ABERJONA RIVER

HISTORICAL BACKGROUND

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For the Town of Winchester's Flood Mitigation Program

Updated 6/25/2016

This purpose of this report was to document historical changes to the Aberjona River in Winchester, Massachusetts, in order to assist ENSR International and later AECOM with the development of a flood-mitigation program and submission of an Environmental Impact Report to the State Office of Environmental Affairs.

As that program has been implemented, this report has been updated to provide further information on individual project sites. Since the program is not yet complete, it may be further updated. Although the program includes three projects in Woburn and Medford, this report is limited to the Winchester section of river.

The maps and photographs used in this report were gleaned from the collections in the Winchester Archival Center and Winchester Engineering Department.

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INTRODUCTION

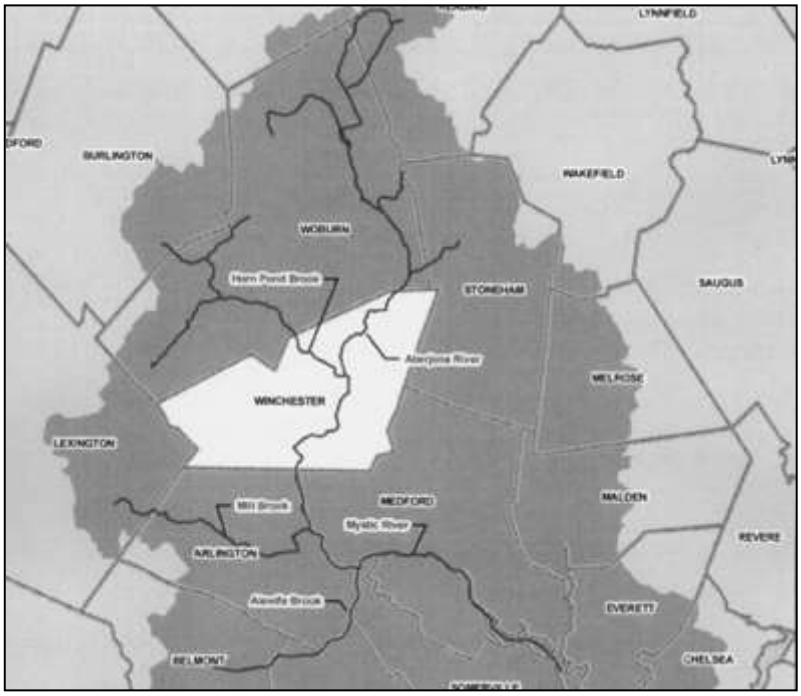
A Changed Course

The Aberjona River as it currently flows through Winchester retains little of its original channel bed and environmental character. As soon as colonists arrived, they began erecting dams, creating mill ponds, and cutting new channels for their mills. Because of this, it can be difficult to tell from historical maps the exact nature of the natural river.

Later, from the 1890s through 1940s, the river was altered due to projects to clean up industrial pollution, to eliminate mosquito- and vermin-ridden swamps and other environmentally caused health problems, and to create a park system based around the river. In fact, the history of the changes to the river during this time period is inseparable from the history of Winchester's park development. Flood prevention was also a consideration and is the major concern today.

The three great river improvement programs of the 1890s, 1910s, and 1930s, along with the field projects of the 1940s and 1960/70s – all of which have defined the current character and course of the river – are summarized on the next pages, with details given later in the report.

In 1957 there was another Waterways Committee, which did another study, however, it resulted primarily in sections of the river simply being dredged.



SUMMARY OF MAJOR RIVER PROGRAMS
& LATER CHANGES TO THEIR DESIGNS PRIOR TO THE CURRENT PROGRAM

1890s MYSTIC VALLEY PARKWAY
Metropolitan Parks Commission, City of Boston, Town of Winchester

Accomplishments
Parkway
Parks: Manchester Field & Ginn Field (not improved until 1930s)

Later Changes
1940s Manchester Field, river, parkway relocated

Historic Designation
Mystic Valley Parkway, National Register, 2006

1910s MILL POND
Winchester Waterways Committee with Herbert Kellaway, landscape architect

Accomplishments
Park: Redesign of Mill Pond area as park
Bridges: Converse and Waterfield bridges
Dam: Center Falls Dam

Historic Designation
Part of Winchester Center Historic District, National Register, 1986

1930s NORTH ABERJONA
Winchester Waterways Committee with Herbert Kellaway, landscape architect

Accomplishments
New or widened and straightened channels, marshes filled, banks firmed
Parks: Shore Road Field
Davidson Park
Washington Street Park
Ponds: unnamed pond ("Pond #1") next to Transfer Station
Davidson Park basin
Leonard Pond (Leonard Field already existed)
Dams: small dams built to maintain level of water in 3 new ponds
Bridge: Washington Street Bridge

Later Changes
1957 little dam for Pond #1 removed
1968-71 Shore Road Field developed for high school,
river channeled underground for high school field
unkn. Pond #1 sold to The Village, unrecognizable as pond

Historic Designations
None

OTHER MAJOR PROJECTS INFLUENCING THE RIVER

1950s RAILROAD ELEVATION (combined with Skillings Road project)
Alterations
Culverts at the Wedgemere train station
Culverts & new Shore Road bridge at Judkins Pond
Tributary from Wedge to Judkins ponds
Judkins Pond (filled further for road)
Railroad bridge downstream of Leonard Pond

1960s- HIGH SCHOOL
1970s *Alterations*
River channeled underground for high school playing field
Shore Road Field used for school building

SUMMARY OF NATURAL VS MANMADE RIVER SECTIONS

BELOW WEDGEMERE
Southern-most channel section covered by Upper Mystic Lake due to dam (1864)

BACON STREET
River location shifted during building of bridge (1874)

MANCHESTER FIELD
Manmade channel from Mystic Avenue footbridge to Waterfield Bridge (1940s). (The natural channel from Manchester Road to below Waterfield Bridge already filled in 1890)

MILL POND
Created by dams (since 1640); outlet at Main Street and Waterfield Road altered by mill owners and improvements of 1914-15

JUDKINS POND
At original site but only a remnant of its former size. (The filled, upper end and adjacent Aberjona Pond were apparently not original but resulted from the dams at Main Street.)

TRIBUTARY FROM WEDGE POND
Straightened, decreasing the length of the channel by approx. 400 feet (1950s)

JUDKINS POND TO SWANTON STREET
Manmade channel: 700 feet of new channel below Swanton Street dug (1932);
At Ciarcia Field, river channeled underground (1968)

SWANTON STREET TO RAILROAD
Manmade pond dug, about 1/3 mile long and five acres in area (1931)

RAILROAD CULVERT
Channel widened on either side (1932)

RAILROAD TO CROSS STREET
Entire channel from the railroad to the Cross Street bridge, a distance of 2,300 feet, was widened and straightened; manmade pond next to Leonard Field dug (1932)

CROSS STREET TO WASHINGTON
Manmade pond, 900-foot new channel dug between Davidson Park and Washington Street (1932)

WASHINGTON STREET TO WOBURN LINE
Double channels eliminated, river rechanneled through Washington St. Park (1934-35)

SUMMARY OF MAJOR CHANGES AT PROJECT SITES

PROJECTS

No.	CDM Project	*EIR Deletions	Status a/o 2016	Date
1	MWRA Siphon		Completed	2007
2	Channel		Completed	2012
3	Center Falls Dam		Completed	2013
4	Mt. Vernon St. Bridge		Designed, funded	
5	Shore Rd. Bridge		Completed	2002
6	Ciarcia Field culvert		In design, funded	
7	Field to Swanton St.	*		
8	Swanton St. Bridge		In design	
9	Swanton to RR bridge	*		
10	RR bridge			
11	RR to Leonard Pond	*		
12	Leonard dam		Completed	2002
13	Cross St. Bridge		Completed	2005
14	Davidson dam	*		
15	Davidson dam 2	*		
16	Park to Washington St.	*		

MYSTIC LAKES TO BACON STREET BRIDGE

From Colonial times this was an industrial site, whose industry and dams affected the course of the river and the environment. The mill dams were also used to set the level of the lake. The major impact on this section of the river was the construction of the Mystic Lakes Dam in 1864, which flowed the natural meadows and spring that were original features of the area and led to the destruction of the mill dam.

River Improvement Project #1
This siphon was part of the North Metropolitan Relief Sewer, built in 1937. The first sewer built in Winchester was the Mystic Valley Sewer, constructed in 1878 to get industrial waste out of the river since the Upper Mystic Lake was, at that time, used as a reservoir for drinking water for Charlestown and Boston. The sewer went from the Lower Mystic Lake up along the railroad, turning off above the center and following the Woburn Branch Railroad, since pollution of the brook was then greater than that of the river.

In 1889 the Legislature ordered the construction of a general system of sewage disposal. The Metropolitan Sewer was completed in 1895. It followed (roughly) the route of the older sewer until reaching the center where it took the direction of the river through northern Winchester. The New Mystic Valley line was built in 1913 and the North Metropolitan line in 1937.

A consequence of allowing the tanneries and factories to connect into the sewer is that, while the water was cleaner, the land next to it became contaminated. The industries were required to exclude solid waste, which meant building settling tanks or basins and collecting waste materials at industrial sites. Over time, the river became polluted again as sometimes the dikes surrounding the settling basins broke, leading to accidental dumping of refuse into the river.

BACON STREET TO WATERFIELD ROAD CHANNEL

River Improvement Project #2
This channel was formerly a winding, swampy stream with islands and with extra channels cut by the railroad and mill owners. During the 19th century it became heavily polluted, leading civic-minded residents to begin a parks movement in the 1890s. Winchester and Boston together removed the industry below the town center, reshaped the upper end of the river, created two parks, Ginn Field and Manchester Field, and built the Mystic Valley Parkway. Today, only the section of channel below Mystic Avenue still adheres to the original parkway design. The section above Mystic Avenue was changed drastically when, in 1946, a new channel was dug parallel to the railroad and Manchester Field was moved and enlarged for the benefit of having a large football field at the base of the McCall School hill.

The parkland adjacent to the river has been owned by the State since the 1890s, since the parks were part of the Mystic Valley Parkway project.

MILL POND

A dam at Main Street has controlled the flow of water to the north ever since the first settler built his mill dam in the 1640s. Until 1911, when the Town purchased the property to continue cleaning and improving the river along the model of Manchester Field, this was a functioning mill site. During the 1910s, assisted by landscape architect Herbert Kellaway, the Town began to improve the area as a civic center with a park surrounding the pond. In 1915 the Waterfield Bridge, Converse Bridge, and Center Falls Dam were constructed, and the course of the river leaving the pond was altered from two channels to one. The Mount Vernon Street Bridge, built in 1872, was left unaltered; however, the course of the river as it approached the bridge narrowed during the late 19th century.

River Improvement Project #3
When Center Falls Dam and the Converse Bridge were constructed in 1915, 30-inch gate valves were installed to allow for the control of the water flowing over the stepped dam and to assist the reduction of flooding.

River Improvement Project #4
Built in 1872, the Mount Vernon Street Bridge is the oldest surviving stone bridge built by the Town. Its design was altered in 1916 by the addition of a concrete parapet to replace the original iron railing, then dilapidated. The bridge was damaged in the flood of 1886 and subsequently repaired.

JUDKINS POND TO WASHINGTON STREET

While in Colonial times only the northernmost section of this channel near Washington Street was industrial, the rest developed as an industrial site during the 19th century. The river was swampy and polluted. At every industrial site the river was lined with settling basins, industrial waste, and/or contaminants. The Judkins Pond/Aberjona Pond area was redone in the 1930s and in the 1950s and 1960s. The river channel from those ponds north to Washington Street was entirely redug during the 1930s, according to Kellaway's recommendations. This project also included the creation of three flood-expansion ponds with dams to control the water height.

JUDKINS POND TO SWANTON STREET

Now the site of the high school and its playing field, this area was originally meadow and had been flowed ever since Edward Converse put the first dam across the river in the 1640s. Judkins Pond stretched from its present location over the entire high school site, and Aberjona Pond was essentially a continuation to the west of the railroad. During Winchester's industrial era, they were both polluted swamps breeding mosquitoes, bordered by dumping grounds. The upper end of Judkins Pond was filled in during the 1910s and 1930s, and Aberjona Pond disappeared in 1968 when the river was channeled through culverts below ground.

River Improvement Project #5
Shore Road Bridge is a relatively recent structure along the Aberjona. During the 1950s, the area was altered when the railroad was elevated and when Skillings Road was created (1955-57), setting a new boundary for Judkins Pond.

River Improvement Project #6.
Before the high school was built, this area was covered by the shallow and marshy Aberjona Pond. In 1968, before the new high school was constructed (1971-72), three parallel pipes were installed to carry the river water underground.

River Improvement Project #7.
The river south of Swanton Street formerly flowed past three successive tanneries until the last burned in 1959. In 1932, a new channel was dug and the old channel filled in. A dam or weir was constructed at the lower end (near Winter Street) to maintain a proper depth of water in the pond above the Swanton Street bridge. It was removed in 1958.

SWANTON STREET TO CROSS STREET

River Improvement Project #8.
Swanton Street Bridge – This 1933 bridge, a single box culvert, was rehabbed in 1996.

River Improvement Project #9.
The channel from Swanton Street to Railroad Bridge was improved by resident Lewis Parkhurst, who bought the land on both sides of this section of the river in 1931, created the recommended pond and cleared, filled, and graded the shores. Then he helped arrange for the freight yard that occupied 11 acres on the west side of the river to be moved to a one-acre parcel southeast of

Summer Street. At that time, the Puffer Manufacturing Co. lay to the east of the river. In 1944, the town purchased the Puffer site for the town dump. The Village now owns the pond.

River Improvement Project #10.
The railroad bridge was built for the Boston and Lowell railroad, which opened in 1835. It was apparently altered during the railroad elevation of the 1950s. It is a double box culvert constructed of stone and blocks.

River Improvement Project #11.
The channel between the railroad bridge and Leonard Pond was widened and straightened in 1932, and Leonard Pond was formed. Over 300,000 sq. ft. of swamp land, in the words of the Park Commissioners, was "reclaimed." The gravel bank next to the field was also removed. At that time, the pond was fed by the river. Because the pond was used for swimming and river water contaminated the pond water, in 1938 a dike was built at the north end of the pond and a dam at the south, and the pond was filled with well water. Leonard Pond was used as a swimming pond through the 1980s. In the early 20th century, the Whitten Gelatin Factory stood on a former tannery site (the Marotta site), and the Parker & Lane coal and wood business lay on the west side of the river. The McLatchy Patent Leather Factory was on its east side, north of the pond.

River Improvement Projects #12 & 15.
The dam below Leonard Pond near Muraco School was constructed in 1932 to control the level of water at Leonard Pond. The ponds at Davidson Park, Leonard Pond, and the pond near the transfer station were all constructed to act as expansion spaces in time of flood. The ponded areas were to be controlled by a series of rapids or dams.

River Improvement Project #13.
A single culvert structure, the Cross Street Bridge was unaltered in the 1930s, except that stone riprap along the channel north and south of the bridge was added (as well as the riprap below the Swanton Street and Washington Street bridges) in 1932. The bridge was rehabbed in 1996.

River Improvement Project #14.
The pond or lagoon at Davidson Park was created in 1932 when 280,000 sq. ft. of swamp area was "reclaimed" and transformed into a park. Two pedestrian bridges were installed.

River Improvement Project #16.
Before the river improvements of the 1930s, the river crossed Washington Street in two branches (the southern called Willow Brook) which joined below the Winn Watch Hand Factory (later McCord Winn). In 1932, 900 ft. of new channel was dug by hand and the old channel filled. The current Washington Street bridge was built in 1934.

HISTORY OF THE RIVER & ITS ENVIRONMENT

ABERJONA RIVER – ENTIRE LENGTH

Pre-Contact Era
The Mystic Lakes and the Aberjona River were doubtless used by Native Americans for transportation and were a gathering area. Artifacts, including projectile points, arrowheads, knife, half grooved axe, woodworking tool, and pestle, have been collected at the Mystic Lakes. Some of these were dated to c. 1400 B.C. and 2500 B.C. by personnel of the Mass. Archaeological Society and Peabody Museum.[1]

The Mystic Lakes were known to 19th-century Winchester residents as a resort for Native Americans, especially since Myopia Hill, west of the lakes, was the habitat of the last squaw sachem to have resided in this area. Natives were known to make yearly visits following her death in 1650 up through the 19th century, passing up from the Mystic Lakes or the Middlesex Canal and camping in the area.[2]

Character of the River

Colonial Era

Edward Johnson described the general area including the Ipswich, Shawsheen, and Mystic rivers in 1641 as being "very full of pleasant springs, and great variety of very good water." He also described the early settlers traveling "through watery swampes ... sometimes ... their feete clambering over the crossed trees which when they missed they sunk into an uncertain bottome in water and wade up to the knees tumbling sometimes higher sometimes lower."[3] The site of Longe Bridge, built over Horn Pond Brook in 1641 (either at its outlet or where it crossed Main Street) was described as "soe boggy that it swallowed up much wood before it could be made passable."[4]

Colonial Flooding
The swampiness was exacerbated by the construction of dams.

- 1640s - Edward Converse built the first dam built along the river within Winchester boundaries at the site of the current Center Falls Dam. It caused the overflow of a meadow upstream owned by Robert Hale. Converse had to pay Hale seven pounds (in money, corn, or cattle) in compensation.[5] Ever since this dam has been a major factor in river overflows upstream.
- A dam in Medford also caused problems within Winchester bounds. In 1658 Zechariah

[1] Betty Bugbee Cusak, *Collector's Luck–Giant steps into Prehistory,* 1968, pp. 40-45.
[2] George Cooke, "Our Aboriginies," *The Winchester Record,* I:273-74.
[3] Edward Johnson, *Wonder-Working Providence* of Sions *Saviour in New England*, London, 1654, pp. 176-77, p. 81.
[4] Woburn Records, Vol. I, p.4 , quoted in *The Winchester Record*, vol. II, p. 426.
[5] Arthur E. Whitney, "The Old Converse Mill, *The Winchester Record*, vol. I, p. 253.

Symmes, who had a 300-acre tract below Converse's land, brought suit against Thomas Broughton and Edward Collins of Medford after they built a dam across the Mystic River in the neighborhood of Alewife Brook that caused the water to so rise upon Symmes' meadow that "his farm was incapable of maintaining his cattle in winter and part of the summer."[6] After a similar suit in 1675 his estate was awarded damages.

- About 1670, Capt. William Symmes built a dam and erected a mill just above where the river now empties into the Mystic Lakes. A second dam for the mills created a mill pond and led to occasional disputes between the owners of the mills at this site and at Mill Pond over the centuries.

Industrial Era

The Middlesex Canal (opened 1803) and more significantly the railroad (1835) led in the industrial era. The railroad crossed the river at three points and cut through the Aberjona Pond. The presence of a river and railroad led to both the river and Horn Pond Brook becoming lined with factories and tanneries.

During the 19th century, the river was marshy and swampy, and the marshes were mosquito- and vermin-ridden. The river was also polluted by industrial waste and by dumping. This was changed by the Town's river improvement programs that extended from the 1890s through the 1930s, as well as by the construction of metropolitan sewers. A consequence of allowing the tanneries and factories to connect into the sewers is that, while the water was cleaner, the land next to it became contaminated. The industries were required to exclude solid waste, which meant building settling tanks or basins and collecting waste materials at industrial sites. Over time, the river became polluted again as sometimes the dikes surrounding the settling basins broke, leading to accidental dumping of refuse into the river.

Sewers: Since Charlestown used the lake as a reservoir during the latter part of the 19th century, Boston had an interest in the quality of the water feeding into it. In 1878 the Boston Water Board completed the Mystic Valley Sewer, constructed to take waste from seven tanneries or factories in Woburn and two in Winchester. It went from the Lower Mystic Lake up along the railroad, turning off above the center and following the Woburn Branch Railroad, since pollution of Horn Pond Brook was then greater than that of the river. Though the sewer relieved the problem in the Upper Mystic Lake, it worsened the water in the lower lake, so in 1881 Boston built purification works at the south end of Winchester. In 1889 the Legislature ordered the construction of a general system of sewage disposal. Completed in 1895, the Metropolitan Sewer followed the route of the older sewer until reaching the center where it took the direction of the river through northern Winchester. The New Mystic Valley line was built in 1913 and the North Metropolitan line in 1937.

