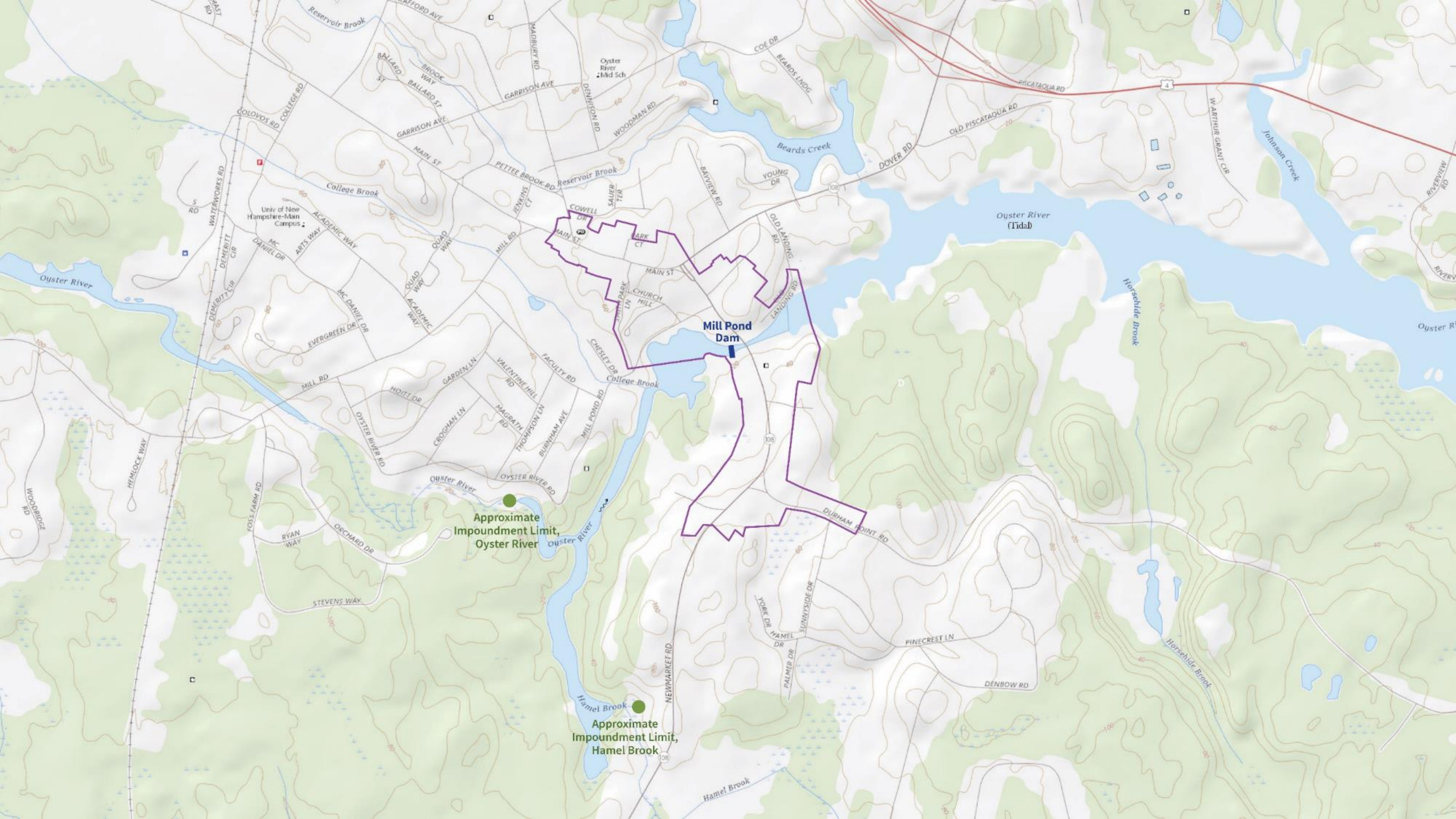
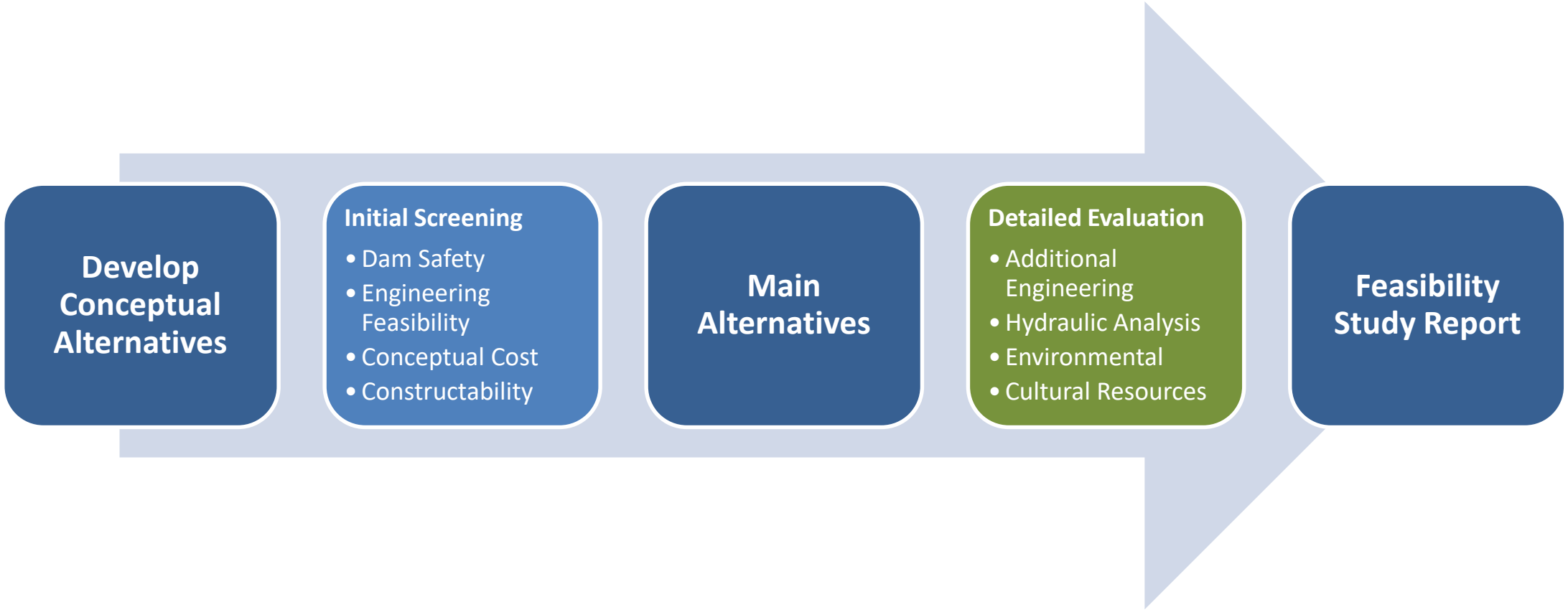
Oyster River Dam at Mill Pond

