



Higganum Cove MASTER PLAN

Higganum Cove Park Team

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INTRODUCTION

1.0 INTRODUCTION

Mission and Vision of the Higganum Cove Advisory Committee - December 2021

The Higganum Cove Advisory Committee mission is to review, identify and propose necessary actions to be implemented by the town to fulfill the vision set forth in 2000 by the original Higganum Cove Committee.

The vision of the committee is to make the Higganum Cove a town park open to the public and to be used for passive recreational and educational activities while protecting the outstanding natural attributes of the Cove connecting the Higganum Creek to the Connecticut River.



This vision has three parts:

1. PASSIVE RECREATION

The Cove should be available for bird watching, fishing, hiking, and kayak launching. Walkable connections should be made to Higganum Center and other areas of interest surrounding the Cove. A pavilion should be built to be a focus for picnics, educational or other fitting events.

2. HISTORICAL AND ENVIRONMENTAL EDUCATION

The Cove is a very special place for both an environmental and historical perspective. It should also be available for school children and high school students for nature and historical studies.

The past manufacturing history of the Cove, and the importance of waterpower for the 19th and 20th century economy of Higganum, should be memorialized by placement of explanation panels where appropriate.

Likewise, the very special role the Cove plays as an ecosystem part of the Connecticut River should be preserved and explained via panels where appropriate.

Where practical public viewing stations should be constructed to highlight all the unique aspects, historical and environmental, of this special place.

3. ON-GOING MANAGEMENT OF THE COVE

Because the Cove should be used for a diverse array of open space, recreational and educational uses open to the public, our vision is to have a standing Higganum Cove Committee to manage the Cove. The committee's responsibilities should include control of maintenance activities, funding requests and allocation of Cove resources when needed.

2

RESEARCH & DISCOVERY

Right: 1957 Aerial

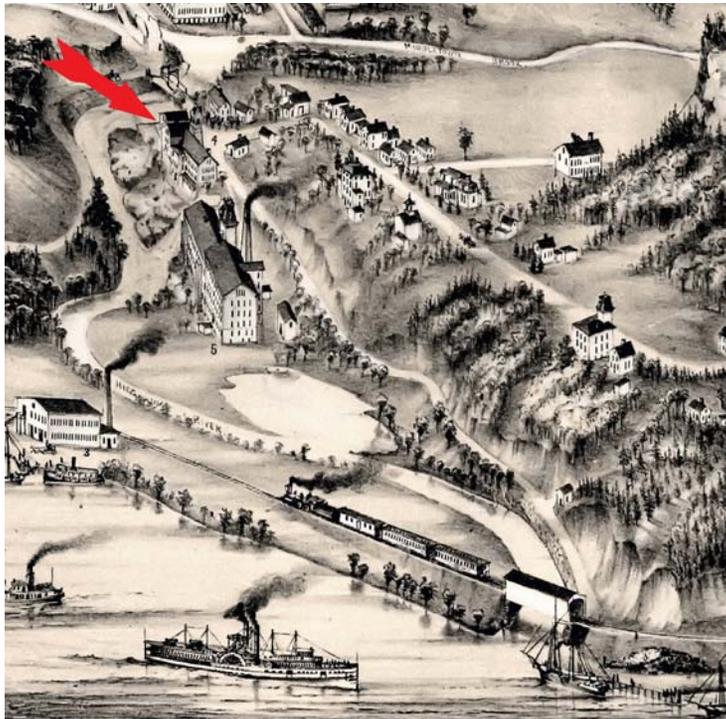


Higganum Cove

Remarks by Elizabeth Malloy, Haddam Historical Society Ribbon cutting ceremony

“Although the mill buildings, sluiceways and water tower are gone, this beautifully restored site still possesses the ghosts of our community’s industrial past and the heritage of many of those who called Haddam and Higganum home.

The water power of the Higganum River has been used for over 300 hundred years. The earliest mill was a grist mill which provided original settlers and their descendants a place to grind their wheat into flour and their corn into cornmeal. Other early mills included a fulling mill, a process in the making of cloth.



*Above: Historic Illustrated Aerial, Higganum, CT
Right: 2022 Drone Aerial Image*

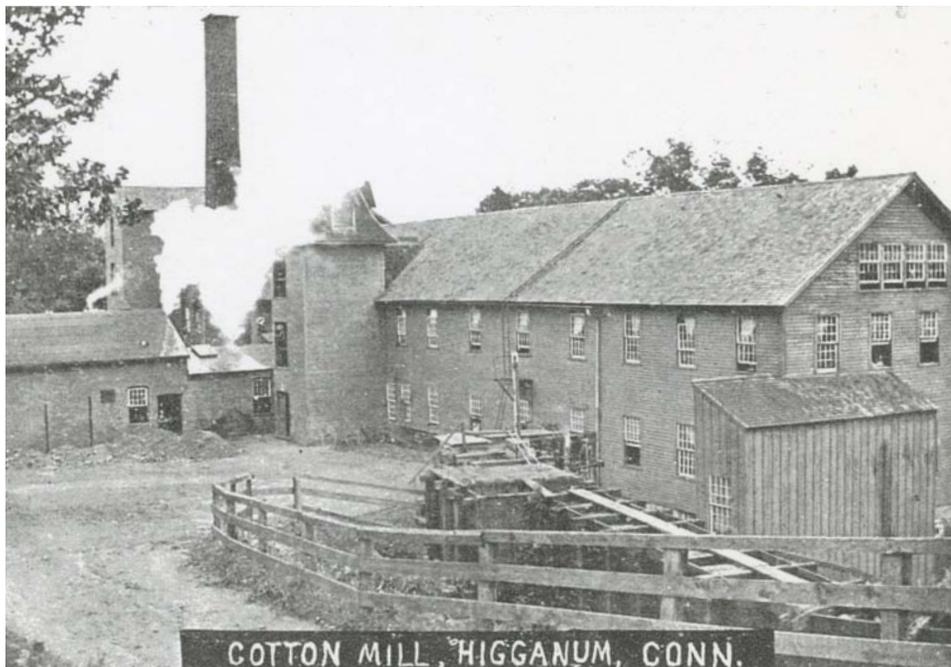




During Higganum's heyday as a ship building center the river provided power to an oakum factory which manufactured the caulking used in wooden ships.

The 1859 Map of Higganum shows the Higganum Manufacturing Company occupying a mill at this site. This small firm, not to be confused with the later, larger firm of the same name, manufactured oakum and cotton.

