

MHC Reconnaissance Survey Town Report

NEWTON

Report Date: 1981

Associated Regional Report: Boston Area

Reconnaissance Survey Town Reports, produced for MHC's Statewide Reconnaissance Survey between 1979 and 1987, introduce the historical development of each of the Commonwealth's municipalities. Each report begins with an historic overview, a description of topography, and political boundaries. For the purposes of the survey, the historic period has been subdivided into seven periods: Contact (1500–1620), Plantation (1620–1675), Colonial (1675–1775), Federal (1775–1830), Early Industrial (1830–1870), Late Industrial (1870–1915), and Early Modern (1915–1940/55). Each report concludes with survey observations that evaluate the town's existing historic properties inventory and highlight significant historic buildings, settlement patterns, and present threats to these resources. A bibliography lists key secondary resources.

Town reports are designed for use together with a series of town maps that demarcate settlement patterns, transportation corridors and industrial sites for each historic period. These maps are in the form of color-coded, polyester overlays to the USGS topographic base map for each town on file and available for consultation at MHC. For further information on the organization and preparation of town reports, readers should contact MHC.

Users should keep in mind that these reports are now two decades or more old. The information they contain, including assessments of existing knowledge, planning recommendations, understanding of local development, and bibliographic references all date to the time they were written. In some cases, information on certain topics was not completed. No attempt has been made to update this information.

Electronic text was not available for digital capture, and as a result most of the reports have been scanned as PDF files. While all have been processed with optical character recognition, there will inevitably be some character recognition errors.

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MHC RECONNAISSANCE SURVEY REPORT

Date: 1981

Community: Newton

I. TOPOGRAPHY

City occupies 18.3 square miles. Most of it Laforge described as the Needham Upland, an elevated area of glacial outwash interrupted by glacial hills and lowlying swamps. The Charles River, to which all streams are tributary, wraps the city on three sides, and its available waterpower -- at the Upper and Lower Falls and at Nonantum -- tended to concentrate early development there rather than in the interior of the town. The Upper and Lower Falls, about two miles apart, mark the river's departure from the Needham Upland at fault lines, and both sites have been sources of power since the early 18th century. In addition, Smelt Brook, which flows north from Bullough's Pond into the Charles at Watertown, and South Meadow Brook, flowing south from the Great Meadow into the Charles at Watertown, and South Meadow Brook, flowing south from the Great Meadow into the Charles at Upper Falls, also were used. Palmer Brook, flowing southeast out of Newton from Hammond's Pond, furnished power for the town's earliest sawmill (1683) at the Brookline line. Cheesecake Brook, rising north of Beacon Hill, is the only major brook for which no power usage is recorded.

All of Newton's major hills -- and early 20th century historians noted that the city was founded on seven! -- are glacial drumlins, predominantly in the eastern part of the city, east of Newtonville and the 319 km grid line. Of these, the highest -- about 300 feet elevation -- are Waban, Institution, and Bald Pate Hills.

II. POLITICAL BOUNDARIES

Originally granted as part of New Towne-Cambridge (1636) with limits at Charles River. Watertown wear lands apparently granted during 1630s with original boundary intact at Newton Corner. Boundary between Newtown and Brookline established by 1641 as Boston (Muddy River) and Cambridge intact at Chestnut Hill-Hammond Pond. Separate parish formed in 1661 as Cambridge Village-New Cambridge and established as independent town of Newton by 1692, with boundary at South Cambridge-Brighton, now Boston city line at Waban Hill, with later adjustments in mid-19th century around Chestnut Hill Reservoir and Newton Corner. Southern portion of Saw Mill Brook-Oak Hill annexed to Roxbury (1831), now Boston city limits at West Roxbury. Northern portion along Charles River annexed to Waltham (1849) through Auburndale. Newton established as a city 1873. Originally included in Middlesex County (1643) as part of Cambridge.

III. HISTORICAL OVERVIEW

Affluent suburban city on primary western corridor of metropolitan Boston. Located within the Charles River highlands with Contact period native sites at Nonantum Hill and Upper Falls with suspected settlement areas around Crystal Lake and Bullough's Pond. Early axis of settlement from Cambridge to Natick with First Period burying ground on Centre Street. Primarily agricultural economy during Colonial period with several Late First Period houses of restored condition and early mill sites at Upper and Lower Falls including village centers of Federal style cottages, churches and mill structures. Increasing development from Boston during early 19th century with turnpike through Upper Falls and railroads through Newton Corner to Auburndale with related residential parks and Greek Revival houses. West Newton developed as civic center during mid-19th century with early educational facilities and Black community, while Newton Centre retains former status with theological seminary, including imported Greek Revival portico on library. Continued suburbanization along commuter rail lines from Boston through late 19th century with affluent estate districts established at Chestnut Hill, West Newton Hill and Auburndale Hill, including elaborate Victorian houses of architect design, while depot centers contain well-preserved suburban period homes and landmark Romanesque and Gothic churches of noted design at Newton Corner, West Newton, Newtonville and Newton Centre. Late Industrial development expands along trolley routes with streetcar suburban districts along Crafts and Watertown Streets to Waltham and Nonantum and Washington-Walnut Streets to Newton Highlands and Auburndale. Industrial district developed at Nonantum with related period worker's housing. Status residential districts expanded along Commonwealth Avenue from Chestnut Hill to West Newton with substantial houses of Revival style, including many innovative stucco Craftsman-Mission examples and several true mansions. Newton Corner emerged as primary commercial center with multi-storied business blocks, while similar urban scale is attempted at Newtonville and West Newton with related apartment hotels of detailed design. Suburban development continued through mid-20th century with emphasis on auto-highway axis of Route 9 in Oak Hill, Newton Centre and Waban with innovative Craftsman bungalows and Picturesque Revival houses amidst survival of landscaped institutional facilities and market farms. Present developmental pressures are most evident along Route 128 beltway at Upper and Lower Falls and along Route 9 and Mass Pike at Chestnut Hill and Newton Corner where commercial centers and high rise apartments have overwhelmed the areas. Much of Newton retains a stable residential fabric with several districts of preservation except for the larger estate homes which have suffered maintenance costs in Chestnut Hill and West Newton.

