olmsted Park through State funding (\$348,850).

In 1989, a Pinebank Feasibility Study was completed through funding by the City of Boston (\$30,000).

Pinebank stabilization was completed in 1989 through funding by the City of Boston (\$58,000).

The first phase of the Emerald Necklace standard signage was installed in 1989-1990 through funding by the Parkman Fund (\$12,089).

The Boathouse and Bandstand were rehabilitated in 1989-1990 through funding by the City of Boston (\$415,000).

Restoration of the water control mechanism and selective restoration of the pond edge, pedestrian path system, benches, and planting was completed in 1990 through state funding and the Parkman Fund (Approx. \$359, 000).

## The Jamaica Pond Plan

### CONCEPT AND VISION

*“Jamaica Pond -- a natural sheet of water, with quiet, graceful shores, rear banks of varied elevation and contour, for the most part shaded by a fine natural forest-growth to be brought out over-hangingly, darkening the water’s edge and favoring great beauty in reflections and flickering half-lights. At conspicuous points numerous well-grown pines, happily massed, and picturesquely disposed.”*

-- Frederick Law Olmsted, City of Boston Sixth Annual Report.

Many of the recommendations for this park are intended to restore the rich scenic character Olmsted achieved there a century ago. The scenic mix of woodland, glade, formal promenades, informally planted hillsides and banks, and the highly varied waterside landscape must be carefully restored through a combination of selective removal, replanting and management.

In order to improve the environmental quality at Jamaica Pond, the water level must be regulated and pollution controlled, pond edges stabilized and understory plantings re-established, especially on steep slopes where erosion is occurring.

The park’s appearance will also be improved by the re-creation of scenic elements such as the shelters that originally overlooked the pond, and eventually the restoration of Pinebank. Other structures and furnishings will be carefully restored or re-created within the scope of the Master Plan.

The planned improvements will make Jamaica Pond even more appealing to users and invite new uses that are compatible with the contemplative nature of Jamaica Pond. Pedestrian and bicycle access to the park will be improved and two separate non-vehicular circuit routes created, one for faster moving cyclists and joggers, and one for strollers. Traditional activities, such as walking, cycling, jogging, fishing, boating, picnicking, theater, free-play, softball, sledding, sitting, watching and nature study will be enhanced through the restoration, landscaping and programming.

Equipment and features that encourage activities not in keeping with the nature of this park, such as exercise equipment and play structures, will be phased out. The ball field near Pinebank will be reoriented to mitigate its intrusion on the landscape.

The ultimately restored Jamaica Pond will be very similar to the park Frederick Law Olmsted envisioned. The deviations from Olmsted’s design recommended in this plan are primarily responses to changing use and traffic patterns. The bridle path, no longer used for horseback riding, is to become part of a dual path system providing separate circuit routes for cyclists/joggers and pedestrians, resolving a troublesome use conflict while restoring Olmsted’s dual circuit concept. Certain recommended planting modifications may reflect security and maintenance considerations.

Jamaica Pond is already distinctive and popular. The restored park will continue to be a special destination in the Emerald Necklace system.

### Jamaica Pond Projects Update, cont.

Erosion control repair was implemented by the City of Boston in 1994 (\$125,000).

Shoreline repair, path and planting improvements began in 1999 and was completed in 2000. Funding was by the City of Boston's Office of Capital Planning and a federal grant from the Intermodal Surface Transportation Efficiency Act (ISTEA) (\$946,625). In addition, Pinebank slope stabilization and planting is being implemented through funding by the DEM, Historic Landscape Preservation Grant Program (\$100,000).

Repair of the water control mechanism in 1990 restored the ability to regulate the water level in the pond.

BPRD completed a first phase of shoreline rehabilitation in 1990 and completed a second phase in 2000.

### RATIONALE

The restoration of Pinebank with its associated water and landscape features, as well as the replacement of other original elements in the park are crucial in recreating the historical character so important to the revitalization of Jamaica Pond.

Pinebank's rehabilitation continues to be complicated by dueling environmental and preservation concerns and the high costs of rehabilitation and annual operations. Pinebank is in an extremely deteriorated condition, a fire hazard and a target for vandals. Its rehabilitation and reuse can allow for the development of new and/or expanded park programs to justify and ensure the success of the effort.

Other physical problems that exist in the park include: a non-functional water-leveling mechanism (which is holding the present water level at an elevation below that which was originally intended), depleted pond-side vegetation, eroded banks and hillsides, abandoned walks, compacted soils and limited woodland regeneration. Steps must be taken to correct these conditions, the most serious and obvious problems first, to restore health and vitality to the park's environment. Many of these issues have been resolved with capital projects as described below.

The need for a coordinated system-wide management approach is especially crucial at Jamaica Pond because of its relatively heavy use, and the expansion of programs associated with the three structures scheduled to be renovated.

### SPECIFIC JAMAICA POND RECOMMENDATIONS

#### Watercourse

- **Regulate water level by repairing outflow control from Jamaica Pond to Ward's Pond.**

The water level is several feet too low. This is due in large part to the antiquated water control mechanism close to the intersection of Perkins and Chestnut Streets, with an additional problem from seepage.

The physical conditions perspective suggests that the water level of Jamaica Pond be raised by approximately two feet. It will improve the pond edge condition, both for vegetation and scenic effect, without affecting Shea's Island, which is a much-loved picturesque feature. The invasive herbaceous materials currently growing between pond edge stones and gabion-crib edges of the lake will be below water level. This will reduce the maintenance required to remove the plant materials and repair disturbed stones. This will also bring the surface of the pond closer to its originally intended level.

- **Stabilize pond edges and selectively thin vegetation.**

Pond edges are eroded and overgrown with invasive vegetation that obscures intended views. Techniques for dealing with a range of edge conditions include: grass to water, beach, rock retainage, repair and extension of heavy stone banks, and woodland edges on the west side. Invasive river birch should be selectively removed to preserve the stone edging and restore views. This is an important but extensive undertaking, as the pond perimeter measures almost 1.5 miles. But, it is essential to guard against bank erosion, and will contribute greatly to scenic





Figure 194: Jamaica Pond - River Birch should be selectively removed (Jon Crispin Photography, 1999).

quality. Once the remedial work has been accomplished, only periodic, low intensity maintenance will be required to keep it in excellent condition.

- **Identify and control point source water pollution.**

Several outfalls on the west side of Jamaica Pond (marked on the Inventory Plans) should be monitored on a regular basis by the city to ensure the continuance of the pond's current standard of exceptionally good water quality.

### Internal Circulation

- **Provide separate circuits for pedestrians and for cyclists and joggers by creating upper perimeter loop around the pond.**

There is presently a major conflict between pedestrians and higher-speed cyclists and joggers who try to use the same pathways. The proposed improvements would utilize the old bridle path along the Jamaicaway side, the south side of Perkins Street and a converted Parkman Drive from Perkins to Kelly Circle. Cycling and jogging paths should be smooth, joint-less bituminous, as distinct from pedestrian paths which should be bituminous with an aggregate or crushed stone/stone dust embedded surface finish, a durable "natural" look appropriate for an Olmstedian Park. Olmsted designed a dual-path circulation system for this park which would be reflected in this use-related improvement, which also offers a broader and richer scenic experience than presently available from the pathways.

- **Control vehicular access and improve pedestrian access in the Pinebank area.**

The old Pinebank entrance drive and circle is currently closed due to past overuse by automobiles. Police and maintenance vehicles overran driveways edges, and passenger vehicles parked on grass areas compacted the soil and damaged historic trees. Many of the walk destinations, such as the shelters and estate elements, no longer exist, which has caused severe deterioration of the original circulation system.

In 1989, BPRD transformed the historic "ride" for equestrians into a designated bikeway from Kelly Circle to Route 9. In 1990, the pedestrian path at the Jamaicaway side was upgraded. Jamaica Pond's perimeter path is designated for pedestrians only, which is enforced by Boston Park Rangers.

Solutions to these access problems must consider contemporary uses with sensitivity to the historic appearance of the Pinebank area. Selective automobile access and parking should be provided for sports and the new Pinebank programs. Gate access at the Jamaicaway, parking on one side of the drive, historically appropriate curbs and bollards, and the issuance of special permits should achieve a reasonable level of control.

A new pedestrian circulation system should be installed that connects to the pond's main path system and special destinations: down to the pond, around the restored inlet, along the top of the bank where original shelters provided high views across the pond. Several sets of original stairs should be reconnected with these paths, respecting both historic alignments and contemporary desire lines.



Figure 195: Jamaica Pond - Vehicular access should be controlled and pedestrian access improved in the Pinebank area (Topo-Metrics, Inc., 1985).

- **Improve pedestrian access to and around the Parkman Memorial area.**

The Parkman Memorial area is visually and physically disconnected from the rest of the park and is consequently under-utilized. The conversion of Parkman Drive into the west leg of the cycling and jogging path, and the connection of the pedestrian circulation system to the area will help to bring users into the pond's Parkman Memorial area, one of the three original meadows around Jamaica Pond.

#### Parkways

- **Reconfigure Parkman Drive and Prince Street to allow for creation of the new cycling and jogging path, and to provide safer pedestrian access to the Parkman Memorial area.**

Parkman Drive, an original Olmsted carriage parkway, no longer serves the parks well as a circulation route. In conjunction with the much needed rehabilitation and widening of Prince Street, an immediately realizable interim improvement would close Parkman Drive to through traffic, and/or to make it a one-way pair with Prince Street. Eventually, it should be converted to a southwestern leg of the cycling and jogging path. The closing of Parkman Drive will necessitate the funneling of high



Jamaica Pond improvements 1999-2000 included the installation of a bikeway and crosswalks along Perkins Street from Prince Street to the Jamaicaway.

levels of commuter traffic onto Prince Street. In order to keep this increased traffic volume from negatively impacting the five residences on the eastern end of Prince Street, a reconfiguration of Prince Street is proposed that will divert the roadway down the hillside before reaching the residential area, to connect with the eastern end on the Parkman Drive roadbed. Some woodland clearing, as well as the partial relocation of an historic fieldstone wall, will be necessary. This, and other traffic proposals, such as the safe reconfiguration of the Perkins and Prince street intersection, require further study, traffic counts, and discussion.

- **Reconfigure Perkins Street from Prince to Chestnut to gain space for a dual pedestrian and cycling/jogging system. Develop safe pedestrian crosswalks at the corner of Chestnut and Perkins streets.**

Perkins Street from Chestnut to Prince streets is wide enough for a parking lane on the park side with enough width left over to return a strip of parkland for the new cycling and jogging path.

The Chestnut Street Circle should be reconfigured as a “T” intersection with a “stop” for outbound traffic turning left, and a free right for outbound traffic turning right. Inbound traffic on Perkins Street would make a left into Chestnut. New crosswalks connecting Jamaica Pond and Olmsted Park, and a signalized traffic island were constructed in 1988 by the MDC. While a highly engineered solution, the crosswalks alleviate a potentially hazardous condition, and serve to re-establish the intended linear park connections.

- **Renovate Arborway from Kelly to Murray Circle.**

As an integral part of the original Emerald Necklace design, with a central parkway and adjacent service roads, the Arborway was one of the most beautiful sections of carriage road in Olmsted’s original plan. It should be resurfaced and re-curbed, have new crosswalks and MDC historic pendent light standards, and have blocks of formalized parkway trees replanted to ensure the future integrity of its consistent historic character.



Figure 196: Jamaica Pond - The Kelly Circle area should be reconfigured to regain lost parkland (Topo-Metrics, Inc., 1985).

**Improve Perkins Street between Chestnut and Jamaicaway.**

At the time of the survey, this stretch of Perkins Street dividing Jamaica Pond and Ward's Pond had no curbs or sidewalks. Installing curbs, street trees, a cycling and jogging route on the south side and a walk on the north, historic light standards and a crosswalk at the Jamaicaway end (to match the one at Chestnut Street), will enhance circulation between the parks, safety and appearance. The MDC completed much of this work in 1988, including the first segment of the new cycling and jogging path supported by the public during the Emerald Necklace master planning process.

- **Reconfigure Kelly Circle area to regain lost park land, and replant.**

The present circle configuration, designed in 1943 as a traffic improvement project, slices nearly 200 feet off the park. This proposal is intended to reduce the size of the circle without significantly impairing vehicular movements, and to replant the traffic island in the original, informal character. Naturalistic plantings, historic in design, will require less maintenance than the existing ornamentals.

**Landscape Composition**

- **Reinstate historic plantings throughout the park, including trees that overhang the water for scenic effect, and plants that provide cover and food for wildlife.**

Throughout the park, changes in vegetation have destroyed the original, rich landscape appearance. There must be an ongoing program of vegetative restoration to progressively improve scenic quality and wildlife habitat. It should be carried out in conjunction with other work, such as during pond-edge stabilization and the removal of invasive vegetation. The result will be a return to the shady, tree-fringed Jamaica Pond Olmsted described in his writings.



Figure 197: Jamaica Pond - "A Shady Spot," circa 1900 (John Tankard Collection).



Jamaica Pond improvements 1999-2000 included restoring historic views through selective removal of invasive vegetation.

The rehabilitation of understory planting on the steep slope below Pinebank completed in 2000 will be evaluated as a prototype for other woodland areas through funding by the DEM, Historic Landscape Preservation Grant Program. DEM (\$100,000).

- **Selectively remove invasive water edge trees and shrubs to restore scenic views.**

Most of the views Olmsted planned at Jamaica Pond are now overgrown. The originally intended openings and framed views should be restored, with careful reference to the historic plans in order to recreate the historic character of the pond-side environment. Even though the plan does not reveal the species originally used, it fully illustrates and describes the rhythm of “open” and “closed,” the framing of views, and the intended scenic character. The plant palette will be based on the historic plant lists, availability, and hardiness.

- **Re-establish understory plantings, especially on steep slopes where erosion is occurring, such as below Pinebank.**

The absence of understory trees and shrubs is a serious problem, especially on slopes too pronounced for grass, and on steep banks such as those below Pinebank. In order to improve physical conditions and halt erosion, intensive replanting is recommended. In areas next to steps and walks, where security is a concern, a full range of forest groundcovers and low shrubs (less than three feet high) is appropriate. Elsewhere, where a full plant community is desirable, taller shrubs and understory trees will help stabilize the ecosystem, provide for wildlife cover and give scenic variety.



Figure 198: Jamaica Pond - Eroded bank at steps near Pinebank (Pressley Associates, 1998).

### Uses, Structures and Facilities

- **Recreate the inlet below Pinebank and eventually construct bridge as originally proposed. Use fill from inlet to enhance Shea’s Island if necessary.**

The great expanse of Jamaica Pond needs contrasting features, such as Olmsted’s original inlet, to restore its rich, picturesque character. The inlet provides a focus for the Pinebank grounds. The inlet bridge, which appears on the original 1892 plan, was never actually constructed. It would have allowed for uninterrupted

circulation around the pond, away from the activities occurring around the inlet, such as toy boating, add to the aesthetic quality of that area of the park. The inlet and bridge construction would also reduce the impact on the sensitive adjacent slopes and decrease maintenance problems where soils and plant materials have been depleted. Depending on the ultimate water level, the elevation of Shea's Island may need to be enhanced. These projects need not be done concurrently, although the inlet restoration could be accomplished during the pond-edge rehabilitation.



Figure 198: Jamaica Pond - View over cove from the Pinebank shelter, circa 1892 (H. D. Perkins, photographer, FLONHS).

In 1990, fishing stations were established along the Jamaicaway side.

- **Create access to pond edge at certain points for fishing.**

At the present time, fishing along the straight areas next to the Boathouse is causing erosion and associated maintenance problems. Also, as mentioned above, lines and hooks are a hazard to walkers along the main paths.

Fishing is an activity unique to Jamaica Pond and should be given all possible encouragement. The popular "hot spots" should be made to coincide with scenic openings. Separate designated areas next to the water will help eliminate erosion and fishhook hazards.

The Commonwealth of Massachusetts Division of Fisheries and Wildlife stocks the pond with rainbow trout. Other species known include bluegill, crappie, perch and black bass. Fishing is a very popular pastime and with these improvements will become even more so.





Figure 200: Jamaica Pond - Informal fishing at stone edge (BPRD, 1997).

The play structure was removed in 1988 and the “life course” exercise equipment is being phased out as it deteriorates.

- **Phase out exercise equipment and remove deteriorated play structure.**

The life course exercise equipment beside the paths on the north side of the pond and between Prince Street and Parkman Drive has outlived its usefulness, and it looks artificial in its naturalistic setting. The play structure is also under-utilized and, in its poor condition, hazardous. Both should be removed as the separate cycling and jogging path is constructed. The wide range of scenic diversity and the richness of the restored pond edge offer much more rewarding opportunities for child activity and discovery than the outdated equipment does. The defined exercise station areas adjacent to the pedestrian path should be restored to their original natural condition. Elimination of these elements will improve the scenic quality of the park, respond to current uses, and help alleviate maintenance problem areas.

- **Reorient ballfield to reduce impact on the landscape.**

Automobile parking for softball games has an adverse physical and aesthetic impact on the Pinebank plateau, although family ballgames should be encouraged at Jamaica Pond. The adverse scenic and maintenance side effects can be mitigated by controlling parking, and orienting the backstop closer to the woodland edge near Pinebank. Structured ballfields were not part of Olmsted’s original concept. While they are needed for today’s use patterns in many areas of the Emerald Necklace, this one should be kept as informal as possible, since the space available is insufficient for serious league play.

The Boathouse and Bandstand were rehabilitated in 1990, and food concessions, boat rentals, environmental education classes were continued and a park ranger office was established.

- **Rehabilitate Boathouse and maximize use by additional programming as an environmental and park education center. Continue the boat rental and sailing programs. Rehabilitate Bandstand.**

Careful and compatible rehabilitation of these structures will return them to their central places in the life of Jamaica Pond park. The Boathouse and Bandstand should host numerous recreational, educational and cultural activities. Because these structures have great historic significance, all improvements should be evaluated for consistency with their original treatments. The area around the buildings needs special attention, too, in preparation for an expansion of the current programs and for a range of newly promoted outdoor events.



Figure 201: Jamaica Pond -Bandstand (Karen Sparacio, photographer, 1999).

Rehabilitation and reuse of Pinebank remains an outstanding issue. BPRD engaged in a public process between 1996-1998 to determine public opinion and developer interest. The mayor's designated Citizen's Advisory Committee studied re-development criteria and historic ruin (demolition) possibilities. Their criteria for redevelopment emphasized the need to limit vehicular access and the importance of public access. The CAC concluded that the definition of an "historic ruin" was broad and this course of action was one of last resort. However, the committee acknowledged the inherent conflicts between development, the environment, and the estimated \$3.5-4 million restoration costs.

During the Pinebank feasibility study, the public raised environmental concerns regarding the Pinebank bowl. Any programming will need to ameliorate probable negative impacts to protect the aged beeches and woodland character.

- **Restore Pinebank to a good and useful condition. Fully program for daytime, evening and weekend uses and maintain 24-hour security.**

In its current deteriorated state Pinebank is an attraction to vandals and a maintenance problem. However, both architecturally and as a part of Olmsted's plan for the park, it merits the major rehabilitation that will bring it back to active use. The structure needs a fuller investigation than this plan can provide, and such an analysis has in fact already been started by a restoration architect. Boston should develop ongoing programming at Pinebank as a complementary activity for the Boathouse/Bandstand. A restored and highly used facility will deter current vandalism and the attendant maintenance problems. There may also be a potential for income from event rentals, such as if a restored Pinebank were to become an popular site for weddings, parties and other events. For security, a 24-hour staff presence, such as a residential housekeeper, is strongly recommended.

- **Continue use of the natural bowl adjacent to Pinebank as outdoor theater performance space.**

Currently, there are inadequate parking facilities for a theater at Pinebank, and no associated amenities that would increase its attraction as a destination. The adjacent natural bowl could be improved for special open air theater, as could the terrace or interior of Pinebank. Parking for performances would need to be organized and controlled to mitigate potential negative impacts on the Jamaica Pond landscape. These proposed improvements support the operation of a theater at Jamaica Pond, a highly appropriate activity with a great deal of history and public support at the park.



