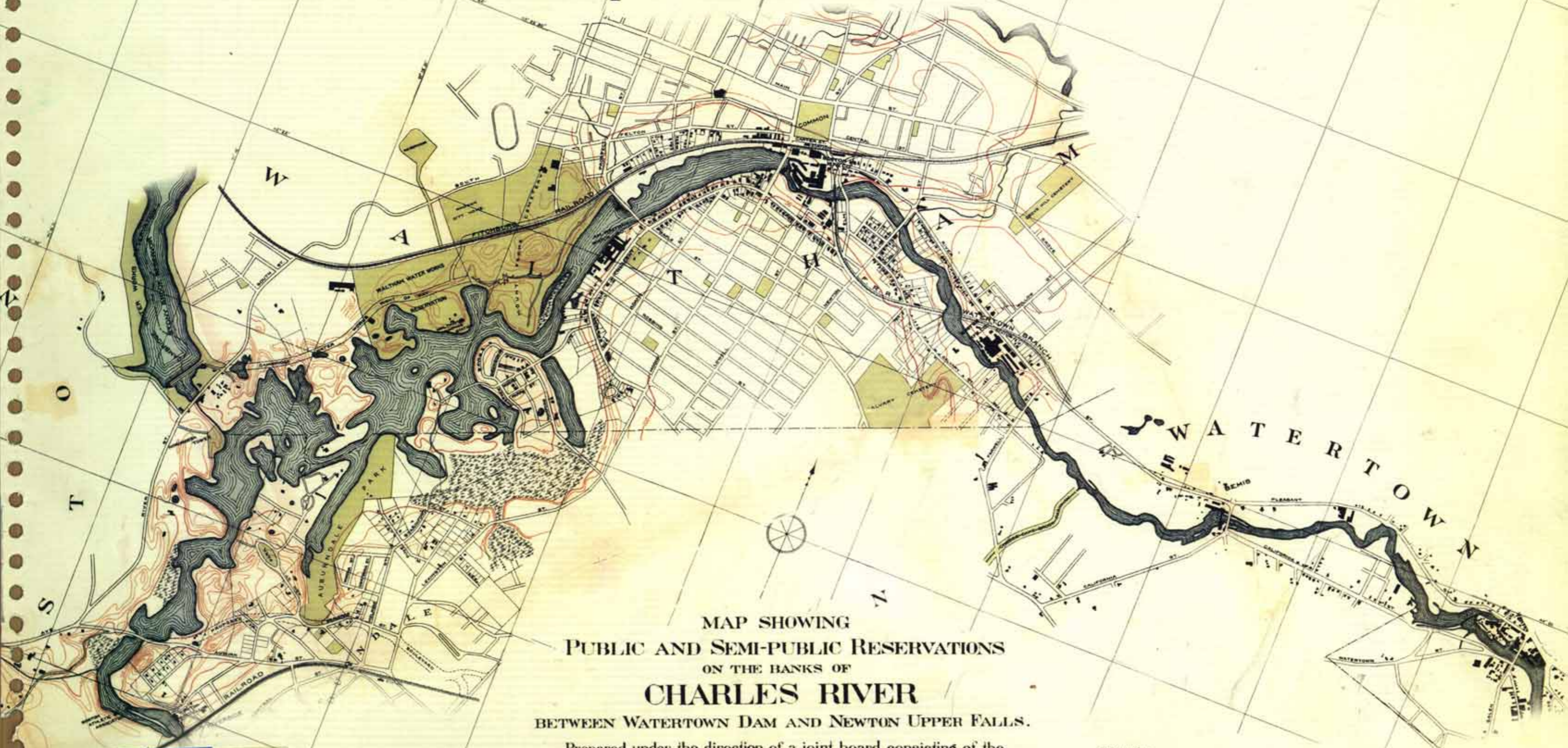


UPPER CHARLES RIVER RESERVATION MASTER PLAN

Metropolitan District Commission



MAP SHOWING
PUBLIC AND SEMI-PUBLIC RESERVATIONS
ON THE BANKS OF
CHARLES RIVER
BETWEEN WATERTOWN DAM AND NEWTON UPPER FALLS.




Prepared under the direction of a joint board consisting of the
METROPOLITAN PARK COMMISSION AND THE STATE BOARD OF HEALTH

Chapter 525, Acts of 1894

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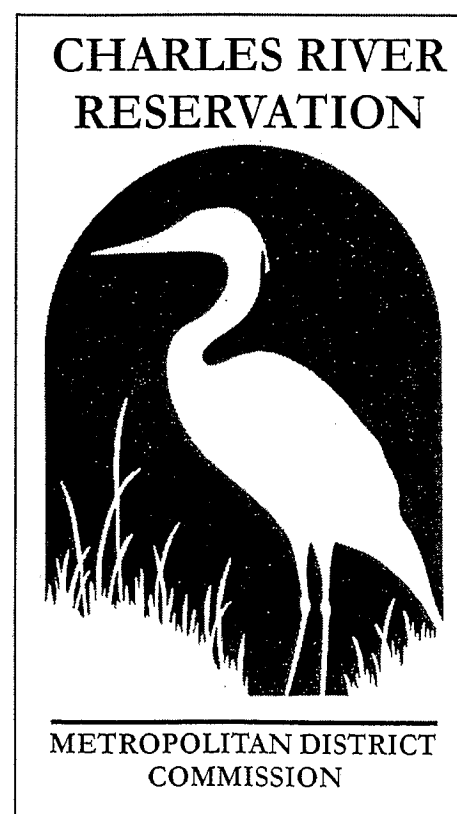
August, 1895.

Explanation.

Public or semi-public ownership, thus: 
Marsh land, thus: 
Contour intervals of 10 feet, thus: 
Figures on contours show elevations above Boston
City base.

10.42

THE UPPER CHARLES RIVER RESERVATION MASTER PLAN



COMMONWEALTH OF MASSACHUSETTS

The Honorable A. Paul Cellucci, Governor

METROPOLITAN DISTRICT COMMISSION

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The Upper Charles River Reservation Master Plan proposes that the new Reservation be thought of and reclaimed as a continuous Greenway. Although the word "greenway" defies specific definition, it is usually considered in the following terms:

greenway (gren' wa) n. 1. A linear open space established along either a natural corridor, such as a riverfront, stream valley, or ridgeline, or overland along a railroad right-of-way converted to recreational use, a canal, a scenic road, or other route. 2. Any natural or landscaped course for pedestrian or bicycle passage. 3. An open-space connector linking parks, nature reserves, cultural features, or historic sites with each other and with populated areas. 4. Locally, certain strip or linear parks designated as a parkway or greenbelt.

Greenways for America
Charles B. Little

All of these definitions seem appropriate for the Upper Charles.
The sum of which begins to describe the form and function of the new Reservation. . . .

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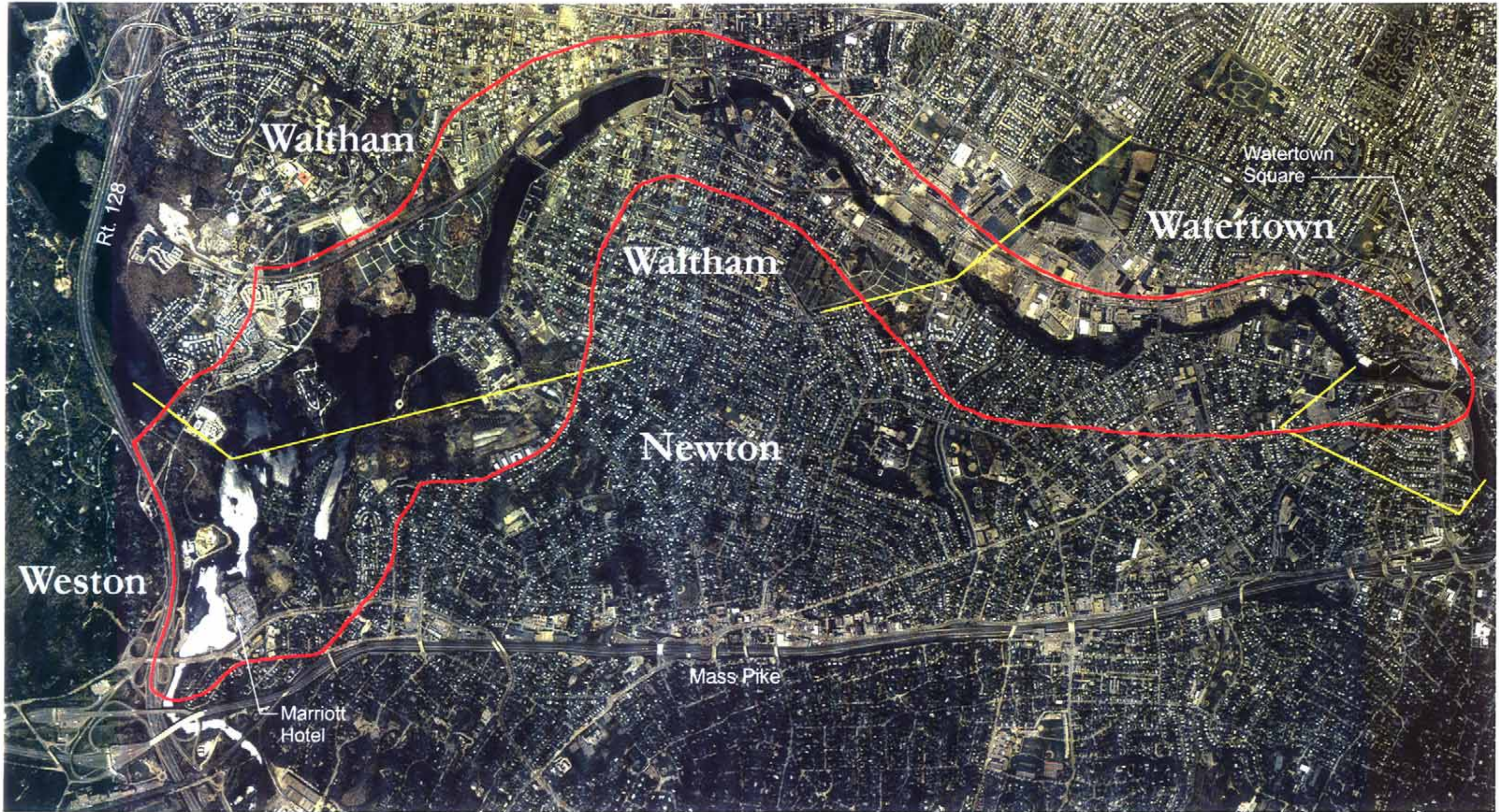
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The Master Plan (Fold-out Copy)



