



*Concept Plan excerpt showing a section of the Cheesecake Brook Greenway*

# **Cheesecake Brook Greenway Master Plan Report**

December 2009



*Images of the Cheesecake Brook Greenway*



**Weston & Sampson**  
When it's essential...it's Weston & Sampson.

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## **APPENDIX**

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Please note that the all referenced items have been furnished to the City of Newton separately. Copies have not published with this document.

PowerPoint Presentation 02|08|08  
PowerPoint Presentation 03|25|09  
Aerial Maps of Greenway Corridor (3 Sheets)  
Various Master Plan Image Boards  
Related Maps, Images, + Related Project Information



## Cheesecake Brook Greenway Master Plan Report

### Introduction

Weston & Sampson was retained by the City of Newton to develop a master plan for the Cheesecake Brook Greenway (the Greenway) located in Newtonville. The master planning work was funded by the Newton Community Preservation Committee, after the receipt of an application submitted by the "Friends of Albemarle". The purpose of our work and the focus of the resulting master plan is summarized as follows:

- Analyze existing conditions along the 4,200 linear foot Greenway, which follows Albemarle Road between Watertown Street to the south and the Charles River to the north.
- Identify use conflicts, safety issues, aesthetic issues, environmental issues and other matters of concern to residents and visitors to this area.
- Identify potential site improvements and enhancements that help to better meet the needs of the residential and institutional uses that line the Greenway corridor.



An aerial image showing Cheesecake Brook Greenway corridor between Watertown Street/Route 16 (bottom of image) to the Charles River (top of image).



- Identify potential methods for implementing the recommended improvements and potential sources of funding (Private, Non-profit, City, State and Federal) for the various improvement opportunities.
- Establish a master plan that will serve as a guide for future public improvements along the Greenway, as well as a tool to secure funding through a variety of sources.

This written report represents the culmination of the master planning process and it contains both narrative and graphic depictions that highlight potential enhancements and describe potential improvements, phasing scenarios and implementation strategies. The Master Plan suggests and identifies new and refurbished amenities that meet the needs of various users of the Greenway, with a focus on important initiatives that would help to promote environmental stewardship, improve safety and convenience for travelers (in cars and on foot or bicycle), reduce the impacts of stormwater to abutters during storm events and improves the aesthetic qualities in general.

Implementation of the various improvements outlined in this master plan will require significant effort. The Funding Opportunities section of the report identifies potential granting agencies, non-profit entities and other sources of capital dollars that might help with the refurbishment of the corridor. Since this Greenway, or linear park, is formed within a public right away associated with the north and south bound travel ways of Albemarle Road, there is an opportunity to do meaningful upgrades under the auspices of future public works infrastructure improvements as they are planned and constructed in upcoming years.



*Image of Cheesecake Brook near Crafts Street courtesy of Sally Brecher.*

***It is important to note that a "master plan" is typically general and that recommendations are not "cast in stone". It is fully intended that as particular projects are implemented the potential range of improvements identified in this report, will again be validated or refined to meet actual field conditions through a continuing public participation process.***

## The Master Plan Work Effort

During an approximately 18 month period of time (January 2008 through June 2009), work was undertaken by Weston & Sampson and included the following basic efforts:

- Compiled mapping for the purpose of developing the actual Cheesecake Brook Greenway Master Plans that identify the potential scope of improvements. Note that no on-the ground topographic survey was performed as part of the master planning effort. In order to advance master plan concepts to finished designs, on the ground survey and more accurate base mapping needs to be completed. City of Newton GIS Mapping was used for much of this work and supplemented by other aerial mapping available from a variety of on-line sources.



*Image of Cheesecake Brook near the Charles River courtesy of Sally Brecher.*

- Performed field reconnaissance efforts in order to examine and report on all Greenway facilities, amenities and conditions.
- Identified safety issues and concerns and potential limitations and constraints associated with future improvements.

- Met with city staff members to review progress, findings and recommendations.

- Engaged the community in a public dialogue to establish needs, preferences and priorities in relation to the future renovation and restoration of the Greenway corridor.



*Image of Cheesecake Brook looking toward the Charles River end of the Greenway corridor courtesy of Sally Brecher.*

- Identified funding, phasing and implementation strategies.



At the outset of the process and in conjunction with the master planning work, Weston & Sampson representatives frequently toured the Greenway corridor in order to assess how it is used by neighbors, school faculty and children, recreation facility users, passersby and other visitors to the area. We also inventoried conditions of various amenities located within and along the corridor. Existing conditions assessments are included in the form of a series of photographs, plans and narrative summaries contained later in this document.



*Image of children walking along the Brook courtesy of Curtis Betts.*

The major points of the master plan were presented to the public at a hearing held on June 24<sup>th</sup> 2009 at the Horace Mann Elementary School. At the conclusion of this meeting, the desire of neighboring residents to improve the corridor in meaningful ways became abundantly clear. The Greenway is viewed as a major environmental and recreational asset that can better meet the needs of residents who live in the neighborhood, school children who attend the elementary and middle schools, their parents, and others seeking recreational opportunities and enjoyment within the considerable park and open space resources. It is also seen and valued as a linear park system with the potential to better accommodate walkers, joggers and bicyclists traveling in north-south directions to and from the Charles River Pathway with connections to other Newton and Watertown locals.

## Background

This study analyzed a section of the Cheesecake Brook Greenway, from Watertown Street (Route 16) to the Charles River. The Cheesecake Brook flows in a generally south to north direction within this section of the City of Newton, and is located between the northbound and southbound travel lanes of Albemarle Road. This section of the Greenway runs approximately 4,400 linear feet. The corridor is located within a 120 foot public right-of-way. Although surface features are somewhat varied, the corridor generally includes sidewalks (north and south bound) public travel ways (north and south bound) parking spaces (informal and formal, parallel and angled), and lawn



*An aerial image showing a southern section of the Cheesecake Brook Greenway in Newtonville. Albemarle Road runs in a south-north direction with angled parking situated along the eastern (right in photo) side of the Greenway. Albemarle Park and The Fessenden School playing fields appear to the east and west (right and left) respectively.*

areas and slopes that form the eastern and western sides of Cheesecake Brook itself. The Brook is contained within a clearly defined channel that is formed with field stone retaining walls.

### **Public Participation and the Community Process**

The master planning process included a comprehensive community participation process, with primary meetings identified in the chart below.

<b>Meeting</b>	<b>Subject</b>	<b>Date</b>
Community Meeting No. 1	Master Plan kick-off meeting, review of existing conditions, historical review of Cheesecake Brook and vicinity, and feedback from attendees on current uses, current problems and new opportunities.	February 8, 2008
Community Meeting No. 2	Presented Master Plan concepts showing potential treatments and enhancements along the corridor, with focus on the Watertown Street to Crafts Street section.	March 25, 2009
Community Meeting No. 3	Presented Master Plan concept drawings indicating general treatments along the entire Greenway corridor length and specific treatments along the Watertown Street to Crafts Street section.	June 24, 2009

These meetings were held at the Horace Mann Elementary School and were attended by members of the surrounding neighborhood, larger community, Board of Aldermen, and represents of the Department of Public Works, Parks and Recreation Department and Community Preservation Committee. At the first two public meetings, PowerPoint presentations were made and followed by extensive question and answer periods. At the final meeting, concepts were presented on large presentation boards with dialogue directed toward the confirmation of design precedent and community preferences. Between 15 and 45 individuals attended the meetings.