# MASTER PLAN IMPLEMENTATION



# *Master Plan Implementation*



Implementing the Emerald Necklace Master Plan will be a complex process, involving many players over an extended period of time. Some of the capital projects fall within the Olmsted Program guidelines and have been funded by the Department of Environmental Management. Others lie outside the guidelines, but could be funded by other agencies involved with the plan, such as the Metropolitan District Commission. Yet others deal with wider issues that will require further investigation and interagency collaboration to carry forward, finalize, and assemble the funding.

The recommendations also cover management and maintenance, as well as policy and operational matters. These involve Boston, Brookline, the MDC and myriad individual organizations and private groups who must work together in support of the plan and to jointly establish the parks' future operations and upkeep.

None of this can or should be achieved all at once, but continued momentum is essential. The plan will be realized through phased projects and operational developments over time. But the process has started. Actions already taken include pruning throughout the park system, and clearing of some overgrown areas undertaken during the summer of 1987 and 1988 under the Olmsted Program's Early Action projects. This master planning initiative has also played a key role in the establishment of advisory committees in both Brookline and Boston to assist in the development of consistent management practices in the Emerald Necklace parks and help coordinate the future maintenance programs in accordance with the study's recommendations.

In general, the Olmsted Program funds projects that will preserve historic features in the parks, or facilitate contemporary uses in ways compatible with the original design. An example of the former is Agassiz Bridge in the Fens or the island area in the Riverway. An example of the latter is the reuse of the old bridle path as a new cycling and jogging route where feasible in the park system. Olmsted Program funding is dedicated to landscape improvements, from infrastructure rehabilitation to restoration of historic landscape plantings, and is not available for building restoration, except for smaller structures, such as scenic shelters and overlooks. Nor can the Olmsted program funds be applied to recreational facilities unless there is a clear historical connection or scenic value.

### CONCEPT AND VISION

This plan is the catalyst for raising and focusing the interest and support of community and volunteer groups. It is an important tool in seeking to attract additional funds from other city, state and federal programs, as well as outside funding sources.

As the Emerald Necklace Master Plan capital improvement projects and associated management and maintenance actions are carried out, the Emerald Necklace will be gradually restored to a fully functioning, increasingly useful and more attractive park system. The parks will be more widely recognized for their cultural value and will offer even more to residents and visitors than they do at present.

This plan is a stimulus to the MDC and MWRA to deal with regional traffic and water quality issues which seriously affect the parks today and will continue to have far-reaching effects into the future. Traffic modifications in support of the plan are vital to the parks' future. And the long-term replanning of the Route 9 Overpass and Bowker/Storrow Drive Interchange can only be accomplished through MDC leadership, which places park concerns at the highest level.

The MWRA contribution to resolve CSOs and water quality problems is fundamental. The whole park system depends on a healthy, working waterway. All of the other recommended improvements will mean little if the river, ponds and streams of the parks cannot be fully used and enjoyed. It is essential that the necessary engineering solutions are conceived out of respect for the parks' landmark status, even if additional funds are involved to meet these higher requirements. Just as engineering and landscape were combined in the 1880s to produce the remarkable "*sanitary improvement*" of the Emerald Necklace, they must be reintegrated in the 1990s for its revitalization.

The Massachusetts Executive Office of Environmental Affairs funded a water quality improvement analysis and plan, "The Muddy River Water Quality Improvement Plan, 1990", which complements and should be utilized in conjunction with this Master Plan.

Boston and Brookline planning departments play a key role in resolving land use and zoning inconsistencies next to the parks. The incompatible industrial uses in the River Road "triangle" and multi-story buildings, such as Jamaica Towers overlooking Jamaica Pond, destroying the parks' visual serenity.

While the Olmsted Program can set forth a long-term plan for the Emerald Necklace's revitalization, and can underwrite the initial projects, future projects will need additional funding sources. Many of these will demand the highest levels of interagency collaboration to arrive at sensitive and effective solutions to the larger problems beyond the program's scope. Their resolution will require the commitment of all municipal and state agencies involved to the Olmsted Program's goals and objectives. It is essential that this plan, and the many individual project plans that will be developed out of it, receive the full and enthusiastic endorsement of community groups and individuals.

### **RATIONALE**

In consultation with the citizens and officials of Boston and Brookline, the master planning consultants have compiled a list of priority projects. The emphasis differs somewhat in each park, in accordance with particular issues, but the projects are complementary and reinforce the major objective of reintegrating the parks as a linked system. The process of determining priorities was guided by the five "R"s:

1. **Restoring** original structures and features, both "historical" restoration and "sympathetic" restoration, particularly if:

- There was clear documentation;
- A current use was served; and
- The cost was judged reasonable for the benefit conferred.

2. **Repairing or Rebuilding** obvious dereliction, especially where:

A real or perceived hazard to public security and enjoyment was in question;  
Historical or authentic features could be lost unless further deterioration was arrested; and  
A highly visible improvement was involved.



3.       **Responding** to publicly stated desires, such as:
- Serving the broadest spectrum of uses that are not inconsistent with the parks’ historic purposes;  
Making linkages and connections to and between individual parks;  
Providing a complete and continuous park circulation of drives, cycling and jogging routes and foot paths;  
Recovering park drives for park users; and  
Improving access to the parks, but resisting parkway and highway incursion into them.
4.       **Recognizing** the need for a coordinated management and maintenance approach to:
- Improve security throughout;  
Ensure that adequate systematic follow-up was considered in the plan;  
Relate the efforts of Boston, Brookline, the MDC and volunteer groups throughout the parks system;  
Develop special guidelines for the management of the parks’ naturalistic landscapes; and  
Expand historic, cultural & educational programs.
5.       **Resolving**, to the extent possible under the program, the major issues having long-term impacts on the parks’ future well-being, namely:
- Water quality;  
Regional traffic; and  
Abutting land use.

In response to these guidelines, the projects listed on the following pages are broken down into three broad categories:

1.       **High priority projects** are those projects that will result in major systems and landscape improvements, and which are proposed for implementation immediately through the Olmsted Program and other available funding sources.
2.       **Medium priority projects** include building projects, which are not eligible for Olmsted funding, as well as landscape projects which will be accomplished in the medium to long range future.
3.       **Long range and inter-agency projects** are primarily those projects which fall under the jurisdiction of the Metropolitan District Commission, those that need to be delayed until the successful completion of an earlier project, or require the participation of more than a single agency.

The proposed projects delineated in this Master Plan are conceptual. As implementation progresses, they will require adjustment as to phasing and scope, further research, programming and design development. Therefore, the proposed scope of work for each project and the accompanying cost estimates are also conceptual, and will need to be refined when detailed plans and specifications are prepared for each project.

In 2001, Boston and Brookline projected the cost of the Phase I Muddy River Flood control, Water Quality and Habitat Enhancement and Historic Preservation Projects to be \$92 million.

The estimated construction costs for all projects (in 1988 dollars) total:

Back Bay Fens	\$11,665,000
The Riverway	9,635,000
Olmsted Park	8,050,000
Jamaica	<u>12,150,000</u>
<b>TOTAL</b>	<b>\$41,500,000</b>

These are estimated construction costs, exclusive of contingencies, administration or professional fees. They do not include engineering costs for resolving CSOs or water quality, the costs associated with traffic mitigation or roadway modification work not included in this study, or the costs of acquisition of critical abutting sites, such as the River Road triangle in the Riverway or the hillside to the south of Prince Street at Jamaica Pond. They also clearly reinforce the magnitude of the undertaking to revitalize the Emerald Necklace, which available funding can only begin.

Finally, the list of capital projects that follows presumes that an upgraded, comprehensive and coordinated management approach is also gradually instituted to protect current and future capital outlays and to reinforce park use.

Priority projects are listed in relative order of importance, with a short discussion of the proposed scope of improvements, and a cost estimate.

When necessary, assumptions were made to restrict variables and are listed for reference. In a few instances, available survey or design information was sparse and an accurate determination of costs was beyond the scope of this study. For these improvements an allowance was used.

It is important to express two basic qualifications concerning the estimates:

- They are based on the generalized level of existing conditions information developed in this study. The completeness of information pertaining to existing conditions is quite limited, particularly regarding sub-surface conditions. As a result, when conditions were questionable, a conservative estimate was generated.
- They are based on the assumption that private contractors will do the work. That is, the capital projects described herein will be constructed under publicly bid contracts and subject to related costs and contingencies.

Therefore, it must be understood that the estimates are only preliminary, as they are based on outline scope descriptions of proposed improvements. The estimates represent an order-of-magnitude for construction costs.



HIGH PRIORITY PROJECTS

Tree Pruning \$ 80,000

This is an Early Action Project to make an impact on the trees in worst condition.  
1987 - Completed (State Funds) \$ 93,565

Agassiz Bridge \$ 200,000

This is an allowance for repair/repointing of the existing bridge.  
1988 - Restoration Completed (State Funds) \$ 142,612

Mother's Rest Area \$ 250,000

Site preparation includes: demolition and removal of existing park walks (800 LF); removal of play equipment (\$10,000 lump sum); installation of 700 linear feet of construction fence; and tree protection (14 trees). A lump sum of \$35,000 is included for grading operations and importing loam soil.

Proposed improvements include: new asphalt-sealed crushed stone walk (19,000 SF); new stone stairway at Boylston Bridge (240 LF of risers); new bituminous concrete cycling and jogging path (4,500 SF); and historic reproduction parkway lights (9).  
1998 - Completed with no lights (City Funds) \$ 293,760

Gate House Area, Phase I \$ 300,000

Site preparation includes: demolition and removal of park walks (1,400 LF); and removal of Phragmites, knotweed and invasive understory (34,000 SF); clearing and grubbing at memorial site (3,500 SF); tree protection (12); construction fence (700 LF).

Proposed improvements include new asphalt-sealed crushed stone walks; and planting of trees, shrubs and lawn areas.

Victory Gardens/North Basin West \$ 550,000

Site preparation includes: demolition and removal of park walk (3,600 LF); removal of fence (\$10,000 lump sum); removal of Phragmites, knotweed and invasive understory (14,000 SF); clearing and grubbing at memorial site (3,500 SF); installation of construction fence (1,500 LF); and tree protection (24).

Proposed improvement includes: grading operations (\$30,000 lump sum); reconfiguration of internal path system and resurfacing with stonedust; installation of a new fence at gardens (2,400 LF); and planting of new trees and shrubs at entrances, perimeter and in conjunction with restoration of lawn areas.

1993 - Victory Gardens Fencing  
(State/Parkman Funds) \$ 118,653

HIGH PRIORITY PROJECTS, ContinuedPhragmites \$ 300,000

This is an allowance to remove and dispose of Phragmites in the area from Sears to Agassiz Road.

Evansway Bridge \$ 200,000

This is an allowance for work necessary to reinstate missing bridge.

Signage \$ 25,000

This is an allowance for informational and regulatory signs. Quantity and design are to be determined.

*1989/1990 - Phase I Completed (Parkman Fund)* \$ 12,089

Fenway South \$ 100,000

This is an allowance for forest management including clearing and replanting operations and slope protection.

**TOTAL HIGH PRIORITY PROJECTS FOR BACK BAY FENS: \$ 2,005,000**

MEDIUM PRIORITY PROJECTSDuck House \$ 225,000

This is an allowance for renovation work on the Agassiz Road Shelter.

*1990 - Re-roofing Completed (City Funds)* \$ 35,000

Duck House Area \$ 600,000

**Site preparation includes:** demolition and removal of park walks (320 LF); removal of Phragmites, knotweed and invasive understory (74,000 SF).

**Proposed improvement includes:** grading operations including importing loam soil (\$45,000 lump sum); new stone curb at parking area (160 LF); new pavement at parking area (900 SF); new gabion slope protector (2,000 SF); new asphalt-sealed crushed stone walk (25,000 SF) with landings at river (720 SF); new bituminous concrete cycling and jogging path (900 SF); and historic reproduction parkway lights (6).

**Proposed plantings include:** new trees (16, 6"-8" caliper); new asphalt (7,500 SF); new meadow areas (24,000 SF); and new lawns (62,000 SF).



**MEDIUM PRIORITY PROJECTS, Continued**

**Waterway, Brookline Avenue to Avenue de Louis Pasteur** \$ 225,000

**Site preparation includes:** removal and disposal of Phragmites, knotweed and invasive understory (18,000 SF); and tree protection (14 trees). An allowance of \$35,000 is included for grading and importing loam soil. An allowance of \$15,000 is included for a drainage system.

**Proposed improvements include:** new asphalt-sealed crushed stone walk (13,000 SF); new bituminous concrete walk (9,000 SF); repair of existing stone curb (1,500 LF) and new stone curb (78 LF); new crosswalks (3); and new signage (\$18,000 lump sum).

**Proposed planting includes:** 5 new trees (6" caliper); new shrubs (4,000 SF); and new lawn areas (27,000 SF).

**Fen Bridge and Waterway** \$ 400,000

**Site preparation includes:** demolition and removal of park walks (600 LF).

**Proposed improvements include:** excavation and regrading of river and slopes including: importing loam soil (\$100,000 allowance); repair and rebuilding of north side of existing bridge (\$100,000 allowance); rebuilding waterway (\$20,000 lump sum); new asphalt-sealed crushed stone walks (9,700 SF); new bituminous concrete cycling and jogging path (3,200 SF); new crosswalks (5); new historic signage (\$8,000 lump sum); new gabion slope protection (1,000 SF); and a new drainage system (\$20,000 lump sum).

**Proposed plantings include:** 16 new trees (6" caliper); new shrubs (5,200 SF); and new lawn areas (14,000 SF).

**Evansway Area, Fens Side and Evansway Park** \$ 500,000

**Site preparation includes:** removal and disposal of Phragmites, knotweed and invasive understory (16,000 SF); tree protection (35); and demolition and removal of park walks (400 LF).

**Proposed improvements include:** a lump sum of \$50,000 for grading operations including importing loam soil; a new drainage system (\$30,000 lump sum); new gabion slope protection (2,600 SF); new asphalt-sealed crushed stone walks: new bituminous concrete cycling and jogging path (2,900 SF); new pedestrian bridge (\$50,000 lump sum); replacement of existing pedestrian bridge (\$40,000 lump sum); repair stone curb (2,850 LF) and new stone curb (150 LF); new signage (\$8,000 lump sum); and historic reproduction benches.

**Proposed plantings include:** 12 new trees (6" caliper); new shrubs (11,000 SF); new ground cover (8,800 SF); and new lawn areas (38,500 SF).

**Clemente Stadium Area** \$ 2,000,000

**Site preparation includes:** demolition and removal of concrete walk (700 LF); riverside bleachers (6,000 SF); basketball courts and related grandstands (23,000

SF); and removal of Phragmites, knotweed and invasive understory (40,000 SF); tree protection (20); and construction fence (120 LF).

MEDIUM PRIORITY PROJECTS, Continued

**Proposed improvements include** repairing Park Drive side bleachers (\$5,000 lump sum); relocating Clemente monument (\$20,000 allowance); grading operations including importing loam soil (\$46,000 lump sum); new stone curb (500 LF); new drainage at driveway (\$10,000 lump sum); renovation of field house (\$978,000 lump sum); construction of outdoor terrace (250 SY); new basketball courts (2); new asphalt-sealed crushed stone walks (46,500 SF); new gabion slope protection (600 SF); and new signage (\$8,000 lump sum).

**Proposed planting includes:** new trees (26, 6" caliper); new shrubs (16,000 SF); and new lawn areas (150,000 SF).

*1995 Completed - Ballfield Renovation (City funds)* \$ 250,000

*Pending - Fieldhouse demolition (City funds)* \$ 350,000

Lagoon Area **\$ 625,000**

**Site preparation includes:** demolition and removal of park walks (1,600 LF); and removal of Phragmites, knotweed and invasive understory (26,000 SF); tree protection (18); and construction of protection fence (300 LF).

**Proposed improvements include:** regrading of meadow and lagoon including importing loam soil (\$15,000 lump sum); new gabion slope protection (3,000 SF); new asphalt-sealed crushed stone walk (20,000 SF); new bituminous concrete cycling and jogging path (7,000 SF); historic reproduction pedestrian lights (12); and historic reproduction parkway lights (10).

**Proposed plantings include:** new trees (18, 6" caliper); new shrubs (9,000 SF); and new lawn areas (99,000 SF).

Rose Garden/Memorial Area **\$ 500,000**

**Site preparation includes:** demolition and removal of park walks (15,000 LF); and removal of Phragmites, knotweed and invasive understory (29,000 SF); tree protectors (16); clearing and grubbing at memorial site (3,500 SF); and construction fence (1,500 LF).

**Proposed improvements include:** grading operations including importing loam soil; new asphalt slope protection (1,600 SF); and plantings of new trees, shrubs and lawn areas.

Gate House Area, Phase II **\$ 570,000**

**Proposed improvements include:** grading operations including importing loam soil (\$90,000 lump sum); new gabion slope protection (2,000 SF); new asphalt-sealed crushed stone walk (39,000 SF, with Phase I); new bituminous concrete cycling and jogging path (11,000 SF); repairing/repointing of existing outflow walls below gate house (200 LF); construction of a new terrace (45 SY); new stairs (60 LF of risers); and historic reproduction parkway lights (22).



**Proposed plantings include:** 46 new trees (Phase I); new shrubs (10,000 SF total with Phase I); and new lawn areas (126,000 SF total with Phase I).

MEDIUM PRIORITY PROJECTS, Continued

Phragmites \$ 300,000

This is an allowance to remove and dispose of Phragmites in the northern basin.

Mother's Rest Area, Phase II \$ 200,000

**Site preparation includes:** removal and disposal of Phragmites, knotweed and invasive understory (31,000 SF); and clearing and grubbing at memorial site (3,500 SF).

**Proposed improvements include:** new gabion slope protection (2,000 SF); 6 new trees (6" caliper); new ground cover plantings (25,000 SF); and new lawn areas (60,000 SF).

Victory Gardens/Northern Basin West, Phase II \$ 590,000

**Proposed improvements include:** new gabion slope protection (3,500 SF); new historic reproduction lights (12); historic reproduction parkway lights (14); and new signage (\$8,000 lump sum).

**Proposed plantings include:** new trees (37 total with Phase I); new shrubs (60,000 SF total with Phase I); and new lawn areas (36,000 SF total with Phase I).



**TOTAL MEDIUM PRIORITY PROJECTS FOR BACK BAY FENS:**  
\$ 6,735,000

LONG RANGE OR INTER-AGENCY PROJECTS

Fire Alarm Center Area and Westland Entrance \$ 775,000

**Site preparation includes:** demolition and removal of park walks (900 LF); demolition and removal of existing fire house (\$250,000 lump sum); existing pavement (10,000 SF); and existing fence (550 LF); removal of Phragmites, knotweed and invasive understory (18,000 SF); clearing and grubbing at memorial site (3,500 SF); tree protectors (6); and installation of construction fence (550 LF).

**Proposed improvements include:** grading operations including importing loam soil (\$30,000); new asphalt-sealed crushed stone walks (10,000 SF); new stone pedestrian bridge (\$140,000 lump sum); new bituminous concrete cycling and jogging path (4,000 SF); new signage at entry (\$8,000 lump sum); historic reproduction pedestrian lights (10); and historic reproduction parkway lights (8).

**Proposed planting includes:** 16 new trees (6" caliper); new shrubs (4,000 SF); and new lawn areas (80,000 SF).

**Brookline Avenue Bridge and New Waterway****\$ 1,750,000**

**Site preparation includes:** demolition and removal of existing slip road (300 LF), existing curb (600 LF), and existing guardrail (150 LF).

**LONG RANGE OR INTER-AGENCY PROJECTS, Continued**

**Proposed improvements include:** excavation and regrading at riverside and embankments (\$85,000 allowance); new bridge at Brookline Avenue (\$1,600,000 allowance); new waterway (\$15,000 lump sum); new concrete sidewalk (450 SF); new crosswalks (2); and new asphalt-sealed crushed stone walk (5,200 SF).