IV. CONTACT PERIOD (1500-1620)

A. Transportation Routes:

Important corridor of E/W routes across Charles River highlands, limited by isolated loop of river with regional ford sites at Watertown, and Newton Lower Falls and possible sites at Upper Falls and Auburndale. Primary overland trail from Muddy River (Brookline) to Natick follows Heath-Florence-Jackson-Clark Streets to Crystal Lake with continuation west as Centre-Woodland-Beacon-Washington Streets to Wales Street ford at Lower Falls. Connecting routes from Crystal Lake appear to follow Eliot Street to Upper Falls ford and Dedham Street around Meadow Brook to Neponset (Dedham) with likely branch along Charles River as Winchester Street and cross trail to Jamaica Pond as Brookline Street around Oak and Bald Pate Hills. Dudley-Vine Streets may also be possible trail links around Meadow and Saw Mill Brooks. Primary N/S trail from Watertown ford apparently follows Centre Street to Crystal Lake with western route from Jackson Street along axis of Washington Street to Lower Falls ford with branches to Charles River on Crafts, Waltham, Auburndale and Auburn Street to Weston ford site. Alternate interior route around Bulloughs Pond is reported to have followed Walnut-Commonwealth-Fuller Chestnut Streets to Waban. Connections from Oak Square (Brighton) around Nonantum Hill are documented as Nonantum-St.-Waverly Avenue to Ward-Hammond Streets around Waban and Chestnut Hills, with Washington Street reported as trail location over Hunnewell Hill to Watertown ford.

B. Settlement Pattern:

At present, no documented period sites although several potential or reputed examples reported. These include: a burial with European goods found during 19th century in Boyd Park area, a rockshelter located northeast of Parker Street and Route 9 with possible period artifacts, and the reputed site of Eliot's Nonantum west of Strong's Pond. Period sites highly probable along the Charles, especially in the estuary section east of Watertown ford and near the ford at Newton Upper and Lower Falls. Sites are also probable around Crystal Lake, Hammond and other natural ponds. Rockshelters are highly probable in the undisturbed section of conservation land near Hammond Pond and along the falls of the Charles.

C. Subsistence Pattern:

A diverse area with many kinds of resources: access to seasonal fish runs in Charles, tributary creeks and spawning ponds; shellfish and other estuary resources in Charles (as far as Watertown); varied terrain from riverine meadows to rocky uplands for hunting/gathering; close enough to coast for period trade. An eel weir in Charles near Upper Falls.

D. Observations:

Despite its resources, and undoubtedly a large seasonal population, Newton seems less a center of native settlement than a resource, even buffer area. This may have been due in part to the rocky, upland character of much of the town (and adjacent upriver towns as well) plus the area's isolated rather peninsular character resulting from the Charles River's meanders (similar to Needham). Despite all this, probably occupied primarily by the Massachusetts group.

V. FIRST PERIOD (1620-1665)

A. Transportation Routes:

Native trails improved as regional highways with primary western route from Boston-Brookline along Heath-Florence-Jackson-Clark to Centre Street and west as Woodward-Beacon Streets to Lower Falls ford-bridge at Washington Street. Main route west from Watertown apparently followed Centre Street with alternate as Washington-Walnut-Commonwealth-Chestnut Streets to Waban, with highway to Dedham as Dedham Street. Location of Cambridge Village meeting house (1662) at Centre Street burying ground site created radial roads to Bulloughs Pond mill as Mill Street and Cotton Street to Waverly Avenue. Other local roads of the period apparently include Cypress-Dudley Streets along ridge from Newton Centre to Bald Pate Hill and Fuller Street around Woodland marshes. Washington Street reportedly laid out over Hunnewell Hill from Newton Corner to Oak Square (Brighton).

B. Population:

Earliest permanent settlement by Europeans, 1639. Six houses, 23 freemen recorded in that year. Small native settlement in Nonantum vicinity, later moved to Natick. By 1680, about 50-60 families -- perhaps 250-300 persons altogether.

C. Settlement Patterns:

Native population remained intact through mid-17th century around Nonantum-Waban Hill near Charles River (Newton Corner) with reported proto-Praying Town by Eliot at Strongs Pond (Commonwealth Country Club) by 1650 (Jackson, 1855:81-84). Other remnant groups apparently survived at Upper Falls on Charles River as fishing station (Jackson, 1854:101). Initial English settlement from Cambridge by 1640s with dispersed farmsteads along Centre, Waverly, Woodward and Washington Streets. Meeting house center and burying ground established on Centre-Cotton Streets by 1662 with mill at Bulloughs Pond (1664).

D. Economic Base:

Strictly agricultural community. First grist mill built 1664 by John Spring on Smelt Brook, at outlet of Bullough's Pond. Commerce and home wool spinning introduced to natives at Nonantum by Eliot. Fish weirs on Charles at Watertown Square and Upper Falls.