 NORTH
SCALE: 1" = 1500'

 TOWN BOUNDARIES
 MASTER PLAN STUDY AREA

MASTER PLAN STUDY AREA

**CHARLES RIVER
RESERVATION**



**METROPOLITAN DISTRICT
COMMISSION**

INTRODUCTION

INTRODUCTION

The Upper Charles River Reservation Project

The Upper Charles River Reservation has come full circle over the past hundred years. An initial period of land acquisition, park development, and heavy public use in the 1890s and through the early 1940s was followed by decades of neglect, abuse and lost public interest. Today, with ever cleaner



Viewing deck also used for fishing and sunning

river water, the public's historic love for the Upper Reservation has been re-awakened, stimulating renewed desires to protect and restore the River and its banks. The Upper Charles River Reservation Master Plan is an expression of this rekindled spirit. It also reflects the sincere commitment by the Metropolitan District Commission to recapture the River as an extraordinary community resource.

This Master Plan addresses a 5.75 mile section of the river, including 11 miles of protected river banks, from Watertown Square to Commonwealth Avenue in Newton and Weston. It is part of the MDC's larger goal to extend the Charles River greenway 14 miles to Brook Farm in West Roxbury. While this section of the river will be referred to throughout as the Upper Charles River Reservation, it is actually only a portion of the full Charles River Reservation

which extends further westward from Commonwealth Avenue to the South Natick dam. As this first section of the Reservation greenway is completed, it will provide a critical open-space link between the Lower Charles River Basin and the scenic "Lakes District", spreading over 190 acres through Newton, Weston, and Waltham.

The primary objective of this project is to reclaim and extend the public domain of the Charles River Reservation to the west from Watertown Square. This objective will be achieved by developing a public greenway that provides for the long-term ecological restoration of the river corridor as a self-sustaining natural environment. This will be the most substantial and dramatic improvement to this section of the Charles River in this century. Full implementation of this plan will be a major step in strengthening metropolitan Boston's claim of possessing one of the finest urban river greenways in America.

Discovering the Upper Charles Reservation

The Upper Charles River Reservation is currently one of the most hidden natural and cultural assets of the Boston metropolitan region. While the Charles River Basin in Cambridge and Boston is often considered the centerpiece of the MDC's park system, the Upper Charles beyond the Watertown dam is generally unknown to the public. The "Lakes District" of the Upper Charles is the best known part of the Upper Reservation and is again being appreciated for the boating, birdwatching, and fishing activities which it features so wonderfully. From a regional perspective, this area suffers from poor accessibility, and the inability of visitors to find their way around it easily on foot. The stretch of the Charles between the "Lakes District" and the Basin is virtually undiscovered as a public resource. Over

the years, many neighboring businesses and residences have turned their backs to this stretch of the river and closed it off from public use and enjoyment. Although contained in a narrow corridor, the natural beauty and recreational potential of this section of the river are vast and untapped.

What makes this undiscovered Reservation so special and alluring is the diversity of its natural environments, the variety of interesting built features, and the broad range of activities and experiences that it offers to the public. Unlike the Charles River Basin and the river farther west, each of which provides a somewhat consistent or homogeneous experience, every bend of the River here affords a different experience and a new delight. This diversity leads to a sense of surprise, mystery, and unfolding discovery. It is a place of unpredictability and evolving experiences that all ages can appreciate, learn from, and be challenged by during every visit.

Visitors to this portion of the Upper Charles River Reservation will quickly discover the striking contrast between its easterly and westerly stretches. This contrast starts with the river's visible "sheet" of water. The easterly stretch from Watertown Square to Prospect Street in Waltham is a narrow, winding body



Views across the scenic Lakes District

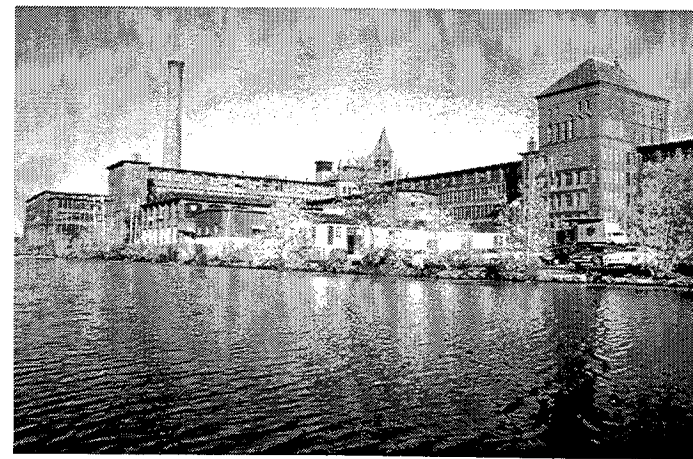


Bridges provide dramatic views of the river and its landscape

of water with a generally consistent width bordered by a ribbon of lush vegetation. Dams and arching bridges of various designs regularly punctuate this linear corridor. Views of the water are short and focused, extending only to the next bend or meander.

The westerly Lakes District, however, is characterized by its broad and placid water sheet, its undulating forested shorelines, small islands, and its series of intimate coves made possible by the damming of the river at Moody Street in Waltham. The water body is too wide to be bridged, and vistas over the calm water are usually long and panoramic.

Visitors will also discover the rich cultural history of the Reservation from an array of artifacts, buildings, and other clues still remaining in the landscape. The industrial heritage of the river corridor is prominently displayed by the four dams on the River and the



The historic (1850's) Waltham watch factory complex

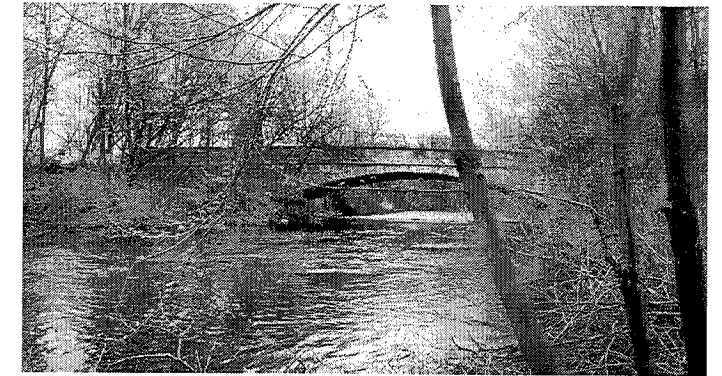
original brick mill buildings which border the River's edge. Located in the historic Waltham Company Mill, the Charles River Museum of Industry recounts the amazing technological feats performed along the river banks starting in the 1800s. In times past, this was a working river with many industrial "firsts," such as the first textile mill and the first bleachery in the United States. Other features such as the pile foundations for the once famous "Nuttings on the Charles" dance hall, the mysterious Norumbega Tower, and the stone bridge in the middle of Auburndale Park provide us subtle clues about the



Norumbega Tower (1889)

cultural evolution of the area.

Walking the River's edge, the visitor discovers the beauty and uniqueness of the bridges which span the river and connect communities. Constructed of concrete, timber, steel, and cut stone, the arched bridges and railroad trestles lend a sense of cadence and orientation. Between the scenic bridges, the river's four dams, built at varying heights, create a soothing sound of rushing water and the feeling of energy being released as the river works its way tirelessly towards the harbor. Each dam is different and reveals its own interesting story. The dam at Bemis Mill was the only "rolling stone" dam in North America, operated by a rolling cylinder across the river which made the dam easily adjustable



Farwell Street Bridge

to any height. Scenic and functional fish ladders are incorporated in the Moody Street and Watertown dams to encourage the alewife and shad fish migration upstream each spring.

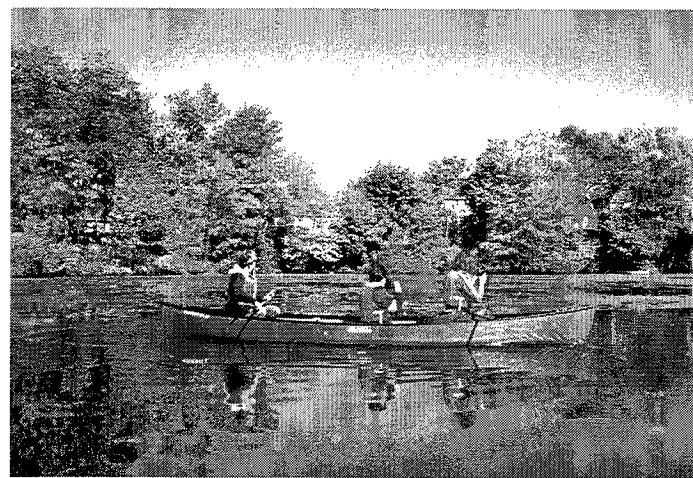
The many parks and recreation facilities along the River also contribute to the rich diversity of the Upper Charles Reservation. These facilities will be destinations within the greenway system. Facilities bordering or within the Reservation include two public swimming pools, tennis courts, playgrounds, an ice skating rink, a street-hockey rink, canoe and kayak rentals, and several baseball fields within neighborhood parks. Numerous community parks also abut, or are part of the Reservation. These include Allison Park and Auburndale Park in Newton, Norumbega Park in Newton/Weston; Forest Grove, Landry and Riverwalk Parks in Waltham; and Cannalonga Park in Watertown. Although technically



MDC's Cannalonga Park in Watertown

not a public park, the gracious hills and mature trees of Mt. Feake Cemetery add considerable breadth to the landscaped open space along the River. All of these open spaces will become more accessible to the public as the new Reservation greenway is completed.