**Proposed plantings include:** 9 new trees (6" caliper); new shrubs (3,500 SF); and new lawns (13,500 SF).


*\* **NOTE:** This project should be planned, designed and implemented with the Sears work proposed in the Riverway.*

**Parkway Lighting****\$ 400,000**

Allowance for historic reproduction parkway lights.

**Fens Gatehouses**

1999-2000 Full restoration including gate mechanisms by BWSC. **\$ 1,000,000**



**TOTAL LONG RANGE OR INTER-AGENCY PROJECTS FOR THE BACK BAY FENS:** **\$ 2,925,000**



**TOTAL PROJECTS, BACK BAY FENS, (INCLUDING PARKWAYS):**  
**\$ 11,665,000**

**TOTAL PROJECTS, EMERALD NECKLACE, (INCLUDING PARKWAYS):**  
**\$41,500,000**



HIGH PRIORITY PROJECTSTree Pruning \$ 100,000

This is an Early action project to make an impact on the worst condition trees.

1987 - Completed (State Funds) \$ 38,165

Island Bridges \$ 150,000

**Proposed improvements consist of:** resurfacing 270 linear feet of existing walks (10'-0" width); and repair/repainting of existing structures.

1998 - Completed (State Funds) \$ 142,175

Riverway South - East Side \$ 350,000

**Proposed improvements include:** importing loam soil (\$20,000 lump sum); regrading (\$20,000 lump sum); new drainage system (including channels and inlets (\$30,000 lump sum); and 6,000 SF new bituminous concrete cycling and jogging path.

**Proposed plantings include:** new tree plantings (6" caliper); new shrub and ground cover plantings; and new lawn areas.

1998 - Pedestrian path with benches completed (City Funds) \$ 159,120

Riverway South - West Side \$ 250,000

**Site preparation consists of:** removal of Phragmites and knotweed (108,000 SF total); and thinning and pruning of existing vegetation in planting strip (1,000 SF).

**Proposed plantings include:** new tree plantings; new shrub and ground cover plantings and new lawn areas.

Riverway Island Area - West Side \$ 225,000

**Site preparation consists of** clearing banks of trees, shrubs, Phragmites and knotweed (8,000 SF total).

**Proposed improvements include:** 5,400 SF of new asphalt-sealed crushed stone walks; 10 new trees (6" caliper); 7,200 SF of new shrub plantings; and 36,000 SF of new lawn areas. A \$10,000 lump sum is also included for grading operations.

Riverway Island Area - East Side \$ 240,000

**Site preparation includes:** removal of Phragmites and knotweed (42,000 SF).

**Proposed improvements include:** importing loam soil and grading operations (\$20,000 lump sum); new drainage system (\$10,000 lump sum); reconstruction of asphalt sealed crushed stone (9,000 SF); repair/replace existing stone curb (250 linear feet repair/500 linear feet new); construct new crosswalks (2).

**Proposed plantings include:** 20 new trees (6" caliper); 18,000 SF of new shrub and ground cover plantings; and 40,000 SF of new lawn areas.

HIGH PRIORITY PROJECTS, ContinuedCarlton Street Bridge \$ 300,000

**Proposed improvements include:** new asphalt-sealed crushed stone walks (12,000 SF); new crosswalks (5); new bituminous concrete cycling and jogging path (6,000 SF); new stone curb (1,700 linear feet); resurface existing walk (1,050 SY); repair/repainting of existing bridge headwall (\$25,000 lump sum); and installation of historic reproduction light fixtures (14).

Chapel Street Bridge \$ 475,000

**Proposed improvements include:** restoration of existing wrought iron railing and masonry bridge deck crossing; reconstruction of existing street pavement and sidewalks; new historical signage; and new tree, shrub and ground cover plantings.  
*1998 Completed (State, Town and City funds)*  
*Part of a \$735,000 restoration with three other bridges*

Signage \$ 25,000

This is an allowance for informational and regulatory signs. Quantity and design are to be determined.

*1989/1990 - Phase I Completed (Parkman Fund)* \$ 12,089

**TOTAL HIGH PRIORITY PROJECTS FOR RIVERWAY:** \$ 2,115,000MEDIUM PRIORITY PROJECTSShelter \$ 150,000

This is an allowance for restoration of the existing stone shelter.

*1990 - Re-roofing Completed (City Funds)* \$ 35,000

Restore Brookline Avenue Bridge \$ 100,000

**Proposed improvements include:** repair and repainting of existing structures; resurfacing existing walks (290 SY); excavation and importing loam soil (\$10,000 lump sum); and new lawn planting (2,000 SF).

*1998 Completed (State, Town and City funds)*

*Part of a \$735,000 restoration with three other bridges*

Longwood South - West Side \$ 420,000

**Site preparation includes** removal of 27 poor or damaged trees.

**Proposed improvements include:** resurfacing existing walk (1,750 SY); new wall with fence (150 linear feet); new gabion slope protection (3,200 SF); new drainage system (83,000 lump sum); and grading operations, including importing loam soil.

**Proposed plantings include:** 8 new trees (6" caliper); new shrub plantings (12,000 SF); replanted shrub (5,700 SF); new ground cover planting (16,800 SF); and new lawn areas (38,000 SF).



MEDIUM PRIORITY PROJECTS, Continued

Longwood South - East Side \$ 550,000

**Proposed improvements include:** new gabion slope protection (3,200 SF); new drainage system (\$30,000 lump sum); grading operations including importing loam soil (\$11,000 lump sum); new asphalt-sealed crushed stone walks (15,000 SF); installation of historic reproduction light fixtures (10).

**Proposed planting includes:** new tree plantings (18, 6" caliper); new shrub plantings (14,000 SF); replanted shrubs (15,000 SF); new ground cover plantings (9,500 SF); and new lawns (38,000 SF).

Longwood North - West Side \$ 1,000,000

**Site preparation consists of** removal of poor or damaged trees (55).

**Proposed improvements include:** new gabion slope protection (5,200 SF); new drainage system (\$60,000 lump sum); grading operations including importing loam soil (\$18,000 lump sum); resurface/rebuild existing walks (3,700 SY); new asphalt-sealed crushed stone walks (6,600 SF); new park drive sidewalk (167 SY); historic reproduction light fixtures (10); new stone-faced retaining wall (60 LF); and new wall with fence (300 LF).

**Proposed plantings include:** 50 new trees (6" caliper); new shrub plantings (27,500 SF); replanted shrubs (12,000 SF); new ground cover planting (39,000 SF); and new lawn (170,000 SF).

Longwood North - East Side \$ 1,100,000

**Site preparation includes:** removal of understory at banks (32,000 SF); demolition/removal of existing walk (167 CY).

**Proposed improvements include:** new gabion slope protection (12,600 SF); grading operations including importing loam soil (\$50,000 lump sum); reconstruct existing park walks (563 CY); new crosswalk (1); new drainage system (\$60,000 lump sum); and historic reproduction light fixtures (31).

**Proposed planting include:** 45 new trees (6" caliper); new shrub/ground cover plantings (65,000 SF) and new lawn (247,000 SF).

Route 9 Area \$ 200,000

**Site preparation costs include:** a lump sum of \$15,000 for demolition and removal; and a \$5,000 lump sum for cleaning existing drainage structures.


**Proposed improvements include:** new drainage inlets (4); new concrete sidewalk (167 SY); repair of 325 linear feet of existing granite curb and 325 linear feet of new stone curb; new crosswalks (4); repair/repointing of existing bridge headwall (\$45,000 lump sum); and signalization (\$20,000 lump sum).

**Proposed plantings include:** new trees (5, 6" caliper); new shrubs (2,500 SF); and new lawn areas (13,000 SF).

MEDIUM PRIORITY PROJECTS, ContinuedLongwood Bridge

\$ 275,000

**Proposed improvements include:** repair/repointing existing bridge; installation of boulder/rip-rap slope protection (4,000 SF); resurface existing park walks (225 SY); new stone curb (300 LF) and replace existing stone curb (300 LF); reconstruct existing sidewalk (6,000 SF); new crosswalks (2); install historic reproduction light fixtures (2); and new historic signage/markers.

**TOTAL MEDIUM PRIORITY PROJECTS FOR RIVERWAY:**

 \$ 3,795,000
LONG RANGE OR INTER-AGENCY PROJECTSSears Parking Lot Area

\$ 3,000,000

**Site preparation includes** demolition and removal of parking lot and accessories. A lump sum of \$840,000 is included for excavation and grading operations, including importing loam soil as necessary.

*1998 - Completed removal of lot, lawns and planting (Funded by Sears and Roebuck, Co.)*

\$ 125,000

**Proposed improvements include:** rebuilding existing culvert and waterway (200 LF); reconstruction of granite bridge ends (\$500,000 lump sum); new bituminous concrete walks (5,000 SF); new concrete sidewalk (5,000 SF); and installation of historic reproduction light fixtures (10).

**Proposed plantings include:** 10 new trees (6" caliper) at parkway; new shrubs with occasional trees (10,400 SF) and new lawns (41,600 SF).

*\* **NOTE:** This estimate does not include the cost of disposal of potentially toxic sediment that may be present in the twin 72" conduits that carry the Muddy River under the parking lot. It also does not include the costs associated with the reconfiguration of the present screening facility adjacent to the Back Bay Yard, or the modifications needed to redirect the Muddy River flow into the Back Bay Fens, or the reconstruction of a facility similar to the original Brookline Avenue Gatehouse. Together, these additional items could amount to another five to seven million dollars. The Boston Parks and Recreation Department conducted further study on the Sears parcel during 1989.*

*1996 - BWSC investigated the sediment in twin culverts and found inches of gravel-like material.*

*1995 - BWSC restored the underground gatehouse mechanism.*

\$ 70,000

Parkway, Parkway Islands, City Edge

\$ 725,000

**Site preparation includes:** pruning of existing trees (7), and clearing/removal of parkway trees (112).



LONG RANGE OR INTER-AGENCY PROJECTS, Continued

Proposed improvements include: new crosswalks (7); installation of new historic light standards (25); new stone curbs (4,500 linear feet); 147 new trees (6" caliper); new shrub plantings (3,600 SF); and new lawns (44,800 SF).

TOTAL LONG RANGE OR INTER-AGENCY PROJECTS FOR RIVERWAY:  
\$ 3,725,000



TOTAL PROJECTS, RIVERWAY, (INCLUDING PARKWAY):  
\$ 9,635,000

HIGH PRIORITY PROJECTSTree Pruning

\$ 140,000

This was an Early Action Project to address trees in poor condition.

1987 - Completed (State Funds)

\$ 70,011

Cycling and Jogging Path, Perkins Street to Route 9,  
Boston

\$ 250,000

**Preparatory site work includes:** rough grading (\$15,000 allowance).

**Proposed site improvements include:** 11,000 SF of new ground cover plantings; 60,000 SF of new lawn at margins (7'-0" width); and 4,300 linear feet of bituminous concrete cycling and jogging path (9'-0" width, 1-1/2" base course over 6" gravel and 1" top course).

Riverdale Parkway, North End

\$ 650,000

**Preparatory site work will consist of** 41,000 SF of clearing and grubbing (this assumes 20% of existing vegetated areas); removal of crossovers at Cumberland Avenue, 99 Pond Avenue, and 33 Pond Avenue; lump sum of \$7,000 for demolition & removal of excess pavement.

**Proposed improvements include:** a new drainage system (\$40,000 allowance); a new parking area at the Route 9 end to accommodate 30-40 cars; 2,100 linear feet of bituminous concrete cycling and jogging path (9'-0" width); construction of footpaths at Cumberland Avenue, 99 Pond Avenue and 33 Pond Avenue; new lawn at margins (38,000 SF); new tree plantings (35 total, 6" caliper); and a \$10,000 allowance for grading.

1999- Completed (State and Town funds)

\$ 317,000

Riverdale Parkway, South End

\$ 500,000

**Preparatory site work includes:** clearing of the stream bank (approximately 20,000 SF); 30,00 SF of clearing and grubbing (this assumes 30% of existing vegetated areas; removal of guardrail adjacent to Willow Pond; removal of crossover at Jamaica Road; and an allowance of \$10,000 for demolition & removal of excess pavement. An allowance is also included for grading.

**Proposed improvements consist of:** resurfacing existing pavement (9'-0" width) for a cycling and jogging path; a new parking area at Chestnut Street end to accommodate 10-15 cars; 45 new trees (6" caliper), and 64,000 SF of new lawn at median and planting strips; \$50,000 for grading and a new drainage system; 24,000 SF of new asphalt-sealed crushed stone walk; construction of a new footpath at Jamaica Road; and construction of new crosswalks at Willow Pond Road.

1997 - Completed (State and Town funds)

\$ 300,000

Leverett Pond, East Side

\$ 240,000

**Preparatory site work includes:** the selective removal of woody plant material; an allowance of \$55,000 is provided for grading.



HIGH PRIORITY PROJECTS, Continued

**Proposed site improvements include:** repairing & repointing of existing bridge (\$50,000 lump sum); resurfacing of existing walk (30 linear feet).

**New planting shall consist of:** 9,500 SF of meadow; 4,000 SF of lawn banks; and 10 new trees (6" caliper).

Signage

\$ 25,000

This is an allowance for interpretive, informational and regulatory signs. Quantity and design to be determined.

1989/1990 - Phase I Completed (Parkman Fund)

\$ 32,000

Ward's Pond, Phase I \$ 500,000

**Proposed improvements include:** an allowance of \$20,000 for under-drainage; approximately 12,000 linear feet of new stonedust walk (9'-0" width); construction of two new pedestrian bridges and a boardwalk; and new lawn margins along walkway (5'-0" strip, average). Additionally, a lump sum of \$50,000 is included for grading.

1998 - Completed boardwalk along Perkins side only  
(City Funds)

\$ 216,000

Allerton Street Entrance

\$ 200,000

**Preparatory site work consists of:** the demolition and removal of existing concrete stairs. A lump sum of \$10,000 is included for grading.

**Proposed improvements include:** a new stone stairway (120 linear feet of risers); 4,000 SF of new asphalt sealed crushed stone walk; 28,000 SF of new shrub plantings; and 10 new trees (6" caliper).

1999 - Completed (State and Town funds)

\$100,000

TOTAL HIGH PRIORITY PROJECTS FOR OLMSTED PARK:

\$ 2,505,000



MEDIUM RANGE PROJECTS

Ward's Pond, Phase II

\$ 600,000

**Preparatory site work includes:** tree protection; removal of existing stone wall and salvage (\$20,000 lump sum); clearing and grubbing of 21,000 SF (assume 50% of total vegetated area); and excavation of stream mouth (3,000 SF).

**Proposed improvements include:** construction of a new 300 SF overlook; new stone wall using salvaged material (\$30,000 lump sum); restoration of existing rock cascade (\$50,000 lump sum); repairing & repointing of existing granite stairs (368 linear feet of risers total assume 10% new); new stone stairs (240 linear feet of risers); new asphalt-sealed crushed stone walk (approximately 700 linear feet).

**MEDIUM RANGE PROJECTS, Continued**

**Proposed planting includes:** 35 new trees (6 caliper); 29,000 SF total of new shrubs and ground cover; new lawn areas (15,000 SF). The existing woodland shall be upgraded by removal of poor and/or dead material and new plantings of low shrub and ground cover (12,000 SF total area). Additionally, a \$20,000 lump sum is included for grading 1,400 linear feet of fabric soil protection shall be provided.

**Leverett Pond Bridge and Inlet** **\$ 365,000**

**Proposed improvements include:** repairing & repointing of existing bridge and restoration of historic inlet.

*1999- Completed (State and Town funds)* **\$ 365,000**

**Daisy Field** **\$ 675,000**

**Proposed improvements include:** relocation and painting of existing light fixtures (12) and controls (\$10,000 allowance); 1,500 linear feet of new stonedust walks (9'-0" width).

**Proposed plantings consist of:** 30 new trees (6" caliper) and 180,000 SF of new lawn (sod/seed).

**Leverett Pond, Forest Management and Erosion Control** **\$ 650,000**

**Site preparation includes:** removal of 36,000 SF Phragmites (assume 20% of area); selective clearing of shrubs and invasive trees (54,000 SF, assume 30% of area); and excavation of water areas in two locations (\$20,000 lump sum).

**Proposed improvements include:** filling of existing drainage ditch and extension of outfall pipe (\$20,000 lump sum); construction of 150 linear feet of edge/overlook treatment.

**Proposed planting consists of:** consolidation of existing shrubs (24,000 SF); 72,000 SF of new lawn at east side (assume 40% of total); and new trees and shrubs at islands (\$68,000 allowance).

**Small Ponds and Aquatic Areas Near Ward's Pond** **\$ 500,000**

**Site preparation consists of:** clearing and grubbing and selective removal of trees (38,000 SF, assume 50% of area).

**Proposed improvements include:** 600 linear feet of new crushed stone walks (5'-6" width); construction of two new pedestrian bridges (\$40,000 each); 30 new trees (6" caliper); and new meadow plantings (64,000 SF). Additionally, a \$100,000 lump sum is included for grading.

**Willow Pond Area** **\$ 240,000**

**Site preparation includes:** selective clearing of shrubs, invasive trees and Phragmites.

**Proposed improvements include:** excavation and grading operations to reshape pools; stabilization of banks with gabion edge treatment and plantings.



MEDIUM RANGE PROJECTS, Continued

Shelters \$ 120,000

This \$120,000 allowance is provided for construction of two stone shelters.

Stream and Bridges \$ 400,000

**Site preparation consists of:** selective removal of woody plant material (4,500 SF).

**Proposed improvements include:** repair & repointing of existing bridge structures (4 total @ \$50,000 allowance each); construction of new pedestrian bridge (\$40,000 lump sum) and stone bridge ends (\$80,000 lump sum); resurfacing of existing walks (80 linear feet); installation of a new drainage culvert (70 linear feet); 4,500 SF of new lawn planting along stream banks; and 5 new trees (6" caliper). A lump sum of \$20,000 is also included for grading.

**TOTAL MEDIUM PRIORITY PROJECTS FOR OLMSTED PARK:**  
\$ 3,550,000



LONG RANGE OR INTER-AGENCY PROJECTS

Willow Pond Road \$ 500,000

**Site preparation consists of:** demolition and removal of excessive pavement.

**Proposed improvements include:** upgrading drainage systems including cleaning, adjusting and repair of existing system and new basins, manholes, laterals and connections as necessary; 1,700 linear feet of new stone curb; resurface existing roadway (28,000 SY); construction of four new crosswalks, installation of historic reproduction light fixtures and signage; new tree plantings (6" caliper) and new lawn margins (10'-0" strip average). An allowance of \$20,000 is also included for grading.

Kelly Rink Area \$ 600,000

**Site preparation consists of:** demolition and removal of the existing rink building, parking and walks (\$250,000 total based on \$5.00/SF); removal of invasive vegetation (60,000 SF).

*1997 - Completed by MDC* *\$ No Costs Available*

**Proposed improvements include:** 200 linear feet of new stone curb; reconstruction of paving (450 SY); new crushed stone walks (1,200 SF); new bituminous concrete cycling and jogging path (3,600 SF); 20 new trees (6" caliper); new lawn and meadow plantings in open areas (120,000 SF). Additionally, a \$30,000 lump sum is included for grading.

LONG RANGE OR INTER-AGENCY PROJECTS, Continued

Ponds Below Rink \$ 150,000

**Proposed improvements include:** grading and dredging operations (\$40,000 lump sum); restoration of existing boulder bridge (\$50,000 lump sum); new crushed stone walks (14,000 SF); new stone stairs (\$9,000 lump sum); and new pedestrian bridge (\$40,000 lump sum).

**Proposed plantings consist of:** 5 new trees (6" caliper); 3,500 SF of new lawn at banks; and 3,500 SF of new meadow seeding.

*\*NOTE: Prior to the commencement of any work in this area, the City must ascertain the presence or absence of the threespine stickleback, and how restoration work can proceed if this rare fish is present.*

Jamaicaway \$ 625,000

**Site preparation consists of:** removal of 80 poor and/or damaged trees along parkway and pruning of existing trees to remain (\$7,000 lump sum).