Feasibility Study

Durham Heritage Commission
August 6, 2020


Mill Pond
Dam
Approximate
Impoundment Limit,
Oyster River
Approximate
Impoundment Limit,
Hamel Brook
Oyster River
(Tidal)
Oyster River
Oyster River
Oyster River
Beards Creek
Johnson Creek
Horsehide Brook
Horsehide Brook
Hamel Brook
Hamel Brook
College Brook
College Brook
Reservoir Brook
Reservoir Brook
Oyster
River
Mid Sch
Univ of New
Hampshire-Main
Campus
MAIN ST
MAIN ST
MAIN ST
DOVER RD
PISCATAQUA RD
OLD PISCATAQUA RD
DURHAM POINT RD
NEWMARKET RD
MILL RD
MILL POND RD
OYSTER RIVER RD
OYSTER RIVER RD
GARRISON AVE
GARRISON AVE
PETTEE BROOK RD
MADBURY RD
DENNISON RD
WOODMAN RD
COE DR
BEARDS LNDG
BAYVIEW RD
YOUNG DR
OLD LANDING RD
LANDING RD
CHURCH HILL
CHESLEY DR
FACULTY RD
VALENTINE HILL RD
GARDEN LN
HOITT DR
CROGHAN LN
MAGRATH RD
THOMPSON LN
BURNHAM AVE
EVERGREEN DR
MC DANIEL DR
ACADEMIC WAY
ARTS WAY
QUAD WAY
COLLEGE RD
COLOVOS RD
WATERWORKS RD
DEMERITT CIR
HEMLOCK WAY
WOODRIDGE RD
FOSS FARM RD
RYAN WAY
ORCHARD DR
STEVENS WAY
YORK DR
HAMEL DR
PALMER DR
SUNNYSIDE DR
PINECREST LN
DENBOW RD
W ARTHUR GRANT CIR
RIVERVIEW
BALLARD ST
BROOK WAY
JENKINS CT
COWELL DR
SAUER TER
108
108
108
4

