Massachusetts Department of Conservation and Recreation
Bureau of Planning and Resource Protection
Resource Management Planning Program

RESOURCE MANAGEMENT PLAN EXECUTIVE SUMMARY

DCR's Beaver Brook Reservation

Historic Beaver Brook Reservation and Beaver Brook North Reservation
Belmont, Lexington and Waltham, Massachusetts

March 2010

Resource Management Plan for DCR's Beaver Brook Reservation

Belmont, Lexington and Waltham, Massachusetts

Massachusetts Department of Conservation and Recreation
Bureau of Planning and Resource Protection
Resource Management Planning Program

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The Massachusetts Department of Conservation and Recreation (DCR), an agency of the Executive Office of Energy and Environmental Affairs, oversees 450,000 acres of parks and forests, beaches, bike trails, watersheds, dams, and parkways. Led by Commissioner Richard K. Sullivan Jr., the agency's mission is to protect, promote, and enhance our common wealth of natural, cultural, and recreational resources.

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Figure 1: Carriage road and MetFern Cemetery in the Beaver Brook North Reservation, 2009 (Pressley Associates).

Executive Summary

Introduction

Resource Management Plans (RMPs) are "working" documents that develop short and long-term management goals and objectives for the properties under the stewardship of the Commonwealth of Massachusetts, Department of Conservation and Recreation (DCR). They include an inventory and assessment of environmental, cultural, and recreational resources and identify unique characteristics and values associated with a forest, park, or reservation. They are intended as working documents, used to set priorities, establish capital and operational budgets, allocate resources, and enhance communication and cooperation between park visitors and the surrounding communities.

The Massachusetts Department of Conservation and Recreation (DCR) was established in 2003 as a merger of the former Metropolitan District Commission (MDC) and the Department of Environmental Management (DEM). DCR manages of one of the largest state parks systems in the country. Its 450,000 acres is made up of forests, parks, greenways, historic sites and landscapes, seashores, lakes, ponds, reservoirs and watersheds, constituting 10% of the state's landmass and including 29 campgrounds, 67 beaches, 39 pools, 2 golf courses, 60 playgrounds, and 55 ball fields. The agency also manages 650 lane miles of parkways, 278 bridges, and 338 dams, and oversees watershed and forestry management across the state.

The mission of the DCR is to exercise care and oversight for the natural, cultural, and historic resources of the Commonwealth and to provide quality public outdoor recreational opportunities that are environmentally sustainable, affordable, and accessible to all citizens. To carry out its mission, DCR investigates, analyzes, plans, and provides stewardship of the Commonwealth's resources.

DCR is guided by a legislative mandate (M.G.L. Chapter 21, Section 2F) to prepare management plans for "all reservations, parks, and forests under the management of the department." Although the mandate does not specify the format or content of these management plans, it does require the following:

> "Said management plans shall include guidelines for the operation and land stewardship of the aforementioned reservations, parks and forests, shall provide for the protection and stewardship of natural and cultural resources and shall ensure consistency between recreation, resource protection, and sustainable forest management."

In addition, this legislation also requires that the DCR Commissioner "shall seek and consider public input in the

development of management plans, and shall make draft plans available for public review and comment period through notice in the *Environmental Monitor*." These management plans must be reviewed and adopted by the Stewardship Council; within thirty (30) days of adoption, the Commissioner must file a copy with the Secretary and the Joint Committee on the Environment, Natural Resources and Agriculture. Resource Management Plans meet and exceed the basic requirements defined by all legislative mandates.

Beaver Brook RMP

DCR initiated this Resource Management Plan (RMP) for the Expanded Beaver Brook Reservation in response to the transfer of 254 acres of the former Metropolitan State Hospital from the Department of Capital Asset Management (DCAM) to the DCR. The Metropolitan State Hospital was declared surplus in 1992 and in 1994, the Massachusetts Office of Capital Planning and Operations (DCPO, now DCAM) completed a Reuse Plan for the property in collaboration with a Tri-Community Task Force, the MDC (now DCR), and others. This Reuse Plan and its subsequent amendments and disposition documents sets forth guidelines and parameters for the redevelopment of the hospital grounds, including a significant new state reservation to be managed by the DCR. The Reuse Plan also established 54 acres of land to be acquired by the City of Waltham on which DCR holds a conservation easement.