**Proposed improvements include:** construction of new walks (\$18,000 lump sum); construction of new crosswalks (6); installation of historic reproduction light fixtures (43); 108 new trees (6" caliper); new lawn at verges (52,000 SF); and new shrubs with occasional tree plantings (10,000 SF).

PerkinsStreet \$ 120,000

**Proposed improvements include:** repair & repointing of existing stone wall (750 linear feet); new asphalt-sealed crushed stone walk (68,000 SF); 750 linear feet of new stone curb; 10 new trees (6" caliper); and 4,500 SF of new lawn at verges. An allowance of \$20,000 is also included for grading and a new drainage system as necessary.

**TOTAL LONG RANGE OR INTER-AGENCY PROJECTS FOR OLMSTED PARK:** \$ 1,995,000



**TOTAL PROJECTS FOR OLMSTED PARK (INCLUDING PARKWAYS):** \$ 8,050,000



HIGH PRIORITY PROJECTSTree Pruning \$ 90,000

This was an Early Action Project to make an impact on the worst condition trees.  
 1987 - Completed (State Funds) \$ 89,469

Cycling and Jogging Path, Perkins Street to Route 9 \$ 350,000

This includes preparatory site work such as rough grading (\$15,000 allowance).  
 1989 - Completed (State Funds) \$ 348,850

Signage \$ 25,000

Since the actual signage, type and quantity, has not been determined, this is an allowance.  
 1989/1990 - Phase I completed (Parkman Fund) \$ 12,089

Water Leveling Mechanism and Flow Control \$ 60,000

An allowance has been used which should be adequate to replace the facility if rehabilitation is not feasible.  
 1990 - Completed (Parkman Fund) cost unavailable

Pond EdgeSoutheast Side \$ 225,000

This area measures approximately 800 linear feet along the pond edge.

**Preparatory site work includes:** the removal of 32 existing birch trees (assume 4 100 LF); and 2 exercise stations.

**Proposed improvements are:** a drainage system including 11 inlets (assume 1/75 LF) and drainage pipe (12", 500 SF).

**Existing site elements to be restored are:** 750 linear feet of stone edge banks (assume 80% repair & repoint and 20% new); resurface existing walks and jogging paths with asphalt-sealed crushed stone (10'-6" width); and extend walks at overlooks in three locations.

1990 - Completed (Parkman & State Funds) \$ 358,902

East Side \$ 350,000

The area covered under this heading measures approximately 1,400 linear feet along the pond edge.

**Preparatory site work includes:** removal of 56 existing birch trees (assume 4 100 LF); and 2 exercise stations; shrub removal at boulder bank (assume 10'-0" width, 70% coverage, 9,800 SF total).

**Proposed improvements are:** drainage pipe (12", 420 LF); 19 new trees; new

**HIGH PRIORITY PROJECTS, Continued**

shrub plantings (11,200 SF); 10 new historic reproduction benches; new lawn areas(11,200 SF).

**Existing site elements to be restored are:** 700 linear feet of boulder bank (10'-0" width, along 20% of walks, 2,800 SF total); resurface existing walks and jogging paths with asphalt-sealed crushed stone (10'-6"width).

**North Side****\$ 400,000**

The area covered under this heading measures approximately 2,900 linear feet along the pond edge.

**Preparatory site work includes:** removal of 116 existing birch and willow trees (assume 4/100 LF); 4 exercise stations; shrub removal at boulder bank (assume 10'-0" width, 30% coverage, 8,700 SF total).

**Proposed improvements are:** a drainage system including 29 inlets (assume 1/100 LF) and drainage pipe (12", 1,160 LF); 39 new trees; new shrub plantings (5,600 SF); 15 new historic reproduction benches; resod lawn areas (4,000 SF).

**Existing site elements to be restored are:** 1,600 linear feet of boulder bank (10'-0" width, 35% repair and 65% new); new boulder along walk edge (assume 10'-0" width, along 20% of walks, 5,800 SF total); boulder stairs at 2 locations (3'-0" width, 6'-0" height); 6 sand/pebble beaches (assume 20'-0" width x 1,300 LF); resurface existing walks and jogging paths with asphalt-sealed crushed stone (10'-6" width).

**West Side****\$ 200,000**

The area covered under this heading measures approximately 1,400 linear feet alongthe pond edge.

**Preparatory site work includes:** removal of 11 existing birch and willow trees (assume 3/100 LF); shrub removal (2,100 SF).

**Proposed improvements are:** a drainage system including 14 inlets (assume 1/100 LF) and drainage pipe (12", 1,120 LF); 9 new trees; new ground cover plantings (4,200 SF); sod lawn areas (2,100 SF).

**Existing site elements to be restored are:** 350 linear feet of boulder edge protection (4'-0" width); new boulder banks (assume 10'-0" width, 3,500 SF total); boulder stairs at 2 locations (3'-0" width, 6'-0" height); sand/pebble beach (assume 20'-0" width x 350 LF); resurface existing walks and jogging paths with asphalt-sealed crushed stone (10'-6" width). A lump sum of \$30,000 has also been included for finish grading and loam fill and 72,000 SF shall be upgraded by removal of dead, poor, and/or invasive vegetation, pruning of saplings and plantings along forest edge.

*2000 - East, North and West sides completed*

*(City of Boston Federal Intermodal surface Transit Efficiency Act  
Enhancement Fund)*

**\$1,400,000**



HIGH PRIORITY PROJECTS, Continued

**Kelly Circle Area** \$ 350,000

**Preparatory site work includes:** selective thinning of birch saplings and shrubs (30% of 27,000 SF); 2 exercise stations; shrub removal (5% of 160,000 SF).

**Proposed improvements are:** 13 new trees; new shrub plantings (7,000 SF); resod/ reseed lawn areas (169,000 SF); new asphalt-sealed crushed stone walk (9'-0" width, 9,000 SF total).

**Existing site elements to be restored are:** sand/pebble beach (assume 20'-0" width x 650 LF); resurface existing walks and jogging paths with asphalt-sealed crushed stone (10'-6" width). Additionally, a lump sum of \$50,000 is included for grading.

**TOTAL HIGH PRIORITY PROJECTS FOR JAMAICA POND:**  
\$ 2,050,000



MEDIUM PRIORITY PROJECTS

**Boathouse/Bandstand** \$ 500,000

Allowances of \$180,000 and \$45,000 have been included for renovations to the boathouse and bandstand, respectively.

**Proposed improvements include:** removal of the existing concrete pavement and construction of a new decorative pavement (260 SF) and pavement inlay (660 SF). A lump sum of \$3,000 has been included for relocation of the existing drinking fountain and related piping.

**Additional site improvements are:** 10 historic reproduction benches (8'-0" each); 12 lights; 8 new trees; new shrub plantings (assume 40% of landscaped area, total 4,000 SF); a new stairway; and a 1,650 SF extension to the existing wood dock. An allowance of \$15,000 is included for a new drainage system (to be designed). A lump sum of \$14,000 to cover terrace balustrade improvements is also included. This is to accommodate 40 linear feet of new railing and 40 linear feet of existing railing to be relocated.

*1988/1989 - Boathouse and Bandstand Rehabilitation  
(City Funds)* \$ 415,000

**Playfield/Pinebank Area** \$ 1,000,000

**Preparatory site work includes:** removal of one backstop and play equipment (lump sum of \$5,000). A total lump sum of \$35,000 is included for regrading, soil preparation and finish grading.

**Existing site elements to be restored are:** stone stairways (554 LF total) with an additional lump sum of \$10,000 for repair of the Perkins Street stairway; existing asphalt-sealed crushed stone walks shall be rebuilt (10'-6" width) and the existing drive (16'-0" width) shall be resurfaced.

MEDIUM PRIORITY PROJECTS, Continued

**Improvements to planted areas include:** removal of dead, poor and/or invasive material, pruning of saplings and planting along forest edges in an area totalling 182,000 SF; a lump sum of \$10,000 for pruning and replanting trees; 200,000 SF of existing lawn areas shall be resodded/reseeded. Additionally, 2,000 SF of new shrub plantings, 20,000 SF of new ground cover plantings (at theatre) and 65,000 SF of new meadow seeding shall be completed.

*1999 - Pinebank Slope Area (DEM Historic Landscape Grant)  
completed*

*\$ 100,000*

**Additional site improvements include:** 2,500 linear feet of new stone curb; a new parking lane (10'-0" width, 5,300 SF total); new asphalt-sealed crushed stone walks (10'-6" width); 18 historic reproduction pedestrian lights (75'-0" o.c.). An allowance of \$120,000 for two new historic reproduction shelters and a lump sum of \$5,000 for an entry gate are also included.

Parkman Memorial Area

**\$ 500,000**

For restoration of the Memorial and surrounding historic landscape, an allowance of \$500,000 is included.

Prince Street/Parkman Drive

**\$ 1,000,000**

**Work to be completed by the MDC includes:** removal of existing street pavement (approximately 6'-0" width x 1,650 LF); removal of the guardrail (1,000 LF); relocation of the stone curb (1,650 LF); reconstruction of a portion of Parkman Drive (16'-0" width, 26,400 SF total, bituminous concrete); construction of three crosswalks and 1,650 linear feet of new cycling and jogging path (8'-0" width, bituminous concrete); planting of sod median and edges (10'-0" width, 16,500 SF total); and repair/repointing of existing stone wall (400 LF). Additionally, a lump sum of \$20,000 is included for a drainage system.

**Work to be completed by the Boston Parks Department work includes:** selective clearing of vegetation at the Parkman Memorial (4,200 SF); removal of dead, poor and/or invasive vegetation, pruning of saplings and planting of edges in the existing forest areas (140,000 SF); new major tree (40) and minor tree (20) plantings and 54,000 SF of grass/meadow mix seeding; and replacement of existing historic parkway lights (9) and installation of additional historic reproduction parkway lights (7). A lump sum of \$20,000 and \$10,000 are also included for grading and repair of the Park Memorial respectively.

Pinebank

**\$ 3,000,000**

An investigation of the building and terrace for eventual reuse was completed in 1989. A very preliminary allowance for restoring the exterior and adapting the interior for contemporary programs not yet defined is included here.

*1988/1989 - Pinebank Stabilization (City Funds)*

*\$ 58,000*

*1998 - Rehabilitation Study Sets (New Estimate)*

*\$4,500,000*

Inlet and Bridge

**\$ 400,000**

In addition to a lump sum of \$80,000 for construction of a stone pedestrian bridge, work in this area includes: boulder bank protection (4'-0" width, 1,800 SF total); new



**MEDIUM PRIORITY PROJECTS, Continued**

asphalt-sealed crushed stone walks (10'-6" width); new shrub plantings (7,000 SF); 8 new trees; and 3,000 SF of new sod. For excavation, regarding and importing loam, a \$50,000 lump sum is included.

**TOTAL MEDIUM PRIORITY PROJECTS FOR JAMAICA POND:****\$6,400,000****LONG RANGE AND INTER-AGENCY PROJECTS****Perkins and Chestnut streets to Jamaicaway****\$ 200,000**

**Improvements in this area include:** repair & repointing of existing stone wall (720 LF); resurfacing street (22,000 SF); installation of a new stone curb (770 LF); bituminous concrete cycling and jogging path (9'-0" width) and historic reproduction light fixtures (7).

**New plantings shall include:** trees (7, 1/100 LF) and sodding & seeding of grass verge (6'-0" width, 4,400 SF total). Additional lump sums of \$10,000, \$5,000 and \$10,000 are included for grading operations, street markings and a new drainage system, respectively.

**Perkins Street, Prince to Chestnut****\$ 400,000**

**Improvements in this area include:** demolition and salvage of existing granite curb (3,000 LF); repair & repointing of existing stone wall (260 LF); removal of existing street paving (2,400 LF); rebuilding of existing stone curb (1,000 LF); installation of new stone curb (2,400 LF); bituminous concrete cycling and jogging path (9'-0" width) and historic reproduction light fixtures (15).

**New plantings shall include:** trees (40); and sodding & seeding of grass verge (6'-0" width, 20,400 SF total); construction of new crosswalks (6). Additionally, lump sums of \$30,000 and \$10,000 are included for a new drainage system and construction of parking lane, median strip, island and turn lane, respectively.

**Kelly Circle****\$ 1,000,000**

Work to reconfigure the traffic circle, adding land to the park is covered by an allowance.

**Jamaicaway****\$ 600,000**

**Work along the city edge of Jamaicaway includes:** existing tree removals (45, including stumps, repair 80% and replace 20%); resetting of stone curbing (3,100 LF total); resurfacing streets (40' width, 124,000 SF total); construction of new crosswalks (6); and pedestrian signalization in two locations. A lump sum of \$20,000 is included for signalization. Replace existing historic parkway lights (25).

**New plantings shall include:** trees (77) and resodding & reseeding of verges (12'-0" width, 37,200 SF total).

**Arborway and Arborway Circle****\$ 1,500,000**

**Work to be completed in these areas includes:** removal of existing roadway pavement (30'-0" width x 27,000 LF), curbs (4,000 LF), granite block pavement, light

**LONG RANGE AND INTER-AGENCY PROJECTS, Continued**

fixtures (73) and trees (85, including stumps).

**Site improvements include:** repair (9,000 LF) and new (13,500 LF) stone curb; resurface (150,000 SF) and new (72,000 SF) roadway pavement, including new crosswalks (17); construction of new cycling and jogging path (9'-0" width) and asphalt-sealed crushed stone walks (10'-6" width); and installation of historic reproduction lights (60).

**New planting shall consist of:** trees (207) and new lawn at verges, islands and medians (180,000 SF). Additionally, lump sums of \$80,000 for a drainage system, \$20,000 for grading, and \$10,000 for street markings are included.

**TOTAL LONG RANGE OR INTER-AGENCY PROJECTS FOR JAMAICA POND:**  
**\$ 3,700,000**



**TOTAL PROJECTS FOR JAMAICA POND (INCLUDING PARKWAYS):**  
**\$ 12,150,000**



## APPENDICES



# *Appendices*



The contributions and cooperation of many people in the development of this Master Plan are hereby gratefully acknowledged:

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The Emerald Necklace Master Plan was developed through the Executive Office of Environmental Affairs, the Department of Environmental Management's Olmsted Historic Landscape Preservation Program in collaboration with the following state and municipal officials.

**COMMONWEALTH OF MASSACHUSETTS**

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Patrice Kish, Director, Office of Historic Resources

**Metropolitan District Commission**

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Susan Park, Associate Park Commissioner

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Richard Kelliher, Town Administrator

The Emerald Necklace Master Planning process was guided by the advice and input of the following advisory committees. It is because of their commitment and vision that this document exists.

**OLMSTED PROGRAM STATEWIDE ADVISORY COMMITTEE (1985-1989)**

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**EMERALD NECKLACE ADVISORY COMMITTEE, BOSTON (1985-1998)**

Massachusetts Water Resources Authority  
Massachusetts Audubon Society  
MASCO, Medical Area Services Corporation  
Jamaica Plain Neighborhood Council  
Boston Foundation  
Boston Redevelopment Authority  
Metropolitan District Commission  
Massachusetts Association for Olmsted Parks  
Massachusetts Department of Environmental Management  
Franklin Park Coalition  
Roxbury Neighborhood Council  
Boston Natural Areas Fund  
Northeastern University  
Jamaica Pond Project  
Friends of the Boston Common, The Public Garden and Commonwealth Mall  
Massachusetts Horticultural Society  
Boston Greenspace Alliance  
Boston Trust Office  
Town of Brookline  
Massachusetts Historical Commission  
Restore Olmsted's Waterway  
Friends of the Muddy River  
Friends of Leverett Pond  
The Arnold Arboretum of Harvard University  
Boston Environment Department  
Boston Conservation Commission  
Boston Landmarks Commission  
Boston Parks and Recreation Department  
Boston Fenway Program

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Nancy Yetman, Preservation Commission

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INSTITUTIONS

Army Corps of Engineers  
Boston Community Cable Network  
Boston Conservation Commission  
Boston Environment Department  
Boston Landmarks Commission  
Boston Redevelopment Authority

**INSTITUTIONS (Continued)**

Boston School Department  
Boston Transportation Department  
Boston Water and Sewer Commission  
Brookline Conservation Commission  
Brookline Park and Recreation Commission  
Brookline Planning Board  
Brookline Preservation Commission  
Brookline Tree Planting Committee  
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Emmanuel College  
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Forsythe College of Dental Hygiene  
Frederick Law Olmsted National Historic Site  
Hellenic College  
Holy Trinity Orthodox Cathedral  
Isabella Stewart Gardener Museum  
Latvian Luthern Church  
Lynch Recreation Center  
Mary E. Curley School  
MASCO/The Medical Area Service Corporation  
Massachusetts Emergency Management Agency  
Massachusetts College of Art  
Mission Park  
Morville House  
Mt. Auburn Cemetery  
Museum of Fine Arts  
National Park Service  
Northeastern University  
Radcliffe Seminars  
Simmons College  
State University of New York at Syracuse  
The Boston Globe  
The Boston Globe Foundation  
The Brookline Chronicle-Citizen  
University of Massachusetts at Amherst  
University of Massachusetts at Boston  
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WCTB-TV/Chronicle  
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Wheelock College

**ORGANIZATIONS**

Boston Fenway Program & Street Safe  
Boston GreenSpace Alliance  
Boston Society of Landscape Architects  
Boston Preservation Alliance  
Brookline GreenSpace Alliance  
BUG/Boston Urban Gardeners  
Ebony and Ivory League  
Emerald Necklace Conservancy  
Fenway Alliance  
Fenway Civic Association  
Fenway Community Development Corporation  
Fenway Garden Society  
Friends of Leverett Pond  
Friends of the Muddy River  
High Street Hill Neighborhood Association  
Historic Massachusetts, Inc.  
Jamaica Pond Project  
Jamaica Plain Historical Society  
Massachusetts Association for Olmsted Parks  
Massachusetts Recreation and Parks Association  
Muddy River Action Group  
National Association for Olmsted Parks  
On the Fens Condominium Association  
Open Door Theater  
Point Neighborhood Association  
ROW/Restore Olmsted's Waterway

**STATE AGENCIES**

Massachusetts Water Resources Authority  
Massachusetts Department of Environmental Management, Office of Waterways  
Massachusetts Department of Environmental Protection, Division of Water Pollution Control  
Massachusetts Historical Commission



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Cynthia Zaitzevsky lead a team of local historians to develop individual park histories and modified historic structures reports, as well as bibliographies under the Massachusetts Department of Environmental Management, Olmsted Historic Landscape Preservation Program.

Draft copies can be reviewed at the Boston Parks and Recreation Department, Town of Brookline Parks and Open Space Department and the Department of Environmental Management. Since they have not been finalized and published, distribution is not available.

1. **Jamaica Pond and the Arborway**, prepared by Richard Burck, Technical Consultant, edited with a Preface by Cynthia Zaitzevsky, Architectural and Landscape Historian, June 1987.
2. **Jamaica Pond: Modified Historic Structures and Furnishings Report**, prepared by Therese Alduino, Research Assistant and C. Zaitzevsky, June 1986.
3. **Jamaica Pond: Bibliography**, prepared by T. Alduino and C. Zaitzevsky, January 1986.
4. **Olmsted Park: Historic Landscape Report**, prepared by R. Burck, edited with a Preface by C. Zaitzevsky, July 1986.
5. **Olmsted Park: Modified Historic Structures and Furnishings Report**, prepared by Kenneth Story, Research Assistant with contributions by R. Burck, edited with a Preface by C. Zaitzevsky, October 1986.
6. **Riverway: Historic Landscape Report**, prepared by Caryn Summer, Technical Consultant and C. Zaitzevsky, January 1987.
7. **Riverway and Olmsted Park Combined Bibliographies**, prepared by Sylvia Sanborn, Research Assistant, completed and edited by C. Zaitzevsky, February 1986.
8. **Riverway: Modified Historic Structures and Furnishings Report**, prepared by K. Story, edited with a Preface by C. Zaitzevsky, August 1986.
9. **Back Bay Fens: Historic Landscape Report**, prepared by Gary Hilderbrand, Technical Consultant, with an appendix by Elizabeth Hope Cushing, Research Associate, edited with a Preface by C. Zaitzevsky, June 1986.
10. **Back Bay Fens: Modified Historic Structures and Furnishings Report**, prepared by G. Hilderbrand, edited with a Preface by C. Zaitzevsky, December 1986.
11. **Back Bay Fens Bibliography**, prepared by T. Alduino and C. Zaitzevsky, with contributions by E. H. Cushing, January 1986.
12. **The Boston Park System, 1869 - 1985, General Bibliography**, prepared by C. Zaitzevsky, April 1986.