### **Historical Summary**

While historical research and reporting were not major parts of the master planning process, it was noted that the Cheesecake Brook and surrounding areas possess many interesting historical attributes. We offer a few tidbits and images on the following pages, and we encourage readers to pursue other sources at the Newton Public Library and the Newton History Museum/Jackson Homestead as there is an ample amount of interesting historical information pertaining to this geographic section of the City.

Much of the historical information contained below was provided to Weston & Sampson by the City of Newton. Some of the information was transcribed by Alice Ingerson from note cards typed by Thelma Fleishman, a Newton History Museum/Jackson Homestead volunteer and based on her many years of research from multiple sources.

### Historical Tidbits + Anecdotes

- The Albemarle Golf Club was located adjacent and surrounding Albemarle Road and Cheesecake Brook during the early part of the twentieth century and golf balls hit within the road or creek had to be played where they sat or dropped if unplayable under the penalty of a stroke.
- Ca. 1869 | Engineer reports that "culverts on Cheesecake all need to be enlarged whenever they are rebuilt" to cope with demands in heavy rains in the next 10 years, channel at Cherry St should be deepened to 18", and both culverts and channel behind City Hall should be widened" But "for comprehensive improvements would need the cooperation of owners of lands along its course"
- Ca. 1891 | As part of a project to widen/deepen 375 feet of open ditches and brooks, Cheesecake Brook widened and deepened north of North St.
- Ca. 1892 | Cheesecake Brook watershed reported as 2,300 acres.
- Ca. 1892 | "The constant encroachment of buildings and streets over the territory of the brook have caused the natural flow of the water towards the brook to be much more rapid than when it could all soak into the surface where it fell and percolate slowly through the soil down to the brook. This has caused much trouble from flooding and in order to remedy the evil it was necessary to increase the capacity of the brook."
- Ca. 1892 | Cheesecake Brook described as "one of the principal tributaries which the Charles River receives from Newton. The portion treated is that part lying between Watertown St. and the River, a length of 4,430 feet as measured along the new channel, which is 660 feet shorter than the old."
- Ca. 1892 | Width of taking [by the city] as summarized below

Central channel for the ordinary waterway (8 to 12')	12
Paving	3
Grassed slope at inclination of 1:4 or 3/4 in. per ft, to contain floodwaters	28
Roadway on each side (est.)	70
Sidewalk (est.)	6
<b>TOTAL WIDTH (feet)</b>	<b>120</b>

- Ca. 1893 | From a report by Landscape Architect Charles Elliot: "[Along] Cheesecake Brook ... the City of Newton is practically illustrating the treatment which, with modifications, should be applied to all the larger waterways of the district as soon as the lands about them are demanded for building purposes. Instead of covering the stream with backyards or a street, the watercourse is placed in an open strip of grassy or bushy ground, upon each side of which is constructed a roadway affording access to houses built facing the stream." "... The pollution of the stream is effectually prevented." "... The value of the adjacent real estate is so enhanced that it much more than makes good the subtraction of the brook banks. The treasury of the City of Newton will soon be more than reimbursed by the increase of the taxable value along the stream."
- Ca. 1893 | Engineers Annual Report: "Improvement [along Cheesecake Brook] practically finished up ... drives on both sides completed and the banks of the brook sloped off, there remains only to grass and seed slopes." "North [St.] culvert was built and the one commenced last year at Crafts St. was finished, both having substantial stone arch bridges with capstones outside and durable fences across them."

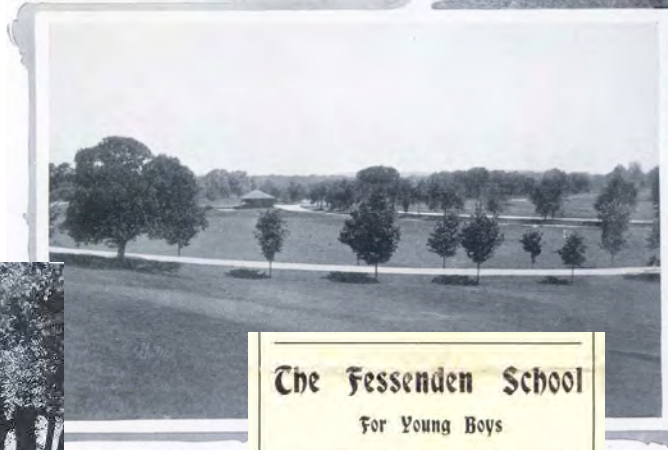


- Ca. 1893 | Engineers Annual Report: "The winding course of the brook down through the valley and under these bridges adds greatly to the beauty of the landscape. In the spring ... trees can be planted along the line of the roadway making a beautiful drive from Watertown Street to the River." "If a rustic bridge could be thrown across the stream at the lower end near the River, so that people could drive down one side, cross the bridge and return on the other side, it would be one of the most attractive drives we have in the city." "The land for the construction of the park and the roadways was given principally by parties owning the land, who considered the great benefit to the adjoining property ..."
- Ca. 1895 | Charles F. Avery lives in a home at Crafts St. opposite California St. (by 1899 this property has a house number: 346 Crafts Street). The property abuts current day Albemarle Park.
- Ca. 1903 | Fessenden Began School with Nine Boys.

A selection of historical maps and images are contained below (Please note that these images have been generously provided by the Newton Historical Museum/Jackson Homestead):



*Post cards and other images showing historical structures in the Albemarle Road/Crafts Street vicinity and the former Albemarle Golf Course property.*



Albemarle Golf Links, Crafts Street and Albemarle Road



**The Fessenden School**  
**For Young Boys**  
**Albemarle Road, West Newton**

Prepares for the Newton High School and OTHER LEADING SECONDARY SCHOOLS; number limited; spacious grounds for golf, tennis, base-ball and foot-ball; trolley connection with all the Newtons.  
 Tuition for day pupils, including dinner, \$200.00.

F. J. FESSENDEN, Principal



Below: Map images from 1907 showing the Cheesecake Brook corridor north to south (left to right) all courtesy of the Newton Historical Museum/Jackson Homestead.



Cheese Cake Brook Boulevard, or Albemarle Road

## Surrounding Land Use Context

Current land uses surrounding Cheesecake Brook within the project area include primarily residential, institutional (public and private) and recreational properties. Mostly single-family residential properties line the northern and southwestern sections of the Greenway, while the institutional and recreational properties line much of the southern section of the Greenway. Major properties other than residential include:

- Russell J. Halloran Sports & Athletic Complex (aka Albemarle Park) (includes various named fields, Henry Gath Memorial Pool and Albemarle Playground)
- Avery Estate (Avery Woods)
- The Fessenden School
- Frank A. Day Middle School
- Horace Mann Elementary School

## Present Day Usage

The Cheesecake Brook Greenway is at once transportation corridor, stormwater management corridor, and linear park. As a transportation corridor and linear park the area is enjoyed by drivers, walkers, joggers and bicyclists.