Part of discovering the magic of the Upper Charles Reservation lies in participating in the wealth of activities which take place in all seasons of the year, both on water and along the River's shores. Canoeing, kayaking, rowing, power boating, fishing, ice fishing and ice skating are the most popular water-based uses. Many of these occur in the spacious Lakes region. Special events include the annual "Run of the Charles" canoe race sponsored by the Charles River Watershed Association. This race attracts all



Canoeing the Lakes District

ages and skill levels in trying their hand at mastering the river.

Along the river's wooded edges, visitors jog, picnic, hike, mountain bike, walk and amble. In the wilder sections of the river corridor, nature observation and bird watching are excellent. The solitude of some parts of the Reservation encourages quiet observation of the water, birds and gently moving foliage. In snowy winters, cross-country skiers are seen winding their way quietly

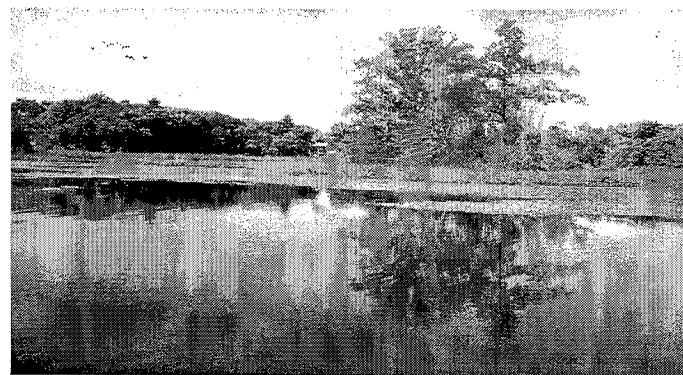
through the woods. Thus, this is truly the "Peoples' River"—with something for everyone to discover throughout the year. The daily "undocumented" use of the River by many people adds immeasurably to the quality of life in this region.

For most visitors to the Upper Charles Reservation, the most startling discovery is that this stretch of river, while hidden in such a densely populated urban region, can be so wild and natural. Even the narrowest section of the Reservation evokes a wonderful wilderness-like feeling, making the tensions of surrounding city life fade from consciousness. Although degraded in many places from various human activities, the landscape of the Upper Charles exhibits remarkable diversity and an array of very healthy wildlife habitats. These environments offer food, water, cover, and space: the four essential needs for wildlife survival.

Walking the 5.75 mile length of this Reservation, visitors can discover seven noticeable "cover types" or habitats.

Open Water

First, Open Water habitat is provided by the River itself and includes the large bays and coves found within the Lakes District located in Newton,



In places, the open water habitat is being eliminated by invasive aquatics

Waltham, and Weston. The large areas of open water checkered with aquatic vegetation provide

excellent habitat for various species of reptiles, waterfowl, and mammals (muskrats in particular). These species forage on the vegetation and/or insects supported by the dense aquatic plant life. Other species, including wading birds, such as great blue herons, are attracted by the small fish and larger insects in the shallower waters. It is not uncommon, while canoeing or walking along the shore, to see the graceful silhouette of a great blue heron flying across this expanse of open water or to see a pair of mallards dabbling in the calm waters of a cove. Common fish include pickerel and large-mouth bass, along with northern pike (stocked to compete with less desirable, over-abundant species, such as carp). Fish-eaters such as belted kingfisher and several species of mergansers, can be seen foraging within the open-water areas of the Charles River.

A few species of anadromous fish, salt water fish that spawn in fresh water, inhabit this section of the Charles every spring. River herring or alewives, rainbow smelt and American shad travel upstream by the millions, aided by a series of fish ladders, similar to the one at the Watertown Dam. The shad stopped entering the Charles to spawn early in the century, probably due to pollution and construction of the Charles River Dam in 1908. Restoration efforts occurred in the 1970s when the Charles was stocked with pre-spawning shad from the Connecticut River. By the early 1980s, with the addition of fish ladders at some of the lower dams, populations began to increase.

Aquatic vegetation is concentrated in the open-water areas of the Lakes District. However, several of the more abundant plant species found in this area such as Eurasian milfoil, water chestnut and water lilies, are not eaten by most wildlife. These non-native species choke the river and prevent the growth of more desirable native aquatic vegetation which provides food and cover for fish and wildlife.



Shallow Marshes provide camouflage for predators and prey.

Shallow Marsh

Shallow Marsh habitat is found along portions of the Charles River banks and small islands within the river, particularly in Robert's Bay of the Lakes District. Large areas of this habitat extend through the Flowed Meadows Conservation Area in Newton. Amphibians inhabit this cover type during both the breeding and non-breeding season. Herons, camouflaged by rushes and sedges, use shallow marshes to forage on frogs and other prey. Other ground-gleaning birds, such as sparrows and grackles, also forage and nest in this habitat, while avian gleaners, such as swallows, forage on insects above the marshes.



Shrub swamp/ Wetland meadows give important cover for wildlife

Shrub Swamp / Wetland Meadow

Shrub Swamp/Wet Meadow occurs within small islands in the River and also borders much of the Upper Charles, particularly within its lower reaches. Areas of shrub swamp and wet meadow are also evident within portions of Kingsbury Cove, near the terminus of Edgewater Drive, and within the Flowed Meadows Conservation Area. Consisting primarily of water willow and cat-tail, this habitat provides important cover for wildlife that forage along and within the River. Wildlife may be less likely to use portions of the River lacking a dense shrub understory since it provides a solid screen against human activities.

Several species of frogs and snakes inhabit this cover type, as do waterfowl such as black ducks, wood ducks and herons. Other bird species, such as ground gleaners and lower canopy gleaners, also forage and nest within this cover type. Mammals such as the white-footed mouse, eastern cottontail, opossum, and shrews also flourish in this habitat.



Floodplain forests give the Reservation its wild and natural look

Forested Floodplain Wetland

Forested Floodplain Wetland may be the most important cover type for supporting wildlife diversity along the Charles River. This is attributed primarily to the presence of multiple layers of vegetation within

the riparian zone which provide a wide variety of nesting and feeding places.

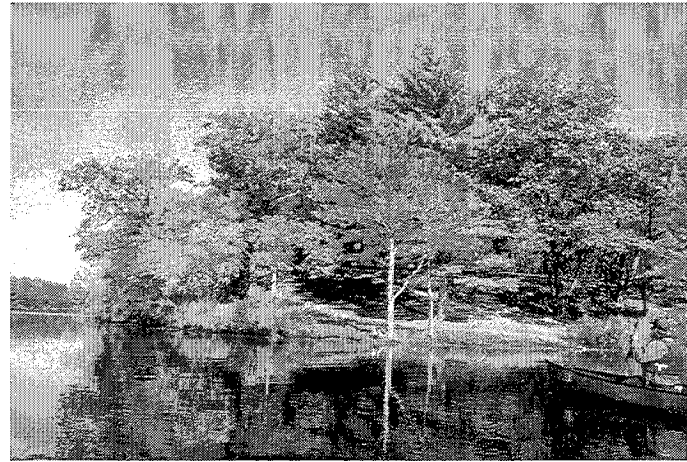
The larger areas of forested wetlands occur near Kingsbury Cove and the terminus of Edgewater Drive in Waltham, within the Flowed Meadows Conservation Area in Newton, and along the southern shore in the lower reaches of the River. Particularly valuable forested floodplain wetlands noted along the southern bank include a large expanse located west of the Farwell Street bridge in Waltham, and an extensive area located east of Cheesecake Brook and west of the Bridge Street crossing in Newton. The two areas are extremely valuable wildlife refuges within a heavily



The forest canopy offers important nesting sites

urbanized area.

These rich forests are characterized by an expansive tree canopy. Species noted within the overstory include red maple, silver maple, and river birch. The seeds are consumed by a variety of wildlife including songbirds and mammals. These trees also provide nesting habitat for many birds, including colonies of black-crowned night herons and, if large enough, provide suitable cavities for medium-sized mammals such as raccoons and opossums. The trees also provide perch sites for birds, such as flycatchers, kingfishers, and raptors which hunt along the River.



Forest Grove Park in Waltham

Oak / Pine Forested Uplands

Oak / Pine Forested Uplands are primarily present within the Lakes District of the Upper Charles where they provide such a scenic shoreline. Smaller areas are located along the north bank of the River, east of the Newton Street bridge in Waltham and east of the Farwell Street bridge in Watertown. Red oak and white pine are the most prevalent species in this habitat within the upper reaches of the River, while various hardwoods including red oak, black cherry, red maple, and ash predominate in the lower reaches. A variety of wildlife inhabit these oak / pine forests, including songbirds such as wood warblers, whose bright colors are a favorite of birdwatchers.

Clusters of white pine and some eastern hemlock are unique to the Lakes District. Stands of evergreens are important as nesting or roosting for some species of birds, such as the great horned owl. These stands contribute to the diversity of wildlife within the Charles River corridor. The lack of substantial evergreen stands is a notable deficiency of the Upper Charles landscape.

Developed and Non-Forested Upland Areas

Developed and Non-Forested Upland Areas include parkland and other developed areas of open space such as Mt. Feake Cemetery. These areas are typically savannah-like in appearance, with a tree



Entrance to Mt. Feake Cemetery

overstory and grass understory, or they are characterized by well-maintained lawns. Although not providing diverse wildlife habitat, these areas can provide important travel corridors for wildlife if they are located between more vital habitats.