SOME ECOLOGICAL VALUES TO BE CONSIDERED IN THE RESTORATION OF THE EMERALD NECKLACE

by Christopher W. Leahy, Director  
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Far more than most city parks, Boston and Brookline’s Emerald Necklace park system lends itself to an ecological approach in management. This is due to Frederick Law Olmsted’s vision of urban parks as areas of natural countryside preserved or created within the city as places of escape and passive recreation for its human residents.

Olmsted’s intention was not to create wildlife refuges of course, and ecology as we think of it today did not exist in his time, but a number of his central concepts are compatible with basic ecological principles. He favored, when possible, *large* areas of woodland, meadow, and other habitats. He had a bias for using *native* species. He appreciated the aesthetic appeal of the wild, apparently chaotic aspects of nature, as opposed to the highly formal, excessively tidy tendencies of most of his contemporary landscape architects. In Boston especially, he envisioned a “linked” system - a concept with far greater ecological potential than isolated islands of habitat, however “natural.” And his view of nature was not that of the Victorian wildflower presser or egg collector, but robust and grand like that of Church, Heade and other landscape painters of his time; thus, his remarkable determination to create a sweeping salt-marsh vista in the Back Bay.

The desire to retain and perhaps improve upon this relatively diverse ecosystem within the city of Boston is manifested throughout the Commonwealth of Massachusetts’ Department of Environmental Management Master Plan for the Emerald Necklace, and is stated explicitly under the General Objectives of the plan.

Both Olmsted’s original vision and DEM’s intention, as recorded in the Master Plan, require that the current and potential ecological values of the Emerald Necklace be documented at least minimally in order that they be adequately considered as management plans are implemented.

The present document is in no sense a biological analysis of, or ecological management plan for the Emerald Necklace. Such efforts would require the gathering and analysis of much physical data, for example on soil and water chemistry, and a thorough inventory of the system’s present biota, requiring many work hours during at least one full cycle of seasons.

What is offered here is as follows:

1. A discussion of some general ecological principles, relevant to the nature of the park system, that may be useful in planning certain aspects of the restoration where conserving natural elements is deemed desirable.
2. The highlighting of certain natural elements characteristic of city parks in general and the Emerald Necklace in particular that might be preserved, developed or interpreted to enhance the natural diversity of the Necklace.
3. Comments on existing or potential ecological problems.

GENERAL ECOLOGICAL PRINCIPLES

1. Natural Diversity

Generally speaking, a variety of biotic communities containing a diversity of plant and animal species will tend to be more self-sustaining and interesting than “simple,” depauperate, homogeneous landscapes. This is not achieved by introducing a lot of species, but rather by creating where possible, conditions in which native communities (woodlands, grasslands, wetlands) can sustain a full complement of characteristic species. This is consistent with Olmsted’s landscape concepts and should be considered, for example, in the planned restoration of some of the wooded and open areas.

Areas of transition between different communities, such as shrubby areas occurring between grasslands and woodlands also tend to increase diversity, both because they contain their own characteristic organisms and because they encourage the presence of species whose life cycles require more than one habitat.

## 2. Size of Habitat Type

Large areas of individual natural communities will tend to be more diverse and “healthier” than isolated islands of habitat. Certain species, e.g. forest songbirds, cannot sustain populations without a sufficient area of interior forest free from disturbance by predators that tend to proliferate along edges.

Though Olmsted’s design is generally consistent with this principle and is reinforced by the linkage of the parks, creating corridors between areas of habitat, the Emerald Necklace cannot hope to sustain natural communities of great diversity in many cases (e.g., forest communities). Still, this value can be maximized by choosing, where possible, to enlarge and consolidate habitat types, rather than promoting a patchwork design. For example, gaps between two smaller forested areas might be allowed to grow up, creating one larger forested area. Areas where this concept could be most valuable are in Olmsted Park between Jamaica Pond and Leverett Pond, and in the opportunity to “re-naturalize” the Fens. **Large areas of dense vegetation may, of course, be incompatible with security concerns in some areas.**

## 3. Nativeness

Olmsted showed a preference for using species native to the region in which he was working, and installed a remarkable variety of native trees and shrubs in the Emerald Necklace. However, he also used a number of alien species which tend to reduce diversity by “taking over” in forest understory and open land and reducing the prevalence of native species. Several species of alien honeysuckles, Japanese barberry and buckthorn are in this category and in many cases were planted in large numbers. There is a host of native trees and shrubs (as well as forbs and grasses) that are attractive, productive as food for wildlife, and readily available. These should be preferred in the restoration. Any effort to remove alien shrubs and herbs, especially where they have become dominant, is also desirable ecologically.

## 4. Succession

Natural communities are ever changing and this fact is not compatible with a landscape architect’s desire to create a constant aesthetic structure, even when, as with Olmsted, the structure was meant to look natural. Much of what has changed in the Emerald Necklace since it was designed is simply the result of succession. This is particularly evident in the senescence of much of the oak woodland. One approach to this problem would be to assess, with the aid of a plant ecologist, what the apparent forest type at maturity is likely to be (given urban limiting factors) in the areas where woodlands are wanted, and to simply allow this to develop naturally, possibly with the aid of management applications that would “encourage” the natural process. The advantage of this approach would be the creation of a naturally diverse, self-sustaining community that would require little maintenance. The disadvantage is that the “landscape” would probably fall short of Olmsted’s vision while the system matured naturally and might never achieve the ideal structure in some areas.

The other approach is to try to rejuvenate the woodlands by plantings, duplicating, at least superficially, the desired structure. This will be much more labor intensive, will probably require continual “adjustment,” may never stabilize, and will likely be less diverse than a “natural” woodland. But it may have short-term aesthetic advantages and may be the only practical option. Some middle ground between these two options may also be possible.

Grasslands will of course have to be maintained periodically if they are to remain grasslands. It is important that the ultimate effect desired for any particular “meadowscape” be carefully detailed and then managed accordingly. There is a casual reference to “splashes of color” from wildflowers in the Master Plan. Such effects are not typical of New England and cannot be achieved (or at any rate sustained) by planting colorful wildflower mixes. Pleasing meadowscapes of native species can be created but they require careful planning, maintenance, and “aging.” Less dramatic grasslands can be achieved with less management.

## 5. Biological Value of Messiness

Leaf litter, rotting vegetation, brush piles, weed lots gone to seed, pond edges rank with emergent plants, thatch left after mowing,

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and carrion are some natural conditions that are valuable in promoting diversity because they are useful or necessary to a variety of life forms. However, these conditions may be aesthetically unpleasing in the wrong situations and conflict with the public's notion of what a city park should be like. Olmsted aimed for a kind of controlled natural chaos in which the beauty of wildness is present without the threat. The kind of desirable messiness described above is consistent, therefore, with Olmsted's vision. but needs to be carefully sited and measures taken in some cases to demonstrate that the circumstance is intentional, planned and under control (mowing tidy edges around a weed lot, for example).

The "messiness" described above does not, of course, include paper, plastic, metal and other trash of human origin which poses a threat to many aspects of the system's biota and is an eyesore that cannot be rationalized.

## 6. Water Regimes

The waterways of the Emerald Necklace have always been, and continue to be, crucial both to the design and ecological values of the system. It is impossible to overstate the importance of the inter-relationship between the dynamics and condition of the system's many water bodies and the biological values of the parks. The desire to "improve" the park's water regimes is a clear priority in the Master Plan and specific elements of this improvement, such as re-establishing flow, reducing or eliminating the effects of combined sewer outflows and cleaning up toxic sediments and other forms of pollution, will certainly tend to have a positive effect on the ecological "quality" of the parks. While it is probably the most intractable and most expensive problem to deal with, pollution may also be the most critical determinant of long term biological diversity (or its absence).

It should be recognized, however, that an alteration as sweeping as re-establishing flow through the system at a given rate will have wide ranging ecological effects, many of which may not be predicted and some of which could adversely affect current elements that are ecologically desirable. For example, a superficial sampling of the aquatic invertebrates of the basins seems to indicate a relatively rich and healthy fauna, including hydra and planaria (Gwilym Jones pers. comm.). Ward's Pond and other Emerald Necklace wetlands also appear on superficial inspection to be relatively rich in life forms. Given the slight gradient of the waterway, it seems unlikely that returning "natural" flow would greatly increase water velocity. However, if flow did increase to the extent that significant flushing of these areas occurred, diversity might conceivably be reduced rather than increased. Without a thorough biological inventory it is impossible to assess present levels of diversity or have a baseline against which to measure changes.

Before specific, long term ecological priorities can be established for the system's water-bodies, the basic conditions under which the aquatic communities will exist need to be determined. A survey by an aquatic ecologist to establish the presence of any rare or otherwise desirable elements to evaluate the dynamics of water systems and to assess the general impacts of contemplated changes in the water regimes of the parks would be worthwhile.

## NATURAL ELEMENTS WORTHY OF PRESERVATION, DEVELOPMENT AND/OR INTERPRETATION

At its worst, the "urban ecosystem" is a very poor thing, supporting only those few organisms capable of withstanding the multiple stresses - pollution, noise, over-use - typical of most cities and of living on the most minimal resources: a biota. in short. of weeds and pests. The Emerald Necklace parks by contrast, are relatively rich in life forms. They will never support bears or banks of rare wildflowers, but, in addition to the general aesthetics of wild nature crafted by Olmsted, they contain numerous natural elements worthy of protection and public attention.

### 1. Natural Areas of Greatest Interest or Potential

#### Olmsted Park

The area between Chestnut and Perkins streets and Willow Pond Road offers the greatest opportunity in the Emerald Necklace system for a rich natural history experience. The topography and landscaping promote seclusion; there is a nice variety of aquatic and terrestrial habitats and lush, wild ambience; and the area is relatively little used, doubtless in part due to security concerns. It is reminiscent of the Ramble area of New York's Central Park which has become a focal point for that city's naturalists, especially bird-watchers. Consideration should be given to designating this area as the prime "nature area" of the system, preserving and enhancing the qualities noted above, and minimizing uses that would be inimical to nature study. Security concerns might eventually be ameliorated if the "use culture" were changed in this direction. (See also under Migratory Land Birds.)

**Jamaica Pond**

This area is very attractive to migratory and wintering waterfowl. At least 22 species of ducks and geese have been recorded (66% of all Massachusetts anatids) — up to 13 on a single day, (fide Miriam Dickey (2) pers. comm). Pond shores and many bordering trees have also attracted significant wildlife, especially birds. There is some indication that this diversity has declined in recent years as use has increased.

**Back Bay Fens**

Though presently less wild and diverse than Olmsted Park, the Back Bay Fens have sufficient area to support a more varied biota if the vegetation were planned to become denser with a more continuous tree canopy and more understory cover in specified areas. Master Plan guidelines for the War Memorial, Rose Garden and Victory Gardens are compatible with this scenario. As the water regime is altered, attention should be given to maintaining any significant elements of the present aquatic biota and promoting a richer natural diversity, especially around the Basins. If cattail beds and other native aquatic vegetation replaced Phragmites, the aquatic fauna might become more diverse and a vestige of Olmsted's original Fens vision be retained. In fact, a fresh water marshland vista can be easily imagined between the Southern and Northern Basin and might be created with relatively minor alterations of present shallows and shoreline and some clearing of woody vegetation.

As Kenneth Hudson, local authority on breeding birds of Boston's parks has pointed out (pers. comm.), the Fens area is also ideal for introducing beginning bird watchers to common species. (See also under Migratory Shorebirds and Master Plan Comments.)

**2. Resident Land Birds**

A variety of common land bird species typically breed in park canopies, shrubbery and tree cavities and in some cases are present year round. Species known to nest within the Emerald Necklace as recently as the 1960s or likely to breed (\*) include American kestrel\*, eastern screech owl, chimney swift, northern flicker, downy woodpecker, eastern phoebe, tree swallow, barn swallow\*, blue jay, American crow, tufted titmouse, black-capped chickadee, white-breasted nuthatch\*, house wren, American robin, wood thrush (Arnold Arboretum), gray catbird, northern mockingbird, red-eyed vireo, warbling vireo, black and white warbler\*, American redstart\*, yellow warbler, common yellowthroat, ovenbird (Arnold Arboretum), northern cardinal, rufous-sided towhee, song sparrow, chipping sparrow\*, common grackle, brown-headed cowbird, red-winged blackbird, northern oriole, orchard oriole, American goldfinch and house finch.

Due to limitations of habitat size, predation by raccoons, skunks, opossums, dogs and cats, and increased human disturbance, ground nesting song birds such as wood thrushes, ovenbirds, and rufous-side towhees, which have bred in the Emerald Necklace parks within the last 25 years, may no longer be able to survive in them.

Studies of urban parks in Finland (3) have shown that density of bird populations increases as park size decreases (small parks can still have lots of common birds), but that species diversity declines as park size decreases. Variety and density of songbirds are encouraged by creating the largest possible areas of undisturbed habitat (canopy, understory and ground). The Ward's Pond area affords the greatest potential for this strategy in the Emerald Necklace.

**3. Nest Boxes and other structures to attract birds.**

Natural tree cavities in New England are created almost exclusively by woodpeckers. Consequently, there tend to be more cavity nesting birds at any given time than there is available housing. Nest boxes, therefore, have the potential to increase cavity nesting bird populations. Native cavity nesting species likely to occur in the Emerald Necklace include: American kestrel, eastern screech owl, tree swallow (near aquatic habitats), downy woodpecker, northern flicker, tufted titmouse, black-capped chickadee, white-breasted nuthatch, and house wren. Nest boxes need to be constructed to specifications appropriate to particular species and sited to maximize potential for occupation (see attached guidelines). Nest boxes need to be cleaned at the beginning or end of each nesting season. And some effort will probably have to be made to discourage house sparrows (or in the case of larger boxes, squirrels) from occupying many boxes.



Many youth programs, scouts, campfire, etc. have nest box building projects which might be made part of a park's education program. Seasonal maintenance of boxes would ideally be part of any such program.

High, open perches are used by a number of bird species, especially raptors and flycatchers to spot their prey. For example, a high perch overlooking Jamaica Pond might be used by migrant ospreys, merlins and peregrines. The ideal perch is simply a dead snag that happens to occur in the right place. Where these occur they should be left. Artificial perches might also be erected, perhaps through cooperative arrangements with power companies.

#### 4. Migratory Land Birds

From late April to early June, Massachusetts experiences "waves" of songbird migrants stopping to rest and feed between neotropical wintering grounds and breeding areas to the North. The phenomenon is particularly pronounced along the coast and in city parks and cemeteries with dense stands of trees, which are perceived by birds as islands of forest in a sea of cement. Mount Auburn Cemetery in Cambridge and The Ramble in New York's Central Park are nationally famous in this context and are visited by thousands of "birders" each spring. Mount Auburn is the traditional urban hot spot for bird-watchers in Boston but the Back Bay Fens and especially Olmsted Park should be similarly attractive. In addition to an extensive insect-laden canopy, access to undisturbed water edges to drink and bathe and areas of sheltered forest floor covered with leaf litter are important attractions. The Ward's Pond area is similar in many respects to the Dell area of Mount Auburn, a focal point of bird and birder activity. Bird records from the 40s through the 60s in Olmsted Park, Jamaica Pond and the Arnold Arboretum attest to this potential (Miriam Dickey (2), pers. comm.). It would be instructive to visit Olmsted Park and the Back Bay Fens on a day when a wave occurred at Mt. Auburn to further assess this potential.

#### 5. Resident and Transient Raptors

Cities typically abound in rodents, pigeons, starlings, and house sparrows, all of which serve as ready food sources for a variety of hawks and owls. Red-tailed hawk, peregrine falcon, American kestrel, great horned owl, barred owl and eastern screech owl occur in appropriate habitat in Boston and are to be expected in the Emerald Necklace. American kestrel and eastern screech owl, both cavity nesters, use tree hollows and nest boxes. Other species of raptors doubtless occur as transients in spring, fall and winter and feed on smaller migrants and small rodents in the parks. Management of grassland areas (mowing schedules, etc.) can affect small mammal populations and the availability of this food source to raptors.

#### 6. Wading Birds

A number of species in the heron family are likely to use the park's waterways on migration, during the summer and even through the winter where water remains open. Snowy egrets nest on Boston Harbor Islands and travel long distances to feed. Great blue herons and green herons are known to stop to feed in spring and fall migration. A black-crowned night herons have (at least historically) roosted on wooded islands in the Riverway near the Chapel Street Bridge. These birds feed in shallow water and conditions which favor their presence include: sloping shores with emergent vegetation (as in diagrams in the Master Plan) and other aquatic vegetation that can support the frogs, small fishes, and aquatic invertebrates on which herons principally feed; areas of shore sheltered from public access by dense vegetation but open at the shoreline; areas of bank overhung by bordering shrubs allowing good visibility of prey below the surface; and densely vegetated islands where night herons can roost securely.

#### 7. Migratory Shorebirds

In view of the fact that the Back Bay was once salt marsh it is interesting that a variety of shorebirds (greater and lesser yellowlegs, common and long-billed dowitcher, stilt, least and semipalmated sandpipers and black-bellied and semipalmated plover) fed on sand bars in the basins as late as the early 1970s (and perhaps continue to do so today). This would be a nice natural reminder of Olmsted's vision and would require little management if small flats or bars continue to exist in the basins. These species occur on migration mainly from mid-July to mid-October. This is an element to be considered if dredging and raising water levels is contemplated for the Back Bay Fens.

#### 8. Wintering Waterfowl

Because city ponds tend to remain ice-free longer than water bodies in the colder suburbs and countryside, they often attract wild

waterfowl that are frozen out elsewhere. Hyde and St. James Parks in London, where wild ducks of many species quickly learn to beg for stale bread like park mallards, are notable examples of this urban winter wildlife phenomenon. Jamaica Pond, Leverett Pond and the Fens Basins are used in this way by American black ducks, American pigeon, ruddy ducks, canvasbacks, ring-necked ducks, scaup, American coots and many other species in varying numbers. (For resident waterfowl, see Ecological Problems.)

#### 9. Frugivorous and Seed-eating Birds

In the fall (chiefly mid-September to early November) large numbers of seed-eating birds (mainly species of sparrows) pass through Massachusetts. In winter a variety of so-called “winter finches” move south in varying numbers depending upon the availability of food to the North. Other species, e.g. American robins and cedar waxwings may be attracted on an unpredictable basis if winter fruit is available.

Seed-eaters are attracted to weedy fields containing a variety of grasses and forbs, especially those with abundant seed (e.g. foxtail and barnyard grass, amaranth, evening primrose, and thistle and other composites). Such habitats must be allowed to mature and go to seed of course in order to be effective and will need to be sited carefully lest they be considered unsightly. Mowing the edges of such areas can give them the more formal and “intentional” look of a planned weed garden or “organic bird feeder”. Several areas in Olmsted Park between Ward’s and Leverett Pond might lend themselves naturally to this approach as would the Victory Garden in fall and winter if properly managed.

Olmsted provided for a wealth of fruiting and seed-bearing shrubs and trees in the Emerald Necklace plan. For some reason, invasive, alien shrubs and vine species such as Eleagnus, Celastrus, and Rhamus are often suggested as good bird attractants. But there is a wide variety of native species, e.g. winterberry, American holly, barberry, bayberry, catbriar, as well as non-invasive ornamentals (crab apples and cherries) that are just as attractive in all senses. Birches, maples, ashes, and conifers are particularly favored by winter seed-eating birds. Studies in Finnish parks (3) indicate that summer bird populations are higher in localities in which breeding species are able to inhabit the area year round due to food availability. (See attached brochure for other planting suggestions.)