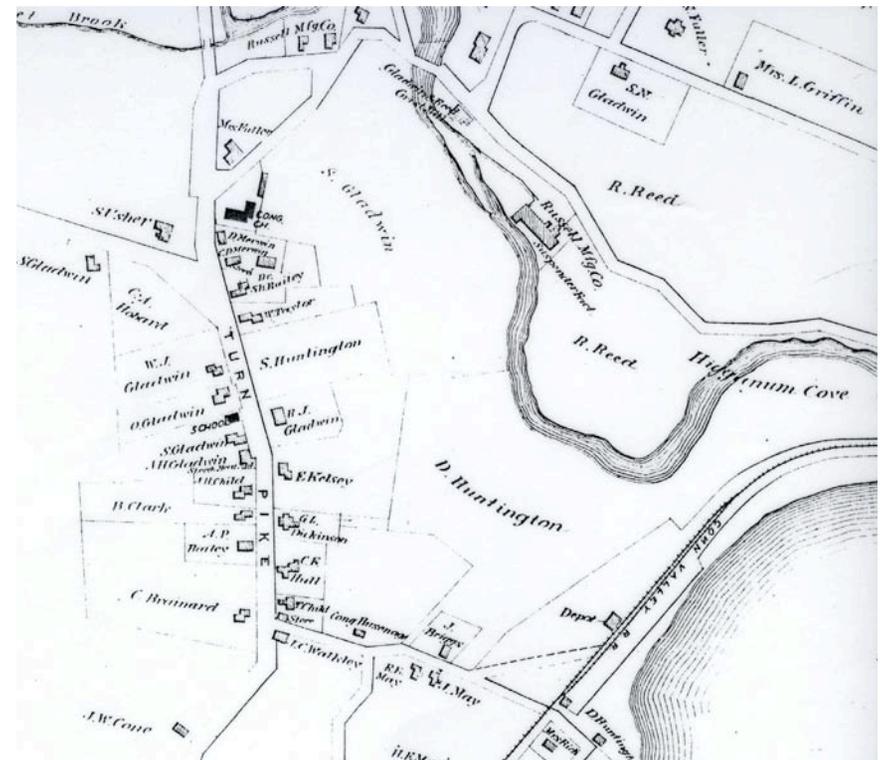
1860 Russell Manufacturing constructed a sizable mill to fabricate cotton webbing. This material was used for making suspenders and by the 1890s they were the largest producer of suspenders in the country. I like to think that Higganum helped "hold up the country" for the last half of the 19th century. This mill was just one of the Russell's plants with a number being located in Middletown.



Cotton Mill, Higganum, CT



Model 1903 Suspenders, produced by Russell Manufacturing



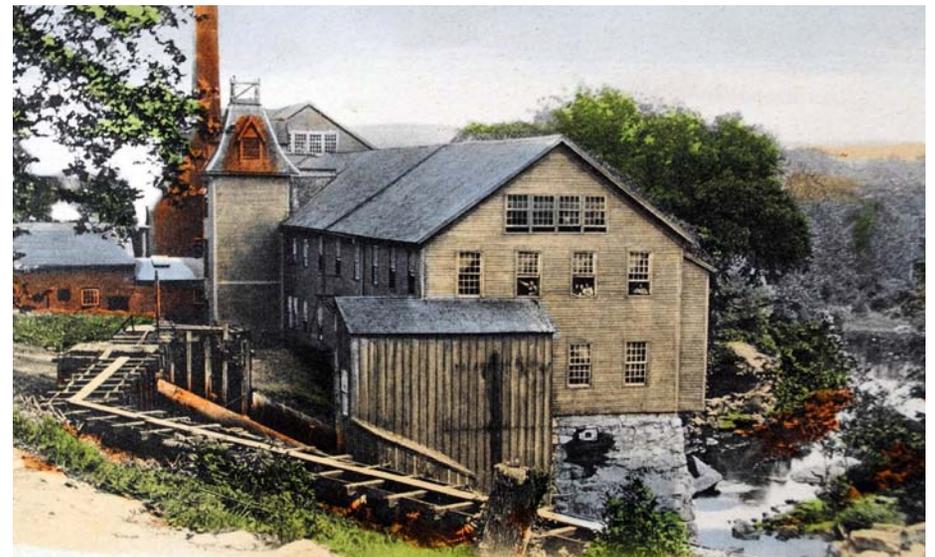
1874 Russell Manufacturing





They also fabricated items that contributed to the war effort during WWI including canteen covers, first aid pouches, belts for infantry, cavalry, officers, cartridge belts, rifle slings and much more. Higganum again provided items for the greater good, this time on a global scale.

Russell was one of the village's major employers including descendants of original founders as well as early immigrants including the Irish, Scottish and Danish. In 1880 Rose Bailey, age 12 worked full time here in the "cotton mill" and boarded with a local family, a good distance from her family in Portland. The entire Sorenson Family from Denmark worked here including 11-year-old daughter Sarah. The mill actually employed many young children and teenagers and most of the employees were under the age of 20. Although Connecticut was at the forefront of Child Labor Laws it wasn't until the early 20th century that many states set a minimum age of 14 for manufacturing workers.

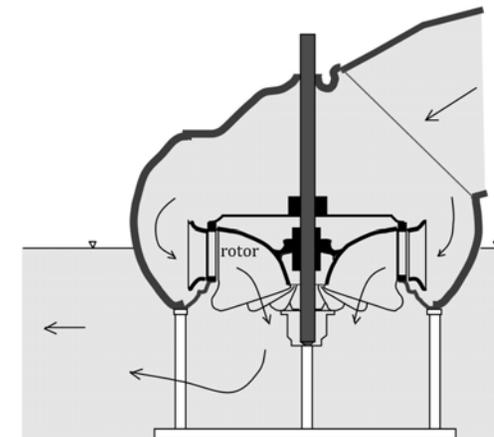
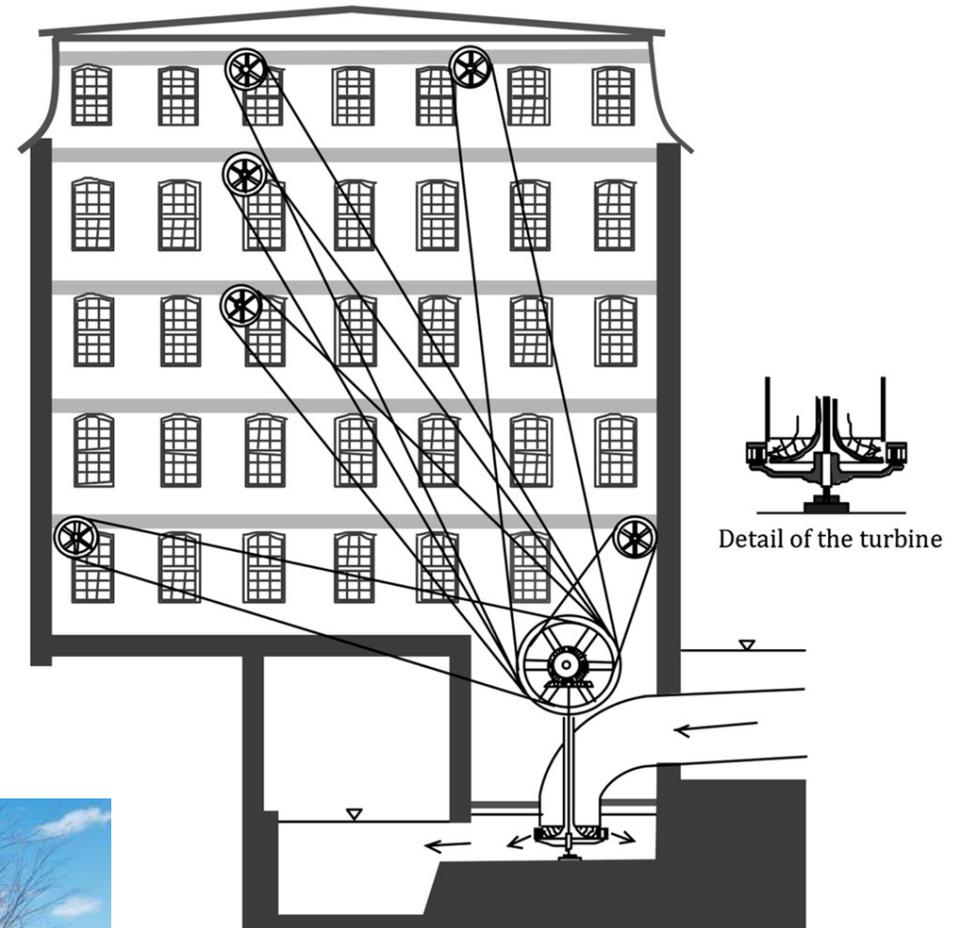


