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# Hingham Comprehensive Trails Plan Appendix A

## Hingham Open Space Park Information and Trail Maps

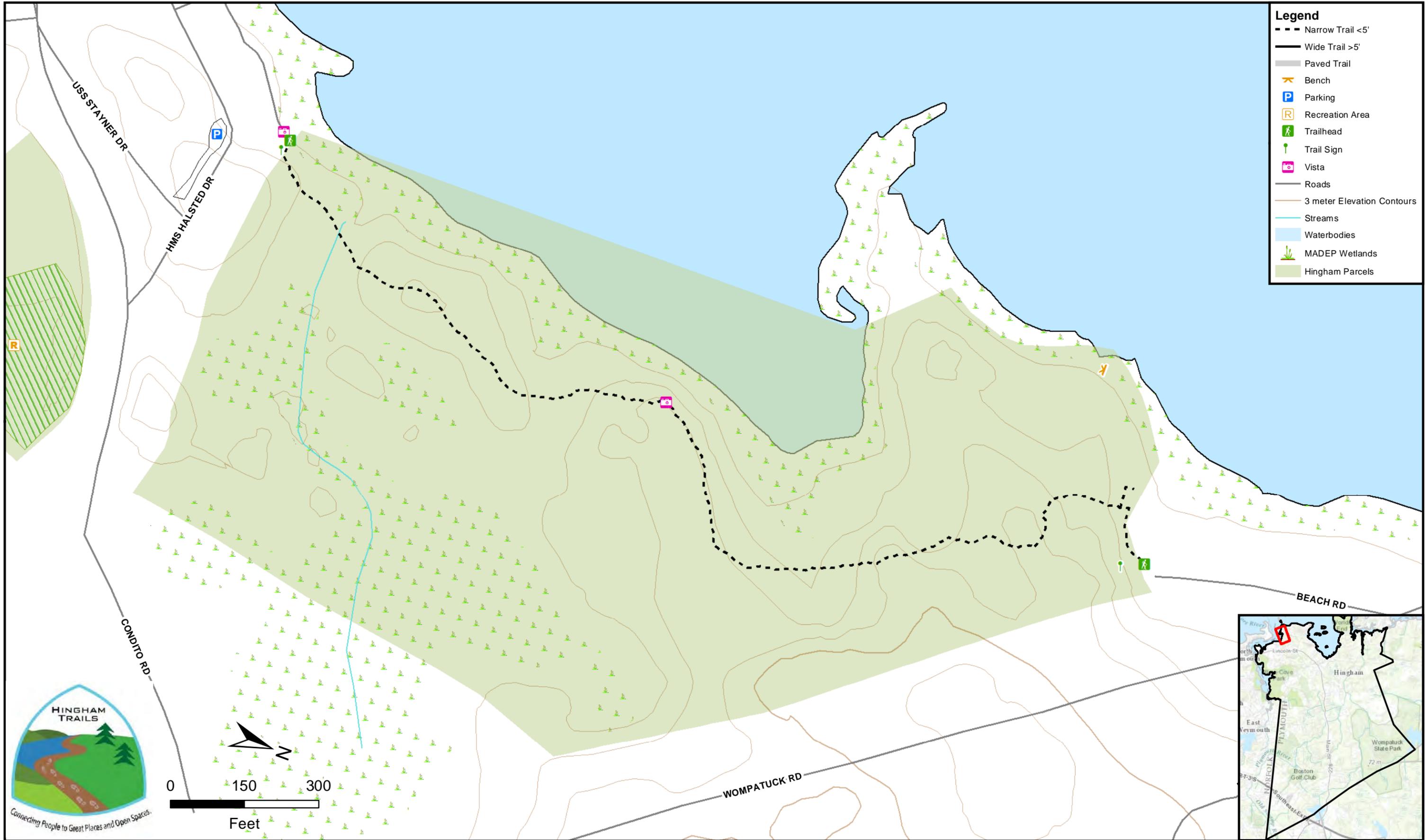




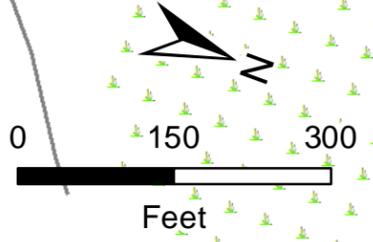
# BOUVE CONSERVATION AREA

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

Approx 0.49 miles  
HMS Halsted Drive/Beach Road



- Legend**
- - - Narrow Trail <5'
  - Wide Trail >5'
  - ▬ Paved Trail
  - ✎ Bench
  - P Parking
  - R Recreation Area
  - 🚶 Trailhead
  - 📍 Trail Sign
  - 📷 Vista
  - Roads
  - 3 meter Elevation Contours
  - Streams
  - Waterbodies
  - MADEP Wetlands
  - Hingham Parcels



# Foundry Pond

Kilby and Weir Streets

Hingham, MA

The pond was created by damming the Weir River, in the late 18<sup>th</sup> Century. It was used sequentially by two ironworks and a wool scouring plant, all of which burned. The Sportsman’s Club eventually acquired it for fishing and later sold it to the town. The 32 acre parcel includes the salt marsh below the recently reconstructed dam an abandoned quarry. Across Rockland Street, Amonte Meadows (CPA Funded acquisition of 3.3 acres in 2009) has grassy areas, wetlands, and a stand of tupelo trees adjoining the Weir River.

Foundry pond is located at the lower end of Weir River between an old Colony railroad grade and the Foundry Pond Dam. Points of entry can be found on Weir Street and by the Log Road on Kilby Street. Special sights to see include the Foundry Pond Dam, the Fish Ladder, an abandoned quarry, and other activities such as hiking, nature study, fishing, birding, and scenic enjoyment of the waterfall at the spillway. The pond functioned as a power source for accommodated the 1840 Hingham Malleable Iron Company which burned in 1876, and then Colonel Weston’s wool processing factory which burned in 1888.



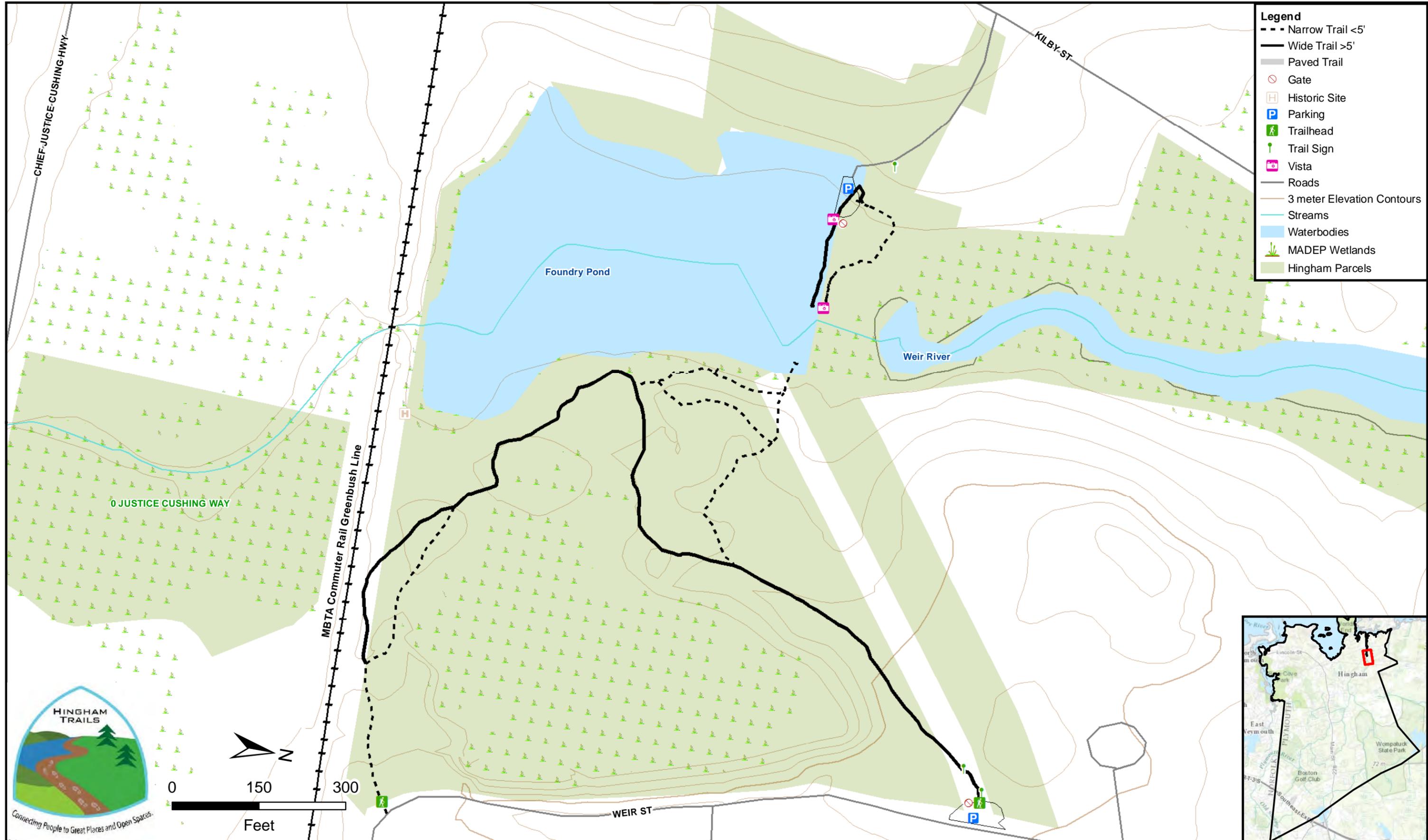
Parking	Trailhead	Paved Trail	Single Track Trail	Wide Forest Trails	Benches	Scenic/View	Cultural Sites	Picnic Area	Interpretative Signs	Fishing Access	Portage Area	Connection to Other Open Space	Connection to Commercial / Transportation Areas
X	X		X	X		X	X			X			

# FOUNDRY POND

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

Approx 0.77 miles  
Weir & 108 Kilby Street

Deer hunting is allowed on this property between  
October 19 and November 28. Special permit by  
the Conservation Commission is required for this activity.



# McKenna Marsh & Marchesiani Farmlands

Weir & Kilby Streets  
Hingham, MA

This open space provides for more than 100 acres that include a freshwater marsh once used as a waterfowl preserve, with a beaver dam of unusual length and linearity. Accord Brook threads through the area, making it important to water supplies of Hingham and Norwell, which has town wells and many acres of publicly owned land abutting the southern border. Considerable high ground and open woods provide easy walking and vantage points to observe waterfowl. Large white cedars can be seen from the trail that skirts eskers toward the northern margin. In 2007, CPA purchase of the Gladys Cushing property of Scotland street added over 2 conserved acres.

Access to McKenna Marsh is provided through Marchesiani Farmland, a large field located along Main Street. This historic farmland was once a part of Pushcart Farm originally purchased by the Marchesiani family in 1934. Parking for McKenna Marsh is provided at the Main Street Middle School proximate to the tennis courts. Park users can follow the sidewalk from the parking area to Main Street and across Main Street via an existing crosswalk to access Marchesiani Farmland. The Farmland, a 25 acre field was acquired by the Town in 2001. The entrance to Marchesiani Farmland is marked by a stone wall and two granite monuments. The McKenna Marsh trail system connects to the Jacob's Pond Conservation Land trails in Norwell, MA.



Parking	Trailhead	Paved Trail	Single Track Trail	Wide Forest Trails	Benches	Scenic/View	Cultural Sites	Picnic Area	Interpretative Signs	Fishing Access	Portage Area	Connection to Other Open Space	Connection to Commercial / Transportation Areas
X	X		X	X		X	X			X		X	

Open Dusk to Dawn  
 Hingham Conservation Commission  
 Contact: (781) 741-1445

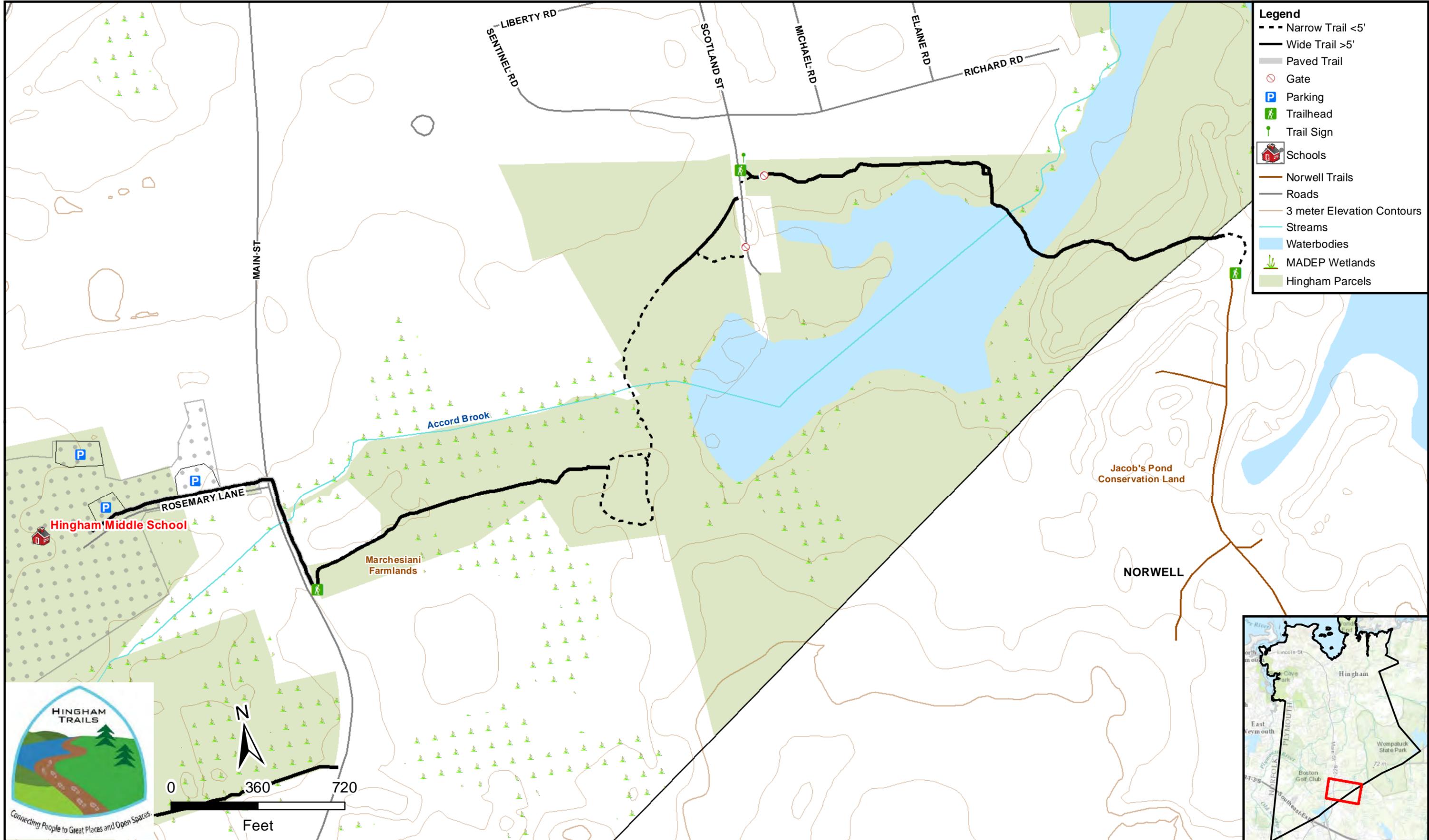
# MCKENNA MARSH

Marchesiani Parkland

Approx 1.47 miles

1148 Main Street

Deer hunting is allowed on this property between  
 October 19 and November 28. Special permit by  
 the Conservation Commission is required for this activity.

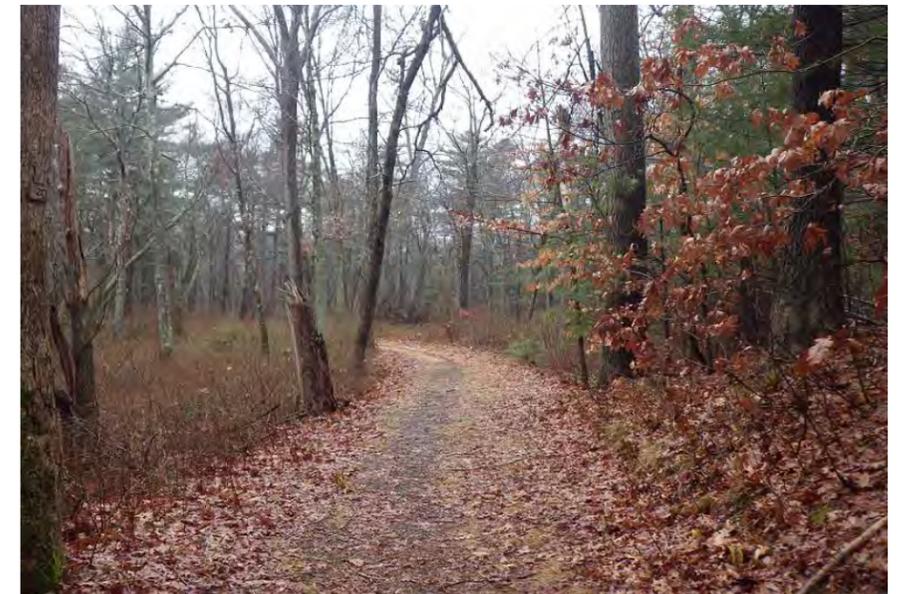


# More Brewer Park, Brewer Reservation, Cranberry Pond and Ridgewood Crossing

## Hobart and French Streets Hingham, MA

Francis Brewer, son of John R. Brewer, spent happy boyhood days on his father's World End Farm; and possibly inspired by that experience began in 1884 to purchase sheep grazing land at Great Hill. He originally planned to create a park and give it to the town. Instead, he married, built a house and farm buildings, and raised a family there. In the spring of 1921, Brookes More, a poet purchased the Great Hill estate. His daughter, Katherine More, eventually married Francis Brewer's son, Wilmon Brewer, also a poet. Nearly a century after Francis Brewer began buying the land, his original intent was fulfilled by an act of uncommon generosity when, in 1980, Dr. and Mrs. Wilmon Brewer gave the Conservation Commission 107 acres of the Great Hill estate. Combined with previously acquired 31.4 acres to the north and the 48.1 acres Brewer Reservation earlier given by the Brewer family, the park totals 186.5 acres of varied land, much of it interlaced with winding carriage paths. An outstanding feature is a spacious meadow, surrounded by pine, Larch and dogwood. Brewer Pond, gorgeous when water lilies are in bloom, and the more secluded Ice House Pond, provided habitat for many creatures. Other features include a trail through Bear Swamp and the foundation of the tiny cottage of Bootleg Charlie, immortalized in Brookes More's poetry. In 2006, protection of Bear Swamp was enhanced by a 5 acre gift of the Estate of Gertrude Higgins. The 112 acre park provides access at Hobart Street and New Bridge Street. Parking is located along Hobart Street.

Cranberry Pond located south of More Brewer Park and west of Brewer Reservation was once a cranberry bog known as Bouve Pond. The Cranberry Pond area is a 13.8 acre preserve that attracts ice skaters and water fowl. Parking is located along French Street.



Parking	Trailhead	Paved Trail	Single Track Trail	Wide Forest Trails	Benches	Scenic/View	Cultural Sites	Picnic Area	Interpretative Signs	Fishing Access	Portage Area	Connection to Other Open Space	Connection to Commercial / Transportation Areas
X	X		X	X	X	X	X	X		X		X	

# MORE-BREWER PARK

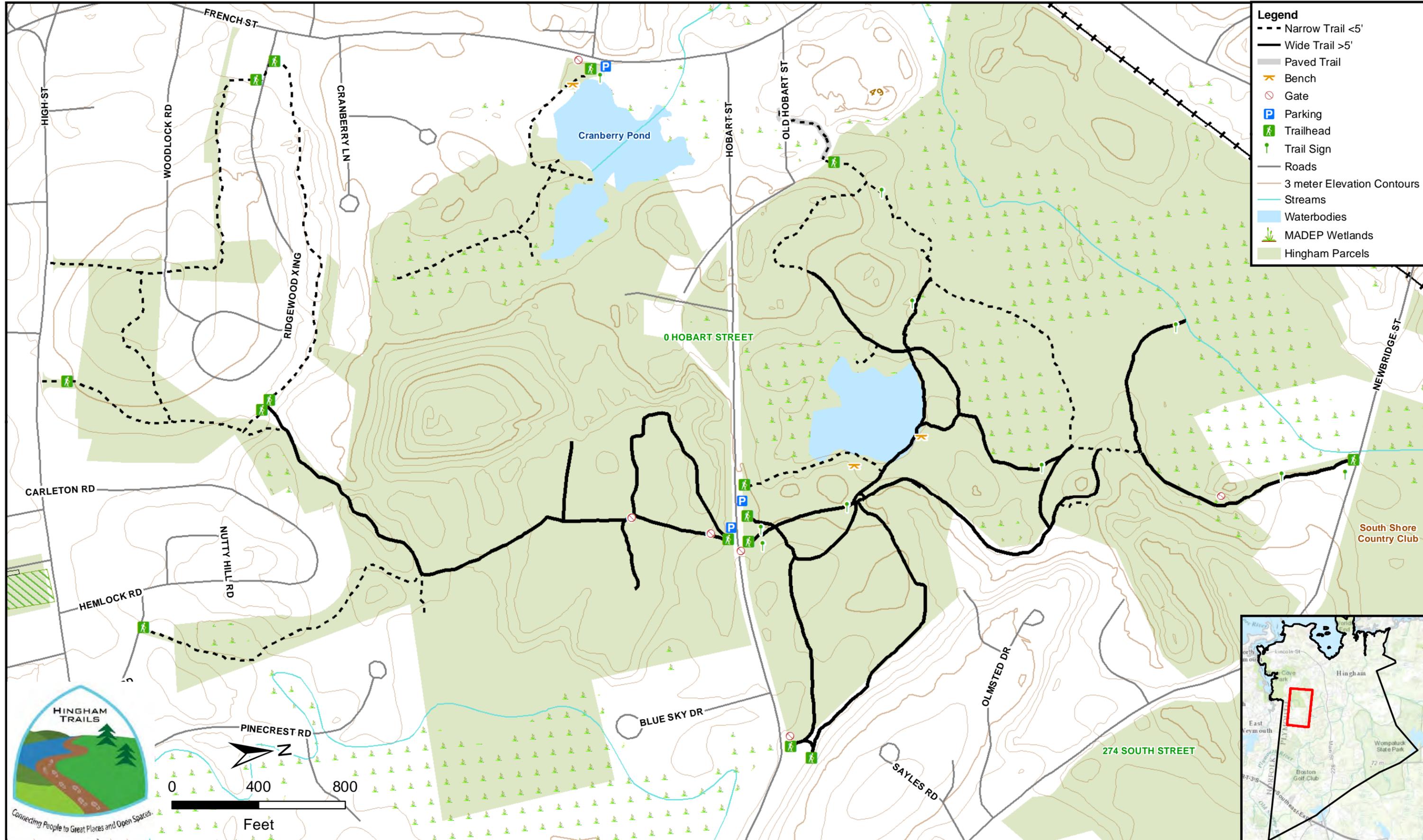
Cranberry Pond (Approx 0.4 miles)

Approx 4.9 miles

Hobart Street/French Street

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

Deer hunting is allowed on this property between  
October 19 and November 28. Special permit by  
the Conservation Commission is required for this activity.