#### 10. Winter Bird Feeding

A well planned and maintained winter bird feeding station could be worthwhile “wildlife attraction” and interpretive element if sited where it could be managed by staff. Blue jays, cardinals, goldfinches, house finches, juncos, chickadees, tufted titmice, downy woodpeckers, and white-breasted nuthatches are all likely visitors to a station offering seed, suet, and water.

The challenge for any urban bird feeder is to keep it from being overrun by pigeons, house sparrows, starlings, and squirrels. There are ways of minimizing this problem such as selecting appropriate food and feeders and employing forms of enclosures. Any such feeder area would have to be cleaned daily to prevent attracting rats and promoting disease among the birds. The effort required to set up and maintain such an operation in an urban park should not be underestimated. (See attached brochures for more specific details.)

#### 11. Bats

While they still suffer from a bad public image due to ancient superstition and fear of rabies, bats are in fact enormously beneficial mammals with great potential to thrive in cities. Bat authority Dr. Tom Kunz (4) estimates that as many as 50,000 big brown bats may inhabit greater Boston in summer, consuming up to 13 tons of insects annually. However, bat populations have decreased due at least in part to bio-accumulation of persistent pesticides in their tissues after ingestion of sprayed insects. In addition to their role in eating significant quantities of insects, bats make excellent subjects for interpretation. Their life histories and their “superstitious history” form the basis of an excellent program. Bat detector devices now make it possible to hear bats as they communicate and echo-locate their prey on the wing.

Encouragement of bats could consist of: (A) minimizing aerial spraying of pesticides in the parks (see #6 under Problems) and (B) siting man-made bat roosts within the system. No one has proven the effectiveness of these devices in the East and this might be a worthwhile project in cooperation with area schools. (See attached construction specifications.)



## 12. Reptiles and Amphibians

The present herpetofauna of the Emerald Necklace is little known and few historical records exist. As with mammals, a survey to establish a baseline on present populations would be useful.

Species that have been recorded in the recent past from Olmsted Park (fide Dickey (2), Harte (15), and Baird (6), pers. comm.) include: snapping turtle, painted turtle, spotted turtle\* (formerly common, now increasingly rare statewide), stinkpot turtle (recently recorded in the Fens basins, fide, Jones), eastern garter snake, DeKay's snake, red-backed salamander, dusky salamander, bull frog, green frog, leopard frog\*\* and American toad.

\* State listed species (Special Concern)

\*\* State listed species (Watch List)

Native turtle species can provide a conspicuous element of natural interest as well as adding to the diversity of the park's aquatic biota. The majority of native turtle species have recently become rare in Massachusetts and, while the rarer species are perhaps unlikely to thrive in the Emerald Necklace, promoting populations of common species (e.g. painted turtle) may be useful in raising public awareness of these animals.

One aspect of turtle behavior that may be poorly addressed in the Emerald Necklace is basking areas. These could be open, relatively smooth areas on islands and shores or rocks, stumps, or logs positioned to accommodate this need. Disturbance of basking turtles by ducks, geese and gulls as well as people, may be a significant limiting factor and it may be possible to design or locate basking surfaces that attract turtles, but discourage birds.

## 13. Fish

Jamaica Pond is a popular fishing spot and continues to support healthy populations of common warm water fish species including large-mouth bass, yellow perch, bluegill, pumpkinseed, white crappie, pickerel and bullhead. (A list of fish species found in Jamaica Pond has been done by Kynard (7). In addition, the Division of Fisheries and Wildlife (Northeast District Office in Acton) stocks the pond with rainbow trout (sometimes brown and brook trout as well) yearly between March and May, and sometimes again in the fall depending on the availability of hatchery stocks.

At one time "reclamations" of the pond were done regularly in which the pond's native fishes were chemically (Rotenone) eradicated prior to introducing trout, but this practice has been discontinued as unnecessary and counter to the best interest of the pond's many fishermen. The last "reclamation" occurred in August, 1964. Water temperature and pH are sampled each year prior to trout stocking. By these measures and the apparent health of the fish populations, the condition of Jamaica Pond has remained stable according to Division of Fisheries and Wildlife manager Peter Jackson (8). It is impossible to know at this point the extent of impacts on native aquatic life resulting from initial reclamations. No other water bodies in the Emerald Necklace are stocked.

There would seem to be no significant conflict between fishing and biological conservation at Jamaica Pond, especially given the Master Plan's provision for designated fishing areas. However, due to its apparent biological richness and its potential for bird-watching and other passive natural history-related activities, consideration should be given to prohibiting or restricting fishing at Ward's Pond.

(For threespine stickleback, see under Endangered Species, p. 231).

## 14. Butterflies

Though there is no track record on the subject, it should, in theory, be possible to promote wild butterfly populations in urban parks, especially ones with as great a diversity and abundance of vegetation as the Emerald Necklace.

Butterfly species have two fundamental requirements: Supply of their characteristic larval food plants and nectaring sources for the adults. (Many other factors, e.g. climate and predation are also important, but are much less subject to human control.) While some species of butterflies will feed as larvae on only one or a few related plant species, many are less fussy, and the Olmsted plant

list contains many acceptable species. Adult butterflies will nectar on a wide variety of flowering plants and are strongly attracted to some common species, e.g. milkweeds, many weedy legumes (cow vetch, crown vetch, clovers, etc.), New Jersey tea, and the colorful garden shrub called butterfly bush (*Buddleia davidii*). There are even a few relatively uncommon butterfly species that are almost characteristic of cities because their food plants tend to thrive there, e.g. checkered white (weedy crucifers), roadside skipper (common grasses). There is evidence that the proximity of food plants and good nectaring areas promote high butterfly populations.

The strategy could be to target certain areas (ideally wild meadow areas bordered by shrubs and trees, e.g. parts of the Fens and Olmsted Park) and introduce a variety of self-sustaining food plants and nectaring sources. There are several recent books on the subject of butterfly gardening that provide plant lists (22).

### 15. Dragonflies and Damselflies

These are attractive, interesting and beneficial insects that occur in almost any body of water, even those suffering significant biological degradation. The dragonfly fauna of New York's Central Park was the subject of an article in the *New York Times* in 1986 which noted the presence of at least one uncommon species. And the Emerald Necklace with its diversity of aquatic habitats should be able to support a relatively diverse fauna of these insects. Both as adults and larvae, dragonflies eat large numbers of insects including, at times, mosquitoes.

Basic requirements of these insects include: sufficient emergent and floating vegetation in which to lay eggs; areas of undisturbed shoreline in which males can set up territories and females can lay eggs; a balanced pond fauna (for example, if Ward's Pond were to be overstocked with fish, the aquatic insect fauna might suffer accordingly); absence of excessive turbidity or chemical pollution.

These are among the organisms likely to be affected by significant alterations in the water regime. Many other, less eye-catching aquatic invertebrates, e.g., mollusks, crayfish, other insects and spiders, would be similarly affected.

### 16. Wildflowers

The natural terrestrial ecotype of Massachusetts (except very locally) is forest, and its herbaceous flora, including its most spectacular native wildflowers, therefore consists largely of forest species. Most of the common upland meadow wildflowers that thrive in the pastures cleared by farmers and that also now grow in highway medians, airstrips, and other managed open areas are naturalized aliens from the Old World. Many of these are very colorful and attractive, but they seldom occur in the rainbow combinations or over the vast vistas shown on labels of wildflower mixes now being widely sold. Such displays are characteristic of prairies and alpine meadows, neither of which exists in Massachusetts.

To the extent that the "forests" of the Emerald Necklace can be compared to natural forest types it is probably closest to the oak-hickory forests characteristic of eastern Massachusetts. The herbaceous flora that occurs on the floor of this kind of forest is relatively poor in species compared to that of the rich mesic forests of central Massachusetts or (especially) the Berkshires. And of course the Emerald Necklace forest flora is even more depauperate due to the many additional limiting factors prevailing in the city. A thorough inventory should be done of the herbaceous flora of the entire system to give some sense of the potential for promoting native species. Works by Davis (9), Deane (10), Gray (11), Harris (12), Jacob (13), Kenrik (14), Palmer (15), and Rich (16) should provide a useful historical baseline against which to compare the present Emerald Necklace flora. One might contemplate introducing certain common hardy forest wildflowers such as Canada mayflower, but the effort involved would probably be wasted unless a kind of forest reserve were created with access limited. The uplands of Olmsted Park are the only areas today where such a scheme is plausible today.

It is possible to be somewhat more optimistic about wildflower meadows. Despite the above *caveats* there are a number of native field wildflowers for which seeds can be obtained and despite the earlier promotion of "nativeness" many naturalized species are probably justifiable as useful to birds and butterflies as well as on the grounds of attractiveness and practicality. The amount of planning and nurturing required to create a native/naturalized wildflower meadow should not be underestimated, but it seems consistent with Olmsted's vision and is at least worth consideration. There are a number of recent "how to" books on the subject (e.g., Martin (21)). (N.B. "Meadows-in-a-can," even those purporting to be New England mixes, contain many exotic species and annuals that may produce a patchy profusion of color for one season but will not persist.)



### 17. Natural Forest Debris

In the course of seasonal cycles and long-term aging forests go through structural changes and create debris which become important elements in the function of the forest ecosystem. Senescent trees, for example, often provide open perches and holes for cavity nesting birds (see #3), den sites for mammals and food for a wide variety of organisms in the form of infesting insects. Fallen logs attract certain forms of vegetation, e.g. mosses and lichens, and provide shelter for characteristic fauna including red-backed salamanders, sowbugs, centipedes, land snails, ground beetles, and other organisms, themselves important in the natural decay and soil building process. Litter on the forest floor also shelters many invertebrates and contains nutrients of its own in the form of mast (acorns and other tree seeds) which certain bird species (thrushes, sparrows, towhees) are adapted to exploit.

To a degree consistent with public safety, this process and its products should be allowed to proceed without disturbance. If a significant amount of cosmetic tidying is contemplated, a plan should be developed to retain an adequate range of these elements.

### 18. Endangered Species

The database of the Natural Heritage and Endangered Species Section of the Massachusetts Division of Fisheries and Wildlife contains only a single record for the Emerald Necklace (fide Bruce Sorrie (17)), a unique form of the threespine stickleback (*Gasterosteus aculeatus*). It occurs in a small, spring-fed pool in Olmsted Park. Heritage biologists last checked the population in 1984, however Harvard University ichthyologist Karsten Hartel, checks the population regularly and has done so within the last six months; it appears to be thriving.

This is typically a marine species which often enters rivers and occasionally becomes landlocked and evolves unique fresh water “morphs”. There is some question as to whether the Emerald Necklace population arrived naturally when the waterway was more directly linked to the sea or whether the fish was introduced in Olmsted’s time. In either event it is the southern-most land-locked population of the species on the east coast. For further detail on the population, see Bell and Baumgarten (18).

## PRESENT OR POTENTIAL ECOLOGICAL PROBLEMS

### 1. Domesticated Waterfowl

Nothing is more typical of city parks than feeding ducks and undeniably this activity has legitimate recreational and (some) natural history education value. Boston parks have a heightened stake in the practice because of the children’s classic Make Way for Ducklings. Nevertheless, there are a number of negative factors associated with city waterfowl that suggest the need for management. City waterfowl populations maintained artificially by handouts become artificially large. Feeding also attracts gulls. Both of these factors exacerbate the associated problems, including:

- (A) Undue pressure on the native ecosystem - depletion of other aquatic organisms or competition for space with other organisms (e.g. basking turtles).
- (B) Deterioration of water quality from organic wastes.
- (C) Promotion of disease within the over-large population.
- (D) Traffic hazards as females with young move from one location to another (the dark side of Make Way for Ducklings).
- (E) An assumption by the public that “the park” is a good place to release unwanted Easter ducks or other such pets.
- (F) Time consuming public “emergencies” when birds are injured by cars, dogs, or people, found sick or are wrongly perceived to be starving or frozen in the ice during cold weather.

It may be impractical to prohibit feeding ducks in the Emerald Necklace, but some means should be considered of limiting sites

where ducks are fed; providing interpretive signage explaining the issues; regularly removing surplus birds from the population (through the Division of Fisheries and Wildlife) to prevent habitat degradation.

## 2. Phragmites (Phragmites communis)

This tall aquatic grass (common reed) dominates its own natural community in the Old World complete with characteristic birds (reed bunting, bearded reedlings, a variety of reed warblers) and other organisms. In eastern North America, by contrast, stands tend to occur in disturbed wetlands, both fresh and brackish and are depauperate biologically (for one exception see under Purple Loosestrife below). Because it can grow in relatively deep water and soon covers the area within stands with a thick layer of litter, it is usually invulnerable to invasion and competition from other, native wetland plants.

The occurrence of Phragmites in the Emerald Necklace, particularly in the Riverway and Back Bay Fens, is consistent with its preference for disturbed and polluted sites. Though potentially an attractive aesthetic element in small, managed stands, it presently serves to obscure many intended vistas and landscape elements while contributing virtually nothing to the park's biological diversity.

A number of control methods have proven successful to varying degrees for Phragmites, including:

- A. Covering stands following cutting with sheets of clear plastic raises temperature under the sheets as high as 169 degrees Fahrenheit and kills all vegetation within 3-4 days (Boone (19), et al).
- B. Cutting. If cut near the end of July for a number of years in a row, stands of Phragmites may be contained. This reduces the plants' vigor by removing most of their food reserves stored in the upper portions of the plant at this season. Cutting at the wrong time, however, may increase the density of the stand and cut shoots at any season should be removed to prevent them from sprouting and forming stolons.
- C. Raising water levels so that the rhizomes are covered to a depth of 3 feet during the 4 months of growing season. This has been shown to be an effective control (Beall (20)). Though raising of water levels in the Emerald Necklace waterways is recommended in the Master Plan, it is doubtful whether a rise of 3 feet is possible or ecologically desirable.
- D. Herbicides. RODEO (glyphosphate), applied with extreme caution has proven effective in controlling Phragmites and has been used in this way on national wildlife refuges and Nature Conservancy reserves. It is applied after the flower "tassels" so that the herbicide is transported from the foliage to the roots. It is possible to apply it specifically with a backpack sprayer. Improperly applied, this herbicide can cause major ecological damage, especially in aquatic systems, and this is therefore the least attractive option, especially in an urban ecosystem in which chemical stresses are already severe. (See #6)

Dredging, mowing, disking and pulling are not recommended means of eliminating Phragmites either because they are ineffective or have unwholesome side effects (e.g., releasing toxins imbedded in soil) or both.

In many places growth of Phragmites is promoted by highly saline run-off from salted roads. Drainage alterations and/or road salt reduction near Emerald Necklace wetlands could be important in discouraging re-colonization.

Particular circumstances in the Emerald Necklace may preclude or cause adaptation of the ideal scenarios presented here. Safety and security to park users, as well as environmental factors, must all be considered.

Once the weed has been substantially eliminated by whatever means, desirable native aquatic plants (e.g. Typha) should be established to discourage re-colonization and the areas should be monitored regularly to catch invading plants early before they spread.



### 3. Purple Loosestrife (*Lythrum salicaria*)

An introduced wetland species which, like *Phragmites*, is aggressively invasive and competitive with native species. It does have some ecological value as a nectaring source for bees and butterflies, and as nesting habitat and food (seeds) for a few bird species. Most notably it has recently been found that a relatively rare and local butterfly species, broad-winged skipper, seems to occur regularly where *Phragmites* (food plant) and purple loosestrife (nectar source) occur together. Purple loosestrife has also become popular as one of our most spectacular late summer wildflowers. It does not occur very extensively at present in the Emerald Necklace. In small quantities it can be controlled by hand pulling and this should be done sooner rather than later, especially if re-establishment of cattail beds in the Back Bay Fens or elsewhere is contemplated. Re-colonization is likely to be slow because there is no significant upstream seed-bank. Arguably a specimen stand of *Phragmites* and loosestrife could be permitted, especially if it contained a population of broad-winged skippers.

### 4. Invasive Alien Shrubs See under Nativeness, p. 224.

### 5. River Birch (*Betula nigra*)

This species is treated as a problem species in the Master Plan due to its invasion of the Jamaica Pond shore. Unquestionably it obstructs the view in some areas and is causing damage to the stone embankment. However, it is worth noting some differences between this and other invasive species described above. (A) It is a native species; (B) It is a relatively rare species in Massachusetts (Heritage Program Watch List) occurring chiefly along large rivers, especially the Merrimack; (C) Like other birches, it produces seeds in winter which serve as food for a variety of bird species; (D) It is an attractive tree that fits naturally with the "aesthetics" of the pond. Still, it must be noted, at Jamaica Pond, these trees in no sense represent a native occurrence, and have no ecological significance.

### 6. Applications of pesticides

No pesticides are currently in use in the Emerald Necklace with the possible exception of the Victory Gardens. However, the indiscriminate applications of pesticides: (A) kill a wide variety of beneficial invertebrates (e.g., bees and other pollinators) in addition to the target species; (B) damage populations of beneficial insect-eating organisms such as bats and birds through bioaccumulation in tissue; (C) may find their way eventually into aquatic systems causing further damage; (D) exacerbate the existing overload of toxic elements in the urban atmosphere; (E) often fail to eradicate or even measurably affect the targeted pest.

In most cases infestations of plant-eating and other pest insects should be allowed to run their natural course and the degree of actual threat should be carefully analyzed in cases of public health concerns (e.g. mosquitoes). If pesticide application is deemed necessary, biological agents such as Bt, (*Bacillus thuringiensis*) may be preferable in some cases, but these also kill beneficial insects (esp. dipterans) indiscriminately and are no panacea. Each "insect pest" instance should be analyzed individually and an appropriate integrated pest management (IPM) strategy devised to treat it, when necessary.

### 7. Nutrient Enrichment of Aquatic Systems

This occurs when wastes and other organic products are flushed into waterways through storm drains, leach out of faulty septic systems or wash directly off the land by precipitation. Fertilizers applied to lawns often find their way into water bodies in this way. Roadway run-off is also high in nitrogen and phosphorous from wear of tires over time. The additional nutrients tend to promote rapid eutrophication in ponds, characterized by algae blooms and rapid proliferation of other aquatic plants. In severe cases eutrophication suffocates the pond's biota through depletion of oxygen as the excess vegetation decomposes. Ward's Pond has a nearly continuous algae mat in summer and may be suffering some depauperation through eutrophication. The mat is also unsightly, odorous and inhibits some activities, both by people (e.g. fishing) and wildlife.

Establishing a new flow through the waterway may provide some flushing of excess nutrients but an effort should also be made to identify and curtail sources of nutrient enrichment. Redesign of roadway drainage systems, e.g., through incorporation of vegetated swales, may help with run-off problems. Any proposed need for fertilizers in the Emerald Necklace should be reviewed critically and if approved, the least hazardous substance should be applied in the smallest amounts deemed to be effective. Again, an IPM approach is advisable. In the short-term, mechanical removal of the algae mat may be a desideratum. And sediment sealing or removal may be necessary if the system is to be functionally restored.

**8. Predation by Domestic Animals and Other Urban Mammals**

Raccoons, skunks, opossums, and rats are all resourceful scavengers that can make a good living from the many sources of urban refuse and find ample denning spaces in tree holes and man-made structures. These species in addition to free ranging pets or feral dogs and cats take a great toll on smaller terrestrial vertebrates and invertebrates.

For example, the presence of large numbers of these animals makes it unlikely that ground nesting birds can successfully rear young in the Emerald Necklace at present, though several common species once bred.

**While no such cases have been reported in Massachusetts, raccoons and skunks carry rabies elsewhere in the United States and the nematode parasite Baylisascaris procyonis is epidemic in raccoons, can be transmitted readily by contact with dead or sick individuals and can be fatal to humans, especially children.** Rats of course are well known vectors of a wide range of diseases, including bubonic plague, trichinosis, rabies, tularemia, typhus and Salmonella food poisoning.