The width of the corridor remains 120 feet, as referenced in 1892 by the City Engineer (see related historical excerpt). The image below shows the basic layout of the corridor, which includes in cross section the following basic elements (listed from west to east):

- West side sidewalk (not present in places)
- South bound travel way (variable width) (informal parallel parking permitted in places)
- Grass bank



*Aerial image showing a northern section of the greenway as it approaches the Charles River. North Street crosses the greenway on a diagonal toward the bottom of the image.*



*Aerial image showing the angled parking along the east side of the corridor at Albemarle Park and Gath Pool. Cheesecake Brook forms the dark linear form near the center of the photo. To the west of the Brook the roadway width is limited with restricted parking and no sidewalk.*



- Cheesecake Brook mortared fieldstone wall (west side)
- Cheesecake Brook
- Cheesecake Brook mortared fieldstone wall (east side)
- Grass bank
- East side travel way (formal parallel and angled parking in places, informal parallel parking allowed elsewhere)

The Albemarle Road and Cheesecake Brook Corridor is an attractive, vibrant and often busy corridor that provides access to residents of the neighborhood and the many institutional properties located along the southern end of the corridor. In regard to vehicle traffic, the southern end of the corridor is impacted by:

- Heavy school season traffic associated with the Horace Mann Elementary School and the Frank A. Day Middle School, especially at drop off and pick up times and during special events.
- Additional traffic associated with Albemarle Park, particularly during busy spring and fall recreation and athletic seasons.
- General traffic moving in a north-south direction between major east-west connector routes including Washington, Watertown, Crafts and North Streets.
- Cut through traffic avoiding tie ups and signalized intersections along Watertown Street and Washington Street.
- Vehicular travel that is reported to move at a high rate of speed, creating safety issues for walkers, joggers, bicyclists, school children and other drivers.
- Special events traffic associated with the schools and the park. The 4<sup>th</sup> of July celebration at Albemarle Park has been reported to attract upwards of 30,000 people.

The northern end of the Cheesecake Brook Greenway has a much quieter feel and is far less impacted by vehicular traffic. The northern most portion of Albemarle Road is actually a dead-end, so vehicular traffic within the area to the north of North Street is light and generally limited to residents accessing their homes and to visitors. In addition, walkers, joggers and bicyclists use this length of roadway to access the Charles River Pathway.

To the south, the center of the corridor is used and enjoyed by children and adults of all ages. On most days, people can be observed walking and jogging along the sloped lawns that form the two sides of the channel. Dog walking is popular and many use the corridor to access Albemarle Park or the adjacent school properties. Some users make their way to the Charles River Pathway and Reservation located at the far northern end of the corridor. Bicyclists and joggers in particular seem to make use of the entire length of the corridor to and from the Charles River Pathway. Many bicycle enthusiasts spoke out about the challenges of using the north bound section of Albemarle Road near the Horace Mann School and Albemarle Park, as heavy traffic, parking and school drop off and pick up activities create conflicts.

## Existing Site Conditions

### Travel Ways

The chart below summarizes the travel patterns along the various segments of Albemarle Road and the Cheesecake Brook Greenway. There are basically six segments of Albemarle Road, three each along both the east and west sides of the corridor.

The condition of paved surfaces has been noted to be fair to good. In general, conditions seem to be better along the two northern most segments of the corridor which receive far less traffic compared to the busy southern segments. There are surface areas located along the southern segments that exhibit poor physical conditions and according to neighborhood and community representatives attending public hearings, these same sections are plagued by heavy traffic during peak periods of usage, high rates of travel, cut-through traffic and a lack of pedestrian and bicycle accommodations.

<b>Albemarle Roadway Segment</b>	<b>South Bound</b>	<b>North Bond</b>
Watertown Street to Crafts Street	One-way	One-way
Crafts Street to North Street	One-way	One-way
North Street to Charles River (near Arizona Street)	Two-way	Two-way

The images that follow below identify the basic configuration and condition of Albemarle Road at four different locations. We have selected two images from the southern, Watertown Street to Crafts Street vicinity and two from the Crafts Street to Charles River vicinity since the four northern most roadway segments are quite similar. It was noted that there may be future opportunities to undertake road improvements as utility infrastructure is upgraded within the area and other improvements within the Cheesecake Brook Greenway should be piggy-backed onto any roadway and utility projects that are implemented.



*Crafts Street to Watertown Street segment looking southerly in the direction of the Horace Mann Elementary School. Albemarle Park is to the left and The Fessenden School playing fields are located to the right in the image. A travel way is marked out, with no parking permitted along the east side of the road and informal parallel parking permitted along the west side.*





*Watertown Street to Crafts Street segment looking northerly with angled parking in front of Albemarle Park and Gath Pool and the narrower south bound travel way and The Fessenden School playing fields at left.*



*North Street to Charles River segment looking northerly toward the Charles River. Travel in this area is much lighter and parallel parking, while not formally marked, is permitted along curb lines.*



*North Street to Charles River segment looking southerly. This quieter, residential area is off the beaten path and two-way traffic is permitted along both sides of the Brook.*



## Parking

Parking is located and permitted along most lengths of Albemarle Road and Greenway. The most intensely sought after parking is located along the eastern side of the channel in the Watertown Street to Crafts Street segment, where spaces are formally striped throughout. Within the other five roadway segments, parking is informal, with no spaces marked. At certain locations parking is restricted due to the narrowness of the travel way and corresponding pavement widths or due to the proximity to intersecting streets. At most times, there seems to be sufficient parking with the exception of peak periods of traffic flow that typically correspond to school drop off and pick up times



*Both angled and 90 degree parking stalls are shown in the photo above at Albemarle Park. Backing out of these stalls can be challenging during peak traffic periods, but the number of spaces is maximized by the current arrangement. Most bicyclists expressed a preference for travel along the left, or west side of the corridor in order to avoid conflicts with cars backing up.*

and heavy athletic event schedule days at Albemarle Park. The heaviest use periods at Albemarle Park tend to be in the spring and fall months when fields are intensely programmed. During summer months, Gath Pool is operating, but school and programming of the fields tends to be reduced.

During major events, like the annual city-wide 4<sup>th</sup> of July celebration, it is impossible and impractical to meet the demands for parking along this corridor, and this is a generally accepted fact. The major issue to be addressed from a parking perspective is safety and visibility for those attempting to back out from the angled and 90 degree parking stalls. Someone driving a lower-sitting vehicle is at a disadvantage when parked next to a van or SUV, especially given the high speed of travel that has been reported. In addition, there may be opportunities to designate parallel parking opportunities along the southbound side near the Fessenden School.