The project area for this RMP includes the original Beaver Brook Reservation (59 acres) and the portions of the former Metropolitan State Hospital land, now under the care and control of the DCR (254 acres), including the new Metropolitan Parkway. For the purposes of this document, the original 59-acre property is referred to as Beaver Brook Reservation, and the former hospital land as Beaver Brook North Reservation. The RMP Appendix E also includes an evaluation of the City of Waltham's proposed 9-hole golf course with respect to environmental alterations and the potential effects on the adjacent reservation.

This RMP for the Expanded Beaver Brook Reservation is intended to provide a framework for future management and capital investment, while also defining a common vision for property managers, stakeholders, and community representatives. The Plan presents an inventory and evaluation of current site features and conditions, and recommends both capital improvements and increased staffing.

Planning Process

In spring 2005, DCR prepared a scope of services and hired the consultant team of Pressley Associates, Inc. and LEC Environmental to prepare the RMP for the Expanded Beaver Brook Reservation. The process of developing the RMP included reviewing previous studies for both the original reservation and Beaver Brook North Reservations, conducting site inventory and evaluations, completing additional research, public review process, and preparation of draft and final reports.

Public Participation

A public meeting to present preliminary findings and solicit input on issues and topics to be addressed in the RMP was held in March 2006. Approximately thirty individuals representing the communities of Belmont, Lexington, and Waltham and organizations such as the Waltham Land Trust, Massachusetts Audubon Society, and the New England Mountain Bike Association attended. On May 10, 2006, the public review draft was posted on the DCR RMP website and a public notice published in the MEPA *Environmental Monitor*.

The second public meeting held on May 23, 2006 presented the findings and recommendations of the draft RMP and solicited input and comments from the participants. Approximately twenty (20) individuals from the three communities and several stakeholder organizations attended the second public meeting. Consistent with RMP legislation, Chapter 26 Acts of 2003, the draft was available for public comment for a 30-day period ending on June 9, 2006. Thirty-eight (38) written comments were received, primarily by email. DCR and the consultant team evaluated all comments, and revised the draft plan and submitted it to DCR on June 30, 2006. In order to finalize the plan and prepare if for its presentation to the DCR Stewardship Council, DCR initiated a second phase of planning work in December 2008.

A summary of public comments, DCR's response to those comments, and a summary of substantive changes to the public review draft RMP are included in Appendix D.

Distinctive Characteristics of the Expanded Reservation

The 254-acre Beaver Brook North Reservation and the 59-acre Beaver Brook Reservation are important components of the DCR's Urban Park (DUPR) System, each with different and distinctive characteristics. As the first reservation in the Metropolitan Park System, Beaver Brook Reservation is a significant cultural landscape, with features that include mill ponds and dams, stone walls, open lawns, specimen trees, woodlands, trails, historic buildings and structures, and intensive recreation facilities. Relative to other parks, reservations, and facilities in the DUPR North Region, Beaver Brook Reservation is small in size, but it never the less holds a unique place in the

history of the Metropolitan Park System, and deserves increased recognition.

The former Metropolitan State Hospital, a portion of which is now Beaver Brook North Reservation, contains a diverse assemblage of natural communities resulting in part from minimal human intrusion or alteration over many decades. Cultural artifacts remaining from the former hospital such as the MetFern Cemetery and the carriage roads enhance the property and make it readily accessible for passive recreational use. Beaver Brook North is also much smaller in size than other urban reservations such as the Middlesex Fells or Great Blue Hill, but it contains a particularly diverse ecological system with important and extensive wetlands that have high habitat value.

Finally, the entire expanded reservation is part of an important regional open space system, called the Western Greenway, which presents opportunities for continued habitat and trail connectivity with adjacent open spaces managed by the Commonwealth, municipalities, and private conservation organizations. Thus, the expanded reservation, including both Beaver Brook and Beaver Brook North Reservations is an extraordinary asset for the citizens of the Commonwealth, particularly in the dense western suburbs of Boston.