Few data are available on the populations of these species in Boston. Because of their potential for ecological disturbance it would be useful to undertake baseline population studies on which management decisions could be based.

The next step in pursuing ecological management of the Emerald Necklace would be to undertake a thorough biological inventory of the entire system. This would confirm or refute suppositions provided here on what actually occurs in the Necklace today; pinpoint actual localities of any species of particular note; and, through comparison with extant early studies of Boston's biota, indicate the direction and degree of the degradation the parks have suffered since Olmsted's day.



Enabling Legislation for the creation of the Olmsted Historic Landscape Preservation Program

Acts of 1983, Section 4 of Chapter 723

“For a study, and the preparation of plans, if necessary, and for the rehabilitation and restoration of the Olmsted Parks in the Commonwealth including, the Olmsted park system in the city of Boston and the town of Brookline including, Franklin Park, Olmsted Park and Jamaica Pond, the Riverway and the Back Bay Fens; the Kennedy Park in the City of Springfield; Fall River; the Lynn Woods and High Rock Reservation in the city of Lynn; Forest Park in the city of Springfield; D.W. Field Park in the city of Brockton; Buttonwood Park in the City of New Bedford; and Elm Park in the city of Worcester. - \$15,000,000”

Acts of 1987, Section 2 of Chapter 564

“For a study which shall include an inventory, and the preparation of plans, if necessary, and for the acquisition, rehabilitation and restoration of Olmsted Parks in the commonwealth; provided that the Department of Environmental Management is hereby authorized to make grants to municipalities for the studies, planning, engineering services and for the construction and the restoration of said Olmsted Parks. Amounts appropriated herein to be in addition to amounts appropriated in item 2120-8841 of section four of chapter seven hundred and twenty three of the acts of nineteen and eighty three - \$17,000,000”





## Emerald Necklace Citizen's Advisory Committee

Pursuant to the Massachusetts Environmental Policy Act (MEPA) (MGL c. 30 ss61-62-H) and MEPA regulations (301CMR11.00) the City of Boston and the Town of Brookline filed an Environmental Notification Form for the Emerald Necklace Environmental Improvements Master Plan and Phase I Muddy River Flood Control, Water Quality, and Habitat Enhancement and Historic Preservation Project. In his certificate issued on April 29, 1999, Secretary of Environmental Affairs, Bob Durand, called for the establishment of a Citizen's Advisory Committee (CAC). As the Certificate states, the CAC's role is to advise the Secretary in his evaluation of the proponent's (Boston and Brookline) measures to minimize or mitigate damage to the environment, while meeting the goals of flood control, water quality improvements and landscape restoration. The CAC reviews proposed activities and provides comment on the feasibility of different approaches and their likely environmental impacts, and assist the Boston and Brookline in the development and review of project alternatives, which would avoid or minimize damage to the environment. The CAC, appointed in 1999 is made up of the following individuals:

Adam Kahn, Brookline Conservation Commission  
Charles Alan Birnbaum, National Park Service  
Edward Burke, Citizen at Large  
Isabella M. Callanan, Friends of the Muddy River  
Suzanne Comtois, Fenway Community Development Corporation  
Edward Cutler, PhD, Citizen at Large  
Christine Cooper, Jamaica Pond Project  
Mary Crane Penniman, Charles River Watershed Association  
Margaret Dyson, Historic Massachusetts, Inc.  
Frances Allou Greshwin, Citizen at Large  
Irene Gillis, Citizen at Large  
Alan Goodman, The Abbey Group  
George Haggerty, Fenway Studios  
June Hatfield, Boston Preservation Alliance  
Richard Heath, Citizen at Large  
Gary Hilderbrand, Citizen at Large  
Frances Kemp, Citizen at Large  
John Leahy, Citizen at Large  
Arleyn Levee, National Association for Olmsted Parks  
John Martin, The Emerald Necklace Conservancy  
Hugh Mattison, Friends of Leverett Pond  
Lauren Meier, Citizen at Large  
Paul Mentag, The Fenway Alliance  
Jane Pfister, Citizen at Large  
George Proakis, Citizen at Large  
Marion Sabal, Fenway Garden Society  
Roscoe Sandlin, Fenway Community Development Corporation  
Joyce Starnier, Symphony United Neighbors  
Fredericka Veikley, Fenway Civic Association  
Eileen Woodford, National Parks & Conservation Association







# *The Commonwealth of Massachusetts*

*Executive Office of Environmental Affairs*

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ARGEO PAUL CELLUCCI  
GOVERNOR

April 29, 1999

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SECRETARY

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CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS  
ON THE  
ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME : Emerald Necklace Environmental  
Improvements Master Plan and Phase I  
Muddy River Flood Control, Water  
Quality, and Habitat Enhancement  
PROJECT MUNICIPALITIES : Boston and Brookline  
PROJECT WATERSHED : Charles River  
EOEA NUMBER : 11865  
PROJECT PROPONENT : Boston Parks and Recreation Department  
and Brookline Department of Public Works  
DATE NOTICED IN MONITOR : February 10, 1999

Pursuant to the Massachusetts Environmental Policy Act  
MEPA) (M.G.L. c. 30, ss. 61-62H) and Sections 11.05 and 11.06 of  
the MEPA regulations (301 CMR 11.00), I hereby determine that  
this project **requires** the preparation of an Environmental Impact  
Report (EIR).

Frederick Law Olmsted Sr. created the Boston Park System,  
known as the Emerald Necklace, to provide a "ground to which  
people may easily go after their day's work is done, and where  
they may stroll for an hour seeing, hearing and feeling nothing  
of the bustle and jar of the streets." His seven-mile long park  
system, designed and constructed between 1878 and 1895, is the  
first and historically the most significant urban park system in  
the country, if not the world. Olmsted's genius was to combine  
the environmental improvement of the Muddy River, then a foul  
sewer, with a park system linking residential neighborhoods in  
Boston and Brookline. This system of linear parks provides a



profound artistic experience and a democratic meeting place for all citizens.

Olmsted's legacy remains a challenge and an inspiration to us today. His creation has been roughly handled over the years. Erosion has clogged the waterway, causing persistent and damaging floods in adjacent areas. The sediments at the bottom of the river are heavily contaminated. The damming of the Charles River has converted the Muddy River from a tidal estuary to a fresh water river, allowing invasive vegetation such as Phragmites reeds to flourish. Following many years of neglect which damaged the contours, plantings, roadways, and bridges that constitute Olmsted's artistic vision, the work of advocacy groups and municipalities has begun the restoration of the Emerald Necklace.

The purpose of this project is to ensure the continued restoration of Olmsted's Emerald Necklace in its entirety. As described in the Environmental Notification Form, the project involves a range of physical improvements and management practices that will produce flood control, water quality improvements, habitat enhancement, landscape restoration, pedestrian and automobile circulation improvements, and building and bridge restoration along the Muddy River and throughout the Emerald Necklace parks in Boston and Brookline.

The project meets or exceeds the following mandatory EIR review thresholds: direct alteration of 50 or more acres of land (301 CMR 11.03(1)(a)(1)); alteration of one or more acres of bordering vegetated wetlands (11.03(3)(a)(1)(a)) or alteration of ten or more acres of any other wetlands (11.03(3)(a)(1)(b)), provided that a permit is required; and alteration requiring a variance in accordance with the Wetlands Protection Act (11.03(3)(a)(2)). The project requires a Chapter 91 License, a Water Quality Certificate, and a Special Waste Determination from the Department of Environmental Protection. It may also require a variance under the Wetlands Protection Act. The project requires Orders of Conditions from the Boston and Brookline Conservation Commissions (and a Superseding Order of Conditions



from DEP if either Order is appealed). Because the project will receive financial assistance from a state agency, MEPA jurisdiction extends to all significant environmental impacts potentially resulting from the project.

This Certificate describes the subjects that must be analyzed and discussed in the EIR for this project. By a separate Certificate, also issued today, I established a Special Review Procedure for this project. This Certificate does not require the EIR to analyze the impacts of certain projects identified in the Master Plan attached to the ENF (for example, dredging in ponds above the Muddy River), as the proponent does not intend to move ahead with this work in the near-term, and background conditions may change significantly before that work is ready to proceed. The proponent should describe the content and schedule for that work in an annual update (see the Certificate Establishing the Special Review Procedure) prior to commencement of the work. Although I am sensitive to concerns about an appearance of segmentation of the project, the pieces of work hereby excluded from the EIR are discrete projects that may proceed independently of the main body of work, or not at all. Further, I expect that the procedures developed during the review, permitting, and implementation of the EIR project will inform and likely simplify the review of those later projects.

### **SCOPE**

#### General

As modified by this scope, the EIR should conform to the general guidance for outline and content contained in section 11.07 of the MEPA regulations. The EIR should also reprint the comment letters received on this project and address the issues raised in them, to the extent that the comments are within the subject matter jurisdiction of MEPA. The proponent should circulate the EIR to any state agencies from which it will seek permits or approvals, and to those parties listed at the end of this Certificate as having submitted written comments. In

addition, the proponent should make a reasonable number of copies of the EIR available on a first come, first served basis.

### Alternatives

As further detailed below, the EIR should expand on the alternatives analysis included in the ENF. The purpose of the alternatives analysis is to consider what effect changing the parameters of a project will have on the environment, keeping in mind that the objective of the MEPA review process is to avoid or minimize damage to the environment to the greatest extent feasible. The EIR should analyze the no-action alternative to establish baseline conditions.

### Project Permitting

The EIR should include a brief discussion of each state permit or agency action required for the proposed project. The EIR should discuss how the project will meet the requirements and performance standards of each state permit.

### Flood Control

The EIR should identify specifically which proposed actions are intended to prevent or minimize flooding. It should describe the potential impacts of flood control activities and impacts that have been considered that would avoid or minimize damage from flood control activities. It should quantify additional flood water storage capacity to be gained by each area of proposed dredging intended to add to flood storage capacity. It should identify the locations of additional storage capacity areas. Where the project proposes clearing or expanding culverts, the EIR should specify the activities to be undertaken and the benefits projected to be gained. The EIR should include the sequence in which flood control projects will be implemented and should describe the criteria used to assign priority to flood control projects.



Stormwater/Water Quality Improvements

The EIR should describe in detail measures that will be undertaken to improve water quality. It should identify specific measures to be implemented and their locations. It should indicate the sequence in which they will be implemented and should relate that sequence to the schedule for dredging to ensure that sedimentation prevention measures are in place prior to sediment removal. It should describe potential impacts that may result from implementation of any stormwater or water quality improvements. The EIR should include a comprehensive maintenance management plan to be implemented by Boston and Brookline throughout the watershed of the Muddy River to ensure continuing effectiveness of any stormwater or water quality improvement measures and prevent new siltation, and it should specifically identify funding sources for ongoing, long-term implementation of the maintenance plan.

Wetlands Impacts/Variance Requirement

The EIR should identify all wetland resource areas, including riverfront area, and buffer zones and delineate them on a reasonably scaled plan. The EIR should identify the significance of the resources, including value to flood control, storm damage prevention, pollution prevention, and fisheries and wildlife habitat.

The EIR should quantify in appropriate units the project's estimated impact on each resource area. It should describe the nature of all likely impacts that cannot be avoided, including whether they are temporary or permanent impacts, and including impacts from proposed bridge restoration work. It should provide the information requested in DEP's comment letter regarding the project purpose(s) to be served by each instance of wetland alteration.

Dredging

The ENF proposes a substantial volume of dredging which may have significant impacts on the natural environment and on historic resources. The EIR should describe the potential impacts of the proposed dredging and indicate the location of each area proposed to be dredged. It should describe the purpose(s) of each area of dredging and alternatives to dredging for each area or groups of similar proposed dredging sites. In particular, the EIR should compare the benefits of bank-to-bank, channel, and spot dredging in terms of the goals of the proposed project. Wherever dredging emerges as the preferred alternative, the EIR should analyze a range of dredging techniques, describe the circumstances under which each would be the preferred alternative, and indicate the criteria it is using to select dredging techniques for the project's various dredging areas.

The ENF indicates that overdredging will occur in some areas. The EIR should clarify the purpose of any proposed overdredging and describe how the project will avoid damage to the clay liner during overdredging.

Dredged Material Management and Disposal

The EIR should describe in detail how the proponent will manage dredged material. The ENF suggests that dredged material could be stored and dewatered on the Sears parking lot site. The EIR should analyze various locations in terms of their technical suitability, impacts on traffic, residents, and historic resources.

It should describe the proponent's plans for identifying and managing contaminated sediments, including proposed testing and on-site treatment and techniques for segregating contaminated sediments.

The EIR should identify landfills that may be able and willing to accept dredged material from the project. As



recommended by DEP, the EIR should include appropriate out-of-state landfills.

### Phragmites Control

In November, 1994, the Boston Parks and Recreation Department filed an ENF for a Phragmites Control and Park Restoration Program for the Back Bay Fens and Riverway (EOEA #10215). That ENF proposed (1) a demonstration project to evaluate the effectiveness of several methods of Phragmites control, (2) full implementation of a Phragmites control program using a method selected based on the results of the demonstration program, and (3) restoration of the historic landscape design. A Phase I waiver allowed implementation of the demonstration project prior to the preparation of the EIR. I understand that the demonstration project has been undertaken and that the results are available. The EIR for the project has not been filed. Since the project described in that ENF is similar to the project currently under review, for procedural purposes, I will consider the file on the earlier ENF to be closed. However, the issues raised during its review remain to be resolved.

The EIR required by this Certificate should describe the methodology and results of the demonstration project and indicate how those results will inform the alternatives analysis for Phragmites control in this project. It should describe the purpose and potential impacts of any proposed Phragmites control activities. It should describe alternatives considered and explain why any alternatives are no longer under consideration. It should provide information related to the projected effectiveness of the preferred alternative (which is described in the ENF currently under review as dredging). It should also describe the maintenance plan to be implemented to ensure that the Phragmites, however it is removed, does not return. It should identify funding sources for implementing the maintenance plan.

Habitat Improvement and Rare Species

Throughout the ENF there are references to activities to be undertaken to improve wildlife habitat. The EIR should identify which activities are intended for that purpose and document what improvements to wildlife habitat will result from these activities, what impacts -- whether positive or negative -- are likely to result from those activities, and what alternatives have been considered that may avoid or minimize impacts from these activities.

The Natural Heritage and Endangered Species Program (NHESP) indicates that two rare species, the "threatened" Threespine Stickleback (*Gasterosteus aculeatus*) and the "endangered" Pied-billed Grebe (*Podilymbus podiceps*) occur in the area of Olmsted Park, and that it will need to review plans for dredging and restoring this area to ensure that these species are not harmed. NHESP also notes that, contrary to the statement in the ENF, it has no record of Spotted Turtles occurring in the project area. The EIR should describe steps that the project will take to avoid impacts to rare species. The proponent should consult with NHESP during the development of the EIR.

Historic Resources and Landscape Restoration

The project is located within the Olmsted Park System Historic District which is listed in the State and National Registers of Historic Places. The ENF proposes an ambitious, long-term plan to restore the historic designed park landscape, following completion of the flood control portion of the project. The EIR should describe the landscape restoration project in greater detail, including the proposed sequence of restoration projects and plans that demonstrate at least a conceptual level development. I anticipate that this portion of the EIR will consist of the "Emerald Necklace Master Plan" prepared by Walmsley/Pressley in 1990 as required by the Department of Environmental Management's Olmsted Historic Landscape Preservation Program for Brookline and Boston.



The EIR should identify any impacts on historic resources -- whether positive or negative -- that may result from the implementation of this project, as well as any alternatives that have been considered that may avoid or minimize damage to historic resources.

The Massachusetts Historical Commission (MHC) has requested information regarding the potential impact of changes in water level on river banks and vegetation and regarding the age of the underwater stop log structure proposed to be removed. The proponent should work with MHC on these questions, and on any others MHC may have, as well as with the Brookline Preservation Commission and the Boston Landmarks Commission, to ensure that the project avoids damage to historic resources.

#### Circulation Improvements

The ENF indicates that the project will include improvements to pedestrian, bicycle, and automobile circulation in and around the parks. The EIR should describe the proposed improvements in greater detail, including the proposed sequence of circulation improvement projects and plans that demonstrate at least a conceptual level development and include proposed stormwater management improvements in roadways and pathways. It should describe potential impacts on the environment of the proposed circulation improvements, alternatives that have been considered, and the sequence in which the improvements are proposed to be undertaken.

#### Charlesgate

The proponent has requested that the Special Review Procedure include a provision allowing the Charlesgate portion of the project to proceed in advance of the rest of the project. Based on my current understanding of that proposed work, this portion of the project should provide significant public safety benefits without significant impacts on the environment. Therefore, provided (as described below) that the proponent provides sufficient information in the Draft EIR regarding this

portion of the project, I will allow work in the Charlesgate area to commence following review the Draft EIR and before preparation of the Final EIR is complete. In the Certificate on the Draft EIR I may make separate findings regarding the adequacy of the description of the Charlesgate portion of the project and the rest of the EIR.

The EIR should detail the proposed activities in the Charlesgate area, their likely impacts on the environment, any alternatives to that have been considered and an analysis of those alternatives, a schedule, and proposed mitigation measures for any damage to the environment that may occur. It should include a construction mitigation plan, particularly regarding potential traffic impacts. It should include site plans at an appropriate scale showing the boundaries of the proposed project area, as well as wetland resource areas and their buffer zones. It should include all information that the proponent will be required to provide to the Federal Emergency Management Agency (FEMA) for its review of this part of the project. I note that the proponent will have to satisfy DEP and other permitting agencies that this phase can be permitted separately. The Draft EIR should contain a proposed Section 61 Finding relative to this phase.

#### Construction Impacts

The EIR should describe impacts likely to result from project construction and steps that will taken to avoid or minimize construction impacts. It should describe in detail the measures that the proponent will take to protect historically and environmentally significant landscape features and vegetation. It should also describe potential impacts on traffic and recreational use of the parks, especially during the dredging portion of the project, and steps that will be taken to avoid or minimize these impacts wherever feasible.

Diesel powered construction equipment is a significant source of air pollution in the Commonwealth. In 1998, the



Central Artery Project, in cooperation with EPA Region I, EOE, Northeast States for Coordinated Air Use Management (NESCAUM), and DEP, with assistance from the Manufacturers of Emission Control Association (MECA), launched the Clear Air Construction Initiative. That program retrofits heavy construction equipment used at major public works/infrastructure projects with pollution control devices targeted at reducing diesel emissions and the localized adverse health impacts and nuisance conditions they may create. The EIR should describe steps that the proponent will take to minimize the project's adverse impacts on air quality, including ensuring the use of retrofitted construction equipment.

#### Maintenance and Monitoring

The Commonwealth is committed to making a substantial investment in the implementation of this project. To ensure that the capital investment is protected, the EIR should describe in detail the proponent's maintenance management plan for maintaining the restored condition of the Muddy River and the Emerald Necklace parks. I expect that these plans will include a commitment to a detailed schedule, including an ongoing annual schedule, of best management practices to create and maintain high quality stormwater runoff, which will benefit both water quality and prevention of sedimentation. It should describe ongoing measures to prevent the recurrence of invasive vegetation that has been removed. It should include commitments to maintain the restored historic landscape and structures. It should include protocols for regular monitoring of environmental conditions to provide a continuous feed-back loop by which the effectiveness of management practices can be measured. Finally, it should define the proportional financial responsibilities of the City of Boston and the Town of Brookline for all short-term and long-term maintenance and monitoring measures related to the project.

#### Mitigation

The EIR should include a summary and appropriate commitments

for each project impact within MEPA jurisdiction described in the EIR. This section should form the basis for the Proposed Section 61 Finding which will appear in the Final EIR.

April 29, 1999

Date



Bob Durand

Comments received:

Barton, Joe

Boston GreenSpace Alliance/Friends of the Muddy River

Boston Redevelopment Authority

Boston Water and Sewer Commission

Brookline Village Action Groups

Brookline Conservation Commission

Burke, Edward J.