VI. COLONIAL PERIOD (1665-1775)

A. Transportation Routes:

Highways remain from 17th century with main roads to Watertown bridge from Upper and Lower Falls on Washington and Eliot-Centre Streets by early 18th century. Relocation of meeting house to Newton Centre (1721) created radial roads at Homer Street and Langley Road. Bridge connections opened to Needham on Nahanton Street and California-Bridge Streets (Bemis) across Charles River. (Greenwood Street).

B. Population:

At incorporation of town (1691), 60 families (perhaps 300 persons). During succeeding 70 years, population grew slowly-- by about 1,000, reaching 1,308 in 1765, with 174 houses, 222 families, 17 blacks and 1 native.

C. Settlement Pattern:

Expansion of agricultural settlement through 18th century along main highways of Centre, Dedham, Washington and Woodward Streets with local concentration around Smelt and Cheese Cake Brooks. Mill site established on Charles River at Upper Falls (1688) with ironworks at Lower Falls (1722). Meeting house relocated to Newton Centre (1721) with secondary focus at West Newton tavern by mid-18th century, and at Bemis mill on Charles River (1770).

D. Economic Base:

Earliest sawmill constructed 1683 by Erosmond Drew on Palmer Brook at Brookline town line. Second sawmill five years later by John Clark of Brookline at Upper Falls. (Nathaniel Parker seems to have bought both mills by 1726, retaining them in family for 50+ years, though sites were at opposite ends of town.) Other grist mills established in period along Smelt Brook. Iron forge, 1705 initiated activity at Lower Falls; operated by Roxbury blacksmith John Hubbard. Fulling mill and clothier's shop established c. 1730. Earlier paper mill in Newton constructed 1760 by David Bemis and Enos Sumner at Bridge Street.

E. Architecture:

Residential: Although at least one house (Hammond House) is dated to 1645, it seems unlikely that any Newton houses predate 1675. It is probable, however, that the Hammond House and several other surviving early houses were constructed in the late First Period, c. 1675-1725. Potential late First Period houses include the center chimney Hammond House (with added side and rear lean-tos), a center chimney four-bay house on Crafts Street and the Woodward House (1681) on Fairlee Road, which, to judge by its off-center chimney, seems to have been constructed as a half-house; the other houses, too, have an additive look suggesting original one-room plan construction, not unexpected in the comparative isolation of 17th century Newton. In addition to these possible early survivors, Newton retains a significant cluster of houses dating from the second quarter of the 18th century, a period of generally diminished building activity (First Period houses of the initial waves of construction continuing in efficient service and easily adapted to new spatial demands) and hence a period not otherwise well-represented in the study unit. Examples survive on Cherry (Mansion house 1716), Ward and Suffolk (Kingsbury House 1715) Streets, both houses retaining the characteristically tall and narrow sash of the period. Other notable Colonial structures include the integral lean-to, gambrel-roofed Kenrick House (1732), several end chimney houses, including the Woodward House (with a hipped roof), and at least one twin-rear-wall chimney house and a few gambrel-roofed cottages at Lower Falls, possibly dating just after the end of the period.

Institutional: None of the institutional structures of the period are extant; the first meetinghouse was built 1661 with schools in 1699, 1701 and three schools in 1754.

VII. FEDERAL PERIOD (1775-1830)

A. Transportation Routes:

Highways remain in place from mid-18th century with Washington and Centre Streets primary roads from Watertown to Needham and west. Improvement of E/W corridor with Worcester Turnpike (1805) between Newton Centre and Upper Falls and around Hammond Pond at Chestnut Hill.

B. Population:

Very little apparent growth between 1765 and 1790. By latter date, population stood at 1,360. Rate did not much increase during next 40 years, with fluctuating rate varying between 10 and 30 persons per year growth. Only in last decade 1820-30 did the rate pick up (50/yr.) so as to reach 1,850 by 1830. It is reported that in that year there were 48 foreign-born residents in town (2 percent of population).

C. Settlement Pattern:

Increasing dispersion of development across Newton with concentration of settlement around Charles River mill sites at Upper and Lower Falls villages during early 19th century. Civic focus remained at Newton Centre, including Theological Seminary (1828). Commercial activities shift to Washington Street axis at West Newton and Angiers (Newton) Corner with southern axis along Worcester Turnpike (Boylston Street) at Eliot village.

D. Economic Base:

Proximity to Boston and two excellent water powers led to early manufacturing, much of it with Boston capital (Elliot, Perkins, Jackson) and inventive mechanics (Ellis, Pettee, Ware, Bemis).

At Newton Corner, small manufacturing enterprises led by Hull Brewery (c. 1798), Smallwood furniture shop (1817), and substantial Jackson soap and candle factory (c. 1823). Eastern part of town, near Nonantum Hill early developed nursery reputation like neighboring Brighton. John Kendrick had begun planting peach and other fruit trees by 1790, eventually becoming leading fruit-tree nursery in New England. With son William published New American Orchardist (1822). Son John began famous Nonantum Nursery in Brighton, just across town line.

Most active sections of town, Upper and Lower Falls. Bixby Rolling mill begun c.1771 to manufacture scythes. Cessation of British trade during Revolution caused Boston tobacconist Simon Elliot to build 4 snuff mills (with 20 mortars) 1778-82 at Upper Falls. Operated under direction of German immigrant John Clough with imported snuff makers. Elliot's son-in law, Boston merchant Thomas H. Perkins bought property 1814 just before fall of cotton prices, and construction postponed of Elliot Mfg. Company until 1823. Under direction of Foxborough mechanic Otis Pettee (son of thread-mill owner in Foxborough) cotton and thread mills constructed with integrated machine shop for textile machine production. Pettee's invention of double-speeder (1825), key element in popularity of shop. Also at Upper Falls, Newton Iron Works (1799) inaugurated large-scale nail manufacture under direction of Rufus Ellis with advanced manufacturing practices (early use of anthracite, advance nail machines -- Odiorne; Reed -- and use of company ships to import Swedish and Russian iron). Large quantities shipped to New Orleans and Cuba for making sugar boxes, as well as to New England and other southern markets. Ellis bought out owners 1821-23 and formed Newton Factories, by 1832 producing \$105,000 worth of nails, hoops. etc.