[6] Henry Chapman, *History of Winchester*, Winchester, 1936, p. 45. The incident is also recorded in the *Winchester Star*, Oct. 26, 1906.

MAP 1 - 1794

MAP 1 is a composite of 1794 maps of Woburn and Charlestown. While marking the entire course of the river through Winchester, it reveals nothing about the character of the river. It does show how Horn Pond Brook originally bypassed Wedge Pond and emptied into the Aberjona. It also shows the Spring Pond now under the Upper Mystic Lake.

The features pictured include (top to bottom) Horn Pond, Horn Pond Mountain, Winter Pond, Wedge Pond, Spring Pond, and Mystick Ponds.

Caution: Map 2, "Waterfield (now Winchester & Woburn) in 1638," was drawn in 1886 by local historian George Cooke and must not be viewed as a Colonial map. Certain features of the river on his map can be identified as post-1638 man-made changes (which will be noted in the appropriate places). It is better to refer to maps to which Cooke had access (as is done herein), including the 1706 and 1769 Symmes plot plans and 1854 town map.

MAP 2 - "Waterfield 1638" drawn in 1886

ABERJONA RIVER – SECTION BY SECTION

MYSTIC LAKES TO BACON STREET

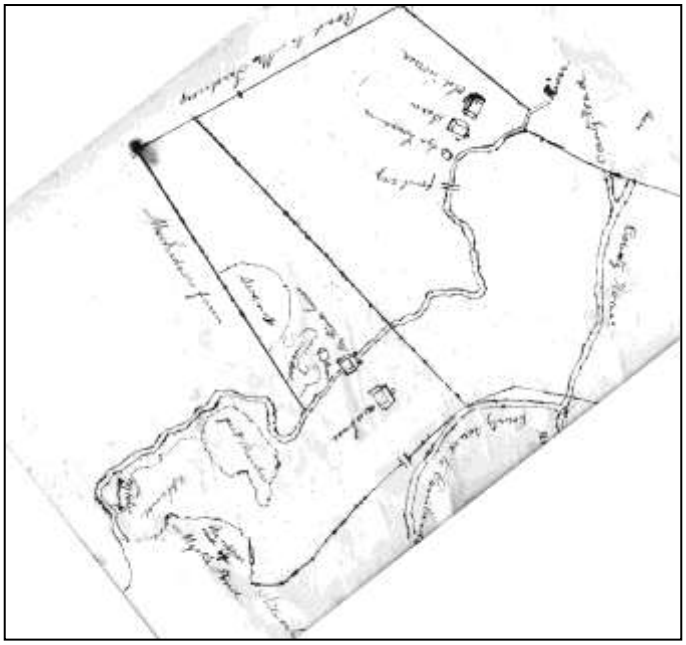
Character of the River and Environmental Conditions Prior to 1864

"The river came down from Whitney's mill, in Winchester [at Mill Pond], and down here, just before you reach the bridge erected by the park commissioners, it divided into two sections, making an island on which these different mills and factories were erected. When they flowed the meadow [after building the Mystic dam] they filled up one of the branches of the river and spoiled a part of the beauty of the place."[7]

Spring Pond: "A little way to the northwest of the winding river a remarkable spring came up out of the meadow…. It is said to have been fifty feet across and thirty feet deep; perhaps the largest spring in this part of the country. It lies now [1936] beneath the water of the Upper Lake, some three hundred feet from the shore at Everett Avenue."[8] This pond was originally located on the Gardner farm, which abutted the Symmes farm (discussed below) to the west (see MAPS 1 and 4).

Changes to Natural Course

Colonial Era
Because industry came early to this section of the river, some of the features shown on surviving maps may be the result of the Symmes/Bacon dam and mills.



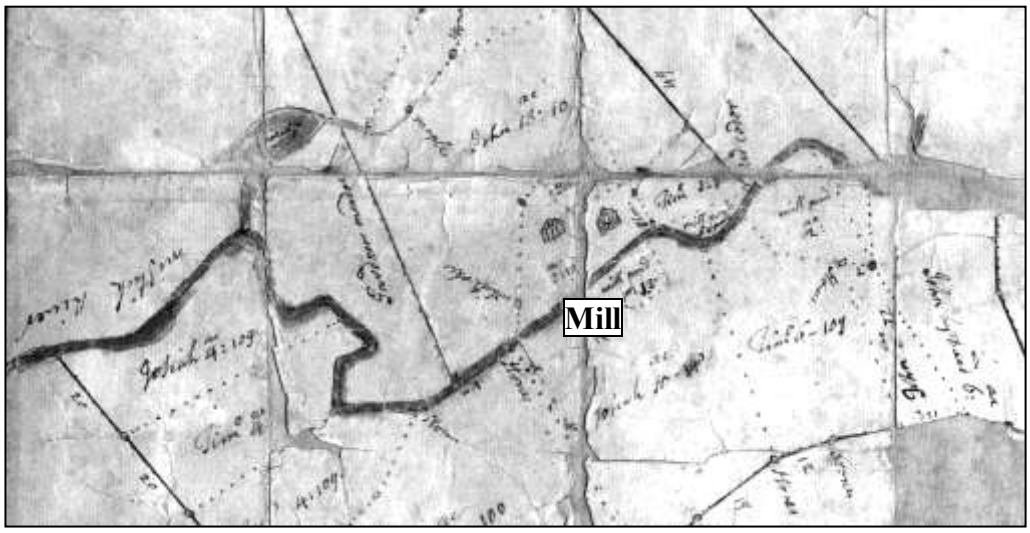
MAP 3 - 1705

Symmes/Bacon Mills & Dams
For nearly two centuries after 1638 the southern-most stretch of the river ran through the Symmes farm, originally a 300-acre tract of land above the pond. The name Symmes River was sometimes applied to that section (see MAP 1). Beginning in 1824, the Bacon family took over the mills, dam, and surrounding property.

During the 1670s Capt. William Symmes put a dam across river (near where the parkway crosses the river) and built a mill. MAP 3, a 1705 plot plan, shows the Symmes River with the "dye house" located at the north end of the Symmes property.

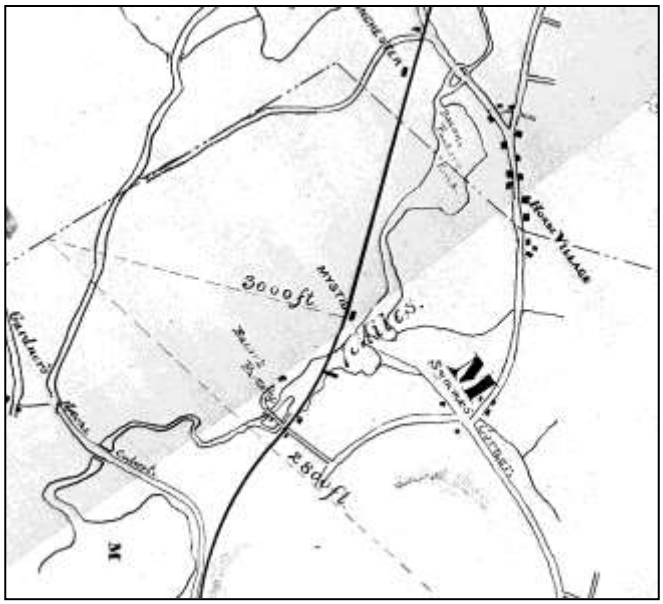
[7] Charles N. Bacon, quoted in *Sunday Herald*, 1900.
[8] Chapman, p. 46.

Later the Symmes family had two mills, rebuilt several times. The dam was relocated to the south. The dams created mill ponds north of the mill (see MAP 4). The mills also affected the stream. When the mills were moved south, they were located on an island in the river. This is the site of "Mr. Paine's House," which straddles the river on the 1705 plan (MAP 6). Whether the island was an original feature is unknown. Waste-ways were created for the mills. An 1873 history of the Symmes family noted in connection with the location of the Symmes fulling mill, "A little island in the small pond, near the railroad bridge shows where the waste-way was."[9]



MAP 4– 1769

When the Symmes dam was rebuilt about 1801, the increased height flowed the land above, leading to a succession of lawsuits with the owner of the mill and meadow just below Main Street. That the dam did affect the river upstream is shown in a railroad map from 1836, MAP 5, which shows the Bacon Factory Pond just below Main St., about where the old dye house use to be. The result of three lawsuits was that the dam was lowered by two feet. The Bacon dam stood and was used to establish lake levels (see below) until 1864, when it was destroyed.



MAP 5 1836, REVISED 1890

[9] John Adams Vinton, *The Symmes Memorial*, Boston: David Clapp & Son, 1873, p. 32

19th-Century

- Middlesex Canal - the Canal, which opened in 1803, went along the east side of the Lake and crossed the Aberjona to the north of the old pond (see MAP 6). The construction of the canal reportedly helped drain a considerable amount of the territory.

- Railroad - In 1835 the railroad embankment was built to carry the track between Bacon's mill and a bridge over his roadway that led down from Grove Street. The train station was originally to the north of the Bacon Street Bridge (see MAP 7).

The southern end of the Aberjona downstream of the Wedgemere train station in 1901.

- Mystic Dam - By an act of March 28, 1861, the city of Charlestown, which needed an additional supply of water, was given the right to take water from Mystic Pond and was also given authority to erect a dam. When the dam was built at the Partings in 1864, the upper pond was raised by six feet and a new upper pond was created. The mouth of the river moved from near Robinson Circle to near Lakeview Terrace. The new upper pond resulted from the river overflowing its former banks. See MAPS 6-7. The area flowed was about 64 acres.[10] See MAP 8.

- Spring Pond covered - The flooding from the dam not only covered meadow, it covered the old Spring Pond (see MAP 1 and 4).

- Mystic Valley Parkway built during the 1890s.

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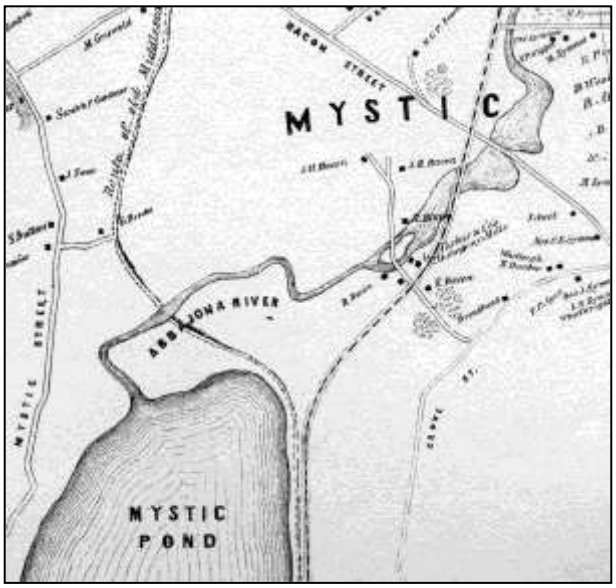
[10] What the level of the enlarged lake should be was the subject of ongoing dispute since it affected also the level of the river and, thus, mill activities along the river. Charlestown had a right to raise the water to a level "not exceeding the level of Bacon's dam, so called."[10] In 1864 the dam was blown up. There was then, apparently, no fixed level for the lake, and it fluctuated according to Charlestown's water use until the lake ceased to be used for drinking water in 1898. Then the lake was reportedly flowed to a higher level, which began several years of contention with the Whitney family who owned and operated a mill on Mill Pond and apparently wanted the level lower than the state did.

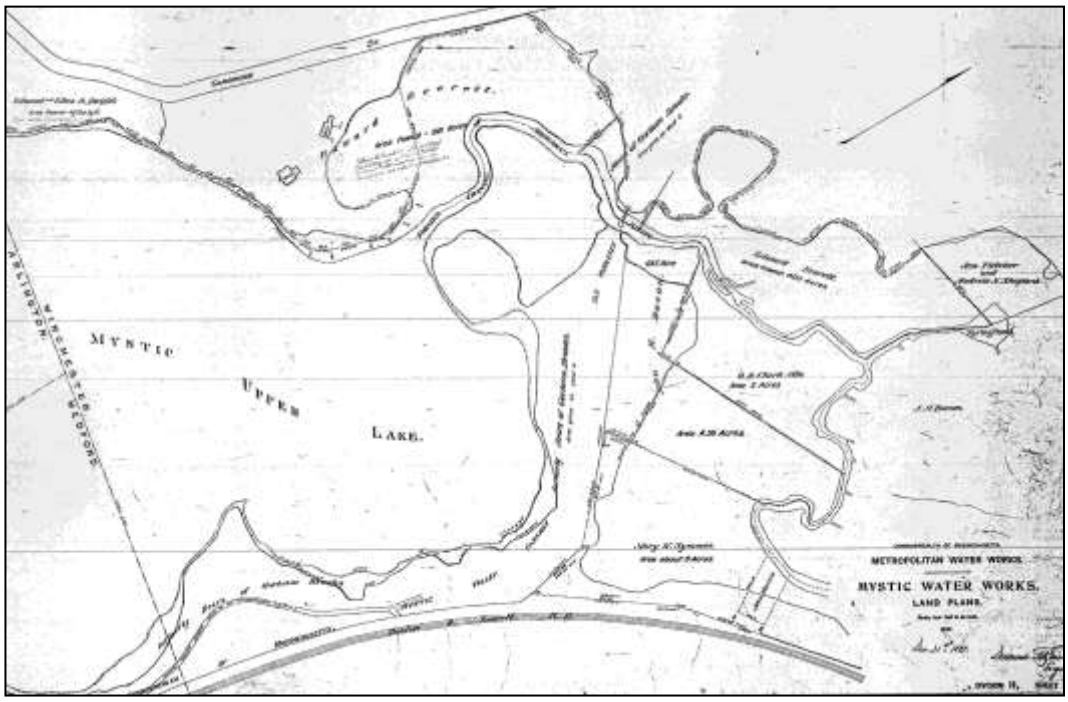
Finally, in 1906, a copper bolt was set into the Aberjona Bridge at the mouth of the river to mark the height agreed upon between the Whitneys and the Metropolitan Water Board at which the river could be maintained without flooding the tail-race of the mill. "Hereafter the Mystic dam can only be maintained at such an elevation as not to flow water above the copper bolt at any part of the lake affected by the dam." The point became moot in 1911 when Whitney sold the mill property to the Town, which demolished the mill.

During the 19th century (dates uncertain), fishways were maintained along the river. That the old Bacon dam interfered with a fishway was one factor in the decision to remove the dam.



MAP 6 - 1854 **MAP 7 - 1875**

The First Map of the Town after Incorporation



MAP 8 – 1897 Showing the original channel of the Aberjona River and the flowage resulting from the construction of the Mystic Dam in 1864

WEDGEMERE STATION TO BACON STREET

Character of the River

19th Century

Maps consistently show the river spreading out into a pond below the bridge.

MAP 9 – 1906

MAP 10 – (Aerial Photo) 2001

The Shu-shu-ga Canoe Club built a clubhouse in the 1880s below Bacon Street Bridge

20th Century

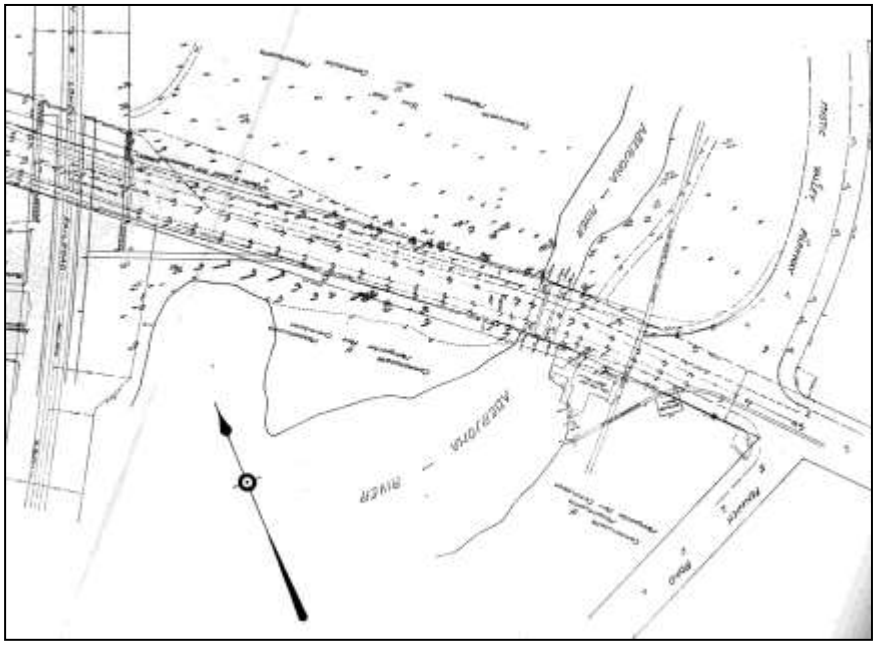
- North Metropolitan Relief Sewer built in 1937 – left siphon jutting into the river near Wedgemere train station.
- 2006 - MWRA filed notice of intent with Conservation Commission to move siphon. Project completed in 2007.

BACON STREET BRIDGE

The first stone bridge to replace wooden bridges at this site was built in 1874. That bridge was formed of three box culverts. Collapsing, it was replaced in 1922 by an arch bridge, designed by Ralph S. Vinal and engineered by J. R. Worcester & Co. That bridge was rehabbed in 1996.

Channel Change:

- 1874 – since the location of the bridge on the street was changed, it was necessary to alter the channel.

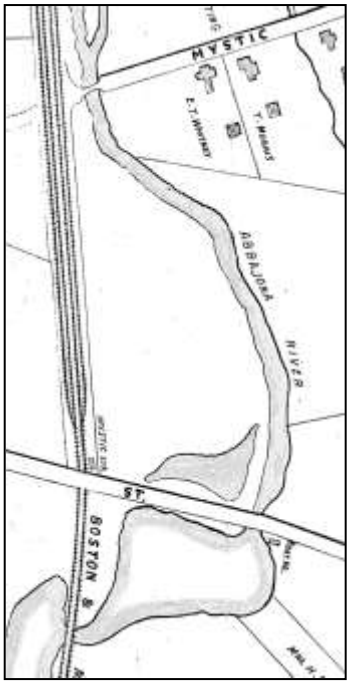


MAP 11 – 1919
Topographical Plan for Bacon Street Bridge Construction

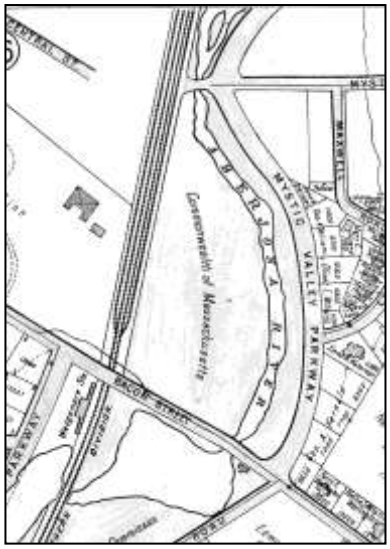
Bacon Street Bridge – 1922

BACON STREET TO WATERFIELD ROAD

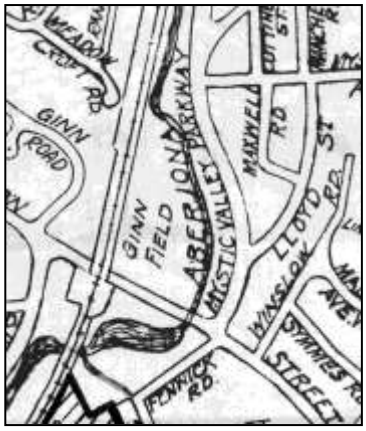
GINN FIELD



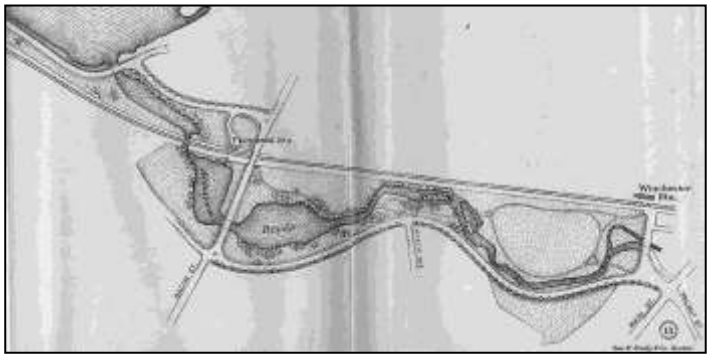
MAP 12 - 1889



MAP 13 - 1906



MAP 14 - 1958



Map 12A – 1895 Olmsted, Olmsted & Eliot design for Mystic Valley Parkway

MAP 12

Character of the River and Environment

The property that became Ginn Field had never been developed.