Priority Findings

This RMP builds on a substantial body of work completed by the Tri-Community Task Force, Beaver Brook Watershed Coalition, the DCR and many others as part of the surplus process for the former Metropolitan State Hospital property. Early in the reuse process, Met State was identified by the Task Forces' consultants as a "fragile and valuable natural environments including wetlands, wildlife habitats;" historic preservation advocates expressed a strong interest in the possibility of reusing existing buildings and landscapes on the site.[1] The quality of existing habitats and natural systems is confirmed in this RMP, particularly given the urban location of the property. The former hospital is also listed on the National Register of Historic Places and the North Reservation contains the MetFern Cemetery, a non-active patient cemetery for both Metropolitan State Hospital and the Fernald Center.

However, interest in the former hospital property should not overshadow the importance of the original Beaver Brook Reservation, which was the first public reservation in the Metropolitan Park System. The reservation contains the Beaver Brook watercourse, mill ponds and dams, the location of the original Waverley Oaks, upland woodlands and wetlands, and popular recreation facilities including a spray pool, play area, tennis courts and turf fields.

Figure 2: "Beaver Brook Reservation," (Metropolitan Park Commission Report, 1898).

Beaver Brook Reservation

Established in 1893, the original Beaver Brook Reservation was the first reservation in the Metropolitan Park System, which has been determined eligible for listing on the National Register of Historic Places by the MHC.[2] Early accounts by Charles Eliot, Frederick Law Olmsted, and Sylvester Baxter, proponents of the Metropolitan Park System, emphasized the importance of preserving distinctive natural scenery near Boston. In recommending the preservation of land around Beaver Brook, including the famous Waverley Oaks, Eliot argued that the land in two municipalities (Waltham and Belmont) required protection under new state statutes, leading to the creation of the Metropolitan Park Commission, later the MDC (now DCR).

Today, Beaver Brook Reservation includes two parcels separated by Trapelo Road. The north or Mill Street parcel contains two mill ponds with associated dams, the historic Copeland House and Stearns barn, as well as stone walls, trails, open grass areas, and woodlands. This parcel is used primarily for passive recreation including hiking, dog-walking, and bird watching; duck feeding is also popular. The Copeland House is currently used as DCR staff housing on the second floor and the first floor could serve as a park staff office and visitor center as it once did.

The southern, Waverley Oaks parcel contains popular active recreation facilities including children's spray pool and play area, tennis courts, and turf fields. The existing restroom and picnic pavilion are associated with the early development of the reservation and are therefore historic structures. As the brook continues south through this parcel, it supports wetlands and a potential vernal pool.

Beaver Brook North Reservation

The Beaver Brook North Reservation includes a substantial portion of the former Metropolitan State Hospital grounds. In 2009, the construction of the Metropolitan Parkway north and south segments are complete, with a temporary connector road constructed to link the two segments. The parkway provides public access to the new AvalonBay residential development located in the former hospital buildings. Public access into the reservation is currently limited pending completion of a DCR/City of Waltham parking area in the vicinity of the former Administration Building. Plans for a proposed 9-hole golf course to be developed by the City of Waltham are currently on hold.

DCAM has demolished the hospital buildings in the DCR land, and has cleaned up the former debris site. Former carriage roads provide an existing trail system, and link the reservation to the adjacent Rock Meadow conservation land in Belmont. The historic MetFern Cemetery contains the remains of patients from both the Metropolitan State Hospital and the Fernald Center.

Beaver Brook North supports a diverse assemblage of natural communities including upland forest, successional shrub habitat, upland meadow, forested wetlands, emergent marsh, and wet meadow including both certified and potential vernal pools. The importance of the wetland habitats in Beaver Brook North has been documented since the disposition process began in the early 1990s, and is confirmed by the findings of this RMP.

Figure 3: Land owned by the City of Waltham on which DCR holds a conservation easement, 2005 (Pressley Associates).

Proposed Waltham Golf Course

The RMP also evaluated the natural communities found on land currently owned by the City of Waltham on which DCR holds a conservation easement, and considered environmental issues associated with the proposed 9-hole golf course, which is included as Appendix E. Construction of the golf course would require substantial alteration of the vegetation and topography of the site, largely because of the limited size of the property, and its sloping terrain and wetland system. The evaluation did not consider other potential uses of the property other than conservation land, which is consistent with the DCR easement.

Figure 4: Metropolitan Parkway and adjacent bike path, 2006 (Pressley Associates).