# Triphammer Pond Conservation Area

Popes Lane  
Hingham, MA

Triphammer Pond Conservation Area was acquired by the town in 1945. This conservation area consists of 97.8 acres. It is contiguous to and its trail system connects to the trail system at Wompatuck State Park. This Conservation Area abuts the Leavitt Street Conservation Land, a 16.3 undeveloped open space parcel. Triphammer pond itself is approximately 19 acres and is co-owned by the Town and the Commonwealth of Massachusetts' Department of Conservation and Recreation.

Access to Triphammer Pond is best obtained off of Popes Lane. A long dirt road provides access to an undeveloped parking lot and a portage area. Additional foot access can be obtained from the Leavitt Street Conservation land or the Golf Driving Range between two house lots donated by a town resident after the loss of Triphammer Lane to the public.

The Triphammer Pond trails provide access to multiple recreational activities. These include hiking along narrow wooded trails, views of the pond, picnic areas, benches, wildlife viewing, and fishing, boating (non gas powered) and pond skating access. A reconstructed old mill dam, fish ladder, spillway, sluiceway, a stone well and remnants of other historic mill features are also found at this location. The conservation area is open from dusk to dawn. Deer hunting is allowed on this property between October 19 and November 28. Special permit by the Conservation Commission is required for this activity.



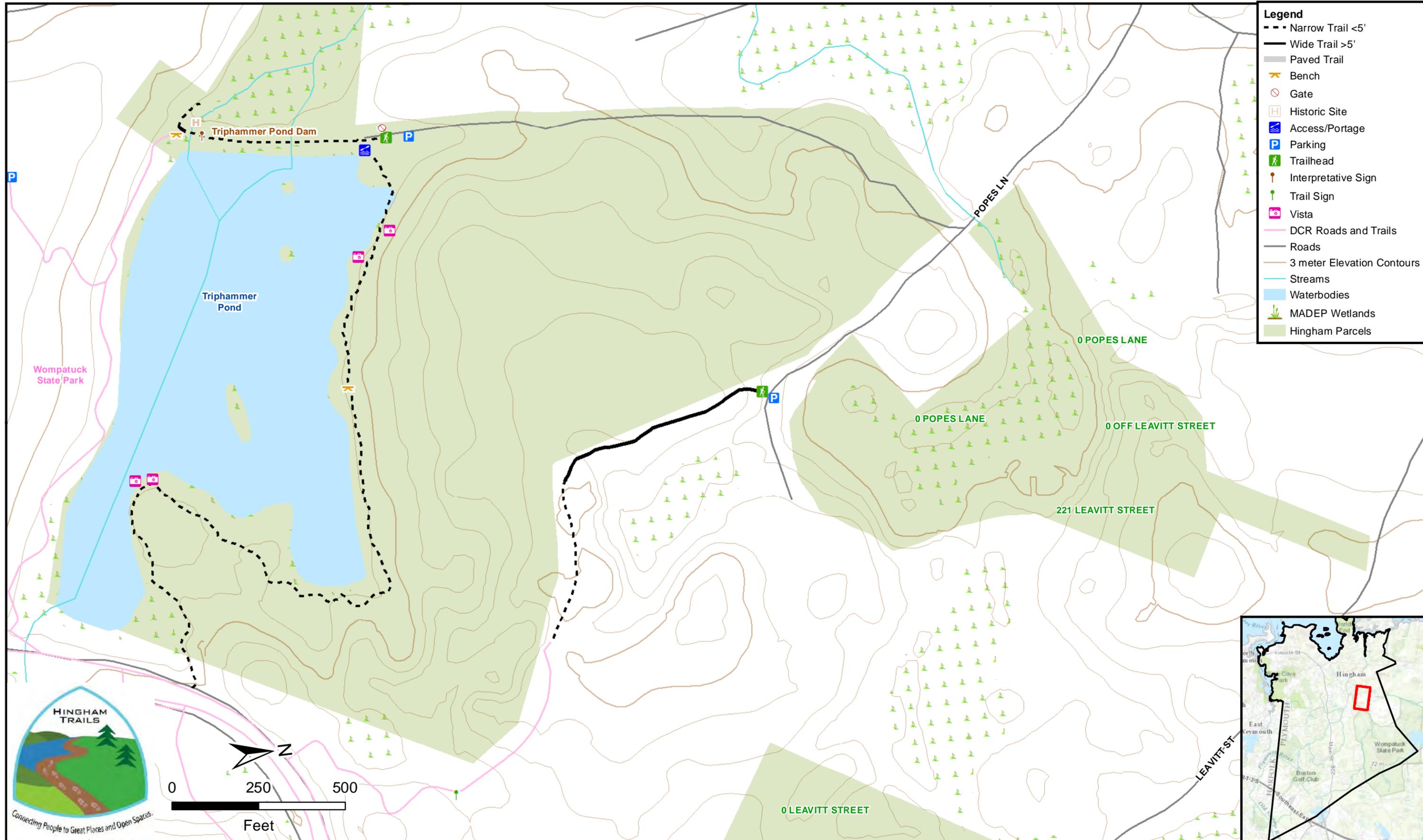
Parking	Trailhead	Paved Trail	Single Track Trail	Wide Forest Trails	Benches	Scenic/View	Cultural Sites	Picnic Area	Interpretative Signs	Fishing Access	Portage Area	Connection to Other Open Space	Connection to Commercial / Transportation Areas
X	X		X			X						X	X

# TRIPHAMMER POND

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

Approx 0.91 miles  
Popes Lane

Deer hunting is allowed on this property between  
October 19 and November 28. Special permit by  
the Conservation Commission is required for this activity.



# Mildred Cushing Woods

Cushing Street  
Hingham, MA

Much of the southeastern shore of Cushing Pond is protected by 19 acres donated by Mildred Cushing, a resident of the area and along member of the Conservation Commission. The rolling, open woods, well known to fishermen of all ages, have good-sized native trees and there is an open field that abuts several Main Street parcels. Public access is along a footpath from Cushing Street. Additional access is being considered to the west of 58 Cushing Street where there is an informal water portage and parking area.



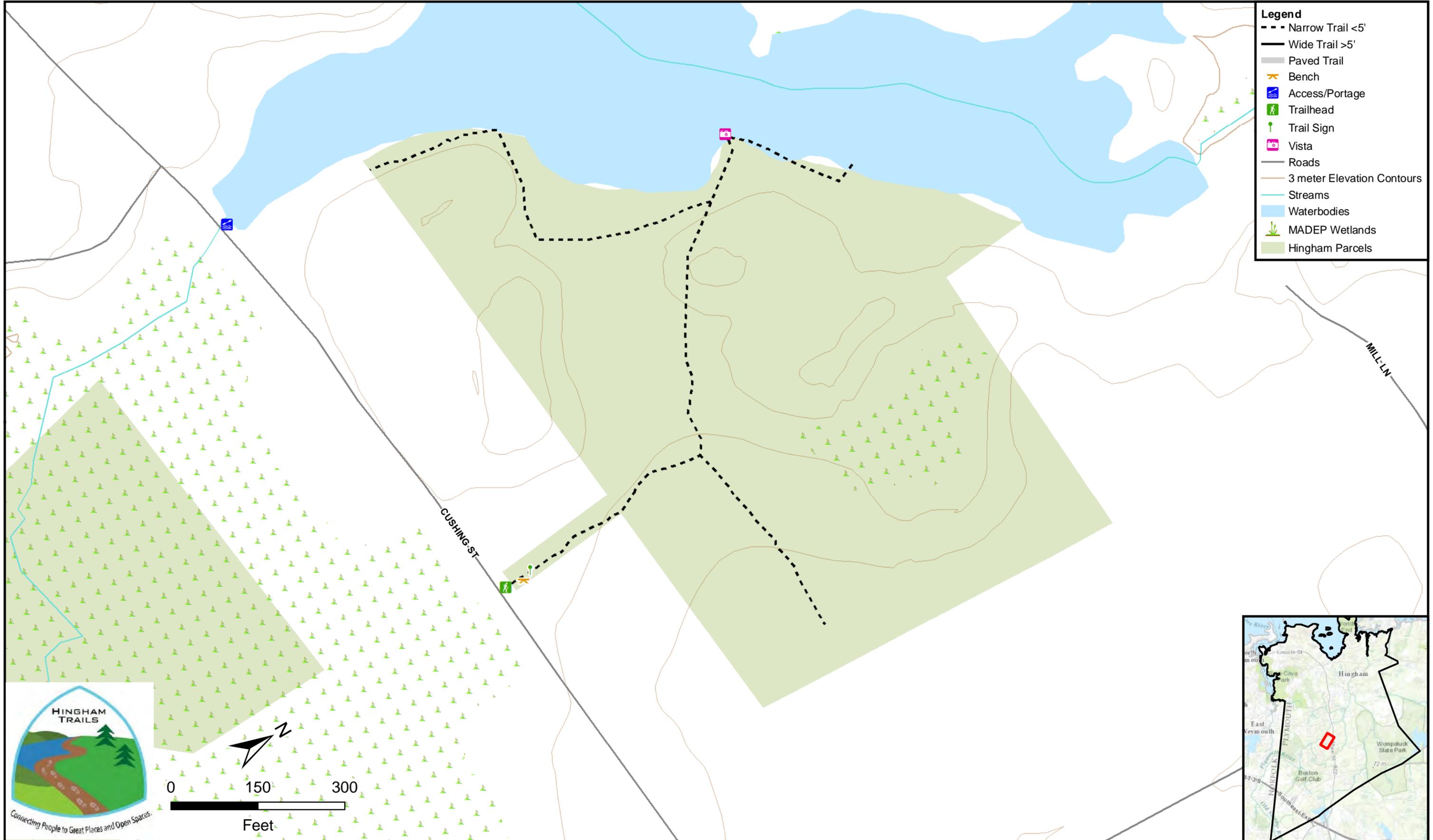
Parking	Trailhead	Paved Trail	Single Track Trail	Wide Forest Trails	Benches	Scenic/View	Cultural Sites	Picnic Area	Interpretative Signs	Fishing Access	Portage Area	Connection to Other Open Space	Connection to Commercial / Transportation Areas
	X		X	X	X	X				X	X		

# MILDRED CUSHING WOODS

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

Approx 0.49 miles  
26 Cushing Street

Deer hunting is allowed on this property between  
October 19 and November 28. Special permit by  
the Conservation Commission is required for this activity.

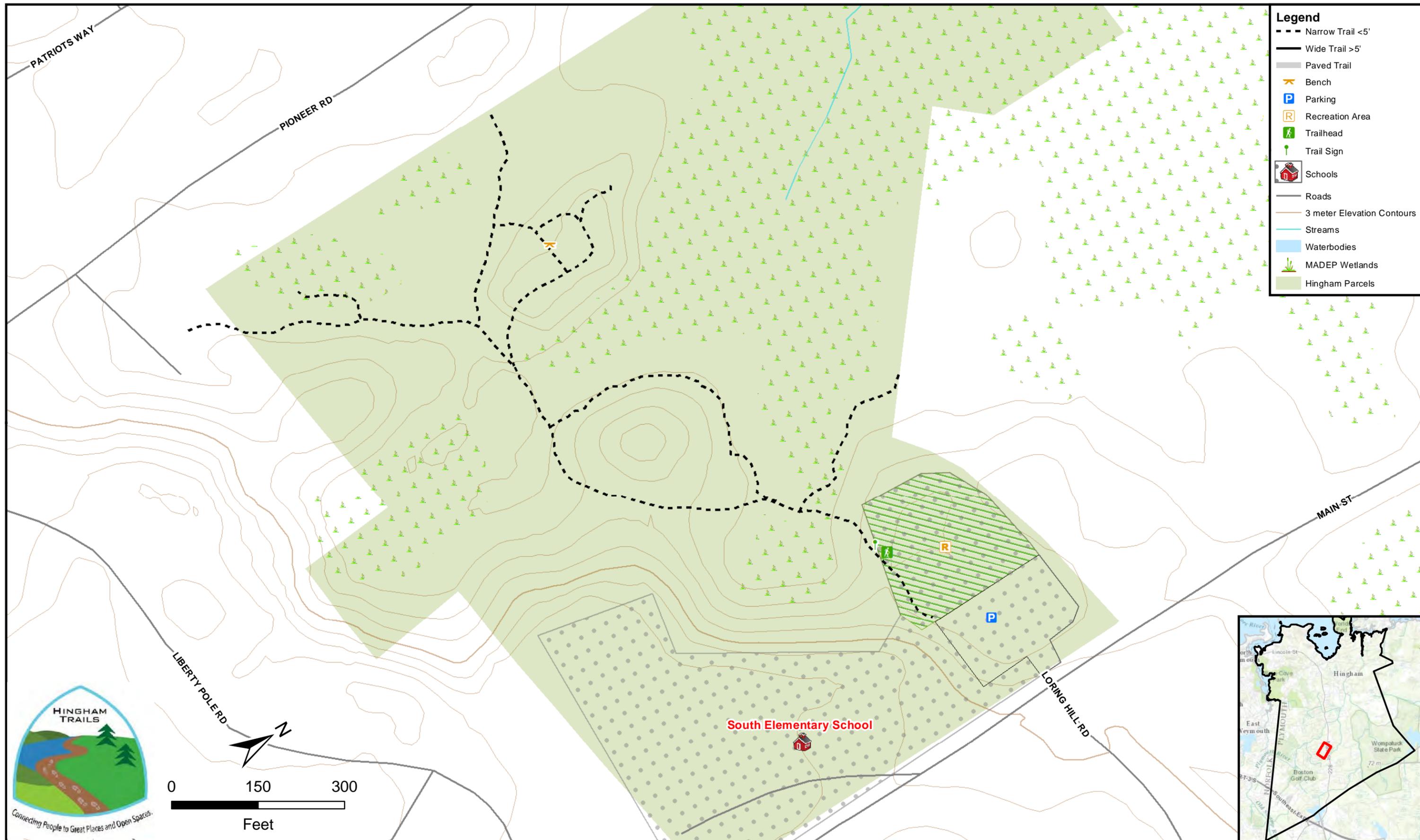




# SOUTH ELEMENTARY SCHOOL

Open Dusk to Dawn  
Town of Hingham

Approx 0.63 miles  
831 Main Street



# Plymouth River Complex

Plymouth River Conservation Land, Ward Street  
Hingham, MA

The Plymouth River Complex is a 93 acre tract that includes three sections. The northern section, with an athletic field, six tennis courts, a small pond and some wooded upland around Plymouth River Schools is controlled by the School Department. The Recreation Commission has recently built a playing field in the center area. The Conservation Commission holds the southern section including open woods and marsh bordering the upper reaches of Cushing Pond.

Access to the Plymouth River Conservation Land is best obtained off of Ward Street. The trail entrance is located adjacent to the northernmost recreational fields. Access is also available through the Plymouth River Elementary School. The trail connection from the Elementary School provides a series of interpretative signs describing the park's flora and fauna. Foot access can also be obtained via Camelot Drive.

The Plymouth River Conservation trails provide access to multiple recreational opportunities. These include hiking along narrow wooded trails, views of the Plymouth River, benches, wildlife viewing, and fishing. The Conservation area is open dusk to dawn. Deer hunting is allowed on this property between October 19 and November 28. Special permit by the Conservation Commission is required for this activity.



Parking	Trailhead	Paved Trail	Single Track Trail	Wide Forest Trails	Benches	Scenic/View	Cultural Sites	Picnic Area	Interpretative Signs	Fishing Access	Portage Area	Connection to Other Open Space	Connection to Commercial / Transportation Areas
X	X		X		X				X	X		X	

# PLYMOUTH RIVER COMPLEX

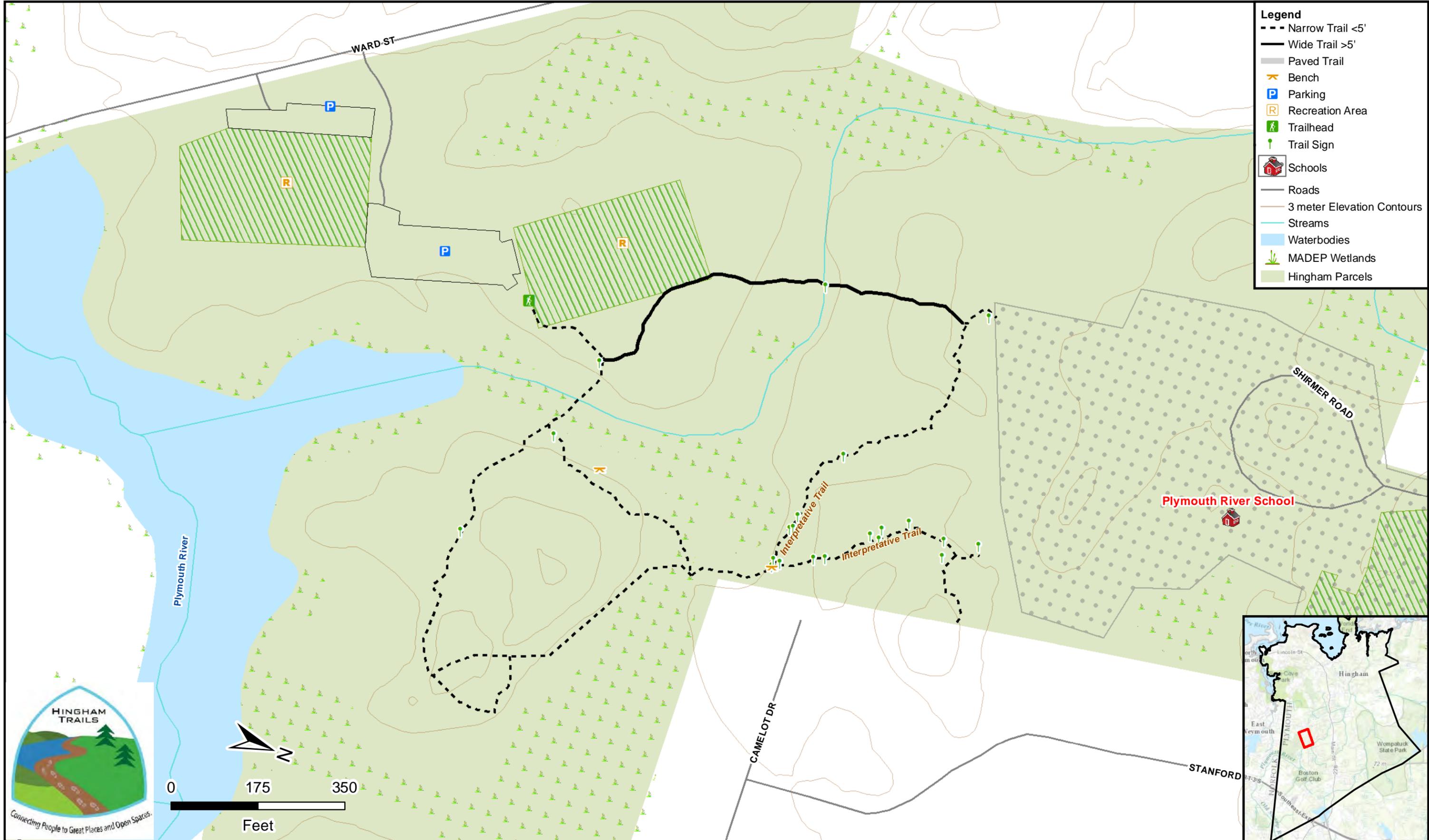
Plymouth River Conservation Area

Approx 0.92 miles

Ward Street

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

Deer hunting is allowed on this property between  
October 19 and November 28. Special permit by  
the Conservation Commission is required for this activity.



# Jacobs Meadow– Glad Tidings Plain

Main Street  
Hingham, MA

Fifty acres of open fields and varied woodlands now extend from Main Street to the Fulling Mill Brook, with trail access on weekends and after school behind the Wilder Memorial Building. Helen Burns, a major donor to the town, gave 30 acres to the HLCT and 8 acres to the HCC. The northern 10 acres were purchased by the Commission from abutters and the access to Main Street was donated by the Goodlatte family along with an easement given by Wilder Memorial. Two lots extending the park's southeast corner have been given by Richard and Virginia Kurtzman (3.6 acres) and Robert and Carolyn Garvie (6.75 acres).

Combined with Glad Tidings Plains, the land protects the 18<sup>th</sup> century city-scape as a recreational space.