<b>Albemarle Roadway Parking</b>	<b>South Bound</b>	<b>North Bound</b>
Watertown Street to Crafts Street	Informal Some Restrictions	Formal/Striped Angled (141) 90 Degree (25) Parallel (1) 167 Total Spaces
Crafts Street to North Street	Informal No Restrictions	Informal No Restrictions
North Street to Charles River (near Arizona Street)	Informal No Restrictions	Informal Some Restrictions

## Pedestrian Accommodations



Walkways, pedestrian bridges and crosswalks provide critical connections to the institutional and residential uses that line Albemarle Road and invaluable benefit to walkers and joggers traversing part of or the entire corridor to other city destinations and the popular Charles River Pathway. Combined, these pedestrian accommodations represent the most critical aspect of any linear park or greenway system. As part of the master planning effort, we looked at the condition of various elements within this pedestrian network, identified obvious gaps, limitations and safety concerns and in developing recommendations for improvement, have attempted to solve some of the most obvious deficiencies. The primary issues are summarized as follows:

- A continuous pedestrian path runs the entire east side of the corridor from Watertown Street to the Charles River, a distance of nearly one mile. There is a direct connection to the Charles River Pathway and pedestrian bridge located at the northern end of the Cheesecake Brook Greenway.
- The conditions of asphalt and concrete sidewalk surfaces vary from good to poor, with certain sections of pathway exhibiting deteriorated conditions caused by age, basic wear and tear and tree root penetration.
- Crosswalks are located at key cross streets including Crafts and North Streets. Intersections are not signalized so crossing can be difficult during periods of intense traffic and nighttime use.
- There are no pathways located within the interior of the corridor. People are often observed walking within this area, probably because it is more removed from the busy travel ways than the sidewalks and offers direct views to the Cheesecake Brook.

- Pedestrian accommodations are generally lacking along the western side of the Watertown to Crafts Street segment of Albemarle Road. This leaves residents located along that corridor fewer opportunities to safely connect to the existing linear pathway system.
- The high speed and heavy volume of traffic during peak periods is a detriment to pedestrian use of the greenway.
- The lack of pedestrian crossings over the channel and the location and condition of the two existing pedestrian bridges make it difficult for pedestrians seeking to connect between the east and west sides of the greenway.
- In places, Americans with Disabilities Act (ADA) compliance is compromised due to poor surface conditions, inadequate pathway widths, excessive slopes, inadequate ramps and related issues. The pedestrian bridges are not accessible due to the steep gradients and the use of steps at ramp entrances.

Much of the discussion at the three community meetings focused on the need to provide improved pedestrian accommodations that are sought out by a wide range of users, that are ADA compliant, that are safe for use and that provide key links to residential properties, institutional uses and Albemarle Park to other linear park systems located to the south and north.

<b>Pedestrian Accommodations</b>	<b>South Bound</b>	<b>North Bond</b>
Watertown Street to Crafts Street	Limited, Poor Condition	Concrete, Fair Condition, Mostly ADA Compliant
Crafts Street to North Street	Concrete, Asphalt, Fair to Good Condition	Concrete, Fair to Good Condition
North Street to Charles River (near Arizona Street)	Concrete, Fair to Good Condition	Concrete, Asphalt, Gravel, Mostly Good Condition

*Note that handicapped ramps are lacking in many locations, and that other ramps may be substandard or deteriorated.*



## Pedestrian Bridges



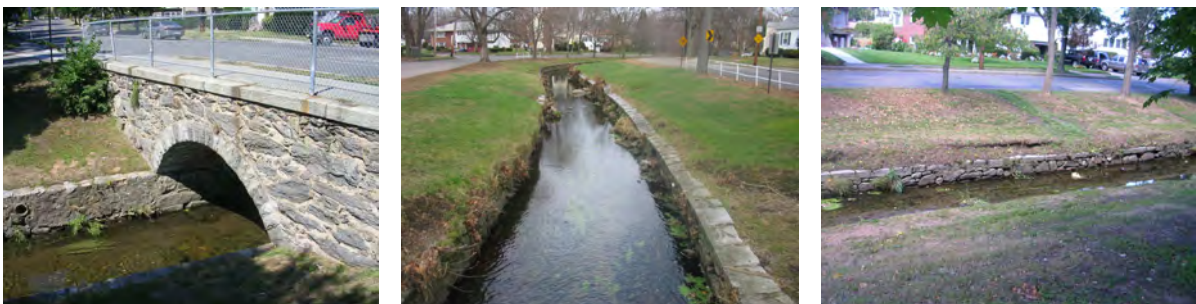
*Images above show the two pedestrian bridges crossing the Cheesecake Brook. The bridges are in poor or fair condition, not compliant with ADA and visually unappealing. According to local residents, the locations do not provide optimal connections to the variety of uses located along the east and west sides of the greenway corridor.*

## Crosswalks



*Crosswalks are delineated and sufficiently wide at Crafts Street. However, the high speed of travel and the heavy flow of traffic during peak periods are impediments to crossing the two major cross streets (North and Crafts) with ease. Crosswalks are not in place at North Street or at many other key locations where pedestrian requirements probably warrant their installation.*

## The Channel







The six images above show representative conditions of the fieldstone channel walls that form the eastern and western edges of the Cheesecake Brook. Conditions of the wall vary from poor to fair to good. As the Newton Department of Public Works is looking separately at issues related to the structural integrity of these channel walls, we have not addressed the matter within this master planning effort. At the end of the document, we reference relevant studies and structural engineering analysis that identifies protocols for wall repairs and replacement.

**The Lawns**



The images above show representative sections of the Cheesecake Brook Greenway and the sloped lawns that form the eastern and western sides of the channel. In general, the lawns are well-maintained in that they are mown on a regular schedule during warm weather seasons. The lawns (and the trees) provide the “green” in

Greenway. They are a very visible element along the corridor and provide high aesthetic value as they set off the channel walls and actual brook and provide contrast to the paved surfaces of Albemarle Road. A more detailed assessment of the conditions of the lawns is indicated below:

- Ruts and irregular grades are prevalent, particularly in areas of heavy use or uncontrolled stormwater runoff. Combined with steep slopes in places, these characteristics tend to limit access.
- Turf conditions are varied, with mostly weed growth and some grasses that go dormant during hot, drought periods and appear lush and green where shaded and when receiving ample rainfall.
- Lawn areas generally contain no amenities in the form of pathways that might provide access to the brook or benches that would allow opportunities for passive use and viewing. Where there is a lack of tree cover and corresponding shade, the lawn areas appear a bit desolate, particularly during hot weather months when the turf cover is apt to turn brown and desiccated.
- In some places, lawn areas have been washed away at the back of the channel walls, and undermining has occurred. In other places, soils and lawn appear to overtop the channel walls, creating in essence, a turf retaining wall with reveals that range from three inches to eighteen inches.

## Stormwater Management



Although the analysis of stormwater management issues was not a specific part of this master planning work, these systems do have an impact on the use and visual quality of the Cheesecake Brook Greenway. The Channel itself is a stormwater management mechanism that was constructed in the second half of the 19<sup>th</sup> century. At the time, it was acknowledged by city engineers that during storm events water flows were likely to expand out of the channel itself but would then be contained by the sloped lawns that were constructed adjacent to the channel. Today, the channel collects stormwater from an expansive watershed (containing a higher percentage of impervious surfaces) and transports it to the Charles River. From a global perspective, water quality is impacted by cross connections and a



lack of treatment up gradient. As a result, sediment and nutrient levels are elevated in the water that runs through the channel.

Locally, stormwater from paved surfaces and from drainage structures lining the corridor are directed into the Cheesecake Brook. In places, paved swales and curb openings provide inlets for untreated surface flows into the channel. In other places, paved swales have been undermined, compromising the condition of adjacent lawns and the fieldstone channel walls.

As infrastructure improvements are planned and implemented along this corridor, there is a great opportunity to improve the quality of water directed into the Cheesecake Brook through the installation of catch basins with sumps, rain gardens, bio-retention cells and other stormwater treatment facilities that separate sediments and remove nutrients before they enter the Cheesecake Brook.

