

## SECTION 3

### COMMUNITY SETTING

#### **A. REGIONAL CONTEXT**

Brookline, with a population of 58,732 (U.S. Census Bureau, 2010 Census), is an urban town of 6.8 square miles (4,355 acres) surrounded by Boston on three sides and Newton on the southwest side. Cambridge is readily accessible on the other side of the Charles River. Brookline is part of Norfolk County, although it is physically detached from the main portion of the county.

Brookline is an active member of the Inner Core subregion of the Metropolitan Area Planning Council (MAPC). The Inner Core Committee consists of 21 cities and town within the metropolitan Boston area, and fosters interlocal collaboration and discussion amongst the involved municipalities.

MAPC's 30-year master plan "MetroFuture" is a planning tool which emphasizes the importance of open space protection in relation to achieving public health, social equity, and environmental quality goals. The plan includes 65 goals and objectives, in addition to 13 implementation strategies with hundreds of action recommendations. Brookline is actively seeking to advance the objectives of MetroFuture through the goals, objectives and recommended actions outlined in this Open Space and Recreation Plan.

#### ***Watershed Address***

Brookline is located entirely within the Charles River watershed; all rain and snow that falls within Town boundaries eventually drains to the Charles River. Surface water drainage is influenced by topography, street and utility infrastructure and land use patterns. The Charles River itself does not flow through the Town. Brookline is divided into twelve major subwatersheds that contribute flow to the Charles River either directly or through one of several tributary streams. Four of these discharge directly into the Charles River, five into the Muddy River, two into Saw Mill Brook and one into Stony Brook.

Brookline's subwatersheds are defined largely by the Town's extensive underground storm drain system. Brookline's storm drains consist primarily of concrete pipes that collect runoff from rain and melt-

ing snow and carry flows through a system of pipes that discharge to either a pond or stream, or to an adjacent community's storm drain system, flowing eventually out to the Charles River.

The Muddy River is the most significant surface waterbody in Brookline and serves as part of the municipal boundary of Boston and Brookline. Over the past century, the water quality, flood carrying capacity and habitat conditions of the Muddy River have been impaired due to increased urbanization. Most of Brookline's land area drains to the Muddy River, and five of the Town's subwatershed areas discharge directly into the Muddy River, including the Village Brook drain system, the Tannery Brook drain system and the Longwood Avenue drain system.

#### ***Resources Shared with Other Communities***

Brookline shares a number of significant open spaces and waterbodies with adjacent communities and other government jurisdictions. Most prominent of these are the Olmsted and Riverway Parks and the Muddy River, which are part of the Emerald Necklace. These parks are some of Brookline's most valuable open space resources. Their size, connections to larger water and open space resources, and ease of access allow them to function as one of the region's major passive and active open space networks, as a critical habitat corridor and as a significant water resource.

The Emerald Necklace Park system, created by Frederick Law Olmsted, includes pathways on both banks of the Muddy River starting from the confluence with the Charles River to its headwaters at Jamaica Pond. Currently, Boston and Brookline share in the primary responsibility of managing and maintaining the parks and pathways, with a small portion of the Park system under the jurisdiction of the Massachusetts Department of Conservation and Recreation (DCR). The DCR is responsible for the parkways within the park system.

The Muddy River has flooded several times since the fall of 1996 and caused damage to nearby residents' homes, businesses and institutions. In response to these events, numerous parties, including federal and state environmental agencies, and local government bodies of Boston and Brookline, have come together to address the flooding and environmental issues. The resulting Muddy River

## COMMUNITY SETTING

Flood Control, Water Quality and Habitat Enhancement, and Historic Preservation Project is intended to address this issue. The goal of the restoration project is to improve flood control in the river, improve water quality, enhance aquatic/riparian habitat, rehabilitate the landscape and historic resources and implement stormwater best management practices. The project is underway and is scheduled for completion within three to five years.

The southwestern portion of Brookline also contains shared natural resources of regional importance. Here, one of the Town's few remaining surface waterbodies, Lost Pond, is located on the state's Lost Pond Reservation, managed by DCR. This property is adjacent to significant open space parcels owned by Brookline and Newton, including Brookline's Lost Pond Conservation Area and the former Newton Street landfill property, as well as Kennard Park and Conservation Area, which belongs to the City of Newton. The Brookline Lost Pond Conservation Area was once part of the Town's landfill and incinerator site, which ceased operations in 1975. In 2006, the front portion of the landfill was formally closed, as part of the landfill closure and reuse project. The project involved clearing debris, regrading, drainage and access improvements, environmental remediation, landscaping, and the creation of a new multi-use park on the capped landfill. The beautiful 15-acre community park, Skyline Park, opened in 2008, and contains state of the art playing fields, equipment for toddlers (in addition to older children), a picnic area, walking paths, and seating, as well as connections to the adjacent Lost Pond Conservation Area. Over the past several years, the debris located in the back portion of the landfill has been excavated and pulled back from the Lost Pond Sanctuary.

Also in the southern part of Brookline, D. Blakely Hoar Sanctuary, owned by Brookline, lies near natural areas located in Boston and Newton. Leatherbee Woods, managed by the Boston Natural Areas Fund, is directly adjacent to the Hoar Sanctuary and efforts to strengthen a partnership are underway.

### ***Socio-Economic Context***

Brookline is predominantly a residential community with a diverse mix of housing types and a relatively small commercial tax base. However, Brookline has approximately 1,907 businesses, many of which are based in homes and sole proprietorships, and some in small offices. About a third of

all businesses are located in first floor storefronts in the Town's commercial areas. In 2017, the assessed value of commercial and industrial property was 9.1% of the total Brookline assessment, and the percentage of taxes paid by the non-residential sector was over 17%. Hotel room excise tax brought in \$1.7 million and local option meals tax was another \$1.1 million. Less than 5% of the property is zoned commercial. Recent commercial development includes the Homewood Suites hotel at 111 Boylston Street in 2015. Other commercial developments under active construction include a portion of the AC hotel at Cleveland Circle and 250,000 square feet of medical office at 1 and 2-4 Brookline Place. (Employment and Wages Report, Executive Office of Labor and Workforce Development, and Brookline Assessors Department).

Commercial business establishments are primarily service businesses located in the small commercial centers along major streets and intersections. These areas, such as Coolidge Corner, Brookline Village, Washington Square and Putterham Circle, have had a substantial effect on community development, as residential developments have formed around these commercial areas, creating small communities within each village or square.

Overlying this very local development pattern are regional development effects linked directly to the Town's proximity to Boston. Chief among these are high real estate prices, constant development pressures, and a regional transportation system that experiences more pressure as the population around Boston increases. Brookline is part of the east-west commuter corridor for Boston. Boylston Street/Route 9 and Beacon Street, in particular, feel the daily stress from development further west. Regional planning to manage the impacts of this growth is essential.

Brookline is a desirable residential community because of its rich historical development, location, physical characteristics, natural resources, level of municipal services, land use and the diversity of its population. Relevant to the pressures on open space, Brookline's population diversity cannot be viewed out of context of the history of racially segregative local, state, and federal policies and practices. 3% of Brookline's population is African American and approximately 5% identifies as Hispanic (Brookline Housing Production Plan). The need for policies to facilitate making Brookline's housing stock accommodate previously excluded

families is an added pressure on open space.