Russell Company Mill, Higganum, CT

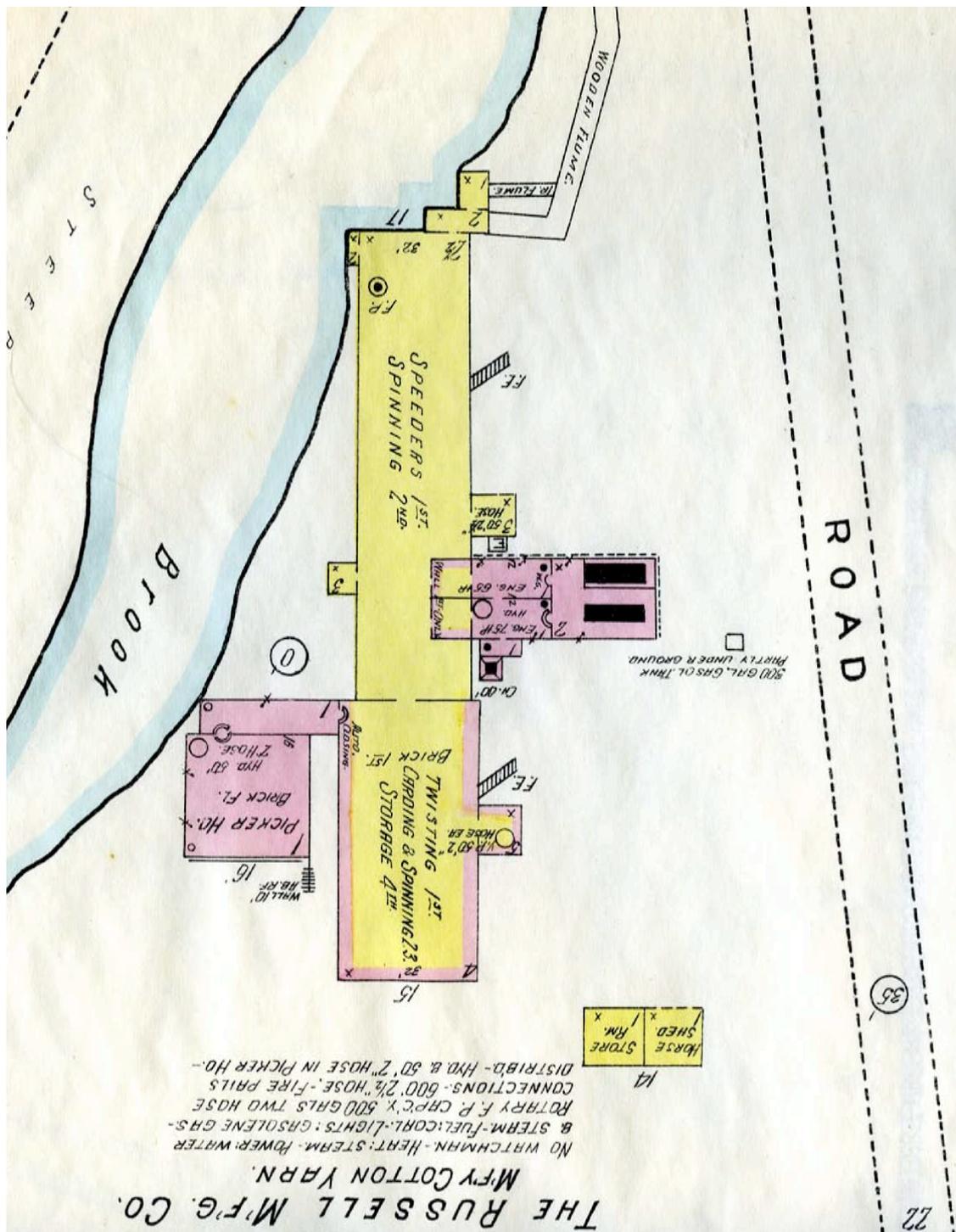
In 1920 Frank Frissell a former Superintendent of Russell Manufacturing purchased the site and open the Frissell Fabric Company. They manufactured and dyed all types of textiles including braided fabric. Frissell became well known and wealthy after patenting a belt like cartridge carrier for machine guns just prior to WWI.

In 1946 Frissell sold the site to Frismar Company which fabricated mimeograph paper. A number of Higganum residents today recall working here and remember a time when goods were manufactured in town and you could buy all your necessities in the village. It was a time people would walk to work, buy your groceries at Olsen's and grab an ice-cream at Ruth's.

The site holds memories for many different generations whether it was your first job Frismar's or a dare to climb the water tower in the 1970s. But let us not forget those who ground the grain 300 years ago or the 12 -year- old who toiled in the mill in the 1870s. I hope that visitors will enjoy the natural beauty of the site and respect its long industrial history."







Above: 1914 Sanborn Map of Russell Company Mill, Higganum, CT
Left: 2022 Drone Aerial Image

THE FOUNDATION

Remnants of the cotton mill foundation exist in their original position. The turbine room structure protrudes into the creek and is the most prominent masonry feature.

Most of the stone foundation is buried under soil that was placed upon completion of the EPA environmental cleanup. It is presumed that some of the areas filled were cellar spaces.

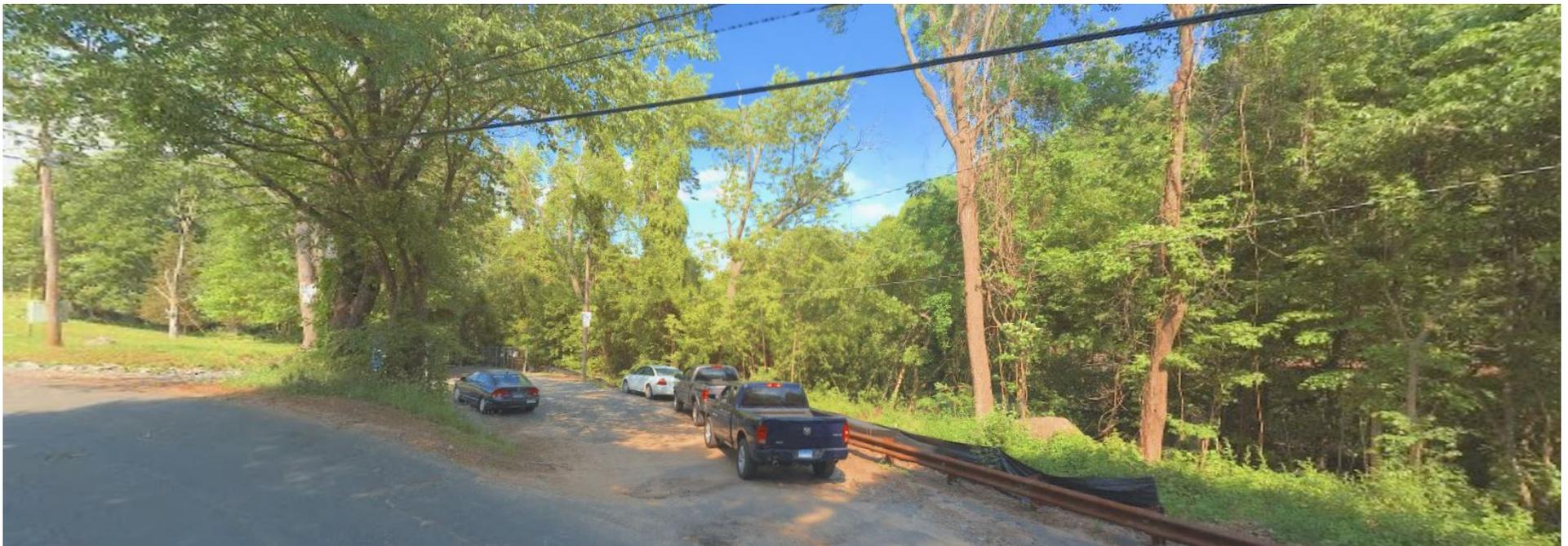
The building was expanded over time and a variety of materials was used for the newer foundations like brick, brownstone, and oil drums filled with concrete.