To meet the public concerns about the frequency of flooding that inundates roadway surfaces and residential yards across from the Horace Mann School, it will be important to continue seeking measures that slow the delivery of stormwater into the channel within upstream areas.

### **Existing Conditions Summary**

Cheesecake Brook Greenway, which includes Albemarle Road, is an important public open space and passive recreational resource that can be much improved as infrastructure projects are planned and constructed. The focus of future improvements should be on the provision of new pedestrian accommodations that are ADA compliant, that encourage multi-generational use and that provide access to the Cheesecake Brook, the focal point of the corridor. Traffic calming measures (pavement striping, bikeway lane striping, raised and textured crosswalks and curb line bump outs) would help to provide for safer travel for all users traveling along Albemarle Road.

In addition, there are opportunities to create new linkages and channel crossings that allow safe and convenient access for residents, school children, park patrons and other visitors to the area. There is also great opportunity to enhance the basic aesthetic qualities of this valuable resource through the installation of new pathways and site furnishings within lawn areas and new tree plantings and rain gardens along the roadway that enhance both visual and water quality as well as habitat for wildlife.

As improvements are contemplated within the immediate area and surrounding watershed, new stormwater management amenities and facilities can help to improve water quality and reduce the impacts of chronic flooding at residents located near the Horace Mann School.



## Recommendations

The master planning effort provided a unique opportunity to comprehensively assess the Cheesecake Brook Greenway for the purposes of developing a series of thoughtful and achievable enhancements that will provide benefits to all members of the surrounding neighborhood and larger community.

Working with community representatives and city staff members “preferred” Master Plan concepts have been developed that identify the basic scope of desired improvements throughout the Cheesecake Brook Greenway. In summary, the plans identify restoration, reconstruction or redevelopment approaches for the corridor. The intent is to enhance this linear open space in a way that provides improved recreational attributes, improved environmental stewardship, improved aesthetics and enhanced safety and accessibility for all users. The highlights of the plan are described on the following pages.

With no funding sources imminent and significant economic challenges facing cities, states and the federal government, it is important to keep vigilant and focused on implementing improvements over an extended period of time, perhaps bit by bit. The corridor is long, the infrastructure is extensive and it will take a significant amount of funding to achieve the recommendations identified in this plan. Funding sources are identified later in this section, but modest improvements can be undertaken even in the short term that can help to improve various qualities along the corridor as summarized below:

- Community clean-up days would help to remove trash from within the corridor.
- Striping and signing of crosswalks and travel ways could improve pedestrian, vehicular and bicycle circulation and safety.
- Replacement of asphalt drainage swales with deep sump catch basins, even under a one structure at a time approach, would start to improve water quality and increase stormwater storage capacities. A five foot diameter, 8 foot depth structure might cost between \$4,000 and \$10,000, depending on the construction method employed (in-house or public bid) and include excavation, structure install, backfill, piping to the channel and roadway surface restoration. Annual maintenance would be performed by in-house labor with currently available equipment and simply be an add-on to current DPW maintenance efforts.

- Construction of new sidewalks and replacement of old sidewalks would improve pedestrian travel and safety and help to achieve ADA compliance.
- Tree planting programs are relatively affordable and would help to improve aesthetics, lend shade and provide enhanced wildlife habitat, particularly within southern segments of the Greenway.
- The replacement of a single pedestrian bridge might be attainable as a stand alone project, and achieve ADA compliance and provide new, highly desired linkages.

At some point, funding will become available in large enough chunks to be able to tackle larger initiatives. In the meantime, Cheesecake Brook will continue to be an important asset within the neighborhood and larger community, particularly if continued headway is made in the control and reduction of street and yard flooding during peak rain events and traffic calming mechanisms are employed. It is worth noting that improvements are far more important from both a functional need and aesthetic standpoint within the Watertown Street to Crafts Street segments of Albemarle Road and the Cheesecake Brook Greenway. Traffic problems are most bothersome, aesthetics are most lacking and stormwater control measures are most needed within this area. The other four Greenway/roadway segments have a far different look and feel overall and possess far fewer deficiencies in comparison.

In conducting the public hearings and in developing the preferred master plan concepts, a number of basic refurbishment themes became apparent as briefly summarized below:

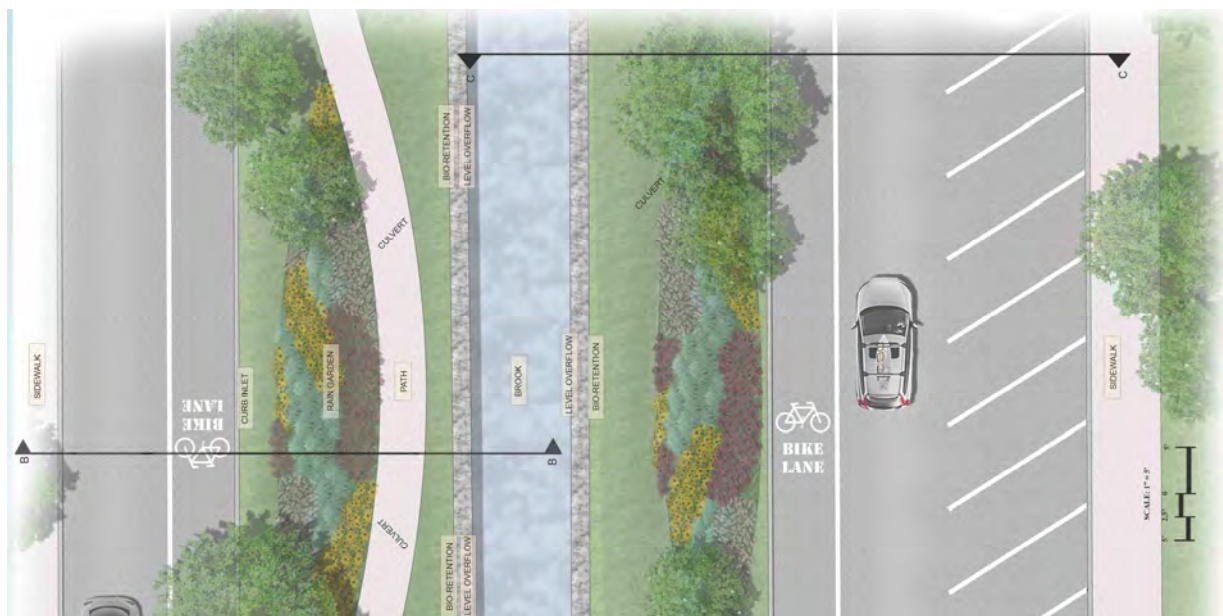
- Refurbish roadway surfaces and curb lines and consider restriping travel ways and adding bike lanes along segments of Albemarle Road, particularly between Watertown Street and Crafts Street where vehicle/bicycle conflicts are likely to be greater and traffic is heavier. The corridor is sufficiently wide to provide 19' angled parking, 12' travel ways and 4' bike lanes without the need for additional widening of paved surfaces.
- Install traffic calming mechanisms to include narrowed travel ways, tabled crosswalks, curb line neck downs and pavement treatments for improved pedestrian safety throughout the corridor.
- Improve pedestrian amenities throughout the corridor to include new and replaced pathways, crosswalks and pedestrian bridge crossings at strategic locations.
- Improve the actual Greenway, through the installation of access points to the brook, seating in the form of park benches, shade trees and rain gardens for water quality enhancements. Small seating areas can be installed at a likely





cost of between \$20,000 to \$30,000 and include a connecting pathway that is ADA compliant, benches, a railing to discourage direct access into the water and a minor retaining wall if needed. These are also ideal locations to install interpretive signage. Similar treatments were implemented near the Eddy Street end of the Cheesecake Brook Greenway under an earlier improvement project.