Non-Native and Invasive Plant Species

Non-native and Invasive Plant Species are primarily located within the lower reaches of the Upper Charles. These areas are characterized by the presence of non-indigenous species such as tree-of-heaven, Norway maple, Japanese knotweed, and multiflora rose, along with invasive species such as false indigo. Although multiflora rose provides berries that are used by many species, most non-native species provide little food benefit for most wildlife. These plants still have some value in



Thickets of invasive species also block views of the river

providing nesting habitat or cover for small mammals and various songbirds.

New Expectations

It is significant that over 100,000 people live and work within walking distance of this fascinating landscape and its rich habitats. However, much of the Reservation goes unnoticed and may be hard to find if one is not a nearby resident or a very curious explorer. Presently, there are few clues that the public is invited into this natural preserve. Once the Reservation is found, passage is difficult or impossible due to a variety of obstacles, including steep slopes, fences, thickets, discontinuous trails, and dumped or discarded materials.

The Master Plan for the Upper Charles recommends improvements to the Reservation that focus upon restoring, enhancing, and expanding its ecological assets. This will be coupled with improved accessibility along the river corridor, thereby making its riches and excitement more easily available to all people of the region. For years to come, people will be able to enjoy the river as a unique natural and recreational resource, while learning about the river's ecosystem and the importance of our enduring relationship with it.

Master Plan Goals

During the initial planning phases of the project, a set of working goals was established with the Citizens Advisory Committee to guide the greenway master planning. These goals and related objectives present the purpose of the project and suggest its potential recreational and environmental benefits.

1. **Improve access to the river and/or greenway for walkers, hikers, boats, canoes, bicycles, anglers, and the physically challenged.**
 - Create multiple access points or gateways to the Reservation, and make entries more formal and visible where appropriate.
 - Improve pedestrian access from neighborhood streets and open space.
 - Improve, expand and create parking areas where possible.
 - Create or improve informational/directional signage to make the Reservation and its entries more widely known.
2. **Improve circulation and open-space connections along the river corridor.**
 - Provide a continuous public pathway on one or, where feasible, both sides of the river corridor.
 - Use low-impact boardwalks and bridges in steep and wet areas in order to achieve continuous pathways.
 - Remove physical barriers blocking passage along the River's edge.
 - Create safe pedestrian crosswalks and add traffic lights where necessary at bridge crossings.
3. **Eliminate gaps in public ownership**
 - Acquire private property and/or develop public access easements.
 - Work with semi-public property owners to encourage public access.
4. **Reclaim all MDC property on which abutters have encroached.**
 - Clearly demarcate the MDC property line with fencing, guardrail, planting or boundary markers.

- In conjunction with the MDC and property owners, implement a means of removing stored and dumped materials from MDC property.
5. **Protect and enhance the character of open space and the shoreline along the River.**
 - Enhance/upgrade areas where there are notable views, topography, scenic structures, etc.
 - Enhance/upgrade current park land which abuts the Reservation.
 - Remove trash and clean up abandoned dumping areas.
 - Revegetate encroachment areas using indigenous plantings.
 - Preserve as much existing riparian vegetation as possible.
 6. **Protect and improve visual/ scenic quality.**
 - Improve access to prime viewing spots, and create new viewing areas where appropriate.
 - Selectively prune vegetation to open new views to the river.
 - Promote bridges/ dams as major viewing points.
 - Screen poor views with new vegetation.
 - Cover obtrusive structures with plant materials.
 - Clean up areas along the river edge and within the corridor that impair visual quality.
 - Enforce scenic easements and propose others where appropriate.
 7. **Promote sustainable environmental quality.**
 - Protect sensitive ecology, such as wildlife habitat and wetland resources.
 - Limit interaction between wildlife species and Reservation users.
 - Improve water quality and wildlife habitat.
 - Improve potential for anadromous fish migration.
 - Promote species diversity, eliminate exotic and invasive plant species and revegetate with native plant materials.
 - Restore and revegetate eroded slopes and damaged or reconfigured river banks.
 - Promote low maintenance by avoiding large areas of mown grass and other planting requiring extensive care.
 - Use native/ natural recycled materials for site elements whenever possible.

8. **Maximize educational/ interpretive opportunities.**
 - Explore the interpretive potential of historic buildings and sites, cultural evolution, unique natural areas, and wildlife habitat.
 - Explore educational potential of natural resources, and cultural evolution of the river corridor.
 - Explore partnerships for educational and interactive activities with institutional abutters.
9. **Limit potential conflicts between Reservation activities.**
 - Where possible, separate path uses (e.g. walking versus cycling versus birdwatching) through design, location, materials and signage.
10. **Maximize safety of Reservation users and privacy of abutters.**
 - Use planting and fencing to separate public and private property.
 - Emphasize good visibility from adjacent properties.
 - Post safety and use regulations.
 - Employ park rangers to patrol the path system on bike.
 - Encourage arrangements with local police for surveillance.

While achieving the above goals will clearly facilitate improvement of water quality, the ecological health of the River depends heavily upon an adequate amount of water flowing within its banks. Although not within the purview of the Master Plan, resolving the problem of water removal from the watershed and consequent flow reductions is critical in the continuing rebound of the Charles River. Improvements to the river corridor, such as those proposed in this Master Plan, combined with efforts by groups such as the Charles River Watershed Association to normalize flow will help this successful rebound.

The Upper Charles River Greenway will also serve a larger purpose than the above goals. The new Reservation will link several communities and bring people together to share in a common natural resource. Thus, at the heart of this landscape reclamation effort lies the joining of neighborhoods and the enduring social good which will develop in the process.

**CHARLES RIVER
RESERVATION**



**METROPOLITAN DISTRICT
COMMISSION**

THE MASTER PLAN

MASTER PLAN

For best understanding of the following text, please refer to the fold-out Master Plan located at the back of this report.

The Setting of the Upper Charles: Transition from Woodland to Basin

This stretch of the Charles River, between Watertown Square and Route 128, can be thought of as a transition between the Charles River Basin and the westerly reaches of the River beyond Newton Lower Falls. The Charles River Basin has the breadth and stillness of a lake. Its water sheet is generally broad and is bounded by busy roadways, traditional parkland and open banks. This "River Park" is characterized by unobstructed vistas and heavily used, wide paved paths often passing through expansive lawns. This area is refined, controlled and fairly urbane. Movement along the edges of the basin is often at the rapid pace of bicyclists, passing roller bladers, and runners.

In contrast, the westerly reaches of the Charles River, beyond the Lower Falls, are more narrow and winding. Here, there are extensive wetlands, forested



Vegetated edges of the westerly reaches of the Charles River

areas, and thickly vegetated edges. Wildlife is abundant. Expansive vistas are replaced by shorter, more intimate views within each turn of the river. There is a more solitary, quiet "wilderness" feeling here. Trails and paths in these upper portions of

the Charles River are narrow and winding. Movement along them by foot or mountain bike is slower-paced, more exploratory and introspective.

As a transition landscape, the Upper Charles River Reservation combines attributes of both the Charles River Basin and the western reaches of the Charles, and thereby affording very diverse and contrasting environments. Along this stretch of the River, the water sheet varies from "lake" to stream quality, interrupted by frequent dams. The edges of the river in this stretch change from wild and natural to hard and urban. Riverside parks in this area include heavily forested preserves, along with "River Parks" with expanses of lawn and scattered shade trees.

The new Reservation is not a place of wide urban paths set in cut-grass plains. Rather, it is a place of 6 foot to 8 foot wide paths, trails and boardwalks through woodlands. This more narrow path width will encourage visitors to slow down and experience some of the intimacy that this stretch of the Reservation greenway affords. Existing trails are improved only where appropriate. Also, unlike "The Basin", this is not a place of uninterrupted bike traffic on both sides of the River. Bicycles are allowed; however, foot travel is encouraged throughout as the best way to discover and appreciate the diverse features of both natural and man-made origin.

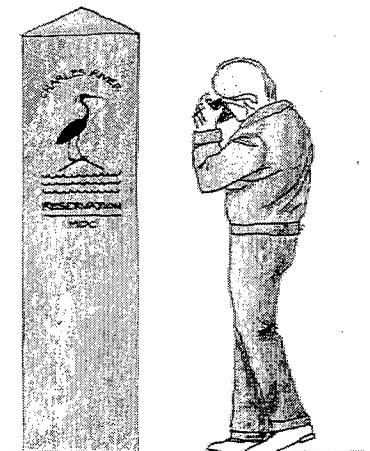
Summary of Recommendations

Entries to the Reservation

Three primary visitor centers are proposed to improve visible access to the Reservation. These are located at either end, and in the middle of the Reservation. They include the MDC's Dealtry Pool in Watertown, the Charles River Museum of Industry in Waltham, and the Charles River Canoe and Kayak Service in Newton. These existing facilities are evenly spaced to serve the Reservation efficiently, and all

have easy access to nearby public transportation. They include existing visitor services, such as public parking, restrooms, drinking water, indoor shelter, information display, telephones and full or part-time staff for at least the summer months of the year. At the outset, each of these points will be identified by the familiar 4 foot x 6 foot MDC sign announcing the Charles River Reservation. Free brochures, doubling as "trail guides," and other critical information, such as "Rules of the Reservation" will be available here. Each facility has a place where school children and teachers can gather at the start of Charles River field trips. As the new Reservation becomes better known and more frequently used, the three gateway locations can easily expand their services becoming more formal visitor centers. Large scale map models of the entire upper Charles region will be displayed, along with more extensive educational information describing historical, natural, and recreational features. MDC park rangers will lead interpretive "river walks" from these locations which will eventually become discovery centers with the goal of promoting environmental awareness.