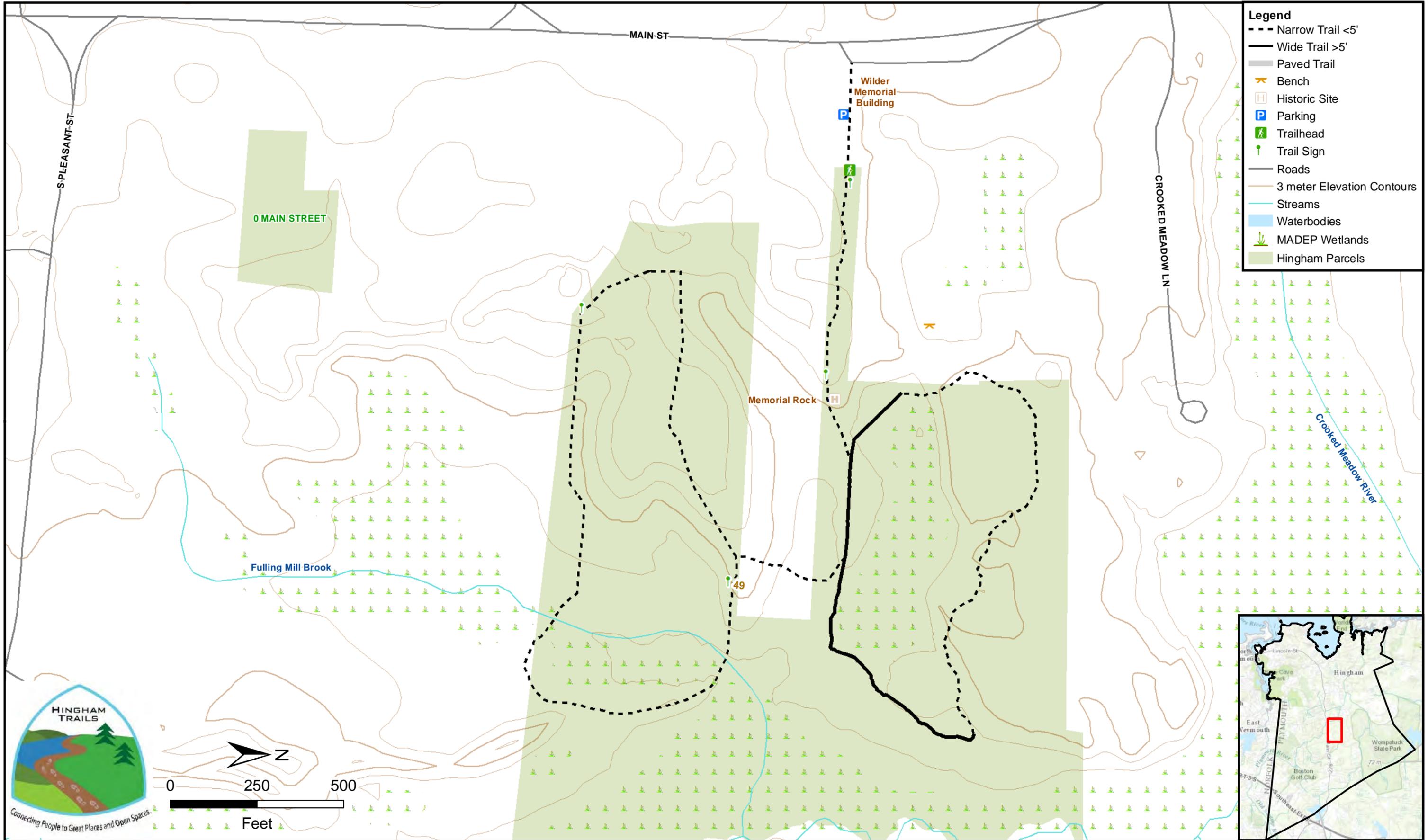


Parking	Trailhead	Paved Trail	Single Track Trail	Wide Forest Trails	Benches	Scenic/View	Cultural Sites	Picnic Area	Interpretative Signs	Fishing Access	Portage Area	Connection to Other Open Space	Connection to Commercial / Transportation Areas
X	X		X	X	X	X	X		X				

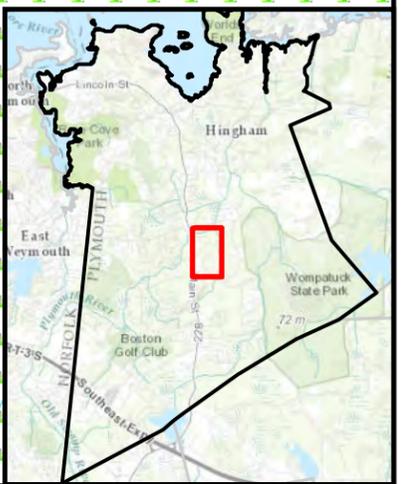
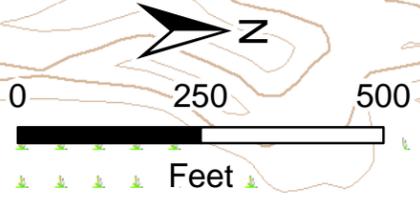
# JACOBS MEADOW/TIDINGS PLAIN

Access through Wilder Hall  
during non Nursery School hours  
Hingham Land Conservation Trust

Approx 1.45 miles  
666 Main Street



- Legend**
- - - Narrow Trail <5'
  - Wide Trail >5'
  - Paved Trail
  - Bench
  - H Historic Site
  - P Parking
  - T Trailhead
  - T Trail Sign
  - Roads
  - 3 meter Elevation Contours
  - Streams
  - Waterbodies
  - MADEP Wetlands
  - Hingham Parcels



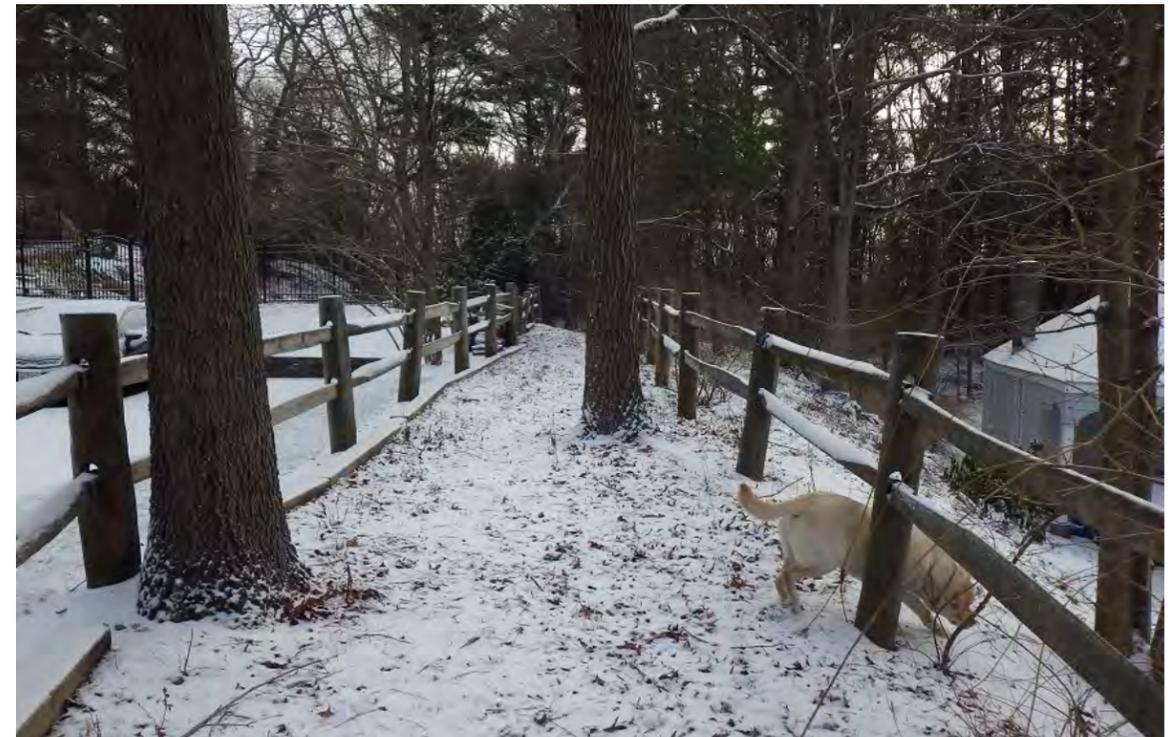
Source: MassGIS Basemap & Environmental Data. Field Delineated Data by BSC Group, Inc. March 2015

# Burn's Memorial Park

Hersey Street  
Hingham, MA

Centrally located, the beautiful 24.1 acres encompass pine covered ledges, meadow and red maple swampland which belonged to the Burns family. The Burn's Memorial Park serves as a wildlife habitat, fresh water meadow, and Red Maple swamp. In Tranquility Gove, outdoor meetings, such as abolition rallies were once held.

Burns Memorial is located along Hersey Street and is open from dawn to dusk. Parking for park users is provided at the Hersey Street DPW facility.



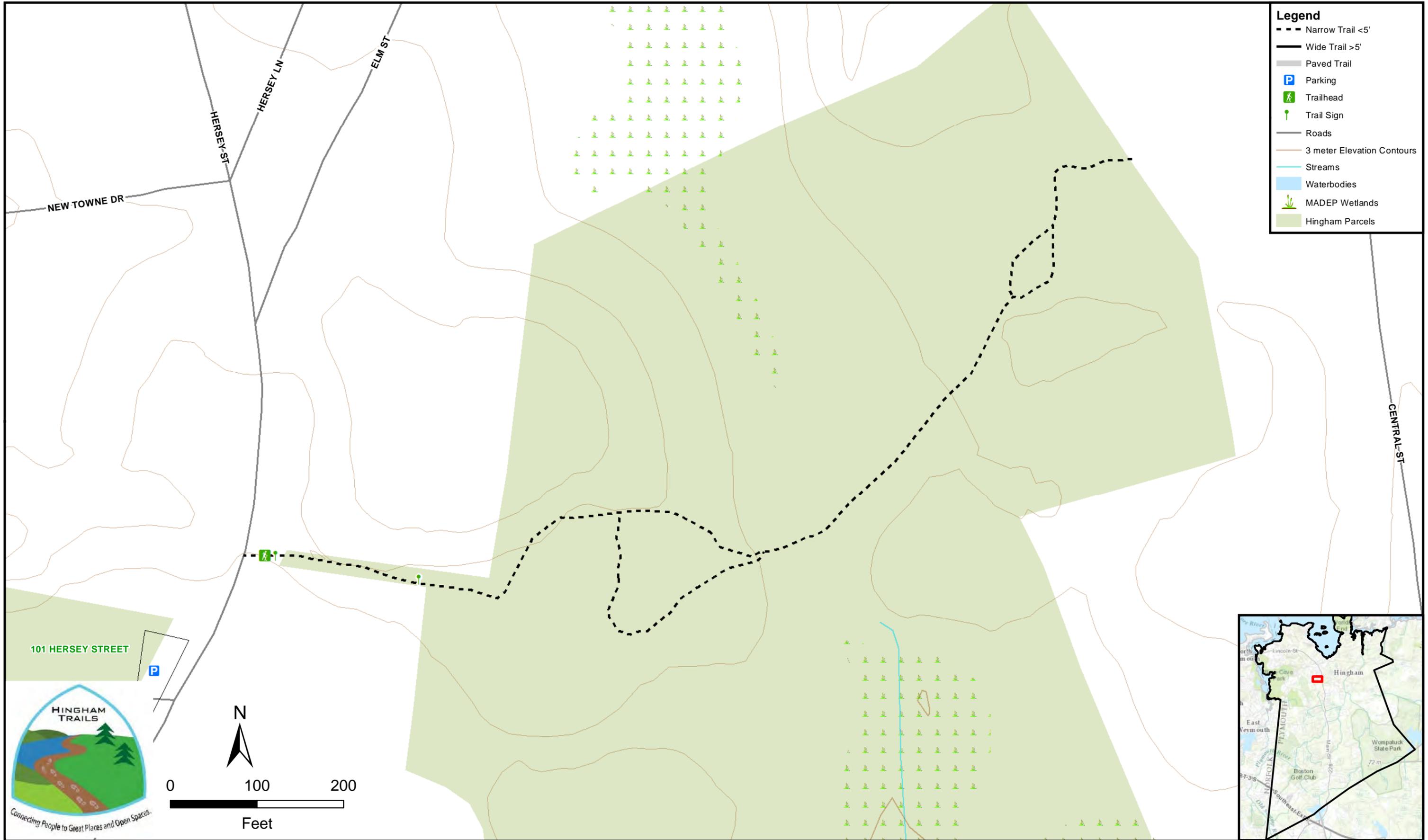
Parking	Trailhead	Paved Trail	Single Track Trail	Wide Forest Trails	Benches	Scenic/View	Cultural Sites	Picnic Area	Interpretative Signs	Fishing Access	Portage Area	Connection to Other Open Space	Connection to Commercial / Transportation Areas
X	X		X				X						

# BURNS MEMORIAL

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

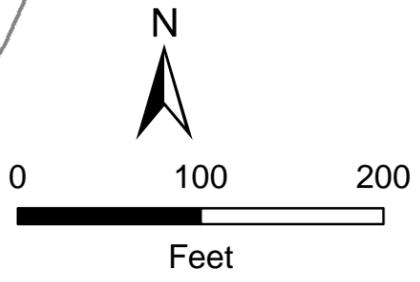
Approx 0.35 miles  
Hersey Street

Deer hunting is allowed on this property between  
October 19 and November 28. Special permit by  
the Conservation Commission is required for this activity.



**Legend**

- - - Narrow Trail <5'
- Wide Trail >5'
- ▬ Paved Trail
- P Parking
- 🚶 Trailhead
- 📍 Trail Sign
- Roads
- 3 meter Elevation Contours
- Streams
- Waterbodies
- 🌳 MADEP Wetlands
- 🟩 Hingham Parcels



Source: MassGIS Basemap & Environmental Data. Field Delineated Data by BSC Group, Inc. March 2015

# Governor Long Bird Sanctuary

Cottage Street  
Hingham, MA

Site of the home of John D. Long, Governor of Massachusetts (1880-83), and Secretary of the Navy, this 11.1 acre site was given to the town by his family. This small open space a view of the Hingham Harbor and includes marshland sanctuary for water fowl. A portion is also used by the DPW as a small tree nursery.

The Long Bird Sanctuary is full of wooded upland marsh and has a fine harbor view. The flanks of the knoll are marked by ledge and mixed hardwoods with marsh grass and phragmites in the marsh area. Access to the sanctuary is through a gravel drive off of Cottage Street with curbside parking.

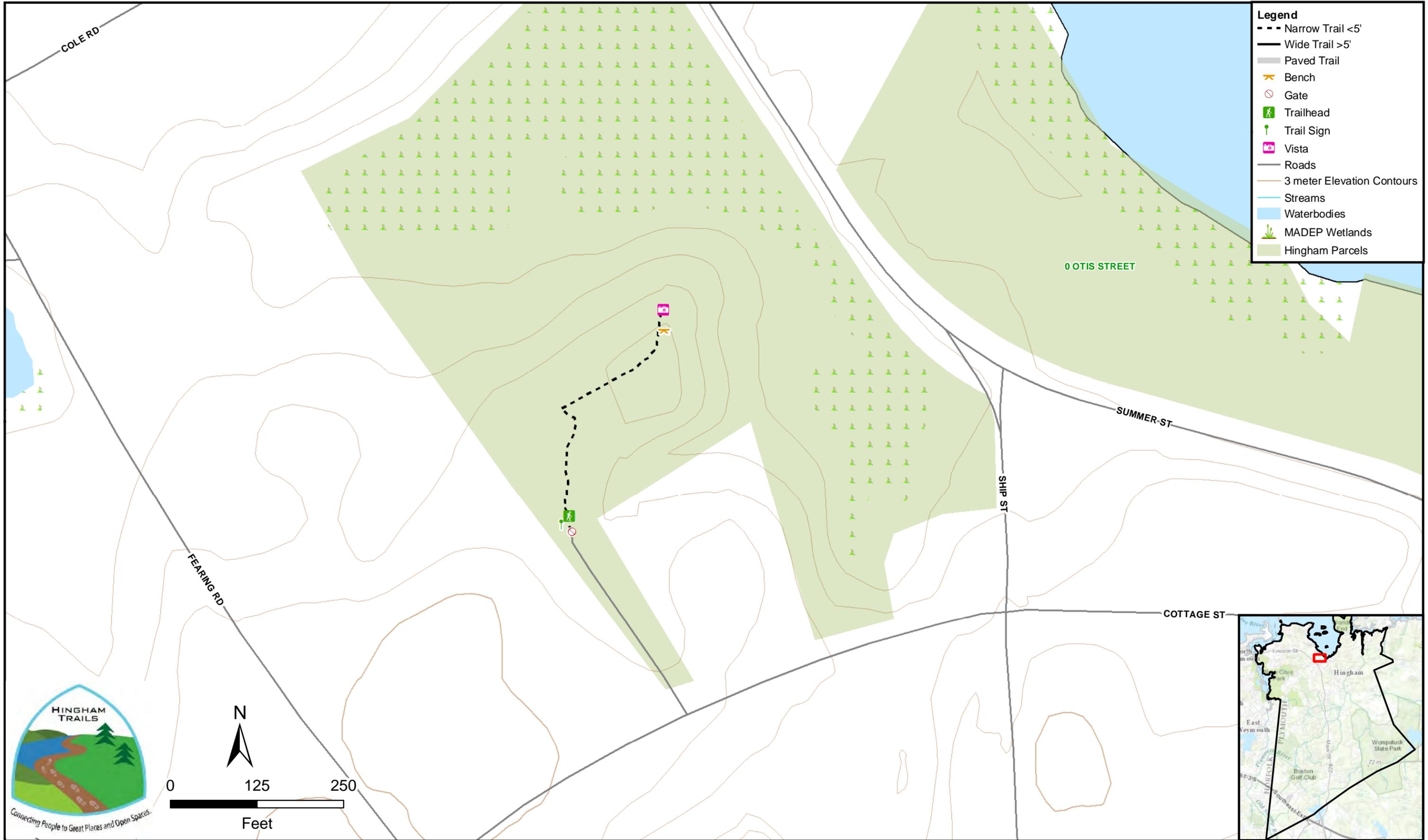


Parking	Trailhead	Paved Trail	Single Track Trail	Wide Forest Trails	Benches	Scenic/View	Cultural Sites	Picnic Area	Interpretative Signs	Fishing Access	Portage Area	Connection to Other Open Space	Connection to Commercial / Transportation Areas
X					X	X	X						

# GOVERNOR LONG BIRD

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

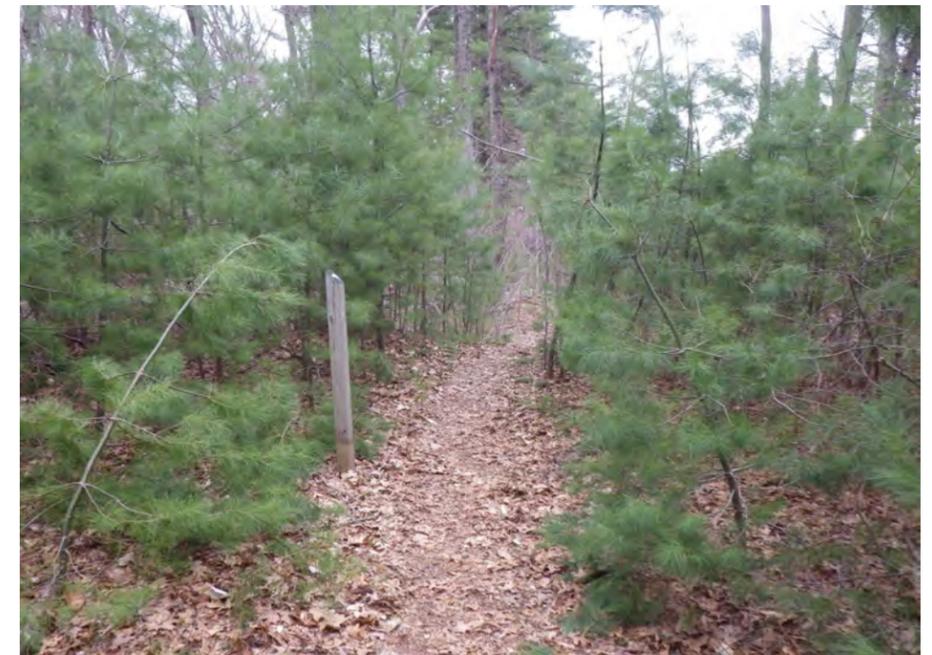
Approx 0.08 miles  
43 Cottage Street



# Whortleberry Hollow

Cushing Street  
Hingham, MA

This 13-acre tract of varied terrain has a public footpath access via granite steps from Cushing Street. The land was given to the Trust by Suvia P. Whittemore in memory of the late Arthur E. Whittemore, Hingham's Town Moderator for many years. Also, across Gardener Street Mrs. Whittemore donated 3 acres to the Conservation Commission, for wildlife and watershed protection

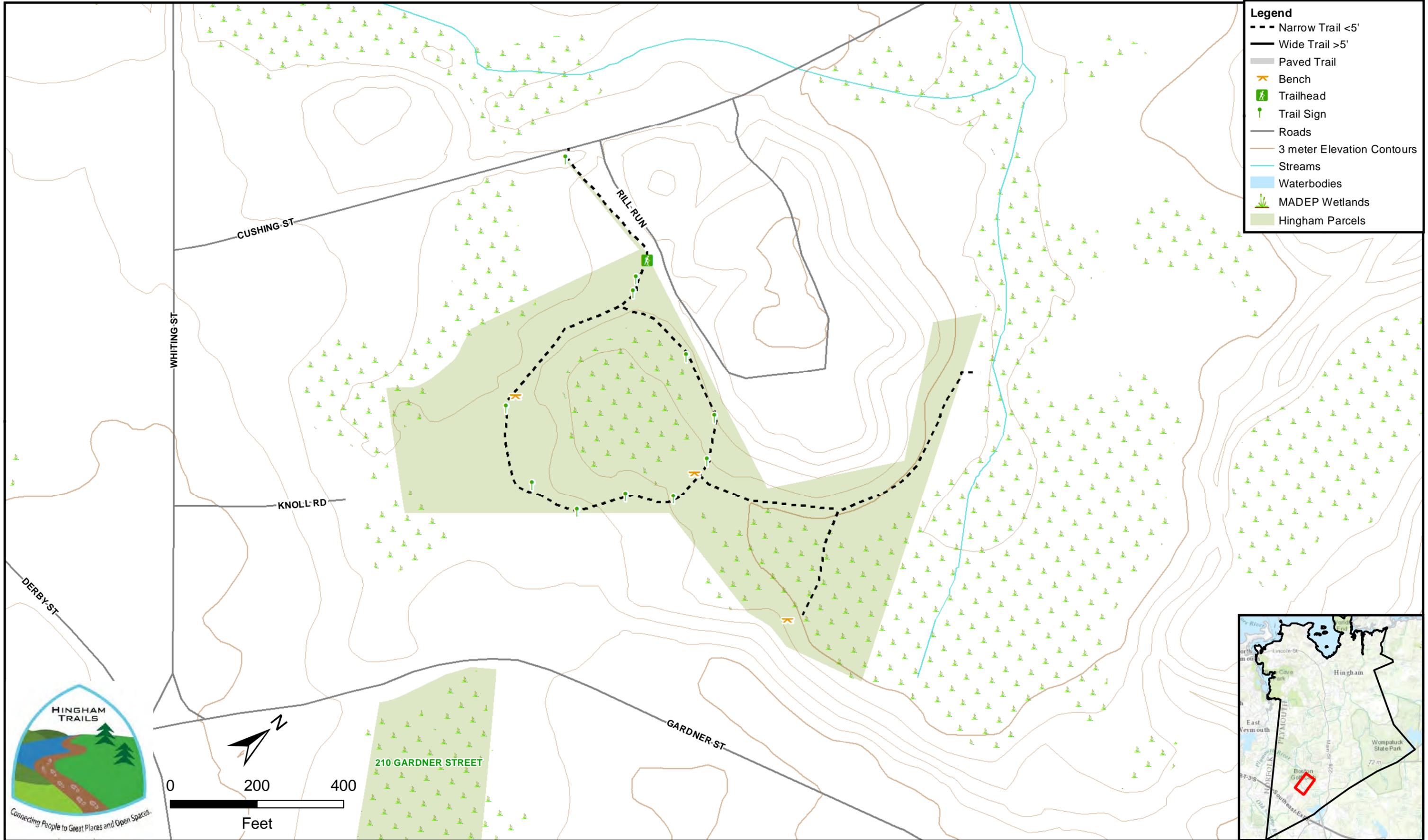


Parking	Trailhead	Paved Trail	Single Track Trail	Wide Forest Trails	Benches	Scenic/View	Cultural Sites	Picnic Area	Interpretative Signs	Fishing Access	Portage Area	Connection to Other Open Space	Connection to Commercial / Transportation Areas
	X		X	X	X				X				

# WHORTLEBERRY HOLLOW

Open Dusk to Dawn  
Hingham Land Conservation Trust

Approx 0.57 miles  
Cushing Street



- Legend**
- - - Narrow Trail <5'
  - Wide Trail >5'
  - ▬ Paved Trail
  - ↗ Bench
  - Trailhead
  - Trail Sign
  - Roads
  - 3 meter Elevation Contours
  - Streams
  - ▬ Waterbodies
  - 🌳 MADEP Wetlands
  - ▭ Hingham Parcels



# Bare Cove Park

Beale Street, Fort Hill Street & Clifford Court  
Hingham, MA

Acquired by the town in 1971, 468 acres were the site of the United States Naval Ammunition Depot from 1906 to 1968. The Great Esker Park land, across the Black River estuary had also been held by the Federal government as a buffer zone. Together these 705 acres form one of the foremost scenic, urban-centered open spaces in New England and protect precious tide waters and salt marshes. Bare Cove Park has approximately three miles of paved bicycle paths, numerous picnic sites, and woodland trails. A great many of the original military buildings have been removed, but some remain. One side of the park contains beautiful geological features such as glacial eskers, kettle-holes, drumlins and swamps. A former military site, the other side of the park was previously an ammunition depot and is alternately level and ridged. Red Cedar, Gray Birch, and White Pines grow within the woods. On the park's northern shore are 32 more acres, about half recently transferred to the town by Massachusetts Highway Department and half held by the Department of Fisheries and Wildlife.