SITE REMEDIATION

The CTDEP commissioned an environmental assessment in 1995 that documented site contamination. Findings were published in the Higganum Cove Site Assessment Report, 4/18/97.

The EPA designated the site as a Superfund Site and allocated over \$3M for remediation to residential standard. Remediation involved removal of debris, contaminated soils, and submerged sediments in 2015. Soil removal exposed building foundations as seen in the following photographs.

Imported soil was placed over the site and covered most of the exposed foundations. Native trees, shrubs, grasses, and wetland plants were planted to stabilize the site. No provisions for public use were included except for barrier fencing along dangerous drop-offs.



Upper mill site overgrown with trees and vegetation



LEGEND

	EXISTING CONTOUR		EXISTING STONE WALL TO BE BURIED		PROPOSED GRAVEL VEHICULAR ACCESS DRIVE
	EXISTING SPOT GRADE		PROPOSED UPLAND TREE PLANTING		PROPOSED WATER BAR
	PROPOSED CONTOUR		PROPOSED UPLAND MEADOW PLANTING		PROPOSED STONE-LINED SWALE
	PROPOSED SPOT GRADE		PROPOSED NATIVE SHRUB PLANTING		PROPOSED STRAW WATTLES
	PROPERTY BOUNDARY		PROPOSED EMERGENT, SUBMERGED & FLOATING AQUATIC VEGETATION		PROPOSED EROSION CONTROL BLANKET
	EXISTING TEMPORARY SILT FENCE		PROPOSED DOWN PEDESTRIAN ACCESS PATH		
	EXISTING TEMPORARY SECURITY FENCE				
	PROPOSED 4 TALL CHAIN LINK FENCE				
	PROPOSED TEMPORARY WILDLIFE EXCLUSION FENCE				
	EXISTING WATERCOURSE TO REMAIN				
	EXISTING WATERCOURSE BOUNDARY				
	EXISTING STONE FOUNDATION WALL TO REMAIN				

PLANT LIST

SY#	QTY.	SCIENTIFIC NAME	COMMON NAME	SIZE	ROOT
TREES					
AS	2	ACER SACCHARUM	SUGAR MAPLE	2"-3" CAL.	B&B
BL	18	BETULA LENTIA	SWEET BIRCH	6"-8" HT.	CONT.
LT	8	LINDENOVIA TULIPIFERA	TULIPTREE	6"-8" HT.	CONT.
PS	5	PINUS TROBIS	WHITE PINE	3"-4" HT.	CONT.
PO	2	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	2"-3" CAL.	B&B
PR	18	PRUNUS SEROTINA	BLACK CHERRY	6"-8" HT.	CONT.
QA	1	QUERCUS ALBA	WHITE OAK	2"-3" CAL.	B&B
SA	17	SASSAPARILLA ALBIDUM	SASSAPARILLA	6"-8" HT.	CONT.
TOTAL:	71				
SHRUBS					
AA	45	ARONIA ARBUTIFOLIA	RED CHONEBERRY	18"-24" HT.	CONT.
CB	45	CORNUS PACIFICOSA	GRAY DOGWOOD	18"-24" HT.	CONT.
CS	18	CORNUS SERICEA	REDOSMIR DOGWOOD	18"-24" HT.	CONT.
RA	45	RHUS AROMATICA	FRAGRANT SUMAC	18"-24" HT.	CONT.
RC	32	RHUS COPALLINA	WINGED SUMAC	18"-24" HT.	CONT.
RP	17	ROSA HULSTRIIS	WHAFF ROSE	18"-24" HT.	CONT.
TOTAL:	102				
EMERGENT, SUBMERGED & FLOATING AQUATIC VEGETATION					
AC	100	ACORUS CALAMUS	SWEETFLAG	2" FLAG	B&B
IV	100	IRIS VERSICOLOR	BLUE FLAG IRIS	2" FLAG	B&B
ND	100	NYMPHAEA ODOATA	WATER LILY	2" FLAG	B&B
PV	100	PELTANDRA VIRGINICA	ARROW ARUM	2" FLAG	B&B
PC	100	PONTEDERIA CORDATA	PICKERELWEED	2" FLAG	B&B
SA	100	SCHODOPLECTUS ACUTUS	HARDSTEM BULLRUSH	2" FLAG	B&B
SP	100	SCHODOPLECTUS PINGENS	COMMON THREE SQUARE	2" FLAG	B&B
ST	100	SCHODOPLECTUS TABERNAEMONTANI	SOFT STEM BULLRUSH	2" FLAG	B&B
SE	100	SILVIA SIABAE	WATER PARSHIP	2" FLAG	B&B
SS	100	SPARGANGLUM EURYCARPUM	GREAT BUR-REED	2" FLAG	B&B
VA	100	Vallisneria spiralis	WILD CELERY	2" FLAG	B&B
ZA	100	Zizania aquatica	WILD RICE	2" FLAG	B&B
TOTAL:	1100				
PROPOSED UPLAND MEADOW SEED MIX					
PROPOSED MIX SHALL CONSIST OF A CORE AND NURSE MIX.					
CORE MIX: NEW ENGLAND CONSERVATION WILDLIFE MIX AS PRODUCED BY NEW ENGLAND WETLAND PLANTS (WWW.NEWP.COM). APPLIED AT A RATE OF 1 LB/1,750 SQUARE FEET. MUST INCLUDE COMMON MILKWEED.					
NURSE MIX: ANNUAL RYEGRASS (LOLIUM MULTIFLORUM). APPLIED AT A RATE OF 10 LBS/1 ACRE.					

