
Chapter 3

PROPERTY INVENTORY AND ANALYSIS



Figure 3.1: Chestnut Hill Reservation with pedestrian path around the Reservoir (2005)

Introduction

The location, character and condition of existing site features within the Chestnut Hill Reservation reflects information gathered through a series of field surveys conducted by Pressley Associates between August and October 2005 with an additional site visit in early March 2006, supplemented by specific plans and reports completed by the RMP sub-consultants. Pressley Associates inventoried and evaluated the overall site conditions including structures, vegetation, vehicular and pedestrian circulation, and site furnishings and small-scale features. DCR staff contributed substantial information related to the inventory and analysis of management resources, surrounding land uses, and park operations and maintenance. Judith Nitsch, Inc. prepared a property survey delineating the land officially owned by the Commonwealth of Massachusetts. LEC Environment Consultants, Inc. carried out site evaluations in August and September 2005, which included an inventory of wildlife habitats and plant communities within the Reservation. Ocmulgee Associates visited the site in August and September 2005 and prepared a structural report on Gatehouse #1, the perimeter fence, freestanding walls, and retaining walls. The analysis of current conditions in relation the Reservation's history is based on primary and secondary historical research conducted by landscape historian Jill Sinclair, included as Appendix C. Each of the subconsultants' independent reports and DCR sections have been excerpted and included along with the inventory and analysis data to form this property inventory and analysis section of the RMP.

This resource inventory and analysis is a critical component of the Resource Management Plan, because it helps DCR focus on the areas, features, and resources that are most important or which need urgent attention. Identifying areas and features that are significantly deteriorated will help guide decisions related to items addressed both in the RMP recommendations as well as those identified as Early Action Items in Chapters 5 and 6 respectively.

Natural Resources

LEC conducted two site evaluations on August 24, 2005 and September 7, 2005 to assess existing natural resource conditions, inventory habitat communities, and evaluate their potential as wildlife habitat. LEC also reviewed appropriate topographic and resource maps and scientific literature to compare existing site conditions with wildlife habitats and ecological relationships documented under similar conditions throughout New England. While an actual wildlife inventory was not a component of the study, wildlife observations are noted below. Based on the results of the site evaluation, LEC has preliminarily determined that the Reservation provides fragmented wildlife habitat resources for a variety of mammals, birds, reptiles, amphibians, and invertebrates adapted to urban environments.



Figure 3.2: Rock outcropping on the west side of the drumlin (2005)

1. Surficial Geology

The Reservation's topography in relation to the surrounding landscape is depicted on the USGS Topographic Map (Figure 3.2). As depicted, the site contains the man-made Chestnut Hill Reservoir while a prominent drumlin occurs within the northeastern portion of the Reservation. Boulder outcroppings and ledge adjacent to Chestnut Hill Driveway descend steeply toward the walkway encircling the Reservoir. Saint Thomas More Road and the wooded areas north of Chestnut Hill Driveway are comparatively flat. The hill within the northeastern corner of the site descends moderately from all sides, and soils within this area consist of exposed bedrock on hills and ridges where the relief is affected by the underlying bedrock. These Hollis and Charlton soils consist of excessively drained soils atop rock outcrops and within low pockets. The remainder of the site is mapped as Udorthents, or areas where the original soils have been cut away and/or consist of filled areas that were previously tidal marshes or river floodplains, and is a common soil designation within urbanized areas. This fill consists of mixed soil material including sand and gravel.

2. Habitat Types

A variety of regionally common, but botanically diverse vegetated habitats are contained within the Reservation. A brief description of each of these is outlined below.

a. Upland Forest

An upland forest vegetates the drumlin and the steep slope south of Chestnut Hill Driveway. Maturing stands

of Northern Red Oak (*Quercus rubra*) and Eastern White Pine (*Pinus strobus*) dominate the canopy with scattered inclusions of Black Cherry (*Prunus serotina*), White Ash (*Fraxinus americana*), tree of heaven (*Ailanthus altissima*), white oak (*Quercus alba*), Norway Maple (*Acer platanoides*), and American Beech (*Fagus grandifolia*). The moderately dense shrub layer contains clusters of Multiflora Rose (*Rosa multiflora*), Red raspberry (*Rubus idaeus*), and European Buckthorn (*Rhamnus frangula*) with individual apple (*Malus* sp.) and sapling canopy species. Groundcover species include seedlings of Norway Maple, Poison Ivy (*Toxicodendron radicans*), Wild Sarsaparilla (*Aralia nudicaulis*), Garlic Mustard (*Allaria officinalis*), False Solomon's Seal (*Smilacina racemosa*), Wood Anemone (*Anemone quinquefolia*), Aster (*Aster* sp.), Deer Tongue (*Panicum clandestinum*), and clover (*Trifolium repens*). Several of these woody and herbaceous plants are invasive plants including Norway Maple, Multiflora Rose, European Buckthorn, and Garlic Mustard.

Red Oak, Norway Maple and grassed areas occur within the northern portions of the Reservation, north of Chestnut Hill Driveway and south of a series of residential apartment buildings. The Red Oak and Norway Maple maintain limited habitat connectivity to the forested upland described above and offer reduced wildlife habitat due to their lack of species diversity and locations within the surrounding urban landscape. As Chestnut Hill Driveway winds toward Saint Thomas More Road, the canopy of major shade trees thins out and lawn grass dominates the landscape. Manicured lawn grass and various herbaceous species, including clover, aster, and Common Plantain (*Plantago major*), vegetate either side of Saint Thomas More Road.



Figure 3.3: Specimen beech tree (2005)

LEC visually observed Downy Woodpecker (*Picoides pubescens*), Black Capped Chickadee (*Poecile atricapilla*), and a male and female pair of American Goldfinch (*Carduelis tristis*) during the August 24 and September 7, 2005 site visits. These species typically breed within successional scrub and forested habitats and often nest within tree cavities. Auditory calls by the Gray Catbird (*Dumetella carolinensis*) were also confirmed in the field during this site evaluation. The Gray Catbird typically returns from the Gulf States and Central America in the spring to breed and nest within forested areas and dense thickets of vegetation, such as those contained within the Reservation. The open water may also serve as stopover point for other migratory species that make their way further north during the breeding and nesting season. Additional species observed by LEC include Eastern Chipmunk (*Tamias striatus*) and Gray Squirrel (*Sciurus carolinensis*) sightings while Pressley Associates, Inc. observed a Muskrat (*Ondatra zibethica*) at the site.



Figure 3.4: Upland forest vegetation on drumlin (2005)



Figure 3.5: Trees and grass along Chestnut Hill Driveway (2005)



Figure 3.6: Upland successional vegetation growing in rip-rap (2005)

b. Successional Shrub Upland

A narrow band of various successional saplings, shrubs, and groundcover species occur between the circular walkway and the open water, sprouting up-gradient of and between the granite lined embankments. Several of the wetland species occur between the granite embankments, rip rap slope, and along the water's edge, in closer proximity to the open water. These wetland species include individual White Willow (*Salix alba*), Purple Loosestrife, and Poison Ivy. Successional shrubs and saplings also occur along the top of granite embankments but inside of the perimeter path, including scattered patches of sapling trees and shrubs, such as Black Locust (*Robinia pseudoacacia*), Tree of Heaven (*Ailanthus altissima*), White Willow, Meadowsweet (*Spiraea alba*), and Slippery Elm (*Ulmus rubra*). Groundcover species include Poison Ivy, Purple Loosestrife (*Lythrum salicaria*), Cow Vetch (*Vicia cracca*), seedling Gray Birch (*Betula populifolia*), golden rod (*Solidago* sp.), Smartweed (*Polygonum caespitosum*), Common Milkweed (*Asclepias syriaca*), Virginia Creeper (*Parthenocissus quinquefolia*), Indian Tobacco (*Lobelia inflata*), Common Tansey (*Tanacetum vulgare*), Butter and Eggs (*Linaria vulgaris*) and various grasses. Several of these plants are invasive species within the sapling and groundcover layers, including Black Locust, Tree of Heaven, and Purple Loosestrife.

While several invasive species occur around the perimeter of the Reservoir, the density of the shrubs afford potential wildlife cover habitat and bolster the site's habitat value. During the August 23, 2005 site evaluation, LEC encountered dragonflies and bees (Hymenoptera) perched

within and feeding on the shrubs and observed numerous grasshoppers (Orthoptera) resting within the grasses and groundcover species. Although sparse, overhanging White Willow and Purple Loosestrife along the water's edge may moderate water temperatures and provide cover habitat for amphibian and reptilian populations utilizing the Reservoir.



Figure 3.7: Canada Geese (*Branta canadensis*) and Cormorant (*Phalacrocorax auritus*) resting on boulder rock outcropping (2005)

c. Open Water Reservoir

The open water provides a water source for wildlife, particularly for Double-crested Cormorant (*Phalacrocorax auritus*), Mallard Duck (*Anas platyrhynchos*), Canadian geese, and gulls (*Larus* sp.) which were observed in abundance. These avian species were observed diving and surface feeding within the Reservoir and basking on several emergent rock outcroppings within the Reservoir. Based on these observations of aquatic wading birds, likely fish populations within the Reservoir may include freshwater bass (*Micropterus* sp.), sunfish (*Lepomis* sp.), perches (*Perca* sp.), and sculpins (*Cottus* sp.). The open water may also serve as a feeding and resting stopover point for migratory species traveling north to breed and nest or south during winter months.

LEC also visually observed a juvenile turtle swimming within the Reservoir, most likely an Eastern Painted Turtle (*Chrysemys picta*) according to the momentary glimpse of distinctive red bands on either sides of the turtle's head. Other potential wildlife include aquatic amphibians such as Green Frog (*Rana clamitans melanota*), and macro invertebrates including mollusks, aquatic worms and the immature forms of aquatic insects such as stonefly and mayfly nymphs.

3. Invasive Exotic Plant Species

Invasive exotic species are generally defined as non-native plants that have aggressively invaded naturally occurring plant communities.¹ Virtually every habitat within the Reservation contains one or more invasive plant species, including Oriental Bittersweet (*Celastrus orbiculatus*), Black Locust (*Robinia pseudoacacia*), Norway Maple (*Acer platanoides*) European Buckthorn (*Rhamnus frangula*), Multiflora Rose (*Rosa multiflora*), Purple Loosestrife (*Lythrum salicaria*), and Garlic Mustard (*Alliaria officinalis*). Poison Ivy, although not considered an invasive species, presents a management challenge within the site as it occurs as a low-growing groundcover and as a climbing vine that winds around trees and shrubs within the upland portions of the site.

A brief description of each of these species is outlined below. Details on the control and treatment of tree of heaven (*Ailanthus altissima*) will be included in the Vegetation Management Plan, under development as a companion piece to this RMP.

a. Oriental Bittersweet (*Celastrus orbiculatus*)

Oriental Bittersweet is a deciduous invasive non-native woody vine that has a twining or trailing growth pattern. Native to eastern Asia, Japan, Korea and China, Oriental Bittersweet was first introduced into the United States in the 1860s. Oriental Bittersweet typically prefers roadsides, hedgerows and thickets, but its shade tolerance has allowed it to spread into forested areas. It reproduces by seeds, stolons, rhizomes and root suckers. Dense stands of vines can shade and suppress native vegetation.² Tree and shrub stems are weakened and killed by the twining and climbing growth which twists around and eventually constricts solute flow. Trees with girdled stems and large amounts of vine biomass in their canopies are more susceptible to damage by wind, snow and ice storms.³ Oriental Bittersweet was observed entwined amongst the upland mature and sapling trees throughout the site. LEC observed a moderate amount of Oriental Bittersweet within the upland trees and saplings located in the northeastern corner of the Reservation.

b. Black Locust (*Robinia pseudoacacia*)

Black Locust is a rapidly growing, early successional, deciduous tree native to the southeastern United States. Once introduced into an area, Black Locust expands rapidly, creating dense stands of clones that shade native ground vegetation. The large, fragrant blossoms of Black

Locust compete with native plants for pollination by bees and other insects. Although abundant seeds are produced, few actually germinate.⁴ Black Locust is intolerant of shade and is not found in dense woods except as a dominant tree.⁵ Scattered Black Locust saplings were observed within the successional shrub habitat.

c. Norway Maple (*Acer platanoides*)

Acer platanoides is a fast-growing tree, highly tolerant to variations in environmental conditions, including soil type and moisture regime. It is often overlooked due to its resemblance to Sugar Maple (*Acer saccharinum*). Its thick foliage tends to over-shade the understory and groundcover layers, stressing native shrubs and herbs. Native to continental Europe, this tree spread south from Norway, and was likely introduced to North America in the mid 1700s. Despite its aggressive nature, Norway Maple is still widely planted as a landscape tree, particularly in the urban and suburban landscape. Scattered Norway Maple trees were observed on the hill and particularly within the lawn area located between Chestnut Hill Driveway and the residential apartment buildings.

d. European Buckthorn (*Rhamnus frangula*)

European Buckthorn is an invasive, deciduous shrub native to Eurasia and first introduced into the United States prior to 1800 as a hedge planting. European Buckthorn is well established in New England and rapidly spreading westward. European Buckthorn is an aggressive invader of wet soils, capable of growing in both full sun and heavily shaded conditions. In addition, this species also grows well in a wide variety of upland habitats, including old fields and roadsides. European Buckthorn is a nuisance species growing mainly in thickets, hedgerows, pastures, abandoned fields, roadsides and rocky sites. It aggressively out-competes native flora, mainly on well-drained soils. Under full-sun conditions, individual plants can produce seed in only a few years. In heavily shaded habitats, seed production may be significantly delayed. The fruit of *R. frangula* is effectively dispersed by a variety of birds and mice. Common and Glossy Buckthorns readily invade natural communities. Once established, exotic buckthorns crowd or shade out native shrubs and herbs. Clusters of European Buckthorn were frequently observed along the embankment to the Reservoir and within the forested upland habitats, with scattered individuals observed within the successional shrub habitat.

e. Multiflora Rose (*Rosa multiflora*)