Year	Single Family	Condo
FY2007	\$1,023,550	\$424,800
FY2008	\$986,900	\$411,450
FY2009	\$1,017,000	\$423,500
FY2010	\$1,022,400	\$423,000
FY2011	\$1,027,300	\$423,900
FY2012	\$1,059,400	\$421,900
FY2013	\$1,071,750	\$425,200
FY2014	\$1,114,000	\$447,000
FY2015	\$1,193,600	\$496,150
FY2016	\$1,298,000	\$547,800
FY2017	\$1,412,200	\$607,150

Source: Brookline Assessors Department

Overall, Brookline residents have higher incomes than most people in the country and the state. The median household income in Brookline is \$93,640 (Brookline Housing Production Plan), compared with \$55,322 for the U.S. (2012-2016 American Community Survey 5-Year Estimates). However, 67% of householders under the age of 25 and 72% of householders 65 years and older have household incomes of less than \$39,999 a year (ACS 2010-2014 Five-Year Estimates, B19215, "Median Nonfamily Income by Age and Sex of Householder by Living Alone" as cited by Brookline Housing Production Plan). Approximately 3.5% of Brookline's families live below the federal poverty line, compared with 4.3% and 15.1% for Norfolk County and the U.S., respectively (ACS 2010-2014 Five-Year Estimates S1702, "Poverty Status in the Past 12 Months of Families" as cited in Brookline Housing Production Plan; U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates). Brookline's poverty rate is higher among families with children (5.7%), and significantly higher among female householders (15.7%), and female householders with children (24%) (Brookline Housing Production Plan). Historically, the income diversity in Town has been supported by the diverse housing mix which ranges from large estates to small rental apartments. One important municipal objective has been to develop more affordable housing to meet the needs of a diverse group of residents as real estate pressures persist. As of 2016, there were 2,254 low- and moderate-income housing units on the Subsidized Housing Inventory

(SHI), an increase of 192 units from 2005 (Brookline Housing Production Plan).

The desirability of Brookline as a residential community has affected the cost of land, which continues to impact the Town's ability to obtain new open space.

Figure 1  
**Property Values and Open Space**

A 2007 report from The Trust for Public Land, summarizes data on the economic benefits of parks and open space, and finds the following:

*\* Proximity to parks and open space has a positive impact on property values. Several studies show a 20% average price premium for properties abutting or fronting a park, with substantial positive impacts up to 500-600 feet away, or further depending on the park.*

Source: *The Economic Benefits of Land Conservation, The Trust for Public Land, 2007*

**B. HISTORY OF THE COMMUNITY**

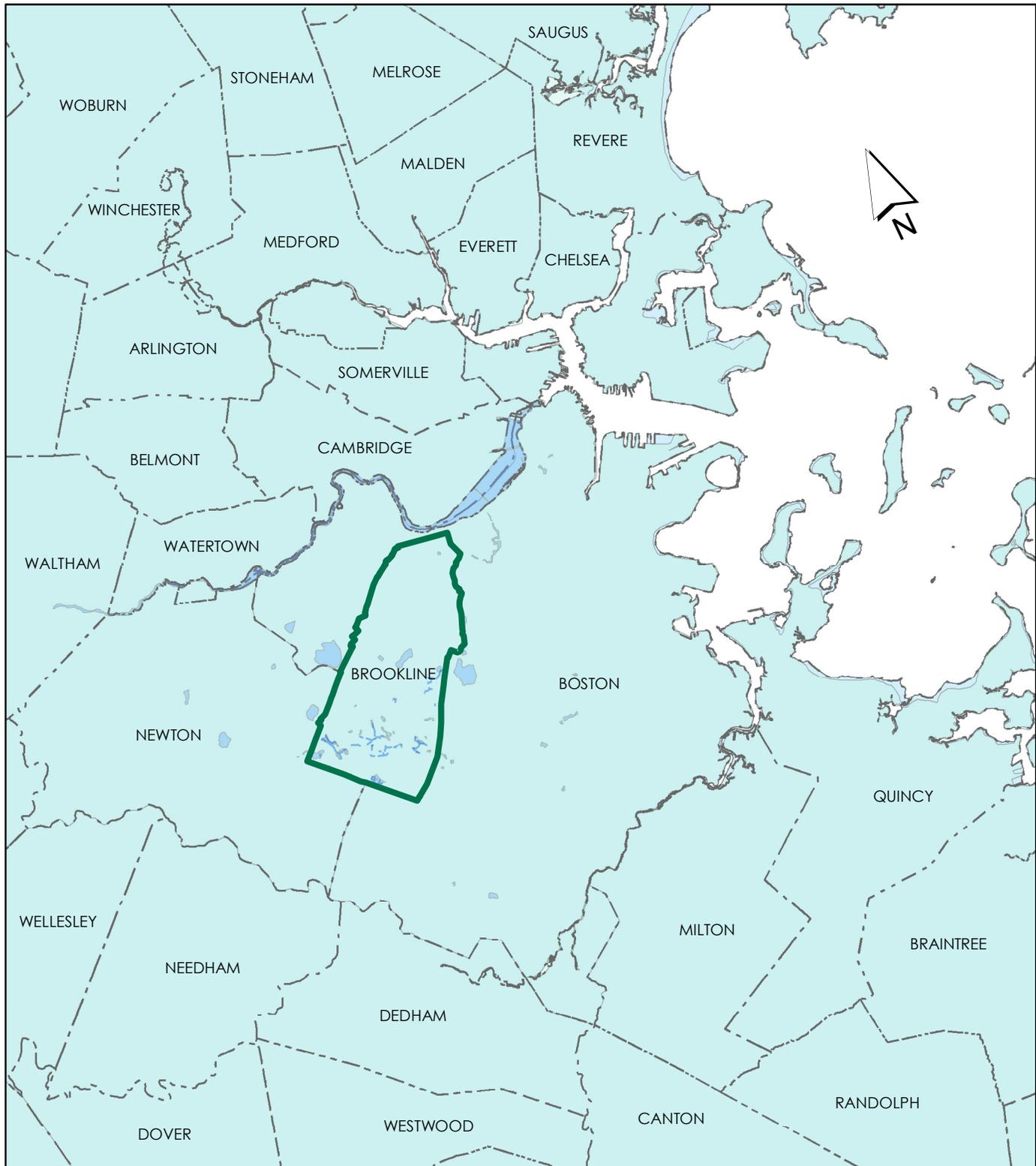
Once part of Boston and originally named "Muddy River", Brookline was settled in 1630 and incorporated as a separate town in 1705. Between 1630 and 1705, the area was used primarily to graze livestock, as the extensive marshes and wet meadows bordering the Charles and the Muddy River provided rich pasturage. Most owners, however, continued to reside in Boston.

At this time, the Charles River was tidal for nine miles upstream to Watertown, where a dam was subsequently built. There were mud flats in the Back Bay of Boston and between the Charles and Muddy Rivers. Extensive wetlands, ponds, and streams in Brookline were filled, drained or channeled through culverts during the course of agricultural work and subsequent development. Filling wetlands and draining "problem water" into the storm drain system continued into the 20th century. South Brookline was developed around extensive wetlands; wetland resources are still present across the area and challenge the residential and commercial development of the Town.

Between 1636 and 1641, more than 100 land grants were given in the Muddy River hamlet of