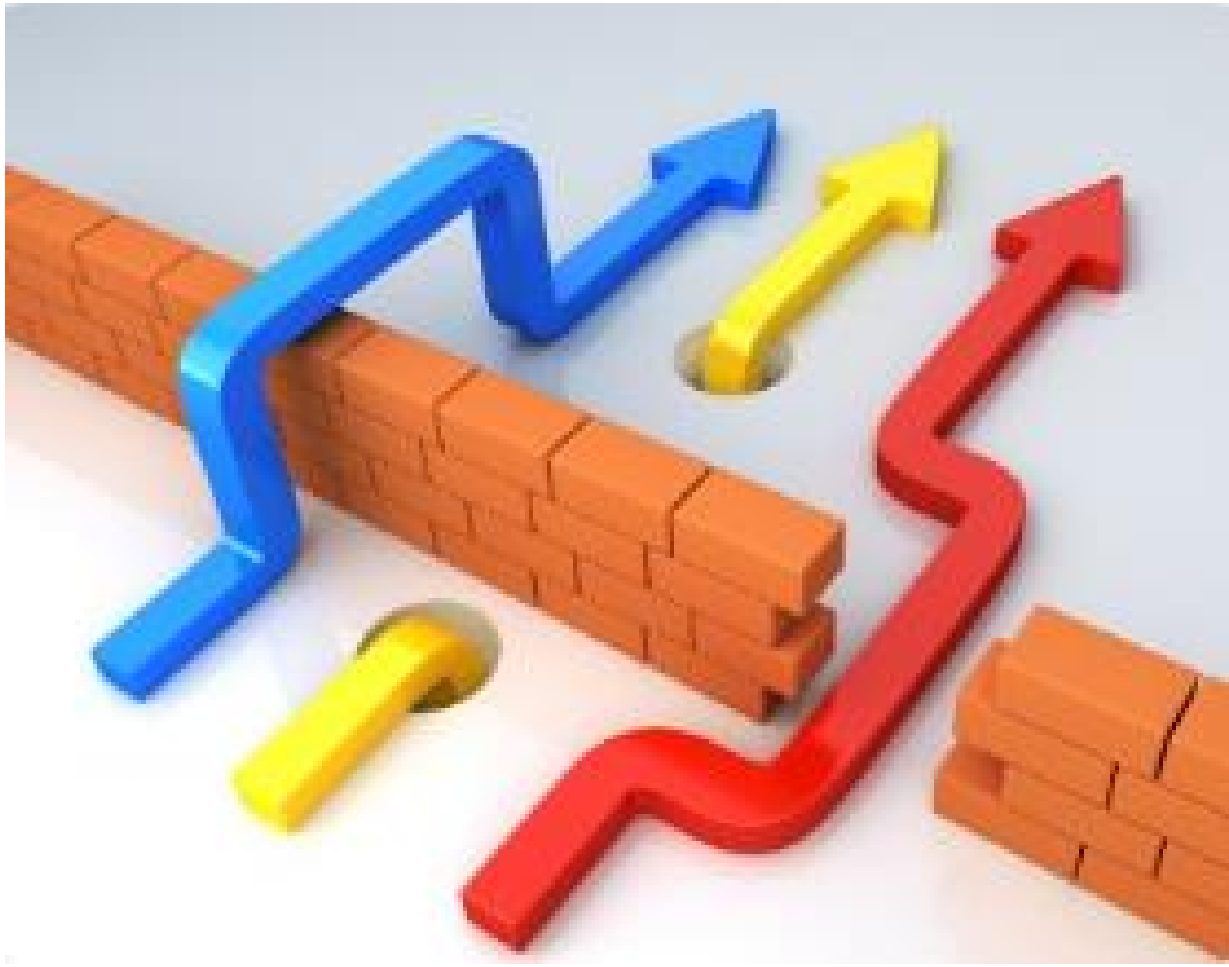
Study Process



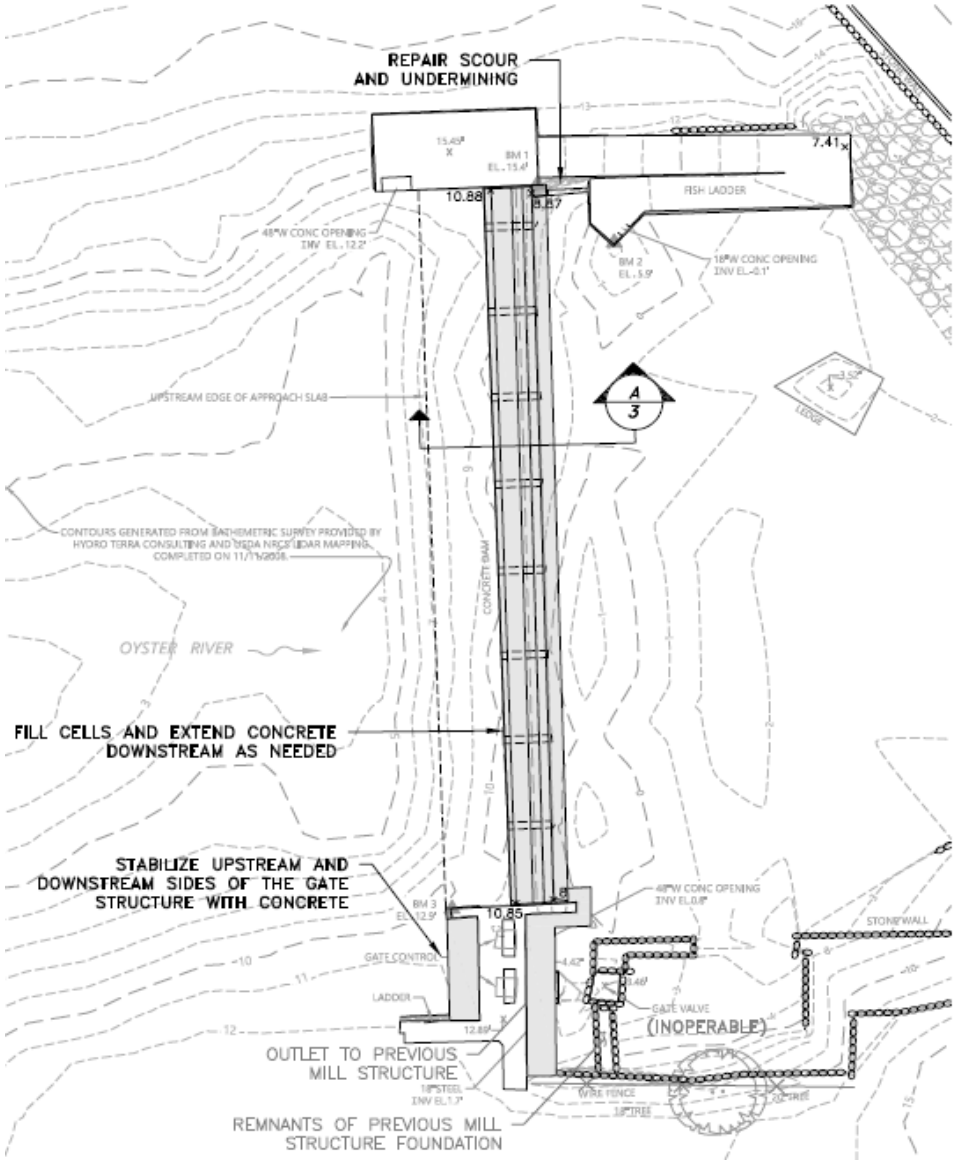
Alternatives

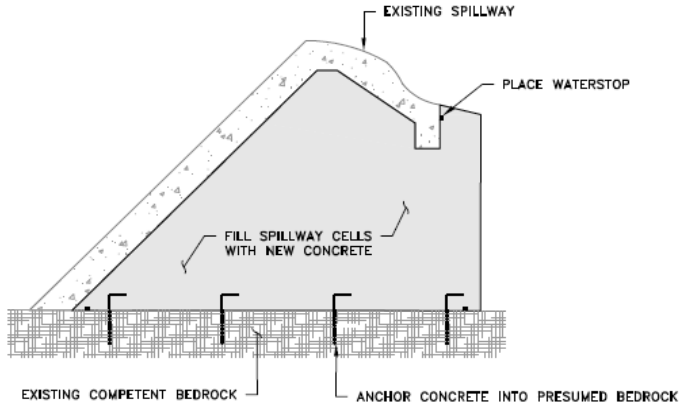
Alternatives Identified

- Alternative 1 – No-Action
- Alternative 2 – Dam Repair
- **Alternative 3 – Dam Stabilization**
- Alternative 4 – Dam Redesign
- **Alternative 5 – Dam Removal**