GENERAL NOTES

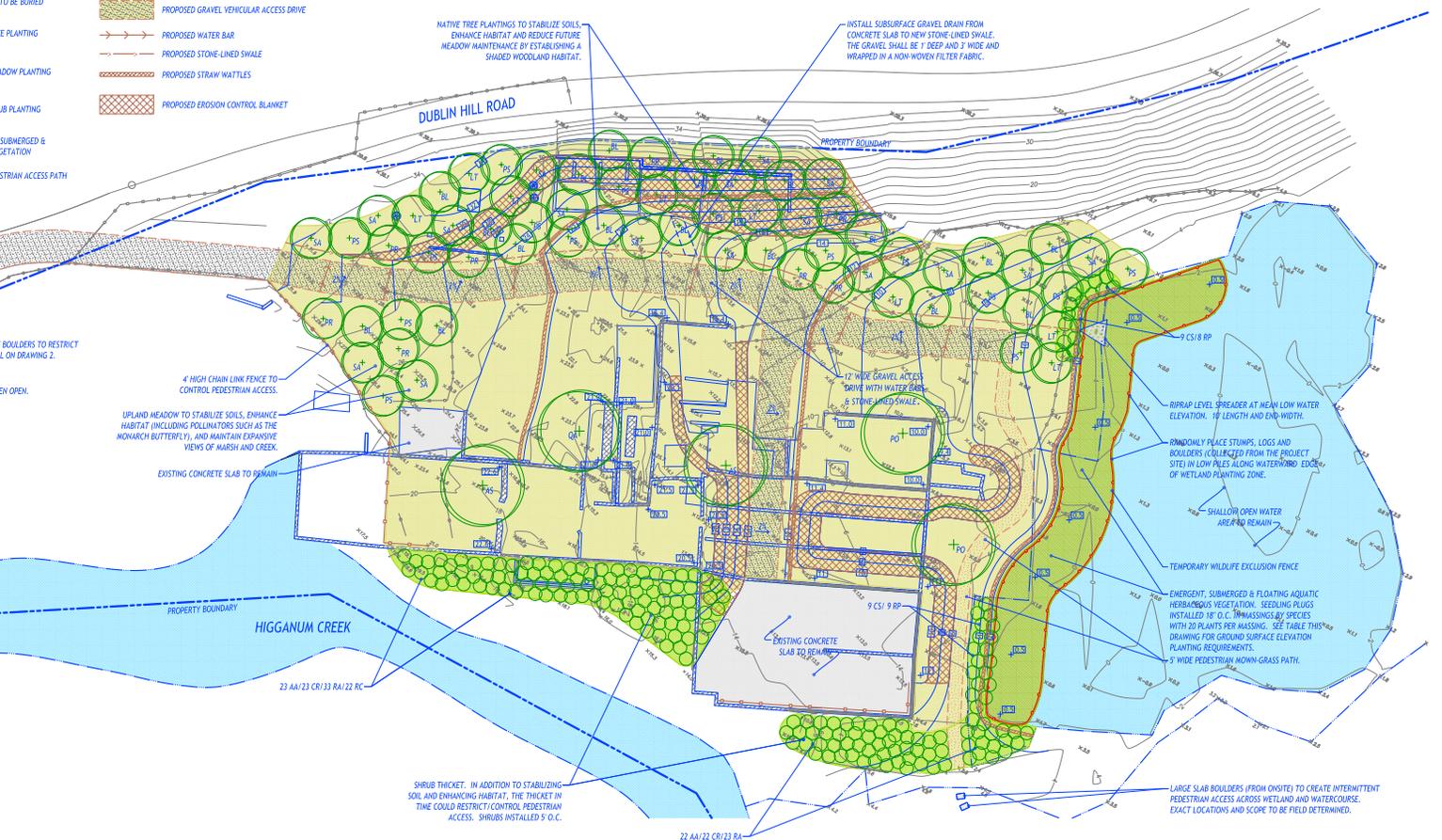
- UNLESS NOTED OTHERWISE, EXISTING CONDITIONS INFORMATION TAKEN FROM A DRAWING PREPARED BY KRATZERTY, JONES & ASSOCIATES, INC.
- PROPOSED SITE RESTORATION INFORMATION PROVIDED BY WILLIAM KENNY ASSOCIATES LLC.
- PLEASE SEE DRAWING 2 OF 2 FOR SITE RESTORATION SPECIFICATIONS AND DETAILS.

WILLIAM KENNY ASSOCIATES LLC
 506 SOUTH ECONOMICAL SERVICES
 LAND USE PLANNING
 LANDSCAPE ARCHITECTURE

195 TENNIS HILL ROAD
 FAIRFIELD, CT 06425
 PHONE: 203 366 0580
 FAX: 203 366 0967
 WWW.WKASOCIATES.COM

GROUND SURFACE ELEVATION PLANTING REQUIREMENTS FOR EMERGENT, SUBMERGED & FLOATING AQUATIC VEGETATION

SCIENTIFIC NAME	COMMON NAME	GROUND SURFACE ELEVATION	
		HIGH	LOW
ACORUS CALAMUS	SWEETFLAG	1.5	1
IRIS VERSICOLOR	BLUE FLAG IRIS	1.5	1
NYMPHAEA ODOATA	WATER LILY	0.5	-1.5
PELTANDRA VIRGINICA	ARROW ARUM	1.5	0.5
PONTEDERIA CORDATA	PICKERELWEED	1.5	0.5
SCHODOPLECTUS ACUTUS	HARDSTEM BULLRUSH	1.5	-1.5
SCHODOPLECTUS PINGENS	COMMON THREE SQUARE	1.5	1
SCHODOPLECTUS TABERNAEMONTANI	SOFT STEM BULLRUSH	1.5	0.5
SILVIA SIABAE	WATER PARSHIP	1.5	1
SPARGANGLUM EURYCARPUM	GREAT BUR-REED	1.5	0.5
Vallisneria spiralis	WILD CELERY	1.5	-0.5
Zizania aquatica	WILD RICE	0	-3.5



SITE RESTORATION PLAN

LOCATION:
 HIGGINUM COVE
 19 NOSAL ROAD
 HADDAM, CONNECTICUT

DATE: JULY 14, 2015

SCALE: 1" = 10' 1" = 20'

REF. NO. 3069



DRAWING NO:
 1 of 2

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DESIGN EXPLORATION

SITE OPPORTUNITIES

Kent + Frost walked the site in April 2022 along with the Town Planner and a member of the Higganum Cove Committee. The group was impressed by the site's historical significance and natural diversity. They studied the remnants and structures of the upper mill area and the central cotton mill. Opportunities for public access, events, education, and recreation were discussed. K+F flew a drone over the site and took the enclosed photographs.

Over the course of a month, Committee members provided valuable input on the types of improvements they and the Haddam community would like to see on the site. These suggestions are compiled in the Initial Programming & Ideas Matrix.

Project Principal Brian Kent presented his impressions of project opportunities to the Higganum Cove Committee in May 2022. These include a viewing area above the turbine room, a turfgrass lawn for passive recreation and event seating in the center of the site, cove access on a boardwalk, a kayak put-in, and a pavilion on the remaining concrete slab.



Initial Programming Elements & Ideas	TOPICS					
	Bill Warner	Peter Baird	Dan Orisini	Ed Schwing	Tim Teran	Steve Gephard
Litter Receptacles	◆					
Restroom/Composting Toilet	◆					
Septic System					◆	
Timber Guide Rail from Parking down	◆					
Entry Gate	◆					
Entry Sign	◆					
Entry Sign w/ Rules	◆					
Welcome Sign w/ Maps					◆	
Local Connections Map		◆				
Terraced Seating	◆					
Picnicking	◆					
Cove Boardwalk	◆	◆		◆		◆
Educational Activities	◆					
Appropriate Events	◆					
Historical Exhibits - Mills	◆					◆
Environmental Exhibits - Ecology	◆	◆				◆
Environmental Exhibits - Geology		◆				
Power Source	◆				◆	
Water Source	◆				◆	
Daffodils	◆					
Wildflowers/shrubs		◆	◆			◆
Native Low Maintenance Plantings	◆	◆				
Mowable Lawn	◆					
Accessible Walking Trails			◆			
Rail Trails		◆				
Hiking Trails		◆				
Security Lighting			◆			
Site Lighting/Entry Sign Lighting					◆	
Remove Graffiti/prevent more			◆			
Views of River & Cove			◆			◆
Swimming Hole/Depot Rd Access	◆					

Initial Programming Elements & Ideas	TOPICS					
	Bill Warner	Peter Baird	Dan Orisini	Ed Schwing	Tim Teran	Steve Gephard
Bird Watching	◆	◆		◆		◆
Bird Boxes	◆					
Osprey platform	◆					
Fishing	◆	◆				
Hiking	◆			◆		
Kayak Launching	◆		◆	◆	◆	◆
Walkable Connections to Village	◆					
Walkable Path to Upper Ruins		◆				
Pavilion	◆	◆		◆		◆
Pavilion at Water Tower		◆				
Gazebo		◆				
Bandshell		◆				
Viewing Stations	◆			◆		◆
Nature Center/café					◆	
Viewing Platform / Mill Ruins		◆		◆		◆
Stream View - Below Waterline		◆				
Picnic Tables		◆	◆			
Benches		◆				
Bike Rack		◆				
Bike Repair Station			◆			
Grills		◆				

INTERPRETIVE SIGNAGE

Many opportunities for interpretation are evident. These can include:

- An entry sign with map, park guidelines, and primary features.
- Historical information about pre-history, colonial activities including the earliest industrial uses, intensive industrial use in the 19th and early 20th centuries, site pollution and restoration.
- Ecological information about flora and fauna
- Geological features and hydrology of the creek that creates the potholes and waterfall, significance of the large watershed.
- Influence of the CT River on the site - tides, migratory fish, Spring freshet



New Entry Sign



Example if Interpretive Sign

FOUNDATION

Foundation stones are hand-hewed granite that were likely sourced from nearby quarries. The drill holes made to split the stones are visible. Skilled local stonemasons were likely employed to construct the foundations.