Late 19th Century[11]
"Beginning at Bacon Street on the westerly side of the river there is a tract containing over an acre, that is below high water mark, part of it is a pool, excepting in very dry weather, and the greater portion of it a marsh or swamp, covered with water in the wet season that becomes stagnant as the season advances, making a home for frogs, turtles, and vermin, and producing a growth of flags, rushes, etc.; when the autumn rains come this tract is over-flowed and all

[11]Brief prepared by Forrest Manchester prepared for the City of Boston water board and city engineer, reprinted in the *Winchester Star*, Feb. 11, 1893.

decaying mater and accumulation are washed into the river and thence to the lake, which is but a few rods below."

At the time Manchester Field was turned into a park, Ginn Field was left largely in its natural state with a shallow pool at the south end of the river bed and growths of grass and weeds catching debris. "Along the banks of the stream are pipes from catch basins in the Parkway, delivering directly into the stream, forming mounds of dirt, with a little stagnant pool behind for the benefit of the mosquito family. A 12-inch pipe is made to partially drain a low area in Ginn field. The shores of the river in this section are clogged with growth and the water in the stream is very shallow. Ginn Field, so called, is an open space that has never been developed into a local playground."[12]

Bacon Street Bridge photographed from upstream in 1928 showing the river expanding into a pool.

Changes From MAP 12 To MAP 13

- 1894 – Park land set aside. While the MPC and Town were acquiring land abutting the river for the parkway and park (see Manchester Field below), Edwin Ginn gave six acres above Bacon Street which he had previously purchased to the MPC. In 1897, Boston ceased to use the Mystic as a water source, "which put a stop to all work here of improving or extending the water supply."[13] The Ginn Field site was left unimproved.

Changes From MAP 13 To MAP 14

- 1938 - Ginn Field was laid out as a playground and three tennis courts were built. The other main project at that time was grading the field, accomplished by the WPA in 1938-40. The work of improving the field also included continuing the road from Manchester Field, building a road leading out to Bacon Street and creating a walk leading from tennis court to train station at Wedgemere, building an 800-foot-long stone retaining wall, and installing 360 feet of drain pipe at the field and more drains in 1942 to carry off water which made roadway impassable in rainy weather. In 1980, the Winchester Historical Commission erected a plaque in Ginn's memory.

Changes from MAP 14 to Today

The channel from the MWRA siphon to the Mystic Avenue footbridge is one of the more natural sections of the river today. It has been impacted by the construction and reconstruction of the railroad, the sewer, Bacon Street Bridge, and grading of the field, but it follows a more natural course than the manmade channel from Mystic Avenue to Waterfield Road. In 2006, the parkway was listed on the National Register of Historic Places.

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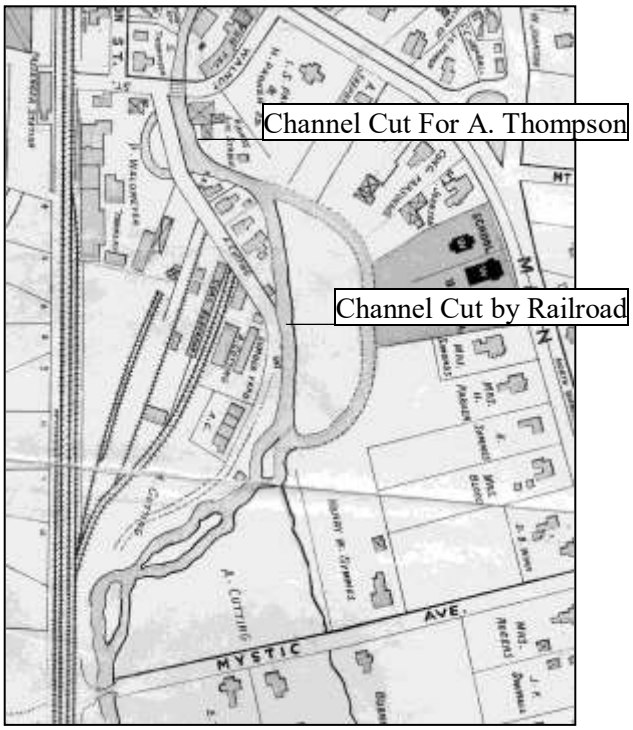
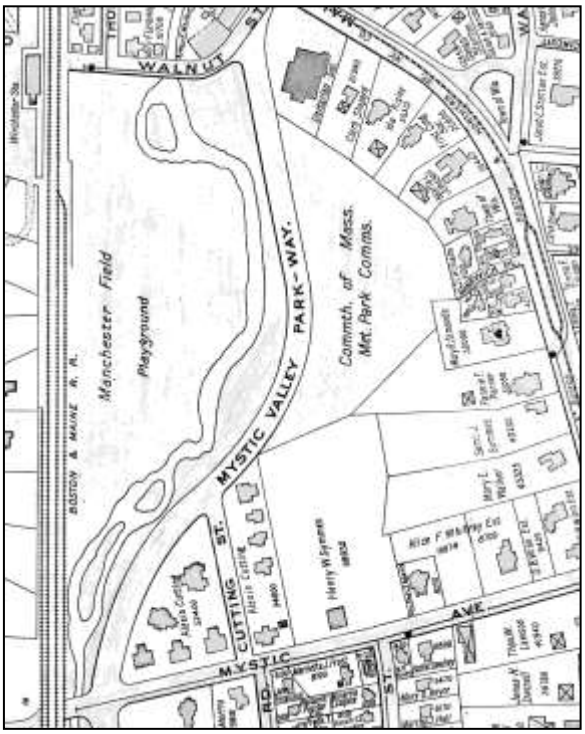
[12] Herbert Kellaway, *Report on the Improvement of Waterways in Winchester, Massachusetts and Related Matters*, Boston: 1928, p. 21.
[13] Report of Park Department in Town of Winchester Annual Report, 1897, p. 156.

MANCHESTER FIELD



MAP 15 - 1889



MAP 16 - 1906

MAPS 14A & 15

Character of the River and Environmental Conditions Pre-1890s

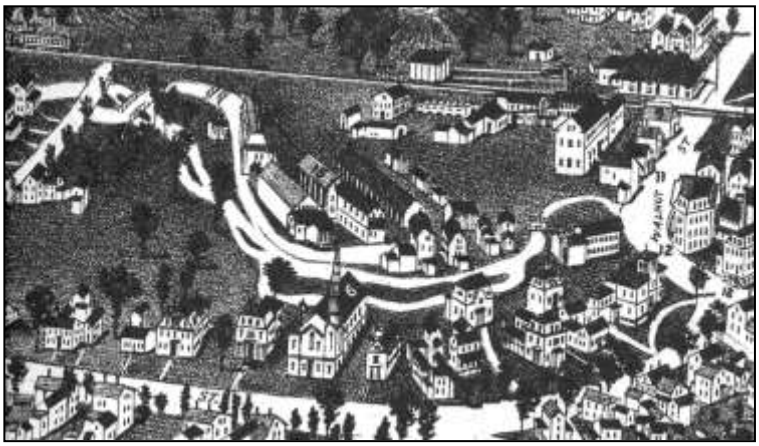
Manmade Channels
Prior to the 1940s, this section of the river was winding, with islands in the stream (see photo p. 19), some possibly created artificially due to the mills. MAP 15 shows the river in two channels just below the bridge and then separating again into two channels east of the lumber and coal yards. According to an 1872 map, the eastern channel at the bridge was cut by H. Parker (owner of abutting land) for A. Thompson and the western channel below had been dug by the railroad.

Underground Channels & Springs
"The geological formation of Winchester is such that a great abundance of fine sand-filtered water is constantly flowing through underground channels into the Aberjona. This is particularly true of the land lying along the river between the center of the town and Mystic Lake. All the old residents remember the depot spring and the big Thompson spring, the latter being situated in Manchester Field, just below the present Walnut Street bridge and quite near the river. This spring was 10 or 12 feet in diameter and "originally supplied the tannery with clear, sweet water of even temperature, large quantities of which were used in the business"[14]

[14] Arthur Whitney, "Plenty of Spring Water on Manchester Field," *Winchester Star*, 1914.

Swamps
"At the northerly end of the tract and lying of the easterly side of the river is another swamp of six acres, filled with decaying vegetable matter and vermin; the water over this whole path becomes stagnant and slimy during the hot months, different kinds of foul scum formed by the action of the sun and heat, covers the water. More or less of this filth is washed into the river through the old channel of the river and by the high water; this is a malarial swamp in every detail and is a standing menace to the health of the community."[15]

Industry:
Between the railroad and river were a tannery covering about 2 acres, coal yard, lumber yard, livery stable, and the railroad freight yard (see Maps 15 and 17). Within a few feet of the banks of the river were nine tenement houses, accommodating about 150 people, as well as pig-pens and outhouses. The tenements were so low that the cellars were below high water mark and the sewage could not get into the Metropolitan sewer.



MAP 17 - 1886

<u>Changes from MAPS 15 & 17 to MAP 16 (See also Map 12A)</u>

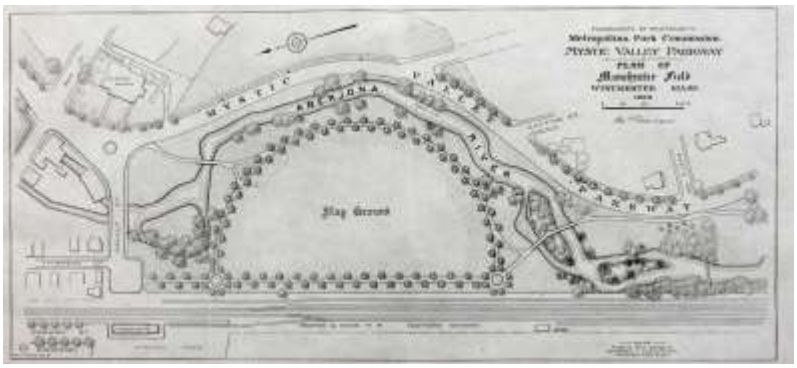
- 1890s - removal of all industry, buildings, freight yard to create a park.
  During the 1890s the park movement came to Winchester and began a river improvement program that continued in stages for a half century. The first park created was Manchester Field (see Map 17a), named for the young lawyer, Forrest C. Manchester, who spearheaded the park movement. Manchester and his colleagues proposed eliminating industry below the Waterfield Bridge in order to eliminate sources of pollution. Because Boston was still using water from the lake, Winchester applied to the Legislature for a special act authorizing it to take that portion of the river and land on either side "to abate all nuisances there existing and to purify and to preserve the purity o said river."

- 1890s – creation of Mystic Valley Parkway. The above plan was expanded to include the creation of a new parkway approaching the Middlesex Fells for the Metropolitan Park Commission (MPC). The act passed, authorizing the MPC to do the land takings between Bacon Street and Walnut Street, for which all three bodies contributed funding. The parkway opened in 1897 (with the extension above Walnut Street opening two years later).

- 1890s - filling and regrading of the ground for the field. When created, this field was a

[15] Manchester brief.

park/playground located between the railroad and the river, as seen in the map, before the river channel was moved in the 1940s. The field was not completed until 1902, having been delayed by the railroad's difficulty finding a new site for its freight yard before moving to Swanton Street. The MPC turned the management of the field over to the town in 1905.



Map 17a

- 1890s - altered waterway. When the parkway was built, the natural river course which curved around the base of the hill where the McCall School now stands was filled in, leaving one channel. Above Mystic Avenue there were still islands in the stream.

- 1901 – landscaping. At Manchester Field, a row of rock maple trees was planted on each side of the path running parallel to the railroad. The trees were cut down when the river was moved in 1946.

- 1910 - spring filled. The Thompson spring was at first left at the field and used for drinking water. In 1910 it was analyzed, found unfit for use, and filled in by the MPC. The Town installed piping for a drinking fountain and for sprinkling.

- 1915 – channel cleanup. Kellaway's 1911 report revealed that the river channel at Manchester Field was shallow because of material washing into the stream, and the original river channel at the Walnut Street bridge was full of refuse and rubbish. Along the shore were many dead eels, and the river was covered with scum at several points. Many street drains emptied into the river. The channels around the islands were almost filled with accumulations of street washings. In 1915 the MPC agreed to clean out, regrade, and improve the shores from Bacon Street to Mill Pond.

View of the southern channel about 1900.

Changes after MAP 16

- 1946 – channel from Mystic Avenue to Waterfield Bridge straightened.
  In the 1940s, the search for a better football field led to the last major alteration in the course of the Aberjona River, the moving and straightening of the channel between Waterfield Road and Mystic Avenue. Football was being played on the Shore Road Field (see Judkins Pond section, below), which was built on a filled-in swamp and could not stand up to the wear and tear. Of the several solutions suggested (against some opposition from those who wished to keep the winding, country-village nature of the river), Town Meeting endorsed Town Engineer Parker Holbrook's proposal to move this section of the river next to the railroad, moving the parkway next to it, and rebuilding a larger Manchester Field in its present location. That project included riprapping the western banks, removing trees, and grading the field.

- 1940s - footbridges other than at foot of Mystic Avenue lost during the straightening.

- post 1946 – change of Post Office park to parking lot.

- 2011-2012 – Project #2 of the Flood Mitigation Program was implemented to widen the channel between the Waterfield Bridge and Mystic Avenue and level the river bed down to Bacon Street.

Photograph taken after the river had been moved but before the parkway had been moved parallel to it.

Photograph (right) of the new channel below the Waterfield Bridge.

Aerial Photos – 1931 & 2001

WINCHESTER CENTER

During the Manchester Field project, some consideration had been given to also improving Mill Pond; however, the latter project was delayed for about fifteen years.

A Waterways Committee created in 1911 hired landscape architect Herbert Kellaway to recommend improvements for the sanitary conditions and appearance of the river. Reporting in 1911, he recognized that "the needed amelioration of the nuisances" above Mill Pond depended on "the treatment of the portion between Walnut Street [Waterfield Road] and Mount Vernon Street." Thus, he at first recommended eliminating the dam at Main Street in order to drain both the Judkins and Aberjona Ponds, "that the waters now covering the large areas find their natural water course in a brook, as it was originally, and that the land be allowed to dry out, harden, and be used as a public open space," a park, with lawns, walks, and a play field.

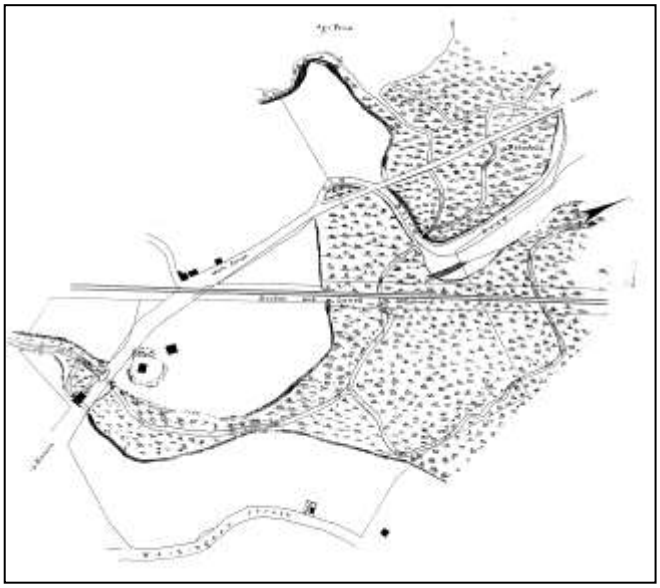
He also envisioned the Mill Pond area as a civic center with the pond as a picturesque park at its center. Kellaway in fact included many park and recreational elements into his plan. Without the dam, he envisioned that "This pond will then become the head of navigation for boats and canoes in summer. It will be possible to skate in winter from this pond to the dam in Upper Mystic Lake." Following the model set by Manchester Field, Kellaway recommended surrounding the river with park land. Further, he also viewed the river as a means of linking parts of the town from the Mystic Lakes through to Woburn.[16]

Approved Plan

In 1914, when Town Meeting voted an appropriation, it was to build a new dam, widen Main Street, build two new bridges, and create a new, single channel for the river. It was also necessary to purchase abutting properties. The project left the Mount Vernon Street Bridge and the Aberjona Pond basically unaltered, though efforts to create a park around Judkins Pond began in the late 1910s.

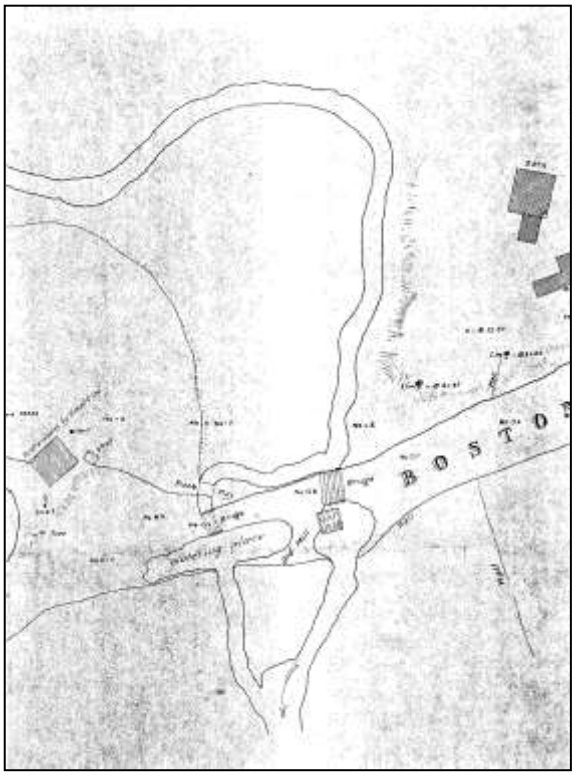
[16] Details of the plan have been chronicled in the Herbert Kellaway issue of the Winchester Historical Society's Architects of Winchester series.

MILL POND

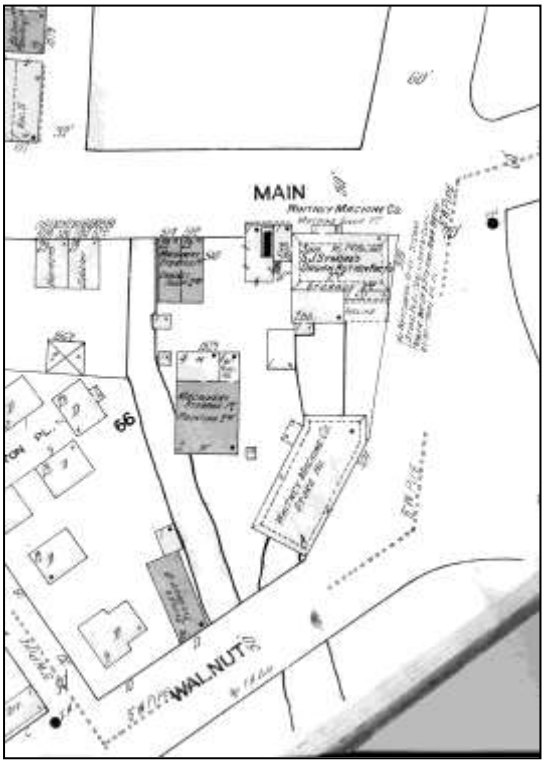


MAP 18 – 1835
Map of the Abel Richardson Farm
now Mill Pond and Winchester's downtown
between Main Street and Washington Street

This map identifies the channel in the lower right as Abbajonna Brook and the channel leading from the center up to Wedge Pond as Cutter Brook. The Mount Vernon Street Bridge is now located at the narrowest point parallel to Washington Street.