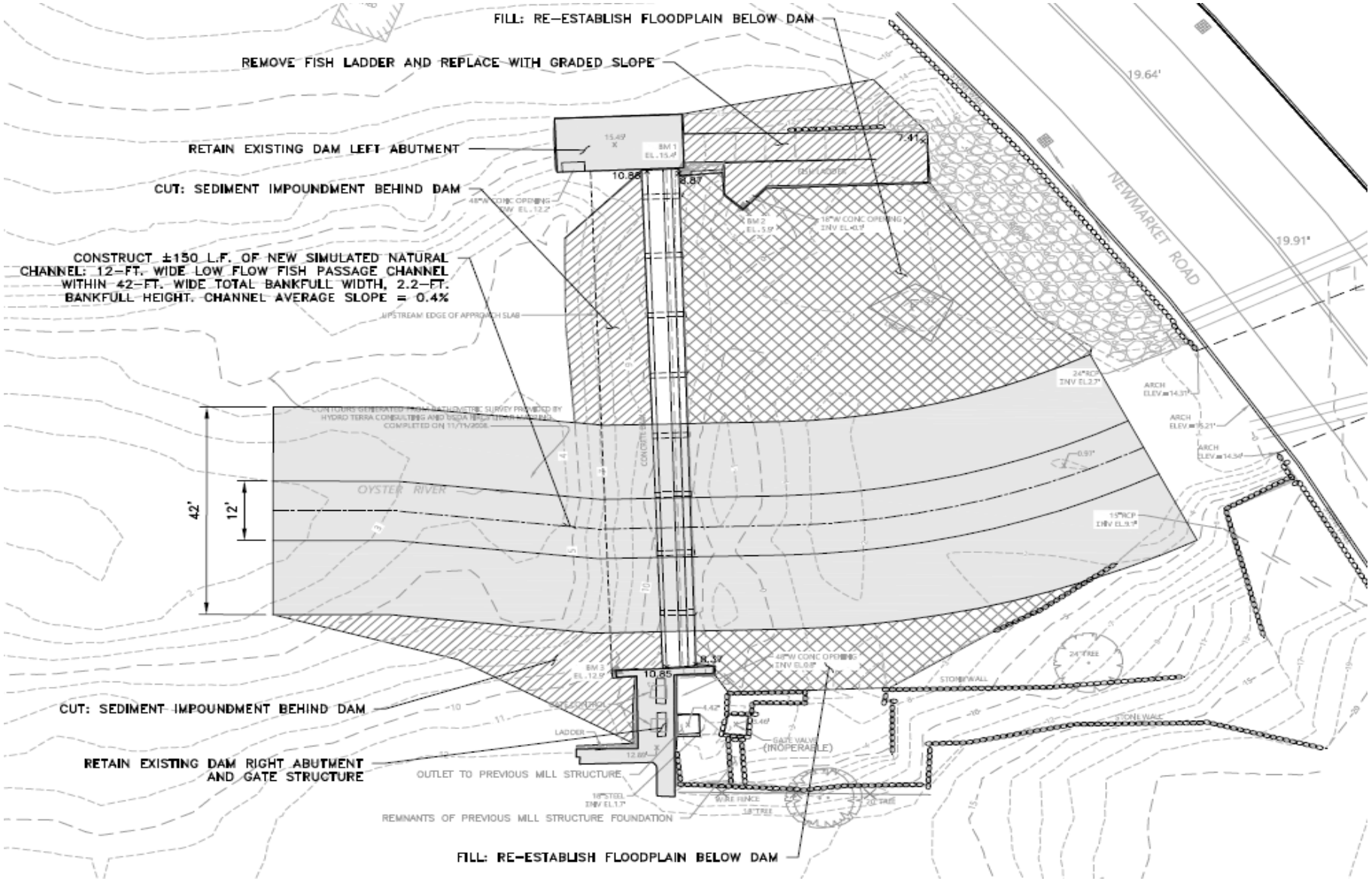
Alternative 3 – Dam Stabilization





A/3 SECTION A
SCALE: 1"=2'

Alternative 5 – Dam Removal



Cultural Resource Mitigation


1975
OYSTER RIVER FISHWAY
CONSTRUCTED BY
N. H. FISH & GAME DEPARTMENT
—COOPERATORS—
TOWN OF
U. S. FISH &


THIS DAM WAS ERECTED
BY
MRS. EDITH ONDERDONK
IN MEMORY OF HER FATHER
HAMILTON SMITH


SEAL OF THE STATE OF NEW HAMPSHIRE
1776
OYSTER RIVER MASSACRE
On July 18, 1694, a force of about 250 Indians under command of the French soldier, de Villieu, attacked settlements in this area on both sides of the Oyster River, killing or capturing approximately 100 settlers, destroying five garrison houses and numerous dwellings. It was the most devastating French and Indian raid in New Hampshire during King William's War.