- Construct additional pathway segments within the Greenway to provide the opportunity to traverse and occupy the corridor from within the actual green area.
- Install interpretive signage that presents the unique environmental and historical qualities that are inherent to the area. This has great educational potential given the proximity to the three schools located along Albemarle Road.



The plan excerpt above shows a typical section of the Cheesecake Brook Greenway within the Watertown Street to Crafts Street segment of the corridor near Albemarle Park. The north bound travel and bicycle lanes are shown to the right in the image. The south bound travel and bicycle lanes are shown to the left in the image. The image shows the majority of suggested improvement types. Refer to the section view locations on Page 24.

Following is a more detailed presentation of the recommendations for improving various elements that make up the Cheesecake Brook Greenway.

### **Albemarle Road | Travel Ways, Parking + Sidewalks**

As infrastructure needs become more acute and as funding becomes available, there is much to be gained through the refurbishment of the travel ways, with a particular emphasis on the two Watertown Street to Craft Street segments of the Greenway. Physical conditions are deteriorated within significant areas and the high rate of speed and lack of travel way definition create safety and convenience hardships to neighborhood residents and others traveling to and from the many institutional and recreational properties located here.

Major recommendations as represented on the plan and sketch images contained throughout this section include the following:

- Installation of a consistent, 12 foot wide travel way. Consideration of an even narrower travel way width to further calm, or slow vehicle traffic. The City of Cambridge is introducing 11 foot travel ways in many locations and has realized success in slowing vehicles through the use of this mechanism.
- Installation of an 18-19 foot wide, 60 degree parking bay throughout this corridor section. This includes eliminating the 90 degree parking that presently exists in front of Gath Pool. This allows for a consistent roadway cross section to be developed and allows between 2 feet and 4 feet of current pavement to be captured and turned over to other uses.
- Installation of consistent 4 foot wide bike lanes along both sides of the corridor, to the left side of the travel ways for consistency. This reduces potential conflicts between bicyclists and drivers backing their cars out of angled parking spaces.
- Establishment of a series of bump outs to foster traffic calming, aid pedestrians at crossings and reserve space for park maintenance vehicles.
- Creation of clearly defined pedestrian crosswalks that alert and caution drivers and provide enhanced safety to users. Crosswalks can be “advertized” to drivers in advance with appropriate signage, surfaces can be textured and colored in contrast to roadway surfaces and crossings can be raised or “tabled” to offer further protection. Raised crosswalks serve to calm traffic, especially when introduced as a repetitive theme along a corridor. With only five crosswalks currently located along the entire corridor, there is an opportunity to install many additional crosswalks to ensure safe passage at all intersecting streets and key mid block locations and to help reinforce the linear nature of this open space and recreational asset with important linkages to the north and south.
- Refurbishment and expansion of the pedestrian walkway network to include proper widths, even surfaces, consistent treatments and new lengths of pathways along the southbound side of the channel between Watertown and Crafts Street for improved multi-generational accessibility and ADA compliance.
- Refurbishment of curb lines along both sides of the travel ways to replace aging and deteriorated asphalt or concrete curbs, to fill gaps and/or to create new edges where none presently exist. Curb lines help to protect pedestrians and to control and direct stormwater runoff.

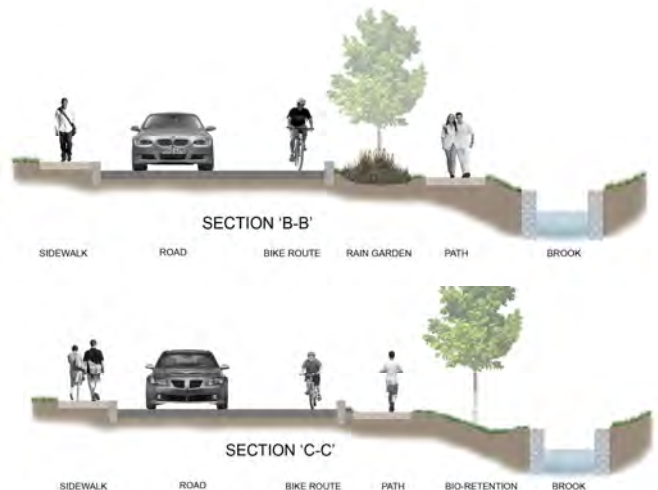


*The plan image identifies suggested roadway treatments aimed at slowing traffic and improving pedestrian and bicyclist accommodations, including the bump outs and raised crosswalks.*

- Undertake pavement refurbishment efforts to include full depth reconstruction, cold planing and overlaying or just overlaying depending on the degree of pavement degradation exhibited along various segments of the Albemarle Road corridor.
- In conjunction with roadway refurbishment efforts, undertake other utility system replacements and upgrade all stormwater management systems to treat flows prior to discharging into Cheesecake Brook, and ultimately the Charles River. This would remove dozens of problematic direct connections and improve water quality dramatically within Cheesecake Brook Greenway.



A plan excerpt showing typical treatments within the Albemarle roadway corridor, defined by sidewalks along The Fessenden School playing fields (top of image) and Albemarle Park and the Gath Pool (bottom of image) and including curb lines, travel lanes and bike lanes that hug the center Greenway portion of the 120 wide corridor.



The images above and to the right identify proposed treatments along the Watertown Street to Crafts Street segment of Albemarle Road. The perspective sketch shows a new bike lane along the Greenway side of the road and the sections show views looking north (bottom view) and south (top view). For the locations of Sections B-B and C-C, please refer to the plan diagram contained on Page 22.

In regard to parking, we have not made major recommendations and suggest only the following minor refinements, to be pursued as actual refurbishment plans evolve for the Watertown Street to Crafts Street corridor segment.



- Change 90 degree or head in parking in front of the Gath Pool complex to angled parking for consistency along the entire corridor. This will allow for the expansion of green areas or pedestrian zones and the narrowing of the paved surfaces dedicated to the travel lane and parking by approximately 3 or 4 feet.

- Look at opportunities to create parallel parking along the western side of the Albemarle Road segment that runs along the Fessenden School grounds. The right-of-way may be wide enough to satisfy this addition, although the alignment of the travel lane in this vicinity would need to be adjusted and the hatched no parking zone located to the Greenway side of the travel way removed. There is probably room for between 40 and 50 new parallel parking spaces. The image at right shows a typical segment of this roadway.