Planning Issues

It should be noted that several important resource and operational issues complicate the current management of the expanded reservation and the ultimate implementation of the Resource Management Plan. While the Metropolitan Parkway is largely complete, with a temporary connector linking the north and south segments, there is no formal public access at this time to the Beaver Brook North Reservation. Local residents informally access the reservation from adjacent public lands owned by Waltham and Belmont. The construction of the residential development complex and the potential for a Waltham golf course adjacent to Beaver Brook North will likely affect future site conditions and increase public use of the new reservation. Work still remains to be done to finish the reuse of the former hospital grounds, including determining a viable new use for the Administration Building and site restoration. This work requires inter-agency coordination between DCR, DCAM and the City of Waltham. Beaver Brook and Beaver Brook North are not contiguous properties (although they are linked ecologically by the Beaver Brook watercourse). Finally, no permanent, year-round DCR staff members are assigned to manage the expanded reservation; management of the current Beaver Brook Reservation is shared with other park, parkway and recreational facilities in the North Region Fells District.

Recommendations

The RMP provides a wide range of recommendations that address proposed capital improvements, public use, maintenance and management, and the protection and enhancement of the reservation's significant natural and cultural resources, which are summarized below. The underlying theme of these recommendations is balancing resource conservation and public use, and engaging in maintenance and management practices that improve and sustain the condition of cultural, historic, and recreational resources and infrastructure without altering the character and health of the natural communities or the integrity and significance of the cultural resources (see also Chapter 4 of the RMP and the two Recommended Improvements plans.)

Natural Resource Recommendations

The natural resources, including plant communities, wildlife, and habitats are an important characteristic of the expanded Beaver Brook Reservation and should be managed with a light hand to protect sensitive resources, perpetuate habitat diversity, and to monitor the health and condition of the ecosystems. Natural resource recommendations include public recreational use, management of invasive or nuisance species, habitat enhancements, and public education, as summarized below:

- In sensitive habitat areas, focus recreational uses on the existing primary and secondary trail systems, with passive uses (e.g. walking and bicycling) allowed and other inappropriate activities (e.g. motorized vehicle usage) prohibited.

- Provide public education materials in the form of brochures, signage, web-based information or other methods to describe the fundamentals and importance of habitats, ecosystems, vernal pools, avian migration, food webs, and seasonal changes and to identify species found in the reservation.

- Sustain the health of the existing natural habitat areas by managing invasive plants through physical, chemical, biological, or an integrated combination to insure effective, species-specific, invasive species elimination and control.

- Manage Canada Geese through a combination of vegetation management, halting public feeding of waterfowl, and public education.

- Enhance the distribution of natural habitats in Beaver Brook North Reservation by re-vegetating disturbed areas resulting from construction activities, building demolition, debris removal and motorized vehicle use. This will deter the colonization of these sites by invasive plant species. The former debris site may also provide an opportunity to establish a new wetland.

- Sustain habitat heterogeneity in field and successional shrub habitats, which require routine maintenance in the form of mowing and brush-cutting in the absence of natural herbivore grazing or fire.

- Enhance the emergent marsh, successional shrub habitat, and interior forest (upland and wetland) habitats by introducing wildlife nesting and roosting boxes.

- Monitor and evaluate both certified and potential vernal pools.

- Provide educational opportunities for local school groups and college and university students. Study topics may range from simple biological principals such as habitat diversity, food webs, vernal pool studies, to reservation management, and invasive species control.

Cultural Resource Recommendations

Both the former Met State Hospital and the original Beaver Brook Reservation are historic properties with important resources and features including archaeological sites, cultural landscapes, and historic buildings and structures. These features are integral to the importance of the reservation and will be treated according to the *Secretary of the Interior's Standards for the Treatment of Historic Properties.* Cultural resource recommendations are summarized below:

Beaver Brook Reservation

- Preserve historic character by retaining the cultural landscape features, materials, and spaces that contribute to its significance as the first reservation in the Metropolitan Park System.

- Undertake a detailed structural assessment of the two dams to determine specific repairs needed as well as code requirements and routine and cyclic maintenance needs.

- Retain existing specimen oak trees and develop a long-term program for replacement as the Waverley Oaks are a significant character-defining feature of the original reservation.