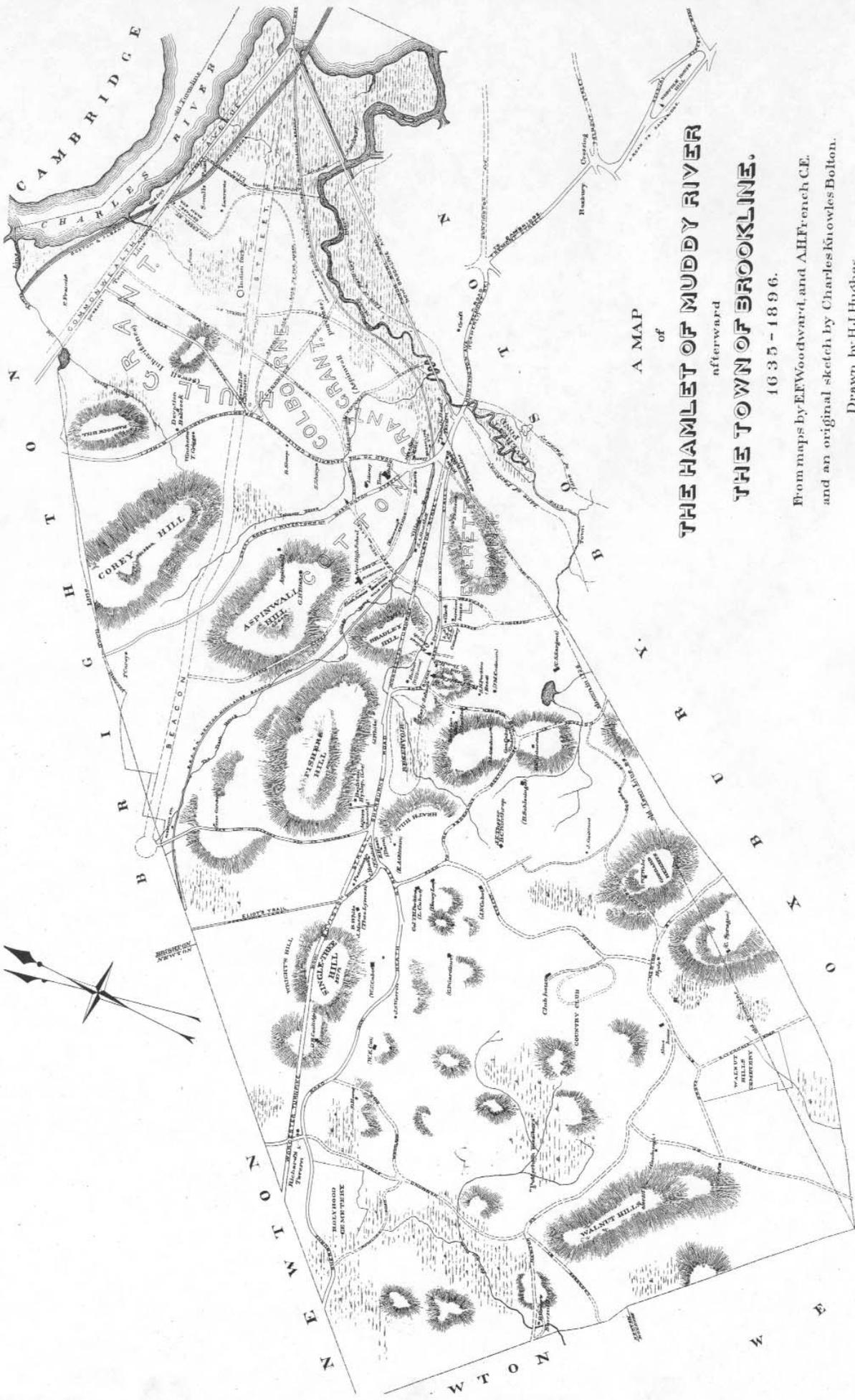
# Town of Brookline, Massachusetts

## Regional Context



Map updated by Brookline GIS on 4/10/2019





A MAP  
of  
**THE HAMLET OF MUDDY RIVER**  
afterward  
**THE TOWN OF BROOKLINE.**

1635 - 1896.

From maps by E. Woodward, and A. French C.E.  
and an original sketch by Charles Knowles Bolton.

Drawn by H. J. Hughes.  
1896.



*Note: While the center of Muddy River is still the boundary line with Boston on the eastward, the corner of the stream has recently been somewhat changed.  
Downstream bridges present occupants.  
The shaded marsh area shows its withdrawal from*

Boston. Smaller tracts were granted in the northern and eastern portions of the Town; a few larger grants were located in the central and southern portions of the Town. Most of the Town's acreage was given to prominent Bostonians whose names denote streets and neighborhoods today, such as Heath, Winchester, Clark, Aspinwall and Devotion. In 1640, a British officer, Captain Joseph Weld, received a 2000-acre land grant which included Goddard Avenue, the Greek Orthodox Church grounds, Park School, Arnold Arboretum and Allandale Farm. This working farm, still owned by descendants of Captain Weld, is a significant element of the Brookline landscape which has flourished for over three hundred years. Neighboring the farm and former home of many generations of Welds is Larz Anderson Park, given to the Town in 1948. Long prized for its views of Boston, as well as the sledding potential of its great Hill, the park overlooks, as it did during the American Revolution, the still-extant farmhouse of John Goddard, George Washington's Wagon-Master.

When Brookline was incorporated in 1705, there were about fifty families residing here, most engaged in farming. While light industry (ie. tanneries, a saw mill, grist mill, and forge) developed as a result of widespread farming, heavy industry never became a significant economic force in the Town. The Sherburne Road, laid out in 1658 by the Massachusetts Bay Colony was, at first, the only land route that led west from Boston. The Town Green was located along this road, where Walnut and Warren Streets intersect.

As transportation routes were developed, residential and commercial areas became established. The population grew rapidly. The Town's civic and commercial center moved from the Town Green area to Brookline Village after a new Town Hall was built there in 1844, and the Boston-Worcester Railroad began operating in the Village in 1847.

Beacon Street was built in 1821 as a continuation of the Mill Dam Road leading west from Boston. It was intended to open the northern part of Brookline for development and to be more convenient for Boston businessmen who wished to live in Brookline. The widening of Beacon Street in 1887 and the introduction of the electric streetcar in 1889 accelerated the development of the northern section of Brookline. By 1900, the Town's population had reached 19,925. Water and sewer systems had been completed, a public education system with fifteen schools was established and a Parks

Commission had been created to administer land set aside for recreation for the burgeoning community. The last section of the Town to be extensively developed was an area in South Brookline, as a result of post-WWII housing demand.

***Acquisition of Parks and Sanctuaries***

In 1871, Brookline created the first public playing fields in the country, Cypress Field and Boylston Street Playground, followed by the first public pool in 1885. Many of the existing public parks and recreation areas were acquired by 1930, some by outright purchase and some by donation. Brookline has also received numerous state grants to help fund and protect the expansive network of open space owned by the Town. A more recent acquisition of recreation land was an augmentation of Billy Ward Playground in 1972. In 2008, the Town officially opened Skyline Park on the site of the former Newton Street landfill, though this land was already owned by the Town. At the beginning of 2011, the Town purchased the formerly state-owned Fisher Hill Reservoir for the development and preservation of parkland and conservation land. At present, approximately 15% of Brookline's 6.8 acres of land is devoted to Town-owned parks, open space and recreational facilities.

Although there had been earlier proposals to establish bird sanctuaries and/or conservation lands at Putterham Meadows, Hall's Pond, Lost Pond and the D. Blakely Hoar property, it was not until the 1960's that the Town's first conservation land was established. The D. Blakely Hoar Sanctuary was acquired in 1961 by the Town on land from a bequest by a former resident. Hall's Pond Sanctuary was established in 1975 and the adjacent Amory Woods in 1977. Lost Pond Conservation Area was formed in 1982 by a transfer of land which was formerly part of the Town's Newton Street landfill.

***History of Planning and Zoning***

In 1914, the Town's first Planning Board was established with Frederick Law Olmsted, Jr., co-author of the nation's first planning enabling legislation and son of the designer of the Emerald Necklace park system, serving as Chairman. One of the Board's first decisions was to establish a setback policy regarding building lines for specific streets, particularly those witnessing the construction of apartment buildings, residential hotels, and stores.



The Planning Board wrote in 1915, “Almost every year now sees more numerous and more costly buildings erected close to the side lines of streets which are liable to prove too narrow for the traffic of the future; and every season sees new inroads upon the established character of many residential streets through disregard of the customary setback which has hitherto maintained a margin of cheerful green between the buildings and the sidewalk.”

Brookline's 1922 Zoning By-Law was one of the first in Massachusetts. By 1949, separate districts for single-family, two-family and multi-family housing had been introduced and parking requirements had been established. Controlled growth, both in density and building size, were goals of the first Comprehensive Plan in 1960.

Nonetheless, as growth increased in the most populous parts of Town through the 1960s, many people became concerned about the quality of life in Town. In the early 1970s, the public's negative reaction to a number of large developments and high-rise buildings sparked a substantial down-zoning. As a result, very little development took place in Brookline's commercial areas for the following 20 years.

Proposition 2 ½, a statewide property tax limitation measure, was passed in 1980. This legislation capped municipal property tax revenue at its 1980 level, plus 2 ½ % per year. Exceptions were granted for new buildings and local overrides. In 1989, faced with Proposition 2 ½ and the Town's need for new revenue sources, the Select Board appointed a Development Committee to work with neighborhood groups on zoning amendments that would foster appropriate development.

In the late 1990's, a strong economy and accompanying development raised concerns about loss of open space, loss of off-street parking and traffic congestion. In addition, with the end of rent control in the 1980s and rise in housing prices, Brookline was faced with a shortage of affordable housing. Continuing pressure from Proposition 2 ½ led to the need to examine revenue and services too. To address these needs and demands, the Town instituted a planning process which culminated in the Brookline Comprehensive Plan 2005-2015.