MAP 19 – 1836



MAP 20 - 1910

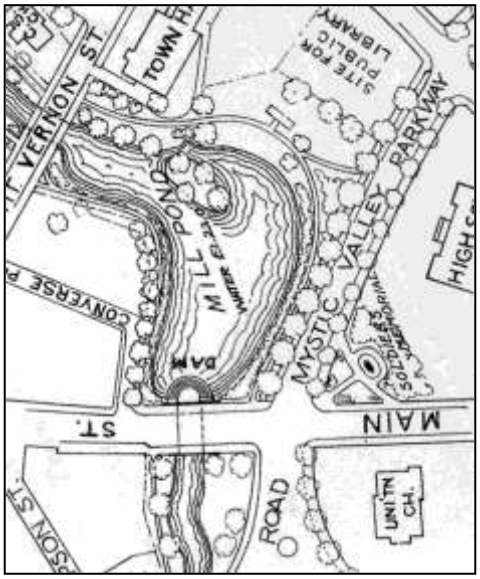
MAPS 19 - 20

Environmental Conditions

Industry
Mill Pond was created to serve a mill and continued as a functioning mill pond through 1911, serving several industries in the 19th century (MAP 20).

Converse Dam
Mill Pond was created by Edward Converse about 1641 and through the 1910s it was a functioning mill pond with mills and their yards occupying the surrounding area.[17]

Former Course of the River
Formerly, the river left the pond in two parts, one being the mill raceway. (For the river entering into the pond, see Mount Vernon Street Bridge below.)



MAP 21 – 1928

From Kellaway's 1928 Plan for river improvements north of Mill Pond.

Changes From MAP 20 to MAP 21 to Today

- 1913 – raceway filled. The raceway, which had been used as a general catchall for rubbish by townspeople, was mostly filled by dumping Town ashes into it.

- 1914-15 – new bridges and dam built (see below), designed by Kellaway.

[17] This was not the only mill pond the town had seen, for one was created by the Bacon dam to the south and another by the Cutter dam on Horn Pond Brook, but it was the first and remains the last.

- 1914-15 – single channel cut leading out from the pond. On Kellaway's recommendation, a new, single channel with firm banks was made between Walnut Street (Waterfield Road) and Main Street.

Above: The Walnut Street bridge, site of the Waterfield Bridge (right). Note condition of banks.

- 1932 – pond dredged and graded. Because the 1914 appropriation was not sufficient to improve the pond itself, Mill Pond was not dredged, graded, or improved until 1932 when it was dredged to an average depth of four feet and the shore riprapped.

- 1938 - dredged and cleaned above Center Falls Dam

- 1962 – Swanton Street to Mill Pond dredged

- 1964 – Mill Pond dredged

- 1966 – underground watering system along the margin of the river from the Mount Vernon Street Bridge to the Main Street Bridge complete to insure adequate water for many trees, shrubs, and ground coverings planted by the Winchester Garden Clubs.

- 1969 – landscaping. Installation of duck feeding station (removed during rehab of Sandy's Island).

- 1970 – reconstruction of east bank of pond.

- 1971 – landscaping. Willows and white birches were planted along both banks of the river, replacing trees removed earlier, and the area was graded and seeded. South end was cleared of heavy underbrush, dead shrubs, and debris.

- 1971 – landscaping. The south end was cleared of heavy underbrush, dead shrubs, and debris. Concrete steps with a wrought iron railing were built into the banking at the end of the path extending from the Mount Vernon Street bridge along the east bank of the pond.

- 1973 – maintenance. Subgrading and riprapping at south end completed

- 1974 – landscaping. South end planted with dogwood trees, azaleas, mountain laurel, rhododendrons, and cherry trees (among others), a gift of the Winchester Garden Club. 400 jonquil bulbs planted around the pond, a gift of the W. Home and Garden Club.

- 1975 – landscaping. About 800 more daffodil bulbs planted.

CONVERSE & WATERFIELD BRIDGES, CENTER FALLS DAM

These three structures were designed by Kellaway and constructed during 1914 and 1915. The Converse Bridge with an arch span of 35 feet, replaced an old stone girder bridge of two openings 70-feet wide.[18]

The dam has six steps, each one foot thick and three feet wide, the total descent being six feet six inches. The semi-circular shape of the dam resulted from the need to meet the required width.

Removing the top step to lower the crest was discussed in the 1950s but not executed. In 1956, the Park Commissioners reported, "We are informed by the State and Town Engineers that the water level by the railroad bridge on the new By-Pass is so high that the frost, during the winter months, might cause this particular area to 'heave.' To correct this trouble it will be necessary during the cold weather to lower the water level in the Mill Pond. It is planned to do this by eliminating entirely the top step of the present dam." Dredging the river was planned, as preparation. As the state was to do this, work was delayed until 1962 when part of the river was dredged. Mill Pond was dredged in 1964. Then a new Aberjona Watershed Committee was formed.

Changes from 1915 to Today

- 1974 – dam restored by The Penetryn System.

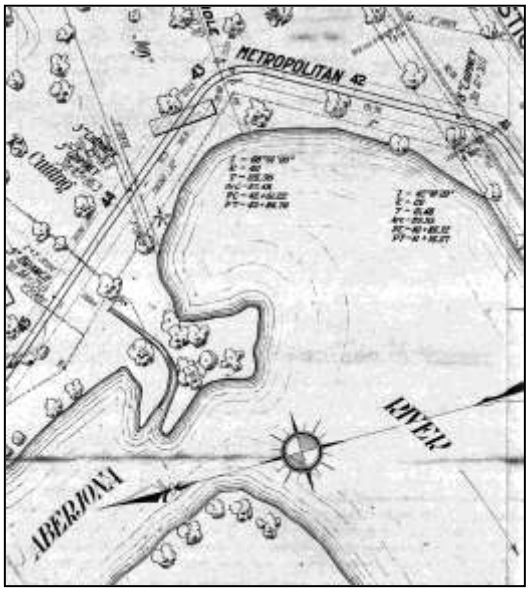
- 2002 – Flood Mitigation Project. One of the 30-inch valves was replaced with a 5-foot valve.

- 2013 – Second valve replaced, designed to accommodate a fish ladder.

[18] The dimensions of the bridges and the dam may be found in the Annual Report for 1914, pp. 101-105.

SANDY'S ISLAND

Not original to the pond, this island developed during the late 19th and early 20th centuries from the deposit of debris at the end of the culvert for an MDC sewer pipe (which may be traced back to the development of the parkway in the 1890s). It was changed from a peninsula to a landscaped island, accessible by a foot bridge, during the late 1910s or 1920s. The island underwent renovations in 1968-69, 1990, and 2001 when it was named for Sandra Rodgers, who planned and financed the new landscaping and bridge.



MAP 22 – 1913

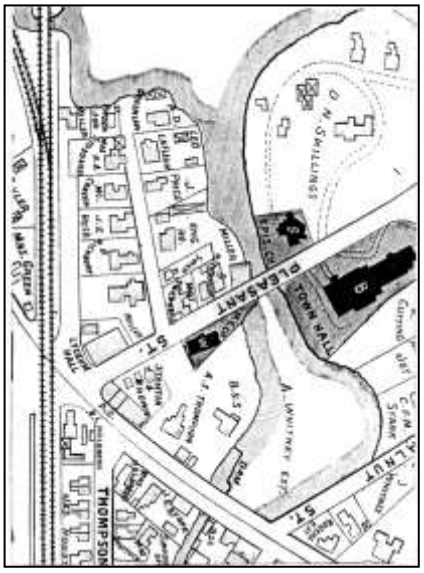
MOUNT VERNON STREET BRIDGE

The first bridge at this site was built in 1845 when the road was created. In 1872 a stone bridge was built when the road was widened. It was designed by Edmond Frost, engineer for the Massachusetts Central Railroad, and built by C. T. Derry and D. H. Edwards of Boston. It was damaged in the flood of 1886, losing its up-stream foundations and a part of its superstructure of long heavy stones, but was subsequently repaired. Despite Kellaway's recommendation to replace this bridge with a new arched bridge, it was never altered, except that in 1916 the dilapidated iron railing was replaced by a concrete parapet designed by Town Engineer James Hinds. In the early 20th century, the new bridge at Main Street was considered to relieve much of the problem at Mill Pond.

CHANNEL ABOVE MOUNT VERNON STREET BRIDGE

MAP 23 - 1875

MAP 24 - 1889
(right)



Changes MAPS 22A & 23 to MAP 24

- 1875-1889 – channel narrowing.
  The width of the river passing under the bridge appears wider in maps before 1889. The narrowing was apparently caused by building projects on the banks. On the eastern side David N. Skillings allowed the Episcopal church in 1884 to build its first building on his property next to the river (now site of Hope Church). In 1885 Henry Miller purchased the western riverside property and subsequently built a building (now the Tedesco Building, pictured right), apparently building into the pond (or the river) at that point (and joining the foundation of his building to that of the bridge). In 1887 Town Hall was built.

Later Changes

- 1962 - the channel from Judkins to Mill Pond was dredged, a Chapter 91 project recommended in 1957.

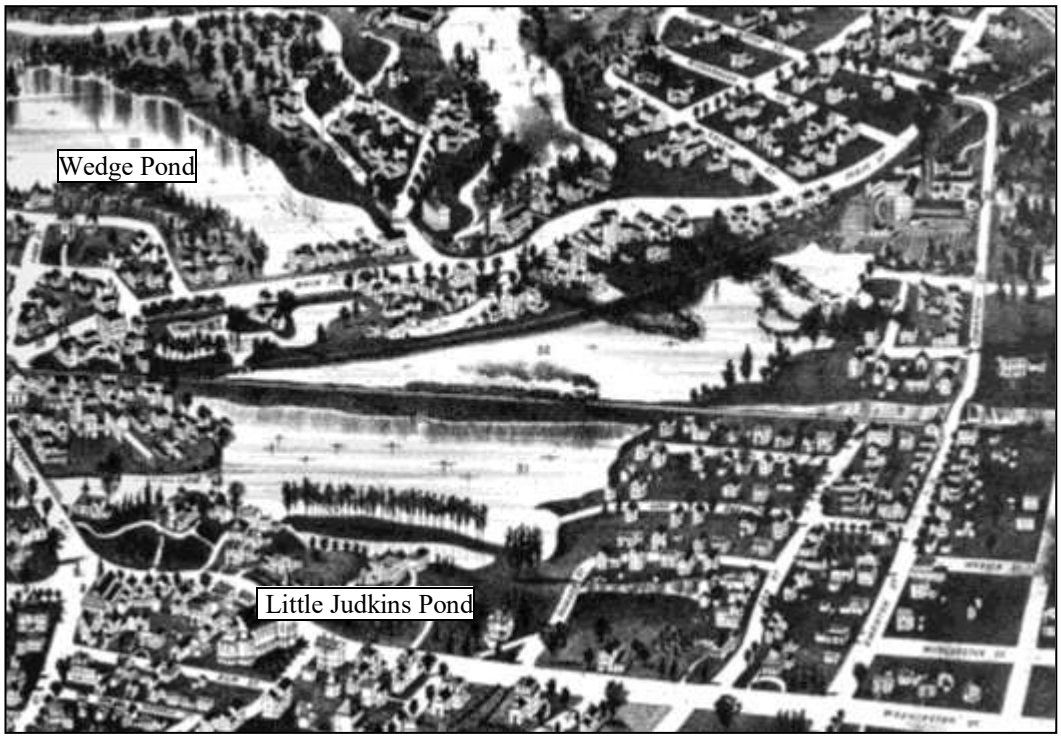
JUDKINS POND TO SWANTON STREET

Environmental Conditions

Colonial Era
During Colonial times this was meadow area which used to be flowed by the seasonal operation of the dam at Mill Pond.

MAP 25 - 1854

MAP 26 – 1906



MAP 27 - 1886

MAPS 25 –27

Industrial Era

By the end of the 19th century, both ponds were polluted swamps. Judkins Pond (aka Black Ball Pond) "is a shallow flowed area, nearly dry in the summer months. … All about the Pond cat tails and other growths hold water in puddles for the propagation of the mosquitoes"[19]

"Judkins Pond…some fifteen acres are covered to a depth estimated at sixty feet, with a liquid of about the consistency and appearance of black bean soup."[20] At the northwest end was an ash dump. In the summer the pond could be nearly dry.

Judkins Pond 1922

Aberjona Pond 1922

[19] Kellaway, 1928, p. 25.
[20] Report of the Waterways Improvement Committee, 1931, p. 229 of the Annual Report.

MAP 28 – 1923 **MAP 29 – 1934**

Changes MAP 26 & 27 to MAP 28

- Judkins Pond: About 1917 a park was begun. Wanting a better connection between the northern portion of the town and the center, the Town filled in around Judkins Pond next to the railroad over the course of several years. Through purchase and gift, it acquired land near Nelson Street for park use.

- Aberjona Pond: In 1911, Kellaway also observed that Aberjona Pond was being gradually filled in with refuse from the Beggs & Cobb tannery.

Aerial Photo of Judkins and Aberjona Ponds 1931 **MAP 30 – 1954**

Changes MAP 28 to MAP 29

Kellaway Recommendations
In 1928, Kellaway recommended that Judkins be excavated and the surrounding area be made into a park, with lawns, walks, and a play field. In both his 1911 and 1928 reports, he viewed the Aberjona Pond site as unsuitable for park land and suggested that it be drained, that a new masonry channel be created for the river, and the area be used for a factory or freight yard.

Judkins Pond:

- 1916 - Little Judkins Pond, a narrow strip of water on the east side of Judkins, was filled in with Town ashes because the Board of Health considered it a nuisance. (See MAP 27)

- 1934 and 1935 - Shore Road Field created. Judkins Pond was dredged and the northern end drained and filled in to create an enclosed field. The mud taken from the pond was used for fill on the new field. Over 28,000 cubic yards of earth were removed and used for filling and surfacing the new athletic field and a large quantity of gravel was trucked in. The 5 3/4 acre field was fenced and named Shore Road Field after Railroad Avenue, renamed Shore Road, was extended to go along the west and north edges of the pond and field. A parking lot was also created. Two rose gardens and a rock garden were planted. Shrubs were planted on both sides of the bridge.

Aberjona Pond and Channel South of Swanton Street

- 1932 – pond cleaned

- 1932 – new channel. 700 feet of new channel below Swanton Street were dug, in which 3,300 cubic yards of earth were removed. The old channel was filled in, and over 20,000 square feet of swamp area were brought up to grade, top-soiled, and seeded. A dam was constructed at the lower end of the new channel in order to maintain a proper depth of water in the pond above the Swanton St. bridge.

- 1933: To define the outline of the pond and furnish means of access to the center, piles of accumulated debris on the town land at the rear of Beggs & Cobbs were removed and the material used to build a road from the northerly end and curving to meeting excavation in the narrow area at the southerly end. A similar road would be developed on the opposite side of the river. "The material excavated from these ponds furnished the chief source of material with which the areas outside the ponds are filled, thus achieving the permanent fill and permanent grades." "Great quantities of mud have been excavated from the area of the proposed pond and this has been dumped back of the roadway, which, being packed down hard, prevents the mud from sliding back into the pond."[21]

- 1934: the freight yard was moved from north of Swanton Street to a 1-acre parcel to the southeast of Summer Street. Board of Health's 1934 report says it had that year shifted the public dump to "a location in the triangle formed by the main line and the Woburn

[21] *Winchester Star*, Feb. 1933.

loop of the railroad." This is where the Aberjona Pond was. The Winchester Star of Feb. 6, 1934 says the town dump had been transferred to the end of Summer Street.

- 1939: The Town's annual report stated "…it has been possible to extend the dump along the tracks on the east side of the river. This location will be completely filled in another six months and dumping then will be carried out on the west side of the river near the Woburn loop."

- 1949: The Town having purchased the Puffer Manufacturing Co. off Swanton Street for the new dump, the dump off of Swanton and Summer Streets on the Site had been completely filled on both sides of the Aberjona River.

Changes from MAP 29 to MAP 30 To Today

Judkins Pond/Shore Road/ Skillings Road

- 1940s – field changed to park. Kellaway had predicted in 1911 that, without removing the dam and draining the area, filling deposited on the soft mud there would probably sink and require refilling. Such proved to be the case. Football games annually ruined the field, and the eventual solution was to enlarge Manchester Field by moving the river in the 1940s.

- 1954-57 – pond further shrunk. Judkins Pond was further shrunk and the park enlarged when the railroad was elevated and Skillings Road was created, setting a new northern boundary for the pond. A strip of the pond area, approximately 500 feet by 150 feet along the shore line, was filled and the road constructed.

- 1954-57 – new culverts. The above project also included the replacement and reconstruction of the culverts at Shore Road, the railroad, and the Woburn Loop.

- 1957 – weir or dam at Winter Street removed to address complaints of flooded cellars in the Winter Street area during times of high water.

- Early 1960s – field compacted. The area north of the road was compacted and reinforced as a playing field.

- 1971-72 – high school built.

- 1973 – landscaping. 1,200 daffodil and jonquil bulbs planted in drifts around the periphery of Judkins Pond.

- 1975 – landscaping. About 800 more daffodils planted.

- 2002 – Flood Mitigation Project. Culvert added to Shore Road Bridge to increase hydraulic capacity.

Tributary

- 1954-57 – tributary straightened. Prior to the 1950s, a pond existed along the connection

between Wedge Pond and the river between the Woburn Loop and Main Street. This pond was called Aberjona Pond or Stanton Pond on some maps. The channel took a bend south and then back to the railroad culvert. During the 1954-57 railroad elevation, the tributary channel from Wedge Pond was straightened. This decreased the length of the channel by approx. 400 feet and the water surface of storage area by about 75,000 sq. ft.[22]

Aberjona Pond & Channel South of Swanton St.

- 1962 – channel dredged. The channel from Skillings Road culvert to Swanton Street dredged by Town in an effort alleviate the flooding in the low areas in the Winter Street area. The channel adjacent to Skillings Road near the Shore Road culvert was also deepened.

- 1968 – three parallel 7-foot diameter culverts, each about 1,250 feet long, were installed to carry the river water underground.

- 1971 – field began use as high-school field.

New Shore Road and Railroad Culverts 1950s

Aerial View of the Judkins/Aberjona Pond Area after high school construction

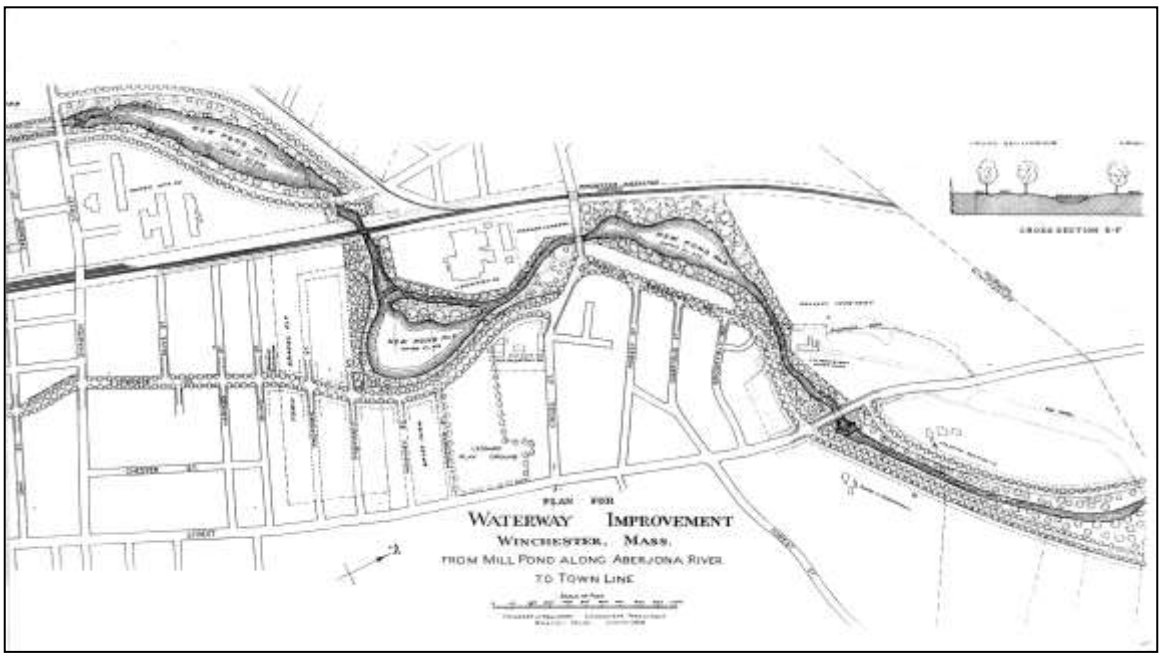
[22] Fay, Spofford & Thorndike, Inc. Preliminary Investigation of the Flooding of the Aberjona River in the Center of Winchester, April, 1963.