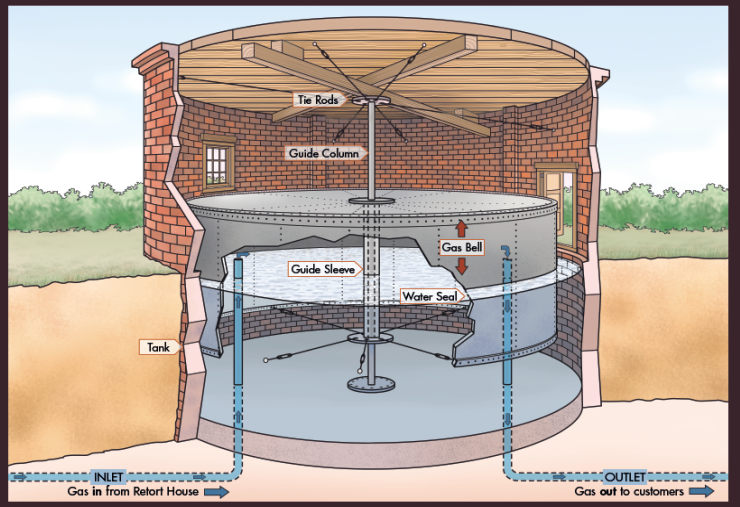
THE CLAREMONT GASHOLDER HOUSE

Claremont's 1859 Gasholder House was a rare example of early gas-storage technology. Coal gas was stored and sent to consumers using a simple structure called a gasholder, a sealed vessel that rose vertically as it was filled with gas during the day and fell as gas was consumed at night, with greater demand in darker and colder months. The Claremont Gas Light Co.'s gasholder technology followed typical industry patterns. The company's first gasholder—the round, brick 1859 Gasholder House, held about 12,000 cubic feet of gas. Its vertical movement was guided by a central column, an early 19th-century British design. Claremont's gasholder was reportedly the last known example in the world when the building was demolished in 2015.

In 1905, the Claremont Gas Light Co. built a second, 50,000-cubic-foot-capacity gasholder for its new carbureted water gas plant. The new design incorporated a telescoping, multiple-section tank supported by an external steel frame. The new holder increased delivery pressure of the gas and helped age it to improve quality. The 1859 gasholder became a "relief holder" to cool the gas, regulate pressure, and remove the last traces of coal tar. In 1924, an even larger gasholder of similar design was built for additional storage capacity. The 1905 holder became the relief holder, and the 1859 holder became a coal tar storage well.

The 1859 Claremont Gasholder House ruins before demolition in 2015. The components of the rare pre-Civil War structure are expressed by the concentric pavement rings, vertical wood and steel posts, and overhead truss rods of the plaza around you.