New recreational fields have been added near the park, along Beal Street called Lynch Field and Carlson Field. The park has a new entrance next to these playing fields. Park parking is available by the new fields on Beal Street and the main park entrance located at Fort Hill Street. A few parking spots are also located off of Clifford Court.

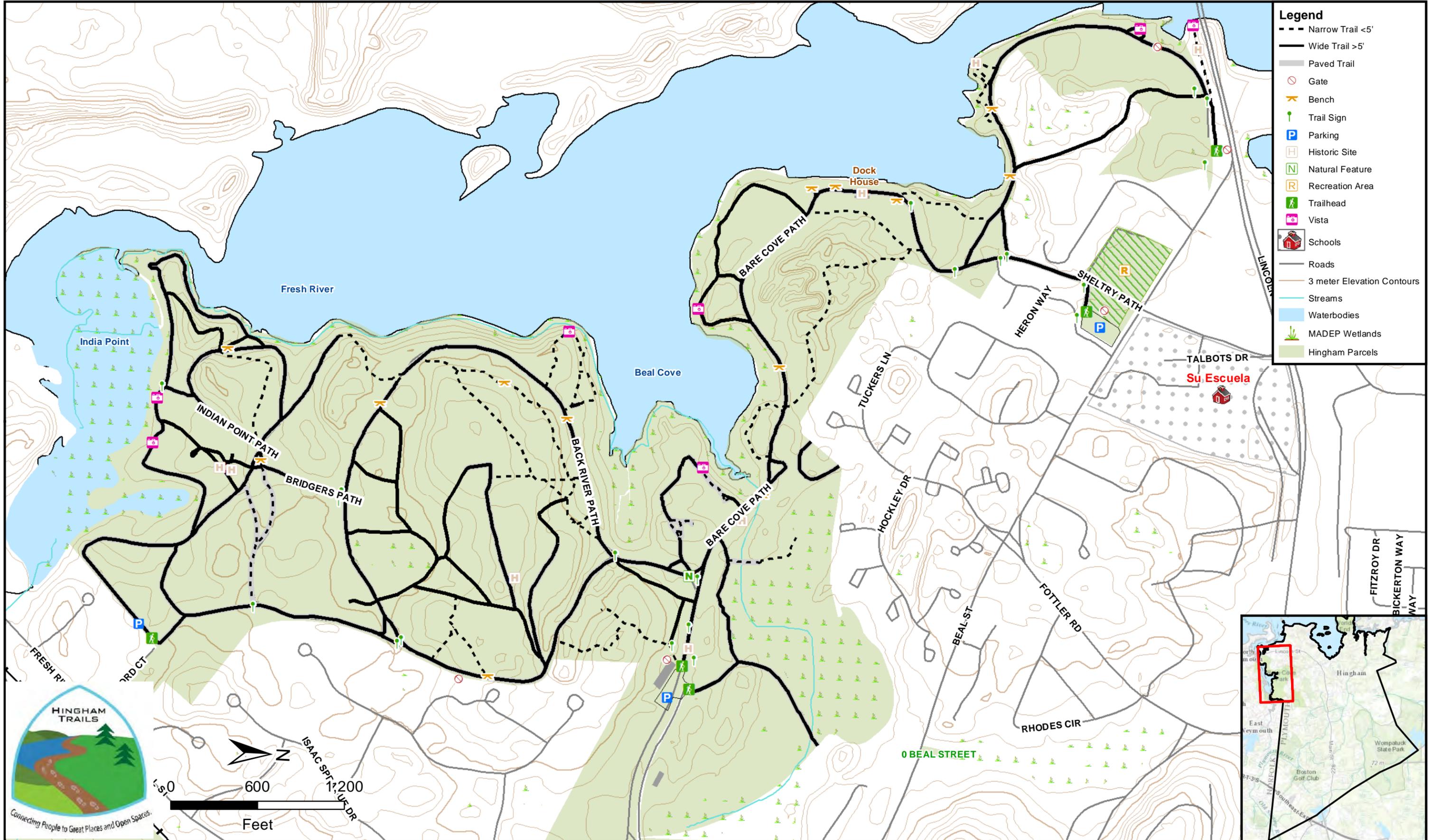


Parking	Trailhead	Paved Trail	Single Track Trail	Wide Forest Trails	Benches	Scenic/View	Cultural Sites	Picnic Area	Interpretative Signs	Fishing Access	Portage Area	Connection to Other Open Space	Connection to Commercial / Transportation Areas
X	X	X	X	X	X	X	X	X	X	X			

# BARE COVE PARK

Open Dusk to Dawn  
Bare Cove Park Committee  
Contact: (781) 741-1400

Approx 11.83 miles

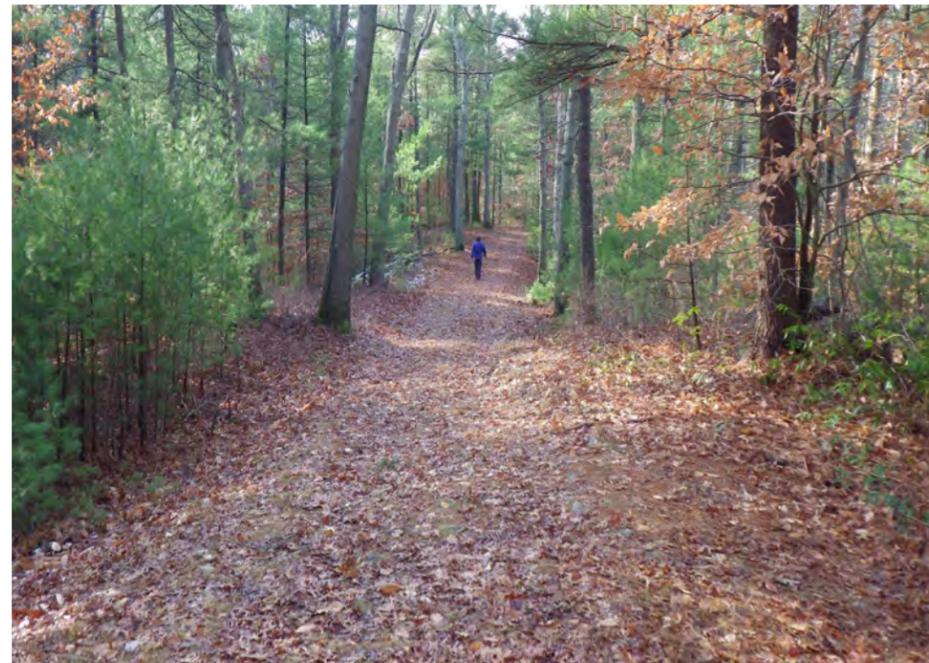


# George Washington Forest/Town Forest

South Pleasant Street & Charles Street  
Hingham, MA

Also known as the Hingham Town Forest this open space offers 197.6 acres of rolling land presents an aspect of open conifer groves, winding eskers, and fern carpeted swales not found elsewhere in Hingham. Vehicles are not allowed, but pine needle covered maintenance roads and trails make for excellent walking. The forest uplands are mainly composed mainly of Red and White Pines and Norway Spruces. Wetland depressions are full of maple shrubbery. The forest is east of Fulling Mill Pond, and glacial ridges and hills surround the area. Many people come to the forest to birdwatch, jog, and horseback ride. A small pull off parking area is available along South Pleasant Street.

The George Washington Town Forest was diagnosed with “Red Pine Scale” and the “Pine Shoot Beetle” which has contributed to the widespread mortality of the Red Pine Trees in the forest. After extensive research and plant diagnostic site work performed by the University of Massachusetts Extension’s diagnostic team it was determined that all trees that could potentially fall onto the roads or trails should be removed for Public Safety. The forest continues to be closed for safety of the public during the work. The Town Forest roads were cleared and made passable by the DPW and Tree & Park to allow a contractor to remove the affected trees. A contractor was selected which performed the work through the winter. About 80% of the trees that were a threat to the public have been removed and an on-going tree removal program is in place which evaluates and removes any threats to the public.



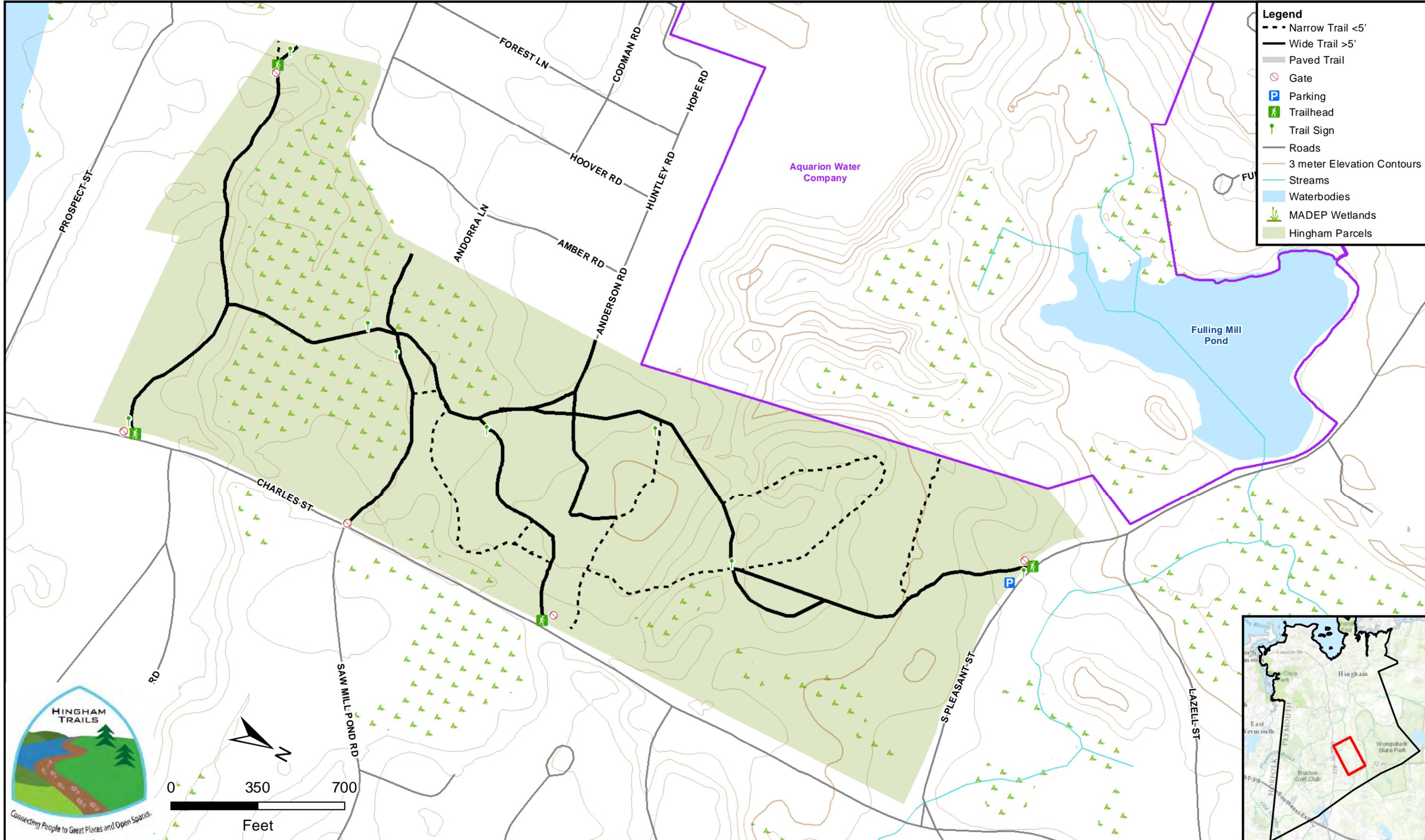
Parking	Trailhead	Paved Trail	Single Track Trail	Wide Forest Trails	Benches	Scenic/View	Cultural Sites	Picnic Area	Interpretative Signs	Fishing Access	Portage Area	Connection to Other Open Space	Connection to Commercial / Transportation Areas
X	X	X	X	X	X	X	X	X	X	X			

# GEORGE WASHINGTON FOREST

Open Dusk to Dawn  
Town of Hingham, DPW  
Contact: (781) 741-1430

Approx 3 miles  
Pleasant Street

The George Washington Town Forest was diagnosed with "Red Pine Scale" and the "Pine Shoot Beetle" which has contributed to the widespread mortality of the Red Pine Trees in the forest. After extensive research and plant diagnostic site work performed by the University of Massachusetts Extension's diagnostic team it was determined that all trees that could potentially fall onto the roads or trails should be removed for Public Safety. The forest was closed for safety of the public during the work."



# Eel River Woods

Cushing Street

Hingham, MA

This 12 acre refuge provides 1,100 feet of forested frontage on busy Cushing Street and includes short wooded trails and some access to the Eel River Wetlands. The land was the generous gift of Mary Niles to the Hingham Land Conservation Trust. Previously, Mrs. Niles and Stephen Baker had given the town a total of approximately 4 additional acres on the edge of Cushing Pond.

The Reservation is bordered by stonewalls. The terrain is generally level and a small brook passes through. The elevation of a swamp was lowered by the channelization of Eel River many years ago, and now provides some water for the Eel River. The Eel River then flows into Cushing Pond. Access to the Eel River site is from Cushing Road, Brewster Drive, or Old Country Road.

The Eel River Woods trails provide access to passive recreational activities. These include hiking along narrow wooded trails and benches for wildlife viewing. The Eel River Woods is open from dusk to dawn.

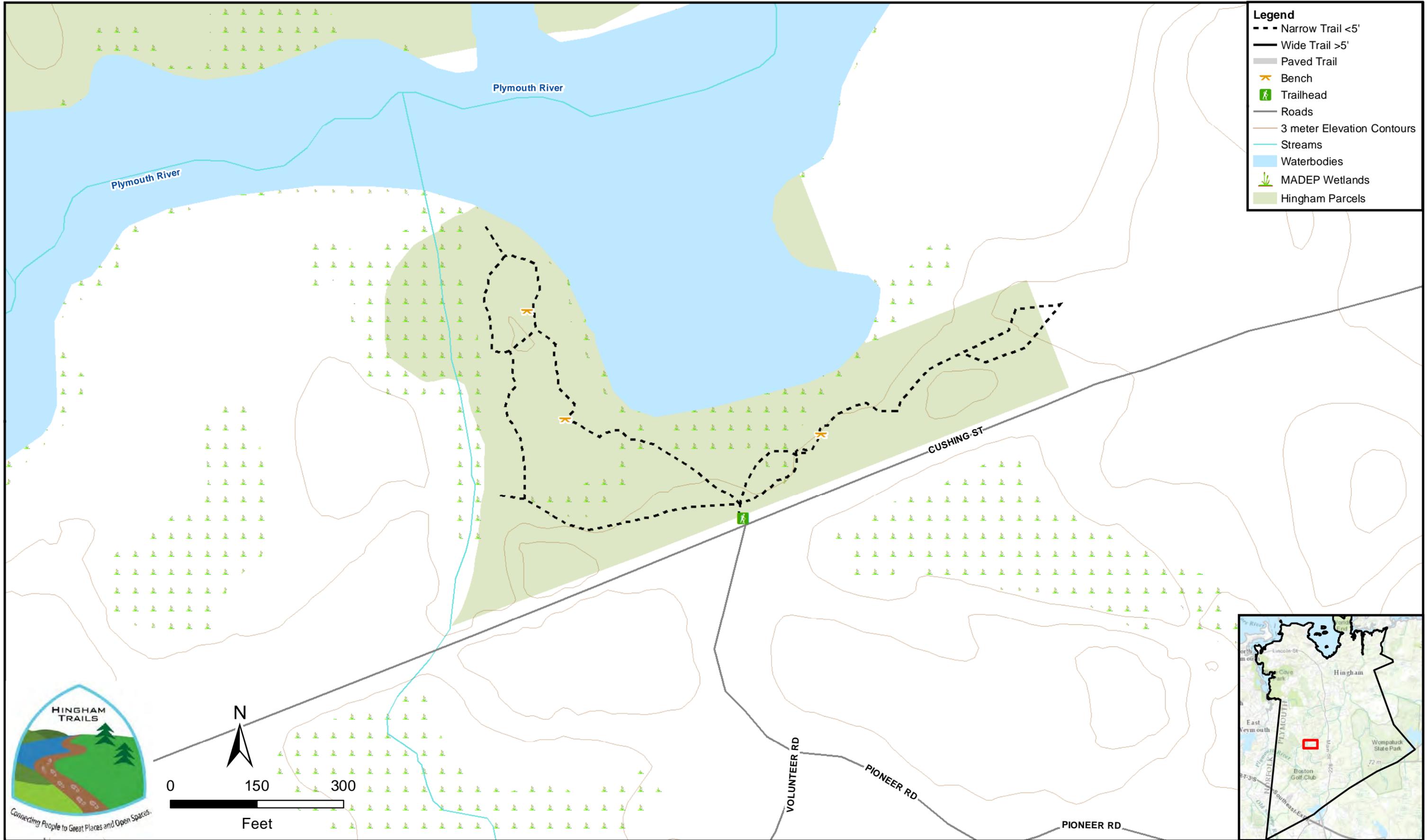


Parking	Trailhead	Paved Trail	Single Track Trail	Wide Forest Trails	Benches	Scenic/View	Cultural Sites	Picnic Area	Interpretative Signs	Fishing Access	Portage Area	Connection to Other Open Space	Connection to Commercial / Transportation Areas
	X		X		X					X			

# EEL RIVER WOODS

Open Dusk to Dawn  
Hingham Land Conservation

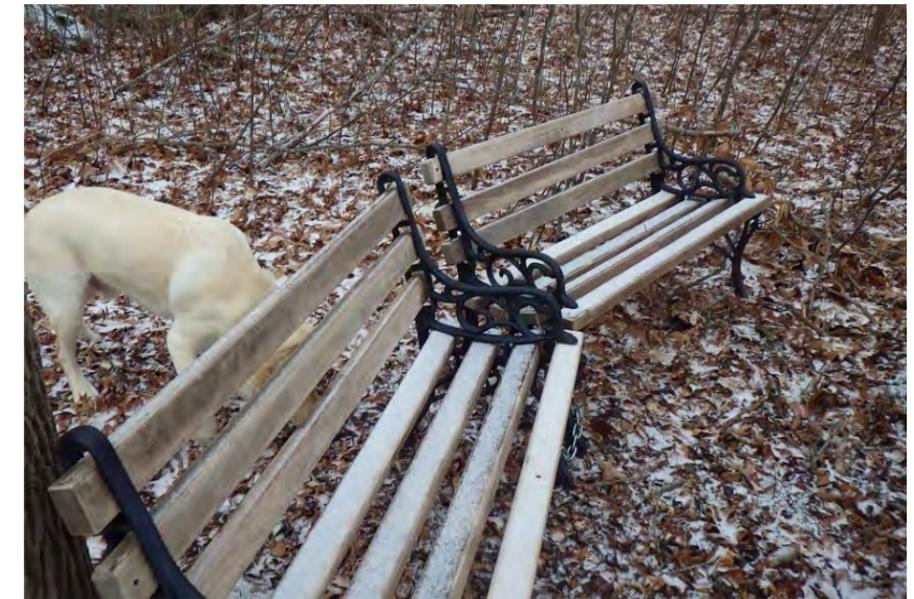
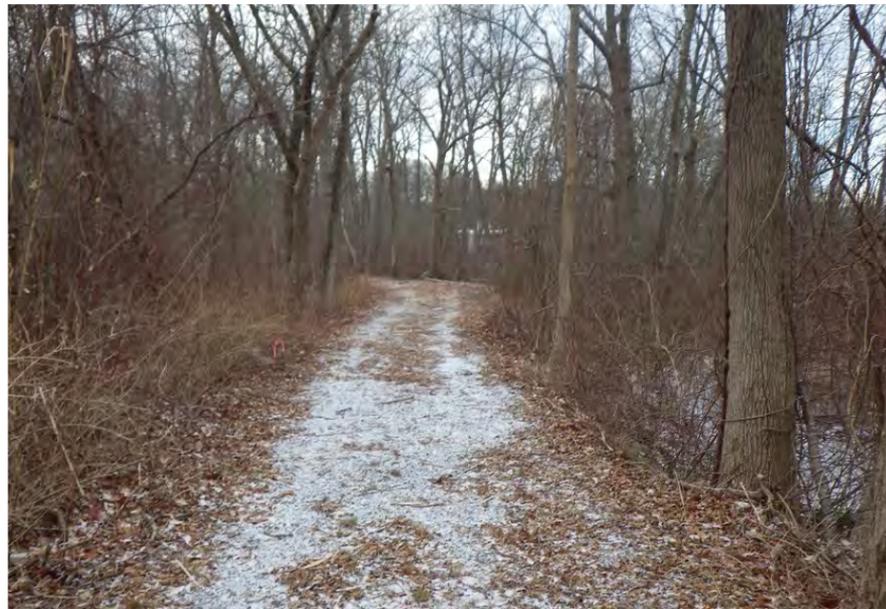
Approx 0.55 miles  
Cushing Street



# Sydney Ice Pond

Rockland Street  
Hingham, MA

Located within the Weir River Area of Critical Environmental Concern, Sydney Pond is a small pond that drains into the Weir River. Woods and wetlands surround this pond then used for ice production and now used for passive recreation and ice skating. Vestiges of former narrow gauge railroad are visible from this site. This pond is potentially critical for smelt migration.