Upstream from the cotton mill are remnants of earlier mills and water control structures. Very little stonework remains and it's possible that stones used for the later cotton mill were borrowed from these abandoned structures. Most of the foundation is obscured by soil placed during remediation. Uncovering more of the foundation walls offers an opportunity to interpret mill building construction and site history. A similar project at the Coogan Farm Heritage Center in Mystic was completed in 2021.



Stillman Mansion Foundation, Coogan Farm, Mystic, CT - BEFORE

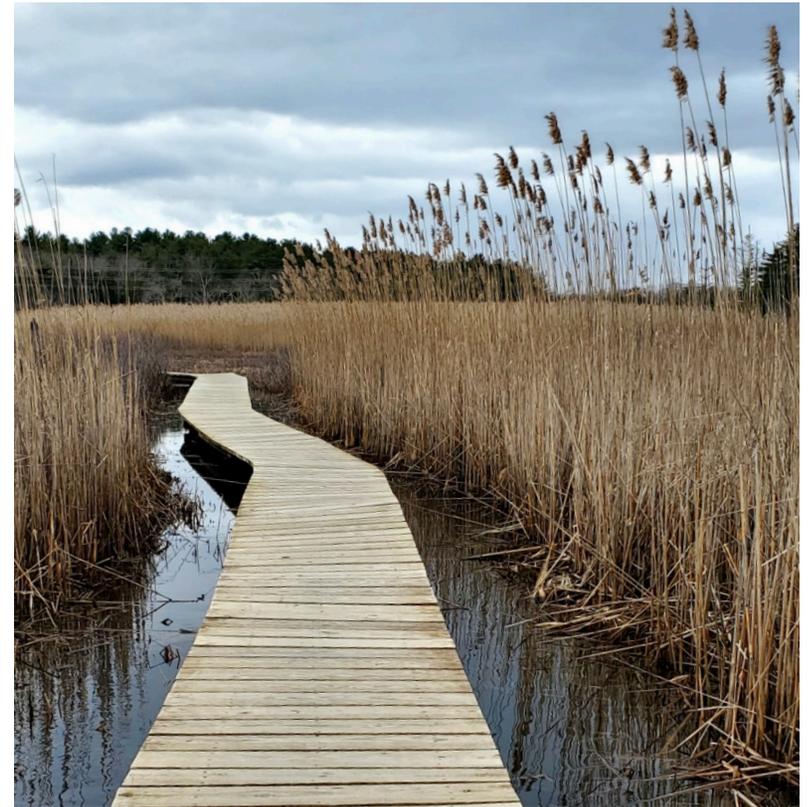


Stillman Mansion Foundation, Coogan Farm, Mystic, CT - AFTER

BOARDWALK

Access over the cove water level may be feasible once annual hydrology including flood levels has been studied.

A boardwalk from shore to a platform over the water has been indicated by the committee as the most desirable feature.



Examples of wetland boardwalks

WATER ACCESS

Options for kayak/canoe access include a put-in below the cotton mill site 1 and at the easternmost location available along the former wharf road and Higganum creek 2.



Example of kayak put-in



PAVILION

A covered pavilion structure has been identified as highly desirable for the site. It can provide shade and shelter for student field trips, special events, and as a rentable community venue for private events.



Example of Post and Beam Pavilion, Coogan Farm, Mystic, CT

Trees

Native Trees over 40':

Acer species, Maple, various species

Fagus grandifolia, American Beech

Platanus occidentalis, American Sycamore

Nyssa sylvatica, Black Gum

Quercus species Oak, various species

Native Trees 20' - 40'

Ilex opaca, American Holly

Ostrya virginiana, American Hophornbeam

Carpinus caroliniana, American Hornbeam

Betula nigra, River Birch

Thuja occidentalis, Arborvitae

Juniperus virginiana, Eastern Redcedar

Crataegus viridis, Hawthorn

Native trees less than 20'

Amelanchier canadensis, Serviceberry

Cercis canadensis, Redbud

Cornus florida, Flowering Dogwood

Hamamelis virginiana, American Witch-hazel

Magnolia virginiana, Sweetbay Magnolia



Shrubs

Native Shrubs:

Aronia, Chokeberry

Ceanothus americanus, New Jersey Tea

Clethra alnifolia, Sweet Pepper Bush

Comptonia peregrina, Sweet Fern

Hydrangea quercifolia, Oakleaf Hydrangea

Hypericum prolificum,
Shrubby St. Johnswort

Ilex glabra, Inkberry

Ilex opaca, American Holly

Ilex verticillate, Winterberry

Itea virginica, Sweetspire

Juniperus horizontalis, Creeping Juniper

Kalmia latifolia, Mountain Laurel

Myrica pennsylvanica, Northern Bayberry

Rhododendron maximum,
Rosebay Rhododendron

Rhododendron viscosum, Swamp Azalea

Rhus aromatica, Fragrant Sumac

Spirea latifolia, Broadleaf Meadowsweet

Spirea tomentosa, Steeplebush

Viburnum, Various species



Perennials & Grasses

Native Perennials

Asclepias, various species

Aquilegia Columbine, various species

Aster, various species

Baptisia australis, Blue False Indigo

Coreopsis lanceolata, Lanceleaf Coreopsis

Echinacea purpurea, Purple Coneflower

Eupatorium, various species

Geum canadense, White Avens

Liatris spicata, Blazing Star

Lupinus perennis, Lupine

Monarda, Beebalm, various species

Rudbeckia, Blackeyed Susan, various species

Verbena hastata, Blue Vervain

Solidago nemoralis, Gray Goldenrod

Native Grasses

Bouteloua gracilis, Blue Gramma Grass

Festuca, Various species

Panicum, Various species

Sporobolus airoides, Prairie Dropseed

Schizachyrium scoparium, Little Bluestem



Wildflower Meadow

Mesic to Dry Native Pollinator Mix (20LBS/ACRE)

- 29.1% *Schizachyrium scoparium* 'Prairie View', Little Bluestem
- 20.0% *Sorghastrum nutans*, Indiangrass
- 15.0% *Elymus virginicus*, Virginia Wildrye
- 8.0% *Echinacea purpurea*, Purple Coneflower
- 5.0% *Panicum clandestinum*, Deertongue
- 3.0% *Chamaecrista fasciculata*, Partridge Pea
- 3.0% *Coreopsis lanceolata*, Lanceleaf Coreopsis
- 3.0% *Rudbeckia hirta*, Blackeyed Susan
- 3.0% *Verbena hastata*, Blue Vervain
- 2.0% *Heliopsis helianthoides*, Oxeye Sunflower
- 1.5% *Asclepias incarnata*, Swamp Milkweed
- 1.0% *Aster novae-angliae*, New England Aster
- 1.0% *Pycnanthemum tenuifolium*, Narrowleaf Mountainmint
- 1.0% *Senna hebecarpa*, Wild Senna
- 0.8% *Tradescantia ohiensis*, Ohio Spiderwort
- 0.6% *Eupatorium perfoliatum*, Boneset
- 0.6% *Zizia aurea*, Golden Alexanders
- 0.5% *Baptisia australis*, Blue False Indigo
- 0.5% *Monarda fistulosa*, Wild Bergamot
- 0.5% *Solidago nemoralis*, Gray Goldenrod
- 0.3% *Asclepias syriaca*, Common Milkweed
- 0.3% *Penstemon digitalis*, Tall White Beardtongue
- 0.2% *Solidago rugosa*, Wrinkleleaf Goldenrod
- 0.1% *Aster umbellatus*, Flat Topped White Aster

ADD TO THE SEED MIX ABOVE (1 LB/ACRE)

Bouteloua gracilis 'Bad River'/Bad River Blue Grama
 Centaurea cyanus/Bachelor's Button
 Linum perenne/Perennial Blue Flax

*WILD FLOWER SEED BY ERNST SEEDS,
 MEADVILLE PA 16355; 1-800-873-3321

The native wildflowers and grasses in this mix provide an attractive display of color from spring to fall. Designed for mesic to upland sites and full sun to lightly shaded areas. This mix will attract a variety of pollinators and songbirds.