ABERJONA POND TO WASHINGTON STREET

During the 1930s the channel upstream of the Aberjona Pond was rechanneled, section by section, as ERA and WPA projects. The projects were based on recommendations by Herbert Kellaway, published in 1928. In the Kellaway plan, three ponds for flood expansion were to be created, bordered by solid land and green grassy banks and connected by new channels.

The rechanneling was designed to eliminate the mosquito problem by draining the marshes. The Town consulted the State Reclamation Board during these projects.

At that time, the entire northern section of the river was lined with industries. While the 1930s improvements did not remove any industries (unlike the earlier Manchester Field and Mill Pond projects), they did create new park and recreational areas along the river.



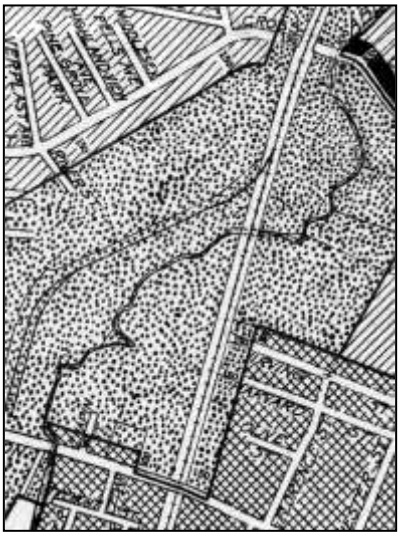
MAP 31– 1928
Kellaway Plan for Flood Expansion Ponds

SWANTON STREET BRIDGE

In 1933 a new single-span steel and concrete bridge was built, replacing the 1874 stone bridge. It was rehabbed in 1996.

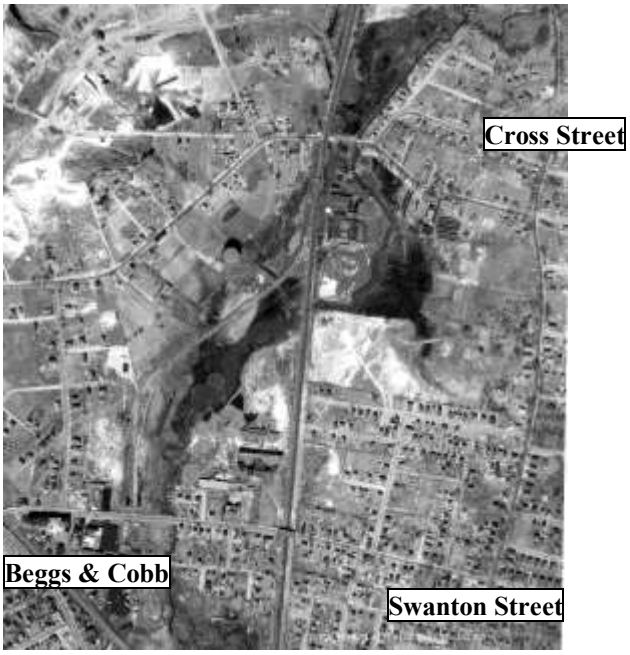
SWANTON STREET TO CROSS STREET

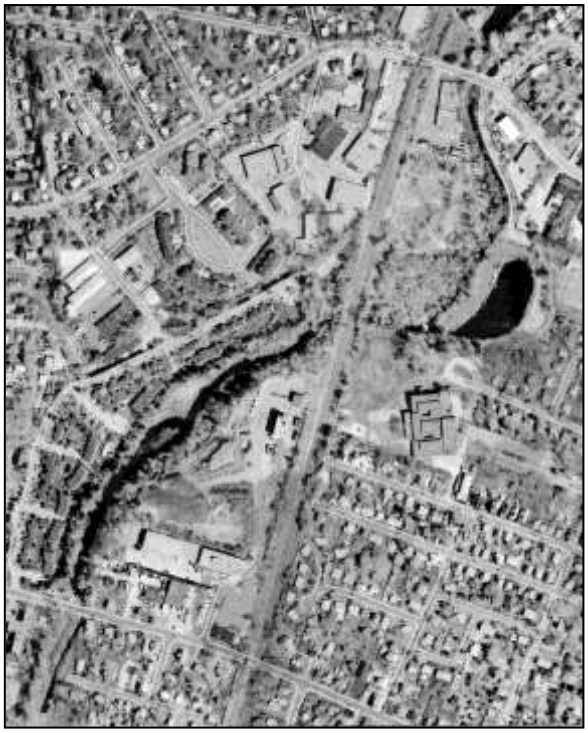
MAP 32 1875



MAP 33– 1923

MAP 34 1934





Aerial Photographs 1931 and 2001
From Swanton Street to Cross Street, showing the sites of Kellaway's Ponds #1 & #2.

MAPS 32– 33

Environmental Conditions

Industrial Era

"For years the stream had been flowing…in a zigzag course, changing this way and that, until the whole area was permeated with sewage and debris… a home of snakes and turtles, every foot of it a breeding place for mosquitoes. … One could not go across this land without sinking into mud from two to six feet deep."[23]

Looking South toward Swanton Street before improvement

Changes MAP 33to MAP 34

- 1931 – Pond #1 created. With the advent of the Great Depression, fearing that the Kellaway plan might not be implemented, philanthropist Lewis Parkhurst decided to buy a section of the river and improve it according to the Kellaway plan himself. In 1931 he purchased eight acres of swamp land bordering the river from Swanton Street up to the railroad tracks, east of the Puffer Manufacturing Company (site of the transfer station). He created a pond about 1/3 mile long and about five acres in area (Kellaway's Pond #1) and cleared, filled, and graded the shores. Material dredged from the area was removed to fill the rest in order to have, in the end, either water or dry land. This area now lies between the Town Transfer Station and The Village.

[23] Lewis Parkhurst, Recollections, typescript, n.d., p. 128.

Railroad Bridge

In 1932, the channel on either side of the railroad was widened and the shores compacted, just as was done to the channel all the way to Washington Street.

This photo shows the channel leading from the bridge up to the new Leonard pond.

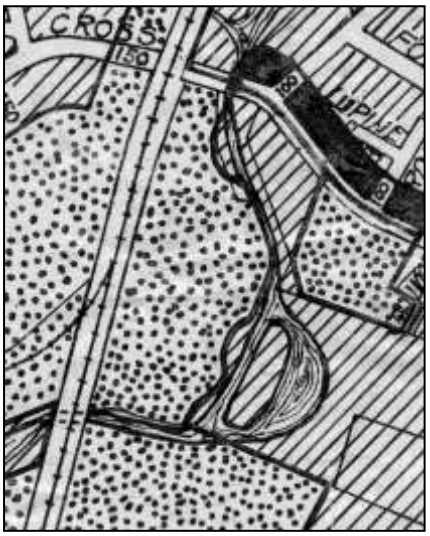
For comparison with the contemporary photo of the railroad bridge near Muraco School (below), this picture (left) of an original railroad bridge at Shore Road is shown. This bridge was demolished in 1934. The surviving bridge was altered during the 1954-57 elevation of the railroad

- 1964 – river cleaned along the back of Leonard Pool to the B&M railroad tracks (also from Davidson Park to Woburn line)

LEONARD POND

MAP 35– 1906

MAP 36– 1923



MAP 37 1934

MAPS 35-36

Site of Leonard Pond 1932

Environmental Conditions

Industrial Era
Before 1932, the area between Leonard Field and the river was a low, wet, swamp with the river channel, partly filled in places, winding through it. The bottom was sand or gravel. Though a "pond" prior to the creation of Leonard Pond appears on a couple of maps (e.g. MAP 35) it is absent on others.

The area was polluted. Across the river, the J. O. Whitten Co. Gelatin Works was "dumping sludge refuse upon their property, near the margin of the stream." Located at 50 Cross St., the McLetchy Japanning Factory, was "also dumping wastes upon the low, wet areas."[24]

Leonard Field to the east of the river opened in 1921.

[24] Kellaway, 1928, p. 36.

Area west of Leonard Field prior to improvement, 1932

Although MAPS 36-37 do not show the industries, they remained after the 1930s river improvement project. (See Appendix I for a summary of all riverside industries.)

Changes MAP 36 to MAP 37 to TODAY

Leonard Pond

- 1932 – pond #2 created. In 1932, the town turned its attention to the river above and below the Parkhurst segment and put 275 men to work filling swamps, rechanneling the river, and making parks. The Park Commissioners wrote in 1932 that "In place of swamp lands and mosquito-breeding marshes, there will be attractive self-draining park lands, with ponds that will be suitable for bathing and canoeing in summer and skating in winter." Though this did not prove to be the case, the entire character of the river was changed.

The pond was excavated, over 8,000 cubic yards of earth being taken out. Over 300,000 sq. ft. of swamp land was "reclaimed" (again using the Park Commission's terminology). The steep bank at the rear of the field was graded so as to give a gradual slope to the shores of the new pond. Gravel from the bank (shown above) was used to fill in the swamp below. A second dam was built near the railroad tracks to ensure the proper depth of water in this pond and another pond north of Cross Street.

- 1933 – beach completed.
- 1935 - beach closed. The metropolitan sewer frequently overflowed into the river, which originally fed the pool. The state Board of Health closed the pool.

- 1938 – pond made independent of the river. At the upper end, the river was shut off from the swimming basin by an earthen dike. At the lower end of the basin, a concrete dam was built.

The dam and the new channel below Leonard Pool in 1932.

The beach, with Whitten Gelatin in the background

The swimming area was cleaned out by pumping out the water, removing two to four feet of sewerage sludge and mud, and spreading out clean sand. Water was then pumped in from a well which had been driven to a depth of 81 feet. In 1939, the park commissioners reported, "though the river was entirely dry the well kept the swimming pool filled all summer. Had it not been for the well the beach could not have been kept open after the second week in June."

- 1940 - a row of maple trees was planted along the river bank
- 1945 – 3 new wells dug
- 1950 - 3 new wells and pump
- 1953 – pool closed due to pollution, apparently from the state sewer line
- 1954 – additional wells dug away from sewer line
- 1963 - pond dredged
- 1964 – repair and cleaning of artesian wells, extension of the retaining wall – 60' on island side of pond, installed three cement steps from the water's edge to the island.
- 1968 – wells cleaned and water pump overhauled
- 1969 –landscaping. 100 feet of 5-foot chain link fence installed; retaining wall extended.
- 1974 – maintenance. Pond drained, dredged, and bottom covered with heavy layer of fresh, clean sand. At the south end of the beach a new dam was built. Retaining wall along the west side of the beach repaired and reinforced. New water pump in operation.
- 1974 – Landscaping. Along the river a row of black pine trees planted. Lawnable area

around the beach graded and seeded.

- 1974 – six new wells dug at Davidson Park area for Leonard Pond
- 1986 - pool was pumped dry, cleaned, and provided with new sand; reportedly it had the "clearest water in many years."
- 1990s – pond closed for swimming

Channel

- 1932 – channel straightened and widened. The channel from the railroad north to the Cross Street bridge, a distance of 2,300 feet, was widened and straightened. 5,000 cubic yards of earth were removed in this operation.
- 1940 – landscaping. A row of maple trees was planted along the river bank.
- 2002 – Flood Mitigation Project. Dam below pond removed.

CROSS STREET BRIDGE

The Cross Street bridge was entirely reconstructed in 1914.[25] It was not altered during the waterways improvements of the 1930s, though stone riprapping was added to the banks above and below the bridge.

Cross Street Bridge in 1932

Changes

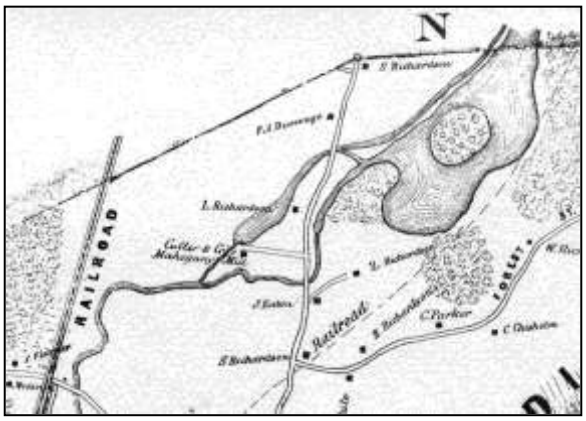
- 1996 - bridge rehabbed
- 2005 – bypass culvert added as part of the Flood Mitigation program.

Former River Conditions

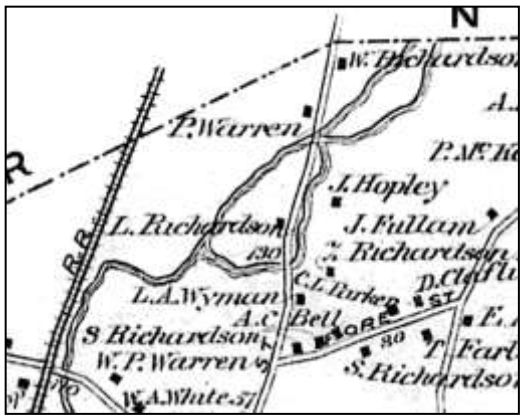
As reported in 1894, the water south of the bridge was quite deep and used to be called "deep hole."[26] It was a popular place for swimming fifty years earlier.

[25] For dimensions of the bridge, see the Selectmen's Annual Report of 1914.
[26] N. A. Richardson, "Interesting Reminiscences of the Long Ago," *Winchester Star*, July 25, 1894.

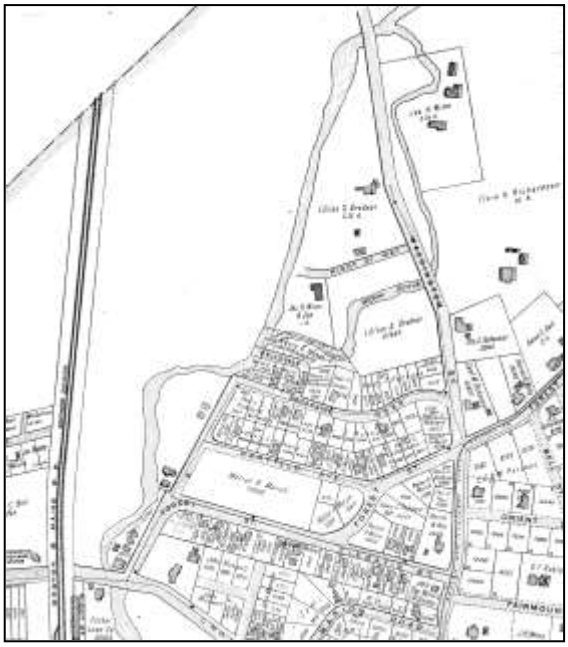
CROSS STREET TO WASHINGTON STREET



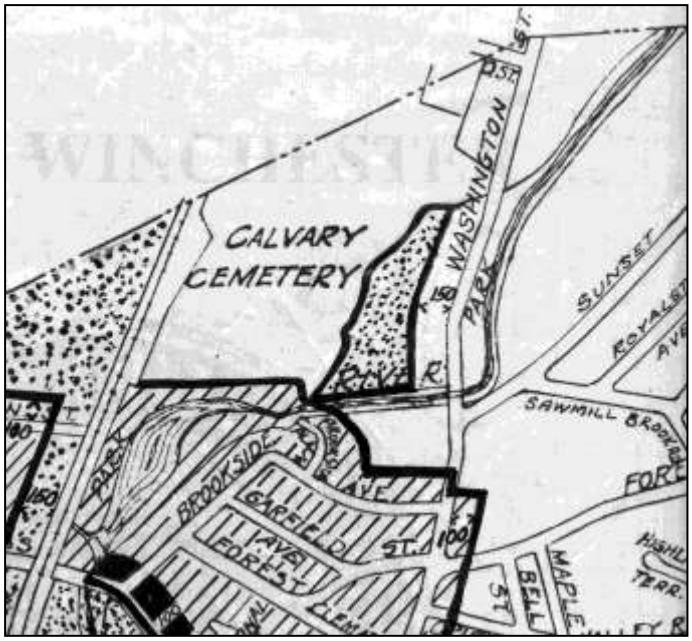
MAP 39 - 1854



MAP 40 – 1875



MAP 41 – 1906



MAP 42 - 1954

CROSS STREET CHANNEL

Area above Cross Street staked for new channel

Riprapped channel near Cross Street Bridge

New Channel near Cross Street

DAVIDSON PARK - *Pond #3*

Environmental Conditions

Industrial Era
In 1928, one side of the river was a built-up neighborhood. The other side was another swampy area "or clogged pond that acts as a storage area in time of flood but gives another good home for the mosquito tribe."[27]

Changes MAP 41to MAP 42

- 1932 - Pond 3 created. In the Park Commissioners words, "some 280,000 square feet of swamp area were reclaimed" and transformed into a park. The pond there was created as another of Kellaway's flood expansion areas.

- 1938 – Cross Street lowered. Another factor in flooding in this area was the increase in the clearance of the railroad bridge. The B&M railroad and the Town agreed to lower the level of Cross Street by 10 ½ inches and B&M to raise the level of its tracks by 10 ½ inches.

- 1964 – cleaning. River cleaned from Davidson Park to Woburn line (also along the back of Leonard Pool to the B&M railroad tracks).

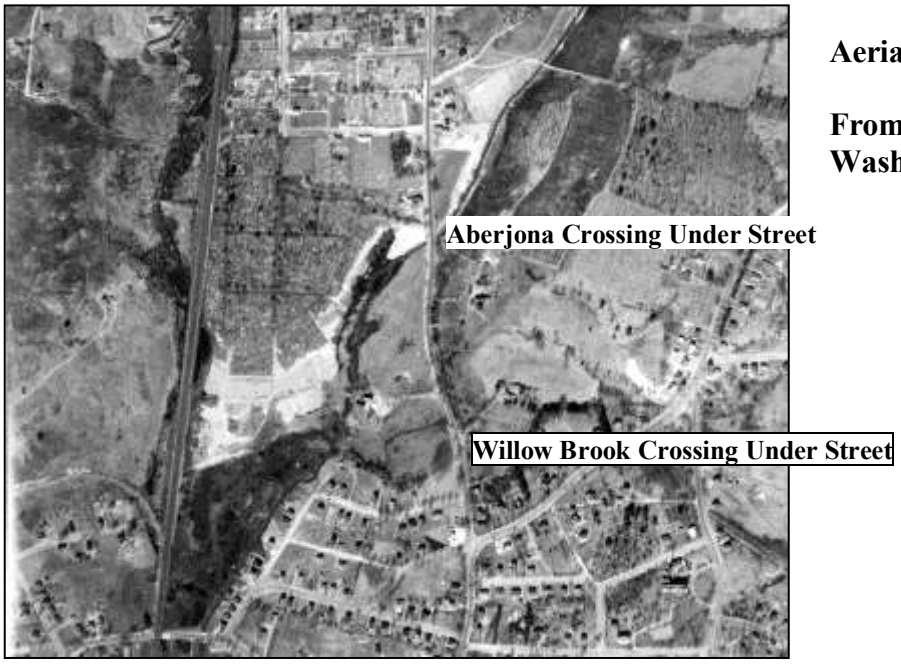
- 1968 – maintenance. An appropriation was voted appropriation for dredging, filling, and shaping the river channel and grading and finishing of filled areas along the river bank. Dams at Cross Street and park repaired and cement retaining walls repointed

- 1971 – reconstruction. Some reconstruction of the park included rebuilding the two bridges; dredging, filling, and shaping the river channel and grading and finishing of filled areas along the river bank; and planting willows and white birches along the banks of the river

- 1975 – maintenance. Two new footbridges installed.