Rosa multiflora is a prolific shrub with thorny, arching stems known as canes. This shrub was introduced to the east coast of the United States from Japan for use as an ornamental landscape plant in the mid 1800s. *R. multiflora* tolerates a variety of soil and light conditions and spreads primarily through seeds consumed by birds (An individual plant may produce up to 1 million seeds per year which can remain dormant in the soil for up to 20 years), but can also root from the canes that contact the soil surface. Multiflora rose has historically been planted for a number of uses, including: wildlife cover for game birds; 'living fences' to confine livestock; and within highway median strips to reduce headlight glare. LEC observed Multiflora Rose within the successional shrub habitat, along forest edges, and intermittently within forested uplands.⁶

f. Purple Loosestrife (*Lythrum salicaria*)

L. salicaria is a perennial, herbaceous species native to much of the world, including Europe and Asia that was introduced to the northeastern United States and Canada in the 1800s for ornamental and medicinal purposes. This species aggressively out-competes and displaces native wetland vegetation, reducing biological diversity, and degrades the quality of wildlife habitats.⁷ This species has quickly invaded much of North America and has no natural predators or diseases that would normally limit its success in the northeast region.⁸ *L. salicaria* produces copious amounts of seeds, up to 250,000 seeds per plant annually, and possesses a strong taproot that continues to provide food to the plant when it is mowed, sprayed with herbicides, or damaged by insects. Purple loosestrife is one of the dominant plants vegetating the banks of the Reservoir.

g. Garlic Mustard (*Alliaria officinalis*)

Native to Europe, this biennial wildflower (seeding over-winter prior to germination) tends to grow in woodlands and floodplains, where it out-competes native herbaceous plants. The plant can self-pollinate, and seed germination is prolific, starting earlier in the Spring (late February/early March) than most native wildflowers. Plant growth may extend into the winter months provided temperatures are above freezing and there is no snow cover. Seeds often spread to new areas via stream flooding events, and tend to germinate in disturbed, open areas and forest edges. Garlic Mustard aggressively has invaded numerous natural forests and is capable of

dominating the ground layer in many areas. It is a severe threat to many natural habitats where it occurs because of its ability to grow to the exclusion of other herbaceous species. Scattered patches of Garlic Mustard were observed throughout the forested portions of the property.

h. Poison Ivy (*Toxicodendron radicans*)

Initial establishment of Poison Ivy is generally by seed that is transported by birds. The single-seeded fruit are eaten by a variety of birds and the fruit is dispersed by birds after passing through their digestive tract. Once established, the plant continues to spread by producing shoots from its extensive underground stems (rhizomes). The plant is spread by creeping rootstocks that extend from the parent plant. New plants can sprout from a small, buried root section that escapes attempts to control it. Poison Ivy is often a nuisance to Reservation visitors and employees. LEC observed groundcover species of Poison Ivy around the perimeter of the Reservoir along with climbing vines within the upland portions of the site.

4. Habitat Diversity and Value

Two primary characteristics contribute to a property's ability to provide wildlife habitat both locally and regionally: habitat diversity and the site's context in the landscape. While each of these characteristics is important individually, their benefit to wildlife is compounded when occurring within the same parcel.

a. Habitat Diversity

As discussed above, the Reservation contains three main wildlife habitats ranging from successional shrub uplands and maturing forest to open water habitat. This habitat heterogeneity provides a variety of feeding, breeding, migratory, over wintering, and cover resources for wildlife. Habitat diversity is directly related to species diversity, and contributes to complex arrangements of species interactions and relationships, as well as community stability. For example, the diversity of herbaceous plants contained within the successional shrub upland provides a varied array of resources for a host of herbivorous insects, including butterflies and moths (Lepidoptera), grasshoppers, beetles (Coleoptera), and ants, wasps, and bees. This variety of herbivorous insects provides a range of prey options for predatory insects, amphibians, reptiles, and birds. Species diversity at these lower trophic levels adds complexity to the food web and gives rise to community stability. Forested areas and the open water both provide breeding, feeding, nesting,

migratory, over wintering and cover habitat for a variety of amphibians, mammals, and birds.

b. Habitat Site Context

The Brighton section of Boston is densely developed with mixed use, residential, and commercial structures occurring in close proximity to the Reservation. Chestnut Hill Driveway, Beacon Street, Commonwealth Avenue, and Chestnut Hill Avenue surround the Reservoir and separate it from the surrounding urban landscape. The Boston College campus, stadium and associated athletic fields and Cassidy Playground occur west and east of the Reservation, respectively, and lawn grass within these areas provides reduced wildlife habitat. The urban landscape surrounding the Reservation also offers minimal wildlife habitat. However, the open water, forested upland, successional shrub upland and the rock outcroppings contained within the Reservation provide some limited wildlife habitat. The Reservation provides feeding, breeding, nesting, migratory, over wintering, and cover habitat for a variety of wildlife. LEC observed many of these species during site evaluations, including chipmunks, squirrels, birds, reptiles, and invertebrates. The open water likely functions as a local stopover point for migrating birds, providing necessary food and cover resources as well as habitat for resident species. Forested areas within the Reservation offer cover habitat for mammalian species, including Eastern chipmunk and gray squirrel that likely den in mature trees year round, using natural cavities or leaf nests. Acorns provide a food source for these mammals throughout the year. Overall, the site provides habitat for those species adapted to urban environments.

Cultural and Recreational Resources

The following section is an inventory and assessment of the main cultural and recreational landscape features at the Reservation. They all reflect, to a greater or lesser extent, the human impact on this landscape. Many of the features contribute directly to the historic character of the Reservation; some are later, non-historic additions. For each feature in turn, this section provides a historical overview and information on any subsequent modifications, derived from the detailed chronology included as an appendix to this RMP. The text then provides an assessment of the feature's current condition (and, where appropriate, use), based on field surveys conducted by Pressley Associates and its sub-consultants and on other relevant documentation as indicated.

1. Cultural Landscape

The cultural landscape is dominated by the Chestnut Hill Reservoir, the central part of the Reservation. Other important landscape features are the Reservoir dam, the heavily vegetated slope at the northern edge of the Reservoir, Chestnut Hill Driveway north of the Reservoir, Saint Thomas More Road, the non-historic Reilly Memorial Pool and Rink, and the wooded hill in the northeastern corner. The area known as Shaft #7 is also a heavily wooded hill. A stonedust path encircles the Reservoir with other paved paths connecting to other parts of the Reservation. Gatehouses #1 and #2, both historic structures, provide an historic connection to the original function of the Reservoir as a major water source. Scenic views of the Reservoir can be seen all around the Reservation, especially all along the perimeter path and from the overlook along the Chestnut Hill Driveway. Several large specimen trees, particularly oak and weeping beeches, are found throughout the northern part of the Reservation, with prominent ledge outcroppings along the northeastern edge of the Reservoir. The perimeter fence is another character defining feature of the Reservation, especially as seen from Beacon Street.

2. Reservoir and Dam

The Reservoir was built between 1866 and 1870. Originally it consisted of two irregularly-shaped basins separated by an earth and stone dam that ran over the Cochituate Aqueduct, installed under the site some twenty years earlier. The site had a natural watershed of 428 acres in Newton and Brighton but, when the Reservoir was constructed, much of the natural drainage was diverted into a storm drain system. A large earth dam (historically described as an embankment) was constructed to enclose the larger, Bradlee Basin to its south and east. The two reservoir basins had a stone lining of dry rubble masonry, which extended down to a berm with riprap reinforcement. This lining was capped with granite blocks. In 1948 the smaller, Lawrence Basin was declared surplus following the introduction of the Quabbin Reservoir. It was conveyed to the adjoining Boston College for educational purposes, and gradually filled in. The remaining Bradlee Basin was changed from an active water supply to an emergency reservoir in 1979 after completion of the Dorchester Tunnel, which runs directly underneath the Reservoir.⁹

The existing Bradlee Basin has a surface area of approximately 85 acres, with a maximum depth of 32 feet

and a mean depth of 19 feet. The typical water level is a maximum of 134 feet and minimum of 130 feet (Boston City Base). The location of the Reservoir places it near the upstream end of the Village Brook drainage area, a tributary to the Muddy River. Only a small portion of the DCR Reservation currently drains through stormwater runoff into the Reservoir. The water level is controlled by the lowest sluice gate at Gatehouse #2.

The MWRA still maintains jurisdiction on the use of the Reservoir, dam, Shaft #7, and Gatehouses #1 and #2. Gatehouse #1 no longer functions for water conveyance purposes, but is part of the dam structure. The gates of Gatehouse #1 have been decommissioned, while Gatehouse #2 was recently upgraded with new gates and operators. The Reservoir will only be activated as a last resort such as a break, rupture, or rehabilitation of the existing main water supplies. (See also the section on Management Resources later in this chapter.)

The Reservoir basin is defined by a shoreline composed of broad sweeping curves and roughly occupies a circular area. The approximate length of the shoreline is 8,105 linear feet (1.5 miles). Rip-rap composed of monolithic granite stones line the entire shoreline. The stones occupy roughly two-thirds of the exposed shoreline at average water level. Overall, the rip-rap is fairly well intact and shows no visible signs of failure despite the fact that woody vegetation has taken a foothold in the cracks between the stones. Currently most of this vegetation is cut back on a regular basis, but the residual woody stumps continue to sprout throughout the growing season.

The Reservoir dam or embankment is located along the south-eastern edge of the Reservation property and parallel to Beacon Street. It is approximately 2,000 linear feet and occupies approximately three acres of land. The crest elevation is at approximately 137 feet.¹⁰ According to a November 2005 emergency inspection report prepared by GZA GeoEnvironmental, Inc. for the DCR, the dam is in good condition. GZA assessed current maintenance levels as adequate, but observed eroded areas, depressions, and animal burrows along both the upslope (reservoir) and down slope (inland) sides of the dam and localized displacement of rip rap. Gatehouse #1 and #2 are along the top of the dam with the gatehouses' piping and pumping operations systems located within the structure. A new thirty inch iron overflow pipe is located along the upslope side approximately halfway between the two gatehouses. The pipe discharges into the storm drain system.

This RMP did not call for an extensive assessment of the Reservoir, analysis of the structural integrity of the dam, or for management recommendations. For further information on the Reservoir and dam, please see “Chestnut Hill Reservoir Dam, MA01113 Emergency Dam Inspection Summary Report” prepared by GZA GeoEnvironmental, Inc. for the Department of Conservation and Recreation in 2005 and the “Task 5.2 Chestnut Hill Reservoir Final Management Plan” prepared by CDM, Inc. in 2002 for the Massachusetts Water Resources Authority.

3. Gatehouse #1 Area

Gatehouse #1 was constructed between 1868 and 1870 and contained the major control gates for the Reservoir. Designed by Edward R. Brown in the Renaissance Revival style, it is located on the rim of the embankment or dam at the end of the original route of Beacon Street, and thus provided the first view of the new Reservoir complex for many visitors. It is a two-level granite structure, three bays wide, with a shingled, hipped roof. Originally built on quicksand, Gatehouse #1 has substantial foundations with rubble piers and brick arches that rested on bedrock. On the first level, the entrance to the gate chamber and two flights of stairs lead to an elevated pathway, which in turn provides access to a central set of steps up to the second story and the level of the Reservoir.



Figure 3.8: Gatehouse #1 upper structure (2005)

Historically, the Beacon Street spur entry drive terminated in front of the Gatehouse in a wide circular driveway that swept past the gate chamber entrance and around a circular ornamental fountain. Beacon Street was planted with two formal rows of elms in 1876, which framed the

view of the gatehouse. A centered cupola was removed from the building in 1909 and replaced with a brick chimney and wooden cornice.¹¹ Effluent Gatehouse #2 took over the building’s operations as part of the water supply system but it served as an outlet works until the 1970s.¹²

a. Entry Road

By 1977, the Beacon Street spur was no longer a straight formal avenue, the elms had disappeared, and the area was being used as an informal grassy parking lot. As part of the 1977 MDC improvements, the area became a paved parking lot with a central island planting bed and, adjacent to the stairs, two curb-edged planting beds. The original fountain was relocated in front of the Low Service Pumping Station with new plumbing. This area is under the care and control of the MWRA and covers water supply pipes originating from Gatehouse #1. The 1977 parking lot has subsequently been demolished and used as a construction staging area up until Fall 2005 when it was resurfaced as a bituminous concrete parking area. This parking area use was only temporary. At the end of 2005, MWRA advertised the "Heath Hill Section 52 Phase 2 Rehabilitation Project" and received bids from a number of qualified contractors. In January 2006, MWRA awarded a construction contract to J. D'Amico, Inc. The contract has an overall duration of 630 calendar days with an estimated completion in October of 2007. The Contractor has agreed to assist the MWRA in stabilizing the Gatehouse #1.

b. Gatehouse #1 Structure

Gatehouse #1 is of random ashlar granite stone masonry construction. It has an approximately forty by fifty feet footprint and is three window bays wide. The hipped roof is covered with slate shingles and is topped with a small stone masonry chimney. The ridges of the roof are covered with copper flashing. The structure has an upper and lower level. Access to the upper structure is from the pedestrian path along the top of the dam.

Extensive underground chambers are present in the lower part of the gatehouse and the within the dam itself. The underground chambers can be entered through cast iron doors set in a stone wall between the double granite stairs and through stairs inside the gatehouse. The double granite stairs lead up to the top of the dam. An ornate iron picket fence and locked gate which were part of the 1928-1929 perimeter fence (described below) currently restrict access from the parking lot to the top of the dam.

The slate covered hipped roof is supported with exposed rafters and decking, forming a cathedral style space. The roof framing is generally in good condition but there appear to be potential leaks at the hips, especially near the bottoms where the hip rafters sit on the corners of the building. The slate joints at the hips appear to be covered with a raised copper cap, although this was difficult to confirm during the 2005 field survey as the roof slope is fairly shallow and the exterior walls are over sixteen feet high.