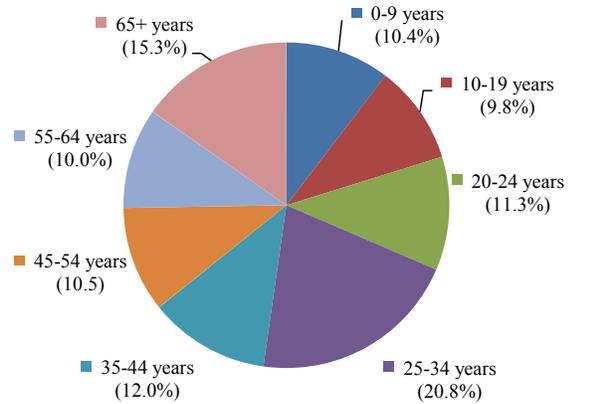
In the past 40 years, the overall trend in Town zoning has been to reduce the amount of develop-

ment allowed. Recent Zoning By-Law amendments include the creation of a new three-family zoning district that replace several multi-family zones, and an overlay district in Coolidge Corner designed to protect existing buildings. In addition, the past few years have seen the creation of several new Local Historic Districts, where new development requires the approval of the Preservation Commission.

**C. POPULATION CHARACTERISTICS**

According to American Community Survey 2016 census data, the population of Brookline is 59,180 with a median age of 33.6. This is an increase of 3.6% since 2000, when Brookline's population was 57,107.

Figure 2. **Population Breakdown by Age Group for Town of Brookline**



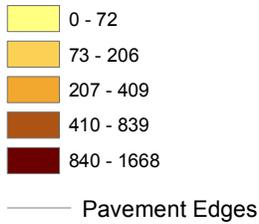
Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Brookline's demographic profile has changed substantially over the last generation. Some of these long-term changes reflect national demographic trends, such as smaller household size, more single-person households, fewer family households, a reduction in the school-age population and an increase in the pre-school population. As of 2016, young adults comprised the largest portion of the Town's population with approximately 20.8% of the total population in the age range of 25-34 years. Adults from 35-44 years of age comprised another 12.0% of the population, and the other age groups (0-9, 10-19, 20-24, 45-54, 55-64, 65+) each averaged approximately 10.5% of the population.

# Town of Brookline, Massachusetts

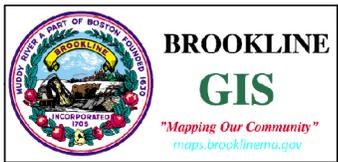
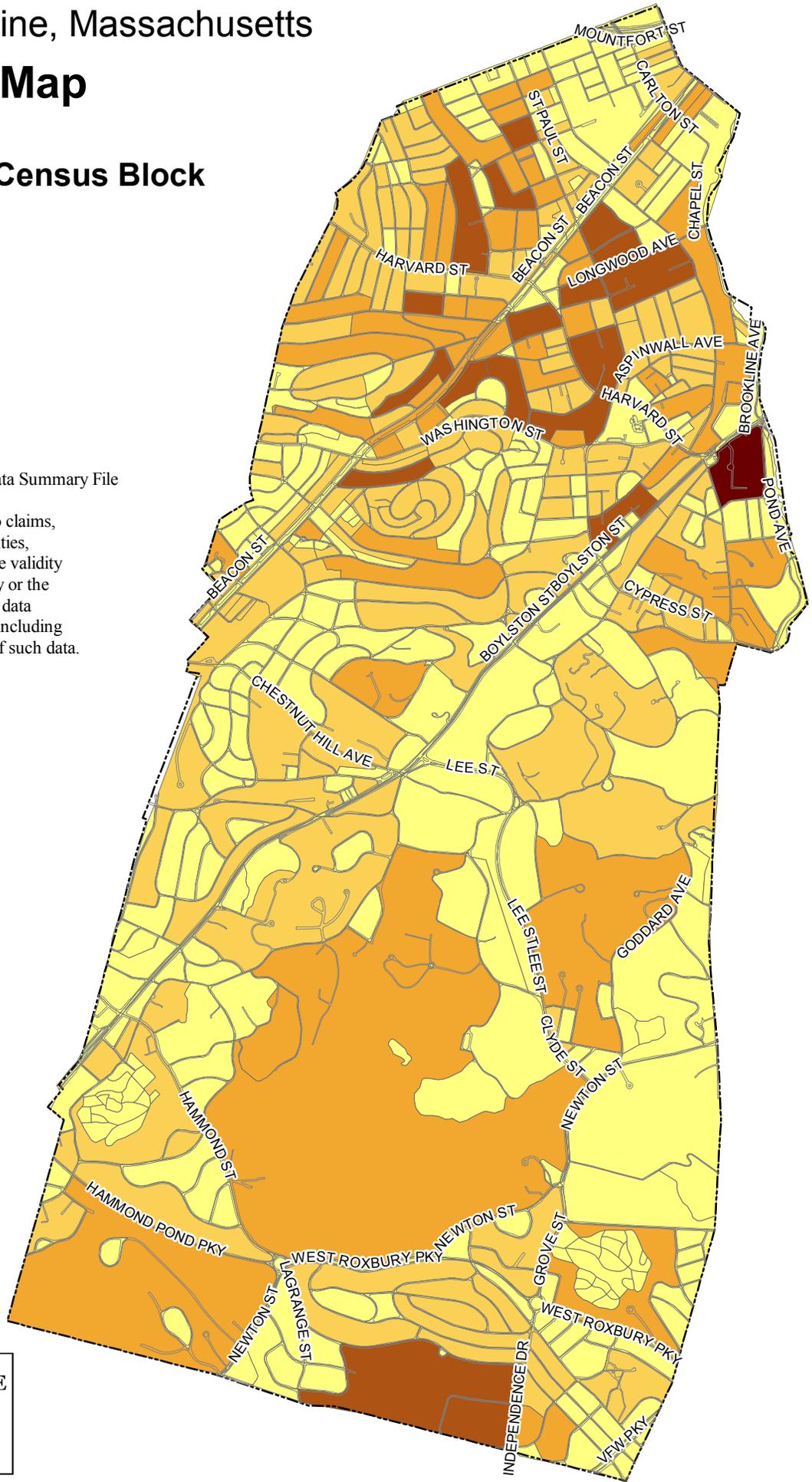
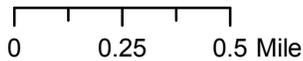
## Population Map

### Population per Census Block

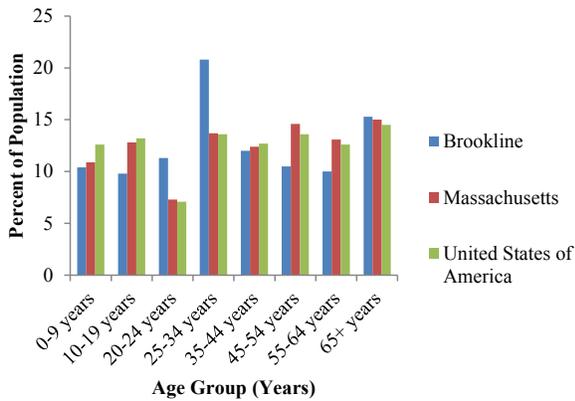


### Data Sources

US Census 2010 Redistricting Data Summary File and Brookline GIS database.  
The Town of Brookline makes no claims, no representations, and no warranties, express or implied, concerning the validity (express or implied), the reliability or the accuracy of the GIS data and GIS data products furnished by the Town, including the implied validity of any uses of such data.



**Figure 3. Population Age Group Comparison for Town of Brookline, Commonwealth of Massachusetts, and the United States of America**



Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

This breakdown by age differs from that of Massachusetts and the country in general (U. S. Census Bureau, 2016 American Community Survey 1-year estimates). Brookline has a large proportion of young adults. In the age range of 25 to 34 years, Brookline’s population is approximately 7% larger than both the state and national averages. What’s more, in the age range 20-24, Brookline’s population is approximately 4% greater than that of the state and country. Brookline also has slightly fewer teenagers, with the number of individuals in the age range of 10 to 19 years being approximately 2% lower than the state and national average. In the age range of 55 to 64 years, Brookline’s population is 3.1% lower than the state average and 0.9% lower than the national average. All other age groups vary by less than 2.7% from state and national averages. The senior citizen population, which rose proportionally from 1960 to 1990, declined in a proportional sense between 1990 and 2010. The differences in Brookline’s population and the state and national averages are generally less significant than they were in 2005.