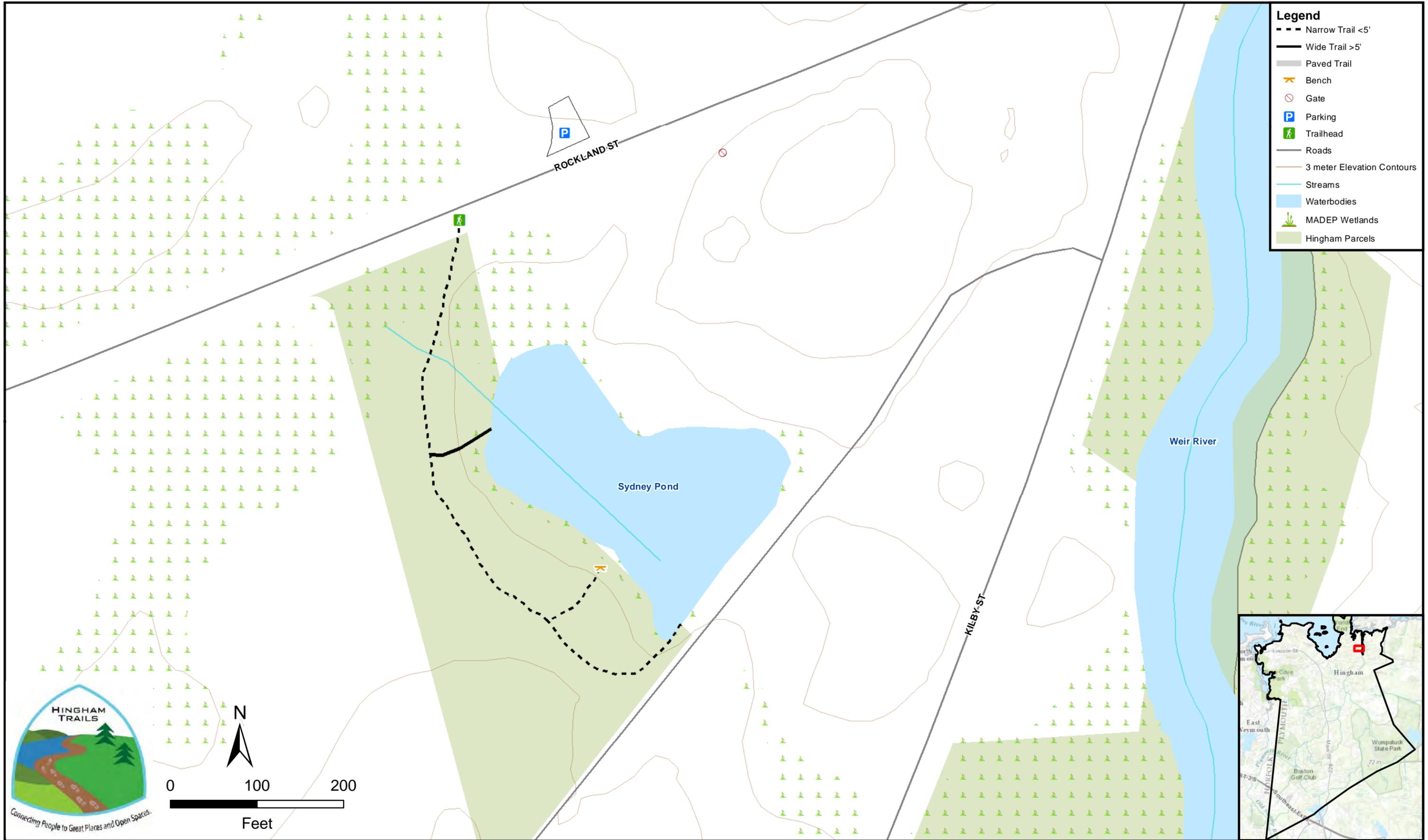


Parking	Trailhead	Paved Trail	Single Track Trail	Wide Forest Trails	Benches	Scenic/View	Cultural Sites	Picnic Area	Interpretative Signs	Fishing Access	Portage Area	Connection to Other Open Space	Connection to Commercial / Transportation Areas
			X	X	X	X				X	X		

# SYDNEY POND

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

Approx 0.17 miles  
Rockland Street



**Legend**

- - - Narrow Trail <5'
- Wide Trail >5'
- ▬ Paved Trail
- 🪑 Bench
- ⊘ Gate
- 🅑 Parking
- 🚶 Trailhead
- Roads
- 3 meter Elevation Contours
- Streams
- Waterbodies
- MADEP Wetlands
- Hingham Parcels

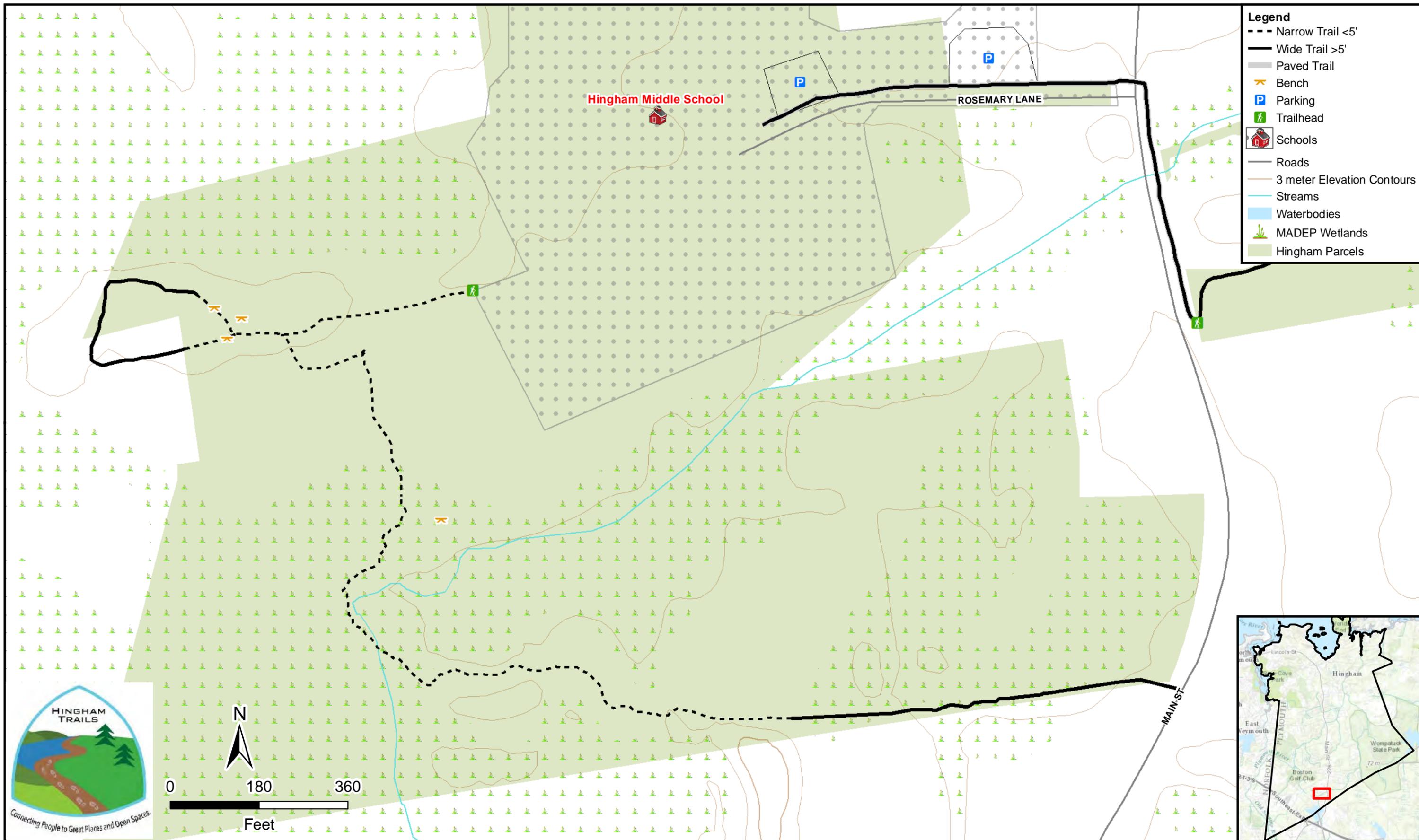




# SOUTH JUNIOR HIGH SCHOOL AREA

Open Dusk to Dawn

Approx 0.75 miles

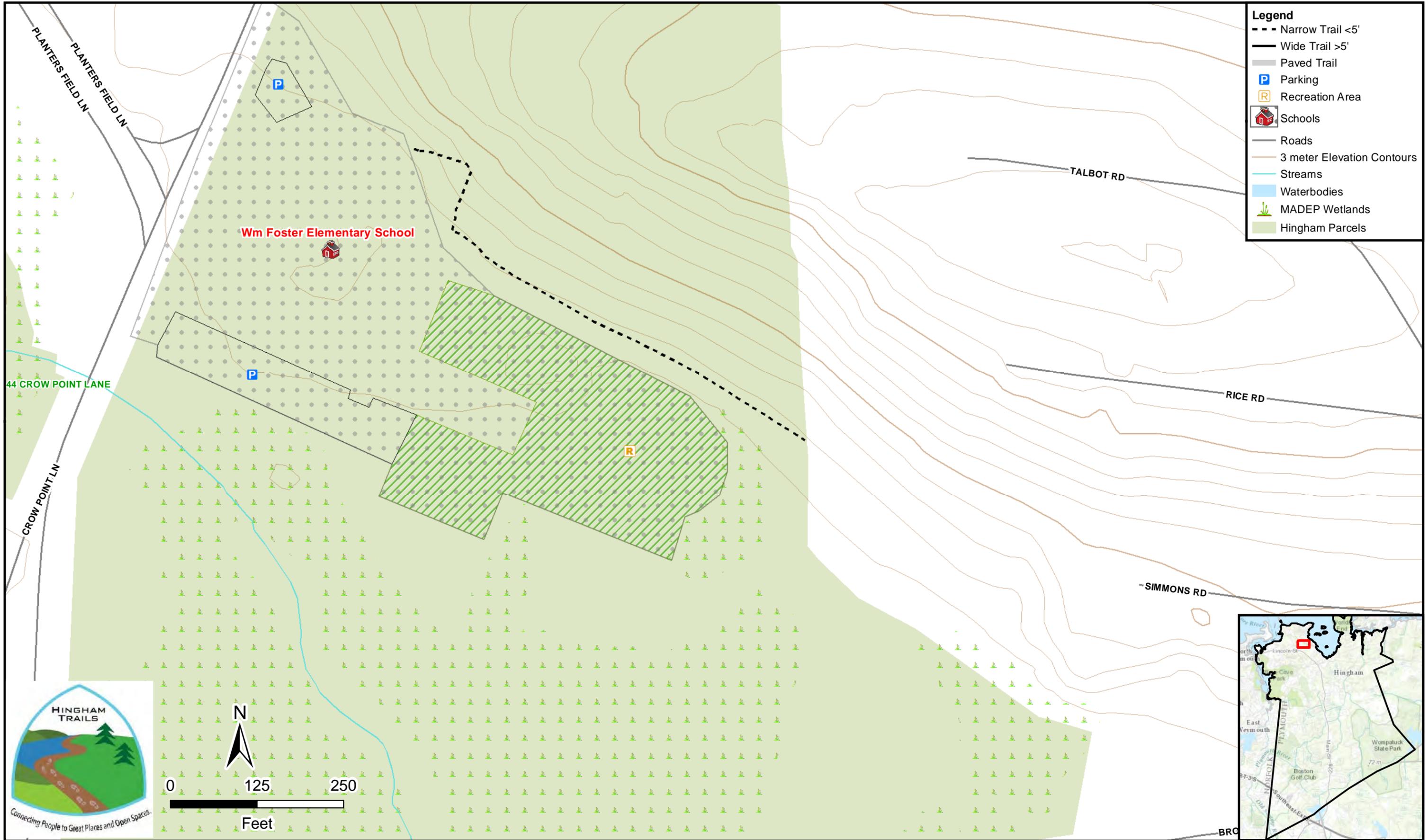




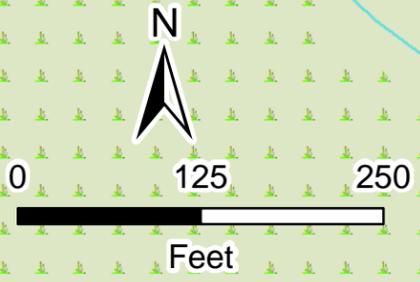
# FOSTER SCHOOL

Open Dusk to Dawn  
Town of Hingham

Approx 0.15 miles  
55 Donher Ave



- Legend**
- - - Narrow Trail <5'
  - Wide Trail >5'
  - ▬ Paved Trail
  - P Parking
  - R Recreation Area
  - 🏫 Schools
  - Roads
  - 3 meter Elevation Contours
  - Streams
  - Waterbodies
  - MADEP Wetlands
  - Hingham Parcels



Source: MassGIS Basemap & Environmental Data. Field Delineated Data by BSC Group, Inc. March 2015

# Col. William McClousky Park

Bulow Place, Rite Aid Plaza (Rt. 3A)  
Hingham, MA

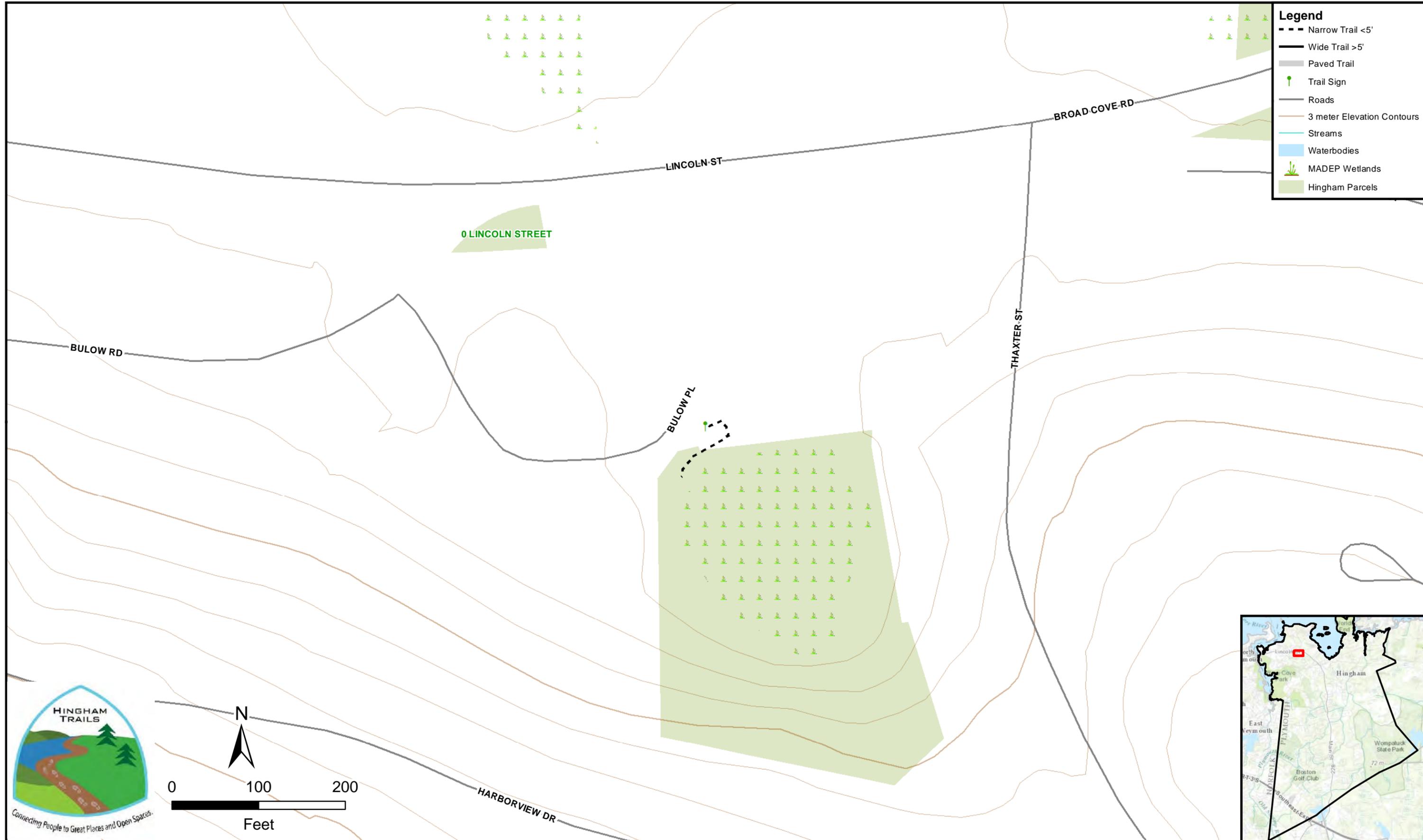
This is an open space parcel consisting of a small upland area next to a pond proximate to Bradley Hill;. The small upland area affords a nice place for a picnic table to view birds and enjoy nature. Currently, there is no active use of this area. Parking is available at the Rite Aid Plaza located on Route 3A or Bulow Place.



Parking	Trailhead	Paved Trail	Single Track Trail	Wide Forest Trails	Benches	Scenic/View	Cultural Sites	Picnic Area	Interpretative Signs	Fishing Access	Portage Area	Connection to Other Open Space	Connection to Commercial / Transportation Areas
X						X							X

# COL. WILLIAM MCCLUSKEY

Approx 0.02 miles

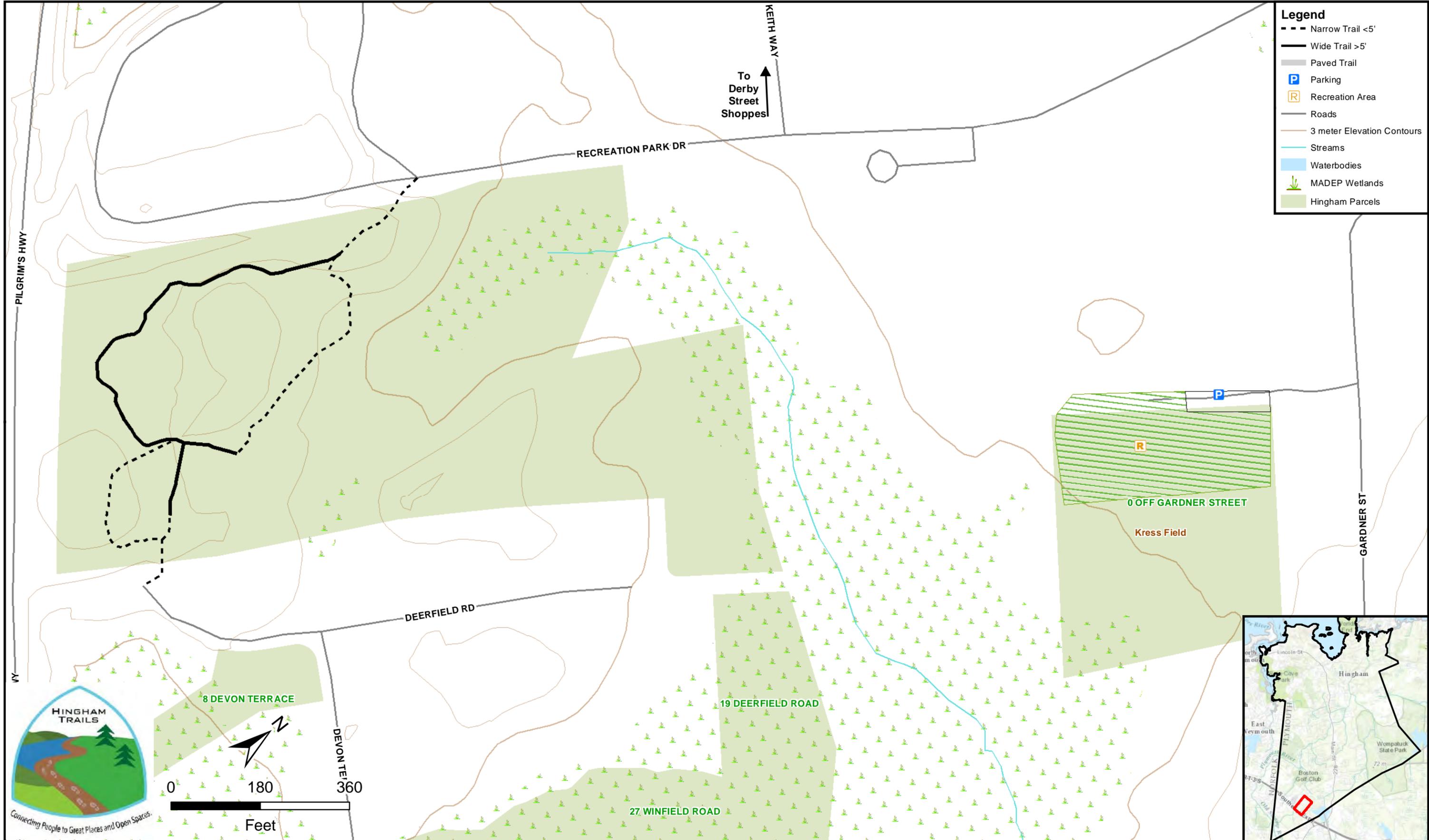




# RECREATION PARK DRIVE

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

Approx 0.46 miles



# Old Swamp River

Abington Street  
Hingham, MA

Two parcels totaling 13.6 acres between Abington Street and Weymouth border were transferred to the town in 2009. Two tributaries of the Old Swamp River pick up drainage from the upper watershed, connect to the Old Swamp River and contribute to the Weymouth water supply. Upland areas are characterized by ancient oaks and stone walls. There currently is no official parking for Old Swamp River. Access is from Abington Street.



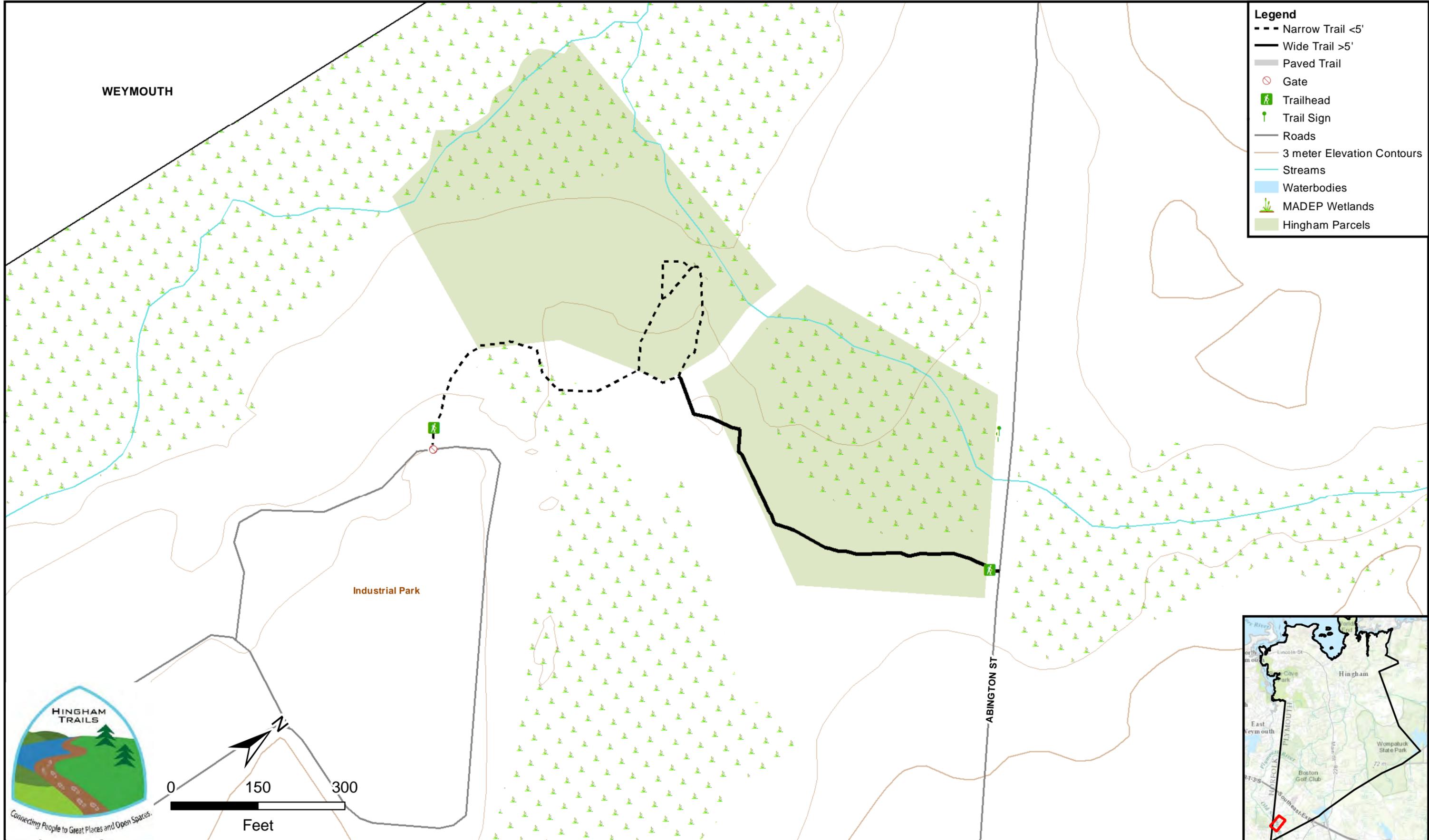
Parking	Trailhead	Paved Trail	Single Track Trail	Wide Forest Trails	Benches	Scenic/View	Cultural Sites	Picnic Area	Interpretative Signs	Fishing Access	Portage Area	Connection to Other Open Space	Connection to Commercial / Transportation Areas
			X	X			X						

# OLD SWAMP RIVER

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

Approx 0.36 miles  
Abington Street

Deer hunting is allowed on this property between  
October 19 and November 28. Special permit by  
the Conservation Commission is required for this activity.