Lower Falls development dominated by paper mills, as manufacture of product shifted from Milton. Earliest mill, 1790 by John Ware, followed by Elliot (1791), Curtis (c. 1804), Brown (c. 1808), Grant (c. 1810), Andrews & Pratt (1813). Marked change in paper manufacture with introduction from England of continuous-feed Fourdrinier machine, of which two of the first examples in U.S. said to have been installed in Curtis Mill, 1828 (Wiswall, p. 35).

Industrial activity also at Bemis (3 Bridge Street). Paper mill there rebuilt after 1792 fire. However, appears that most of Bemis's innovations (first cotton duck woven, 1816 power looms, first use of gaslight, etc.) took place in Bemis mills on Watertown side. With construction of these mills and absorption of attention in cotton and woollens, Bemis abandoned paper manufacture and converted buildings to drug and dye-woods production (Pettee, 105).

Early silk manufacture begun by 1822 by Jesse Fewkes who set about producing silk and linen laces. Difficulty in securing raw silk, however, led him to experiment with introduction of silkworm and mulberry tree into Massachusetts climate. Not all that successful.

E. Architecture:

Residential: The greatest concentration of Federal period buildings stands at Upper Falls; there are mainly center and twin chimney cottages and double cottages built to house mill workers, although a portion of these probably date after 1830. Few other Federal period houses survive in Newton; most of these are twin-chimney, hipped roof examples, with few twin rear-wall chimney houses and only one known substantial end-chimney, double-pile plan house known (Jackson Homestead, 1809). At least one three-story Federal house is known (Baury House) along with a few late Georgian center-chimney houses. Several early 19th century farmhouses survive along Nahanton Street at the south of the city, with one brick end-chimney example known.

Institutional: Two institutional buildings of the period survive; these are St. Mary's Episcopal Church (1813) at Lower Falls and the First Methodist Church (1828; built as a Unitarian meeting house). Both are simple, end-gabled Federal/Greek Revival structures with two-stage square belfries; later in the century, the bipartite entrance of St. Mary's was updated with Gothic lancet labels and tracery above the doors.

Commercial: The only known commercial building surviving is the Greek Revival Manufacturer's Hotel (1829) at Newton Highlands, a simple, frame two-story semi domestic structure.

Industrial: Several substantial stone and wood-frame mill structures were built at Upper and Lower Falls in the Federal period: these include the Crehore Mills (ca.1790), a one-and-a-half story stone structure with quoins, with other similar stone structures built later (1811). These structures and at least one frame mill survive at Lower Falls, but period industrial structures at Upper Falls have been demolished.

VIII. EARLY INDUSTRIAL PERIOD (1830-1870)

A. Transportation Routes:

Turnpikes and highways in place from early 19th century with improvement of E/W axis as early railroad route of Boston & Worcester (1834) through Newton Corner and West Newton-Auburndale with later branch to Lower Falls. Secondary commuter route to Needham opened as Charles River Railroad (1852) from Chestnut Hill to Upper Falls through Newton Centre and Newton Highlands along Crystal Lake as ice pond. Early street railway connections opened from West Newton depot to Waltham on River Street and to Newton Corner from Brighton on Tremont Street by 1865. Local road improvements of the period include Parker Street from Newton Centre, Walnut Street from Newton Highlands, Watertown Street through Nonantum to West Newton, Beacon Street from Chestnut Hill to Waban through Newton Centre and Chestnut St. from Waban to Upper Falls.

B. Population:

But for a five year slower rate during the Civil War, population in this period showed accelerating growth rate, rising in successive decades from 100 persons/year in the first decade (1830-40) to 190 in the second, 310 in the third, and 720 in 1865-70. By 1870, population had reached 12,385, a figure five times that of 1830. Much of this growth was attributable to Boston merchants who moved to Newton with the opening of the Boston & Worcester Railroad in 1835. By 1865 only 22 percent of the population were foreign-born. Three-quarters of these were Irish, with England supplying a little over one tenth.

C. Settlement Pattern:

Opening of Boston & Worcester Railroad along Washington Street axis reorients development to West Newton as civic and commercial center by mid-19th century. Related suburban districts expand around railroad depots at West Newton Hill, Auburndale, Newtonville and Newton Corner, with early examples of Picturesque residential parks. Similar development along Charles River railroad through Newton Centre, Newton Highlands and Chestnut Hill with Crystal Lake as ice pond. Industrial expansion continued along Charles River with manufacturing village around Silver Lake at Nonantum to Bemis bridge (Waltham), and modest activity at Upper and Lower Falls. Much of southern and central portions of Newton remained agricultural with market farms along Dedham and Fuller Streets.

D. Economic Base:

Paper, iron, and cotton -- in that order -- for the most part dominated the manufacturing industries during this period, and for these three the period marked their period of greatest growth. By the 1870s all had declined or vanished altogether. The period saw Newton's transition to a suburban town. Ten years after the arrival of the Boston & Worcester the first land company began sales at Auburndale. With the establishment of the Charles River Railroad in 1852, the town had eight railroad stations on two lines directly into Boston.