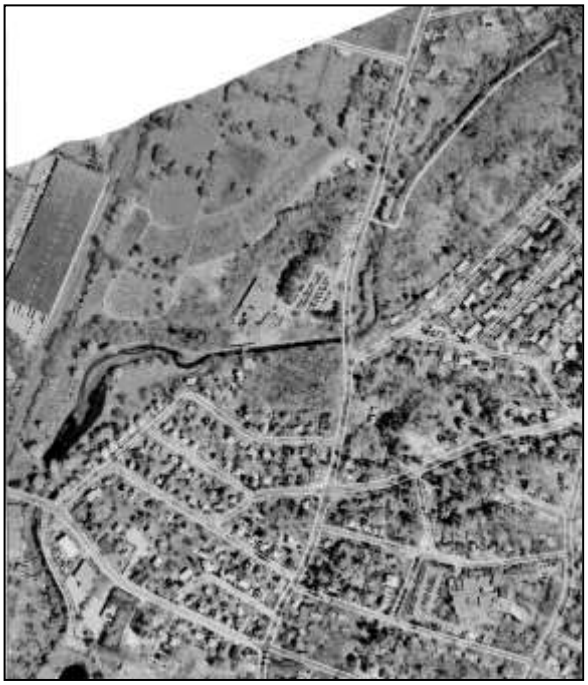
[27] Kellaway, 1928, p. 36.

WASHINGTON STREET AREA



Aerial Photo 1931

From Cross Street to Washington Street



Aerial Photo 2001

MAPS 39 - 40

Environmental Conditions

Colonial Era
Jeduthan Richardson (1738-1815) created an island in the river near the Woburn line after getting permission from the legislature to dig a canal to divert the waters of the river and get better power for a gristmill which he built (prior to 1794) and operated at the site of the later Winn Watch Hand Factory. The western branch turned the mill stones. The eastern branch of the river was called Willow Brook.

Sawmill Brook formerly flowed down from the location of the North Reservoir, crossed Forest St., and discharged its waters into Aberjona.

Industrial Era
1928: "The Aberjona River meanders at the rear of a well-built neighborhood, fronting upon Forest Street and Brookside Avenue. The other side of the brook is another swampy area or clogged pond that acts as a storage area in time of flood but gives another good home for the mosquito tribe."[28]

Changes MAP 41 to MAP 42

Before and After Rechanneling

- 1932 – new channel. Between Davidson Park and Washington Street, a 900-foot new channel was dug by hand and the old channel filled. 20,000 cubic yards of earth were remove and used, in part, to fill the old channel and bring the swamp land up to grade. Two dams were constructed, one just above the pond near the Winn Watch Hand factory and the other at Washington Street.

- 1934-35 – river rechanneled through Washington Street Park, crossing under street north of old Willow Brook channel. Old channels filled in.

[28] Kellaway, 1928, p. 36.

- 1935 - the entire area just below the Watch Hand factory was regraded and loamed.
- 1936 - both banks of the river from Washington Street to the dam below the Watch Hand factory were sodded to prevent washout of the banks.
- 1964 – river cleaned to Woburn line (and as far south as railroad bridge).

WASHINGTON STREET BRIDGE

The existing bridge was built in 1934. Work included the construction of a new channel, dam, and the North Washington Street Park (see Appendix II). At this bridge, as well as the Cross and Swanton street bridges, stone riprap was laid along the channel.

New 1930s rapids

New bridge photographed in 1936

TO THE WOBURN LINE

Environmental Conditions

This area was formerly used as a cranberry meadow, storage pond, and canal for diverting the waters as the owners desired.

Industrial Era
"Above the cranberry bog the land is low, with a dug canal overflowing at spots into the original Aberjona River bed. Beyond the town line is the Atlantic Gelatin Company Works, with its large area of settling beds and piles of waste material. This deposit must have accumulated for years; the whole hillside and low-dyked areas are covered with the lime-colored, sticky mess. The land appears to be saturated and evidently seeps into the Aberjona River and is washed out in time of heavy rain."[29]

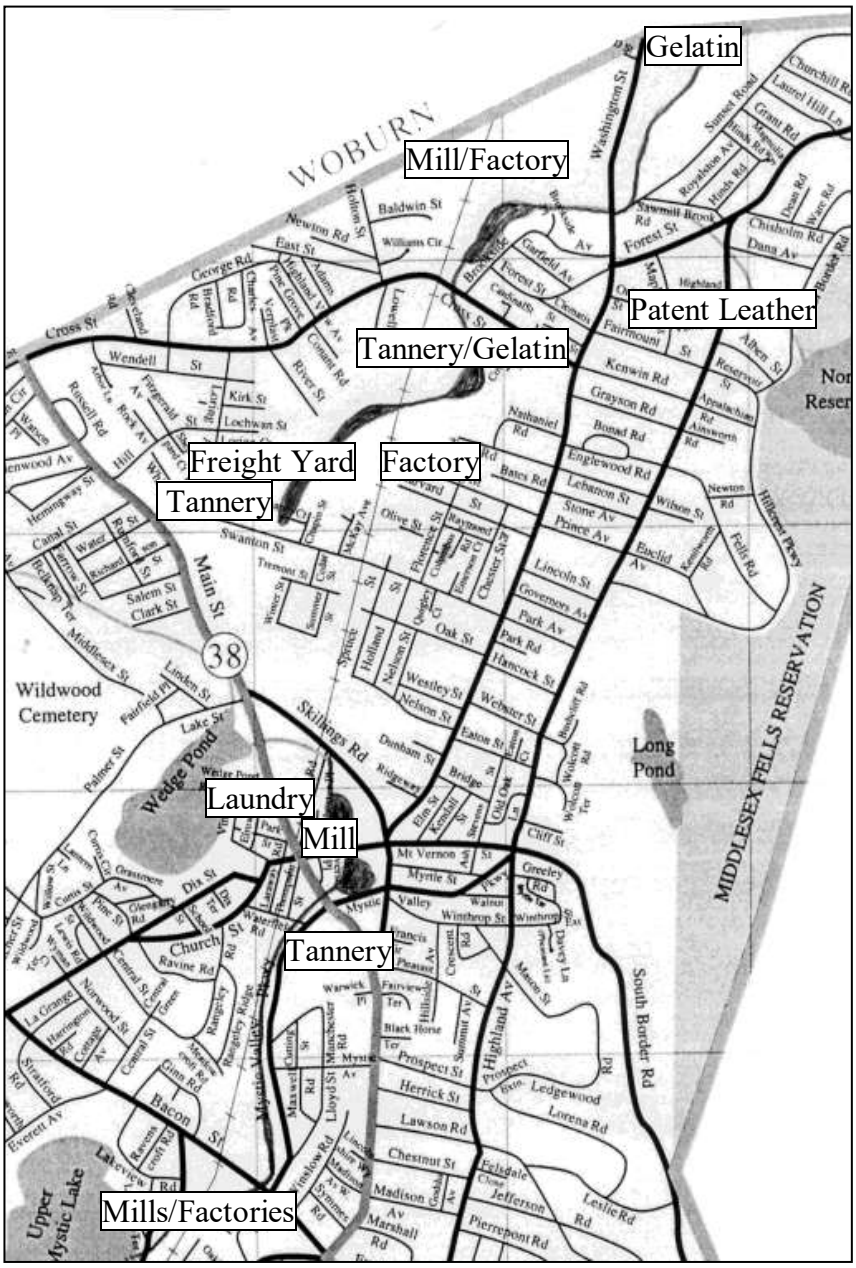
Dam at former cranberry bog above Washington Street 1901

Changes
- 1934 – new channel dug through Washington Street Park.

[29] Kellaway, 1928, p 40.

APPENDIX I

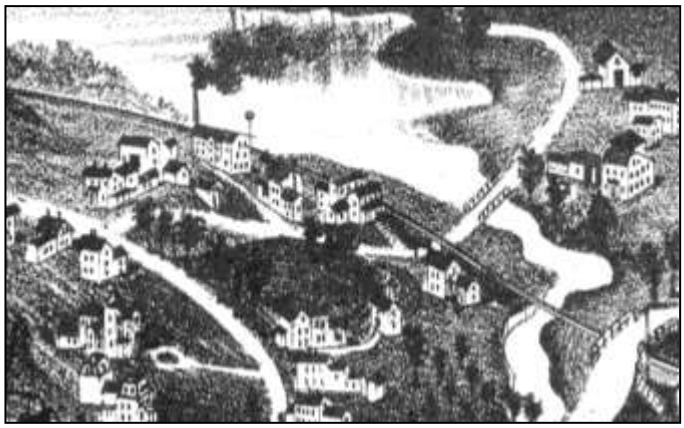
INDUSTRIAL SITES
ALONG THE ABERJONA RIVER



MAP 43

CHANNEL BETWEEN MYSTIC LAKE AND BACON STREET

Symmes/Bacon Mills



From about 1671 until 1876, one or two mills stood on the island in this channel. In 1876 Robert Bacon moved his mill to the foot of Grove Place where it stayed until the early 1950s. Known as Baconville, the area was a thriving industrial site for which the Wedgemere train station was built. Industries and products from these mills included: fulled and dyed cloth, canal boat manufacture, cotton batting, print works, a sash and blind factory, room paper, sawed mahogany, brass finishing and glass grinding, manufacture of hair felt, carpet felt or fabrilla, nail-works, and veneer mahogany & rosewood mill, felting & wadding.

CHANNEL BETWEEN BACON STREET BRIDGE AND WATERFIELD BRIDGE

Manchester Field - Formerly Thompson/Waldmyer Tanneries & Railroad Freight Yard

From 1838 until the 1890s, a tannery stood just south of the Waterfield Bridge, by the railroad and river on the site of Manchester Field (before the channel was moved). Next to the tannery was a lumber and bark business and a coal business. Until the 1890s, the freight yard was also in this area.

MILL POND

Locatelli Building site - Formerly Converse/Richardson Mill

For about three centuries (c. 1642 – 1911) a mill stood just south of the dam at Main Street. During the nineteenth century several small industries operated at the site (see MAP 20), including sash and blind shops, dye shop, lasting machines, manufactory of leather splitting machinery, shoe-pegging, wood-working lathes, mahogany veneering, printing presses, manufactory of knives and curriers' tools, furniture, and machinery.

Mill Pond Building - Formerly Winchester Laundries

The current Mill Pond Building was formerly the home of The Winchester Laundries, which in 1926 was asked to control a merger of four other laundries, known as New England Laundries, Inc. The first laundry building was built on this site in 1898 and was replaced in 1912 by a large brick and concrete building.

SKILLINGS ROAD TO SWANTON STREET

Ciarcia Field site - Freight Yard

A one-acre freight yard stood between the southern end of Summer Street and the railroad after 1939. (See Map 44 below)

Parkview Condominiums site - Formerly Moseley/Loring & Avery/Beggs & Cobb Tanneries

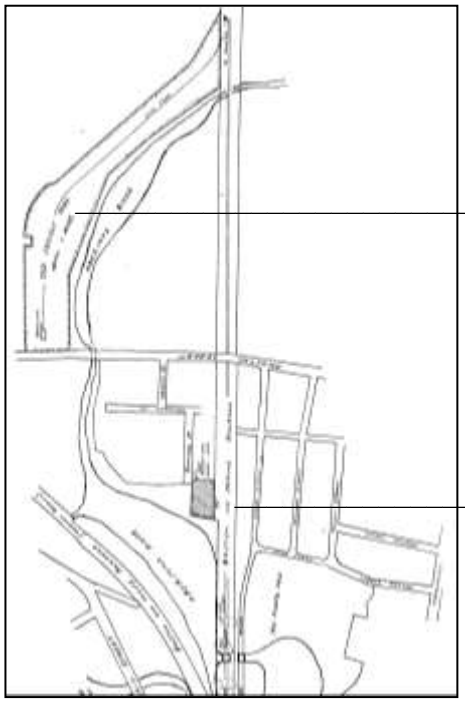
The site of the Parkview Condominiums was the site of a tannery from at least 1870 to 1959, which the buildings were destroyed by fire.

1922 Beggs & Cobb viewed from the Swanton Street Bridge

CHANNEL FROM SWANTON STREET TO CROSS STREET

The Village site - Freight yard

From 1899 to 1939, approx. 11 acres to the west of the river above Swanton Street were used as the railroad freight yard.



MAP 44

Old Freight Yard 1939

New Freight Yard 1939

Town Transfer Station Site - Formerly McKay Metallic Fastener/Puffer Manufacturing

McKay Metallic Fastener Co., manufacturers of shoemaking machinery, built a factory in 1893 on vacant land near river and north of Swanton St. About 1906 it was sold to the Puffer Company, manufacturers of soda water fountains and used by them 20 years or more. Damaged by fire and hurricane, it was partly rebuilt by the Grief Brothers. During the 1940s, the town purchased the site for a dump & incinerator, opened as such in 1949.

Puffer Manufacturing, 1922

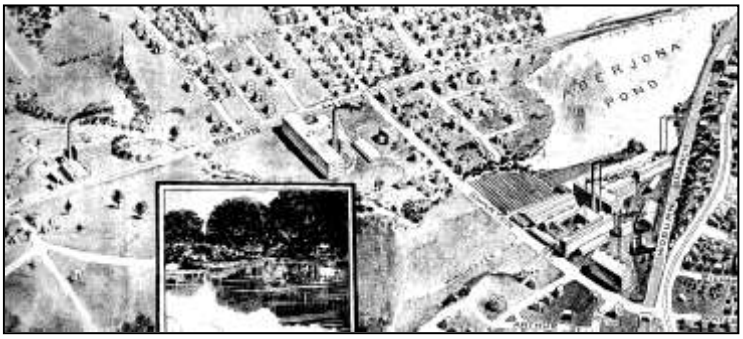
Soccer Fields - Formerly Maxwell Tannery/Whitten Gelatin

Now the site of soccer fields, this area was industrial from at least 1854. From 1870 to 1902, it was the site of the John Maxwell's Eagle Tannery. After the tannery burned in 1887, Maxwell rebuilt it. It was sold about 1902 for a gelatin manufactory known for about ten years as the Winchester Manufacturing Company, then the J. O. Whitten Co., manufacturers of Plymouth Rock Gelatin. The factory was also described as a glue and gelatin factory. Between 1970 and 1973, the property was owned by Swift and Co., then General Gelatin, which continued producing gelatin. In 1979 Hudson Industries took over the property for the production of glue. The sale of the vacant building to General Foods Corp. was reportedly in the closing stages when fire broke out in 1981 destroying the buildings. The site lay vacant ever since.

North of the tannery/gelatin factory was a coal and wood business, whose buildings were demolished in 1949.

50 Cross St./Kidstock site - Formerly McLatchy Patent Leather

50 Cross St. was formerly the site of the Middlesex Japanning Co., manufacturers of patent leather (1916); Waite & McLatchy Co. (incorporated 1919), also manufacturers of patent leather; and then the Allen H. McLatchy Co., which in 1929 had a capacity of 1,250 sides.



1898 pictorial map looking downstream (left to right) showing the Maxwell, McKay, and Beggs & Cobb factories

WASHINGTON STREET

Winchester Hospital lot - Formerly Richardson/Parker mills/Winn Watch Hand factory

About 1790, Jeduthan Richardson built a grist mill at this site. He later built a sawmill on Sawmill Brook. From the 1830s to 1868 the site west of Washington Street was the site of a mahogany mill. Then it was the site of the Winn Watch Hand Factory, absorbed in 1968 by McCord Corporation, a Detroit-based supplier of the auto industry. Prior to purchase in 2004 by Winchester Hospital, the buildings were being used by a church.

Area south of Winn Watch Hand, before 1930s improvements.

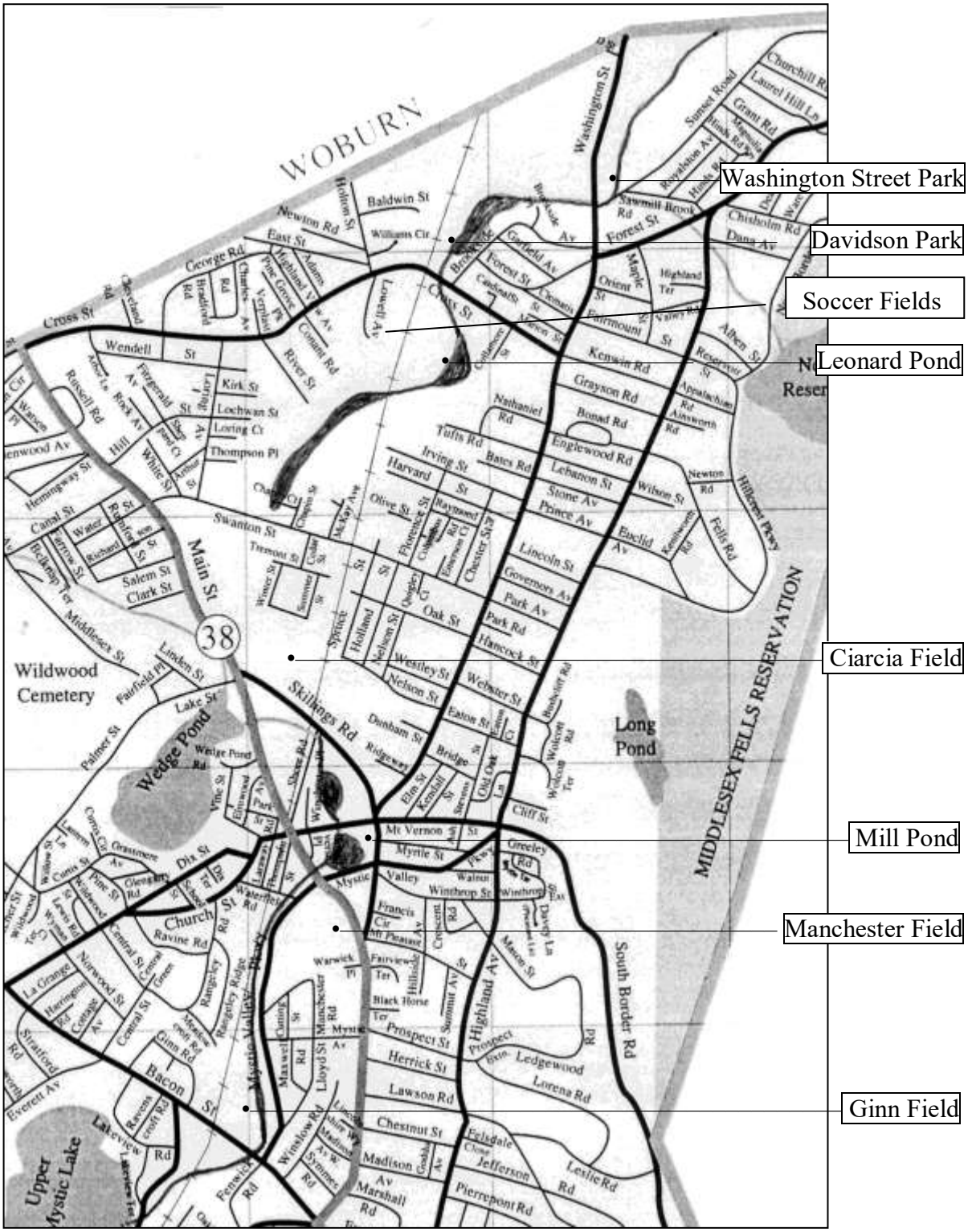
WOBURN LINE

Atlantic Gelatin

Though the industrial buildings are located in Woburn, the "Gelly" site includes land in Winchester through which the river flows. Joseph H. Cohen established a gelatin plant on the site in 1919. In 1930 General Foods bought the Atlantic Gelatin Company. In 1985, General Foods was purchased by Philip Morris which subsequently bought Kraft Foods and merged the two food companies in 1989.