Brookline’s labor force includes approximately 67.6% of the population 16 years and older. The unemployment rate is 5.6%, which is lower than the statewide rate of 8.4%, and the Norfolk County rate of 7.6%. This comparatively low unemployment rate can be attributed in part to the higher levels of educational attainment of Brookline’s population. More than 80% of the population 25 years and over has a college or higher level degree. According to the 2017 American Community Survey 1-Year

Estimates, the top three industries of the working population in Brookline consist of: 1. educational services, and health care and social assistance, 2. professional, scientific, and management, and administrative and waste management services, and 3. finance and insurance, and real estate and rental and leasing.

The average household size in Brookline is 2.27 people per household, a 4% increase from 2000 (2.18 people per household), yet still smaller than that of the Commonwealth, which has an average of 2.48 people per household. The median household income of Brookline is \$93,640- amongst the highest in Boston’s inner-core region. Brookline’s median family income is even higher at \$144,904. The median income for married couples with dependent children is higher still, at \$197,589. Brookline’s non-family households, however, do not have the same economic position as their family counterparts, with a median income of \$52,150. The median income for elderly women living alone is particularly low, at \$32,519.

Approximately 25.2% of all residents of Brookline are foreign-born. Immigrants hail from all over the world, although mainly from China, Japan, India, Israel, and Ukraine, and to a lesser extent from Canada, France, and Germany. As such, Chinese, Russian, Japanese, Hebrew, and French are common household languages in Brookline, and multiple neighborhoods are comprised of English isolation populations.

According to the U.S. Census Bureau, Environmental Justice (EJ) census block groups are located throughout Brookline. Blocks with minority populations are largely present throughout southern (semi-urban) Brookline, and scattered across northern (urban) Brookline. Brookline’s racial and ethnic composition is largely Caucasian (making up 72% of the total population). However, 16% of Brookline’s population is Asian, 5.5% is Latino, and 3% is African American. One area in northern Brookline, located close to Boston University, meets multiple EJ criteria (low income and minority populations).

This area is served by multiple open spaces, including Knyvet Square, Winthrop Square and Amory Playground, in addition to Amory Woods Sanctuary and Hall’s Pond Sanctuary. A neighborhood in northeastern Brookline meets additional EJ criteria (low income, minority, and English isolation populations). This area is adjacent to the recently renovated Brookline Avenue Playground, which was

# Town of Brookline, Massachusetts

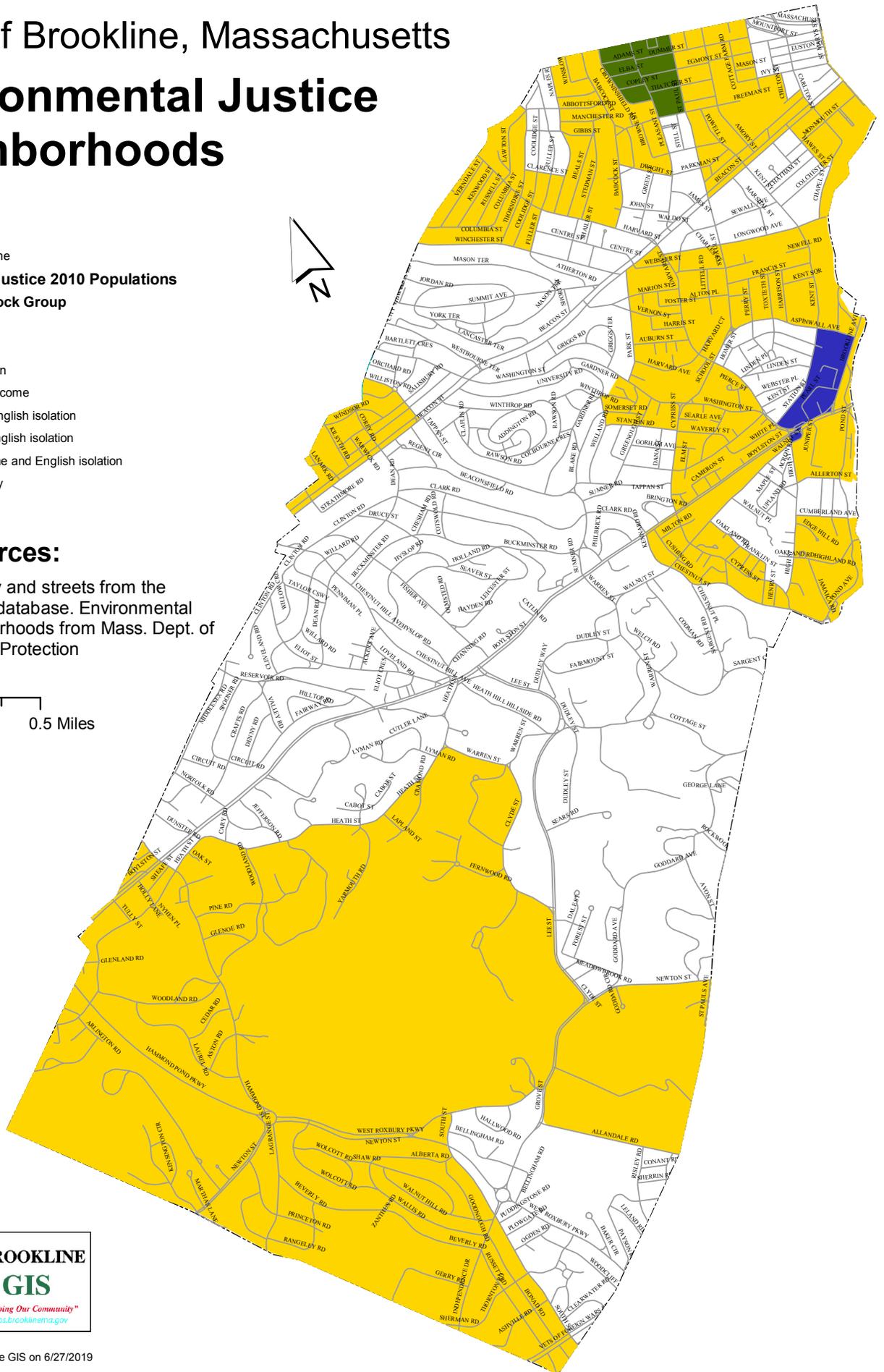
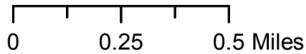
## Environmental Justice Neighborhoods

### Legend

-  Street Centerline
- Environmental Justice 2010 Populations**
- EJ Criteria, by Block Group**
-  Minority
-  Income
-  English isolation
-  Minority and Income
-  Minority and English isolation
-  Income and English isolation
-  Minority, Income and English isolation
-  Town Boundary

### Data Sources:

Town boundary and streets from the Brookline GIS database. Environmental justice neighborhoods from Mass. Dept. of Environmental Protection



## COMMUNITY SETTING

designed to be accessible to visitors of all abilities, and the John E. Murphy Playground. Providing accessible environmental assets in Environmental Justice communities is essential for improving public health and achieving environmental equity throughout Brookline.

Demographics and population play a significant role in determining the community's open space and recreational needs. Recommendations for park and recreational programming based upon these population and demographic trends, as well as other factors, are made in the 2006 Brookline Parks Open Space and Recreation Strategic Master Plan. One recommendation of particular relevance to the Town's open space needs is the goal to acquire thirty-six to fifty-eight additional acres of land for open space and recreational purposes. Of this land, half should be reserved for passive recreational or conservation uses.

In addition, a survey of local residents revealed open space needs as a high recreational priority of residents. The top priority identified by residents was "Open Space Acquisition and Preservation." Among the 19 highest priority items, "More trails and bike paths" ranked third and "More Sanctuaries/Nature Center" ranked fifth.

## D. GROWTH AND DEVELOPMENT PATTERNS

### *Patterns and Trends*

From Brookline's establishment as an independent town in 1705 to the mid 1800's, Brookline was maintained largely as a rural, agricultural community with some light industry.