Barber wrote in 1839 that there were ten paper mills at Lower Falls, though only five seem to have been located on the Newton side. These mills, with the readily-available Ware machine shop (Needham), in the early years of the period led the paper industry with the newest and most advanced equipment. Of these mills, the largest was the Curtis mill, built in stone in 1834 as an open 1-2 story quadrangle. Its product won national recognition and awards, and for several years was the most extensively equipped of any in town and possibly in New England. The industry reached its peak year in Newton when it manufactured paper worth \$204,349.

Although Barber claimed that the Newton Factories nail works and rolling mill employed 100 hands, census figures report at most 30 men. After 1844 the complex was leased by Fred Barden, whose many improvements to the works raised the annual value of the company's product to over \$300,000 in 1865, its peak year. In 1870 the works were closed and later dismantled. In 1831 Otis Pettee, after disagreements with the parent Elliot Mfg. Co., set up an active textile machine works at Upper Falls. His success, both in the U. S. and Mexico (recounted in detail in Pettee, 94-97) sparked several short-lived competitors in Upper Falls in the 1840s.

The cotton mills at Upper Falls, despite several changes in ownership, continued prosperous throughout the period. By 1865, probably stimulated by government war contracts, it was producing over \$363,000 worth of cottons annually and employing 219 operatives, at least twice the number of any other industry. However, 1865 was its peak year. Already visible was the rising knit goods business both in nearby Needham and, in beginning in 1852, when Thomas Dalby, an Englishman, started producing knit goods and hoisery from handlooms. With the success of the product he began importing knitting machinery. By 1855, four hoisery firms produced \$24,000 worth of goods. A decade later two firms represented the third largest industry in Newton producing \$166,500 worth, and by 1875 one hoisery firm alone was

the largest manufacturer in Newton. Silk had also seen popularity. In the silk craze in the 1830s Otis Pettee is thought to have built, if not actually operated, a stone silk mill in Upper Falls; during the '50s and '60s there were two substantial silk operations.

Other industries which played important roles in Newton's economic development included the manufacture of chairs and cabinetware, and of glue. Thomas Smallwood's cabinetware business boomed in the 1840s and '50s. By 1855 he employed 70 men, and with a product worth \$90,000 annually he was the 3rd or 4th largest manufacturer in Newton. Smallwood's business was one of the leading builders of haircloth and plush parlor furniture in New England. The company moved to Brighton in 1875. Edward Collins and his son Frederick both built glue factories. In 1832, along with an associate from Needham (where glue factories were also begun), Edward toured neighboring states at a time when there were few glue makers in the country. Returning home, he seems to have developed a prosperous business, lasting well into the 1870s. In the 1850s, Hayden Knapp invented a lamp for burning rosin oil. The laboratory he started to develop the lamp was made obsolete after 2-3 years with the introduction of the more successful kerosene.

Municipal structures built during the period included the 1846-48 Cochituate Aqueduct, Boston's first major water supply route. The conduit included a long inverted siphon where it crossed the valley of the Charles into Newton, as well as a half-mile tunnel beneath Waban Hill.

E. Architecture:

Residential: With the arrival of the railroad in 1834, suburban residential development began and, by the end of the period, several distinct neighborhoods had formed at Newtonville, West Newton and Auburndale. Although a few highstyle temple front and side porticoed Greek Revival houses were built in the 1830s and '40s, the bulk of the period's residential construction--the ambitious, often architect-designed villas which established Newton's pre-eminence as a high quality suburb -- occurred in the third quarter of the century. Of the Greek Revival houses constructed, the emergence of a distinctive, sidehall plan design with a full monumental portico along a single side elevation should be noted. These houses (with perhaps a half dozen surviving) share with Newton's other substantial Greek Revivals a characteristic verticality and attenuation unusual in a suburban setting. Workers' housing is rare (except at Upper and Lower Falls, where the traditional, twin chimney double cottage prevailed through the end of the period), but well-detailed suburban dwellings are common with cohesive pockets of

more ambitious architecture scattered throughout. Most suburban houses are sidehall Greek Revival/Italianate buildings with mansard-roofed Italianate/Second Empire designs predominating by the end of the period. Notable early use was made of pure Tuscan forms (very wide overhanging eaves, stucco) in at least some Italianate houses. Most Gothic Revival designs are small-scale and suburban in character rather than highstyle with a cohesive cluster around Webster Park (A. Wadsworth, 1844). These are story-and-a-half cottages with a central shed dormer flanked by steeply gabled dormers. Board and batten siding survives in rare individual examples. One Egyptian Revival double cottage is known (Channing Street) while a few Greek Revival houses incorporate columns with papyrus capitals. Highstyle houses of the period are generally large, elaborately-detailed asymmetrical towered Italianate, Stick Style or Second Empire villas built in the late '50s and 1860s; clusters of these houses are located along and east of Centre Street, on Otis and Highland Streets and Washington Park at Newtonville and along Woodland Street in Auburndale as well as at Newton Centre and Highlands.