- Retain and maintain the historic restroom and picnic pavilion and ensure that future repair or improvements meet the *Secretary's Standards*.

- Retain and maintain the historic Copeland house; DCR staff residence is a compatible use and provides additional security for the reservation.

- Conduct a building condition assessment of Stearns Barn and undertake necessary emergency stabilization work and repairs.

- Preserve the two prehistoric sites in the Waverley Oaks parcel and the two historic mill sites in the northern section of the reservation.

- Repair the stone walls surrounding the reservation.

Beaver Brook North

- Continue ongoing maintenance of the MetFern Cemetery, consistent with the DCR Preservation and Maintenance Plan.

- Retain, preserve, and re-establish the character of the historic carriage roads with a rural character that reflects the low-intensity passive use recommended for the property. Reduce the width of the carriage road in the vicinity of the debris removal sites by replanting the shoulder.

Summary of Site and Recreation Recommendations

These recommendations address recreational facilities, public use, and other site features:

Beaver Brook Reservation

- Maintain active or intensive recreation facilities in selected areas of the Waverley Oaks parcel; retain the Mill Street parcel for passive recreation only.

- Perform regular trails maintenance to decrease loss of paths to invasive woody vegetation and reduce soil compaction and erosion.

- Maintain consistent site furnishings compatible with the historic character of the reservation.

- Provide improved site interpretation to enhance passive recreation and public education; clearly display the dog policy, designated trails, and allowable uses in the northern and southern parcels.

- Continue coordination with Belmont on the development and implementation of the Waverley Oaks Trail.

- Undertake selective clearing to reveal views from the dams and around the cascade to improve the visual quality of the reservation.

- Restrict access to the natural area along the MBTA tracks in the south parcel to protect the existing wetlands and to avoid unsafe access to the tracks.

- Perform periodic vegetation management in and around the two historic mill sites in the northern section of the reservation.

Beaver Brook North

- Create curb cut on the north parkway, re-grade carriage entrance, and install gate to allow DCR maintenance vehicles and emergency access to the reservation.

- Create new DCR public parking area near the former MSH Administration Building, accessible from the Metropolitan Parkway.

- Remove all existing non-functional utility poles with minimum site disturbance. This is a high priority for the reservation given their hazardous condition.

- Assess costs and feasibility of removing the water tower; evaluate alternatives for removal vs. retention for expanded cell tower use.

- Delineate a shared-use trail system that utilizes the existing carriage road system and rustic secondary [single track] trails, connecting to Rock Meadow and accessible to the new parkway bikeway at both Trapelo Road and Concord Avenue. Monitor trail conditions for potential new volunteer trails, damage to wetlands, and unauthorized motorized vehicle use. Seasonally close secondary trails if needed for wildlife protection and habitat management (see also management recommendations below).

- Realign the Mackerel Hill trails where necessary to address erosion, including installing water bars or other drainage features. Prohibit access to the water tower for safety reasons.

- Perform regular maintenance of the Metropolitan Parkway, including sweeping, plowing and snow removal, maintenance of the drainage system, and maintenance of the new street trees and lighting system.

- Create new visitor facility with restrooms, drinking water, interpretive exhibits, public program space, and user information in the former MSH Administration Building.

- Evaluate alternatives for a wetland boardwalk that provides pedestrian access to Walnut Street and Dawes Street through the open wetlands located north of the parkway and residential development.

- Prohibit motorized uses on the property consistent with DCR reservation regulations. Create public awareness and community watch programs to implement the recreation policies.

Summary of Management Recommendations

These recommendations address additional partnerships, collaborative programs, monitoring and staffing that achieve the goals of this RMP:

- Recognize the state and regional significance of both the Beaver Brook Reservation and the Beaver Brook North Reservation and advocate for increased staffing and funding resources to meet the maintenance and management needs of the expanded reservation (see management and operations alternatives below).

- Provide environmental programs and stewardship activities within the expanded reservation. Develop collaborative approach or partnerships with nearby environmental organizations (such as Mass Audubon) and institutions (such as Bentley College) related to environmental monitoring, inventory, and programs. This could provide an ongoing database of resource information and public programs that supports the mission of DCR and its partners.