Primary entries to the Reservation will be less prominent than the visitor centers, but appropriately mark pedestrian access ways from bridge crossings and neighboring streets and open spaces. These entries will be accentuated by special circular paving and six foot high granite pillars etched with the familiar Upper Charles Reservation logo, a silhouette of the Great Blue Heron. When needed, side faces of the granite pillars can be used to carve directions, mileage to destinations, or pictorial illustration of features that may be seen in the Reservation.



The Reservation entry from Galen Street to Riverbend Park in Watertown Square should receive special treatment. Currently this entrance is suggested only by a widening of the sidewalk paving. The elegant balustrade of the Galen Street bridge could be extended northerly in a semi-circular configuration to give prominence to this important gateway. Historic lights similar to those on the bridge could flank the opening in the balustrade and further mark this easternmost entry to the Upper Charles River. Pavement design might include interpretive graphics or an abstracted map of key features of the upper Charles.

Pathways - Width and Materials

Four pathway types are recommended for the new Reservation. Path treatments were selected based upon the transitional setting of the Upper Charles River Reservation, the sensitive ecology encountered in this floodplain, the shape and width of the corridor, and also expected trail user volume and types of use. The path's location in such a fragile environment suggests less than the minimum 8 foot paved width that is generally acceptable for a formally designated and signed bike path. While bicyclists are expected to use this path, slow speeds will be strongly encouraged to insure the safety of all users.

1. The primary path is 7 foot wide bituminous concrete with a 12 inch wide shoulder of cement-modified soil on either side. This configuration allows enough hard surface to accommodate emergency and maintenance vehicles, bicycles, rollerblades and wheelchairs, yet is not excessively wide for such a narrow corridor. The path shoulder gives extra breadth, but the ground surface remains permeable. Cement-modified soil is somewhat permeable and is mixed in place with native subsoil.

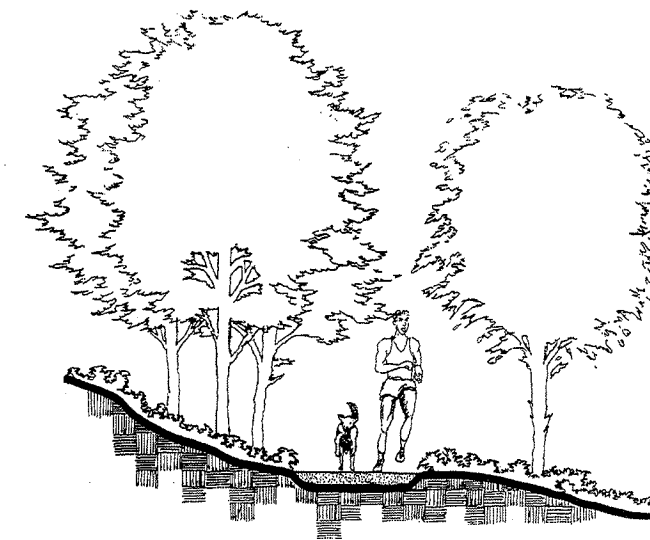
2. Along particularly narrow sections of the Reservation, heavily wooded stretches such as forested floodplains, or on loop trails where there is



A good pathway example found East of the Upper Charles

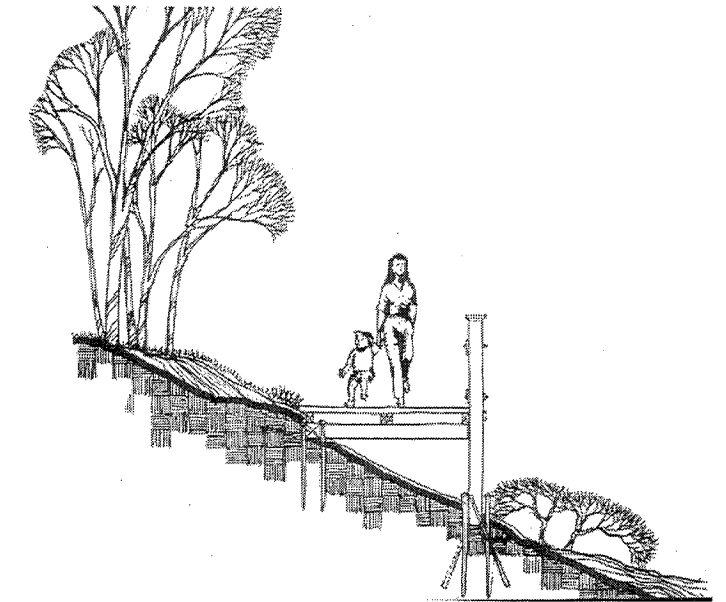
minimal traffic, a 4 foot wide cement-modified soil path is recommended. This more narrow and permeable path treatment improves access with minimal impact.

3. Where the path traverses sensitive resource areas, such as wetlands and particularly steep or eroded



A 4' wide soil path in a wooded area

slopes, or where meeting grades would result in excessive earthwork or vegetation removal, the use of elevated boardwalks is advised. Overlooks and viewing platforms will be built into the boardwalks to give visitors full advantage of these scenic locations.



An elevated boardwalk may be used to avoid excessive earthwork on a steep slope.

4. Lastly, in areas where there are already narrow-trodden trails and the vegetation is particularly



Existing path in the Lakes District

sensitive, and where only occasional foot traffic is anticipated, existing paths will be left and improved. The paths will be made more visible by trimming and pruning existing vegetation. In some cases, the existing trail will be better defined with the addition of a low (12 inch high) wooden railing. As a simple

marker, this rail will serve to encourage walkers and mountain bikers to stay on the pathway and not wander off into sensitive vegetation and wildlife habitat.

Pathways - Location and Grading

The Master Plan recommends a continuous and safe public pathway along the river corridor, on both banks where possible, from Watertown Square to Commonwealth Avenue in Newton. To accomplish this objective in such a constricted environment with such fragile ecological zones, it is as important to consider where the pathway should not be located as it is to consider where it should be located. Thus, the following locational criteria were developed as "avoidance" factors to guide pathway alignment toward sustainable solutions.

1. Avoid locating long stretches of the pathway immediately adjacent to the River. Many of the wildlife species that inhabit the corridor forage within the Charles River or along its banks. The frequent presence of people along the walkway can disturb these species.
2. Avoid siting the pathway in wetlands, and other more uncommon habitats such as scrub-shrub areas. These limited areas can provide habitat for certain species which may not be plentiful elsewhere along the corridor. Bisecting these habitats may adversely affect these species by increasing disturbance associated with people and pets.
3. Avoid locating the pathway along steep slopes adjacent to the river. These areas often provide den sites for several mammalian species, and locating a pathway in these areas would likely preclude this use, in addition to creating erosion problems and loss of vegetation due to excessive grading.

4. Avoid locating the pathway through large depressions located near the River, primarily within areas of forested floodplain, as these sites can contain shallow pools of standing water during spring which can function as critical amphibian breeding areas. The small ponds on Sandy Hook also may support dense aggregates of breeding amphibians in the spring. The walkway should avoid these areas to the greatest extent possible.
5. Divert paths well away from known, extremely sensitive areas such as the Black-Crowned Night Heron roost present within the lower reaches of the Reservation.

Ideally, pathways should be located on high ground and pass through areas having the least ecological value. Examples of these are areas dominated by exotic or invasive plant species and other disturbed areas such as existing roads or trails where they do not intersect critical wildlife habitats. Existing areas of fill or other degradations caused by abutters over the years are advantageous locations due to the negligible impact path construction would cause.

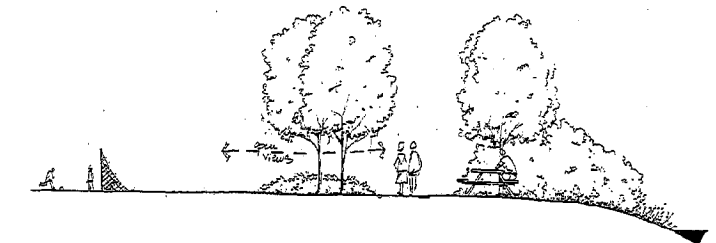
Where the pathway is interrupted, such as at bridge crossings and also where there are gaps in MDC ownership, path users will be brought out to existing sidewalks and directed toward the next entrance to the Reservation. Cross-walks and heron foot prints stenciled on the pavement should connect the pathways in these instances.

Pathways should be graded to closely follow existing grades and have smooth vertical transitions. They should be graded smoothly between control spots and be free from abrupt dips and humps. To be universally accessible, pathways should have a maximum longitudinal slope of 5%, a maximum cross-slope of 2%, and a minimum cross-slope of 1%. Side slopes of pathways should transition back to existing grades at a 4:1 pitch where possible.

Concentration of storm water behind the path without proper outlet should be avoided.

Open Space Linkages

One of the greatest single public benefits of creating this greenway along the Upper Charles Reservation is the linking together of existing open spaces, playgrounds, and parks. The new pathway will connect and thereby expand the value of these existing recreational facilities. Conversely, the existing public parks will provide access ways into the new Reservation. Thus, the true value of the whole system will clearly exceed the sum of its disparate parts.



Planting low shrubs and shade trees between the pathway and abutting recreational fields will provide some physical separation between uses, but still allow a visual connection

The path system should help link existing parks and open spaces to the Reservation. Where existing parks are across roadways from the Reservation, crosswalks and visible entries to the Reservation are recommended to facilitate access. Where existing parks abut the Reservation, the path and planting should encourage interaction between park and Reservation users. At Forte Memorial Park, for example, low planting is proposed between the Reservation path and the park's playing fields to provide visual connection between the public spaces. An open lawn-area is also suggested with picnic tables for joint use. The exercise trail in Forte Memorial Park will connect directly to the Reservation path system, further facilitating linkages and shared benefits.

Two properties offering critical open-space linkages in the Upper Charles Reservation are Mt. Feake Cemetery and the forested parcel on Sandy Hook Cove owned by Brandeis University. At present, public access to both parcels is technically prohibited; and together they control almost 12 miles of riverfront at the beginning of the Lakes District.