Although there were no signs on the floor of any roof leakage during the recent field survey, the southwest corner of the roof has been rebuilt with modern 2"x4' rafters and plywood; the brick wall below this repair has light efflorescence stains. The brick walls at the northwest corner also have light efflorescence on their surfaces. The paint at all four corners is peeling and the wood is darkened, especially at the southeast corner.

While the roof is in good condition overall, it should be assumed that there is some moisture damage in the decking and possibly the rafters at the four corners. The

roof structure would need to be repaired before the building could be designated for public use.

The sixteen inch concrete slab floor of the upper part of the structure is at elevation 138 feet and spans from the entrance to the west end of the wet wells. The remainder of the floor consists of sixteen inch concrete planks spanning between each of the four intake portals.



Figure 3.9: Modern materials in southwest corner of roof (2005)

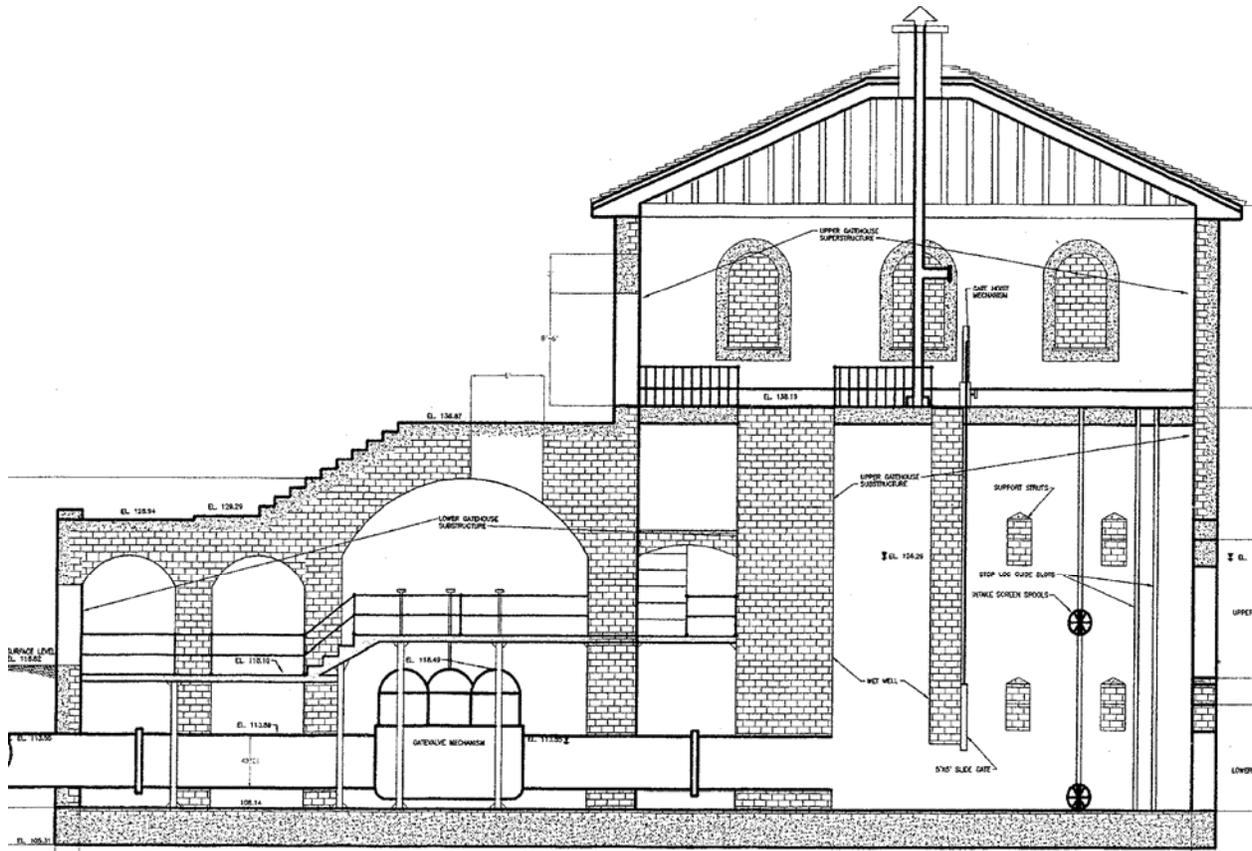


Figure 3.10: Section of Gatehouse #1 from GZA GeoEnvironmental, Inc. report

The 2005 field examination did not include the lower level; an attempt was made to reach the lower level but the wood platforms, catwalks and stairs were heavily damaged with rot and corrosion and access over the water-filled chambers was too dangerous to attempt. An extensive survey of the upper and lower interior levels was conducted by GZA GeoEnvironmental Inc in 1998 and their March 1998 report¹³ provides a complete description of the chambers and related elements.

GZA's 1998 report for the MDC studied options and issues related to the use of the gatehouse. Based on the GZA report, if Gatehouse #1 was to be open to the public in some form, it would be necessary to close the chamber in the lower part of the structure with fill (either flowable concrete fill or a mix of flowable fill and crushed stone) and to concrete up to the upper floor elevation of 138 feet. Bulk heading of the intake and outtake pipe would also be necessary. GZA estimated the cost of closure (which included the work described above plus limited re-pointing of the exterior stone masonry of the gatehouse from the normal water line to the dam crest elevation, construction phase resident engineering, and preliminary testing for lead paint within the lower part of the gatehouse) at between \$233,000 and \$288,000 (at 1998 prices).

The walls of the gatehouse consist of exterior 72"x18"x8" granite units laid in a random ashlar pattern and interior face brick laid with narrow mortar joints appropriate for the best appearance. There are stepped cracks in the mortar joints above the window and door arches. Some of the cracks have been repointed in the past and some are open. These cracks are probably due to thermal expansion and contraction in the wall: they occur where the wall has been reduced in area by the window openings (now bricked up). Once the cracks develop they provide cavities for vine roots to intrude into the joints and further break down the mortar. Cracking was not observed on the interior side of the walls.

The windows have been sealed with brick and the upper entrance covered with wooden boards by the MWRA to prevent access. The interior of the upper structure is face brick with narrow mortar joints. There is some graffiti and vine growth on the exterior walls.

Gatehouse #1 has great potential for adaptive re-use as part of the DCR Reservation. It is an important, classically designed historic building in a very visible location. Based upon the 2005 field surveys and the

previous analysis described here, the upper part of Gatehouse #1 is in good condition but needs extensive repair and maintenance before it can be used for any new purpose.

c. Walls and Stairways

Externally, two formal, angled stairs, constructed of granite, enclose a stone retaining wall. This wall and stair structure is integral to the Gatehouse and presents a grand entrance to the Reservation. At the center of the retaining wall, three cast iron doors lead into the underground chambers of the gatehouse. The large stone units of the wall are in good condition and in their original positions. Minor damage is present at the mortar joints, especially under a narrow coping or belt course at the top of the wall. The cast iron doors function and are in good condition.

Each stair consists of individual tread stone units and heavy side wall units. While the stairs appear to be in good condition, there is evidence of past movements among the various stone units. The side cheek walls appear to have tilted or shifted laterally, creating wide gaps between units that were subsequently filled with mortar. The wide mortared joints are generally intact but many are cracked. Although there are no immediate or major public safety concerns, some level of repair and stabilization of the steps and cheek walls is warranted.



Figure 3.11: Gatehouse #1 lower structure and double stairs (2005)

4. Other Buildings and Structures

a. Gatehouse #2

Gatehouse #2 was constructed in 1898 on the Beacon Street embankment or dam, opposite the High Service Pumping Station. It was designed to provide water to both pumping stations (which had been added in 1886 and

1898 when gravity was no longer sufficient to distribute water from Chestnut Hill) and took over the operations of the original Effluent Gatehouse #1. Built in the Renaissance Revival style, it is one-story in height, three window bays across and one window bay deep. The exterior is dressed granite ashlar and the windows are accented with iron grillwork. The roof has a shallow pitch and is clad with copper. Access to the structure is gained from the pedestrian path on top of the dam. There is a small flight of simple stone steps leading down to the Beacon Street sidewalk that are in fair condition.



Figure 3.12: Gatehouse #2 (2005)

A structural analysis for Gatehouse #2 was not conducted as a part of this Resource Management Plan. This gatehouse remains in operation and is under the control of the MWRA as the main outlet for discharge of the Reservoir's water to the water distribution system. It houses several five foot square gates used to maintain the water level. The MWRA has recently upgraded the equipment within the gatehouse and carried out repair and cleaning work to the inside and outside of the structure. Unlike Gatehouse #1, the windows are still glass and are covered with iron grille-work.

b. Intermediate (Cochituate) Gatehouse

The Intermediate Gatehouse (also known as the Cochituate Gatehouse) was one of the original structures built by the Water Board around 1869. Located on the dam between the two basins, it was designed to connect them both with the Cochituate Aqueduct. It is a hammered granite rectangular structure thirty feet by twenty-five feet in size, with a wood gable roof, arched window openings, and a bracketed cornice. The gatehouse sits on land now licensed by Boston College and the entrance is only accessible from the Boston College side of the fence.

Given its location and the fact that it remains under MWRA management, no structural survey was completed on the Intermediate Gatehouse. From visual examination, it appears to be in fairly good condition.

c. Reilly Memorial Pool and Rink

The Reilly Memorial Pool and Rink was constructed in 1961 at the eastern end of the Reservation on the corner of Chestnut Hill Avenue and Beacon Street. It was located on land acquired by the Commonwealth from the City of Boston in 1959. It is the largest building within the Reservation and lacks the attractive architectural qualities of the other structures.

The RMP did not include an evaluation of the Pool and Rink building itself, but does present an inventory and analysis of its landscape setting. The covered rink is partially screened by a wooded area along Chestnut Hill Avenue, but the open air pool, slightly terraced above Chestnut Hill Avenue, is fully visible from all sides without any screen or buffer vegetation. Only a chain link fence separates the pool from the surrounding streetscape and park land. The main entrance to the building is a roll-up steel door facing Beacon Street. A concrete paved pedestrian walk connects the entrance to the Beacon Street sidewalk. There is also a side service door on the west side of the building. The rink's service driveway leads from Beacon Street into the Reservation on the west side of the building. The bituminous concrete driveway is in relatively poor condition. Parking at the top of the driveway is meant to be reserved for maintenance and DCR only but there is some uncontrolled vehicle access and parking. From the parking area at the top of the driveway, the pavement essentially degrades into the many paths and desire lines leading up to the adjacent playground area and the Reservoir, detracting from the only existing "gateway."

If legislation to lease the Reilly Pool and Rink to a private concessionaire or other entity is under consideration, any agreement should take into account the site-related issues about appropriate access and sufficient parking for visitors. The adaptive reuse of Gatehouse #1 and its courtyard could include provisions for a safe drop-off area and pathway for the Rink. (See further discussion in the Management Resources section, below.)

d. Freestanding Walls

In 1977 three stone masonry freestanding sign walls were installed as part of the MDC landscape site

improvements. These walls mark the Beacon Street entrance to Saint Thomas More Road and the Commonwealth Avenue entrance to the Chestnut Hill Driveway. These walls serve as the only formal signage for vehicles entering the Reservation and therefore function as vehicular gateways into the park. A granite plaque inserted in the center of two of the walls reads “Chestnut Hill Reservoir, Metropolitan District Commission Commonwealth of Massachusetts.” The letters are painted black for visibility. All fascia stones are rough granite. The three walls are typically four to eight feet high and terminate with a five to ten feet high stone masonry column. A cut tapered granite capstone runs along the top of the walls. The Beacon Street intersection wall is straight and twenty-five feet long. The west wall of the Commonwealth Avenue intersection is curved and approximately sixty-six feet long. The east wall is curved and one hundred and forty feet long.



Figure 3.13: Freestanding stone wall at Beacon Street Entrance (2005)

Most of the mortar joints for all three walls are in good condition, but deterioration is starting to affect the masonry. Almost all of the capstone butt joints have small cracks and some moss is taking hold at the butt joints that absorb moisture and dry slowly. A few of the joints between the stone units show calcium carbonate deposits. Water infiltration is beginning to work into the wall but no significant damage has occurred yet. Repair work is warranted given the existing damage and in order to prevent any future deterioration.

e. Retaining Walls

Early historic images of the Reservoir from the 1870s (reproduced in the Chronology in Appendix C) show that stone retaining walls existed within the project area,

although it has not been possible to identify their exact locations or extent. There is an 1876 view showing the beginning of two low walls that ran either side of the Entrance Arch along Chestnut Hill Avenue. The portions photographed would have been demolished along with the Arch in 1896 but other sections may have been retained or replicated along the remaining Chestnut Hill Avenue boundary. There is also a photograph from c.1878 that shows a long low stone wall running northwest through the Amos Lawrence farm, which may also have continued into the land to the north of the Chestnut Hill Driveway. An 1886 engraving of the Driveway as it ran north of the Bradlee Basin shows a steep slope between the pathway and the road, which may have been retained by a stone wall, although no structure is visible.

Two sets of stone masonry retaining walls are today associated with the Reservation – along the Chestnut Hill Driveway and Chestnut Hill Avenue.



Figure 3.14: Upper stone retaining wall along Chestnut Hill Driveway (2005)

Retaining Walls along the Chestnut Hill Driveway

A double-tiered set of stone retaining walls is located in the slope below the Chestnut Hill Driveway. Here, the outer path running on the south side of the Driveway drops down below the upper wall. The path returns to the Driveway level after about 475 feet. The upper wall is typically about five feet high and the lower wall approximately thirteen feet high. The upper wall is composed of large, dry-laid granite stone units. The lower wall is composed of roughly dressed granite stones set in beds of mortar and has a battered face. There is no displacement in the wall as a system, or in individual units.

The stone units for the lower wall are set in beds of mortar and the mortar has been struck flush with the faces

of the roughly dressed stones. In general, there is no displacement of the wall as a whole, but one of the long stones at the top of the wall is displaced about six inches. This stone is at a location where mortar and small chinking stones have fallen out of the face of the wall.