- Clearly communicate and post current and future public access/use policies, particularly at Beaver Brook North, including allowable uses, trail system, entrances, and rules and regulations.

- Continue to work collaboratively with the City of Waltham and DCAM related to the use and physical improvements (including site restoration) to City of Waltham land (DCR conservation easement), former MSH Administration Building, the proposed DCR and golf course parking areas, the demolition of the former MSH Female Dormitory, former entrance road (Lot 4B), and the redevelopment of the Gaebler School to achieve the City's and the DCR mutual goals related to conservation, historic preservation, and recreation for the Beaver Brook North Reservation.

- Monitor ongoing construction and maintenance activities associated with the AvalonBay residential development site, particularly with respect to use of the parkway, equipment and materials storage, tree protection, and protection of the adjacent DCR reservation land.

- Work with established recreational associations to create a comprehensive trail assessment that includes a survey of all existing trails, describes current recreational values and deficiencies and proposes recommendations for enhancements or remediation.

- Coordinate with the Friends of the Western Greenway on the designation of a continuous greenway trail through the North Reservation.[3]

- Monitor Beaver Brook North on a regular basis related to potential inappropriate uses, such as dumping and motorized vehicle use, and take immediate action if such uses are observed.

- Actively participate in long term planning related to traffic safety along the Trapelo Road, Concord Avenue, and Mill Street corridors. Work specifically with the City of Waltham on a safety evaluation of the Trapelo Road/Metropolitan Parkway South intersection.

- Survey and mark the boundary of the reservation surrounding the AvalonBay Communities, Inc. development and monitor annually.

- Work with collaboratively park users to develop and post a policy for dog walkers and specify off-leash hours.

Capital Improvements

Following an analysis of site conditions, management requirements, DCR resources, and with additional public input, the RMP proposes capital improvements to achieve basic vs. enhanced level of service for both Beaver Brook and Beaver Brook North Reservation. Basic level services represent the most fundamental needs for maintaining the expanded reservation, which if left neglected, would lead to a permanent loss of an important cultural or natural resource, adversely affect public safety, or result in further decline of the property's infrastructure. Enhanced level services represent increased management to improve the condition of existing resources, enhance programming and public access, and which achieve cosmetic improvements that are not urgently related to public safety or resource protection.

Reservation-wide

Enhanced Level Services

- Continue voluntary program to acquire conservation easements along Beaver Brook.

Beaver Brook Reservation

Basic Level Services

- Conduct structural and rehabilitation evaluation of the Mill Pond and Duck Pond dams;
- Conduct structural and rehabilitation evaluation of the Stearns Barn;
- Inspect and repair deteriorated stone boundary wall along Waverley Oaks Road and Mill Street;
- Evaluate and restore trails and improve site conditions near the two ponds and along Beaver Brook;
- Improve/repair trail leading to the cascade and overlook;
- Implement a universally-accessible trail from the Mill Street parking area to the Duck Pond;
- Remove vegetation from the two archaeological mill sites;
- Undertake vegetation management and additional planting where necessary;
- Restore designated trails lost to volunteer/invasive vegetation growth;
- Develop riparian buffer planting along Beaver Brook.

Enhanced Level Services

- Implement structural and safety improvements at Mill Pond and Duck Pond dams;
- Implement emergency stabilization at Stearns Barn;
- Rehabilitate the baseball and turf fields
- Develop interpretive/education information related to the history of the reservation.

Beaver Brook North Reservation

Basic Level Services

- Preserve and maintain MetFern Cemetery following the Cemetery Preservation and Maintenance Plan;
- Install curb cut and gate, and re-grade the entrance to the carriage road from the north parkway for maintenance and emergency access;
- Locate and remove remaining non-functional utility poles;
- Survey DCR reservation property line surrounding AvalonBay development and monitor yearly.
- Replant areas cleared from the demolition of historic buildings and ensure that trail connections are re-established;
- Re-vegetate areas damaged by motorized vehicle use in the vicinity of the debris removal areas;
- Implement trail connection to Lot 1;
- Establish other critical trail connections
- Evaluate Mackerel Hill trails and implement erosion control and re-route trail where necessary;
- Design and construct DCR parking area with orientation sign accessible from the parkway east of the former MSH Administration Building (future visitor center);
- Implement site orientation/kiosk at new parking area;
- Implement native species planting along Metropolitan Parkway and in exposed slope area south of AvalonBay development;