Charles River Watershed Association

City of Boston, The Environment Department

Cutler, Edward B.

Demakis, Paul C.

Department of Environmental Protection

Division of Fisheries and Wildlife

Federal Emergency Management Agency

Historic Massachusetts

Katz, Pauline R.

Koch, Harriet F.

MASCO

Massachusetts Historical Commission

Massachusetts Historical Commission

Muddy River Action Group

Natural Heritage and Endangered Species Program

Ransil, Bernard J.

Restore Olmsted's Waterway

Riverway Square Condominium Trust

Riverways Program



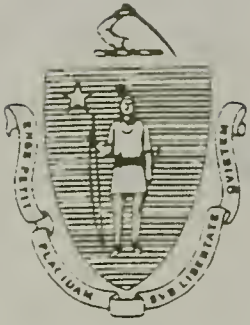
EOEA #11865

ENF Certificate

April 29, 1999

Rubin & Rudman LLP  
The Emerald Necklace Conservancy

BD/LER/lr



*The Commonwealth of Massachusetts*  
*Executive Office of Environmental Affairs*  
*100 Cambridge Street, Boston, MA 02202*

5-17-99  
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ARGEO PAUL CELLUCCI  
GOVERNOR

JANE SWIFT  
LIEUTENANT GOVERNOR

BOB DURAND  
SECRETARY

April 29, 1999

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Fax (617) 727-2754

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CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS  
ESTABLISHING A SPECIAL REVIEW PROCEDURE

PROJECT NAME : Emerald Necklace Environmental  
Improvements Master Plan and Phase I  
Muddy River Flood Control, Water  
Quality, and Habitat Enhancement  
PROJECT MUNICIPALITIES : Boston and Brookline  
PROJECT WATERSHED : Charles River  
EOEA NUMBER : 11865  
PROJECT PROPONENT : Boston Parks and Recreation Department  
and Brookline Department of Public Works  
DATE NOTICED IN MONITOR : February 10, 1999

Pursuant to the Massachusetts Environmental Policy Act (M.G.L. c. 30, ss. 61-62H) and Sections 11.06 and 11.09 of the MEPA regulations (301 CMR 11.00), I hereby **establish a special review procedure** for the evaluation and review of this project. I have established this special review procedure to ensure an appropriately high level of public participation in the review and implementation of this project.

Project Description

As described in the Environmental Notification Form, the project involves a range of physical improvements and management practices that will produce flood control, water quality improvements, habitat enhancement, landscape restoration, pedestrian and automobile circulation improvements, and building and bridge restoration along the Muddy River and throughout the Emerald Necklace parks in Boston and Brookline.





Special Review Procedure

The proponent has requested that the project undergo a special review procedure that accommodates the particular circumstances of the project. Taking into consideration the information in the ENF, comment received on the project, and this office's experience with tailored project reviews, I concur that a project-specific procedure, as provided for in Section 11.09 of the MEPA regulations, will enhance the review of this project. However, the special review procedure described in this Certificate varies in some significant ways from the proposal presented in the ENF.

As specified in the Certificate on the ENF for this project, also issued today, the proponent has requested that the Charlesgate portion of the project be allowed to move forward in advance of the completion of the project-wide environmental review of this project. Provided that the analysis of that portion of the project can be deemed adequate following review of the Draft EIR, I will allow the Charlesgate portion of the project to proceed to permitting at that time.

The proponent intends to construct the project in phases over the course of approximately fifteen years. Annually following commencement of construction, the proponent will file with the MEPA Office and circulate to commenters on the ENF or EIRs an update detailing the status of physical improvements and management practices, and summarizing monitoring information on current environmental conditions in the Emerald Necklace, particularly in the Muddy River. These updates will replace any notice of project change that might otherwise be required to be filed due to lapses of time in carrying out the project, pursuant to Section 11.10 of the MEPA regulations. The EIR should include a proposed Scope for the first such update.

If the proponent wishes to change any provision in this special review procedure, it may file a request for modification of the special review procedure in the form of a Notice of Project Change.

The Certificate on the ENF describes the subjects that must be analyzed and discussed in the EIR for this project. That Certificate does not require the EIR to analyze the impacts of certain projects identified in the Master Plan attached to the ENF (for example, dredging in ponds above the Muddy River), as the proponent does not intend to move ahead with this work in the near-term, and background conditions may change significantly before that work is ready to proceed. The proponent should describe the content and schedule for that work in an annual update prior to commencement of the work. Although I am sensitive to concerns about an appearance of segmentation of the project, the pieces of work hereby excluded from the EIR are discrete projects that may proceed independently of the main body of work, or not at all. Further, I expect that the procedures developed during the review, permitting, and implementation of the EIR project will inform and likely simplify the review of those later projects.

#### Citizens Advisory Committee

The regulations which allow for special review procedures also allow the establishment of a Citizens' Advisory Committee (CAC) to assist in the review of the project. The proponent has requested that I establish a CAC, and I concur that it would be appropriate to do so. Therefore, I will solicit nominations for appointments to the CAC from the City of Boston and the Town of Brookline, and from other interested groups and individuals. I will also publish a request for nominations to the CAC in the next issue of the Environmental Monitor.

The CAC's primary role is to provide input on the environmental impacts associated with the project. The CAC will participate in preliminary reviews of consultant work products and in review of Draft and Final EIRs and the annual updates. Although the CAC may establish its own schedule of meetings, it is entitled to meet monthly with the proponent and its consultant and should be kept informed of progress on any review document called for in the special review procedure.

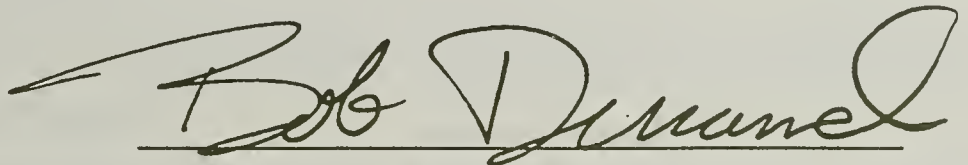


The proponent will ordinarily submit a draft of any review document called for in the special review procedure to the CAC at least one month prior to filing the review document with my office. The CAC may suggest changes or additions to the review document and may file its comments with my office prior to or when the proponent files the review document. The proponent will provide administrative support to the CAC.

After completion of construction, the CAC may consult with the Secretary and the proponent to determine whether it will have any role in any future actions on the project.

April 29, 1999

Date

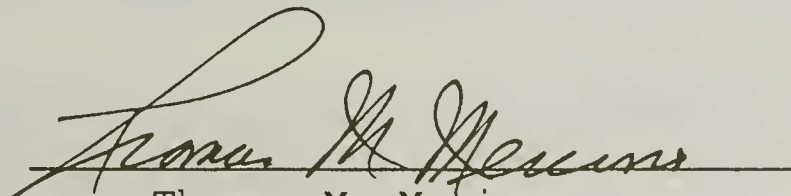


Bob Durand

Secretary of Environmental Affairs

5/10/99

Date

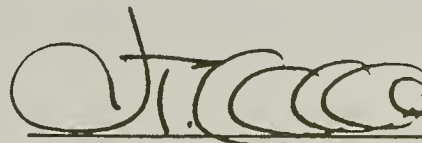


Thomas M. Menino

City of Boston

5/12/99

Date



Joseph Geller

Town of Brookline

Comments received:

Barton, Joe

Boston GreenSpace Alliance/Friends of the Muddy River

Boston Redevelopment Authority

Boston Water and Sewer Commission

Brookline Village Action Groups

Brookline Conservation Commission

Burke, Edward J.  
Charles River Watershed Association  
City of Boston, The Environment Department  
Cutler, Edward B..  
Demakis, Paul C.  
Department of Environmental Protection  
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Federal Emergency Management Agency  
Historic Massachusetts  
Katz, Pauline R.  
Koch, Harriet F.  
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Ransil, Bernard J.  
Restore Olmsted's Waterway  
Riverway Square Condominium Trust  
Riverways Program  
Rubin & Rudman LLP  
The Emerald Necklace Conservancy

BD/LER/lr



**MEMORANDUM OF UNDERSTANDING  
BY AND AMONG  
THE EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS, THE DEPARTMENT OF  
ENVIRONMENTAL MANAGEMENT, THE MASSACHUSETTS EMERGENCY MANAGEMENT  
AGENCY, THE BOSTON WATER AND SEWER COMMISSION,  
THE TOWN OF BROOKLINE AND THE CITY OF BOSTON  
CONCERNING RESPONSIBILITIES FOR FUNDING AND ADMINISTERING  
THE MUDDY RIVER RESTORATION PROJECT  
IN THE CITY OF BOSTON AND THE TOWN OF BROOKLINE**

**WHEREAS**, Frederick Law Olmsted left the people of the nation and of the Commonwealth of Massachusetts a magnificent historic, cultural and environmental legacy of public parks and open spaces;

**WHEREAS**, in January of 1984 the Commonwealth of Massachusetts committed itself to reclaiming that legacy by creating the Olmsted Historic Landscape Preservation Program and the "Emerald Necklace Master Plan" of 1990; and, the Commonwealth's mission is to preserve significant historic landscapes and to encourage the public's appreciation, understanding, wise use and maintenance of this historic legacy;

**WHEREAS**, the health, safety and quality of life of the residents and communities of Boston and Brookline have been threatened by and subject to flooding, impaired water quality and degraded habitat related to the Muddy River in the Boston Park System known as the Emerald Necklace;

**WHEREAS**, in accordance with a Memorandum of Agreement ("MOA"), dated June 8, 1999, between the City of Boston and the Town of Brookline, the City of Boston has accepted responsibility for the implementation of the Emerald Necklace Environmental Improvements Master Plan and the Phase I Muddy River Flood Control, Water Quality, Landscape Restoration and Habitat Enhancement Project (EOEA# 11865) (the Plan and the projects contained therein and Phase I collectively referred to as the "Project", and the first portion of Phase I referred to as "Charlesgate");

**WHEREAS**, the Secretary of Environmental Affairs issued pursuant to the Massachusetts Environmental Policy Act, sections 61-62H of Chapter 30 of the General Laws and its associated regulations, a certificate, dated April 29, 1999, that establishes a special review procedure for the evaluation and review of the Project and a Citizen's Advisory Committee to enhance public participation in the entire Project, and a separate certificate concerning the scope of the required environmental impact report;

**WHEREAS**, the parties to this memorandum (hereinafter the "parties") believe it is appropriate to recognize and outline their respective roles relative to funding and administering the successful design, permitting and construction of Phase I (generally understood as estimated at approximately \$43,200,000) of the Project;

**NOW, THEREFORE**, in order to provide the required funds and related administration for the planning, permitting, and design of Phase I of the Project and the construction and implementation of Charlesgate, the parties hereto agree as follows:

1. The parties intend that the funds outlined herein will be transferred to the City of Boston for the purposes of planning, permitting and the design of Phase I and implementing and completing Charlesgate in a timely manner, and the parties understand that the City of Boston Parks and Recreation Department shall be the project manager for the Project;
2. The City of Boston will receive and expend these funds solely for Phase I, including Charlesgate, purposes, as mutually agreed among the parties, and in accordance with applicable federal, state and local laws, regulations and associated policies, including but not limited to those concerning bidding and procurement of construction or other services required for the Project;
3. The parties agree to cooperate and work together to ensure that all requirements of the various programs from which funds will be provided, including those concerning non-federal matching funds, are fulfilled;
4. A total of approximately \$7,100,000 is understood as the funding considered necessary for the total cost of the planning, designing, and permitting of Phase I and implementing, constructing and completing Charlesgate, and that these funds are anticipated from the following sources as further described:
  - a. The Massachusetts Emergency Management Agency and the Department of Environmental Management ("MEMA/DEM") will continue to seek final approval from the Federal Emergency Management Agency ("FEMA") Hazard Mitigation Grant Program for approximately \$2,300,000 in federal hazard mitigation funds, and should such approval be received, MEMA/DEM will enter into a contract with the City of Boston to provide these funds as described in the associated FEMA application. All parties agree to cooperate and continue to work together to secure these funds. Once a contract has been executed, the funds will be disbursed to the City of Boston on a reimbursable basis, pursuant to applicable regulations and the terms of the contract;
  - b. The \$790,242 in funds already provided by the United States Department of Housing and Urban Development ("HUD") through a federal fiscal year ("FFY") 1997 Community Development Block Grant ("CDBG") to MEMA (CDBG Disaster Recovery Initiative Grant Agreement #97-01 between MEMA and the City) will be disbursed to the City of Boston on a reimbursable basis, pursuant to applicable regulations and the terms of the grant agreement;
  - c. The additional \$1,500,000, that may be made available from HUD to MEMA through a grant under the FFY 1998 CDBG program, will be provided, if made available to the Commonwealth as anticipated, to the City of Boston through a grant contract to be negotiated between MEMA and the City of Boston. DEM and MEMA will complete and forward to HUD an action plan, as required by HUD, for the availability of these funds.

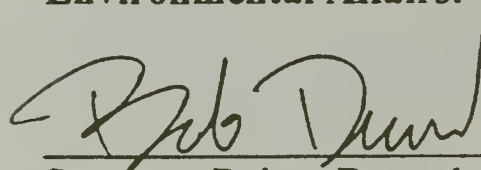


Upon approval of said action plan by HUD, the City of Boston will prepare and provide to MEMA a separate acceptable action plan and any other materials required for the expenditure of these grant funds. The funds will be disbursed to the City of Boston on a reimbursable basis, pursuant to applicable regulations, and expended in accordance with the terms of said contract;

- d. DEM will enter into an agreement with the City of Boston to provide a maximum of \$464,701, as appropriated by the Massachusetts Legislature in line item 2100-3012 of section 2 of Chapter 289 of the Acts of 1998, which shall be transferred to the City of Boston and expended in accordance with said agreement;
  - e. The Town of Brookline, through its Department of Public Works, agrees to transfer to the City of Boston, consistent with the above-referenced MOA, \$500,000, which is the totality of the town's share of Phase I, to be made available as part of the town's fiscal year 2001 capital budget;
  - f. The City of Boston agrees to commit the approximately \$45,700 in remaining funds originally provided by HUD to the city through the FFY 1997 CDBG Disaster Recovery Initiative program;
  - g. The Boston Water and Sewer Commission will transfer \$1,500,000, which is the totality of the commission's share of Phase I, to the City of Boston to be expended on Phase I;
5. The City of Boston and the Town of Brookline, upon the appropriate completion of the design, permitting and implementation and construction of Phase I or as otherwise provided in the maintenance and management plan approved as described in this paragraph, accept responsibility, including any costs, for their respective shares of future maintenance and management activities (not including capital improvement projects), including the implementation of best management practices, identified in an appropriate maintenance and management plan, submitted jointly by the city and the town to the Secretary of Environmental Affairs, that will be reviewed as part of the review for adequacy of the environmental impact report pursuant to MEPA; provided however, should the approximately \$7,100,000 identified in paragraph 4 not be provided, the city and the town may limit or, if necessary, cease their involvement with the Project.
  6. The City of Boston agrees, in consultation with and subject to the approval of the parties, to establish and comply with reasonable and well-defined schedules for the design, permitting and construction of Phase I upon receipt of funding as outlined in this memorandum.
  7. Nothing in this memorandum, except as expressly stated, shall be construed to diminish, enlarge or modify any right or liability of any of the parties, or create liability on the part of any public agency for the act or omission of another public agency or a private person. Nothing in this memorandum shall be construed to amend, repeal or otherwise alter the authority or jurisdiction of any public agency.

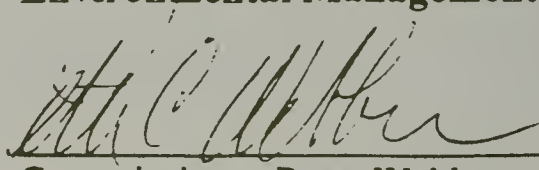
8. The parties acknowledge the importance of the tasks outlined in this memorandum and the monumental undertaking required for successful completion of Phase I as well as the entire Project. In recognition of this and of the significance of the Emerald Necklace to its constituents and that successful restoration cannot be achieved except through the collective cooperation of the parties, each party to this memorandum agrees to cooperate relative to the Project to ensure the preservation and protection of this unique Olmsted park system.
9. The effective date of this memorandum shall be the date of execution by the last of the parties to sign.

**For the Executive Office of  
Environmental Affairs:**

  
Secretary Robert Durand

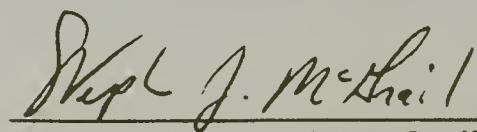
Date: 11/11/99

**For the Department of  
Environmental Management:**

  
Commissioner Peter Webber

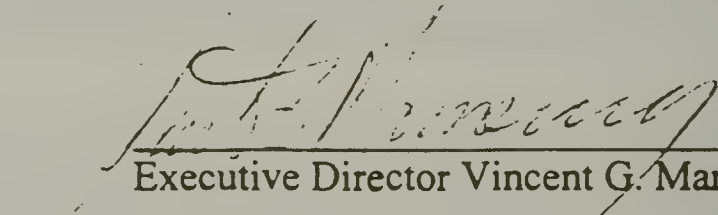
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**For the Massachusetts Emergency  
Management Agency:**

  
Director Stephen J. McGrail

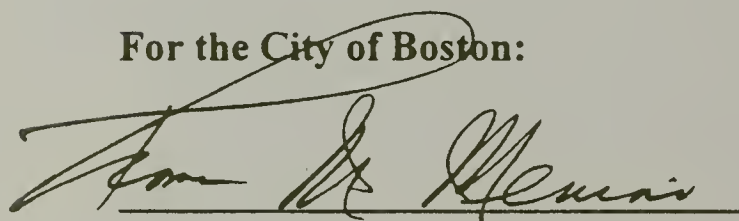
Date: 11-1-99

**For the Boston Water and  
Sewer Commission:**

  
Executive Director Vincent G. Mannering

Date: 10/29/99

**For the City of Boston:**

  
Mayor Thomas M. Menino

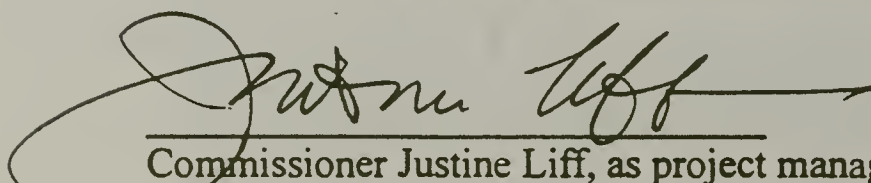
Date: 11/4/99

**For the Town of Brookline:**

  
Selectman Joseph Geller, Chairman

Date: 11.4.99

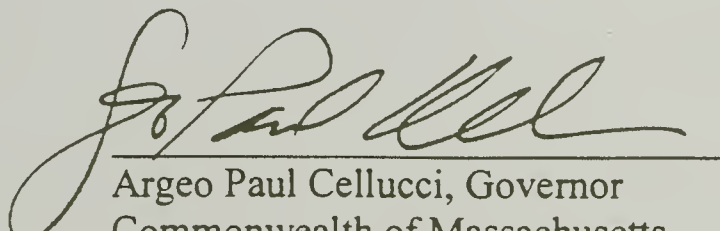
**For the Boston Parks  
and Recreation Department:**

  
Commissioner Justine Liff, as project manager

Date: 11/4/99



I, Argeo Paul Cellucci, Governor of the Commonwealth of Massachusetts, celebrate the significant progress of the parties to this memorandum in advancing the restoration objectives as outlined herein, commend the cooperative relationship that has developed among public and private groups in furtherance of these objectives, and recognize the need for continuing commitment by the parties to ensure the future health of the Muddy River, an integral component of the historic landscape legacy of Frederick Law Olmsted, Sr.



Argeo Paul Cellucci, Governor  
Commonwealth of Massachusetts

Date: 11/14/99