Brookline's evolution to a suburban residential community began during the 19th Century, as the

Table 2  
**Brookline Citizens' Priorities for New Facilities**  
 Relative Importance Ranked on Scale of 1 (not important) to 4 (very important)

<b>Facility</b>	<b>% Respondents Rating "4" (Very Important)</b>	<b>Mean Score for all Respondents</b>
Open Space Acquisition, Preservation	48.1%	3.27
Parks - General	33.3	3.05
More Trails/Bike Paths	31.4	3.06
Fitness Center	29.7	2.89
More Sanctuaries/Nature Center	26.8	2.78
Outdoor Pool	26.1	2.70
Share with School Department	25.6	2.85
Performing Arts/Cultural Center	24.2	2.76
Parks - Organized Sports	21.3	2.63
Community Center	19.6	2.66
Indoor Leisure Play Pool	18.1	2.48
Picnic Areas/Pavilions	17.9	2.62
Indoor Ice Rink	17.1	2.44
Indoor Warm Therapy Pool	14.7	2.35
Amphitheater	11.8	2.32
More Gymnasiums	8.9	2.14
Skateboarding/In-Line Skating	7.2	1.83
BMX Bicycle Course	5.1	1.79
In-Line Hockey Court	1.9	1.54

Source: Brookline Parks, Open Space and Recreation Strategic Master Plan, June 2006 (Table 2.6)

## COMMUNITY SETTING

Boston population expanded and wealthy merchants began to purchase large areas of farmland for elaborate homes. Fortunately, these first developers had the wisdom and resources to create neighborhoods that can still be used as templates for successfully combining the natural and the built environment. Both David Sears, at Cottage Farm in the 1830's, and Amos A. Lawrence, at Longwood in the 1850's, ensured that buildings were always sufficiently balanced by the presence of trees, parks, and playgrounds. Cottage Farm and Longwood Mall are listed in the State and National Register of Historic Places.

Respect for the local natural environment was not an isolated trend. Brookline continued to benefit from the actions of other enlightened developers and designers, such as Alexander Wadsworth, who built the park-like residential areas of Linden Square and St. Marks Square, and Thomas Aspinwall Davis, a developer who put set-back requirements and use restrictions into the master deeds of his homes.

During the second half of the 19th Century, Brookline became the residence of many renowned architects and landscape architects, whose vision and talent left a lasting imprint on the local, as well as national, cultural landscape.

Among the most prominent landscape architects was Frederick Law Olmsted, who made both his home and office in Brookline. His designs for the Emerald Necklace and Beacon Street translated the concept of European pleasure gardens and grand boulevards into the American vernacular and they remain today an inspiration for community planners. Olmsted and his successors in the firm continued to influence the development of the Brookline landscape well into the 20th Century.

The early 20th Century saw a continuation of the former residential trends. Major development along Beacon Street and Commonwealth Avenue continued, the grand houses and apartment structures creating an impressive boulevard. Smaller, multi-family dwellings were built as homes for those who worked at the large estates, and additional apartment buildings in North and Central Brookline became residences for the early commuters to Boston. South Brookline maintained a largely rural quality until the end of WWII, when small, suburban development came to several areas. A particularly striking mid 20th Century cultural landscape is Hancock Village. Developed as a community for

returning soldiers and their families, its small, attached two-story brick buildings are set in and around low puddingstone hillocks surrounded by broad green lawns well-suited to the games of children and neighborly interaction.

Today, with property values remaining high in Brookline, there continues to be a gradual but notable trend toward replacing smaller single family homes with larger homes.

### **Infrastructure**

#### Traffic and Transportation

Major transportation routes from Boston pass through Brookline toward the western suburbs, Cambridge, and the southern parts of the City of Boston. The earliest route from Boston to the west was the old Sherbourne Road, which passed through Brookline via Walnut and Heath Streets, and was replaced by Boylston Street (Route 9), which remains a major route between Boston and the communities along the Route 128 corridor. Beacon Street was built as a second major roadway to and from Boston. Harvard and Washington Streets in Brookline provided north-south through-routes from southern portions of Boston to Allston, Brighton and Cambridge. These early roadways continue to shape Brookline's development.

Three of the Massachusetts Bay Transportation Authority (MBTA) green lines serve Brookline: the B line along Commonwealth Avenue, the C line to Cleveland Circle, and the D line to Riverside in Newton. The bus routes are: Allston-Ruggles via Harvard St., Chestnut Hill from Kenmore via Route 9, Cleveland Circle from Forest Hill via Putterham, Central Square to Cleveland Circle, and Brighton.

Access points to other major routes are available through Brookline's streets. The Massachusetts Turnpike, Storrow Drive and Memorial Drive carry east-west traffic; Route 1, Riverway and Fenway carry traffic to southern sections of Boston, Newton and southwest suburbs. Many residential streets are used extensively to access these routes and are particularly impacted by rush hour traffic.

Development on Route 9 regionally includes sections of small businesses and residential areas interspersed with large suburban-style businesses, complete with large parking lots. In Brookline, Route 9 currently is under careful scrutiny and comprehensive planning for its potential for economic development. Along the Newton portion of Route 9 there

# MBTA Bus Routes and T Lines

## Town of Brookline, Massachusetts

### Legend

-  Bus Stop
-  T Stop
- Summit Ave. T Stop Name
-  Bus Routes
-  MBTA Green Line
-  Street Center Lines
-  Brookline Town Boundary
-  Open Space

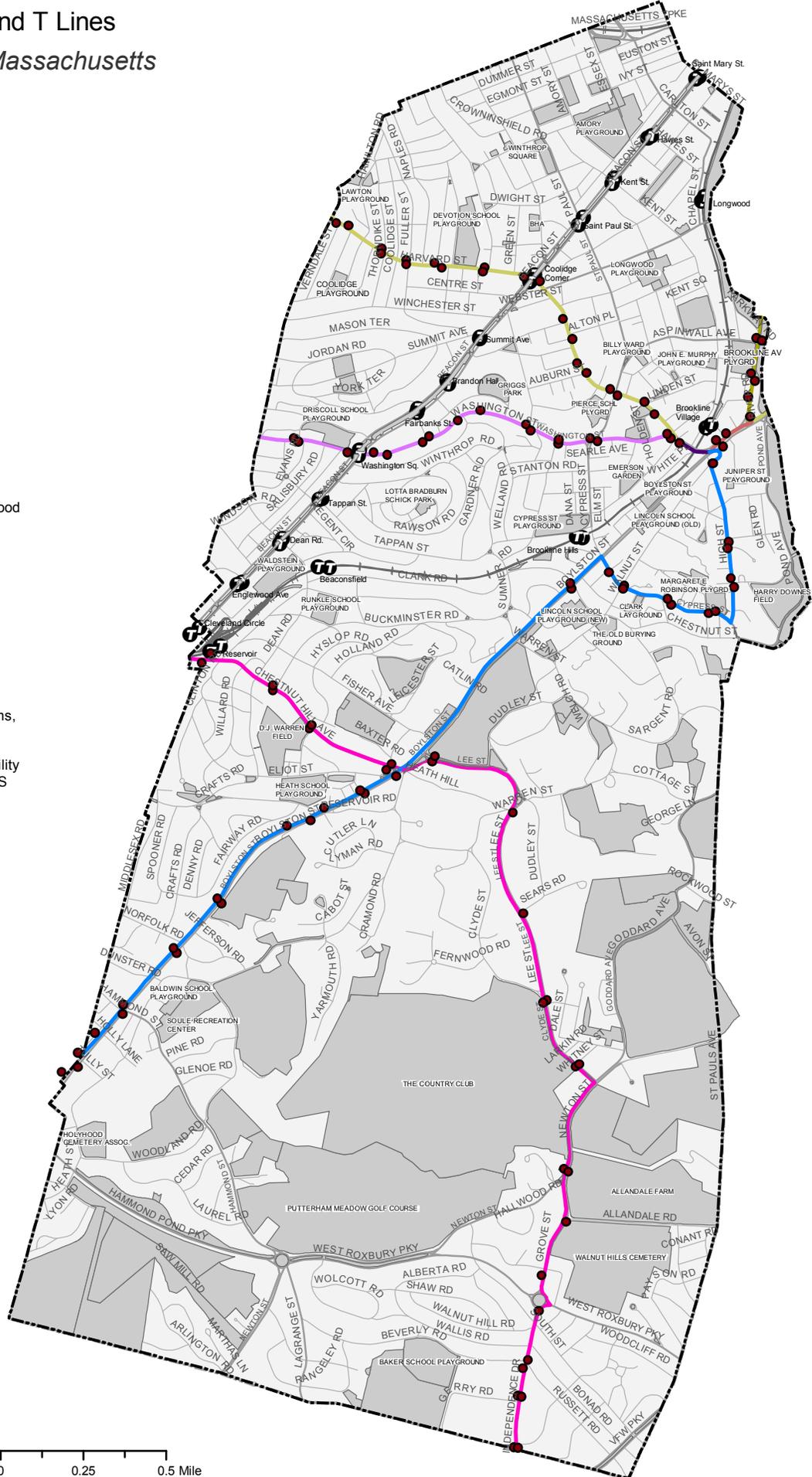
### Data Sources:

All the data layers on this map are from Brookline GIS. The Open Space shown on this map includes Community Parks, Neighborhood Parks, Golf Course, Cemeteries, Agricultural /Recreation Land and School Playgrounds.