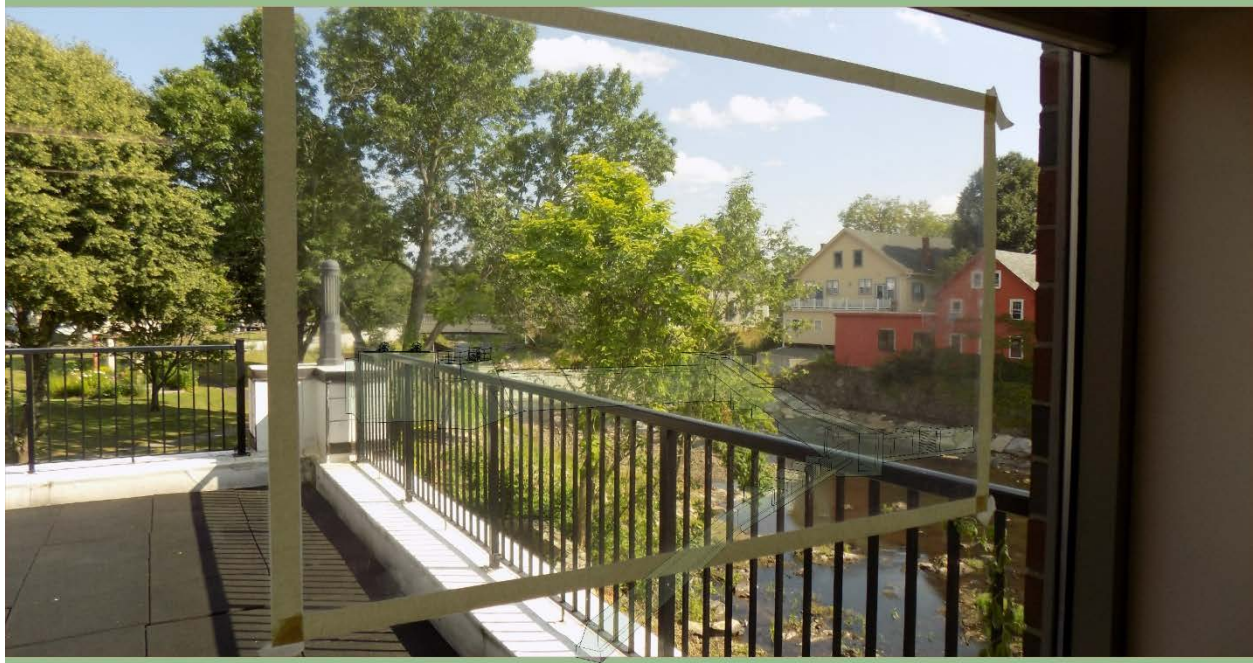
SOURCE: MILESTONE HERITAGE CONSULTING

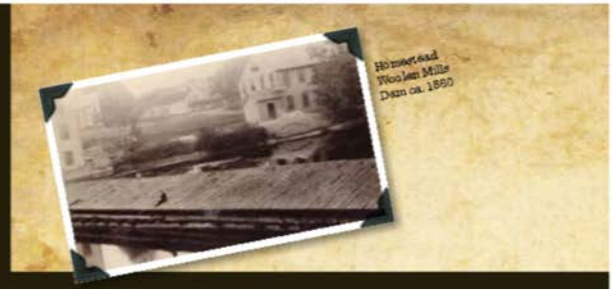


How Claremont's 1859 Gasholder House Worked

Gasholder houses shared the same basic structure and operated on the same general principles. Claremont's 36-foot-diameter, brick-walled Gasholder House sheltered a watertight, belowground pit, or tank, filled with water. The tank contained a smaller-diameter gas bell, a giant upside-down hollow cup made of riveted iron plates that floated open end down in the water. This arrangement created a water seal, forming an airtight space under the bell. Fresh gas was pumped into the space through an inlet pipe in the tank floor. The pressure of the trapped gas, held by the water seal, forced the bell upward, filling it with stored gas. The bell's vertical travel was guided by a central iron guide column inside a tubular guide sleeve at the center of the bell. The tank and column were held in place by radiating tie rods. The gas-filled bell acted like a giant piston. Gravity pushed the bell down, pressurizing the gas and forcing it into an outlet pipe and into service mains for delivery to consumers.

ILLUSTRATION: DENNIS O'BRIEN: MAPS AND WAYFINDING, LLC





West Swanzey Village Historic District Walking Tour

West Swanzey, New Hampshire

New England's industrial prosperity in the 18th through early 20th centuries greatly depended on damming the region's abundant rivers to power the mills that lined them, even in the smallest villages. The millponds and falls created by the dams, and the adjacent mill buildings, are enduring elements of New England villages' settings and character. But the dams have also long been a barrier for migratory fish passage. As early as 1789, the newly formed NH General Court passed a law that required Ashuelot dam sluices to be kept open from May 10 to July 20 every year to enable Atlantic salmon and shad to return to their spawning grounds. The removal of Homestead Dam in 2010 facilitated the restoration of these valuable fish populations.

Sincere appreciation to the following persons and organizations for brochure support and assistance:

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New Hampshire Department of Environmental Services

National Oceanic and Atmospheric Administration

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Richard Scaramelli

John Bridges

This walking tour brochure highlights important places and people in the West Swanzey Historic District, a mill village whose history and intact appearance make it eligible for listing in the National Register of Historic Places. Developing in the 18th century around the falls in the Ashuelot River, the small village grew and prospered as the river was dammed, enabling mills of various kinds to tap the energy potential of the 55-mile long river. Manufacturing flourished in the 19th and 20th centuries, as larger operations in woodworking and textiles took advantage not only of the mill dam, but eventually of steam power, railroad transportation, and finally electrification. The closure of the last and largest mill, Homestead Woolen Mills, in 1985, left the Homestead Dam – itself the last timber-crib dam on the Ashuelot – without purpose and increasingly vulnerable to river flooding. After a formal review process, the dam was removed in 2010. This

pail components, and woolen fabrics.

The early economy of the village was based on agriculture, lumbering, and wool processing, but by 1830 shifted to large-scale production of woodenware and woolen textile manufacturing. The leaders in this new direction were members of the Stratton family, beginning with Richard Stratton, who came to West Swanzey in 1789.

The Stratton family's businesses grew from a small fulling mill, which made cloth denser and firmer, and sawmill on the west side of the river to a substantial grouping of wooden ware, textile, lumber, and grist mills crowding both banks of the Ashuelot River. New companies formed and rented space from the Stratton family, bringing new businesses to the community.

trend. In 1850, Isaac Stratton built the first steam-powered saw mill in West Swanzey near the railroad depot.

At the peak of production in the 1880s, the village contained a woolen mill, two wooden box companies, two wooden ware mills manufacturing buckets and pails, and a grist mill. The influx of capital from the mills led to the growth of a village with significant religious, civic, commercial, and residential buildings clustered between the manufacturing interests on the west side of the Ashuelot River, and the Ashuelot Railroad on the east side of the river.

Points of Interest

1 Homestead Mills Complex

2 Thompson Covered B

1 The Homestead Woolen Mills Complex

The complex on the west side of the Ashuelot River includes the Stratton Woolen Mill (1866), the Stratton Woolen Company Brick Mill (1868) and the South Mill (ca.1950), as well as several special function buildings: a

2 Thompson Covered B

(NH #5 bridge on the Cover
of Southwest NH and world-

Swanzey carpenter Za
supervised the constru
West Swanzey (Thomp
Bridge in 1832 to repla
bridge built in 1774. Th

4 John Stratton Residence

5 Alfred Stratton Residence

9 Stratton Free Library

12 H. Denman Thompson House

13 Stratton/Cutler School

3 Houses on Spring and Prospect Streets

Unlike many Monadnock region industrial villages, West Swanzey's mill owners did not build company housing for their workers. The vast majority of the houses in West Swanzey are single-family houses, modestly styl
Spr
the
20
ma

8 Whitcomb Hall

17 Main Street. This monumental centerpiece of West Swanzey village was commissioned by George E. Whitcomb, prosperous local manufacturer in partnership with C.L. Russell. Recognizing the need for a central assembly place, Whitcomb challenged

from Aberdeen, Scotland. In addition to the building, Mr. Stratton donated 2,000 books and 220 pictures collected during his travels in Europe and Africa.