Atlantic Gelatin, 1922

APPENDIX II
RIVERSIDE PARKS & RECREATIONAL USES



MAP 45

MAP 45

Throughout its history the river has been a scene for recreation - boating, skating, fishing, swimming – though changing conditions have changed the river's uses.

MYSTIC LAKES & ABERJONA RIVER
Swimming continues at Sandy Beach on the Upper Mystic Lake. Since 1901, the clubhouse of the Winchester Boat Club has lain on the banks of the lake. Prior to that, the Shu-shu-ga Canoe Club had its house on the riverbank near the Bacon Street bridge. Within living memory residents have been known to canoe the river's lower channel up to the town center. Previously fishing was also a popular pastime. Once alewives and other fish were plentiful in the river, and fishways were maintained along the river, but 19th-century industrial pollution killed the fish off.

GINN FIELD
This park was first laid out in 1938, when three tennis courts were built. The field now has a softball diamond, basketball area, and a playground.

MANCHESTER FIELD
The original Manchester Field created during 1894-1902 featured play fields, a track, two basketball standards, playground equipment, and a band stand. A memorial to Forrest Manchester was erected in 1931. After the Town moved the river and parkway above Mystic Avenue in order to create a large football field behind the Junior High School (now middle school), a small park used to lie across from the Post Office; however, that area is now used for parking. The current field has a football field, baseball diamond, track, and skateboard park. It formerly had two tennis courts.

MILL POND
A park since the 1910s, the pond has several seating areas and has been the site of community activities.

CIARCIA FIELD
After the river was channeled underground in 1968, this field became the high school field.

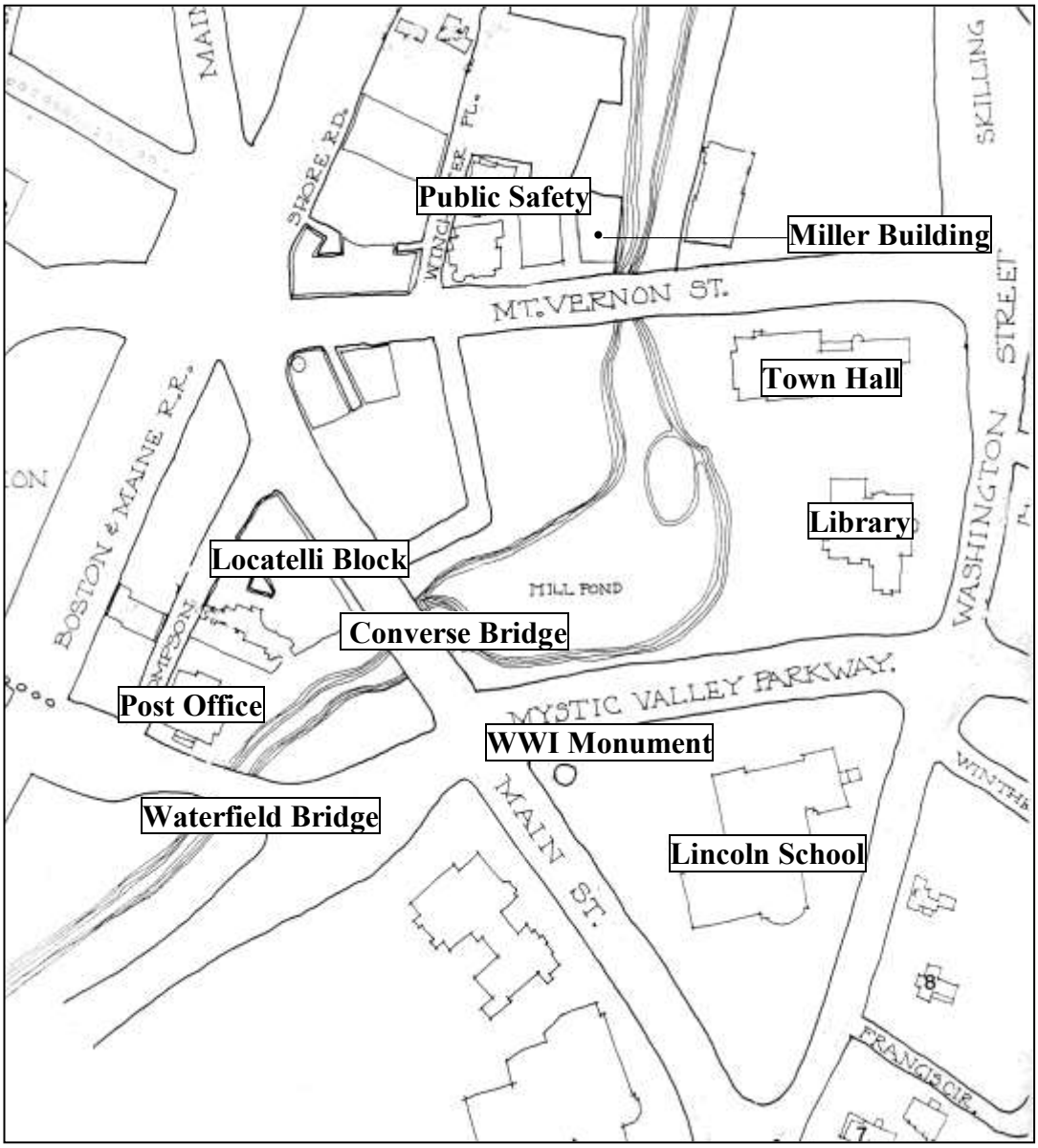
LEONARD POND
One of Kellaway's flood-expansion areas, the Town made this a swimming pool (opened 1933). Use of the pond for swimming was discontinued by 1993 due mainly to contamination from the groundwater wells that feed it.

DAVIDSON PARK
This park was created in 1932 as part of the Kellaway river-improvement plan.

NORTH WASHINGTON STREET PARK
In 1934, at the same time the Washington Street Bridge was built, a park was created along the east side of the street, with two foot bridges, over 1,000 feet of gravel walks along the river, a rock garden, a rose bed, four shrubbery beds, and a hedge. The area of the park is 167,343 sq. ft. The park was not maintained and virtually disappeared due to overgrowth by 2005.

APPENDIX III
HISTORICAL STRUCTURES ALONG THE ABERJONA RIVER

WINCHESTER CENTER



MAP 46

HISTORIC STRUCTURES ALONG THE ABERJONA RIVER

WASHINGTON STREET BRIDGE
Constructed in 1934 as part of the 1930s river improvements and the creation of Washington Street Park.

*MOUNT VERNON STREET BRIDGE
The Town's oldest surviving stone bridge, constructed in 1872. The parapet was added in 1916 to replace an iron fence.

MILLER BUILDING
Built in 1886, the foundation of this building is connected to the Mount Vernon Street Bridge. It also forms the western edge of the river channel as it approaches the bridge.

*CONVERSE BRIDGE (Main Street) / *CENTER FALLS DAM
*WATERFIELD BRIDGE
Built as part of the Mill Pond improvements of 1914-1915, based on Herbert Kellaway's recommendations of 1911, designed by Kellaway.

*TOWN HALL (71 Mount Vernon Street)
Designed by Rand & Taylor in the Richardsonian Romanesque style and built in 1887 near the northern bank of the Mill Pond.

*WINCHESTER PUBLIC LIBRARY (80 Washington Street)
Constructed next to Town Hall in 1931 (with later additions), designed by Robert Coit and Kilman, Hopkins & Greenley in the Gothic Revival style.

*LINCOLN SCHOOL
Opened as Winchester High School in 1904, designed by Herbert Hale in the Beaux Arts style.

*LOCATELLI BUILDING (522-546 Main Street)
Also called Winchester Terrace, an early twentieth century (1935-36) commercial block situated next to the river between the Converse and Waterfield bridges.

*U.S. POST OFFICE (48 Waterfield Road)
A neo-classical building built 1927-28, its side facing the river at the Waterfield Bridge.

BACON STREET BRIDGE
The second stone bridge at this site, built in 1922 after a design by Ralph S. Vinal, and rehabbed in 1996.

*Included in the Winchester Center Historic District, listed on the National Register of Historic Places in 1986,

APPENDIX IV
FLOODS

Aside from problems created by dams built along the river, the first floods that have been documented occurred after the incorporation of Winchester in 1850. Official statistics were apparently not kept until the late 20th century, leaving us to rely on newspapers and personal stories.

Two great floods occurred in the nineteenth century, in 1855 and 1886, both in February, both caused by a combination of heavy rain and melting snow. A series of floods occurred in the 20th century, and the last flood occurred in the second year of the current century.

1855, Feb. 21
Overnight the village center was flooded. According to David Youngman, Main Street turned into a river, "the current of which was so deep that boats were rowed up and down without difficulty. From the depot, northerly, Main Street was completely submerged to Cutter's Village, covering, in some places, the tops of the fences." The water at the depot was fourteen inches deep on the rails. Nearly all the cellars were filled with water. Few were dry five days later. Several families were evacuated by being taken from their windows and "conveyed away in vehicles which were themselves almost afloat."[30]

1886, Feb. 13
George Cooke wrote, "On Saturday, February 6, the temperature indicated was 6 degrees below zero, and on Saturday, the thirteenth, 55 degrees above." Combined with this thaw, a torrential rainfall, measured at 5.5", produced an estimated 8.5" inches of water and a flood "of notable proportions." Again, some residents had to be evacuated through their window. One building was reportedly filled to the depth of 4.5 feet. Access to many houses could be gained only by boat. Damage was done to streets, gutters, bridges, cellars, and foundations, and a portion of Deacon Richardson's house was carried away.[31]

1902, Feb. 28
"As a result of the storm last Friday there was a flood on Cross Street at the Highlands depot, the water spreading and completely surrounding the house occupied by Mr. Allen, which seemed to have a Venetian aspect. It is understood that the Station Master telephoned to the Town Hall for a wagon to carry people to the depot, but no response was made, so that a great many walked down to the Centre for a train."[32]

"The water is over the road almost from the [Willow Brook] bridge to the Wheelers…. Poor Grannie-mire's cellar has 22 inches of water in it…. Harry Winn was ferrying the girls across with an express wagon, horse attached, and he told me I couldn't get over to the station, said everybody had to come back, so told me to get in and he would take me…. Such a sight as it was over to the station. Mr. P's Coal Office was just surrounded and his sled was way down in the field, wood floated off etc. The end of Forest st. from the bend to the store was flooded and

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[30] David Youngman, "The Flood at Winchester," *The Winchester Record*, vol. II, pp. 184-85.
[31] George Cooke, "The Flood of February, 1886," *The Winchester Record*, vol. II, pp. 387-91.
[32] *Winchester Star*, March 7, 1902.

Albert McL. was carrying people across. … I heard on the train that somewhere between Arlington and W. the water was up to the floor of the electric car."[33]

1936, March 11-12
"The warm, foggy and rainy weather of the week culminated on Wednesday evening in a veritable downpour of rain which lasted until Thursday afternoon and this, together with the heavy snow still on the ground, created flood conditions about town worse than has been seen here for many years. By Thursday forenoon the water in the river was higher than it has ever been since the Main street dam was built while all ponds and brooks were way over their banks.

"Cellars about town suffered severely, not only those on the low ground being flooded, but many on the side hills filling up. The playground and Ginn Field were under water, as was the new field at the north end of Railroad avenue. The new bridge on Railroad avenue failed to take all the water, which flowed over the road to such a depth as to cause the street to be closed to traffic. The similar new bridge taking care of the railroad was able to care for the water, this bridge being set higher.

"In some places the sewers flooded, blowing off the manhole covers and spouting water. Wedge Pond was higher than it has been in years, and the Mill Pond and dam presented an unusual sight with the solid head of water flowing evenly over the dam. …

"At Winchester Highlands the Cross street section presented the aspect of one big, unbroken pond, with the water flowing evenly from above Washington "street to the railroad bridge. The Cross street bridge weathered the heavy flow, but the smaller bridge nearby was tied down and anchored by Park Department employees as it was covered by the water. The flood ran high on the Leonard Field playground and no one could ever imagine that there had ever been a beach there.

"Horn Pond Brook over-flowed its banks and became a freshet, flooding cellars in the vicinity of Upland road so that town men had to be sent to pump them out. Sand-bags had to be placed around the Edison Light plant at Horn Pond to guard against the steadily rising water there."[34]

From subsequent articles on Winchester rallying to help flood relief efforts, other Massachusetts towns were harder hit than Winchester.

1955, Aug. 18-20 (Hurricane Diane)
"Eleven inches of rain fell on Winchester in the three-day downpour which inundated Massachusetts last Thursday, Friday, and Saturday. Total weight of all rain dumped over Winchester's 6.45 square miles exceeded 200,000 tons." A peak flow of 835 cfs was recorded at gauging station.[35]

"Washouts, flooded cellars, closed roads, suspended transportation service, power failures, and high creek levels are part of the story of what happened after the rains began to fall…. In cost

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[33]Letter from Flora A. Richardson to Laura Tolman, March 1, 1902, typescript in the Archival Center.
[34] *Winchester Star*, March 13, 1936.
[35] CDM Report, June 1968.

terms, storm damage in Winchester ran to untold thousands of dollars. But, on the credit side of the ledger, Winchester residents were thankful that they escaped the death and destruction which racked Western Massachusetts, Southern New England, and Upstate New York."

Train service was suspended. The Fire Department received nearly 300 calls for help with flooded cellars. "Firefighters were forced to answer only the most urgent calls."

"Cars parked near the Converse Bridge were standing in twelve inches of water... Crews from the Highway Department unplugged the catch basins before serious damage occurred to stores on Main Street…. Washout continued in streets throughout town. A sidewalk and part of a road adjacent to the Palmer Tennis Court were swept down hill by water flowing across and beside the road. A patch of the Mystic Valley Parkway near Highland avenue buckled and broke open beneath a heavy stream of water…. Traffic beneath the Cross street railroad bridge came to a standstill when the underpass filled with water. Shore road was closed after being flooded…. At Leonard Beach, tennis courts, bathing areas and parking spaces were covered in water. Ginn Field became a swamp after the Aberjona River spilled out of its banks."

"The Water and Sewer Department worked until Sunday night on sewers which were overtaxed because people had opened sewer caps to drain cellars. In violation of the law, uncapping of sewers filled Winchester's mains with more water than they could handle. Some people were shocked when they pulled open sewer caps and sewage water began running into their basements."[36]

1958, Jan. 18-28
During a week and a half of stormy weather 4.55 inches of snow or rain fell, suddenly bringing the river to a flood stage. Many basements were flooded. Several businesses also called for their basements to be pumped out. Pictured below: Davidson Park and Cross St. Bridge.

1962, Oct. 5-7
"A nasty nor'easter dumped 10.6 inches of rain on this garden suburb. … Winchester suffered at least 350 flooded cellars and disconsolate ducks took over Shore Road and Skillings Bypass.

"On Friday, October 5, 6.48 inches of wind-torn rain fell on the Town. On Saturday, 3.45 inches. And on Sunday, .58 inches of nasty wetness harassed church goers…. The 10.6 inch storm assault represented, in one stroke, one-quarter of the 39.25 inches of rain that have fallen here since January 1."

"The Fire Department was swamped with calls on flooded cellars…. The Mystic Lakes and Mystic River rose higher than most folks would recall seeing them. Wedge Pound climbed up its banks. … And the flood hit not only the lowlands, but Highland Avenue as well, where one

[36] *Winchester Star*, Aug. 26, 1955.

homeowner reported a wicked 15 inches of water in his cellar.

"At the Cross Street underpass the Police Department erected a block-off, as a lake of rain inundated much of Parkview Electronics Park and Palmer Street…. Two pumps were going full blast at [Water and Sewer] Headquarters on Lake Street as gallons of water seeped into the building, were pushed out by motor only to run down the street toward a drain already so full it was sending rejecting fountains of water into the air.`"

The Fire Department received 174 calls on flooded cellars, an estimated 1/4 to 1/5 of cellars actually flooded since most homeowners did not call. "Chief Callahan told the Star that one home on Brookside Avenue had five or six feet of water in its cellar. The boiler in another home was completely submerged. Damage to homes was estimated in the thousands of dollars."[37]

The peak discharge at gauging station was 790 cfs.[38] Readings at the Shore Road Culvert were:
Normal Flow – 21.68
Flood conditions – 24.57

1963
Pictured below: high water at Shore Road Bridge and Leonard Pond.

1968, March 17-18
During a 36-hour storm, 4.22 inches of rainfall fell on already saturated, partially frozen ground, resulting in an estimated peak discharge of 660 cfs at the gauging station.[39]

"On Monday afternoon, the rate of flow of the Aberjona was over 650 cubic feet per second and climbing toward 850, the records set during Hurricane Diane in 1955…. The area between the railroad spurs just north of Skillings By-Pass blue-printed for WHS playing fields was completely under, good only for water polo…. Shore Road was closed to traffic. …Police officers had to rescue occupants of one small blue foreign-make station wagon who thought they could get through."

Channel below Wedgemere Road

[37] *Winchester Star*, Oct. 11, 1962.
[38] CDM Report, June 1968.
[39] CDM Report, June 1968.

"Davison Park was a lake and waters flooded down under the bridge by the Whitten Company nearly putting under the parking area to the east of the river. The Cross Street underpass had to be shut off…. One of the worst trouble spots in town was the Squire Road area at the foot of the Johnson Road hill where the sewage lines started overflowing on Monday…. [The Water and Sewer Superintendent] surmises that it is caused by householders up on the hill removing their sewage plugs in order to empty their cellars as the surcharge does not occur except in flood times."[40]

1979, Jan. 20-21
After 5 inches of snow fell, a heavy rainfall topped it with 3.25 inches of rain. Several roads, including Shore Road and Cross Street, were closed due to flooding. The Horn Pond brook area was especially hard hit, and residents complained about Woburn opening the dam at Horn Pond. "It was like someone pulled a plug," said a Canal Street resident. Town Manager Tom Groux said, "Winchester was in the middle. The MDC was holding the plug at one end and Woburn was controlling the faucet at the other."[41]

1996, Oct. 19-20
A 100-year storm hit, causing an estimated $2 million in damages to downtown businesses and the high school. Up to 10 inches of rain fell. The river reached 16.8 feet. Over 500 residents reported water in their basements. Businesses on Lowell Avenue were reportedly under four feet of water. The basement of the high school was flooded with 8 inches of water, damaging the mechanical, electrical, and HVAC systems, and causing the building to be closed for about two months. The Post Office was flooded and temporarily did business out of Town Hall. About 500 to 600 business and residential customers lost electricity. There was fear that Scalley Dam at Horn Pond might give way, but it held. The governor and president declared a state of emergency for Middlesex County.

1998, June 13-14
Although water levels were not as high as 1996, this was another major flood. Ginn Field was flooded enough for someone to take out a rowboat. Fewer commercial basements were flooded, and the DPW kept the high school basement pumped to prevent flooding as in 1996. There was scattered, heavy damage. After this flood, the Board of Selectmen engaged CDM to study and make recommendations on flood mitigation and appointed a study committee.

2001, March 22
The river crested at midnight and reached 16.9 feet, a tenth of an inch higher than 1996. Many streets were flooded and impassable, including Cross Street, Mystic Valley Parkway, Skillings

[40] *Winchester Star*, March 21, 1968.
[41] *Winchester Star*, Jan. 25, 1979

Road, Brookside Avenue, and Manchester Road. The Ambrose School was opened as an emergency shelter, and many residents had to be evacuated from their homes due to flooding in their basements which knocked out heat. Winchester center lost electricity for about 13 hours. The Post Office had 4 inches of water in its basement, and other downtown businesses had flooded basements. The DPW was flooded, forcing removal of equipment to Wildwood Cemetery. Horn Pond Brook flooded, and erosion under the Sylvester Avenue bridge caused the street to collapse. The town manager declared a state of emergency at noon.