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# Hingham Comprehensive Trails Plan Appendix B

## Sustainable Trail Design and Maintenance Best Management Practices



# Trail Design and Maintenance Best Management Practices

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## Introduction

Even the best trails deteriorate over time, but routine maintenance can keep them in sustainable shape and limit the amount of time and money that is needed to improve them. Operations, maintenance, and stewardship are essential to the safe use, enjoyment, and long-term success of any trail. Establishing a monitoring and maintenance plan is crucial. Learning to spot problems early will save the Hingham time and money in the future.

Common trail problems include widening, short cuts, tripping hazards, trenching and wet spots. Things to look out for when walking trails that will help minimize future maintenance needs include:

- Missing, damaged or unclear trail markers;
- Indications of trespassers that can include trash, graffiti, fire rings, trail off shoots or OHV tracks;
- Bridges, boardwalks, or steps that might need repairs;
- Large branches or trees that would need to be cleared with special equipment like a chain saw;
- Areas that might need improvement due to soil erosion or water pooling up;
- Other encroaching vegetation along the trail corridor.

The following are maintenance activities that should be completed on a monthly basis:

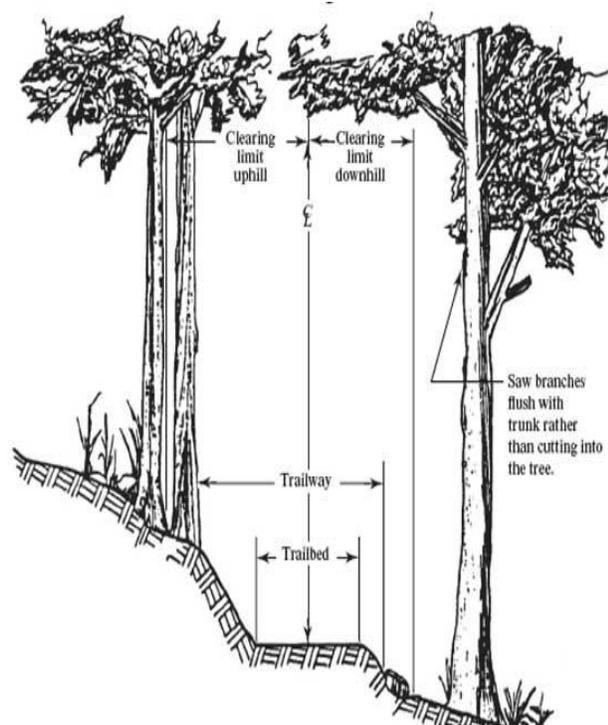
- Replace missing or unclear trail signs;
- Revegetate: areas adjacent to trails or unofficial trails that have been disturbed for any reason should be revegetated to minimize erosion;
- Prune back the trail corridor and remove dead fall;
- Ensure that stream crossings are in good repair and water is flowing properly. Replace broken stringers, decking, guard rails and/or clear culverts and their inlets and outlets;
- Clear erosion control structures of accumulated debris. Erosion control structures include waterbars and grade reversals;
- Stabilize and grade any ditches and trenches resulting from erosion and investigate a solution;
- Ensure trail tread is stable and compacted with a constant outsloped grade.

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## Trail Features and their Maintenance

### Trail Corridor

The trail corridor includes the trail's tread and the area above and to the sides of the tread. The edges of the trail corridor are typically the clearing limits. Vegetation is trimmed back and obstacles like large boulders and fallen trees are removed to provide safe passage.



The dimensions of the corridor are determined by the needs of the target users and the layout of the trail. In Hingham, natural surface trails range between 3' and 5' wide while paved paths range between 8' and 15'. A vertical clearance of 10'-12' is recommended in Hingham due to horse riding recreation activities on the trails. Vegetation clearing typically occurs within 1' to 3' of the edge of the trail. Plant material should be cleared all the way to the ground. Fallen logs should be removed to the clearing limit.

Usually trees growing within the trail corridor should be removed. Limbs of trees proximate to the trail corridor should be pruned. Tree pruning should occur as close to the trunk as possible. In order to preserve tree health, do a partial undercut approximate 1' from the trunk along the branch, then, finish the cut close to the trunk. This prevents stripping the bark of the trunk of the tree. If more than half of the tree needs pruning, it is usually better to cut it down. Cut trees off at ground level and do not leave pointed stubs. Cut vegetation should be disposed of in upland areas at least 10' from the trail. Never dispose of vegetation in a wetland.

### Trail Tread:

The trail tread is the travel surface of the trail. Tread is constructed and maintained to support the designated use of the trail. The best soil type for multi-use trails is a mixture of clay, silt and sand. A combination of these provides for good drainage and durability.

A brief description of the soil series occurring in the Town of Hingham include the sandy Warwick and Quonset soils in our Zone 2 aquifer protection district. These consist of excessively drained soils developed in water sorted sand and gravel occurring on glacial outwash plains, eskers and kames. The newly defined Broadbrook soil series is an example of soils formed on drumlins. These are very deep, well drained soils formed in silty sediments underlain by loamy dense glacial till. Areas within these soils series can be sustainably developed into natural surface trails.

Another soil series found in Hingham include salt marsh soils classified as Ipswich/Pawcatuck/Matunuck, a complex soil consisting of very deep, level, very poorly drained soils

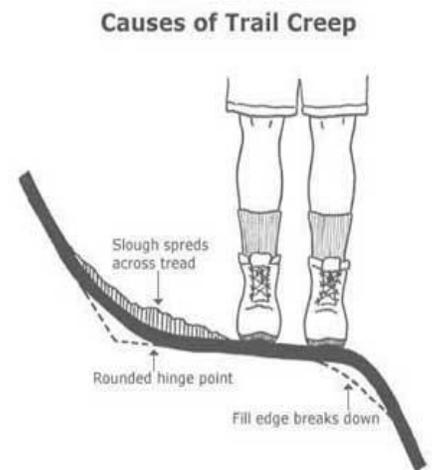
in tidal areas subject to daily inundation by salt water. Trails within the Ipswich Pawcatuck Matunuck complex soil units require more complex planning to ensure sustainability.

An outsloped trail surface is the objective of trail tread maintenance. An outsloped tread is one that is lower on the outside or downhill side of the trail than it is on the inside of bankside. Outsloping lets water sheet across the trail naturally. The tread should be outsloped at least 5%. Remove and scatter berm material that collects at the outside edge of the trail. Reshape the tread and restore the outslope. Remove all the debris that has fallen on the tread. Maintenance includes removing obstacles such as protruding roots and rock on easier trails. Compact all tread and sections of the backslope that were reworked.

### Trail Creep

On hillside trails, such as those at the Bouve Conservation Area and the Foster Elementary School, the slough needs to be removed. Slough is soil, rock, and debris that has moved downhill to the inside of the tread, narrowing the tread. The slough needs to be removed and the shape of the tread restored to have an outslope. The tread should be compacted after the slough is removed.

Berms should also be removed. Berms form a false edge on the outside of the tread, creating a barrier that prevents water from sheeting off the trail. Berms form when water erodes the trail tread and the soil deposits along the edge of the trail. Berms are the single largest contributors to trail erosion. The berm can be pulled into the center of the trail tread and compacted to restore the trail outslope.



### Trail Closures

Providing a better trail option (e.g. line of sight trail) will deter people from traveling on the closed trail. The alternate route must be designed well and flow with other trails. Place clear closing signage at trailhead and indicate reasons why the trail is closed so users understand why they cannot use the trail any longer. If the trail shows signs of erosion, install wooden check dams. In the future, check dams will have to be checked to ensure that they are still functioning and channelizing water away from eroded locations. Planting non-invasive vegetation in the lines of sight from roadways or other trails will prevent users from seeing the trail and using it. Scarify the soil and scatter it around to accelerate the process of naturalization. As a last resort a fence can be used to block the trail. Ensure that there is no access around the fence to the closed trail.

Contact the Hingham Conservation Commission when closing trails proximate to or within coastal and inland wetland resources.

### Erosion Control Structures

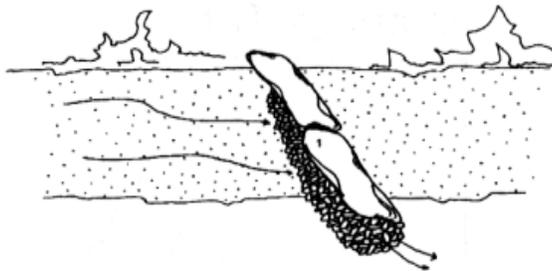
Erosion control structures are implemented along trails with a grade to help maintain the tread in a sustainable matter. Erosion control structures help divert water off of the trail. Erosion control structures would be beneficial along trails with steep slopes (>8% grade) such as those located at

Bouve Conservation Area, Bare Cove Park, Brewer Park, George Washington/Town Forest and Foster Elementary School.

### **Drainage Ditch**

A Drainage Ditch is useful for heavier flow of water. The ditch can be dug to gather water, and then redirect it into another drainage structure such as a culvert. The ditch could also run along the side of the trail and then gradually direct water away from the path. To build a good ditch, the ground should be dug deep enough to accommodate the stormwater for that region. Slopes should be no larger than 45 degrees to prevent the risk of erosion.

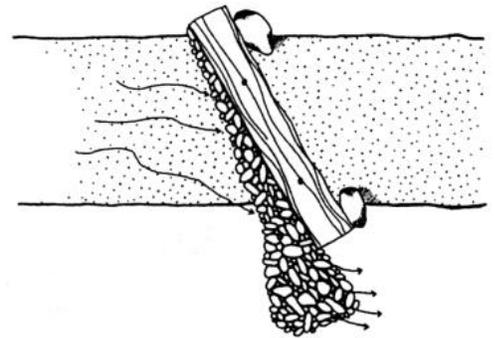
### **Waterbars (Rock or Stone)**



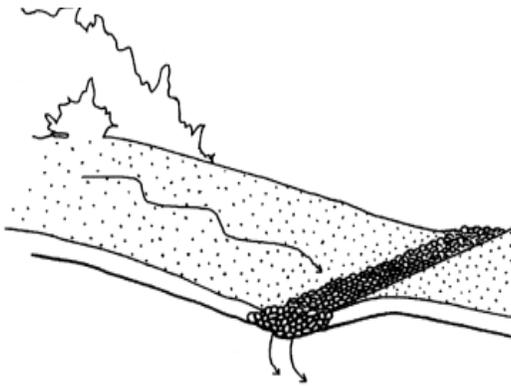
Waterbars are rock or log structures that redirect water away from the trail. They are laid across the trail at a 30-45 degree angle. Rocks are put at the edges of the bars to prevent them from moving. The bar is buried in the bank at least 12" into the ground. The terrain of the path must allow the waterbar to direct water away from the trail. Therefore, they should not be placed in a location that requires extensive excavation. A trough with 6" of depth should be dug into the ground in front of the waterbar to collect the

water and drain it away from the trail. The water should pour into a ditch that is placed outside of the trail area. Safety precautions must be put into place, so trail users do not slip or fall on waterbars, such as their location or using signage. The spacing of waterbars is dependent on the speed volume and distance the water travels through the site. Rebar can be used to keep the waterbars in place. Holes are drilled through the log at an angle, and rebar pushed in. Waterbars are not recommended on multiuse trails.

In order to construct waterbars, a trench should be dug into the ground, where the waterbar will be placed. The site must be cleared of debris and organic material. After the bar is placed onto the ground, use soil to fill in the gap between the trench and bar, creating a slight slope that prevents water from getting in between the bar and trench. The height of the bar should be six inches above the trench. Clear the ditch that the water drains into of any debris or excess dirt. After everything is in the right place, compact the loosened soil as much as possible so it does not erode.



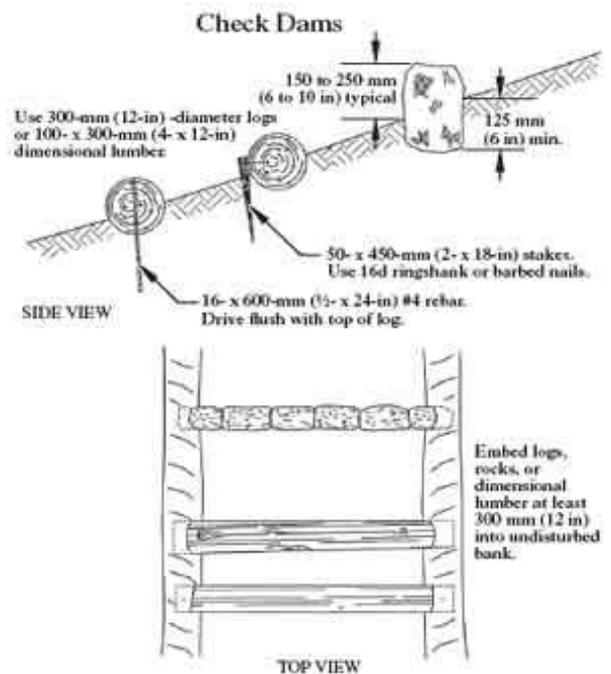
## Grade Reversals/ Dips



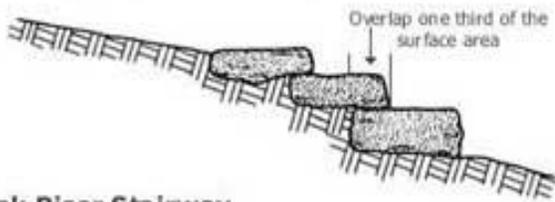
The basic idea is to reverse the grade to keep water moving across the trail. Grade reversals are typically designed and built on new trails. A grade reversal on an outloped trail encourages water to continue to sheet across the trail and not down it. These structures take advantage of natural dips in the terrain., reversing the grade for about 10 to 15 feet, the rolled back to resume the descent. Grade reversals should be places frequently, about every 20 to 50 feet on steep trails. Grade reversals are the most trail user friendly erosion control structure. These also require very little maintenance and enhance trail use experience.

## Check Dams

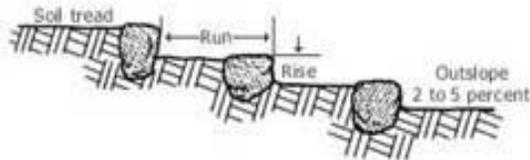
Check dams can be used on sections of highly eroded trails to stop the erosion and hold material in place. They are intended to slow and hold surface water long enough for the water to deposit the sediment it carries. Check dams are used with drainage structures to reduce the overall erosion on the trail tread as well as to restore an abandoned trail. Check dams are not recommended on multiuse trails.



### Overlapping Rock Stairway



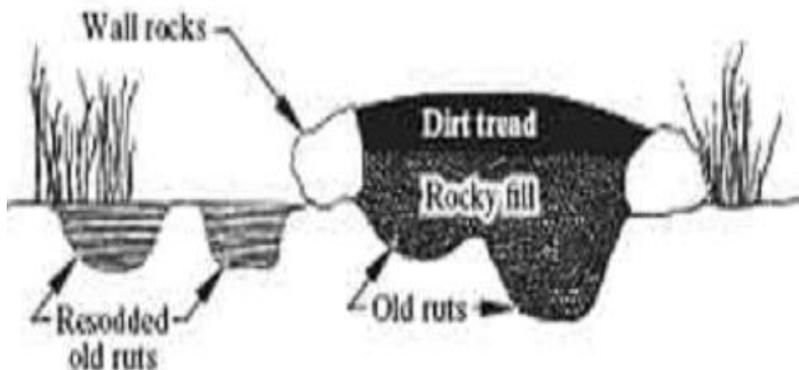
### Rock Riser Stairway



## Wooden and Stone Steps

When a trail has a steep slope, it is beneficial to add steps to the path. This addition makes the trail the slope of the trail which can prevent erosion. The flatter grade of the steps can act as a kind of obstruction for flowing water and slows down the velocity. Wood and stone can become slippery when wet, so the safety of this structure should be evaluated.

## Turnpikes



The Turnpike is a structure placed over an area of trail that retains water and becomes muddy. Soil taken from surrounding parts of the trail is filled so the muddy trail bed is elevated above the water table. Soils that drain well should be used to fill. Soil should be obtained from the general area to maintain consistency and reduce the risk of introducing invasive plant species. Only areas that are flat and not near heavily saturated soil should be used for a turnpike.

To construct a turnpike, dig down and remove any rocks, roots, or other obstructions. The outer edges of the turnpike should slope down. Retaining logs can be added to keep the soil from eroding down the sides. Geotextiles can be placed underneath the turnpike to keep the ground from shifting.

## Wetland and Stream Crossings

When creating pathways that must cross over a stream or wetland, habitats and wildlife must be considered. Animals such as amphibians, crayfish, fish, reptiles, and small mammals need to be able to pass between the walkway put into place. Access must be provided to coldwater habitats which act as a summer habitat for brook trout. If they are barred from accessing coldwater they can succumb to heat stress and fatality. Access must also be included to feeding areas, such as insect communities near water surfaces for fish. Some fish live in the ocean but breed in freshwater, so it is necessary to clear a way for those fish to access streams. Terrestrial animals should have a way to avoid climbing up embankment and crossing streets where they can encounter vehicles.

Trail projects, including maintenance of trails, within sensitive wetland resources areas (streams, rivers, vernal pools, tidelines, marshes, etc.) and their buffers require regulatory review by the Hingham Conservation Commission and the Commonwealth's Department of Environmental Protection (DEP). Depending on the scope and location of the project, additional regulatory review may be required. The permitting process is complex. The Hingham Conservation Commission can provide additional guidance and support about this regulatory requirements. **The best wetland protection is avoidance.**

When building over wetlands is necessary, disturbance to the soil should be minimized. The maximum recommended grade is 10 degrees, except for short stretches. Ideally there should be minimal changes to the existing grade. Runoff and drainage should be collected in a stabilized area or sediment basin, without altering the existing drainage pattern. Planting a natural vegetation buffer zone as erosion control or small trees for groundwater can divert the effects of runoff. A more level slope is less damaging to drainage ways and wetlands. During construction of the trail, temporary erosion controls can be implemented such as hay bales, and straw wattles.

Crossings should be designed to accommodate the flow of the stream. If a crossing is undersized scour, erosion, high flow velocity, clogging, ponding, and washouts can occur.

### **Stream and Wetland Crossings, MassDEP Standards**

Crossings should be designed to accommodate the flow of the stream. If a crossing is undersized scour, erosion, high flow velocity, clogging, ponding, and washouts can occur.



If a crossing is too shallow than organisms will not be able to pass through. The opening of culverts should be buried into the stream bed in order for substrate and water depth to match that of the stream.

Perched crossings are passage openings that are above the stream bed and allow for water to cascade into the stream. This is dangerous for aquatic and terrestrial wildlife to pass through.



Some problems that can occur from poor crossing design include low flow, unnatural bed materials, and scouring and erosion. Low flow can cause low velocities which can make a stream stagnant. Metal and concrete disrupt continuity and can obstruct passage for wildlife. Scouring can happen if the crossing is too small and leads to high velocity flow. The combination of high velocity and eroded bed can lead to flooding. If an opening is too small debris can get caught in the inlet and cause a damming effect.

A crossing should be designed to allow for complete continuity and aquatic and terrestrial wildlife passage. When safe and stable it can prevent erosion and structural damage. The crossing should span from bank to bank, keep the existing water velocity consistent, and create minimal changes in the river. Culverts should be embedded a minimum of 2 ft. Substrate should be consistent with that of the stream.

Tidal and coastal regions have additional concerns regarding continuity. If a crossing causes a tidal restriction, than it can affect the water levels, ocean chemistry, diminish nutrients, and degrade the system. They can cause the opportunity for invasive species to colonize the changed area. Factors to consider in coastal areas include daily fluctuating tides, bidirectional flow, flood protection, and saltwater morphology.

### **Culverts**

A culvert is a pipe of varying size that is placed underneath a road, pathway, or trail. They allow for the continuity of a stream to go underneath soil. The amount and velocity of flow determines the diameter of the pipe. The outlet of the culvert should match the existing body of water as close as possible, or if redesigning the streambed be a ditch large enough to disperse the flowing water. The pipe should also have some kind of downgrade close to 2% to allow gravity to carry the water through. Periodically the culvert will need to be inspected to ensure that there is no debris within the pipe. Rocks can be added at the outlet to prevent the outflow from causing erosion.

### **Bog Bridges**

A bog bridge uses dimensional lumber or natural timbers to elevate the trail where there is failing drainage. These are popularly used for bog or swamp crossing. The hardened surface should be made of a long lasting material. Usually two planks of wood are side by side for as long as hundreds of feet. Sill logs are placed as a foundation, and then the wood planks are placed on top. The wood is laid down in 8-10 foot sections. Stepping stones can be used at the approach to the bog bridges to ease with the elevation change. Bog bridges should not be used on multi use trails.

### **Stepping Stones**

Stepping stones can be used to cross narrow streams. Large flat stones that are consistent in size should be chosen so they are manageable to walk across. The stones should be placed within a foot of each other. The bank must be stabilized so the stones do not cause erosion and sink beneath the surface of the water. Fish must be able to navigate around the placement of the stones.

### **Bridges**

Bridges can be used to cross wider streams. Bridges should span the width of the stream as well as its bank. The height of the bridge should not interfere with water flow, thus, bridges should be constructed at a height above the FEMA flow way and flood height. Depending on the span, footings may be necessary. There are a variety of footings available ranging from low impact (helical piers) to medium and higher impacts (direct embed footings and concrete sonotubes). Bridges should be ramped at each approach. Guard rails should also be provided based on standards provided by the Hingham Town Building Inspector and required for anything over 30”.