### Map Disclaimer

The information shown on this map is from the Brookline Geographic Information System (GIS) database.

The Town of Brookline makes no claims, no representations, and no warranties, express or implied, concerning the validity (express or implied), the reliability or the accuracy of the GIS data and GIS data products furnished by the Town, including the implied validity of any uses of such data.



Map updated by Brookline GIS on 6/28/2019

0 0.25 0.5 Mile

have been several major new development plans and proposals that include parcels close to Chestnut Hill Village and would substantially increase traffic. One option that has been raised is to depress Route 9 in this area to create better north-south pedestrian travel in Chestnut Hill and allow for more green space, as well as create a village center for the Chestnut Hill area.

Transportation by bicycle is increasing in Brookline, and has been improved with the creation of designated bicycle lanes on several streets. The Olmsted and Riverway Park system does include popular bicycle and pedestrian paths, but the difficulty of crossing at Washington Street, which divides the park parcels, has long been under discussion. The Town addressed this issue with the design and construction of a large bicycle and pedestrian connection at the intersection of Washington Street and Pond Avenue.

Walkways include an extensive network of sidewalks within the more urban sections of Brookline, however some southern and western sections of Town lack sidewalks. Brookline does have several well-planned walking paths, including those along the Muddy River, in the Town's parks and sanctuaries, and across the hills of North and Central Brookline.

#### Water Supply Systems

Brookline is a member of the Massachusetts Water Resources Authority. Because elevations in the Town range from 7 feet to 340 feet above sea level, two separate distribution systems are required to provide water service to the entire Town. Without this arrangement, pressures would be extremely high in the low elevations and inadequately low in the high elevations of the Town. Static pressures in both systems are maintained between 20 and 120 pounds per square inch.

The Low Service System is supplied from two direct connections to the MWRA's Southern High Service System at Fisher Avenue. Water flow into the system is measured through two venturi meters owned and maintained by the MWRA. The MWRA is able to maintain pressure within the system through these direct connections. Low service distribution mains supply water to most sections of Town east of Washington Street and north of Boylston Street, representing 62 percent of the total water consumption.

The High Service System is supplied from two

pumping stations on the MWRA's southern Extra High Service System. Primary supply is made through a connection to the discharge piping of the MWRA's Reservoir Road Pumping Station. In periods of high demand or other system emergencies, a secondary supply from the Newton Street Pumping Station can be placed on line. The purpose of both stations is to elevate the supply pressure to service the higher elevations of Brookline. Distribution system storage is provided at the highest land elevation in Town, Single Tree Hill, and consists of a 1.7 million gallon steel spheroidal elevated tank.

#### Sewer Service

The Town of Brookline's sewer system is comprised of about 100 miles of local sanitary sewers which discharge to MWRA interceptors tributary to either the Nut Island or Deer Island wastewater treatment facilities. About 16 miles of Brookline's system are tributary to the Southern High Level Sewer, and about 45 miles are tributary to the Brighton Branch High Level Sewer; each of which transports waste water to the Nut Island Treatment Plant. Finally, about 33 miles of Brookline's sewers are tributary to the Charles River Valley Low Level Sewer which transports waste to the Deer Island Treatment Plant.

The entire wastewater collection system in Brookline flows by gravity (no public pump stations) and consists of sewer mains which are maintained by the Water and Sewer Division. Most of Brookline's sewers are 40 to 70 years old and are constructed of vitrified clay and, to a lesser extent, brick or reinforced concrete. All manholes are constructed of brick, block or precast concrete.

#### Storm Drain Systems

The Town of Brookline has approximately 117 miles of storm drains that carry runoff from rain and snow melt. The drainage network generally follows Town streets, and has been built to carry stormwater runoff entirely by gravity to nearby water bodies. In general, stormwater flows into Brookline's streets, collects in gutters, and flows through a street level grate or curb inlet into a catch basin. Brookline has approximately 2,344 catch basins, most of which are designed with a sump to collect sediment, litter and other debris, and approximately 1,675 drain manholes. Water flows out of the catch basin into a central storm drain under the street. These drains merge into large collector drains, and ultimately into very large conduits that carry stormwater runoff into the Muddy River, Sawmill Brook, Stony Brook or directly into the Charles River (Brookline Engineering

Division).

Brookline's drains are mostly made of reinforced concrete pipe, and vary in diameter from as small as 12 inches to larger than 100 inches. The Village Brook drain, which drains most of Brookline's land area and discharges to Leverett Pond, is large enough in certain areas to drive a car through. Many of Brookline's largest storm drains discharge to the Muddy River, and their outfalls can be submerged when the river begins to rise during heavy storms. This can contribute to flooding problems as flows in the drains have no way to drain out to the river. The Muddy River Restoration Project, currently being executed by the U.S. Army Corps of Engineers, should help alleviate some of these flooding problems.

Stormwater runoff from Brookline is regulated by the United States Environmental Protection Agency (EPA) under the Clean Water Act. Brookline's stormwater system is managed in accordance with its Municipal Separate Storm Sewer System (MS4) Permit, a component of which requires good house-keeping practices such as regular street sweeping and inspection and cleaning out of catch basins, ensuring that sanitary sewage is not getting into storm drains, and public outreach and education efforts. Brookline received a new MS4 permit aimed at reducing the volume of stormwater flowing directly into rivers and reducing the levels of pollution in stormwater runoff. In association with the goals outlined in this permit, a total of 51 cross-connections with an estimated 14,410 gallons per day (GPD) of water flows have been removed from the drainage system from April 2005 to March 2017. Pollutants of critical concern include sediments, which accumulate in storm drains and water bodies, and nutrients, especially phosphorus, which contribute to excessive weed and algae growth in rivers, lakes and ponds.

### ***Long-Term Development Patterns***

Brookline has approximately 26,448 total housing units, with almost 95% of these units occupied (U.S. Census Bureau, 2010 Census). According to the Brookline Comprehensive Plan 2005-2015, the average increase in housing units has been relatively stable for the last thirty years. After a growth spurt during the 1960s, when Brookline added an average of 358 new housing units annually, the number of housing units has continued to increase each year, but at a slower pace. The number of new housing units created in 1980-2000 was less than

one-third the number created in 1960-1980. Since 2000, the rate has been similar, and this steady growth pace may continue into the future, if other factors do not intercede. Higher growth could occur if large properties currently in institutional use or currently developed at low densities were to be redeveloped. Growth will also depend on market conditions, which were favorable for residential development in the late 1980s and late 1990s, and less so in the early 1990s and early 2000s due to economic recessions.

While the overall trend in the creation of housing units shows stability over the last generation, the composition of the housing stock has altered somewhat. According to the Brookline Comprehensive Plan 2005-2015, a comparison of 1990 and 2000 census data showed that the proportion of housing units that are single-family or in multi-family buildings of different sizes had not changed significantly. More recent reports from the Brookline Assessors Department show that 48% of Brookline's housing units are in buildings containing nine or more units, while only 17% are single-family, indicating a movement towards a greater proportion of units in larger buildings.

Population densities in the Town vary greatly. Densities are much higher in the northern parts of Brookline, ranging to more than 28,000 per mile for some neighborhoods and averaging at least 7,500 per square mile through North Brookline. In the south, the densities are consistently less than 7,500 throughout.