2004

2006, May 13-15 (the "Mother's Day Storm")
"This storm rivaled the storm of 1996," Fire Chief John Nash, Winchester's disaster management director, said. Over the weekend, a reported 6 inches of rain fell on Winchester and about another inch followed. The total from Tuesday, May 9, to Monday morning May 15, was 6.6 inches. The river reached flood stage at 4:15 p.m. on Saturday. It crested at 15 feet on Monday the 15th at 1:30 a.m., according to readings at the USGS gauge.

Many of the usual areas flooded. The hardest hit was the neighborhood of Brookside Avenue and Forest Street, from which some families had to be evacuated. Cross Street had to be closed, and Nash himself, assisted by two paramedics, rescued a motorist from her vehicle after it became stranded on under the railroad bridge on Sunday. Skillings Road and Shore Road were closed at 6 p.m. on Saturday. Roads that flooded in the past but remained passable this time included Waterfield Road, Lake Street, Horn Pond Road, Middlesex Street, and Main Street. Ginn Field was under water. Ciarcia Field, however, did not flood. The North Reservoir was completely full and overtopping the dam. Consequently, water came down to Highland Avenue, though no consequent damage to private homes was reported.

At the beginning of the storm, there was significant improvement in the water flow along the northern Aberjona River, Nash said. The new Cross Street culvert delayed the rise in the height of the water, although once rainfall passed the five-inch mark the rainfall was too significant and flooding occurred. The Horn Pond Brook area reportedly fared better than during past storms due to the new culvert at Canal Street. It also helped that for the past several months the DPW had been removing debris from the river, since there was no significant blockage at dams and gates.

Schools were closed on Monday due to the street flooding outside the high school not damage to any school buildings. The Ambrose School was opened as a shelter but went unused. Town buildings were reportedly all right, though, like other buildings in the Center near the river, the Fire Station had to pump out its basement. Since power was not lost, buildings along Main, Thompson, and Mount Vernon streets reportedly were able to keep up with their pumping.

On Saturday night, the Fire Department received numerous reports of arcing wires on poles and trees. No neighborhoods went without power, except those where basements were essentially part of the river and power was disconnected by the Fire Department or NSTAR to prevent damage. On Sunday morning, the flood calls started to arrive – hundreds of them – due not only to the river but also the high water table. Because of the saturated ground and high water table, some people who never had water problems before had them during this storm.

APPENDIX V
MYSTIC VALLEY PARKWAY

THE PARKWAY PROJECT

The decision to create parkland out of the area below what is now the Waterfield Bridge arose in the 1890s. Winchester initiated the project and appropriated the money in 1892 to abate nuisances to public health. Proponents viewed a park as a permanent solution to eliminating swamps, industry, and polluted water. In 1892, Town Meeting passed a resolution to request Boston to apply to the next Legislature for a special act authorizing it to take that portion of the river and land on either side "to abate all nuisances there existing and to purify and to preserve the purity of said river." The request went to Boston because it was using the Mystic Lakes as a reservoir for drinking water. Meetings with the Metropolitan Park Commission (MPC – predecessor of the MDC) followed in 1894. The goals of the negotiations were a park for the town, protection to the Mystic water supply to Boston, and a "pleasure road" to the Middlesex Fells for the MPC. The act passed, authorizing the MPC to do the takings.

<u>The park/parkway project was jointly funded</u>.

- The MPC contributed $120,000 ($80,000 for land damages, $40,000 for labor and construction) for the construction of the parkway from High Street in Medford to Bacon Street in Winchester and for buying the land on the easterly side of the river between Bacon Street and Walnut Street (now Waterfield Road).
- As for the land on the west side, in 1894, "Edwin Ginn having already purchased the six acres on the easterly side of the river, lying between Mystic Avenue and Bacon Street (later Ginn Field), for the price of $5,000, presented it as a gift to the Metropolitan Park Commission, they agreeing to improve and maintain the same."[42]
- Others donated some land at the site of the current McCall School field.
- Boston and Winchester paid for the rest, contributing $65,000 and $50,000 respectively. Although Town Meeting at first defeated Winchester's appropriation, the article was reconsidered and passed in 1894. Boston's appropriation was not voted until 1895. Because the option on the tannery on the site was about to expire and the price rise before the vote, Ginn stepped in and bought the land, holding it until the Boston money was available.

PRE-PARKWAY CONDITIONS – BACON STREET TO WATERFIELD ROAD

<u>Channel</u>: There was extra channel. Above Mystic Avenue the channel split into two sections, the original river channel which curved to the east at the base of the hill where the McCall Junior High School was built and a channel to the west cut by the railroad. There were other splits in the channel. (See maps 15 and 16.)

<u>Bordering Wetlands</u>: There were swamps at both northern and southern ends of this channel and small pools.

[42] Annual Report of the Park Department, 1897.

PARKWAY ALTERATIONS

Manchester Field area: Between the railroad and river were a tannery covering about 2 acres, coal yard, lumber yard, livery stable, the railroad freight yard, nine tenement houses, pig-pens, and outhouses. The park project involved removal of all buildings, filling and regrading of the ground for the field, and filling the eastern river channel).

Ginn Field area: Ginn Field was open space and left largely in its natural state with a shallow pool at the south end of the river bed and growths of grass and weeds catching debris at the end of the Parkway project.

The river was altered during this project. That work was done by the MPC. It was not finished. After the land was purchased, a balance of $4,530.75 was left of the Boston money. "It was expected," the Park Commissioners wrote in 1897, "that the balance would be used to improve the river bed and banks, but the passage of the Metropolitan Water Supply Act [abandoning the Mystic as a water source] put a stop to all work here of improving or extending the water supply."

The Parkway opened in 1897 (with the extension above Walnut Street opening two years later). Manchester Field was not completed until 1902, having been delayed by the railroad's difficulty in finding a new site for its freight yard.

Maintenance of the parkland continued to be a joint venture between the Town and the MPC. "The town had voted to lease the entire area to the commission for nine hundred and ninety-nine years. After the opening of Manchester Field… it was found desirable for the town to resume control of the playground in order to police it more efficiently…. By friendly agreement, the town took back from the commission a lease of Manchester Field for ninety-nine years, and is [in 1936] in the peculiar … position of occupying part of its own territory on lease from a party to which it has previously leased it."[43] The MPC turned the management of Manchester Field over to the town in 1905. It continued to own Ginn Field.

POST-PARKWAY-PROJECT HISTORY

Ginn Field: In 1938, Ginn Field was laid out as a playground, and three tennis courts were built. The other main project at that time was grading the field, accomplished by the WPA in 1938-1940. The work of improving the field also included continuing the road from Manchester Field, building a road leading out to Bacon Street and creating a walk leading from the tennis courts to the train station at Wedgemere, building an 800-foot-long stone retaining wall, and installing 360 feet of drain pipe at the field and more drains in 1942 to carry off water which made the roadway impassable in rainy weather.

Manchester Field: In the 1940s, Town Meeting endorsed Town Engineer Parker Holbrook's proposal to move this section of the river next to the railroad, moving the parkway next to it, and rebuilding a larger Manchester Field in its present location. That project included riprapping the

[43] Henry Chapman, *History of Winchester*, 1936, pp. 269-270.

western banks, removal of trees, and grading the field. This project decreased the length of the river channel. There was an exchange of land, mapped on Oct. 14, 1946, whereby land to the east of the parkway and the area of the current Aberjona parking lot went to the Town and the land for the parkway went to the Commonwealth.

DOCUMENTATION

For orientation in the documentation below, please note that Walnut Street is now Waterfield Road and the Waldmyer tannery and Cutting lumber yard were on the site where the river is now located.

Known Flood Site

From George Cooke, "The Flood of February, 1886," *The Winchester Record* (March 1886):

"The houses on the low grounds below the Walnut-street bridge and the lower portions of Waldmyer's tannery were partially submerged, and access to many of the houses could be had only in boats. … The basement portions of the tanneries… and the lumber-yards indicate serious damages and the cellars used for machinery or storage will swell the aggregate of losses by the flood."

Contaminated Swamps

Ginn Field area: 1893 "Beginning at Bacon Street on the westerly side of the river there is a tract containing over an acre, that is below high water mark, part of it is a pool, excepting in very dry weather, and the greater portion of it a marsh or swamp, covered with water in the wet season that becomes stagnant as the season advances, making a home for frogs, turtles, and vermin, and producing a growth of flags, rushes, etc.; when the autumn rains come this tract is over-flowed and all decaying mater and accumulation are washed into the river and thence to the lake, which is but a few rods below."[44]

1911 "Ginn Field is largely in its native state, and at the southerly end the original river bed forms a shallow pool."[45] Kellaway's recommendations included "fill the cove near the Metropolitan siphon" and "excavate the pool in front of Wedgemere Station," and "slightly reduce the size of pond,"[46] below the Bacon Street Bridge, indicating the presence of pools there.

Manchester Field area: 1893 "At the northerly end of the tract and lying on the easterly side of the river is another swamp of six acres, filled with decaying vegetable matter and vermin; the water over this whole path becomes stagnant and slimy during the hot months, different kinds of foul scum formed by the action of the sun and heat, covers the water. More or less of this filth is washed into the river through the old channel of the river and by the high water; this is a malarial swamp in every detail and is a standing menace to the health of the community."[47]

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[44]Brief prepared by Forrest Manchester prepared for the City of Boston water board and city engineer, reprinted in the *Winchester Star*, Feb. 11, 1893.
[45] Herbert Kellaway, Report of the Waterways Improvement Committee, Town of Winchester, June 1, 1911, p. 8.
[46] Ibid, p. 14.
[47] Manchester brief.

Menace to Public Health

Town Meeting, Dec. 17, 1892

"Art. 2. To see if the Town will request the City of Boston to apply to the next Legislature of this Commonwealth, for a special Act authorizing it to take the Aberjona River between Bacon street on the south and Walnut street on the north, and all necessary land on each side of the river between said streets, and to take all other necessary and appropriate measures to abate **existing nuisances** in and on said territory which **menace the public health**….
Voted."

From the brief prepared by Forrest Manchester prepared for the City of Boston water board and city engineer, reprinted in the *Winchester Star*, Feb. 11, 1893:

"The Winchester Board of Health and the Boston Water Board have had much trouble with this section of land and the nuisances there existing," including a swamp at Bacon Street, a "swamp of six acres, filled with decaying vegetable matter and vermin" at the northeast section, tenement houses bordering on the banks of the river whose cellar bottoms were below high water mark and whose cesspools and privy vaults filtered into the river, tannery, livery stable, coal and lumber yards, and railroad yard. "Statistics for several years show that there is a much greater amount of sickness in and near this locality than in any other portion of the town. It is beyond question a pest hole… and is a constant menace to the citizens of Winchester, and the inhabitants of Boston and all others who use the Mystic water." Mr. Cutting had a plan to build more tenement houses. "Believing that this section, lying so low and near a water supply, is **not fit for residential purposes and ought not to be used for business purposes**, certain persons have inaugurated a movement to clean out the whole tract and have it dedicated to public uses, so that **it shall be forever kept open and in a clean and healthy condition**."

Winchester and Boston Paid for the Current river Site

Town Meeting, March 12, 1894:

"Voted, That the Park Commissioners are hereby authorized and empowered to arrange with the Metropolitan Park Commission for the purchase or taking of certain land between Walnut Street and Mystic Place in Winchester for public playgrounds … the Park Commissioners of Winchester are hereby authorized and empowered to contribute for said purpose, in behalf of the town, a sum not exceeding fifty thousand dollars." Boston contributed about $60,000.

From the Report of the Park Department, 1897:

"The Boston Water Board approved and endorsed it for the benefit to the water supply….
The Metropolitan Park Commission, to obtain a desirably approach to the Middlesex Fells, for the city of Boston… assumed the entire expense, management, and control of the Parkway from High Street in Medford to Bacon Street in Winchester, and all on the easterly side of the river between Bacon Street and Walnut Street in Winchester, **while the city of Boston and the town of Winchester were to take and pay for that portion of the tract on the westerly side of the river lying between Walnut Street and Mystic Avenue…**; the portion taken by Boston and Winchester to be cleared of buildings and debris, and turned over to the Metropolitan Park Commission for improvement, care, and maintenance."

MDC Left Park Unfinished

The MPC did not finish the "improvement, care, and maintenance" of Manchester Field and failed to do anything with Ginn Field. In 1911, Herbert Kellaway reported on the Bacon Street to Walnut Street stretch that "this section of the Parkway has never been completely constructed. Ginn Field is largely in its native state…. Near Walnut Street Bridge, among a group of willows is…a backwater place in which all kinds of refuse and rubbish collect…. Opposite Mystic Avenue there appears to be the remainder of an abandoned street which is now used as the storage place of materials and tools by the Metropolitan Park Commission. On the islands are the remains of former constructions." He recommended excavating the stream bed, deepening the channel, regrading the islands, constructing all surface drains with settling basins, filling in backwater place among willows at Walnut Streets, removing the old roadbed of Mystic Avenue extension and the maintenance boxes of the Metropolitan Park Commission to some other less conspicuous location, and "finish footbridges, walks, grading, and planting to complete the Parkway and playgrounds in this section."

Everett N. Curtis noted in the *Winchester Star*, Feb. 17, 1911, that the MPC actually did not use all of Winchester's appropriation for improvements in Winchester. "The Commission replied that …the Legislative committee… found and reported that over ten thousand dollars of the fifty thousand dollars authorized by the Act had been expended outside of the town of Winchester; that but a small portion of the fifty thousand dollars remained unexpended; and that the Metropolitan Commission expressed no intention of purpose as to further improvements in the town, but claimed that it was, and had been, at liberty to expend this fifty thousand dollars as it expended its general Metropolitan Park's fund without strict regard to locality, but as it might find most needed in the Metropolitan district, giving reasonable preference only to the vicinity referred to by name in the act."

Winchester finished the park. The town piped in drinking water, and local money purchased the flagpole, playground equipment, and other park amenities (although the MPC furnished the grand stand). The town took over its care and maintenance.

After the parkway was finished, the town continued to have health concerns about the river and in 1910 the Board of Selectmen constituted a special committee to secure for the legislature such laws as will place the care of the Aberjona River and its tributaries in the hands of the state Board of Health. [Annual Report 1910] In 1911 and 1928 it commissioned reports on the improvement of the waterways from Herbert Kellaway and continued its own program from the town center to the Woburn line.

APPENDIX VI
FISHWAYS

When the dam in the Mystic Lake was constructed in 1864 to create a reservoir for Charlestown, it was fitted with a wooden fishway (or ladder). That proving inoperative, the Charlestown Water Commissioners built a granite fish ladder over their dam. Within a year it had been altered and further modifications were recommended. Again in 1870, a new fishway was adopted, and yet again in 1873, as the quest to build a better fishway continued.

That pursuit involved Winchester's own Edward Brackett, who was an original member of Winchester's Committee for the Preservation of Fish before his appointment in 1869 to the State Commissioners on Inland Fisheries and Game. His fish ladder, patented in 1872, found favor in many communities and was commended by the federal Commission of Fish and Fisheries.

Fishways were also constructed at the mill dams on Horn Pond Brook and the Aberjona River. Keeping them open was one duty of the local Committee for the Preservation of Fish. The Town of Winchester, incorporated in 1850, was empowered to elect a fish committee in 1861, when acts of 1789 as to destruction of fish in the Mystic River within Cambridge, Charlestown, and Medford and of 1816 as to fishing in Woburn were extended to Winchester and its waters influent to the Mystic River.

The Committee reported in 1865 that the public was generally cooperative in keeping the fishways open at the various mill dams along the river and brook, with one notable exception. In 1864, the manager of the Fibrilla Flax Mills, operating in a building near Bacon Street, would close up the fishway which the Committee had constructed at the dam by the mill whenever he wanted the water to power his mill wheel. Not satisfied with his response to their appeals, the Committee turned for help to the Commissioners of the Charlestown Water Works.

On May 7, 1864, the superintendent of the Water Works took two kegs of gunpowder and some men to the Aberjona River. The kegs, each containing 25 pounds of powder, were placed under the woodwork and ignited by means of a water fuse, leaving a clear passage left for the fish.

Keeping all the fishways open resulted in "a very marked increase in the number of alewives and other fish up the Mystic River, and into the streams of this town," the Committee reported in 1865. "Thousands of barrels of alewives, together with quite a number of shad, thus found access to our waters which otherwise would have been kept out, and great numbers were taken by the inhabitants of this town, and made use of for food and other purposes."

After a fish ladder was built at the Main Street dam during 1871, the Committee wrote that the alewives "swarmed in our waters last spring, and in some small brooks leading into Wedge Pond even crowded each other out of water and tried to make the last part of their annual run on wet grass, rather than stop short of their objective point."

In 1872, the Commissioners on Inland Fisheries and Game of Massachusetts reported that, following the construction of various fishways in the state, "the alewives have increased almost

beyond calculation, ascending the river in the spring by millions, and, in narrow places, often so plenty as to crowd each other out upon the banks."

But, while fish ladders helped the fish population grow, there were other problems to sustaining and increasing their numbers. "The merciless manner in which the ponds were fished" was one. In 1867, an act was passed suspending the right to take alewives or shad from Mystic River or its tributaries, or from Mystic Pond, for a period of five years. This also aided efforts to propagate other fish, including bass and salmon, in the waterways. Laws were also enacted to regulate fishing, and eventually permits were required.

Nevertheless, all the efforts to preserve and propagate fish, however successful initially, were undone by pollution. The destruction of "no inconsiderable number of the small fry" due to "the increasing impurities of the water" was noted in 1872. Before the end of the century, pollution was so horrible that the Upper Mystic Lake was abandoned as a source of drinking water and the fish had been so destroyed that the committee for their preservation disbanded.

In 1914-1915, when the new semi-circular dam was built at Main Street, its design did not include a fish ladder. Consideration of the fish was not even mentioned in the landscape engineer's report.

In 1920, the Division of Fisheries and Game issued a report on the dismal state of affairs for the alewives. At the locks at West Medford, "it is almost impossible for alewives to pass even at high tide, so that few fish reach the Mystic Lakes for spawning. Between the Mystic Lakes is a dam equipped with a wooden Brackett fishway of little use, since the water level is not sufficiently high to afford flowage. Above the Mystic Lakes the Aberjona River is polluted north of Winchester from several sources, and obstructed by the dam at Whitney's Mill Pond, an elaborate concrete structure in the form of a semicircle."

When the Mystic dam was renovated, between 2010 and 2012, it was given a new fish ladder and eel way. After this, when Winchester was planning to replace the second new flood gate at the dam, installed in 2013, the decision was made to design it so as to permit the later addition of a fish ladder.

Following water quality testing, the Division of Marine Fisheries gave the green light to the project. A funding source was identified when the fish ladder was included among the other improvements connected with the Industri-Plex Superfund Site in Woburn. Construction could begin in November 2016.

APPENDIX VII
LOCAL RIVER COMMITTEES & STUDIES

1893 Park Commission formed
Park Commission Reports in Town of Winchester Annual Reports

1911 Waterways Improvement Committee formed

1911 Herbert Kellaway, *Report Upon Mystic Valley Improvements along the Aberjona River, Winchester, Massachusetts, from Upper Mystic Lake to Swanton Street.* Includes the Report of the Waterways Improvement Committee.

1927 Waterways Committee formed

1928 Herbert Kellaway, *Report on the Improvement of Waterways in Winchester, Massachusetts and Related Matters.*

1957 Waterways Committee formed
Committee report in the Town of Winchester Annual Report for 1957

1958 Howard M. Turner, *Report on Aberjona River Flood Study to New Waterways Committee*, March 14.

1963 Fay, Spofford & Thorndike, *Preliminary Investigation of the Flooding of the Aberjona River in the Center of Winchester*

1964 Conservation Commission formed

1967 Aberjona Watershed Committee formed
Reports in 1967 & 1968 Town of Winchester Annual Reports.

1967 Camp Dresser & McKee, Winchester – *Aberjona River Study*

1968 CDM, *Report on Aberjona River Flooding Conditions at Proposed Playfield Area for new Winchester High School*.

1970 Aberjona River Commission (regional) formed

1999 Aberjona-Horn Pond Brook Study Committee formed

1999 Camp Dresser & McKee, *Town of Winchester, Massachusetts Aberjona River Flood Study.*