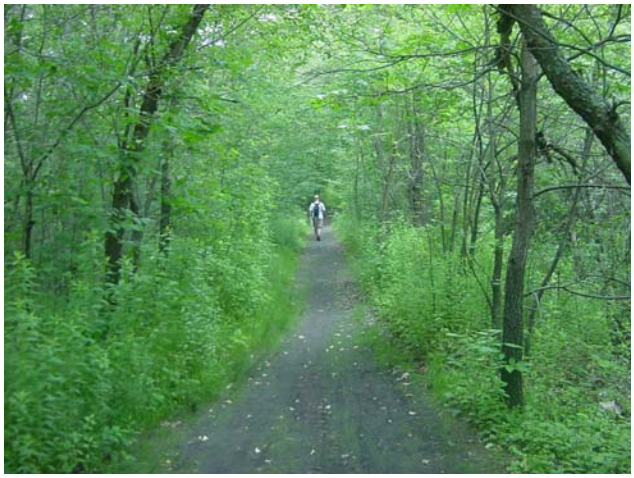

Figure 5: Existing path in Beaver Brook North Reservation, 2005 (Pressley Associates).

Enhanced Level Services

- Work with City of Waltham on the stabilization and re-use of Administration Building; design and construct new DCR visitor center;
- Assess cost and feasibility of removing the water tower on Mackerel Hill; if feasible, remove water tower;
- Design and implement compatible boundary fence and interpretive signage at MetFern Cemetery;
- Re-vegetate areas associated with construction activity and debris removal, including establishing a new wetland;
- Develop a shared-use trail system on the existing carriage roads and secondary rustic [single track] trails; implement priority trail connections across the brook along the south parkway and through the meadow from the north parkway.

Figure 6: Former MSH Administration Building, 2006 (Pressley Associates).

Land Stewardship Zoning Guidelines

The 2003 legislation that created the Department of Conservation and Recreation (DCR) directs the agency to prepare management plans that include guidelines for operation and land stewardship. These guidelines address natural and cultural resources, and ensure consistency between recreation, resource protection, and sustainable forest management. Land Stewardship Zoning Guidelines provide a foundation for recommendations for resource stewardship and facility management, and are intended to cover both existing DCR property conditions as well as future conditions of the reservation. Three zones can be supplemented with specific resource overlays that identify designated or recognized resource features.

Zone 1

Vernal pools possess rare species habitat with a sensitive ecological balance. Zone 1 covers a cluster of five certified and five potential vernal pools, including associated 100-foot buffer areas, and the historic MetFern Cemetery, all located in the Beaver Brook North Reservation. There is no area designated as Zone 1 in Beaver Brook Reservation.

Zone 2

All non-developed areas with cultural and natural resources that can tolerate visitor use and recreational activities at a sustainable level are classified under Zone 2. In the original Beaver Brook Reservation, Zone 2 includes most of the park, with the exception of the intensively used and maintained recreation areas – the parking lots, tennis courts, ball field, and area around the spray pool, picnic pavilion, and restroom. In the Beaver Brook North Reservation, Zone 2 covers all of the property excluding areas under Zones 1 and 3, which includes the aforementioned vernal pools and cemetery (Zone 1), and the Metropolitan Parkway, paved bike path, and proposed DCR parking area (Zone 3). Areas affected by building demolition, debris removal or parkway construction for which site restoration and re-vegetation is recommended will be managed under Zone 2.

Zone 3

All areas developed for intensive recreation and vehicular transportation that require higher levels of monitoring and maintenance are categorized as Zone 3. In Beaver Brook Reservation, Zone 3 includes the parking areas, tennis courts, ball field, and the spray pool and playground in the southern parcel. In the Beaver Brook North Reservation, Zone 3 is limited to the Metropolitan Parkway, the adjacent paved bike path, and the proposed DCR parking area.

Figure 7: Copeland House in Beaver Brook Reservation, 2006 (Pressley Associates). See Figure 2.15 for a historic image of the Copeland House.