### **Boardwalks**

Boardwalks can be used to cross wide wetlands and river margins. The advantage of a boardwalk is that with its elevation, it provides for light penetration for continued vegetative growth (as opposed to a bog bridge which typically only provides inches between the stringer and the wetland substrate). The difference between a boardwalk and a bridge is that a bridge generally crosses a deep or moving water, while a boardwalk traverses very shallow water or even dry land. Moreover, a boardwalk must be supported every few feet while a bridge needs longer clear spans and is typically engineered to carry more weight. Like bridges, boardwalks require footings. There are a variety of footings available ranging from low impact (helical piers) to medium and higher impacts (direct embed footings and concrete sonotubes). Boardwalks should also be ramped at each approach. Guard rails should also be provided based on standards provided by the Hingham Town Building Inspector and required for anything over 30”.

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## Trail Maintenance Tools

A wide variety of tools are available for trail maintenance. A trail maintainer needs to learn how to choose the correct tool for the job, use it effectively and safely, care for and store it properly. The right tool should be used for the right job.



### Loppers

**Uses:** Cutting selected limbs or saplings during construction and maintenance phases. Larger models can cut limbs approaching 2" in size.  
**Maintenance Tips:** High quality loppers with replaceable parts should be used. Saplings should be clipped flush to the ground and limbs flush to the tree. Loppers must not be thrown on the ground as this may clog the head and dull the blades. At the end of the day, the blade should be cleaned and wiped with light oil.

### Hand Pruner

**Uses:** Cutting small branches encroaching on the trail. Also useful for cutting protruding roots that are tripping hazards. Mostly used for trail maintenance. These are handier and lighter to carry than a lopper when only minor pruning is needed—it should be carried in hand while hiking to clip small branches as encountered.



### Pruning Saw

**Uses:** Cutting limbs encroaching on the trail. Can also be used for cutting small trees or shrubs at the base and removing small to medium sized windfalls. Pruning saws come in a wide variety of sizes and tooth patterns. They range from small folding models with 6" to 8" blades to those with blades up to approximately 26" in length. Blades are curved and cut only on the back-stroke—a handy feature when removing hard to reach limbs.  
**Maintenance Tips:** Pruning saws should be resharpened often. A light coat of oil should be applied to the blade after each use.



### Bow Saw

**Uses:** Cutting limbs, small trees, and small to medium sized windfalls—essentially the same as pruning saws except that bow saws can cut larger material. Bow saws have blades ranging from about 21" to 36" in length. The smaller saws are generally triangular in shape and work well for pruning. Their shape limits the length and depth of the stroke to material less than 4" to 5" in diameter. The larger saws are bow-shaped and can cut material up to 8" in diameter, but are more prone to twisting and binding in the cut.  
**Maintenance Tips:** Bow saws should not be resharpened due to the hardness of the blade. When the blade becomes dull, rusty, or bent, it should be replaced. It should be wiped with light oil before storing.



**Cross Cut Saws:**

Uses: Cutting large blowdowns and felling timber. Crosscut saws are available in two basic designs—one-person and two-person. The one-person models are generally 3’ to 4’ feet in length and are perhaps most useful for clearing blowdowns. Even though they are called one-person, an optional second handle can be added. Two-person crosscuts are 5’ to 8’ in length, with a handle at each end. Both types are useful for constructing trail structures in remote areas. In combination with an adze, two-person crosscut saws are especially good for creating a level walking surface on native log bridges. Crosscut saws (especially two-person models) require special skills and care, but are nevertheless an attractive, lightweight alternative in remote areas.

Maintenance tips: A crosscut saw should never be placed in the dirt—the teeth should remain clean and sharp. Generally, the saw is leaned against a tree when not in use, but care must be taken to ensure it does not fall to the ground.



**Pole Pruner and Pole Saw:**

Uses: Cutting overhanging limbs that cannot be reached with bowsaws, loppers, and other short-reaching tools. Pruners and saws are often combined on the same handle to allow for more flexibility.



**Weed Whip**

Uses: Cuts grass, weeds, light brush, briars, and small tree seedlings. It is a very effective tool for clearing new growth along the trail.

Maintenance tip: The tool should be carried or stored with a sheath in place.



**Rock Rake**

Uses: The Rock Rake collects materials in its path as well as levels the surface. It can pick up any rocks larger than half an inch. The debris collected must be gathered and removed from the premise.

Maintenance: Do not swing rock rake high above shoulder’s length. Do not try to pick up any objects that are larger than the teeth of the rake so they do not bend or break. The teeth of the rake should be kept sharp.



### **Leaf Rake**

Uses: A standard rake can collect small debris in the way of the path. It will pick up leaves, sticks and small rocks in proximity of each other. Everything collected by the rake must be removed from the premise.

Maintenance: Do not pick up anything that is too large or dense for the rake, to ensure that the teeth do not bend or break.



### **Pulaski**

Uses: The Pulaski is a dual function tool that combines the axe and the adze. It can chop wood and it can dig soil.

Maintenance: When using the tool do not raise it above shoulder length to ensure that no one is hit by the blade. The user should keep his or her actions controlled. Be sure to keep the blade sharp.



### **McLeod**

Uses: The McLeod is a dual use tool that combines a rake with a blade. It can be used to cut down branches, rake and even out soil, compact tread, and create a slope for a trail. It can also be used for erosion control.

Maintenance: Carry the tool with the teeth pointing to the ground and sheathing the blade, and be careful to keep the tool away from other people. The blades will have to be sharpened periodically.



### **Hazel Hoe/Rogue Hoe**

Uses: The hoe can be used to dig tread, and break apart large clumps of sod. It can clear debris from the path or level an existing path. It is most effective when the corner is used to penetrate the clumps.

Maintenance: Swing the hoe no higher than waist length. Hold the handle so one hand is at the end and the other hand is in the middle. It is best to use the corner of the blade to hit objects. The teeth must be kept sharp.



## Shovel

Uses: The shovel is used to dig into soil. Soil will then have to be placed in a more convenient location.

Maintenance: Try not to hit the head of the shovel into any large rocks or trees, as this will add wear and tear onto the tool. Be sure not to swing the shovel above shoulder length, and be aware of others in the surrounding area. The blade and corner must be kept sharp.



## Trail Maintenance and Trail Tool Use Safety

When using tools it is important for volunteers to be aware of the hazards their tool can present to others. There are a few factors to consider when using large and/or pointed objects.

- Hold the tools with a tight grip, and avoid muddy or wet gloves.
- Volunteers should be aware of each other, and should swing tools in another person's vicinity. When swinging a tool high to use it, for example a tool in the axe family, be sure not to accidentally hit any high objects such as tree branches so they do not shake and drop objects onto the user or other people.
- No one should work in an area where the ground is not stable. A firm footing is key to safe and efficient usage.
- Volunteers should be educated on which tool is best for which task. The wrong tool can wear out the user, the tool, or the environment.
- Tools should be sharp enough and in good condition. If a tool is dull there is risk of it bouncing off the surface.
- Tools should be carried at waist length, and sharp teeth or blades should be sheathed or covered.
- Volunteers should wear the appropriate clothing for their work, such as long pants, long sleeves, work boots, hard hats, gloves, and safety glasses.



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# Sustainable Trail Design, Maintenance and Construction

Principles of Ecologically Sustainable Trails (This section is drawn and adapted from the Minnesota DNR Trails and Waterways Trails Planning, Design and Development Guidelines and the DCR Trails Guidelines and Best Practices Manual.) Trails are our most important tool for linking conservation and recreation. As such, they must be developed and maintained in ways that avoid negative impacts to the ecological resources.

All development, including trails, has direct and indirect impacts to the environment. To help minimize these impacts, we propose the following “guiding principles” when developing and maintaining trail systems:

## 1. Avoid Sensitive Ecological Areas

When developing and maintaining trails, avoid sensitive ecological systems or take sufficient steps to minimize impacts on these systems. Ecologically sensitive systems include:

- Known and estimated locations of rare and endangered species and their habitats as identified by the Massachusetts Natural Heritage and Endangered Species Program,
- Priority Natural Communities and vernal pools as identified by the Massachusetts Natural Heritage and Endangered Species Program,
- Wetlands, lakes, rivers and streams,
- Public water supplies,
- Steep slopes and soils that are identified as restricted for trail or road development as defined by the Natural Resources Conservation Service,
- Unique or important geologic features, formations, and designated state geologic waysides, and
- Cultural and historic resources as determined by the Hingham Preservation Committee and the Massachusetts Historic Commission.

## 2. Develop Trails in Areas Already Influenced by Human Activity

Consistent with the first guiding principle, where feasible, it makes most sense to site and maintain trails in areas that have already been influenced by human activity provided that you can meet your other objectives while doing so. These include:

- Already existing trails,
- Existing or historic wood roads and logging roads,
- Abandoned railroad corridors, often make appropriate multi-use trail corridors,
- Previously developed or disturbed areas.

### **3. Provide Buffers to Protect Sensitive Ecological and Hydrologic Systems**

Maintaining buffers between trails and adjacent sensitive natural areas is essential to ensuring their long-term ecological quality, diversity, and habitat value. Irrespective of how well they are aligned and designed, trails have an impact, including habitat fragmentation, soil compaction, increased runoff and erosion. For these reasons, the use of buffers is an essential part of trail planning and design. Recommended buffer widths, however, will vary in response to a number of conditions, including:

- Sensitivity of the ecological systems being impacted,
- Extent of the natural open space or greenway corridor being traversed,
- Type of trail being proposed and its potential for creating ecological impacts,
- Grade and soils types, and
- Desired trail experience. Recommended buffer widths may range from 50-200 feet depending on conditions. For a more detailed recommendations, please contact the Hingham Conservation Commission.

### **4. Develop Appropriately when Trails Do Intersect with Sensitive Areas**

The above discussion notwithstanding, trail development and maintenance across, along, and within sensitive areas is often desirable and justifiable. Streams need to be crossed, slopes traversed, and features interpreted. Allowing controlled access to sensitive ecological areas may be an integral part of educating the public about the value of protecting them. Most often, this takes the form of routing a corridor trail on the periphery of a sensitive area (with adequate buffers) and allowing more direct access to specific settings only in very select locations, and with appropriate trail forms (such as boardwalks and bridges) for closer observation. This approach provides reasonable access while limiting the potential for environmental impact and can also be developed in conjunction with an environmental education program.

### **5. Use Natural Infiltration and Best Practices for Stormwater Management**

Whether paved or natural trails, one of the most critical components of trail design and management is to keep the trail away from the water and the water off the trail. On highly developed trails, the use of natural, dispersed infiltration systems such as vegetated swales and “rain gardens” offers advantages over engineered stormwater control structures such as storm drains and catch basins.

### **6. Limit Tread Erosion through Design and Construction**

To minimize trail erosion and impacts to water resources use sustainable trail design and construction techniques such as: reducing the “tread watershed”, “outslope” the trail (slope it away from the bank) to facilitate natural drainage across the trail, and provide appropriately spaced waterbars and drainage dips.

### **7. Ensure Trails Remain Sustainable**

A sustainable trail is one that can be indefinitely maintained for its intended purposes, assuming routine management and stewardship is provided consistent with the type of trail. If a trail is well designed and appropriately used, site impacts will stay within acceptable limits. Over time, all trail treads will change shape with use and forces of nature. Anticipating and reacting to this change before significant damage occurs, is key to maintaining a sustainable trail system. A trail becomes

unsustainable when its physical condition passes a threshold where site impacts are no longer acceptable. Under these circumstances, action is required to avoid continued degradation of the trail and adjoining ecological systems. In practice, all natural trail types tend to exhibit similar physical signs of being either sustainable or unsustainable, as reflected by rutting, erosion, by-passing, and impacts to adjoining ecological systems and hydrology.

In general, trails are considered sustainable if the following conditions are found:

- Trail tread is stable and compacted, with a constant outsloped grade preferred (the depression on a well-worn trail should average less than 3 inches in most soil types),
- Displacement of soils from the trail tread is minimal relative to the use and soil type (only limited berming on the outside of curves),
- Tread drains well with minimal to no signs of ongoing erosion,
- Tread does not restrict site hydrology and impact surface- or ground-water quality, and
- Impacts to surrounding ecological systems is limited to the trail tread and directly adjacent clearance zone, with no bypassing and cross-country travel occurring.

When a trail becomes unsustainable, there are three options. Re-design and restore the trail, restrict use/re-classify the trail, or decommission the trail.

## **8. Formally Decommission Unsustainable or Unwanted Trails**

Closing or decommissioning is often necessary to ensure an effective and sustainable trail system and reduce maintenance costs and user conflicts. Decommissioning a trail involves more than just a sign or barrier. When a trail is closed or a trail segment is rerouted, at a minimum the visible ends of the old trail should be re-graded back to the original slopes, the eroded soil there should be replaced, and the trail end should be replanted with native plants. The use of a physical barrier and reducing the visibility of the old trail tread are both necessary to effectively close a trail. Experience has shown that relying solely on fences and gates to block entrances of decommissioned trails is not very effective. The Minnesota Department of Natural Resources' Trail Planning, Design, and Development Guidelines provides guidance on different methods of closing trails including using dense planting at entrances, creating closure berms to block access, using slash to reinforce closures, ways to re-naturalize corridors after closure, and public information and education. In many cases, these closures can be done in conjunction with forest management and integrated into a forest management plan

## **9. General Accessibility Standards**

Although the Federal Government has begun implementing universally accessible trail standards in its parks, Massachusetts has not adopted such requirements. Notwithstanding, in an effort to provide equal access, new trails should be constructed to meet ADA standards. Existing trails should be surveyed to determine whether they are currently accessible and/or if sustainable changes can be implemented to bring them up to the ADA trail requirements. The Universal Trail Assessment Process (UTAP) can be utilized to determine the rate of accessibility of existing trails. UTAP is a tool that land managers, agencies and individuals use to monitor, improve, and document an outdoor path of travel. Data collected during the assessment can also be provided to trail users for specific conditions, such as grade, tread width, features, obstacles, and trail surface. For additional information about the UTAP process, please visit: <http://www.americantrails.org/resources/accessible/UTAPsum.html>

Under the proposed guidelines, an accessible trail would meet these minimum technical provisions:

- Clear tread width: 36" minimum
- Tread Obstacles: 2" high maximum (up to 3" high where running and cross slopes are 5% or less)
- Cross Slope: 5% max.
- Running slope (trail grade) meets one or more of the following:
  - 5% or less for any distance,
  - up to 8.33% for 200' max. Resting intervals no more than 200' apart,
  - up to 10% for 30' max. Resting intervals 30', or
  - up to 12.5% for 10' max. Resting intervals 10'.
- No more than 30% of the total trail length may exceed a running slope of 8.33%.
- Passing Space: provided at least every 1000' where trail width is less than 60"
- Signs: shall be provided indicating the length of the accessible trail segment

While the proposed accessibility guidelines address the special circumstances where designers and operators may not be able to achieve accessibility, they are encouraged to always provide access to the greatest extent possible. Departures from specific accessibility guidelines are permitted for any portion of the trail where compliance would:

- cause substantial harm to cultural, historic, religious, or significant natural features or characteristics;
- substantially alter the nature of the setting or the purpose;
- require construction methods or materials that are prohibited by Federal, State, or local regulations or statutes;
- not be feasible due to terrain or the prevailing construction practices.

For detailed information on accessible trails, the ADA regulations, and how they apply to specific situations, see the American Trails website: [www.AmericanTrails.org](http://www.AmericanTrails.org). Click on the "Resources & Library" icon, then click on "Accessible Trails." The final report of the Regulatory Negotiation Committee on Accessibility Guidelines for Outdoor Developed Areas proposes ADA Accessibility Guidelines (ADAAG) for trails, outdoor recreational access routes, beach access routes, and picnic and camping facilities is available at: <http://atfiles.org/files/pdf/draft-final-accessibility-guidelines-2009.pdf>.



USFS Trail Design Parameters (Hiker Pedestrian) provide guidance for the assessment, survey and design, construction, repair and maintenance of trails, based on the Trail Class and Designed Use of the trail. Exceptions and variances to these parameters can occur, however, when site-specific circumstances demand such exceptions.

Designed Use HIKER-PEDESTRIAN		Trail Class 1	Trail Class 2	Trail Class 3*	Trail Class 4*	Trail Class 5*
Design Tread Width	Wilderness	0" – 12"	6" – 18"	12" – 24" Exceptions: May be 36-48" at switchbacks, tumpikes, fords and steep side slopes.	24" Exceptions: May be 36-48" at switchbacks, tumpikes, fords and steep side slopes.	Not applicable
	Non-Wilderness	0" – 12"	6" – 18"	18" – 48"	32" – 96"	36" – 120"
Design Surface	Type	Native, un-graded. Intermittent, rough.	Native with limited grading. Continuous, rough.	Native with some on-site borrow or imported materials.	Imported materials or hardening is common.	Uniform, firm, and stable.
	Obstacles	Roots, rocks, logs, steps to 24".	Roots, rocks and log protrusions to 6"; steps to 14".	Generally clear. Protrusions to 3"; steps to 10".	Smooth, few obstacles. Protrusions 2-3"; steps to 8".	Smooth, no obstacles. Protrusions <2".
Design Grade**	Target Range (>90% of Trail)	< 25%	< 18%	< 12%	< 10%	< 5%
	Short Pitch Max (Up to 200' lengths)	40%	35%	25%	15%	10%
	Max Pitch Density***	< 10% of trail	< 5% of trail	< 5% of trail	< 3% of trail	< 3% of trail
Design Cross-Slope	Target Range	Not applicable	5 – 20%	5 – 10%	3 – 7%	2 – 3% (or crowned)
	Maximum	Up to natural side-slope.	Up to natural side-slope	15%	10%	3%
Design Clearing	Width	Sufficient to define trail corridor.	24" – 36", with some encroachment into clearing area.	12" – 18" outside of tread edge.	12" – 18" outside of tread edge	12" – 24" outside of tread edge.
	Height	6'	6' – 7'	8'	8'	> 8'
Design Turns	Radius	No minimum.	2' – 3'	3' – 6'	4' – 8'	6' – 12'

\* Trail Classes 3, 4 and 5 may potentially provide accessible passage. If assessing or designing trails for accessibility, refer to current Agency trail accessibility guidance.

\*\* Grade variances should be based upon soils, hydrological conditions, use levels, and other factors contributing to surface stability and erosion potential.

\*\*\* Maximum pitch density refers to the percentage of the trail that is within 5% (+/-) of the Short Pitch Maximum Grade.

**USFS Trail Design Parameters (Horse)** provide guidance for the assessment, survey and design, construction, repair and maintenance of trails, based on the Trail Class and Designed Use of the trail. Exceptions and variances to these parameters can occur, however, when site-specific circumstances demand such exceptions.

Designed Use <b>PACK AND SADDLE</b>		Trail Class 1	Trail Class 2	Trail Class 3	Trail Class 4	Trail Class 5
<b>Design Tread Width</b>	<b>Wilderness</b>	Not Applicable: Not designed for equestrians as primary user, although equestrians may be present.	12" – 18" Exceptions: May be to 48" at switchbacks, turn-pikes, fords and steep side slopes.	12" – 24" Exceptions: May be to 48" at switchbacks, turn-pikes, fords and steep side slopes. Up to 60" along precipices.	24" Exceptions: May be to 48" at switchbacks, turn-pikes, fords and steep side slopes. Up to 60" along precipices.	Not Applicable: Not designed for equestrians as primary user. Equestrians generally not present.
	<b>Non-Wilderness</b>		12" – 24" (With above exceptions)	18" – 48" (With above exceptions)	36" – 96"	
<b>Design Surface</b>	<b>Type</b>		Native, w/ limited grading.	Native with some on-site borrow or imported materials.	Native with some imported materials or stabilization.	
	<b>Obstacles</b>		Roots, rocks, logs to 12"	Generally clear. Occasional protrusions to 6".	Smooth, few obstacles. Occasional protrusions 2-3".	
<b>Design Grade*</b>	<b>Target Range</b> (>90% of Trail)		< 20%	< 12%	< 10%	
	<b>Short Pitch Max</b> (Up to 200' lengths)		30%	20%	15%	
	<b>Max Pitch Density***</b>		< 5% of trail	< 5% of trail	< 3% of trail	
<b>Design Cross-Slope</b>	<b>Target Range</b>		5 – 10%	5%	5%	
	<b>Maximum</b>		Natural side-slope	10%	10%	
<b>Design Clearing</b>	<b>Width</b>		36" – 48"	60" – 78"	72" – 96"	
	<b>Height</b>	8' – 10"	10'	10' - 12'		
<b>Design Turns</b>	<b>Radius</b>	4' – 5'	5' – 6'	6' – 10'		

\* Grade variances should be based upon soils, hydrological conditions, use levels, and other factors contributing to surface stability and erosion potential. Due to effects of use on tread and erosion, steeper pitches should be carefully evaluated based on potential effects of these various factors.

\*\* Maximum pitch density refers to the percentage of the trail that is within 5% (+/-) of the Short Pitch Maximum Grade.

**USFS Trail Design Parameters (Bicycle)** provide guidance for the assessment, survey and design, construction, repair and maintenance of trails, based on the Trail Class and Designed Use of the trail. Exceptions and variances to these parameters can occur, however, when site-specific circumstances demand such exceptions.

Designed Use <b>BICYCLE</b>		<b>Trail Class 1</b>	<b>Trail Class 2</b>	<b>Trail Class 3</b>	<b>Trail Class 4</b>	<b>Trail Class 5</b>
<b>Design Tread Width</b>	<b>One Lane</b>	6" – 12"	12" – 24"	18" – 30"	24" – 48"	36" – 60"
	<b>Two Lane</b>	Not applicable.	Not applicable.	48" – 60" Accommodate two-lane travel with passing lanes.	60" – 84"	72" – 120"
<b>Design Surface</b>	<b>Type</b>	Native. Rough, unstable or soft tread.	Native, with limited grading. Unstable or soft sections likely.	Native with some on-site borrow or imported materials. Some soft areas.	Likely imported or stabilized tread. Few, if any, loose or soft surfaces.	Firm, hardened surface.
	<b>Obstacles</b>	Rocks, logs and roots up to 6–12" common. Forced portages likely.	Embedded rock, protrusions to 6". Some portages may be needed.	Generally smooth with few protrusions exceeding 3".	Smooth, few obstacles. 1 – 2" protrusions.	No obstacles to wheeled transport.
<b>Design Grade*</b>	<b>Target Range</b> (>90% of Trail)	15% – 18%	< 12%	< 10%	< 8%	< 5%
	<b>Short Pitch Max</b> (Up to 200' lengths)	30% 50% on downhill-only travel.	25% 35% on downhill-only travel.	15%	10%	8%
	<b>Max Pitch Density***</b>	< 10% of trail	< 5% of trail	< 5% of trail	< 3% of trail	< 3% of trail
<b>Design Cross-Slope</b>	<b>Target Range</b>	5% – 10%	5% – 10%	5%	3% – 5%	3% – 5%
	<b>Maximum</b>					
<b>Design Clearing</b>	<b>Width</b>	24" – 36" Some vegetation may encroach into clearing area.	36" – 48" Some light vegetation may encroach into clearing area.	12" – 18" outside of tread edge.	12" – 18" outside of tread edge.	18" – 24" outside of tread edge.
	<b>Height</b>	6" – 7"	7" – 8"	8"	8' - 9'	8' - 9'
<b>Design Turns</b>	<b>Radius</b>	3' - 4'	4' – 6'	6' – 8'	8' – 10'	8' - 12'

\* Grade variances should be based upon soils, hydrological conditions, use levels, and other factors contributing to surface stability and erosion potential. Due to effects of use on tread and erosion, steeper pitches should be carefully evaluated based on potential effects of these various factors.