4

HIGGANUM COVE MASTER PLAN



MASTER PLAN

The Master Plan embodies the best attributes of the site, paired with input from the Higganum Cove Committee and K+F’s creative design expertise.

A principal goal is the careful incorporation of public access on a site with a wealth of scenic, historic and environmental value.

The plan allows for modest investment to achieve full implementation, with opportunities for targeted funding by public grants, and private donations.

The site’s proximity to Higganum Center is recognized as an important cultural and economic asset, while its proximity to the Valley Rail Road State Park and Haddam Land Trust property has great potential for greenway connectivity.

- Legend:**
- 1 Parking Area – 9 spaces
 - 2 Gateway – Sign Kiosk, Bollard
 - 3 Upper Ruins Path
 - 4 Thematic Wildflower Area
 - 5 Main Path w/ Guardrail
 - 6 Seating Area/Overlook
 - 7 River & Turbine Viewing/Interpretive Platform
 - 8 Mill History/Activity Area 30’ x 40’
 - 9 Intermediate Level
 - 10 Stone Masonry Interpretive Area
 - 11 Park Overlook/Bench
 - 12 Lawn
 - 13 Picnic Pavilion/Classroom
 - 14 Planting and/or Interpretive area
 - 15 Kayak Put-In
 - 16 Performance Stage/Cove Viewing, Benches
 - 17 Cove Boardwalk
 - 18 Riverwalk Trail
 - 19 30 x 30 Viewing Platform
 - 20 Downstream Kayak Put-In



DUBLIN HILL ROAD

DEPOT ROAD

HIGGANUM CREEK

HIGGANUM COVE WETLAND





- Legend:**
- 1 Parking Area – 9 spaces
 - 2 Gateway – Sign Kiosk, Bollard
 - 3 Upper Ruins Path
 - 4 Thematic Wildflower Area
 - 5 Main Path w/ Guardrail
 - 6 Seating Area/Overlook