Institutional: With the city's growth as a prominent suburb, a number of institutional structures were built, most of frame construction and Italianate or Romanesque Revival design. Of these, the churches are the almost unique survivors, with the Romanesque Revival Auburndale Congregational Church (c. 1850) being the earliest example; other churches built included the Auburndale Methodist Episcopal (1866; Stick Style/Gothic Revival), Newtonville Methodist Episcopal (1857; Romanesque Revival), and 2nd Congregational (1848, Romanesque Revival). In 1859 an elaborately-detailed Italianate high school was built at West Newton (demolished); of the other educational institutions founded in the period (Lasell Seminary, 1851; Fuller Academy/West Newton Normal School/Allen School, 1832, 1845, 1853), no period structures survive. The most imposing institutional building of the period was the Town (later City) Hall (1848) at West Newton, the old West Parish meetinghouse remodelled with a profusion of Renaissance Revival molded ornament on the facade and a tall mansard-roofed tower (demolished).

Commercial: The earliest commercial structure of the period (and one of the few surviving) is the Davis Hotel at West Newton (1831), a three-story Federal/Greek Revival tavern with several Gothic Revival lancet windows. At least one other commercial block, a three-story frame Italianate structure with quoins (c. 1855), survives at Lower Falls. A few semi-domestic frame Greek Revival/Italianate commercial structures may survive unrecognized, particularly at Upper Falls; photographs record that a two-story well-detailed frame Italianate commercial block with quadrant panels was built at Newton Corner in the 1850s along with substantial three-story brick Greek Revival/Italianate blocks at Newtonville.

IX. LATE INDUSTRIAL PERIOD (1870-1915)

A. Transportation Routes:

Railroads and street railways retained from mid-19th century with extension of commuter railroad as Circuit line from Newton Highlands to Auburndale (1885) with depots at Eliot, Waban and Riverside (now MBTA Green Line). Streetcar routes extended through Newton and Watertown on Washington Street to Lower Falls, Watertown-Crafts Bridge and Crafts Streets through Nonantum, Lexington Street from Waltham to Auburndale and on Walnut-Eliot Streets as N/S route between Newtonville, Newton Highlands and Upper Falls, with loop around Newton Centre on Homer-Centre Streets. Important E/W trolley routes opened during early 20th century on Commonwealth Avenue from Chestnut Hill to Auburndale and on Boylston Street (Route 9) from Chestnut Hill to Upper Falls as Boston-Worcester inter-urban line. Upper Falls branch railroad operated as electric trolley line from Riverside terminal.

B. Population:

But for a pause in the five years following 1875, Newton's growth rate remained fairly steady during this period, averaging between 550 and 650 persons per year for the entire period. The only major exception to this growth occurred in the five years 1895-1900 immediately following streetcar electrification, when the rate jumped briefly to double this number. By 1915, at a population of 43,113, Newton had tripled its figure of 45 years previous. During this period the number of foreign-born residents grew steadily. From 22 percent in 1865, the number grew to 27 percent in 1885 and 29 percent in 1905. Over 50 percent at the later date were born of foreign-born parents. Many of these gathered in the manufacturing villages. Nonantum in particular had a sizeable number of Irish, English, and French Canadians employed in the worsted mill. In general, however, the number of Irish declined -- from 3/4ths of the immigrants in 1865 to a little more than a third in 1905. Of the immigrants in 1905, the Maritime Provinces made up 20 percent and Italy, 6 percent.

C. Settlement Pattern:

Rapid expansion of suburban development throughout area with primary focus around commuter depots. Affluent estate district established on Commonwealth Avenue between Chestnut Hill and Newton Centre with similar area on West Newton Hill to Auburndale. Modest suburban neighborhoods expanded along trolley lines between Newtonville and Newton Highlands and between Nonantum and West Newton. Worker's districts maintained around Upper and Lower Falls mill sites with expansion of development around Nonantum factories between Newton Corner and Bemis and along Waltham line to Auburndale and West Newton.

Southern sections still remained agricultural with fringe institutions along Winchester-Nahanton Streets and worker's village at Thompsonville on Worcester Turnpike. Civic center remained at West Newton with primary commercial center at Newton Corner of urban density and secondary centers at Newton Highlands, Auburndale, Newtonville, Newton Centre and Nonantum. Industrial activities expanded along Charles River mill sites at Upper Falls and Bemis with related fringe development along Newton Corner-Auburndale mainline railroad to Riverside.

D. Economic Base:

By the time the Circuit Railroad, or Highland Branch, had been built in 1886, Newton was a thriving city of 10 villages with 14 railroad stations and 9 post offices. Its expanding population was supplied by numerous lumber yards and building-supply firms along the railroad lines, especially in West Newton and Newtonville. In the 1890s, with acquisition by the Metropolitan Park Commission, Riverside became a major recreational area. The first racing canoe in New England was put in the water at Riverside in 1893; by 1897, 4200 canoes were said to be moored there. Norumbega Park opened in 1896.

In the face of rapid suburban growth, manufacturing became less prominent, and by 1915 manufactured product value was in sharp decline. Though the Saco & Pettee machine shops remained active and expansionist in Upper Falls, the paper industry was gradually departing Lower Falls. In the old cotton mill at Upper Falls, Phipps and Train opened one of the largest and most flourishing silk mills in the state, one of the earliest factories to deal in spun silk. Nonantum continued to be a thriving manufacturing village. Nonantum Worsted undertook a major expansion of their plant including acquisition of a major worsted machinery firm, Newton Machine Co., which built a large shop adjacent to Nonantum's factory. For many years Newton's largest employer, the company was crippled by the depression in the 1890s and closed in 1896. Another large firm with an annual business of over \$300,000 in 1890 was the Silver Lake Company (1866), a manufacturer of braided cord and steam packing, for which the company developed a national market. The Gamewell Company (1890) constructed a line of fire-alarm telegraph systems used widely throughout the U. S. Also at Upper Falls a large fireworks concern began manufacturing a popular brand of fireworks in 1887.