Retaining Wall along Chestnut Hill Avenue

A retaining wall runs south to north alongside the Chestnut Hill Avenue sidewalk. It starts with a curved section at the Chestnut Hill Avenue and Beacon Street intersection and runs north to the intersection with Commonwealth Avenue. The wall then curves west and terminates a short distance away from the Commonwealth Avenue intersection. The total length of this wall is 905 linear feet. There is a short gap in the wall north of the Reilly Rink where a pathway leads from Chestnut Hill Avenue into the Reservation. This area of the wall was removed as a part of the 1977 MDC landscape improvements.



Figure 3.15: Stone retaining wall along Chestnut Hill Avenue (2005)

The Chestnut Hill Avenue walls are about two feet wide and vary in height, although three and a half feet is typical. These walls primarily serve as retaining walls, but in the area by the pool, a significant portion of the back side of the wall is exposed. The walls are capped with dressed stone slabs about six and half inches deep and four to five feet long. The wall is built mostly of large granite units that penetrate the full depth of the wall with smaller stones used to fill in the voids between the largest stones.

The stones are mortared together and the mortar between stone units is generally cracked, missing, disintegrated or is an inappropriate white mortar color used for a previous

re-pointing. In spite of the mortar deterioration, the large size of the stone units has ensured the stability of the wall, there being no significant displacement of the wall as a system or of most of the stone units individually. However, several cap stones at the curve in the retaining wall near Commonwealth Avenue have been displaced outward about six inches. Also, small stones at the surface have toppled out of the wall at roughly ten to fifteen foot intervals.

The deterioration is caused by moisture infiltrating the interior of the wall and freezing or dissolving the constituents of the mortar. In the retaining wall, moisture enters the back of the wall from the soil; in the freestanding wall, moisture enters initially through cracked butt joints between the cap stones and then later through cracked mortar joints in general. It is possible to make repairs at the freestanding wall that will last for some time but repairs at the retaining wall will need frequent maintenance, in the absence of a waterproof membrane on the earth side. Immediate repairs may be necessary to prevent future deterioration.

Other Retaining Walls

See also the discussion of Gatehouse #1 related to the stone retaining cheek walls and formal stairs in the Gatehouse #1 area and the description of the Overlook.



Figure 3.16: 1977 overlook (2005)

f. Overlook

The overlook on the Chestnut Hill Driveway, created as part of the 1977 MDC site improvements, contains a granite bench, a steel picket fence, stone columns, granite paving, and an on-grade granite plaque that graphically describes the direction and distance to other Metropolitan

Boston water supplies. The overlook provides an open view of the Reservoir and the pumping station buildings south of Beacon Street. Although it is not a historic feature, the overlook does provide a place for significant views of the Reservoir, Gatehouse, dam, and the Waterworks development and is regularly used by pedestrians.

The overlook and all its associated features are in fair to good condition. However, there is a slight step-down to the adjacent packed dirt pathway that presents a tripping hazard as well as being aesthetically unattractive. This also effectively makes the overlook inaccessible to persons with physical disabilities.

5. Vegetation

a. General character

The park-like landscape was laid out between 1866 and 1870, at the same time as the Reservoir and roadway were being constructed. There are no known historic planting plans or plant species lists, but it is possible to identify the character of the planting and some individual species from historic photographs, postcards, written descriptions, and the records of the Boston Water Board. It is clear that a number of groves of trees were on the site prior to the construction of the Reservoir and that many of these were retained and incorporated into the new park. The Water Board then added specimen shade trees, flowering shrubs and vines, as well as laying out some areas as grass.

Originally, much of the landscape was covered with grass, which from historic photographs was meticulously mown to give a neat, almost manicured appearance. These grassy areas included the dam or embankment that retained the Bradlee Basin to its south and east; six feet wide strips bordering the path that encircled both basins; the land bordering Beacon Street as it approached the Reservoir and the entry drive that led to Gatehouse #1; and various larger open areas, particularly around the Lawrence Basin.

The area to the east of the Reservoir, around the hill parcel, was wooded, with a mix of fine evergreen and deciduous trees growing naturalistically in grass. Close to the water's edge, the large bedrock outcropping was planted with deciduous trees and vines, including Porcelain Berry and Virginia Creeper. In the northeast corner of the Reservoir, near the junction of the Driveway and Chestnut Hill Avenue (later Commonwealth Avenue), were a number of smaller rock outcroppings planted with

deciduous, probably flowering, shrubs, columnar trees (probably Eastern Red Cedar) and grass. To the north of the Bradlee Basin the hilly promontory was densely covered with a range of mature trees. From their size in early images of the Reservoir, many of the trees must pre-date the creation of the park. They appear to have included oaks, elms and clumps of birch trees as well as a number of evergreen species. There were also some large specimen trees to the north of the Driveway in this area, perhaps including a very large American Elm. A further wooded area was located on the triangular piece of land that jutted into the Lawrence Basin (now known as Shaft #7). Over the dam between the two basins, the plantings were smaller in scale, with low massing of flowering deciduous and evergreen shrubs planted in grass. Similar plantings edged the path that joined the Driveway and the Intermediate Gatehouse. A large specimen deciduous tree marked the curve of the Driveway as it met Beacon Street.

Centennial Elms were planted in 1876 around the Reservoir and along the Chestnut Hill Driveway. Also in 1876 and again in 1887, elms were planted on both sides of Beacon Street. (The records of the Water Board and correspondence from renowned landscape architect Arthur Shurcliff both described them as English Elms, although that would seem a surprising choice to mark the centennial.) Although they appear to have thrived at first, 1901 photos show an absence of trees along Beacon Street. By the 1920s many were in poor condition, and more were destroyed by the 1938 hurricane.

The 1977 MDC improvements included an extensive program of replanting throughout the Reservation. Some shade trees were added to new landscaped areas at the Chestnut Hill Driveway and Saint Thomas More Road intersection, and a new circular bed was planted with small ornamental trees in front of Gatehouse #1. But, based upon the inventory of the existing site conditions, and an analysis of the photographs taken of the 1977 work, it seems that many of the proposed planting plans were never implemented.

As detailed in the previous natural resources section in this chapter, the vegetation of the Reservation today is composed of a mix of mown grass areas and wooded areas. Densely wooded areas are found on the slope north of the Reservoir, the area between Chestnut Hill Driveway and Evergreen Cemetery, and along the sides of the hill parcel in the northeast corner of the Reservation. Shaft #7 is also heavily wooded. There are also areas of

trees over mown grass between Chestnut Hill Driveway and the Commonwealth Avenue apartment buildings, the intersection of Chestnut Hill Driveway and Saint Thomas More Road, and the area between the Pool and Rink and the Reservoir. The areas along Saint Thomas More Road adjacent to Evergreen Cemetery and Boston College are typically composed of trees over mown grass. Several trees are fairly large; the most common large trees tend to be oaks with a few specimen quality beeches located on the hill. Many of the heavily wooded areas are overgrown with dense understory vegetation, much of it invasive. Several of the large trees are in poor and hazardous condition and need major pruning or removal because they present a threat to visitor safety.

Poison Ivy is a persistent problem throughout the Reservation. It is found in wooded areas hanging down from trees into pathway and along the fence, particularly in the west and southwest parts of the park.

Other areas, particularly the slopes of the dam and the area immediately around the Pool and Rink are open mown grass. During the growing season, these open grass areas, as well as the grass under tree areas, are mown by DCR/MWRA personnel on a regular basis. Typically the grass in the open areas is mown to approximately four inches. Existing vegetation maintenance practices are described in the Operations and Management section later in this chapter.

In Spring 2006, a complete inventory and analysis of the Heritage Trees (trees greater than 32" in caliper) on the site was undertaken. The inventory noted the location, size, species, and condition of each of the Heritage Trees, which are mostly located in the wooded areas north and east of the Reservoir. The inventory also noted other trees on the site which, although smaller than 32" caliper in size, merit attention because they either approach the size of Heritage Trees or represent a unique specimen tree with a strong form and size for the particular species. There are a total of 77 Heritage Trees, 65 other significant trees, and 10 large dead trees. The typical Heritage Trees species were Red, White and Black Oak, Linden, European Beech, and White Pine. Other trees considered significant included the previously mentioned species as well as Norway Spruce, Green Ash, and Larch.

The condition assessment assigned each tree a rating of good, fair, or poor. "Good" trees are trees in good health, vigor, and structure. "Fair" trees are in fair health due to some insect and/or disease problems and/or require some

structural and dead wood pruning. "Poor" trees are trees in strongly declining health due to some insect and/or disease problems and/or require a large amount of structural and dead wood pruning.

In addition, the inventory noted the location and approximate size of dead trees and hazardous trees which have dead or dangerous branches near or above pedestrian areas. These dead trees should be immediately removed because their hazardous condition represents a threat to public safety.

b. Community Garden

A small community garden exists along the Chestnut Hill Driveway near the Wade Street dead end, officially known as the Chestnut Hill Reservoir Community Garden. The gardens were improved by the MDC as part of its 1977 landscape improvements. Defined along the roadway by a length of the 1977 iron picket fence, the Community Garden is approximately 7,500 square feet in size. A small concrete pad, approximately 20' x 25' in size is located north of the garden plots with three benches and a picnic table. The garden is open apart from two small sheds for storing garden supplies and some small fences around the individual garden plots. A dirt path connects the garden to the end of Wade Street. Overall the garden plots seem to be well maintained by the gardeners although there are some small compost and trash pile areas scattered throughout the adjacent woodland. See the Management Resources section, later in this chapter, for a discussion of the property issues relating to the Community Garden.



Figure 3.17: Chestnut Hill Reservoir Community Garden (2005)

6. Vehicular Circulation

As the Reservoir was being constructed between 1866 and 1870, the Water Board laid out an eighty foot-wide carriage drive around the water bodies consisting of the rerouted Beacon Street to the south and the new Chestnut Hill Driveway to the west and north. These joined with the existing Chestnut Hill Avenue to form a pleasure circuit around both basins. Located principally along the margins of the water, the winding Driveway followed the natural contours of the land and narrowed to sixty foot in places to preserve existing trees and outcrops. The surface was probably crushed gravel, converted to Tarvia Macadam in the early twentieth century as automobiles gradually took over from carriages as the principal vehicles on the road. Both the rerouted Beacon Street and the new Driveway had sidewalks. The main vehicular entrance points to the pleasure drive were from Chestnut Hill Avenue: one was through the Entrance Arch located where the Driveway began (demolished in 1896 when Commonwealth Avenue was extended) and the second was along the original route of Beacon Street as it approached Gatehouse #1. There were a number of secondary access points from the south, west and north.



Figure 3.18: Commonwealth Avenue vehicular entrance (2005)

Following the 1948 transfer of the Lawrence Basin to Boston College, much of the Driveway around the smaller basin was lost, although Saint Thomas More Road follows the original route of the Driveway to the northeast of the Basin. By 1977, both sides of the original Driveway north of the Bradlee Basin had become informal parking lots and were re-designed by the MDC. To the west, the intersection with Saint Thomas More Road, originally a wide triangular area, was also reconfigured from a Y-shaped intersection into a T, and new landscaped areas planted with shade trees adjacent to the roads. Rough cut granite rumble strips and saw-cut granite block crosswalks were installed along the Driveway and an

overlook was added to provide views of the Reservoir and the historic buildings beyond.

Today, the Chestnut Hill Reservation has several main pedestrian and vehicular entrances, or “gateways”, that lead into the Reservation. Public vehicles can enter the Reservation in five locations. Three entrances are from Beacon Street: at the Reilly Pool and Rink service drive, at the Gatehouse #1 parking area, and one leading onto Saint Thomas More Road. Two entrances lead from Commonwealth Avenue, one via Saint Thomas More Road and the other to the Chestnut Hill Driveway. Two vehicular entrances to the Reservation have entry sign walls inscribed “Chestnut Hill Reservoir” (as described in the Other Building and Structures section earlier in this chapter) and thus provide a visual reference point that one is entering into Reservation property. Official DCR and MWRA vehicles access the path area inside the fence through two vehicular gates. From a vehicle, views to the water are limited by the vegetation growing on the slope north of the Reservoir.

The Reservation is bordered by three City of Boston public streets: Beacon Street, Commonwealth Avenue, and Chestnut Hill Avenue. These surrounding roads have heavy traffic loads, particularly Commonwealth Avenue and Chestnut Hill Avenue. Cleveland Circle has major vehicular congestion problems, particularly during rush hour traffic. The MBTA Green Line ‘B’ train runs along Commonwealth Avenue. The MBTA Green Line ‘C’ train terminates at Cleveland Circle east of the Reservation. The MBTA Green Line ‘D’ train runs south of the Reservation at the back of the Waterworks development. The Reservoir is partially visible from Beacon Street whereas Commonwealth Avenue and Chestnut Hill Avenue provide no real views to the Reservoir. Saint Thomas More Road and Chestnut Hill Driveway are completely within the boundaries of the Reservation. Combined, these two roads have around 216,000 square feet (4.96 acres) of paved surface.

a. Chestnut Hill Driveway

As described above, the Chestnut Hill Driveway was part of the historic design for the Reservoir landscape. To alleviate deteriorated conditions and unorganized shoulder parking, the MDC made substantial improvements to the roadway in 1977. This required first removing old catch basins and lights at the edges of the paving, followed by changes to the original alignment of the historic eighty foot-wide road to provide a pull-off

area south of the Driveway for parallel parking as well as head-in parking spaces on both sides of the road. Five feet-wide granite cobble paving strips were added at the back of the head-in parking spaces. This left a narrower central section for through traffic in which the MDC added granite cobble “rumble strips” on both sides of crosswalks. New cobra-head lighting, curbs, and catch basins were installed along the new edges of the road. The intersection of Chestnut Hill Driveway and Saint Thomas More Road was re-configured from a Y-intersection into a T-intersection.