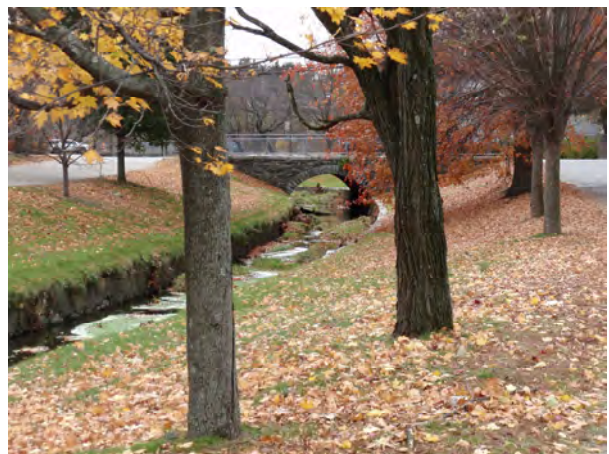
shows a typical segment of this roadway. New pedestrian sidewalks are also proposed along the existing shoulder of the road (to the right side in image).

### **The Greenway | Channel, Pedestrian Bridges + Grassy Slopes**

Work along the center Greenway area has the potential to most dramatically alter and enhance the aesthetic and environmental characteristics of the corridor and to also develop important new connections for pedestrians seeking to cross Cheesecake Brook.

Major recommendations as represented on the related plans and images are summarized as follows:

- Installation of rain gardens and bio-retention cells in order to treat stormwater and to create visual interest and enhanced wildlife habitat through the use of native plant species. Importantly, rain gardens require more annual upkeep compared to areas that contain simply grass. Periodic weeding (twice annually) and sediment removals (once annually) are typically needed. Plant species that are highly salt tolerant, tolerant of being inundated with water for short periods of time, and possess limited maintenance needs are selected for use in rain garden installations. It has been noted at meetings that the upkeep of these amenities will be critical to the

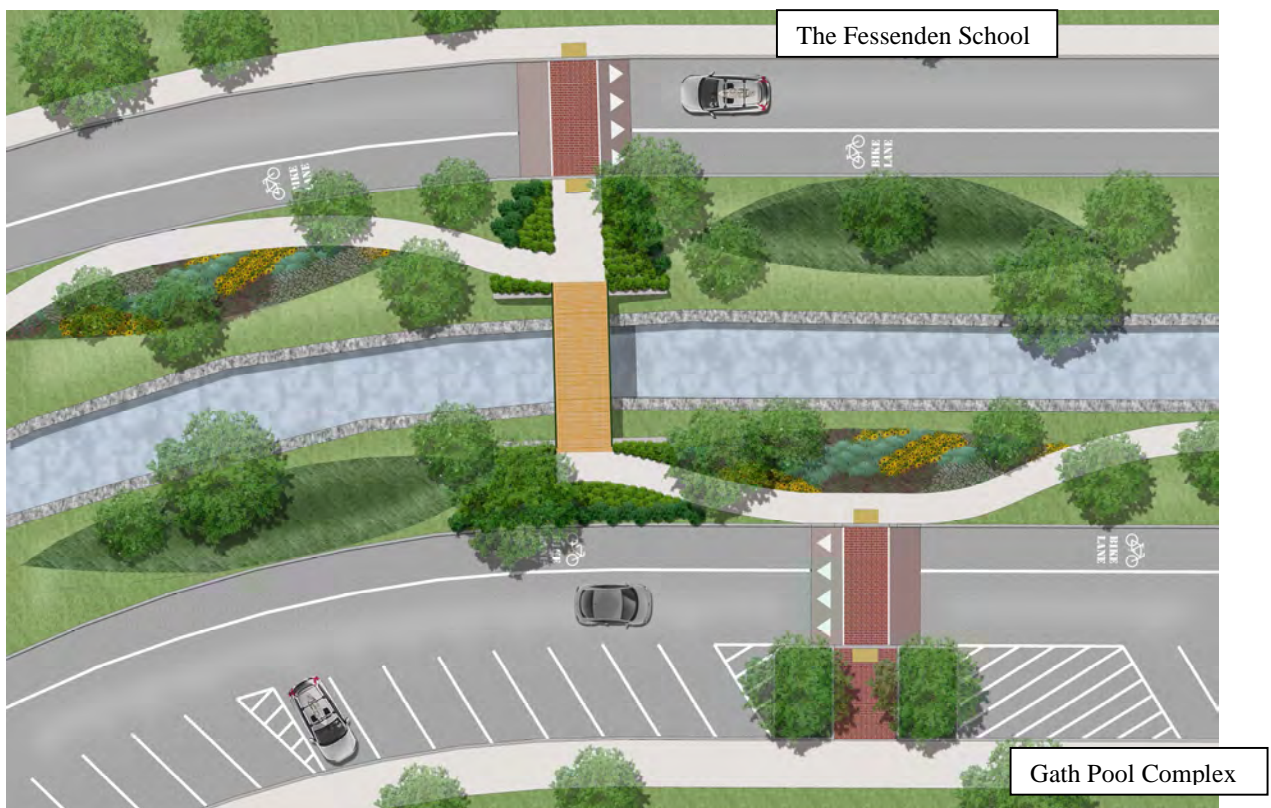


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appearance of the Greenway, so if it is determined that city resources are not able to keep pace, other alternatives must be considered.

- Introduction of native deciduous, evergreen and flowering understory trees, to create shade and visual and aesthetic enhancements. Plantings should compliment recent and older plantings located along other segments of the Greenway, particularly in areas located between Crafts Street and the Charles River. It should be noted that the intent is not to create an arboretum effect along Cheesecake Brook, but simply to achieve a more varied and interesting appearance. Striking the correct balance is important in order to ensure that city resources are not overly taxed by future pruning requirements and to eliminate any possibility of creating a “green wall” that obstructs views to the channel and overly complicates lawn maintenance and access. Also, to prevent future root system damage to channel walls, the planting of larger deciduous and evergreen trees should be set back 15 feet or so from the channel edge.
- Installation of new pathway segments and links within the Greenway, to provide chances to gain access to Cheesecake Brook, and to follow along the channel as an alternative to the pedestrian walks located on the opposite, outside of the Albemarle Road corridor. Pathways would have to be situated such that ADA compliance is attained and the steeper side slopes are avoided.
- Install park benches and pocket seating areas along the edge of the channel at various locations. Being removed slightly from the busy roadway corridor nearby has proven to be popular with local residents along the Eddy Street section of the Cheesecake Brook corridor, where new amenities were constructed adjacent to the channel walls in 2007. At these locations, the installation of interpretive signage heralding inherent historical, open space and environmental qualities should be considered.
- Install new pedestrian bridge crossings and connections, as indicated on the concept diagrams that have been prepared for the entire corridor (refer to attachments). The images above and below identify one such location, in order to provide safe and convenient connections across Cheesecake Brook to the Day Middle School and to the south side of The Fessenden School playing fields. Neighborhood residents living to the west connect to Albemarle Road and the institutional and recreational resources that border the road at this location.