Newton's own water-supply system was constructed during the same year as Boston's Sudbury Aqueduct. Principal structures for both, Charles Palmer's Queen Anne-style pumping station and Echo Bridge, constructed 1876. Early electric power station, 1885, acquired by existing gas company four years later.

E. Architecture:

Residential: Newton retains the finest and most comprehensive collection of late 19th and early 20th-century suburban residential architecture in the study unit with a wide range of building types, materials and styles. The intense residential construction of the mid-century continued through the period and by 1915, most of the area north of Boylston Street had been built up. Older neighborhoods at Newton Corner, Centre, Newtonville, West Newton and Auburndale retained their affluent character with many highstyle, architect-designed Second Empire, Stick, Shingle and Queen Anne style houses constructed. Less substantial late Italianate, Second Empire, Stick and Queen Anne houses were built north of Washington Street, although small clusters of large, well-detailed houses were built there too. By the turn of the century, new neighborhoods and areas above and behind old roads were beginning to be developed: well-finished, architect-designed Craftsman, Colonial, Georgian and Tudor Revival houses in frame, brick and most notably, stucco, filled in blocks north of Commonwealth Avenue, east of Park Street along with much of Waban and Chestnut Hill. Modest Queen Anne and Colonial Revival single and two-family houses were built at Nonantum and at scattered locations along major roads. In the last decade of the period, Craftsman and Spanish Colonial designs began to appear with more frequency (especially for high-style construction) with Colonial and Georgian Revival designs remaining the most common choice. A number of well-detailed bungalows were built with many examples at Waban and Newton Highlands. Three-deckers are almost non-existent, but apartment blocks were built with greater frequency and several Georgian, Mission and Colonial Revival examples in brick and stucco survive along Washington Street and at Newtonville (which retains an early c. 1905, Spanish Baroque stucco block) and West Newton.

Newton's highstyle architecture is notable for its progressiveness and sophistication of design and materials (especially stucco), with important local examples of Queen Anne and Craftsman variants apparently reflecting the work of such architects as Richard Norman Shaw and C.F.A. Voysey. In the sheer number of buildings constructed and their variety, the city becomes a casebook for late 19th-century architecture.

Institutional: Most of the city's institutional structures (particularly its churches) date from this period. They reflect the affluence and sophistication of the period with many highstyle, architect-designed Renaissance, Gothic, Colonial Revival and Craftsman buildings constructed. Of these, the churches are most numerous with examples by noted architects including H. H. Richardson (First Baptist, 1885), A. R. Esty (Grace Episcopal, 1872), A. H. Vinal (Newton Centre Baptist, c. 1885), Shepley, Rutan and Coolidge (First Church, Newton Centre, 1902), Henry Vaughn (St. John's Episcopal, 1903), and Cram, Wentworth and Goodhue (Newton Methodist Episcopal, 1897). Most of Newton's

churches date from the '90s and are of stone in variations of the English Country Gothic with Craftsman-derived stucco treatment more common after the turn of the century; Esty's asymmetrical Victorian Gothic Grace Church is typical of the 1870s, while Vinal's massive Richardsonian Centre Baptist reflects the mood of the 1880s. Cram's Methodist Episcopal is an unusual example (both for the firm and for the area) of Spanish Baroque Revival with a Greek cross plan and plateresque ornament; a few more modest Stick and Shingle Style chapels were also built. Other institutional buildings include the High Victorian Gothic Public Library (1870) and several brick Renaissance and Romanesque schools (Hyde, Bigelow, Claflin; c. 1885-1900) with a few later Colonial and Georgian Revival Examples. Also, the Union Hall (Hartwell and Richardson, c. 1880) at Newtonville and the Romanesque Working Boy's Home (c. 1885).

Commercial: The most notable commercial structures of the period are the several commuter railroad stations of H. H. Richardson and Shepley, Rutan and Coolidge, of which examples survive at Woodland and Newton Centre. Other commercial structures include the Bray Block (c. 1890) at Newton Centre, a three-story, brick Renaissance Revival structure, high-quality Tudor Revival storefronts at Newton Highlands, a pair of four-story, buff brick blocks with pressed metal trim at Newton Corner (1902), and several Georgian Revival and Beaux Arts bank buildings and commercial blocks at West Newton. At least a few of the commercial structures along Washington Street (most of them utilitarian, two and three-story brick buildings) probably date before the end of the period, c. 1910. Not surviving are the Eliot Block, an elaborate four-story Panel Brick structure of the 1880s and the Newton Bank, a highstyle Renaissance Revival structure built of limestone which once stood at Newton Corner.

Industrial: Utilitarian brick factory buildings, most of them four stories tall, were built at Silver Lake and at Upper Falls in the late 19th and early 20th century. Other industrial structures include a Dutch gabled power station at Upper Falls and Renaissance Revival pumphouse at the Newton Reservoir as well as a highstyle granite Victorian Gothic terminal station at the Chestnut Hill Reservoir.

X. EARLY MODERN PERIOD (1915-1940)

A. Transportation Routes:

Abandonment of all streetcar lines by 1930 except Tremont-Galen Street route through Newton Corner, with improvement of local roads as auto highways including original period concrete pavement intact on Washington and Centre Streets. Primary E/W corridor of Worcester Turnpike (Boylston Street) rebuilt as Route 9 (1932) express highway with parkway style interchanges at Chestnut, Centre, Parker Streets and Hammond Pond Parkway extended as Metropolitan District Commission auto road through Hammond Pond Reservation. Other period state highways include Commonwealth Avenue (Route 30) and Washington-Watertown Streets (Route 16).