The Town has used density information, among other factors, to calculate target Level of Service standards for Brookline. These targets include the acquisition of 36-58 additional acres of land (including open space/conservation, active outdoor and facility siting uses). The Brookline Comprehensive Plan 2005-2015 identifies three key planning and development goals, all of which have implications for open space in Brookline. The first goal is planning for better districts and neighborhoods. The protection of neighborhood character, attractiveness, safety and functionality while accommodating desirable changes includes planning and zoning strategies to preserve and enhance open space. One recommended strategy is the creation of Neighborhood and District Plans with development and design standards that accommodate open space goals.

Another long-term development goal is to

increase affordable housing in Brookline. The Brookline Comprehensive Plan 2005-2015 sets a goal of creating, through conversion and new construction, an average of 25 affordable units per year for the next 25 years. This would more than double the current production and produce 625 units, allowing Brookline to meet the 10% affordable housing unit standard set by the state in Chapter 40B. As mentioned earlier, currently approximately 8% of the housing units are affordable units. The Plan stresses conversion of existing market-rate housing into affordable units which would not impact open space. Another strategy contributing to the creation of such additional housing might be the adoption of as-of-right greenway/open-space cluster (GOSR) zoning for large parcels of land. This form of cluster zoning emphasizes the preservation of valuable open space and natural resource features during development of the parcel.

The Route 9 corridor is cited by the Brookline Comprehensive Plan 2005-2015 as one of the most persistent and challenging planning issues facing the Town. The third key recommendation is to develop a Route 9 Plan that looks at the corridor

from a regional perspective with a focus on increasing the attractiveness and livability of the corridor. The Plan envisions the creation of an attractive "Gateway East" to the Town at Brookline Village. This would include strengthening the connection between the Emerald Necklace Parks which are divided by Route 9 at that point. The planning process is currently underway for the "Gateway East" project.

A new "Gateway West" at the Chestnut Hill commercial area would include planned changes to improve pedestrian connections and enhance open space. At other points on the corridor, the Plan envisions the creation of a pedestrian-oriented mixed-use development. Route 9 has been viewed as an important opportunity for commercial development that would expand the community's tax base.

From the perspective of current zoning, Brookline is near build-out. Most of the potentially subdividable parcels that remain are located in the southern part of Town. Future development patterns and planning may have significant implications for open space.

# Town of Brookline, Massachusetts

## Existing Land Use

### Legend

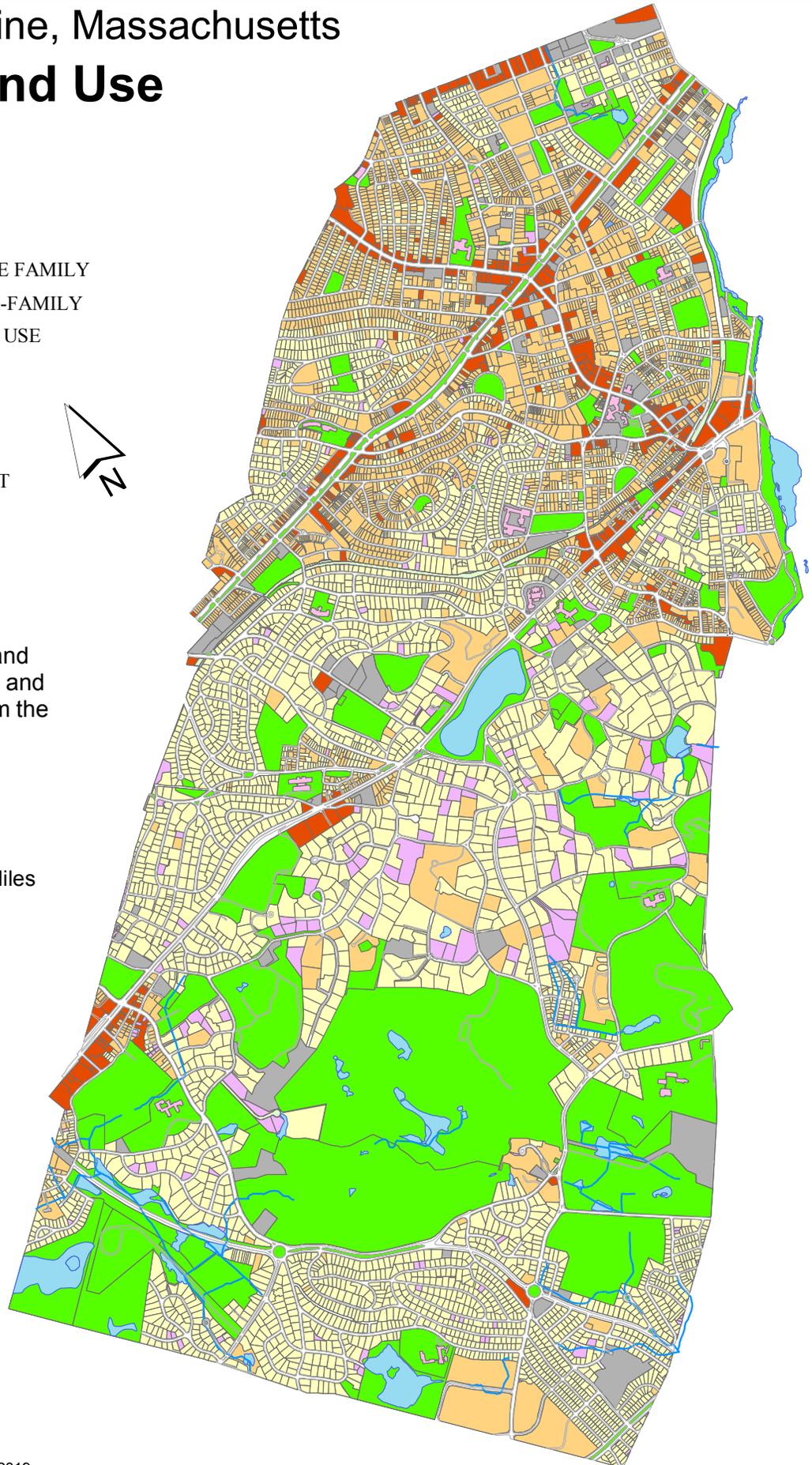
-  ALL OTHER VALUES
-  RESIDENTIAL - SINGLE FAMILY
-  RESIDENTIAL - MULTI-FAMILY
-  COMMERCIAL/MIXED USE
-  INSTITUTIONAL
-  OPEN SPACE
-  CONDO-PARKING
-  RESIDENTIAL VACANT
-  TOWN BOUNDARY
-  EDGE OF PAVEMENT



### Data Sources:

Town boundary, streets, land use, parcels, waterbodies, and open space layers are from the Brookline GIS database.

0 0.35 0.7 Miles



### Louise Kent's Story

*"When your mother was a little girl, there was still an old road in Brookline that had never been improved. It was called the Two Mile Road and it ran from Heath Street in Chestnut Hill through a piece of woodland that had belonged to my grandfather and then across Newton Street in the direction of Roxbury. I rode over it on a horse many times when I was a girl, and when your mother and uncle were little . . . If you wanted to go back into the seventeenth century and see what Brookline was like, you could just go and look for Lost Pond.*

*On all sides of it there was a swamp - a colonial swamp for all you could tell. Marshy plants grew out of the wonderful black dirt. There was only one path to the pond. If you missed it you would soon be up to your knees in mud. Trees and bushes were so thick along the path and around the pond that you couldn't see even a gleam of water until you got close to the edge. . .*

*In wintertime when the ground was hard and the trees were bare, the pond was easier to find than at other seasons. I remember once coming on it sooner than I expected and seeing a pair of wonderful skaters waltzing there. The pond seemed like a secret ballroom with a silver floor and the walls hung with dark tapestries. The ballroom had a lamp because the full moon was just coming up over the trees. I never put my skates on but just stood there, watching the skaters whirling, dipping, and gliding until my feet almost froze. Then I went away through the dark woods. For a while I could hear the music of the skates ringing on the ice, but as I came out on the Two Mile Road again, I thought I must have dreamed that the waltzers were there."*

Louise Kent, *The Brookline Trunk*, 1955