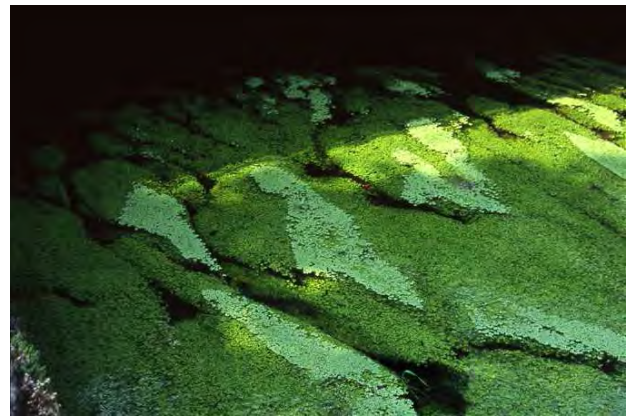


The plan image above identifies a new pedestrian bridge location that would link the west and east sides with easy connections to The Fessenden School, Gath Pool, Albemarle Park and the Day Middle School. The concept works with or without the new segments of meandering pedestrian pathways that head off in northerly (right in image) and southerly (left in image) directions toward Crafts Street and Watertown Street respectively.

- As other enhancements are undertaken, upgrades to the grassy slopes that form the two sides of Cheesecake Brook would include improving soil quality, eliminating areas of washout and erosion, regrading to remove drastic ruts and depressions and reseeding with drought tolerant grass and meadow grass species that help to establish healthier and more attractive turf conditions overall.



- From a maintenance perspective, it was suggested that large expanses of grassy slope be allowed to develop into meadow. This would have immediate positive environmental and economic impacts by reducing erosion, slowing the delivery of stormwater into the brook, enhancing wildlife habitat and reducing the frequency of required mowing. This approach would also result in a more diverse and visually appealing look. This should only be considered in more out of the way areas where the public is unlikely to desire access, as the taller grasses are often a host to ticks and to other insects that might not inhabit maintained lawn areas.



*Photos courtesy of Sally Brecher.*

## **Conclusion**

The Cheesecake Brook Greenway is an important open space and recreational asset within Newtonville. There is an opportunity to significantly improve functional aspects and aesthetic qualities within this linear park as funding becomes available and as infrastructure projects are planned and implemented along its length. Continued collaboration between city departments, local residents, and the institutional partners that abut the corridor can ensure success. Based on the tone of the public meetings, it is apparent that the issues of traffic and flooding within the low lying sections of the corridor are sources of considerable angst among area residents. Short term traffic calming efforts, as suggested within the body of this report, and continued stormwater management initiatives within the larger watershed could help ease the burden felt by certain residents, and help to build momentum and support as additional enhancements unfold.

## Funding Considerations | Implementation Strategies

There are many potential sources of funding from both public and private entities that could help to pay for potential improvements to the Cheesecake Brook Greenway. The City of Newton has been successful at garnering support for other park and open space initiatives in recent years. Donations, both large and small, and from a variety of sources can be lumped together to create the financing needed to undertake meaningful improvements. Newton should continue to pursue a variety of funding and implementation strategies. Two implementation strategies are indicated below:

- **Traditional Public Bidding-** Develop plans, specifications and estimates for desired improvements, publicly advertise, receive bids and award a construction contract to the lowest qualified bidder. Projects typically range from small (\$50,000 +/-) to very large (hundreds of thousands of dollars and more).
- **In-house Services-** Implement improvements making use of city labor forces, materials and equipment. This method is typically appropriate for projects that are limited in scope, such as the construction of sidewalks, handicapped ramps and curb line installations. As funding, materials, equipment and human resources permit, other minor improvement efforts can be planned and undertaken. The removal of dead or diseased trees, pruning of healthy trees, and the installation of new trees may be viable with city forces as well.

For consideration, a number of potential funding sources and mechanisms have been identified. Many of the governmental sources identified allocate millions of dollars per year for parks and open space initiatives, but competition is intense. The actual improvements are then implemented through a public design, bid and construction process.

- **Massachusetts Division of Conservation Services (DCS)-** This state agency has funded hundreds of park, open space and recreation projects throughout Massachusetts over the past several decades. Each June, the agency receives applications from municipalities for improvements to parks and open space properties under their PARC and LAND programs. Demographics play a role in the grant award process and communities that are more urban in nature with higher percentages of low-income residents tend to fare better in the decision-making process. Newton has successfully secured funding through this mechanism for numerous projects in recent years. In order to apply, the Greenway must be under the jurisdiction of the Parks and Recreation Commission or the Conservation Commission.
- **Community Preservation Act Funding-** Newton has passed the Community Preservation Act, which allows the City to generate funds through an added property assessment for improvements related to affordable housing, historic preservation and certain types of park/open space acquisitions and enhancements. Funding generated locally is matched by state dollars. The Newton Community Preservation Committee should be consulted in regard to potential funding.

- **Stormwater Management Grants-** Funding is made available by the Massachusetts Executive Office of Environmental Affairs for stormwater management, water quality protection and enhancement efforts. This funding could be a source for environmental and landscape improvements to the Cheesecake Brook Greenway.
- **Chapter 90 Funding-** The City of Newton, through the DPW, receives annual distributions of Chapter 90 funding from the Massachusetts Department of Transportation for the design and construction of typical roadway improvements. The use of these funds is usually in accordance with priorities established by the Public Works and Engineering departments.

## **Acknowledgements**

We gratefully recognize the assistance provided by representatives of the Newton Department of Public Works and by the Newton Historical Museum/Jackson Homestead. In particular, John Daghlion (Assistant City Engineer), Frank Nichols (Permit Engineer) and Alice Ingerson (former public programs consultant, Newton History Museum/Jackson Homestead) have furnished a great deal of data related to the physical attributes and history of the Cheesecake Brook Greenway. Many of those documents have been included within this master plan report.

Special thanks to the many community members who came out for the open forums to express their concerns in person and to those who forwarded information to advance this effort especially the "Friends of Albemarle Park" group including Curtis Betts, Margaret Albright and Margaret Doris. Thanks also to Sally Brecher for contributing numerous photographs of the Greenway corridor that have been included herein. The recommendations contained in the Cheesecake Brook Greenway Master Plan Report represent our best professional judgment and expertise tempered by the unique perspectives of each of the participants to the process.

## **Other Sources of Information**

1. The Newton Public Library contains abundant information related to the historical evolution of the Cheesecake Brook Corridor.
2. Alice Ingerson, former public programs consultant, Newton Historical Museum/Jackson Homestead, provided or directed us to written recollections by people familiar with the area and other related historical documents.
3. Much of the historical imagery has been provided courtesy of the Newton Historical Museum/Jackson Homestead.
4. The City of Newton possesses an abundant array of mapping for the Cheesecake Brook Greenway corridor that identifies topography, utility systems, roadway layouts and the like.



5. The Newton DPW is managing efforts pertaining to the restoration and/or reconstruction of certain sections of the Cheesecake Brook Channel Walls. In addition, under the direction of the Planning and Development Department, a master plan was completed for the Eddy Street to Watertown Street section of the Greenway. An outgrowth of that master plan was the completion of a structural analysis of the fieldstone channel walls in this same vicinity and the implementation of a Phase I improvement program near Eddy Street.
6. Weston & Sampson has furnished electronic copies of other project data that has been acquired or developed in conjunction with this Greenway master planning effort, including:
  - February 8, 2009 Public Hearing PowerPoint Presentation
  - March 25, 2009 Public Hearing PowerPoint Presentation
  - Copies of relevant image boards used at public meetings
  - Preferred Option Boards identifying potential treatments along the entire corridor length and at key locations
  - Other miscellaneous project information

This information has been furnished electronically and is on file at the City of Newton Engineering Department.



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