Figure 3.19: Chestnut Hill Driveway (2005)

Relative to the other roads in the area, traffic along the Chestnut Hill Driveway is low although higher traffic flows do occur during rush hour as this roadway is frequently used as a shortcut to bypass the traffic on Commonwealth Avenue and Beacon Street. The Driveway still provides a pleasant driving experience as it gently winds across the top of the slope north of the Reservoir, although views of the Reservoir are limited by the dense vegetation and the parking areas. While vehicular speed should be minimized along this road, the rumble strips have proved to be a constant maintenance issue for the DCR. The granite cobblestones routinely are displaced, particularly by snow plows, and are a hazard to bicyclists and pedestrians.

b. Saint Thomas More Road

Saint Thomas More Road connects Beacon Street to the south with Commonwealth Avenue to the north, as well as providing access to several of the roads entering the Boston College campus. The northern stretch, beyond Shaft #7, has fewer street trees, with campus buildings and access roads immediately adjacent to the roadway along most of its length. The majority of pedestrians are students or faculty. As such, it has a different character from the other roads within the Reservation.



Figure 3.20: Saint Thomas More Road looking north (2005)

c. Parking

Currently, Chestnut Hill Driveway provides the only public parking spaces within the Reservation. All of the head-in parking spaces on the north side of the Driveway (seventy two spaces) are restricted to Allston/Brighton resident permit holders. The head-in parking spaces on the south side of the Driveway (fifty two spaces) are open to anyone during the day, but are restricted to permit holders from 8 P.M. to 6 A.M. As a result, there are usually several open parking spaces here during the day. Parking in the small group of parallel spaces (approximately 16 spaces) in the pull-off area on the south side of the Driveway is restricted to maximum three hours limit. Most of the parking on the Driveway is used exclusively by residents of the Commonwealth Avenue apartments and other nearby buildings.

The Boston Transportation Department (BTD) states the Driveway is considered a local roadway, as opposed to an arterial or collector, but is maintained by the Commonwealth. The BTD would not support any reduction in the number of parking spaces along the Driveway as they recognize a substantial need for residential parking in that area.

There is a small parking lot in front of Gatehouse #1, although it is currently used as a MWRA staging area. The MWRA retains care, control, and custody of this area as they require continued access to the water supply valves located under the lot for operation and maintenance purposes. Some parking is also available for DCR and other official vehicles in the service driveway adjacent to the Reilly Pool and Rink. This area with pavement in poor condition sees a lot of informal parking.

Parking spaces are in great demand around the Reservation when there are hockey games at the Reilly Rink and during Boston College sporting events. Until recently, on Boston College game days, the State Police, in an agreement with Boston College, would close down and coordinate parking along Saint Thomas More Road and Chestnut Hill Driveway. Parking was also commonly allowed in the two landscape areas at the intersection of Saint Thomas More Road and the Chestnut Hill Driveway across from Shaft #7. All such parking for sports events within the Reservation was suspended in 2005.¹⁴

The parking spaces along the Chestnut Hill Driveway are located on land leased to the Commonwealth by the City of Boston. This parking occupies land that would otherwise be part of the landscape and the parked vehicles are visible from the lower part of the Reservation, diminishing the visual quality of the park. There are no designated accessible parking spaces anywhere in the Reservation, not even among the approximate 140 spaces on the Driveway.

7. Pedestrian Circulation

In addition to the Driveway, the Reservoir was originally bounded in its entirety by an eight foot wide gravel footpath immediately along the water’s edge, with a portion running along the top of the dam or embankment on Beacon Street, all bordered by trim strips of turf. Historic photographs show that the path and turf were meticulously maintained well into the early twentieth century. In 1928-29, a steel picket fence was installed (as described below), which prevented public access to most of the original path (which became known as the inner path) and a new path was installed outside the new fence for continued pedestrian access to the landscape. Following the 1948 transfer of the Lawrence Basin to Boston College, the two footpaths around the smaller basin were gradually lost.

In 1977 while the inner path was closed, the MDC installed a series of new and improved pathways including a “skinned jogging path” around the outside of the perimeter fence and paved paths atop the hill behind the Reilly Memorial Pool and Rink. Paved paths to the new playground were also installed.



Figure 3.21: Existing circulation diagram

In 2002, after the Bradlee Basin was formally decommissioned as a reservoir, portions of the fence were removed and gates opened to allow public access once more to the inner perimeter path.

Pedestrians currently enter the Reservation at several locations, which are noted on the Existing Circulation Diagram (Figure 3.21). The primary pedestrian entrances are from the Beacon Street sidewalk into the Reilly Pool and Rink area, through the opening in the Chestnut Hill Avenue retaining wall, through three areas along Commonwealth Avenue, and from the Boston College campus across Saint Thomas More Road. These entrances provide access to the two main pedestrian paths systems, which encircle the Reservation, and to another smaller, more recent system around the hill parcel and Reilly Rink and Pool. The existing pedestrian entrances are not signed and in some cases are not visually obvious as entrances into the Reservation. Figure 3.21 shows the location of the existing paths.

a. Reservoir Perimeter Path

The original inner or perimeter path, now typically six to eight feet wide and surfaced in stone dust, still follows the shoreline of the Reservoir, with a section running along the top of the dam. This path is typically called the “inner” path, which is completely inside the perimeter steel picket fence, except in the southwest corner of the Reservation where the original stonedust path is located outside the fence and a narrow dirt path has been established inside the fence. This “inner” path is about 8,250 linear feet long (1.56 miles).



Figure 3.22: Stonedust path along top of Reservoir dam (2005)

The sides of the inner path are not contained by edging and so they are not well defined and gradually transition

into the adjacent mowed grass areas. The stone dust is mostly in fair condition although there are some areas of puddling after rain, particularly in depressions rutted out by vehicle traffic. The path narrows to only two to three feet in width west of Gatehouse #2 and continues to an area across from Boston College’s Shea Field. This portion of the path is mostly composed of packed soil and runs parallel to a portion of the outer path, located on the opposite side of the 1928-29 perimeter steel picket fence. The fence creates a perceived lack of safety for the perimeter path, because there are few points to exit the path in an emergency.

The perimeter path offers a continuous view of the Reservoir. Along the dam, the views from the path also include Beacon Street, Cleveland Circle, Cassidy Park and the Waterworks development. The northern stretch of the path is bordered on the inland side by dense wooded areas which, combined with the physical distance from adjacent streets, screen the nearby urban area and mitigate the sounds of traffic. The perimeter path is the most popular recreational feature in the Reservation, and is actively used by joggers and walkers.



Figure 3.23: Worn dirt path running inside the perimeter fence and alongside Beacon Street (2005)

Access to the perimeter path is possible at nine locations. Two are bituminous concrete paths that run through gate openings in the fence at the southern and western edges of the Reservation. (During 2005 field surveys, the gate in front of Gatehouse #2 was observed to be unlocked on occasions.) The other seven access points are through gaps deliberately created when the MDC removed panels from the fence: near the intersection of Saint Thomas More Road and Beacon Street, near the old playground, inside the wooded area north of the old playground, near the intersection of Commonwealth Avenue and Chestnut Hill Avenue, and three openings adjacent to each other

along Beacon Street between Saint Thomas More Road and Reservoir Road. The gate openings are directly visible as entrances to the perimeter path, whereas thick vegetation and a lack of signs make the other seven access points less identifiable. Furthermore, the entrance paths through these openings are not well-defined and the surface is usually uneven, compacted dirt.

b. Outer Pathway

A second route, about 9,000 linear feet (1.7 miles) long, circles the Reservation, outside the perimeter fence. Most of this “outer” path is the deteriorated remains of the skinned jogging path installed in 1977, with the exception of the concrete sidewalks along Commonwealth Avenue, Chestnut Hill Avenue, and Beacon Street.

For the purpose of this description, the outer pathway begins at a point on Beacon Street west of Reservoir Road, and consists of a deteriorated gravel path up to the intersection with Saint Thomas More Road. This is a remnant of the original perimeter pathway, which in all other locations runs inside the fence. Along this stretch there are frequent large depressions that fill with water and become muddy, forcing pedestrians to the side of the paths. There is a grassed swale with catch basins along this portion of the path, but the effective function of these catch basins is questionable. It is in this area where the two pathways run parallel to one another, separated by the perimeter steel picket fence installed in 1928-1929.

The deteriorated gravel path continues north along Saint Thomas More Road up to the landscaped area opposite Shaft #7, varying in width from three to five feet, with frequent muddy depressions. From here the compacted dirt path continues in an easterly direction as an unpaved four to five foot dirt path along the south side of the Driveway. The path separates from the Driveway and dips below the stone retaining wall adjacent to the head-in parking spaces. Upon returning to the Driveway, the path passes by the overlook area, also installed by the MDC in 1977. At the Commonwealth Avenue intersection, the packed dirt path connects to the concrete sidewalk, which walkers can use to create a circular route via the City of Boston sidewalks on Chestnut Hill Avenue and Beacon Street (not within the RMP project area) to return to the start of the path.

c. Other Paths, Sidewalks, and Crosswalks

Another system of bituminous concrete paths winds along the top and around the hill parcel in the northeastern part

of the Reservation. These paths also connect to the old playground area and the Reilly Rink and Pool building. The paved portions of these paths were part of the 1977 MDC landscape improvements and are in varying conditions between fair to poor with the paved edges frequently crumbling. The typical paved path width is between four to five feet. Several “desire line” dirt paths also exist in this area. Some of these desire lines run straight up the slopes and are creating erosion problems. Since the Reservoir perimeter path system was re-opened, the paths on the hill parcel experience less pedestrian traffic. Given their poor condition and lack of use, these paths are candidates for reconfiguration, including enhancing access to some excellent views of the water.



Figure 3.24: Bituminous concrete path adjacent to 1977 playground (2005)

Along both sides of Saint Thomas More Road, there is a five to six foot wide bituminous concrete sidewalk that is in fair to good condition. Most pedestrian traffic on these sidewalks is from Boston College. These sidewalks become concrete pavement near the Commonwealth Avenue intersection.



Figure 3.25: Desire line on drumlin in northeast corner of the Reservation (2005)

Painted crosswalks, outside the Reservation property, are provided at the intersections of all vehicular roads surrounding the Reservation. There are signalized crosswalks at Commonwealth Avenue and Chestnut Hill at Cleveland Circle. There are non-signalized, painted crosswalks within the Reservation at several points across Saint Thomas More Road and crosswalks paved with granite cobbles (rumble strips) at several points across the Chestnut Hill Driveway described above. These crosswalks serve to connect the outer pathway to a five foot wide bituminous concrete sidewalk running along the north side of the Driveway. The granite cobble crosswalks, part of the 1977 MDC improvements, are in fair to poor condition in many areas with loose and dislodged cobbles. Some areas of these crosswalks have been patched with bituminous concrete and may present tripping hazards to pedestrians.



Figure 3.26: Crosswalk across Chestnut Hill Driveway (2005)

There are no crosswalks or other safe ways to cross Beacon Street except at the corner of Chestnut Hill Avenue and Beacon Street (Cleveland Circle). Once the Waterworks residential development is occupied, additional safe pedestrian crossing may be needed.

8. Site Furnishings and Small-scale Features

a. Perimeter Fence

When the Reservoir and its park-like setting were first opened to the public in 1870, it contained a number of wooden post and rail fences, designed presumably to prevent accidents at certain key points. To achieve this protection, a guard rail was placed along the southwest portion of Beacon Street, at the south end of the

embankment, to prevent carriages sliding into the basin, and to provide a barrier between vehicular traffic and visitors on foot. During the primary period of significance, there were additional fences running along either side of the Chestnut Hill Driveway north of the Bradlee Basin, certainly adjacent to the Entrance Arch and again in the area between the wooded promontory and Evergreen Cemetery. There was also probably a fence running along the lower edge of the embankment by Effluent Gatehouse #1, on the Beacon Street side, although the extent and purpose of this fence is unclear and 1901 photos show no fencing along Beacon Street. None of the wooden fences survive.



Figure 3.27: 1928-29 steel picket fence (2005)

After the end of the primary of period of significance, the MDC enclosed the north side of the Bradlee Basin in 1928 with about 4,500-feet of fence, a combination of decorative iron picket and chain link fence, intended to prevent human access and illegal dumping and thus improve water quality at the Chestnut Hill Reservoir. The new fence also protected the narrow strip of watershed that drained into the Reservoir. Three double-drive gates were erected. The contract suggests that the fence was to be painted with red lead, although this may have been primer and paint analysis tests would be required to confirm the original paint color used (the fence is currently painted green). The following year (1929), the MDC enclosed the south side of the Bradlee Basin with about 3,680-feet of decorative iron picket fence, to join with and match the existing fence. Two gates and a special fence around Effluent Gatehouse #2 were also commissioned. Topped with acorn finials, the fence closed off most of the original inner path to the public. Similar fencing and a new outer path were installed for the same reasons in 1931 around the Lawrence Basin.



Figure 3.28: Post and rail detail (2005)

As part of the 1977 MDC improvements, the picket and chain link fence was repaired, leaving a mix of 1928-1929 steel picket fence combined with 1977 replacement panels of a similar style. The entire area north of the Reservoir is entirely comprised of fence panels installed in 1977. The 1928-29 metal picket fencing starts from a point just inside the park near the intersection at Chestnut Hill Driveway and Commonwealth Avenue, runs atop the hill, past the old playground, and along Beacon and Chestnut Hill Driveway, ending by a small gate opposite Boston College. From there, the 1977 replacement fence runs along Chestnut Hill Driveway, meeting the 1928-29 fencing in the northeast corner of the Reservation. There are also small sections of 1977 fence immediately south of Gatehouse #1 and at the southern tip of the Reservation, around a new gate. A similar fence was installed around the new playground.



Figure 3.29: Typical intact 1928-29 panel (2005)

In total, the perimeter fence, as observed in 2005, consists of 814 panels: 443 panels of the 1928-1929 fence and 371 panels of fence replaced in 1977 (of which half a dozen are located randomly among the original fence panels and sixteen are in front of the community garden on the outer side of Chestnut Hill Driveway). There is also a short section of chain link fence between the 1928-29 panels just below Gatehouse #1.