B. Population:

As in many suburban towns, Newton's boom period occurred in the 1920s. Population grew by nearly 42 percent between 1920 and 1930, with an average growth rate during the last five years of over 2400 persons per year. This growth came to a sudden halt (at 65,276, 1930) in the early years of the depression, though it picked up in the latter years, and during the war and postwar years large numbers of people again moved into Newton. By 1960 the population had reached 92,384 -- more than twice what it had been in 1915.

With the new limitations on immigration, the number of foreign-born in Newton declined -- from 22 percent in 1920 to 13 percent in 1950. Within this group, the Irish declined further (from 30 to 15 percent), while both the Italians (15 to 18) and English-speaking Canadians (24 to 26) made modest gains. Rowe noted that Thompsonville alone had 120 families of Italian descent.

C. Settlement Pattern:

Suburban expansion continued throughout area with primary development along southern Charles River at Waban and Oak Hill on Quinobequin Road, Dedham, Dudley and Woodward Streets. Affluent district maintained at Chestnut Hill and West Newton Hill with substantial infill along Commonwealth Avenue axis between Newton Centre and Auburndale. Related suburban districts also maintained around Norantum to West Newton and Auburndale with development of Charles River inlets. Civic center relocated to Bulloughs Pond between Newton Centre and Waban (Commonwealth-Walnut) with some municipal activities retained at West Newton. Commercial development retained at Newton Corner, but continuing shift of activity to suburban centers at Newton Highlands, Waban, Auburndale, Newtonville and especially Newton Centre, including strip commercial activity along Route 9 (Boylston Street) between Chestnut Hill and Newton Highlands. Industrial districts maintained at Norantum and Upper Falls at Charles River mill sites, although little expansion of activity. Much of central and southern sections infilled with fringe amenities of country clubs and recuperative hospitals.

D. Economic Base:

Newton's manufacturing base continued to shrink in the face of residential and commercial growth. Old textile firms either moved (Silver Lake to Georgia), or closed (Saxony Worsted). Nevertheless, the period was one of great expansion for numerous small knitting companies. Stone's History of Massachusetts Industries (1930) lists eleven separate concerns, almost all of which were formed in this period. Earnshaw Knitting Company, formed in 1911, was one of the largest, with 600 operatives.

Two concerns in West Newton manufactured novelty curtains, a product which appears to have originated in that village in 1895 (Stone, 900). New England Spun Silk operated plants in Newton (the old Elliot cotton mill) and Brighton (the former Sewall and Day Cordage Works).

Throughout the 1920s, the Saco-Lowell Shops continued to operate. In 1920 the company constructed a modern foundry at Newton, and, with shops in Newton, Lowell, and Biddeford, Maine, was said to be the largest builder of textile machinery in the U.S. The Newton plant employed 1100 men. The closure of the company's Lowell Machine Shop in 1928 only postponed the eventual transference from Newton of company operations to Maine in 1931.

Machine shops -- producing packaging equipment, nailing machines -- accompanied by establishment of a Raytheon unit in Nonantum area from Waltham main plant. Crehore paper mill, with 19th-century methods, continued to operate throughout period.

E. Architecture:

Residential: Intensive residential construction continued through the 1920s with most of Commonwealth Avenue, much of Waban (especially along Quinobequin Road), the northern section of Auburndale and various smaller areas, such as Waban Hill and parts of Chestnut and Oak Hills being built up. With a few exceptions, style choice became more circumscribed and conservative than it had been in the preceding period, with a great many Colonial Revival designs in brick although the taste for the stuccoed surface remained strong and many houses show the continuing influence of the Arts and Crafts movement. Pretentious brick Colonial Revival houses were built along Commonwealth Avenue with smaller but still substantial Craftsman, Colonial, Dutch and Tudor Revival houses and bungalows at Waban, Oak and Waban Hills. Large mansions, most of them either Tudor or Georgian Revival in style, many of them exhibiting very finely-crafted masonry construction, were built at Chestnut Hill. At least a few skillful 17th century Colonial Revival houses were built while other authentic early houses were restored during the period. Many simple single-family houses were built along River, Waltham and Watertown Streets in the 1920s along with a large number of two-family houses; similar construction characterizes much of Nonantum.

Institutional: Many of the city's schools date from this period, most being well-detailed Georgian or Colonial Revival designs in brick. Also dating from this period are a few fire stations (both Georgian and Renaissance Revival designs), the City Hall, a massive Georgian Revival Building (c. 1938) and the Newtonville branch of the Library, a Colonial Revival building with rare Moderne detailing (c. 1938). In addition, many of the brick Collegiate Gothic buildings at Boston College were built during this period.

Commercial: One and two-story commercial buildings in brick and concrete were built in numbers at West Newton, Newton Centre and Newton Corner while smaller neighborhood storeblocks were built at Upper and Lower Falls, the Highlands, Waban and along Commonwealth Avenue. Notable survivors are several small Mission style, stuccoed real estate offices dating from the 20s. Also, a few well-detailed Colonial Revival gas stations with one particularly well-preserved Jenney station at Newton Centre. As is true for the period's residential architecture, Colonial Revival designs predominate but at least one subdued Moderne design, possible dating from the period, is known (Telephone Building, Washington Street).

XI. SURVEY OBSERVATIONS

With the present reawakening of interest in late 19th century architecture, Newton's Colonial and First Period houses may not be fully appreciated and could benefit from further research, especially in light of recent scholarship on First Period and vernacular architecture. Survey updates should note the Williams School (Shepard and Stearns, 1946), an extremely rare local example of Moderne design.

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