Public use of these scenic properties is certainly in the best interest of this region, and appropriate regulations for usage were cooperatively developed by the MDC, the Cemetery and the University. Rules of usage would be posted frequently and enforced by both owners as well as MDC officials. Formal access easements, or other forms of legal agreement among parties, will be required to enable public use and to ensure protection of these valuable resources.

The Reservation pathway should link the abutting communities by promoting access at all adjacent open spaces and across bridges. It should serve as a common thread weaving together all communities adjacent to the River and fostering a regional identity.



Newton Street Bridge

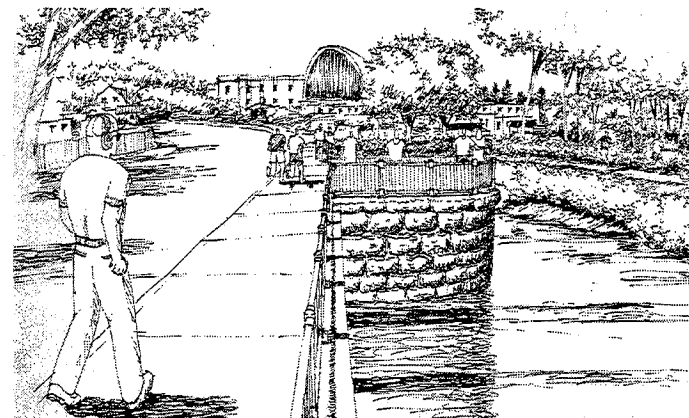
Bridges and Crossings

There are seven vehicular bridges that span the river in this stretch of the Upper Charles River. Since the sidewalks coming off the bridges make contact

with the Reservation at the foot of each bridge, these crossing points have tremendous potential for bringing visitors into the Reservation. The elevation of these crossing points is often well above the elevation of the pathway along the banks of the river. Thus, some amount of filling will generally be required to construct the path connection leading from the bridge sidewalk to the parkland. Despite this difficulty, these connections can usually be made and are essential if the Reservation greenway is to be at all continuous and useful for traveling any distance.

In addition to their role as major access locations, the bridges, both vehicular and pedestrian, serve as prime viewing points, providing pedestrians with some of the most beautiful views along the river corridor in all seasons. Views from the bridges are only rivaled by the wonderful vistas from the peninsulas and high promontories of the Lakes District.

Since much of the river and its varied landscapes can only be seen from the bridges, they are ideal locations for interpretive and educational materials explaining the cultural evolution of the river, its natural assets, and the wildlife inhabiting its shoreline. The bridge railings could be cut and altered to provide semicircular or rectangular "niches" cantilevered outward from the edge of the current bridge. These intimate overlooks on the bridges could be fitted

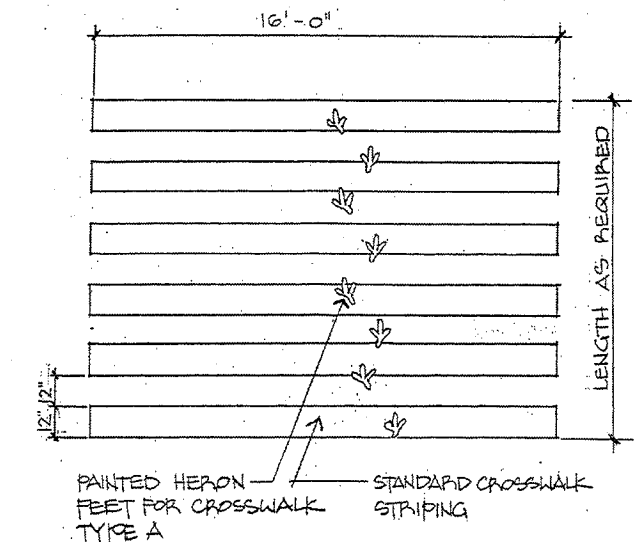


Example of using an existing bridge abutment as an overlook

with seating surfaces, plaques and other graphic panels. Passersby might rest comfortably for a moment, learn something about the River, appreciate and learn about the view, and then continue their travels.

This casual introduction to the River would encourage people to enter the Reservation at the foot of the bridge and experience the river more closely. Since the bridges are not owned by the MDC, bridge modifications as described above would have to be undertaken by the cities and towns as a long-term endeavor.

Access points at bridge crossings would be marked clearly with granite posts as primary entrances to the Reservation. Visitors could be directed from one entry to another by "heron's feet"

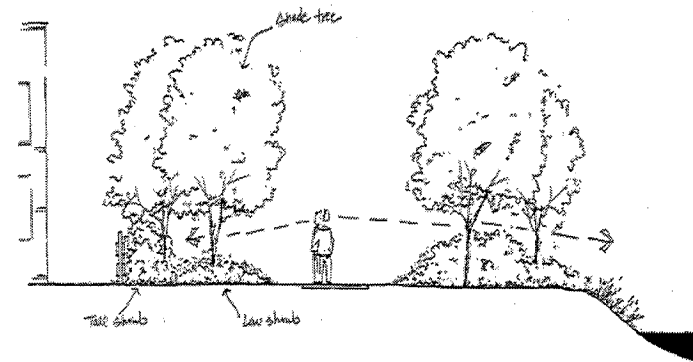


NOTE: CROSSWALK TYPE (A) SHALL HAVE PAINTED HERON FEET, CROSSWALK TYPE (B) SHALL NOT HAVE PAINTED HERON FEET.

tracks painted on the sidewalk leading over the bridge. Safe travel across roadways between access points should be ensured by installing clearly marked crosswalks and pedestrian-activated signals where feasible. Where signals are not possible, "yield to pedestrians" signs should be prominently displayed in both directions. As with bridge rail alterations, crosswalks and signals would be constructed under the jurisdiction of the city or town involved.

Footbridges are particularly special in the Upper Charles Reservation since they bring the pedestrian closer to the water itself and the experience of the River is more intimate without the congestion and noise of passing cars. The Master Plan proposes two new footbridges to complement the three existing ones at Dealtry Pool, Landry Park, and the Bleachery Dam. The first would be located in the vicinity of Cheesecake Brook in Newton, where immediately west of the Brook's entry into the Charles, a gap occurs in MDC ownership of the river bank. Spanning approximately 125 feet, the new footbridge will allow visitors coming west from Bridge Street to cross the River and continue their travel on the north bank in Watertown, adjacent to Super Stop & Shop.

The second footbridge is proposed to span the Stoney Brook inlet and adjacent wet area just west of the WCRB (radio station) property on Roberts Bay in Waltham. This small bridge will allow pedestrians to continue passage along the shore without detouring inland to South Street and back to avoid the stream.



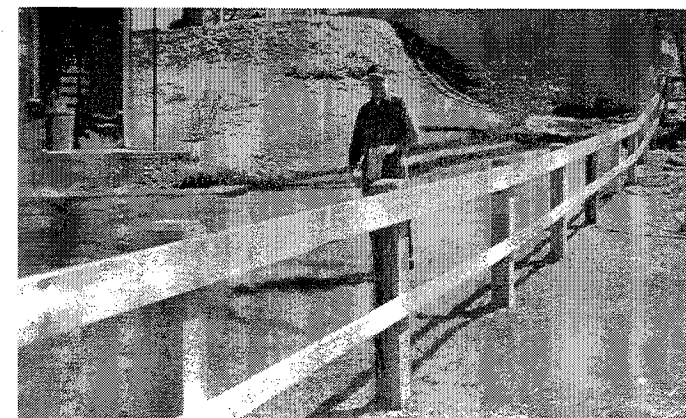
Where the pathway abuts industrial properties, low shrubs near the path backed by tall shrubs at the property line are appropriate. Shade trees, or evergreen trees where space avails, should be interplanted to complete the screen.

Separation from Private Property

Densely planted buffer zones should be used throughout the Reservation to visually screen adjacent industrial facilities and parking areas from path

users and to provide a sense of privacy and separation for homeowners. Buffer planting at residential properties should be of low to medium height, and broad in lateral extent to provide a feeling of physical separation, but, at the same time, to keep open views from residences to the River. For maximum effect, buffer planting at industrial properties can utilize a mix of evergreen trees, thus satisfying screening needs while providing the much needed evergreen nesting and cover sites. Road planting zones in each case will focus travel through MDC lands along the pathways and discourage wandering from the path onto private properties.

The edges of the Reservation will be visibly marked in three ways. At industrial or commercial properties, a continuous **wood timber guardrail** is proposed along the property line. Openings in the guard railing could be made where employee access to the greenway is denied. At residential properties, a **low wooden fence**, 3 feet 4 inches in height, consisting of 6 inch square posts and two 2 inch by 4 inch rails, is proposed to bound the Reservation in a very nonintrusive but still deliberate way. Again,



Low wooden fence used to delineate property line at residential property.

openings in the fence could be made to allow abutters access to the Reservation. Finally, along open spaces, parks, or lengthy vacant lands, **single, wood posts** 3 feet in height spaced at a distance of 50 to 100 feet should be used to discreetly establish the

limits of the public land. All three methods of marking the property line are intended to let visitors know the extent of the Reservation, and to avoid future disputes over the use of public lands. Although not as durable as stone "bounds," the wood materials are appropriate for the natural greenway setting.

Property Acquisition and Easement Needs

MDC ownership of the River's edge is nearly continuous through the Upper Charles Reservation. The combination of MDC lands, local parkland, and other community properties having some public use (e.g. Mt. Feake Cemetery, etc.) will account for approximately 85 percent of the Upper Charles River shoreline. Shoreline parcels that do not allow public access along the river due to lack of ownership and/or physical obstructions include:

Group 1 Parcels: Acquisition or Easement Recommended

For the Master Plan to be implemented successfully, it is imperative that public access be permitted through these high priority parcels:

- A. North bank, behind Watertown ice skating rink and Stop & Shop property - private property.
- B. South bank, behind Longview Fibre - between Elm St. and Embassy Parking lot.
- C. North bank, west of Prospect Street Crossing Mt. Feake Cemetery limited access property.
- D. North bank, west of Mt. Feake Cemetery - private property of Brandeis University (currently have conservation easement).