The 1928-29 fence design consists of panels of twenty-one square section balusters between I-section posts with acorn-styled finials and tied by two horizontal L-section bars. The panels are eight-four inches (seven feet) long. Each panel includes a top and bottom rail made of two inch wide channels laid flat and five-eighth of an inch square by fifty-four inch long pointed pickets spaced four inches apart. The ends of each top and bottom rail have an elongated hole where they are bolted to the posts, thereby allowing the panels to slip slightly as the fencing expands and contracts during temperature changes. Unlike many old iron and steel fences at cemeteries and other historic sites, only a few of the failed connections have been repaired with welds, which prevent slippage between each post. The 1977 fencing panels were designed in a similar style to the 1928-29 originals, but they are one hundred and twenty inches (ten feet) long and do not have the decorative acorn castings. The new 1977 metal fencing is green although most of the panels have severely peeling paint.



Figure 3.30: Typically damaged 1928-29 panels (2005)

The condition of the fence was analyzed in 2004 by DeAngelis Iron Works and, in 2005 as part of this RMP, Ocmulgee Associates performed a further inventory and evaluation. According to Ocmulgee, the 1928-29 steel

picket fences are extensively damaged, with many deteriorated and missing elements. In particular, the following items were noted:

- The paint is completely deteriorated and some of the pickets are pitted from corrosion;
- Ten percent of the top rails are bent;
- Fifty percent of the pickets are bent or corroded in some degree, with about ten percent severely bent, missing or corroded;
- Forty percent of the panels have bottom rails that are significantly corroded and unsalvageable because they are buried in earth or vegetation;
- Twenty-five percent of the panels are in reasonably good condition and can be easily repaired;
- Thirty-five percent of the panels are in mixed condition, with damage and deterioration that could be repaired with replacement components;
- The posts appear to be set in concrete but many are corroded to some extent near the ground. Less than ten percent of the posts have broken off at the ground.



Figure 3.31: 1977 steel picket fence (2005)

The 1977 fencing panels are in fair to good condition except for some vine growth on certain sections, although preventative measures should be taken soon to ensure

they do not deteriorate. There is one panel near the 1977 overlook that appears to have had damage repaired by inserting a section of salvaged, unpainted 1928-1929 fencing.

Two 1928-29 gates are located in front of the two gatehouses. The two forty-seven inch wide gate leaves and the ten foot six inch long fences on each side of the approach to Gatehouse #1 are about six feet high and are decorated more elaborately than the typical panel. Except for extensive paint loss and some corrosive pitting, they are in excellent condition. Most importantly, their hinges and anchors at the granite posts are intact and no spalling or deterioration was seen where the metal anchors are embedded in the stone. Similar gates without side fences are present at Gatehouse #2; some of the decorative circular elements are missing at these gates.

The MDC added two additional gates in 1977, one near the intersection of Saint Thomas More Road and Chestnut Hill Driveway, and the other near the intersection of Beacon Street and Reservoir Road. Both have double gates and are wide enough for vehicle access. In addition, as described in the section on circulation above, there are a total of seven openings in the fence where panels were removed in 2002 by the MDC to provide additional access points into the inner part of the Reservation.



Figure 3.32: 1928-1929 entrance gate at Gatehouse #1 (2005)

The perimeter fence was installed after the primary period of significance for the Metropolitan Water Supply (1845-1926) and the primary period of significance for Chestnut Hill Reservoir (1868-1926) based on the thematic National Register nomination. It was constructed within the later of the two secondary periods of significance

proposed in this RMP, which focuses on the importance of the Reservation as a metropolitan park. The perimeter fence is considered historically significant by the Massachusetts Historical Commission (MHC), and the Boston Landmarks Commission identified it as a feature to be preserved in its 1989 Study Report. In 2004, the MHC determined that its proposed removal would have an “adverse effect” on the property.¹⁵ However, in 2006, the DCR has articulated the desire to restore a section of the dam to its appearance during the primary period of significance as an interpretive exhibit. The perimeter fence post dates this period.



Figure 3.33: Gatehouse #.2 gate with missing circular elements (2005)

The perimeter fence plays an important role in communicating the evolution of the Chestnut Hill Reservoir and Reservation, and provides a potential for historic interpretation of the later development of the landscape. In addition, parts of the fence continue to serve a functional purpose today. It protects the banks of the dam from uncontrolled pedestrian access, thus helping to avoid erosion caused by compaction on cut-through or desire line paths. Along Chestnut Hill Driveway the fence serves to protect the steep slopes on the north side of the Reservoir. Along Saint Thomas Road and the Evergreen Cemetery boundary, the fence delineates the Reservation property line.

Many users consider the fence an unwelcome symbol of control, with a placement that interferes with current use. It is seen as preventing egress from the inner path, thus contributing to the common perception of a lack of safety in the Reservation.



Figure 3.34: Entrance gate along Beacon Street (2005)

If all or portions of the perimeter fence are judged unnecessary and removed, sections that are in the best condition should be re-used to replace deteriorated sections in other areas of the Reservation. This will help reduce the repair costs and maintain the integrity of the original material. In accordance with the 2002 MDC-MWRA agreement, sections of 1928-1929 fence not used at Chestnut Hill Reservation should be made available to the MWRA to repair similar fencing at other locations.

b. Other Fences and Gates

As well as the perimeter fence, there are a number of other fences located within the Reservation. In 1977, the MDC installed additional fencing along the southern boundary of Evergreen Cemetery and along most of the western side of Saint Thomas More Road. This fencing is the same as the 1977 replacement sections to the perimeter fence, but is painted black. Sections of the black picket fence were also installed along the Boston College property line west of Saint Thomas More Road, and continuing west along Beacon Street. This section also delineates the Reservation boundary. In 1977, the MDC installed a metal picket fence to encircle the overlook area along Chestnut Hill Driveway, which differs from the usual 1977 fence in that the vertical balusters do not extend up beyond the top horizontal tie. This fence is in good condition.



Figure 3.35: 1977 fence on top of Chestnut Hill Driveway retaining wall (2005)

A heavy-gauge pipe rail fence, installed in 1977, spans the top of the retaining wall along Chestnut Hill Driveway. Its design consists of panels of seventeen balusters attached to round horizontal bars at top and bottom between I-section posts with arched tops. It is painted green and remains in good condition.

There is a section of fence in a style similar to the 1977 fence (it appears to have been installed prior to 1977 and probably by Boston College) in front of the Edmonds Building on Saint Thomas More Road.

An eight foot high chain link fence encircles the remainder of the Shaft #7 parcel. No public access is allowed into Shaft #7, although it is assumed that illegal access does occur: the area's nickname is "Beer Can Hill." The boundary of the Evergreen Cemetery (a Boston Parks and Recreation property) has been fenced since at least the turn of the 20th century. There is currently a five foot high chain link fence that marks part of the property line between the Reservation and the Cemetery. Generally, the fence is in fair condition although there are some sections that are in very poor condition and are severely rusted and sagging. Although this fence does serve as a distinct boundary between the Reservation and the Cemetery, it is unsightly in its present state and alternative treatments should be considered.

c. Lights

The light fixtures along Chestnut Hill Driveway were installed as part of the 1977 MDC improvements. Standard single head cobra light fixtures and a few double head cobra light fixtures provide lighting for vehicles and the sidewalks along all five main roads within and

surrounding the Reservoir. Power to these lights is supplied through the ten foot easement established in 1978 between the Reservation and Commonwealth Avenue.

Box-style fixture pedestrian lights were also installed as part of the 1977 MDC landscape improvements and are located along hill parcel pathways and around the old playground and Reilly Memorial Pool and Rink. Based upon site observations, it appears that the lights no longer function or are no longer turned on. Most of the metal poles are in fair condition. There are four other 1977 box-style fixture pedestrian lights along the bituminous concrete pathway connecting the small parking area north of the Reservation. Based upon site observations, three of these lights still function and are in generally fair condition, with some graffiti.

The placement of lights within the Reservation contradicts the current DCR policy, which closes the park between dusk and dawn. Lighting at the Reilly Memorial Rink and Pool and along the parkways may be required and should be compatible with the character of the historic landscape.

d. Benches

Benches were in use in the landscape by at least 1912; a photograph in the State Archives shows visitors seated and enjoying a view of the Lawrence Basin. Today there are three different types of benches within the boundaries of the Reservation. For the purposes of this RMP, the benches have been labeled Type 1, 2, and 3.



Figure 3.36: Type 1 bench (2005)

The first bench (Type 1) consists of wooden slats on a precast concrete frame. The concrete frame is attached to a below grade footer. The slats are painted green. These are a standard bench used by the former MDC throughout the metropolitan park system and thus are arguably the

most historically appropriate for the Reservation. There are twenty-three (23) of these benches in total:

- Four are along Beacon Street near the pool;
- Four are near the entrance wall at the intersection of Saint Thomas More Road and Chestnut Hill Driveway;
- Three are located near the intersection of Beacon Street and Saint Thomas More Road;
- Three are found in the Community Garden; and
- Nine are located in the area of the old playground.

These benches are generally in fair condition with mostly maintenance and small repairs needed such as painting the wood slats. The Type 1 benches are well-sited in the landscape and are directed toward views of the Reservoir, although a large grouping of benches is located in an unused area at the corner of Chestnut Hill Driveway and St. Thomas More Road.



Figure 3.37: Type 2 bench (2005)

The second bench (Type 2) has a more rustic design and consists of a longitudinally cut log fixed on rectangular wooden legs. The legs are secured to concrete blocks, which are now exposed several inches above the grade of the soil. There are ten of these log benches in the Reservation:

- Four are along the narrow path running behind the rink to Chestnut Hill Avenue, and
- Six are along the trails on the hill.

Generally, the Type 2 benches are in poor to fair condition with some severely deteriorated and nearly falling over due to exposed footings. These benches are not visually attractive or appropriate for an urban park setting and are not sited to take advantage of the scenic views.

The third bench (Type 3) was installed as a temporary bench and consists of wooden slats on freestanding metal frames. These benches are set directly on the ground without footings or foundation. They are secured with locked steel cables to nearby trees or fence posts, which mean they can be dragged around and the cables cause damage to the trees. There are four of these benches:

- One is south of the parking area along Chestnut Hill Driveway,
- One is on the side of the hillock north of Gatehouse #1,
- One is east of the intersection of Beacon Street and Saint Thomas More Road, and
- One is located along the outer path in the area between the Commonwealth Avenue apartment buildings and Chestnut Hill Driveway.

The Type 3 benches are in fair to good condition, but are not an appropriate style for the Reservation, because they are not permanent installations and as mentioned above, the security cables damage the trees and fence.



Figure 3.38: Type 3 bench attached to tree (2005)

A curved granite stone bench is also a component of the 1977 overlook. This bench is in good condition and is integral to the overlook design.

Overall, there is a lack of benches and other resting areas throughout the Reservation. Benches are particularly needed along the perimeter path which is the portion of the reservation most frequently used and the most scenic. The existing benches are not always in the best locations or condition, therefore infrequently used. The lack of standard bench type makes on-going maintenance by the DCR difficult when benches need repair or replacement.

e. Trash Receptacles

Two steel mesh trash receptacles are currently located at the entrance from the old playground and at the entrance near the intersection of Chestnut Hill Driveway and Saint Thomas More Road. Both are in relatively good condition. Adjacent to these two trash receptacles are dog scoop bag dispensers. A steel drum is located in front of the bituminous path to the Rink from Beacon Street that functions as a trash can. It may be that, for park users, a better location for trash receptacles would be at major entry or exit points to the Reservation. Certainly their current location means that DCR personnel must drive vehicles over pedestrian paths to access the receptacles for emptying: placing them at major gateways which are adjacent to roadways would result in less potential damage to pedestrian areas.



Figure 3.39: Trash receptacle and pet station (2005)

f. Playground

The 1977 MDC landscape improvements included the construction of a children's playground in the area between the Reilly Rink and the Reservoir. The play equipment has since been removed, although a stone mound remains that is a remnant of the slide play structure. The only remaining functioning feature is the semi-circular seating area with six benches facing the parking lot in front of Gatehouse #1. The stone retaining wall on the south side of the playground remains in good structural condition, although it is covered in graffiti. The original design of this playground does not meet current standards for children's play equipment and cannot safely be reused.¹⁶

The dilapidated playground and graffiti-covered retaining wall are prominent eyesores in the landscape. The stone mound is a safety hazard for children tempted to play on it. There are similar children's playgrounds provided in nearby parks such as Boyden, Shubow, Joyce and elsewhere. Given the limited amount of land available at

Chestnut Hill Reservation and the historic significance of the landscape, DCR should carefully consider the need, siting and design of any proposed play equipment.



Figure 3.40: 1977 playground (2005)

g. Signage

There are few signs that officially indicate the area as the "Chestnut Hill Reservation." There is a sign near the intersection of Saint Thomas More Road and Chestnut Hill Driveway. The two freestanding sign walls at Beacon Street and Commonwealth Avenue entrances state "Chestnut Hill Reservation, Metropolitan District Commission, Commonwealth of Massachusetts." There is a single-sided kiosk board near the Reilly Memorial Pool and Rink driveway with information about the Reservation including a map of the property, DCR rules and regulations, history of the site, and listings of local DCR programs. Another metal DCR sign is affixed to the fence at the pool. There are small signs indicating the reservation open and closing times (dawn to dusk) and pet waste removal policy at two of the entrances to the perimeter path. The Reservation would benefit from additional informational signs, particularly at major pedestrian entrances. There is also an opportunity to develop interpretive signage for the Reservation, as none currently exists.

h. Overflow pipe

Along the back side of the dam and to the east of Gatehouse #2, there is an overflow pipe structure and headwall that is part of the operational function of the dam. MWRA has control over this structure. During the process of preparing the RMP, several members of the public expressed concern over the visual impact of these structures on the natural and historic beauty of the Reservation. There is also some erosion around the headwall which should be addressed.