10 Orramon Snow House/ Dr. Arthur Hopkins House

24 Railroad Street. Orramon Snow lived in this house in the late 19th

installed decorative wrought iron gates at the carriage entrance.

12 H. Denman Thompson House

45 Homestead Avenue. Swanzey achieved momentary international fame when its most famous "native" son returned and built a commodious summer home in 1879 on his

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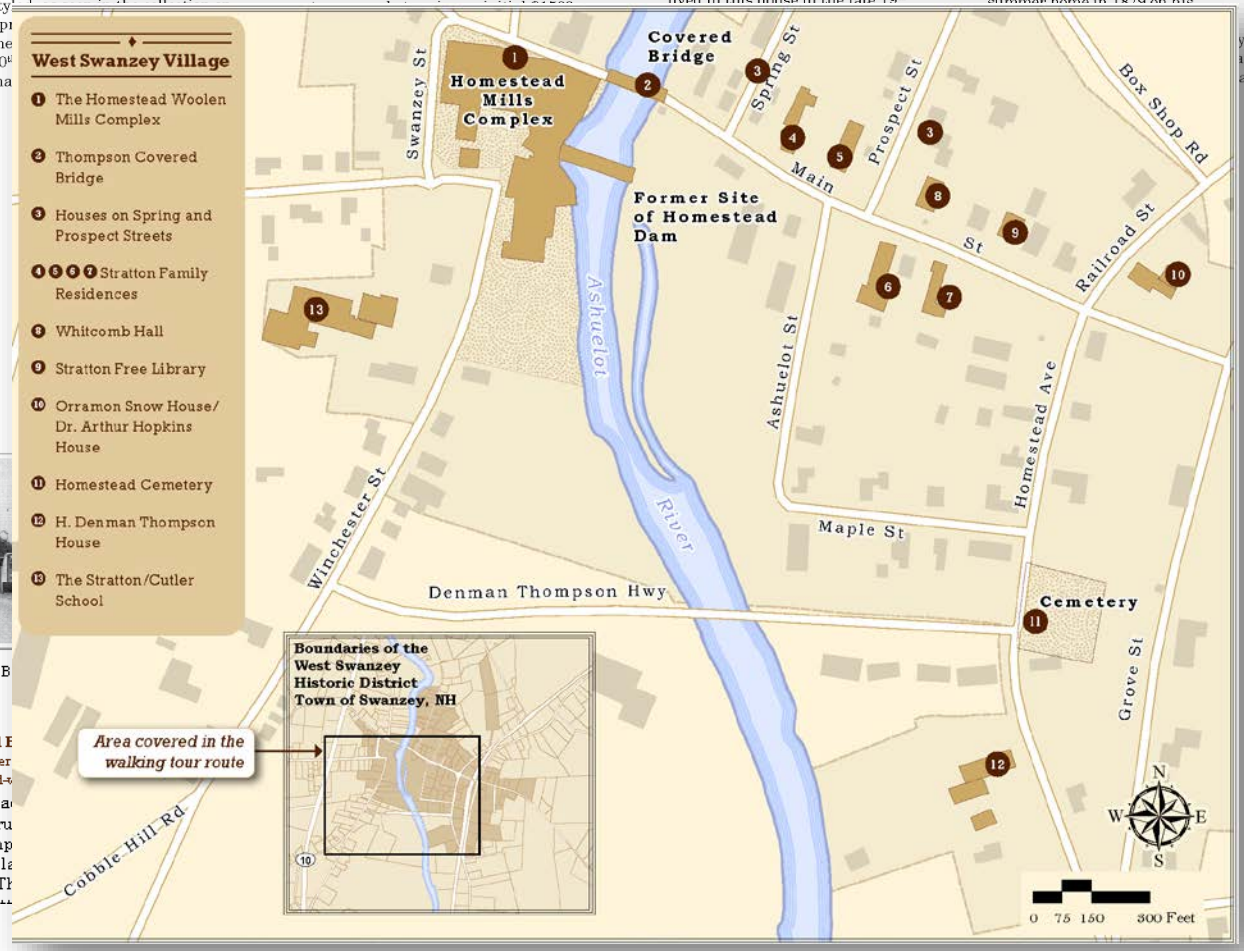

Thank you! Questions?

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