Group 2 Parcels: Public Easement Desirable

Public access along the water's edge of these parcels would clearly help in providing a more continuous and more easily understandable pedestrian system.

However, access through these stretches is of lesser priority than Group 1 parcels and not immediately necessary.

- A. South bank, west of Prospect Street Crossing private property behind historic Waltham Watch building.
- B. South bank, at Commonwealth Avenue (Newton) - private property behind Marriott Hotel.

Group 3 Parcels: Acquisition or Status Change Not Recommended

For some of these parcels, acquisition would be extremely difficult or unreasonable in the case of residential ownership. In most cases, one or two alternative solutions exist: either public property is available on the opposite bank to provide adequate public access, and/or pedestrians can pass around the parcel on public land relatively easily.

- A. South bank immediately east of Bridge Street crossing - steep slopes.
- B. South bank, immediately west of Bridge Street crossing - face of Bemis Mill building abuts river (but good access behind mill - off California Street).
- C. North bank, immediately west of Bridge Street Crossing - private property and face of Aetna Mill building abuts river.
- D. South bank, west of Cheesecake Brook (Newton) - private residential ownership.
- E. South bank, east of Prospect Street (Waltham) slopes and private residential properties along Crescent Street with scenic easement.
- F. North bank, behind Ames Shopping Center (Waltham) - private property and steel crib/ concrete walls abut river.
- G. Both banks - various residential properties in Waltham and Newton overlooking lakes.

Acquisition of property by the MDC is recommended only for the stretch of bank (1400 linear feet +/-) in Watertown between the ice rink and Stop & Shop. This is a particularly scenic stretch of wooded shoreline, and a critical link in pedestrian circulation between the MDC's Cannaloga Park and the Farwell Street bridge crossing.

Formal easements permitting public access, or informal agreements if possible, are recommended for Mt. Feake Cemetery, Longview Fibre, and the Brandeis University property in Waltham. These three properties are important for their unique scenery and/or are critical in promoting continuity of circulation through the Upper Charles. A formal easement will also be necessary for the River's edge of the Grover Cronin property at Moody Street in Waltham. Public access along the river has been negotiated with the new owner of this property called Cronin's Landing.

Habitat Reclamation and Enhancement

The following four strategies are recommended for improving wildlife habitat within the new Reservation:

1. Develop a Continuous Wildlife Corridor Along the River

A woody, vegetated buffer zone adjacent to the River and wetlands will provide essential habitat for wetland-associated species for use in feeding, roosting, breeding and rearing of young. This zone will also provide cover for safety, mobility and thermal protection. Such a buffer will also reduce adverse impacts of human disturbance and reduce sedimentation and excess nutrient flow to the River. For all of these reasons, new planting in the Reservation should seek to reinforce existing vegetation massing or create new continuous, densely vegetated corridors connecting parklands, forested

areas, or other open-space resources. Previously disturbed lands, such as those of past industrial encroachments should be revegetated as densely as possible with indigenous, woody plant material.

The shoreline of the Upper Charles does not show evidence of strong erosive forces. Most shoreline areas are protected and stabilized by a border of emergent vegetation and shrubs. However, in the few areas where the river bank is barren due to human disturbance, it may be planted with appropriate low shrub materials or be left open to provide views over the water and water access.

2. Improve Habitat Structure

Multiple layers of vegetation (trees, saplings, shrubs, forbs/grasses) support a greater diversity of wildlife than a simple tree overstory with a grass understory. Conifers are particularly valuable as they are currently sparsely distributed in the lower reaches of the River and provide winter cover. "Snags" are important habitat features for a variety of wildlife species including cavity nesters, and are generally unavailable in surrounding urban and residential areas.

Thus, to improve habitat structure, planting design should focus on providing multilayered vegetation containing a variety of native plant species which also produce mast or berries for wildlife consumption. Both deciduous and evergreen species of large trees, saplings, and shrubs should be included with a variety of sizes of plants. Existing snags should be left at the River's edge along with some fallen trunks and limbs to decompose. Minimize open and maintained lawn areas, especially adjacent to the river, where the already overabundant Canada Goose flourishes.

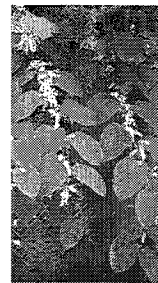
3. Reduce Plants Not Contributing to Habitat Value

Two types of plants in the Upper Charles which may lower species diversity are "exotic" species (non-native plants) and "opportunistic" species (native flora which have become overly invasive due to changed environmental conditions such as hydrologic disturbance or ground pollution). These plants lower habitat value by displacing the "normal" assemblage of plants required by wildlife for food, nesting and cover. Thus, a key Master Plan strategy involves the gradual reduction of these populations and replacement with a diversity of native species beneficial to wildlife.

A. Terrestrial Species

Since the use of herbicides to control problem species can be detrimental to some native flora and fauna, non-chemical methods, such as cutting, frequent mowing and reduction of regeneration using plastic matting should be given first consideration as management techniques. In some cases, these problem species are located in areas where radical removal may cause more ecological harm than good. For example, in steep bank situations where the plants stabilize the bank, prevent erosion, and provide some nesting sites, it is best to leave them alone but prevent further spreading along the bank.

Areas of Silver Maple swamp and Red Maple swamp that have a reasonably diverse plant community, and in which the natural hydrology has not been significantly altered, should receive extra attention to ensure that opportunistic and exotics do not continue to multiply. Target species would include Bittersweet vine, European Buckthorn, False Indigobush, and Japanese Knotweed. Some areas of Japanese Knotweed are located on rubble/filled soils. Soil quality will have to be improved, or native species will not colonize and flourish.



invasive plant

B. Aquatic Species

The Lakes District of the Charles River is a highly eutrophic (nutrient-rich) environment characterized by a dense proliferation of aquatic plants of many kinds—planktonic, rooted, floating, submerged and emergent—all of which have dramatically reduced access to boat traffic and shore fishing. The plant assemblage in the Lakes includes four major species: Water Chestnut, Fanwort, Eurasian Milfoil, and White Water Lily, of which only the last is a native plant. Although there are dense patches of Fanwort and Milfoil, Water Chestnut is by far the most aggressive invasive plant and, without control, will in time become the dominant plant of this River. The present nonnative community of aquatic plants is not desirable, ecologically or recreationally. As plant diversity rapidly declines, the aquatic habitat will continue to degrade.



A dense patch of non-native aquatic plants in the Lakes District.

Some success, although somewhat temporary, has been achieved in past treatment of Fanwort using "Sonar," a herbicide approved by the U.S. EPA for use with potable water supplies (treatment by ACT/Fugro East in Ware's Cove). However, it appears that Water Chestnut may only be controlled by repeated mechanical cutting and harvesting for several years. Thus, it is recommended that a regular control program be initiated using both herbicide treatment (Sonar) and mechanical cutting and harvesting. In addition, an annual survey of the

geographic distribution of dominant aquatic weed species would be advisable in measuring the relative effects of control techniques and directing future measures within the Lakes District. Only repeated programs such as these will eventually improve the aquatic habitat and increase the amount of open water for recreational activities.

Notwithstanding the above recommendations, the only truly effective, permanent solution to this problem is continued efforts to reduce or eliminate both point and non-point sources of nutrient addition to the river from human waste, fertilizers, bird populations, and other sources.

4. Improve Soil Quality

Adequate soil (or "substrate") quality is necessary for any of the above planting to be successful and durable. Much of the upper Charles River banks in the urban corridor have poor quality soil due to filling, compaction, introduction of pollutants, and general low fertility. Therefore, additional loam must be imported to the area, or existing soils must be enriched to replace excavated poor material and provide planting pits or entire beds of better quality. Without such soil improvement, restoration of these areas will not be sustainable.

Safety and Security

A number of analyses of new greenways and completed multi-use trails throughout the country have noted that public safety is lowest in areas where regular public surveillance is not possible and where public use is so infrequent that illicit activities go unnoticed. Parts of the Upper Charles River are this way today. Conversely, it has been demonstrated that visitor safety improves with increased use of a facility. Observation of activities and also the potential for observation by many users and abutters creates a safer environment. Thus, as the new Reservation is improved, its popularity spreads and use and surveillance increases, it will actually become safer than it is today.



Bicycle mounted park rangers and police will be an effective means of insuring a safe public environment.

The MDC will actively promote this improved situation by providing park rangers to patrol the Reservation on bicycles and eventually lead tours on foot. In addition, the MDC is seeking arrangements with police from neighboring communities to join in the surveillance effort to insure a safe public environment. As with other MDC Reservations, the Upper Charles River Reservation will be closed to the public at night.

Encroachment on Public Land

Throughout the Reservation, MDC park land has been encroached upon by adjacent property owners.



Example of commercial encroachment where a business is storing equipment and dumping materials on MDC property

These encroachments fall into two general categories. Residential encroachments consist mainly of backyards or gardens that extend onto MDC property. Commercial and industrial encroachments consist of paved areas for parking and storing equipment, dumped materials, or fill from abutting properties. These encroachments result in misuse of MDC property and the land itself, inhibit circulation throughout the river corridor, and also limit access to the Reservation. To maximize public enjoyment and to restore the River's ecological health, all encroachments should be completely removed, and the land returned to a natural condition in accordance with the Master Plan's restoration strategies.