Management Resources

1. Uses

Chestnut Hill Reservation is a well-used neighborhood park that connects three communities (Boston, Brookline and Newton) and serves a variety of users, from college students to long time residents. Although it is a part of a network of small open spaces in the region, the Reservation is the largest existing open space serving the community. The park provides opportunities for passive recreation, wildlife viewing, meditation, artistic pursuits and a healthful respite from the dense urban setting.

Over the past twenty years, the public has had limited access to the parkland surrounding the Chestnut Hill Reservoir. Up until 2002 the area inside the perimeter fence was under the jurisdiction of the MWRA, who restricted access for water supply protection purposes. Since the control of the parklands reverted back to the [MDC] DCR, the Reservation has seen heavy visitation, primarily from local residents who use the site for passive recreation. The park is open year-round, but visitation is higher in the warmer months.

a. User Survey

In order to better understand the way visitors use the Chestnut Hill Reservation, the DCR distributed a User Survey between November 2005 and February 2006. This survey was also distributed to the public through members of the Working Group and made available on the DCR website. Among the sixty responses received, there was a clear majority of people who walk to the Reservation and use the Reservoir pathway for passive recreation. Further results are summarized below:

- Most visitors are Brighton area residents with Brookline residents second¹⁷;
- Majority of visitors live within ½ mile of Reservation;
- Majority walk to the Reservation;
- Main entrances to Reservation are at Gatehouse #2 and at Reilly Memorial Pool and Rink;
- Walking/dog-walking and running are the most popular activities, followed by bird watching;
- Most users visit the Reservation two to five times per week, with over 75% of respondents visiting at least 1 time per week;

- Favorite features are the path around the Reservoir, views, and natural woodland;
- Biggest safety concerns are visibility along pathways and control of the vagrant population, along with a need for increased presence of rangers or state police;
- Visitors would like to see improvement in trash removal, weed and shrub control and path maintenance;
- Top 3 Capital Improvements are restoration/repair of the paths, treatment of the 1929 fence, trash cans and path lighting¹⁸;
- Users feel regulations could be clearer and better posted, and trails could be better marked;
- Parking is not identified as a major issue relative to park use. Most comments regarding parking relate to evening use by those visiting neighborhood residents, not to users of the Reservation.

2. Reilly Pool and Rink

The Reilly Memorial Pool and Rink are located on the triangular piece of land at the intersection of Chestnut Hill Avenue and Beacon Street. The complex includes the barrel-shaped indoor rink, a one-story, flat-roofed building, and the outdoor pool, enclosed by a black chain link fence. A short pathway from the Beacon Street sidewalk provides pedestrian access to the facility. Informal vehicular parking also exists in a rutted dirt area to the west of the building and at the Gatehouse #1 turnaround. Parking along Beacon Street has also been observed during sporting events at the Rink. There is no dedicated parking for this active recreation facility, nor is there a safe drop-off area..

If future legislation allows for the long term lease of the Reilly Rink to a third party, the lease area for the facility should not include any exclusive use of areas that are critical to the operation of the Reservation or the joint management by the MWRA and the DCR. Maintenance of the lease area should also be consistent with the maintenance recommendations contained in this plan (i.e. mowing, trash removal, tree care, signage, etc.).

Analysis of Surrounding Land Uses

The Chestnut Hill Reservation is one of the largest areas of continuous open space in the Brighton section of Boston. Other adjacent public and private open spaces and parks in Boston, Brookline and Newton are shown on

the accompanying Site Context and Open Space Map, and range from cemeteries, school playgrounds and local parks, to Country Clubs and DCR parks and parkways. The closest parks with playground equipment are Shubow Park in Boston (1/5 mile away), Daniel J. Warren Field and Waldstein Playground in Brookline (both about 2/5 mile away) and Joyce Playground in Boston (about 1/2 mile away). Cassidy Park, located across Beacon Street from the Reservation, provides a baseball field, two softball fields, two tennis courts, and a passive field. In addition, there are the athletic fields and other open spaces in the campus of Boston College.

1. Boston College

Boston College students are a major user group of the Reservation, and the campus of Boston College has a strong physical relationship with the Reservation and Reservoir. Historically, the old Lawrence Basin occupied the area where the Boston College athletic fields and Alumni Stadium are currently located. Boston College purchased the Basin from the Commonwealth in 1949, filling the Basin through 1969. The Chestnut Hill Driveway originally encircled both basins, running atop a dam structure. With the filling of the basins, the Driveway was terminated at Beacon Street.

The close proximity of the Reservation to the college creates the perception that the state-owned open space is an informal extension of the campus. This can lead to inappropriate uses, such as night time walking and running, parties, and long-term parking on Chestnut Hill Driveway. Since the park is not staffed or designed for nighttime use, these activities often conflict with park management. The State Police enforce the “park closed” regulation at night, but patrolling is limited.

2. Waterworks Park, LLC

The “Waterworks at Chestnut Hill” includes a redevelopment of the High and Low Pumping Station buildings and the Carriage House, which are a part of the *Water Supply System of Metropolitan Boston 1845-1926* thematic National Register of Historic Places nomination. The project includes adaptive reuse of the historic pump stations and a new residential building in the area of the former pipe yard, with a total of over one hundred one to three-bedroom units planned. Portions of the High Service Station and pump engine will become a public museum.

The scenic character of the Reservation has been identified as a major marketing advantage by the developer of the Waterworks, but there is little physical connection between the site and the Reservation. Many park users have identified Gatehouse #2 as a major pedestrian gateway to the Reservoir pathway, but there is no crosswalk across Beacon Street, and current landscaping plans for Waterworks do not show any paths to the Reservation. There has also been some interest in



Figure 3.41: “Waterworks on Chestnut Hill” development (2005)

the reuse of Gatehouse #1 for a boating concession.

a. Waterworks Public Benefit

The Waterworks development was made possible through the disposition of state-owned lands to the developer, with a requirement for public benefit investment (\$1.4 million) to off-set the loss of Commonwealth property. The Division of Capital Asset Management (DCAM) negotiated the disposition and entered into an agreement with the developer, and the Boston Redevelopment Authority (BRA) is responsible for implementing the terms of the agreement.

The developer has already committed to a new traffic signal at Cleveland Circle (\$75k) and a contribution to the preparation of the Chestnut Hill Reservation Resource Management Plan (\$25k). The BRA is utilizing an Impact Advisory Group (IAG) process to program the remaining public benefit monies, including \$900,000 for improvements to the reservation. The IAG has identified the removal of the 1928-1929 fence as a high priority for implementation. The BRA has independently committed to replacing the lights on Beacon Street with historic fixtures.

3. Public Transportation and Neighborhood Access and Visibility

Three lines of the MBTA Green Line run immediately adjacent to the Reservation. Stops include the Reservoir Station on the “D” Line, Cleveland Circle Stop on the “C” Line, and Chestnut Hill Avenue Stop, the South Street Stop, the Greycliff Stop, and the Boston College Station on the “B” Line.

Despite the extensive service by public transportation, Chestnut Hill Reservation, particularly Reilly Pool and Rink, are not readily located from the Cleveland Circle area. Residents in neighborhoods around the circle are also somewhat isolated from the Reservation, with no direct visual access to the Reservoir due to the topography of the dam. The Reilly Pool and Rink building and Gatehouse #1 are clearly visible from Cleveland Circle, but there is limited signage in place to identify the facilities.

Many large, single family homes along Beacon Street are located above the street level and residents enjoy open, scenic views toward the Reservoir.

4. Cleveland Circle

The Cleveland Circle area has recently undergone an extensive streetscape planning process spearheaded by the Aberdeen and Reservoir Civic Association related to future infrastructure and landscape improvements.¹⁹ The streetscape plan was funded through the Massachusetts Historic Commission’s Preservation Projects Fund and this planning process will hopefully guide enhanced pedestrian access to the Reservation as well as improving sidewalk conditions along Chestnut Hill Avenue and Beacon Street. Recommended capital improvements for the Cleveland Circle area also included vehicular circulation, parking, and improvements to general aesthetic appearance of the area, including a public art installation. The early action item from this project is a gateway element connecting Cleveland Circle with Cassidy Playground.

5. Property Issues

a. Chestnut Hill Driveway Parcel

The current Reservation boundary runs to the north of Chestnut Hill Driveway, following the rear property lines of the adjacent Commonwealth Avenue apartment buildings, Wade Street residences, and Evergreen

Cemetery. This 17.55-acre driveway parcel, including Chestnut Hill Driveway and Saint Thomas More Road, was formerly “Chestnut Hill Park” and is owned by the City of Boston. Since 1976, the parcel has been under the care, custody and control of the Commonwealth through a 99-year lease originally between the MDC and the City of Boston.

The Chestnut Hill Driveway is an important recreational and historic feature of the Reservation. Its alignment, views into the Reservation and wooded edge all contribute to the Driveway’s character as a historic pleasure drive and should be preserved. The 99-year lease arrangement with the City of Boston does not provide DCR with long term control of the driveway parcel, and the lands could revert to the City, possibly for development.²⁰ In order to protect the character of the Driveway, the driveway parcel should be under the exclusive control of DCR, through a transfer of the fee interest or through an agreement for perpetual care, custody and control.

b. Permits

In 1962 the Metropolitan District Commission (MDC), issued a permit to Boston College for the use of three parcels of land adjacent to the Shaft #7 parcel. The parcels total about 75,000 square feet and remain under permit to the college. Boston College continues to pay the annual fee of \$1038 and is in good standing with the Commonwealth.

As written, the permit allows for revocation by the Commonwealth with 90 days notice, but no termination date is given for the permit itself. Further, there is no provision for re-assessing the value of the permitted land. The permit is over 40 years old, and the fee is no longer equivalent to the land value. The terms of the permit should be renegotiated to insure the long term protection of, or compensation for, public lands as required by Article 97 of the state constitution.

c. Encroachments

Chestnut Hill Reservation abuts a number of densely settled areas, resulting in encroachments into the Reservation lands.

Commonwealth Avenue Apartments

The high rise apartment buildings on Commonwealth Avenue and bordering Chestnut Hill Driveway enjoy the closest connection to the Reservation. Many of the

buildings have pedestrian access to the outer pedestrian path along Chestnut Hill Driveway. Residents have placed picnic tables and benches throughout the tree and lawn areas between the back of the apartment buildings and Chestnut Hill Driveway. The apartments also have direct access to the parking on Chestnut Hill Driveway, making the wooded area, in effect, a large backyard for the apartment buildings. Thus, the area appears to be associated with the private apartment buildings and not a part of the Reservation.

Community Gardens

The Chestnut Hill Reservoir Community Garden is located in the driveway parcel of the Reservation, near the terminus of Wade Street. Originally located at the intersection of Commonwealth Avenue and Chestnut Hill Avenue, the gardens were re-located to their present location in 1976/7. The garden occupies approximately 7,500 square feet, including divided plots, pathways, two sheds, compost piles and other appurtenances. The gardens are separated from the Driveway by steel picket fence installed in 1977. The Chestnut Hill Reservoir Community Garden Club requires that members reside in the Aberdeen neighborhood of Brighton. The garden group is autonomous, but maintains a membership with the Boston Natural Areas Network.

The gardens have been in this location for over 30 years but the history of the gardens goes back further. The Chestnut Hill Reservoir Community Garden Club dates back to the World War II Victory Garden which used to be at corner of Commonwealth Avenue and Chestnut Hill Avenue. The original garden site was sold by the City for construction of a large building, and the current plot was given as an alternative when this area was owned and managed by the City of Boston.

Based on a historic analysis of the Reservation and Chestnut Hill Driveway, the gardens are not considered a contributing feature of the historic pleasure drive once characterized by open water views, winding alignment, and a wooded park edge. The fence, garden plots, sheds, and other features visually detract from the experience of the Driveway and can be considered an inappropriate alteration to the historic landscape.

DCR currently has no written legal agreement with the Chestnut Hill Reservoir Community Garden Club for use of the parklands. While there is no reference to the group in the 1978 lease agreement with the City of Boston, the records of the Boston Parks Commission show the intent

to protect this use in the transfer. A transcript of the Boston Parks Commission meeting in September 1975 notes that Commissioners indicated that the “Victory Gardens” should be maintained in any transfer of the land to the former MDC.

The gardens are seen as an integral part of the Reservation by many in the surrounding community. The gardens are viewed as an attraction, maintaining property values, and bring more of the public in the Reservation. Brighton has the fewest community gardens in the City.

When an agreement is negotiated between the Community Gardens and the DCR, some portion of the membership dues should be used to offset the private use (and public loss) of the property. Contributions could also be made to the DCR Urban Trust to benefit and support management of the Chestnut Hill Reservation. Garden membership should also be non-discriminating and inclusive to all residents.

Saint Thomas More Road

The traffic island at Saint Thomas More Road and the edge of the road along the Boston College campus is maintained and planted with seasonal flowering plants by Boston College. The formal plantings and the island’s close proximity to the college entrance make the area appear to be part of the BC campus. The City of Boston also maintains the edge of the road along Evergreen Cemetery. Although Saint Thomas More Road is a part of the historic circulation pattern at Chestnut Hill, the area appears disconnected from the property. There is also no formal agreement between DCR and Boston College or the City of Boston for the maintenance of these areas.

Operations and Maintenance

1. DCR Management Structure

The Department of Conservation and Recreation manages recreational facilities in the Division of State Parks and Recreation and the Division of Urban Parks and Recreation. Within each division are smaller management units such as regions and districts. Chestnut Hill Reservation falls under the Urban Parks, South Region and is contained within the West District. The management for this area is based out of the West District office located at 12 Brainard Street, Hyde Park, MA.