Existing Panorama of Upper Ruins

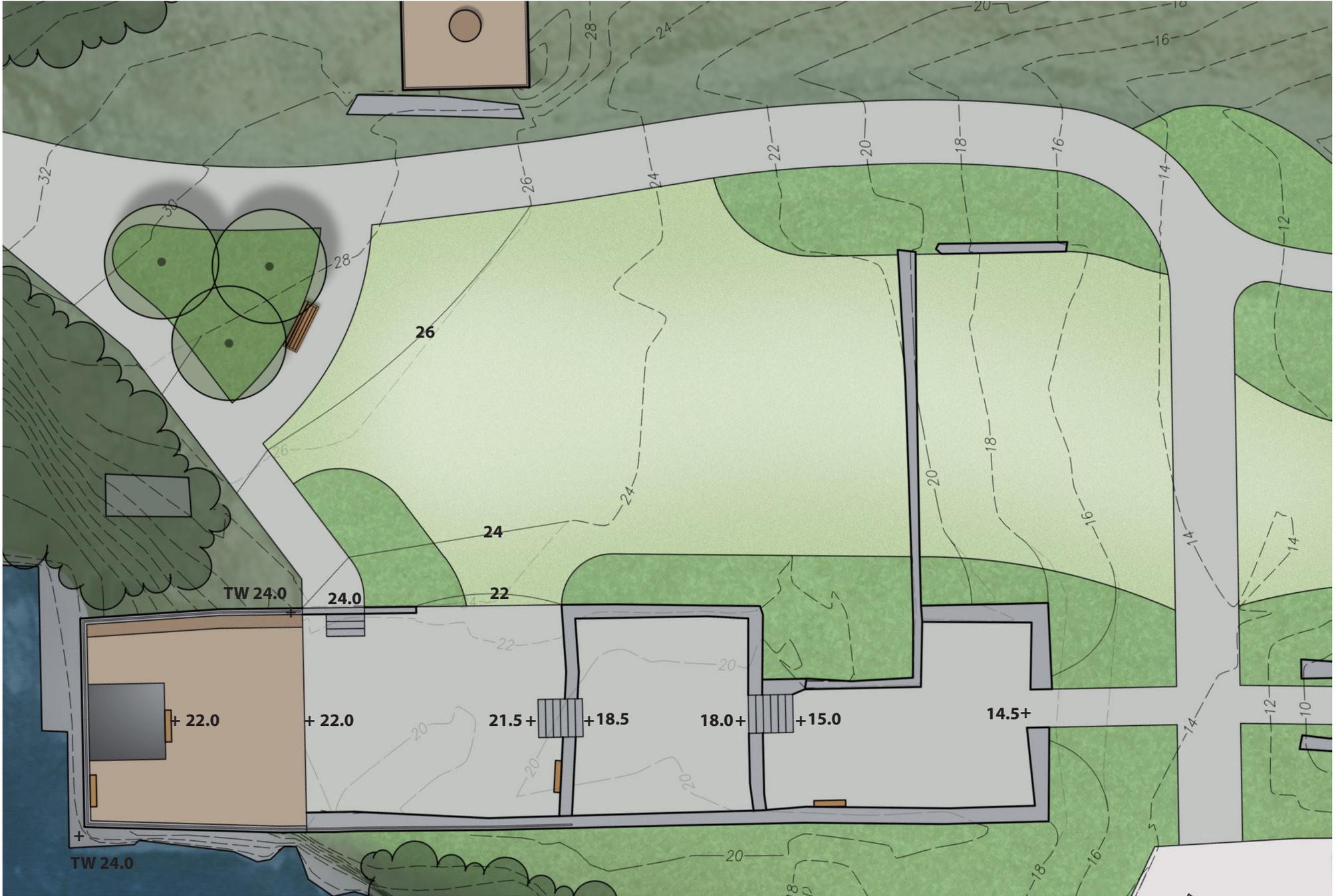


Existing Aerial Imagery



Existing Parking Area





CONCEPTUAL GRADING PLAN

5

CONNECTION TO HIGGANUM VILLAGE

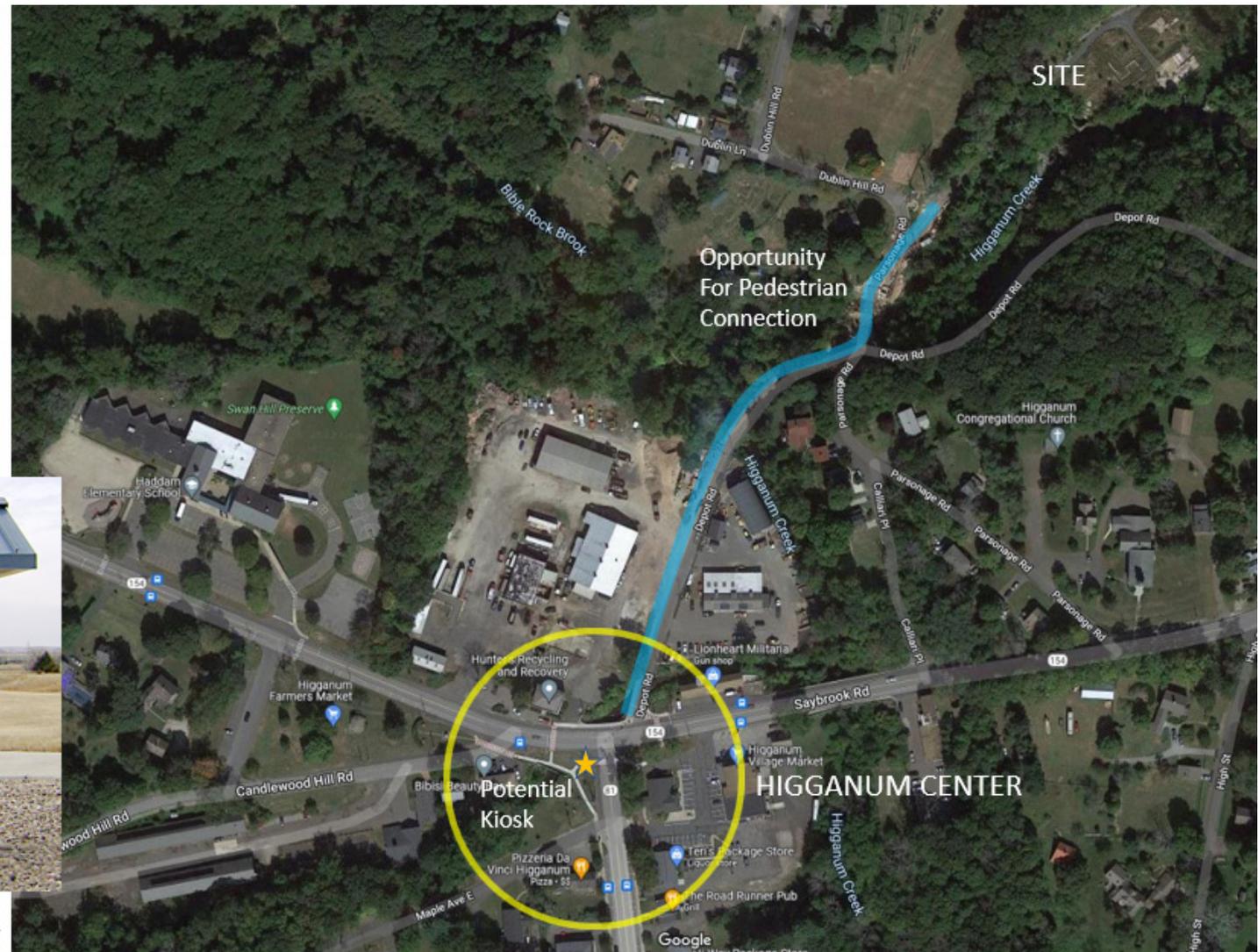
CONNECTION TO HIGGANUM VILLAGE

The Higganum Cove Park entrance is within convenient walking distance from the village center – about 1000 feet. This distance will typically take an average person about four minutes to walk. Because of the small capacity of the

parking lot, visitors should be encouraged to walk to the site. Currently there is no sidewalk, but opportunity exists for a walkway connecting the park to the village.



Examples of Information Kiosk



ITEM	COST	UNIT	QUANTITY	COST	NOTE
Site Demolition					
Relocate Trees on site	\$1,000.00	EA	14	\$14,000.00	<i>Tree spade required At Turbine Area</i>
Demo Chainlink Fence	\$10.00	LF	48	\$480.00	
			Sub-Total	\$14,480.00	
Earthwork					
Clearing and Grubbing	\$7,450.00	ACRE	0.30	\$2,235.00	<i>Planting Bed Areas Remove from foundation infill Placed from on-site stockpile</i>
Strip & Stockpile Topsoil	\$20.00	CY	57	\$1,140.00	
Topsoil Re-use	\$20.00	CY	57	\$1,140.00	
			Sub-Total	\$4,515.00	
Site Improvements					
Bike Rack	\$400.00	EA	1	\$400.00	<i>Removable steel bollard w/ concrete footing</i>
Bench	\$600.00	EA	8	\$4,800.00	
Picnic Table	\$500.00	EA	3	\$1,500.00	
Bollards	\$1,000.00	EA	1	\$1,000.00	
			Sub-Total	\$7,700.00	
Walls					
Dryset Stone Wall - Trail Entrance	\$60.00	SFF	104	\$6,240.00	<i>18" W, 18" H stone wall Repair/stabilize existing & add'l matching stones</i>
Foundation Walls - Repair/infill	\$20,000.00	LS	1	\$20,000.00	
Stone Steps - Within Foundation	\$50.00	SFF	163	\$8,150.00	
			Sub-Total	\$34,390.00	

ITEM	COST	UNIT	QUANTITY	COST	NOTE
Site Structures					
Observation Deck with wooden seat	\$250.00	sf	400	\$100,000.00	20 x 20 Wood structure on new concrete footings
Observation Deck Safety Railings	\$175.00	LF	130	\$22,750.00	Tubular metal w/ code-compliant mesh infill
Cove Boardwalk	\$200.00	sf	400	\$80,000.00	Wood structure on pilings
Turbine Viewing Platform	\$350.00	sf	890	\$311,500.00	Wood decking with structure TBD
Turbine Viewing Platform Safety Railings	\$175.00	LF	143	\$25,025.00	Tubular metal w/ code-compliant mesh infill
Pavilion	\$60,000.00	LS	1	\$60,000.00	Budget estimate cost TBD
Stair Handrails within Foundation	\$150.00	LF	42	\$6,300.00	Tubular metal similar to safety rails
			Sub-Total	\$605,575.00	
Hardscape					
Gravel Parking	\$3.00	SF	3750	\$11,250.00	2" depth, 6" processed base
Concrete Slab for Stage	\$10.00	SF	500	\$5,000.00	5" thick, 4,000 psi concrete, 6" processed stone base
Natural Surface Trail - Upper Area	\$4,000.00	LS	1	\$4,000.00	Upper Mill Area
Stone Dust Surfacing	\$2.00	SF	14344	\$28,688.00	2" depth, 6" processed base
			Sub-Total	\$48,938.00	
Signage					
Main Entry Sign	\$0.00	LS	0	\$0.00	Sign provided by Owner
Interpretive Signs	\$4,000.00	EA	6	\$24,000.00	Coated or Corten steel supports, CHPL* Graphic
			Sub-Total	\$24,000.00	
Landscape					
Tree - Flowering	\$800.00	EA	3	\$2,400.00	B&B, excavation, planting soil, staking
Planting - Upper Wildflower area	\$0.75	SF	6000	\$4,500.00	Native Pollinator Mix
Planting - Shrub and Perennial Area	\$3.00	SF	2961	\$8,883.00	All other Planting Areas
Planting - Lower Wildflower Areas	\$0.75	SF	7443	\$5,582.25	
Grass - Seed	\$0.25	SF	7600	\$1,900.00	Aerate & overseed central lawn
Mulch	\$20.00	CY	27	\$540.00	Woodchip Mulch
			Sub-Total	\$23,805.25	
Site Utilities					
Electric Pull Box	\$450.00	EA	3	\$1,350.00	
Underground Electric	\$25.00	LF	700	\$17,500.00	Trench & backfill, 1.5" conduit w/ conductors
			Sub-Total	\$18,850.00	
			Total of All Items	\$782,253.25	
			20% Contingency	\$156,450.65	
			Grand Total	\$938,703.90	

*Custom High Pressure Laminate