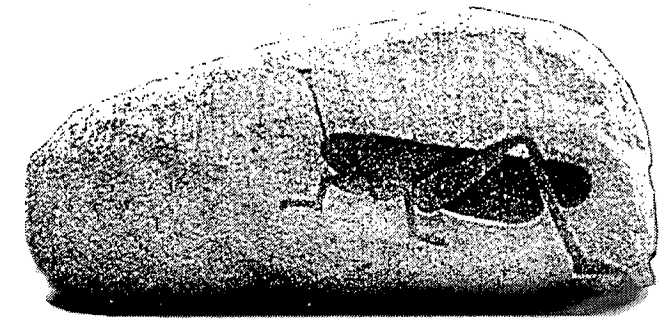
Interpretive Features and Signage

Interpretive features for the Upper Charles Reservation should focus on three major themes:

1. *The Natural River* - description of interesting flora and fauna; evolution of the River; vegetation and wildlife over time; fishing phenomena; unique natural features.
2. *The Settled or Industrial River* - story of early human settlements; transportation and industrial use of/changes to the River (i.e., dams, bridges, mills, etc.).
3. *The Recreational River* - evolution of the recreational activities on and along the River.

Interpretive programming should be structured for short-term, manageable actions as well as longer-term objectives.

Short-term interpretation will focus on special natural features (plants or animals) and on past alterations to the River's edges for industrial purposes. The form of this interpretation should be low-key, nonintrusive, suggestive and durable. For example, images of special plants or common animals can be etched in the surface of boulders positioned at stopping places along the path or at popular fishing



Example of etched images on the surface of boulders

spots. Small plaques can be installed in paving or set into walls describing how the river water was channeled at certain points into the mill complexes.

In the longer term, it is recommended that the three Visitor Centers expand their river-related services and take on a more active role in interpretive and educational programs. The visitor centers would have detailed maps or three dimensional models of the Upper Charles River on display. They would serve as gathering points for nature walks or historical tours by MDC park rangers. Historic photos and artifacts would be exhibited to illustrate the fascinating story of the River, from its original settlement, through the birth of the industrial revolution to the present.

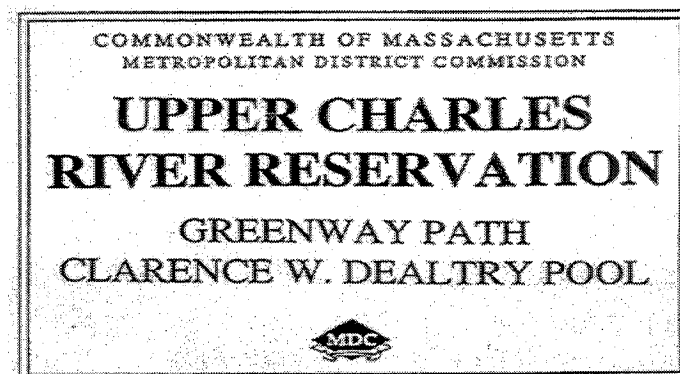


Interpretive features related to the "natural river" could serve as educational tools for nature walks.

In addition to a variety of materials devoted to environmental awareness, self-guided trail maps would be available for public use. Unique and interesting natural or man-made features would be keyed to numbers set into posts along the Reservation pathway. In addition to identifying individual features, the guide would include historical sketches aimed at introducing the visitor to the evolution of a region's culture set in motion by its river.

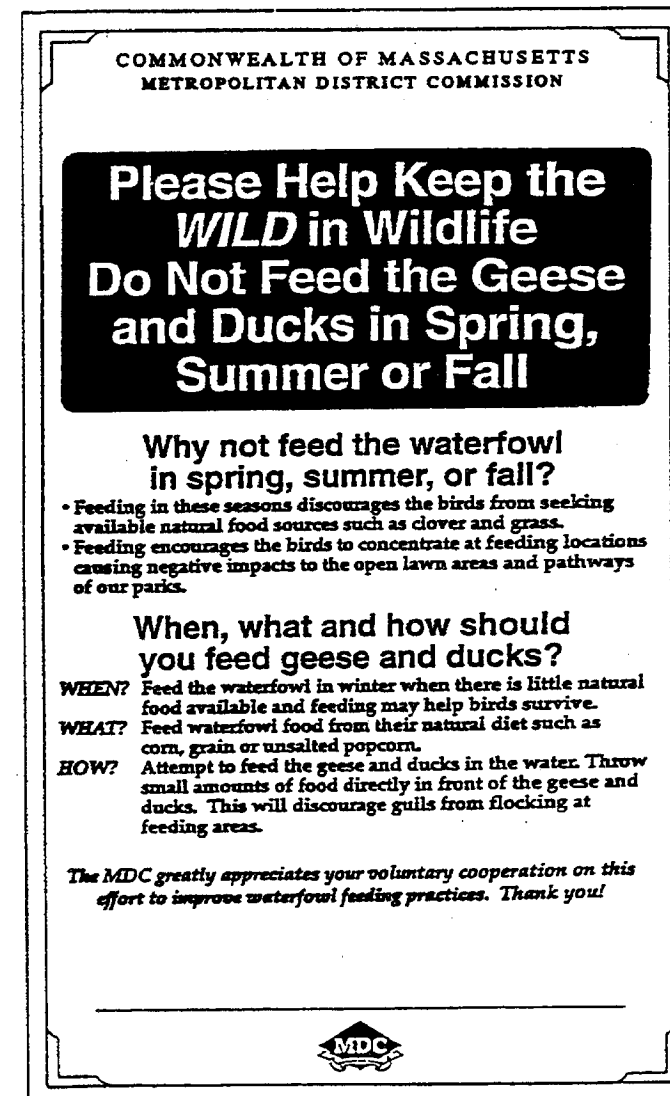
As mentioned above, the bridges over the River provide the best opportunities for display of interpretive information. Such displays will require coordination of efforts between the MDC and the bridge owner, typically the city, town, or the Commonwealth. To suggest pieces of the rich history of this corridor, subtle ways of illustration should be used wherever possible, rather than major signs. For example, in the sidewalk in front of the historic Waltham Watch Factory, one could embed a string of enlarged bronze watch parts (gears, levers, hands, numbers, etc.) indicating that this was the first factory to mass produce complete watch systems. Such playful implication can be combined with text to present history in a more delightful manner.

To reduce unnecessary maintenance and to intrude as little as possible upon this natural setting, new signage in the Reservation should be kept to a minimum. Appropriate signs are as follows:



Main entrance sign

1. Major MDC sign panels identifying the Reservation are proposed at each of the three primary visitor centers.
2. Small sign panels outlining key rules and regulations (e.g., no motorized vehicles, hours of operation, no alcohol or fires permitted) should be located at or near visitor centers and primary entries.
3. In selected River's edge locations, signs explaining policies for waterfowl feeding of should be posted.



Water fowl feeding sign

4. At both ends of lengthy, angled boardwalks, signs should be used to indicate that bicyclists should dismount and walk their bikes.
5. In several situations, due to lack of ownership or physical obstructions, visitors are forced to leave the River and proceed onto public ways arrow would direct people toward the pathway continuation. These would be particularly necessary in the Lakes District where MDC land is fairly discontinuous.

Due to the limited width of the asphalt pathway and boardwalks, the Reservation path will not be formally signed as a bike path.

Water Access and Use

Canoeing, kayaking, rowing, power-boating, year-round fishing, and ice skating are currently the most frequent, and increasingly popular, water-based uses of the Upper Charles. Promoting these activities and the simple enjoyment of the River itself is a key goal of the Master Plan. Strategies to achieve this goal include improving visitor access to the water wherever possible, increasing visual access to the water to heighten awareness of its presence, controlling growth of invasive weeds such as Water Chestnut, and improving water quality to make water use of all kinds more safe and desirable.

Recommendations for developing these strategies are as follows:

1. Develop small "river access areas" in selected locations at the river's edge that are already worn from visitor use. These would consist of surfacing with granite river cobbles and installation of several large boulders to provide informal sitting within a few feet of the water. These areas should be "nestled" in vegetation and be connected to the main Reservation pathway via a soft-surfaced trail.

MASTER PLAN

2. Install viewing decks, or water overlooks, as part of the boardwalk system in selected scenic areas. These decks should get people out over the water to appreciate the River and will serve as fishing platforms as well. To heighten one's sense of being alone on the River, viewing decks should be located ideally so they cannot be seen from other viewing decks.
3. Improve and expand the Woerd Avenue boat launching area to make it efficient, inviting, safe, and enjoyable.
4. To give boaters of all kinds and fishermen adequate space, remove non-native, aquatic plants in the Lakes District by regular mechanical cutting and harvesting.



A boater on the Charles River

5. Increase the number of canoe access points throughout the river corridor and make portaging at dams as easy as possible. The above-mentioned river access areas can be used for this purpose. Improved landing/access points would include the MDC duck viewing area, the Waltham Pump Station site,

Forest Grove Park, Auburndale Park at Ware's Cove, the site at "Nuttings on the Charles", and Landry Park. Publish a plan



The Waltham Pump Station site, a good landing and picnic ground

6. Improve visibility of the water by regular removal along the banks of aggressive, exotic vegetation such as Japanese Knotweed. Also, selectively thin river's edge vegetation at key points to improve plant health and open up views to the river.
7. Encourage towns to develop river viewing "niches" or overlooks on major bridges as described above under "Bridges".
8. Remove all paving encroachments within the Reservation and revegetate these areas to assist in filtering storm water run-off and thus improving water quality.
9. Increase the number of celebrated annual events on the Upper Charles, similar to the "Run of the Charles" canoe race and the New England Steam Expo. These might

include fishing contests, ice fishing demonstrations, guided ecological tours by canoe, historical tours by canoe, an Upper Charles photography contest, or a supervised Upper Charles swimming event to highlight water quality.

10. Continue to support the efforts of Charles West Boatlines which provides educational pleasure cruises between Moody Street and Commonwealth Avenue.

Notwithstanding all of the above items, as has been demonstrated in the past, the three things that will contribute most to future recreational use of the River are clean water, an adequate water supply in dry seasons and continued restoration and greenway development along the banks. The improving health of the River remains the controlling issue.