Table 3.1: List of all facilities and assets under the DCR Urban Parks, South Region, West District

1.	Ames Street – 17 acres	33.	Newton Lower Falls Park
2.	107 Charles Street	34.	Norumbega Park
3.	Ames Street Canoe Launch (Pleasant St.)	35.	Norumbega Road
4.	Bajko Rink	36.	Olsen Pool
5.	Boulevard Road	37.	Quinobequin Road
6.	Brainard Street House	38.	Recreation Road
7.	Brook Farm Historic Site - lawns	39.	Red Wing Bay
8.	Brook Farm Historic Site - meadows	40.	Reilly Memorial Recreation Center (Pool and Rink)
9.	Camp Meigs	41.	Reservation Road
10.	Centre Street	42.	Riverdale Park
11.	Chestnut Hill Driveway	43.	Riverwalk Park
12.	Chestnut Hill Reservation	44.	Riverside Park
13.	Connors Pool	45.	Roche Ice Arena
14.	Cutler Park	46.	Smith Field Road
15.	Dale Street Playground	47.	Stony Brook Reservation
16.	Dedham Parkway	48.	SBR - Kelley Fields
17.	Doyle Playground	49.	SBR - Gelowitz Field
18.	Elm Bank Reservation	50.	SBR - Connell Fields
19.	Elm Bank Reservation - Soccer Fields	51.	Collella Field
20.	Enneking Parkway	52.	SBR - Dooley Playground
21.	Forest Grove Reservation	53.	SBR - Lawler _Playground
22.	Forest Grove Road	54.	Thompson Center
23.	Hammond Pond Parkway	55.	Turtle Pond Parkway
24.	Hammond Pond Reservation	56.	Veterans Memorial Pool
25.	Hancock Woods - entrance	57.	Veterans Of Foreign Wars Parkway
26.	Hancock Woods - fields	58.	VFW Parkway rotaries
27.	Havey Beach	59.	Village Falls Park
28.	Hemlock Gorge Reservation	60.	Waltham Veterans Rink
29.	Hyde Park Avenue	61.	West Roxbury Parkway
30.	Landry Park	62.	Westgate Canoe Launch
31.	Lost Pond Reservation	63.	Wilson Mountain Reservation
32.	Mother Brook Reservation	64.	Woerd Avenue Boat Ramp

2. Joint Management with MWRA

DCR shares responsibility for maintenance of the Chestnut Hill Reservation with the Massachusetts Water Resource Authority (MWRA) as outlined in the 2002 agreement between the agencies and summarized in Chapter 4 of this RMP. Specific maintenance tasks are identified below.

3. Maintenance

The current maintenance program for Chestnut Hill is designed to provide safe access to the path systems, control litter, control invasive growth along pathways and the water edge, and to sustain scenic views. With current

staffing and resources, further restoration of the historic landscape or rehabilitation of the pathways and historic structures is not feasible.

The typical maintenance required for the Chestnut Hill Reservation includes mowing, vegetation management (pathways, riprap, vista clearing, and understory management), pathway maintenance (replenishing surface materials), trash removal, and painting and repairs to site features (bench, fences, kiosk, walls). In the winter, DCR is responsible for snow removal along city sidewalks abutting the Reservation and streets and paths within the Reservation, as needed.

a. Mowing

Mowing by the DCR is done once a week during the spring and summer, and typically takes forty to forty eight staff hours a week to complete, exclusive of trimming. Trimming around the base of the fence is especially difficult with the amount of soil buildup that has accumulated around the bottom rails. The MWRA is responsible for mowing and vegetation control along the 2000 foot dam structure. Mowing schedules are not consistent between the DCR and MWRA, with the MWRA usually mowing the dam much less frequently than the DCR mows the remainder of the reservation. Herbaceous vegetation along the dam sometimes is as high as two or three feet.

b. Vegetation Management

DCR is responsible for controlling vegetation growing in the shoreline rip-rap beyond the dam structure, which requires the use of boom mowers. MWRA boom mowers are sometimes used as they have a longer reach than the mowing equipment owned by the DCR. There has also been an on-going removal of overgrown understory vegetation especially along the slope below Chestnut Hill Driveway and vegetation growing up into sections of the fence. In Spring 2005, the DCR cleared an area of vegetation below the Chestnut Hill Driveway overlook, thus re-opening the view from the overlook to the Reservoir. The view from the overlook is now open, but the head-in parking on Chestnut Hill Driveway is no longer screened from view within the Reservoir and the cleared slope may need to be stabilized.

The MWRA cut back most of the overgrowth in the areas immediately adjacent to the water three or four years ago, however the roots were not removed so new growth is growing out of the old stumps. This requires periodic removals of sucker growth. There is currently no written plan for vegetation management in the reservation. An organized plan will lay the groundwork for more consistent and improved vegetation management.

c. Snow Removal

DCR plows the Chestnut Hill Driveway and Saint Thomas More Road during snow events. DCR also removes snow along sidewalks on Commonwealth Avenue, Chestnut Hill Avenue, and Beacon Street as well as the path to the Rink and Pool. The DCR declares snow emergency for DCR roads, and parking restrictions are enforced by the State Police. Snow emergency signs were recently removed from the parking area along Chestnut Hill Driveway, eliminating “no parking” restrictions during storms. Without restrictions in place, DCR cannot commit to snow removal in this area. At the request of residents, DCR also plows a four-foot wide path on the Reservoir pathway (currently outside the fence) from the gate west of Gatehouse #2 to Saint Thomas More Drive. This is the area where the Beacon Street sidewalk on the Reservoir side of the street ends. Thus, any proposed treatment of the Reservoir perimeter path should be suitable for the mechanical removal of snow in this location. Prompt snow removal on sidewalks is needed, and DCR has ranked the sidewalks around the rink by Cleveland Circle as priority 1 or 2 locations under the DCR snow removal policy.

Table 3.2: Summary of Maintenance Tasks, Equipment, and Time

Task	Equipment*	Time – staff hours
Mowing spring, summer, and fall	2 – 48” Exmark walk behind movers and a 20 push mower	40-48 per week
Mowing along dam	Boom mower	By MWRA
Trimming in park, a majority along the fence	2 Echo weedwackers	10 hours per week
Trimming at shoreline rip rap	Boom mower DCR mower has 10’ reach that can reach on top of rip rap MWRA mower has 30’ reach that can reach the water line	1-4 times a season. Depends on equipment availability.
Selective clearing of understory	Lopper and handsaws primarily used by volunteers and court crews	As needed. Currently on hold pending finalization of RMP.
Trash	Litter sticks and trash bags	5-10 hours per week depending on season
Snow removal	Plows	As seasonally required

*Equipment list (equipment is used in all of the parks in the West District, not exclusive to Chestnut Hill Reservation)

4. Staffing and Budget

The DCR West District, South Region, in which Chestnut Hill Reservation is located, has a total of twelve reservations totaling approximately 2000 acres and stretching from Boston to Dover and Waltham. Currently DCR is responsible for maintaining all areas at Chestnut Hill Reservation. Informal partnerships also exist with adjacent neighbors like Boston College, Evergreen Cemetery, and the adjacent apartment complexes who mow some of the lawn areas.

Staffing and budget levels for Chestnut Hill Reservation are very inconsistent, varying from year to year and often relying on seasonal staff with unpredictable skill levels. The Park Supervisor has provided detailed information on the FY 2005 staffing levels, which are seen as the baseline level of staffing to maintain the status quo (Level 1). In FY 2006, there were two seasonal staff appointments to the Reservation but both candidates took positions elsewhere. No other dedicated seasonal staff was assigned to the Reservation in FY 2006. Therefore, FY 2005 is used as an appropriate baseline for the RMP. (For more information on management levels and associated resources see Chapter 7).

In 2005, the Park Supervisor and two year-round staff were the only full-time staff for the Chestnut Hill Reservation, and their duties were split among the facilities in the West District. In 2005, there was a total of approximately fourteen seasonal staff spread throughout the twelve properties. During the summer of 2005, one seasonal on-site maintenance staff person was hired to work full-time exclusively at the Chestnut Hill Reservation. The primary duties of this seasonal employee were to mow grass, trim vegetation, and collect trash. Half way through the summer, the seasonal laborer was transferred to ballfield mowing duties at other DCR facilities.

5. Volunteer Groups

The DCR West District staff develops and plans volunteer projects and then solicits organizations for volunteers. Once a project is selected, DCR West District staff purchase and/or organize supplies, meet with the volunteer project leaders to go over logistics, and greet and oversee volunteers during the project. Afterwards, DCR West District staff wraps up the project by putting away unused materials and supplies, removing trash and debris, etc,

In addition to the DCR employees, there are volunteer groups, such as Boston Cares and City Year, who provide additional maintenance assistance throughout the season and are supervised by DCR personnel. These volunteer workers assist in major clean-up efforts. Community service workers from the Boston Trial Court also provide additional workers.

6. DCR Financial Information

Because of the management structure of DCR's Urban Parks and Recreation system, there is no dedicated operating budget for Chestnut Hill Reservation. Instead, the park competes with all the regional or district facilities for funds to buy materials and supplies. The FY 2006 allocation for maintenance materials for the entire West District was \$60,000. This included materials for all parks and reservations, several ball fields, two swimming pools and two skating rinks. Supplies included items like mops, toilet paper, and trash bags. The budget and spending priorities fluctuate widely from year to year depending on funds and resources.

According to the Reservation Supervisor, the amount of money spent specifically for maintenance materials and supplies at the Chestnut Hill Reservation during the calendar year 2005 was approximately \$2500.

7. Park Regulations

The current policy for the Reservation has it open year around, dawn to dusk. This is typical policy for all of the parks and reservations managed by the DCR. Dogs are allowed on site, but must be leashed and are not allowed in the Reservoir. All dog waste must be picked up and disposed of properly. Shoreline fishing is allowed. A complete listing of the standard DCR rules and regulations for all of its reservations and parkways is included in Appendix D.

The User Survey issued over several months revealed consensus among residents that the park regulations are not adequately posted. Development of pedestrian gateways should include posting of the regulations.

a. Law Enforcement

At Chestnut Hill Reservation, park regulations and state laws are enforced at the state level through cooperation between the DCR Park Rangers and the Massachusetts State Police. Rangers are on staff only during park hours, while State Police are the primary law enforcement

agency with jurisdiction in the Reservation at other times. State Police are also responsible for enforcement along all of DCR's parkways and roads, including Chestnut Hill Driveway.

DCR also works closely with City of Boston police, who have concurrent jurisdiction on DCR lands, and Boston College campus police, who have no official authority on Reservation lands. Both city police and campus police have been contacted when incidents occur at the Reservation after hours. These reports are not always shared with DCR.

There is an issue of dogs off leash within the Reservation even though the DCR policy is for all dogs to be leashed at all times. Boston animal control officers have been seen on the Reservation.

b. DCR Ranger

One DCR Ranger is assigned to the District, but she splits her duties among twelve other DCR facilities. The Ranger is stationed out of Hyde Park and does not provide a regular patrol of Chestnut Hill Reservation, instead responding only to specific incidents or reports. Seasonal rangers may be able to provide regular foot patrol in the future.

Responses to the User Survey issued as part of the RMP process indicated that many users do not feel safe at the Reservation. In addition to better visibility along pathways, users would like to see more of a presence from law enforcement. This is not likely to happen unless additional staff is assigned to the facility. One Ranger dedicated to the Chestnut Hill Reservation one day per week could improve the public perception of safety and would allow for development of interpretive programming at the park.

DCR's Chief Ranger recommends establishing a pilot "Park Watch" program at the Reservation, through which concerned volunteers would work cooperatively with park rangers and police to recognize and report suspicious activity in and around park areas. There are currently Park Watch programs at Blue Hill Reservation, Hancock Woods, and Stony Brook Reservation. Although this program would improve the perception that the park is unsafe, DCR should not rely on private citizens for law enforcement.

8. Permit Program

Events at Chestnut Hill Reservation are allowed by permit through DCR's Permit Office (see Chapter 7 for details). Permitted activities could include organized walks and sporting events, cultural performances or arts education. Given the lack of dedicated meeting space and the limited land at the Reservation, the facility is not well-suited to most of these uses.

It is important that groups planning events obtain a permit from DCR. Proposed activities will be reviewed and approved by the Park Supervisor to insure that events do not conflict with DCR maintenance or other events. This process also provides park staff an opportunity to plan for events and protect significant resources. A list of activities requiring permits and an overview of the DCR Permit Program are included in the Chapter 7 Operations Plan.

¹ MA Division of Fish and Wildlife 1990.

² IPC 2001.

³ Dreyer 2001.

⁴ PCA 2001.

⁵ Converse 2001.

⁶ Dirr 1990.

⁷ Rawinski 1982, Thompson et. al. 1987, Malecki et al. 1993

⁸ Blossey, 2001.

⁹ CDM. "Emergency Distribution Reservoir Water Management Study, Task 5.2 Chestnut Hill Reservoir Final Management Plan" prepared by for the MWRA, May 2002.

¹⁰ GZA GeoEnvironmental, "Feasibility Evaluation of Abandonment of Gatehouse No. 1" prepared for the MDC, Division of Watershed Management (March 1998).

¹¹ Carolan, MHC inventory form for the Effluent Gatehouse #1, s8.

¹² GZA GeoEnvironmental, "Feasibility Evaluation of Abandonment of Gatehouse No. 1" prepared for the MDC, Division of Watershed Management (March 1998).

¹³ GZA GeoEnvironmental, "Feasibility Evaluation of Abandonment of Gatehouse No. 1" prepared for the MDC, Division of Watershed Management (March 1998).

¹⁴ DCR Commissioner Stephen Pritchard, letter dated September 9, 2005 to Secretary Edward Flynn, Secretary of Public Safety (who oversees the State Police).

¹⁵ Ellen J. Lipsey to Patrice Kish (DCR), letter dated 27 Sept., 2004.

¹⁶ U.S. Consumer Product Safety Commission, *Handbook*

for Public Playground Safety, Pub. No. 325 (Washington, D.C.).

¹⁷ Boston College students are known to be major users of the Reservation, although none responded to the survey

¹⁸ The Reservation is not open at night

¹⁹ Cleveland Circle Streetscape Plan, Final Report prepared by The Cecil Group, Inc. and Howard/Stein-Hudson Associates for the Aberdeen and Reservoir Civic Association. October 2002.

²⁰ The City-owned parkland may also be subject to the provisions of Article 97 of the Amendments to the Constitution of the Commonwealth.