Significant Feature Overlays

The three land stewardship zones can be supplemented with significant feature overlays identified through the RMP inventory process and research. The purpose of these overlays is to provide more precise management guidance for identified resources and to recognize, maintain, protect, or preserve unique and significant resource values, regardless of the zone in which they occur. The Cultural Resource Overlay covers the entire Beaver Brook Reservation, including the cultural landscape, archaeological sites, and historic buildings and structures that should be evaluated further and listed on the National Register of Historic Places. The MetFern Cemetery in the North Reservation is also covered by the overlay.

The Natural Resource Overlay includes additional potential vernal pool areas in both Beaver Brook and Beaver Brook North Reservations, which require additional field research to determine their ecological function and condition.

Management and Operations Alternatives

The expanded Beaver Brook Reservation does not have permanently assigned year-round maintenance and operations staff. The reservation is located in the Fells District of the North Region. This is a large and complex region with thousands of acres of parkland, parkways and recreational facilities; the assignment of staff and the allocation of resources (such as operational funding, materials and equipment, and staff) are based on regional management priorities. The historic 59-acre Beaver Brook Reservation is currently managed as a collateral duty by staff assigned to the Alewife and Mystic Reservations. With the acquisition of the 254 acres of the former Met State Hospital and the construction of a new Metropolitan Parkway, funding and allocation of additional management resources is essential to the preservation and safe public use of the expanded reservation. With this in mind, the RMP identifies three alternative staffing levels, which provide corresponding increased resource protection and public benefit:

Level 1 consists of the current staffing levels and management capacity that provides for limited basic operational responsibilities for the entire expanded Beaver Brook Reservation.

Level 2 is the minimal staff needed immediately to provide essential public safety and resource stewardship. This exceeds the current Level 1 staffing level for Beaver Brook and consists of four positions (1 year round Supervisor, 1 seasonal Ranger, 1 year round Laborer, and 2 seasonal Lifeguards).

Level 3 achieves the optimal staffing level including seven positions (2 year round Supervisors, 3 seasonal Park Rangers, 2 seasonal Lifeguards, and 2 year round Laborers).

Future partnerships could include a formal maintenance agreement with AvalonBay Communities, Inc. related to the maintenance of the new Metropolitan Parkway, which provides vehicular access to the new residential development. Future agreements with AvalonBay must be consistent with DCR's conservation, preservation, recreation, and management objectives for the reservation. Opportunities also exist for collaborative evaluation, maintenance and improvement to the multi-use trails, which could alleviate a portion of the maintenance burden and involve critical stakeholders in the active management of the expanded reservation. Staff training with cultural resource specialists, related to the long-term preservation of the MetFern Cemetery will ensure that the DCR staff has the tools and knowledge to appropriately care for the historic cemetery.

Recommendations for Further Study

The following recommendations include tasks associated with additional research, planning, design, or documentation that are needed either prior to undertaking physical work, or which would enhance the overall understanding of the reservation.

1. Assess cost and feasibility alternatives for the water tower, including removal.
2. Undertake additional trail evaluations in the North Reservation in collaboration with trail users;
3. Coordinate with Lexington, Waltham and Belmont on traffic monitoring related to the use of the Metropolitan Parkway and the safety of the Trapelo Road intersection;
4. Conduct structural and code compliance evaluation of the bridges and dams;
5. Complete a National Register nomination and a Cultural Landscape Report for Beaver Brook Reservation;
6. Conduct periodic water quality monitoring in ponds and along the Beaver Brook watercourse;
7. Conduct rare species monitoring and continue to evaluate and certify the potential vernal pools;
8. Complete a structural evaluation of the Stearns Barn;
9. Complete additional design work necessary to implement the priority improvements identified in this RMP, particularly the DCR parking area and critical trail connections;
10. Conduct a recreational user study of the Beaver Brook North Reservation to determine existing uses as baseline for assessing changes over the next five to ten years;
11. Prepare an accurate GIS base map for both properties, particularly focused on locating existing and proposed trails n the North Reservation.

Endnotes

[1] DCPO, MSH Reuse Plan, p. 7.

[2] Betsy Friedberg, MHC to Julia O'Brien, MDC. June 20, 1991 regarding a determination of eligibility for the entire Metropolitan Park System.

[3] In 2009, several Western Green trail markers were in place in the North Reservation.