\*\* Maximum pitch density refers to the percentage of the trail that is within 5% (+/-) of the Short Pitch Maximum Grade.

USFS Trail Design Parameters (Cross Country Sky) provide guidance for the assessment, survey and design, construction, repair and maintenance of trails, based on the Trail Class and Designed Use of the trail. Exceptions and variances to these parameters can occur, however, when site-specific circumstances demand such exceptions.

Designed Use CROSS-COUNTRY SKI		Trail Class 1	Trail Class 2	Trail Class 3*	Trail Class 4*	Trail Class 5*
Design Groomed Width*	One Lane	N/A – Not designed or managed for skiers as primary user.	3'-4". If groomed, width of grooming equipment.	6'-8" (or minimum width of grooming equipment).	8'-10', but typically managed to accommodate two-way passage.	N/A – Not designed or managed for skiers as primary user.
	Two Lane		Typically not designed for two-lane travel. Employ 6'-8' passing areas in steeper sections.	>8" (or min width of grooming equipment) and/or accommodate with passing areas 8'-12' wide.	12'-14'.	
Design Grooming & Surface	Type		Coarse compaction. Occasional or no grooming (may be ski-packed). Snowmobile packing sufficient. Tracklayer optional.	Groomed or compacted using implements and/or tracklayer when packed surface is snow-covered, drifted, melted or skied out.	Well-groomed with tiller and/or other implements. Groomed frequently, and when groomed surface becomes degraded or buried.	
	Obstacles [Caused by use, lack of grooming, melt, or surface/subsurface protrusions]		Dips, bumps, or ruts to 12" common and may be tightly spaced. Surface obstacles may occasionally require off-trail bypass.	Generally smooth. Dips, bumps, or ruts to 8" uncommon and widely spaced. Surface obstructions not present.	Consistently smooth. Small, rolling bumps, dips and rises. Surface obstructions not present.	
Design Grade**	Target Range (>90% of Trail)		<15%	<10%	<8%	
	Short Pitch Max (Up to 200' lengths)		25%	20%	12%	
	Max Pitch Density***		<10% of trail	<5% of trail	<5% of trail	
Design Cross-Slope	Target Range		<10%	<5%	<5%	
	Maximum [For up to 50']	20%	15%	10%		
Design Clearing	Width	4'-6" (or minimum width of grooming equipment, if larger). Light vegetation may encroach into clearing area	>1' outside of groomed edge. Light vegetation may encroach slightly into clearing area.	>2' outside of tread edge. Widen clearing at turns or if increased sight distance needed.		

Designed Use <b>CROSS-COUNTRY SKI</b>		Trail Class 1	Trail Class 2	Trail Class 3*	Trail Class 4*	Trail Class 5*
	<b>Height</b> [Above normal max. snow level]		6'-8' or height of grooming machinery, if used.	>8' or height of grooming machinery.	10'	
<b>Design Turns</b>	<b>Radius</b> [Use Climbing Turns versus Switchbacks for Ski trails whenever possible]		8'-10' if not snowcat-groomed. OR: Minimum based on turning limits of grooming machine.	15'-20' (Provide sufficient radius for grooming equipment).	>25'	

\* Trail Classes 3, 4 and 5 may potentially provide accessible passage. If assessing or designing trails for accessibility, refer to current Agency trail accessibility guidance.

\*\* Grade variances should be based upon factors such as common snow type, use levels, tightness of turns, and other factors contributing to surface stability and erosion potential.

\*\*\* Maximum pitch density refers to the percentage of the trail that is within 5% (+/-) of the Short Pitch Maximum Grade.



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## Working with Volunteers

When working with volunteers, it is important to keep workers engaged and motivated. To have a successful relationship, the mission and set of goals should be consistent between the volunteers and the Town. As this union accomplishes more milestones, and completed projects together, the spirit of the volunteers will be raised, and they will be prepared to accomplish more. The Town must ensure that volunteers have all of the resources possible to continue working. Volunteers should be kept updated on projects occurring in the areas where they are volunteering and meet with the Town to share information. The Town should consider volunteers input when making decisions, so they can share a community perspective. Volunteers who are involved with a park will be invested in decisions for future changes or development.

Any conflicts that arise between Town and volunteers should be dissolved as quickly as possible. Discrepancies should not be pushed aside for long periods of time. An effort should be made initially to ensure that the volunteers understand exactly what is expected of them. Then, if a conflict arises the volunteer can be directed to their position description and better understand how they can absolve the issue.

It is important to praise and encourage volunteers when they are working hard. A volunteer who feels underappreciated is more likely cause conflicts. Periodically if possible there should be award receptions, parties to bring people together, and public recognition. By having a positive relationship between management and volunteers, this can also act as a form of reward by showing appreciation, even by a simple thank you.

When searching for volunteers, a specific position should be created to define what the role of the volunteer will be. This role should list a title, purpose/goals to be accomplished to let volunteers know what they are working towards, what the responsibilities of the volunteer will be, the qualifications necessary for the volunteer to handle the work, if training will be provide, and if there are any benefits to the volunteer. This description should be publicized where an interested audience will see it. A volunteer database on a Town's website can attract volunteers, as well as mass media, public speaking, the newspaper, outreach to membership organizations, and volunteer fairs.

### **Friends Groups**

A Friends Group creates partnerships with the Town in order to create a sense of stewardship and public support. This type of group is organized to assist the Town with managing their open space projects financially and with other tasks. They support education and awareness for parks and conservation. Because they are a nonprofit group, anyone can claim a tax deduction if choosing to donate to a friend group. The goals of a Friends Group involve leading fund raisers, volunteering, maintaining preservation, and bringing important issues to the public.

There are many specific tasks that the Friend's Group can perform. They can raise and solicit funds, develop the grounds, involve the community, build awareness, offer staff support, maintain parks, create and manage programs, acquire equipment, recruit volunteers and acquire land.

## **Trail Watch Group**

Simpler than a Friends Group, the Town should consider establishing a Trail Watch Group. These are Town recognized and trained volunteers who are willing to work consistently rather than on occasion. Trail Watch members would serve as “extra eyes and ears” on the trails and parks. In addition, they could assist in educating park users about park rules and regulations as well as interpret nature and history and help with directions. If the Town considers establishing a Trail Watch group, members of such group should identify themselves as such when on the trails. In addition, trail watch members should complete a form during their park visits which would inform the Town of the conditions of the park as well as any other observation requiring attention. Trail Watch members could also assist in securing park user surveys and user counts for future park grants. As with volunteers, there must be clear communication between the Town and the Trail Watch group. Together with the group, the Town should consider written guidelines to ensure consistency in communication between the Trail Watch group, Town officials and members of the public.

The following is a sample Trail Watch Reporting Form that could be implemented by the Town.

Sample Trail Watch Reporting Form  
Comprehensive Trail Plan, Hingham, MA



*Instructions: Please fill out this form to the best of your ability. Read the whole form first, because questions could be relevant throughout the entire trail.*

Date \_\_\_\_\_ Time \_\_\_\_\_ Weather \_\_\_\_\_

Trail Watch Member Name(s) \_\_\_\_\_

Contact Info \_\_\_\_\_

Park Name \_\_\_\_\_

Trail Location \_\_\_\_\_ (attached map with highlighted trail segment is necessary)

Date \_\_\_\_\_ Time \_\_\_\_\_ Weather \_\_\_\_\_

Did you park in a designated parking area? (circle one) (Y) (N)

Comments \_\_\_\_\_

Is there signage (circle one) (Y) (N) Is signage viewable (Y) (N) Does sign include a map? (Y) (N)

Condition of Signage (circle one) (Excellent) (Good) (Fair) (Poor)

Trail Condition:

Note any signs of flooding or drainage failure: \_\_\_\_\_

Note any signs of erosion: \_\_\_\_\_

Note any obstructions on path: \_\_\_\_\_

(Fallen trees, rocks, man-made objects, water, etc. )

Note any signs of trash or vandalism: \_\_\_\_\_

Note any signs of pet/animal waste: \_\_\_\_\_

Note safety hazards (if any): \_\_\_\_\_

Please describe any unusual or unexpected features: \_\_\_\_\_

(Abandoned man-made objects, signs of animals, other?)

Please note any additional comments or concerns: \_\_\_\_\_

*Thank you for taking the time to evaluate this trail. Please return form to:*

Conservation Commission \* 210 Central Street \* Hingham, MA 02043-2759



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# Hingham Comprehensive Trails Plan Appendix C

## Trail Signs: Trailhead, Blazes and Wayfinding Recommended Locations for Wayfinding and Trailhead Kiosks



# Trailheads and Wayfinding Signs Best Management Practices

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**Maps with Recommended Locations for Wayfinding and Trailhead Kiosks**



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## Trail Signs

Signage is useful to all trail users to provide essential information about distance, location and amenities. It is also essential to ensure that users don't get lost. Trail signs come in all kinds of types and levels of sophistication, from the simplest trail blaze on a tree, to mileage markers, and information kiosks at trail heads and major intersections. Hingham should develop a coordinate graphic identity (branding) for its trail system. This branding could be implemented by the use of consistent graphics and information in its trail kiosks as well as a universal blaze color and shape for the Hingham trails. Hingham's branding technique should be different from that used by DCR at Wompatuck State Forest and TTOR at Whitney and Thayer and World's End.

### Wayfinding Kiosks

Wayfinding signs provide basic information about distances, directions and destinations, helping park users plan and navigate their travel routes. Signage regarding allowed trail uses can help promote the use established by the sign and encourage these users to stay on designated paths. Wayfinding signs can be used every quarter mile, at potentially confusing turns in the trail and at trail intersections. Wayfinding signs should be considered for use along the proposed trail links. These wayfinding signs could indicate nearby destinations (parks, libraries, business districts, etc.). By installing a network of wayfinding signs, people will be able to follow Hingham's comprehensive trail network and links. The signs would also serve as a branding tool for the Town of Hingham.

Wayfinding kiosks design should be simple, straight forward and easy to replicate. The material used could be one that fits both the need for wayfinding along the trail system as well as for link purposes (navigating through the Town).

### Trailhead Kiosks

Trailhead kiosks serve a variety of functions. They formalize the setting of a Trailhead, and serve as the first and last impression. Trailheads indicate arrival, welcome visitors, and provide them with information that may be essential to their safety and enjoyment on the Trail. It offers the opportunity to educate and communicate a variety of information as a means of helping to solve management problems associated with visitor use. The value of informed visitors is less waste, more reverence, and an understanding of volunteer efforts. A Trailhead kiosk sets the stage for Trail visitors. It invites them to experience the Trail's setting, even if they never take a hike. The idea of the Trail, its length and complexity may capture the imagination of even a casual visitor who may feel encouraged to return with adequate preparation to enjoy the Trail. In addition to creating a visible connection between the primitive footpath and the developed road for visitors arriving by car, hikers traveling long distances along the Trail itself may find information at Trailhead kiosks helpful in understanding their location in relation to area surroundings, such as their location within county or proximity to a nearby town's available services.

A Trailhead kiosk is best placed in a location where we want to say to the public: "Come on in! This park is part of the Hingham Trail System, it's here for you, and here's what you need to know to enjoy it and protect it!" As such, the kiosk can be installed adjacent to the parking area.

## Trailhead Kiosk Design

The Appalachian Trail Design and Construction and Maintenance manual provides three design options: a heavy duty long lasting kiosk, a more traditional kiosk and a vandal resistant kiosk. The designs are available here: <http://www.appalachiantrail.org/docs/default-document-library/trailhead-kiosks-2012-update-to-th-bulletinboards.pdf?sfvrsn=0>. The plans are exemplified and can be adapted to fit the kiosks purpose.

There are several companies that sell prefabricated trail head kiosks, otherwise known as outdoor bulletin boards. These are typically constructed using composite materials. Prefabricated trail head kiosks can be purchased with and without footings. Traditional dimensional lumber can be used as an alternative to the footings sold by these companies.

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## Trail Blazing

Trail blazing or marking of the trail provides positive exposure of the trail to attract more users, educates the user about the trail through trailhead kiosks, reassures the user that he/she is on the right trail and will not get lost, and controls trail usage and create a safer, more enjoyable, environmentally friendly experience. Overblazing is easy to do, quality control is necessary- when it comes to blazing less is better, however, you want to make sure people feel safe and assured that they are in the right location.

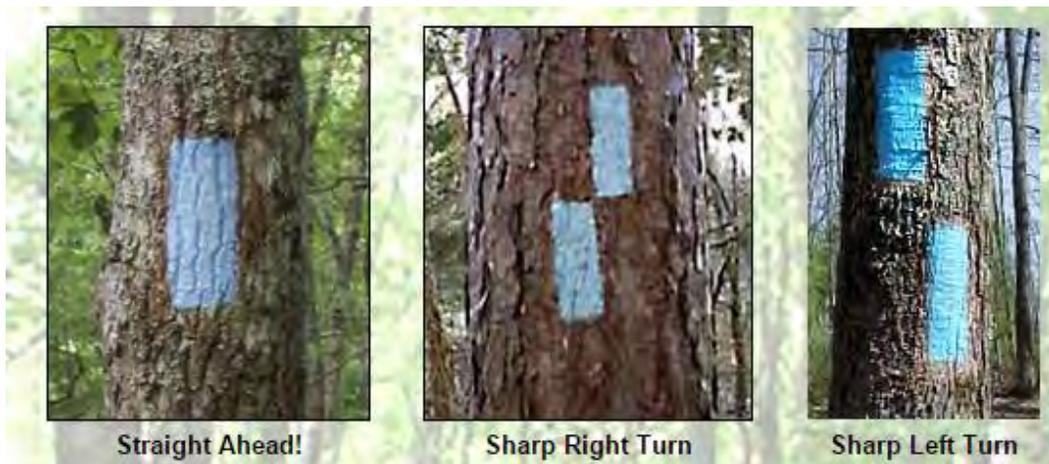
### Design

Standard blazes used by the Federal and Massachusetts State Parks are 2" x 6" painted vertical rectangles. The 2" x 6" rectangular shape is large enough to be seen easily without being visually obtrusive and is the most universally accepted style of trail blazing. Plastic markers nailed to the tree are also appropriate.

For loop trails, circles are used instead of rectangles. Colors on the circles can vary by difficulty; red being difficult, yellow being moderate and green being easy. All trails in Hingham could be green due to the lack of change of elevation. Based on the trail data, loops and straightaways are typically shorter than a mile (except for trails in Bare Cove).

Hingham could consider maintaining a consistent color blaze along the trails with the addition of wayfinding signs like small kiosks with trail maps. A standard color and shape should be implemented as the manner of branding Hingham Parks<sup>1</sup>. It is suggested that trails within Hingham Land Conservation Trust adopt the Hingham branding blaze.

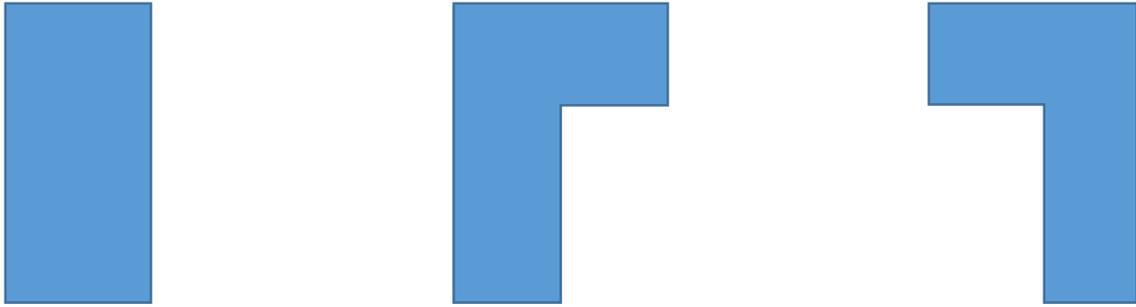
The National Park Services and US Forest Service use the following design for trail direction:



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<sup>1</sup> The color orange should not be selected as the branding color for Hingham trails- Orange is recognized by the off highway community as a motorized use trail.

Alternative directional blaze design option:



### Blaze Application

**Painted Blazes:** On rough barked trees, the tree will first need to be smoothed using a paint scraper, wire brush, or draw knife. A high quality, glossy, exterior acrylic paint such as Sherman Williams Metalatex or Nelson Boundary Paints should be used for long durability. The Nelson paint<sup>2</sup> is recommended for use in Hingham. Smaller sizes of this paint at more watery and not meant to be applied with a brush. A stencil is suggested to make the blazing process go faster. Edges and corners should be crisp and sharp. Dripping paint, blotches and over-sized blazes should be avoided

**Plastic Blazes:** Plastic blazes can be nailed on a tree using 2.5” aluminum nails. Aluminum nails do not corrode and can withstand the changes in the weather. The length is important because the blaze should be nailed to the tree with at least an inch gap between the bark of the tree and the blaze. This will allow the tree to grow for several years without the blaze being affected.

### Blaze Location and Frequency

Blazes are typically placed on trees, slightly above eye level so that hikers, bikers or riders can see them easily when traveling in either direction. In areas where the trail receives winter use, blazes are placed higher so they are visible above the snow. Blazes should be placed immediately beyond any trail junction or road crossing. Blazes should generally be within "line of sight," i.e., when standing at a blaze marker, the user should just about be able to see the next one. It is not desirable to have more than one blaze visible in either direction at any one time. The Federal Highway Administration’s recommendation is 60’.

Vegetation should be pruned from in front of the blazes to ensure visibility in all seasons. In non-forested areas, blazes may be placed on wooden or Carsonite-type posts 4 feet above the ground or stone cairns may be used to mark the trail. Blazes can be painted on exposed rock, but will not be visible in the winter.

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<sup>2</sup> Nelson Paint is available at [http://www.forestry-suppliers.com/product\\_pages/Products.asp?mi=12072&itemnum=57680](http://www.forestry-suppliers.com/product_pages/Products.asp?mi=12072&itemnum=57680)

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## Sign Pollution

Signs are probably the quickest and easiest way to leave the trail user with a positive impression. If the signs are high quality, well maintained, and properly located, other trail problems which are harder to solve are often over-looked (e.g., wet areas). Consistent signs are the quickest way to increase the trail's identity and the public's support for the trail. Other objectives are to:

1. Provide positive exposure of the trail to attract more users,
2. Educate the user about the trail through trailhead kiosks,
3. Reassure the user that he/she is on the right trail and will not get lost, and
4. Control trail usage and create a safer, more enjoyable, environmentally friendly experience.

These objectives are to be balanced with aesthetic considerations to avoid "sign pollution."

## Recommended Locations for Wayfinding and Trailhead Kiosks

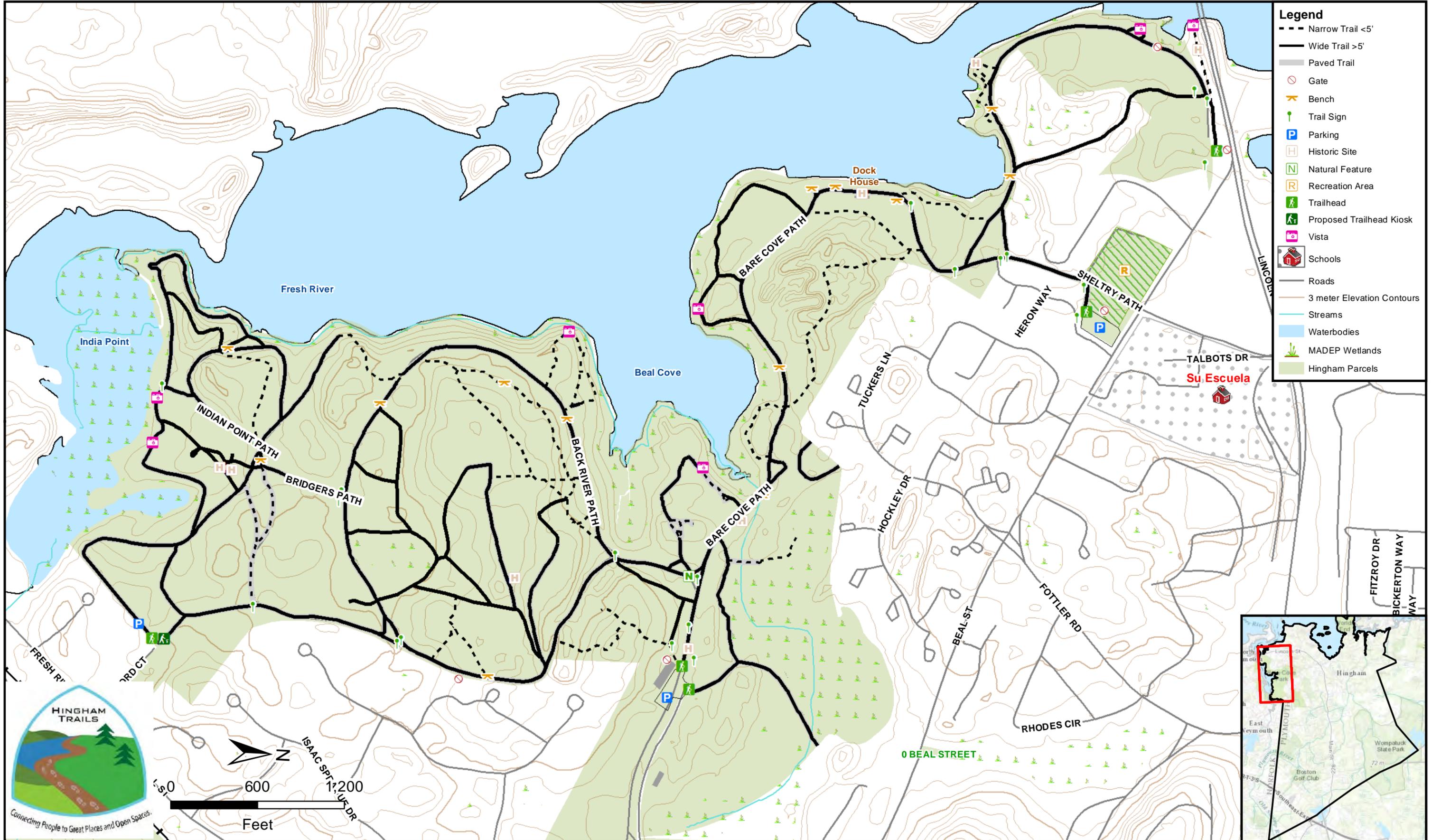
The following park maps provide recommended locations for wayfinding and trailhead kiosks.



# BARE COVE PARK

Open Dusk to Dawn  
Bare Cove Park Committee  
Contact: (781) 741-1400

Approx 11.83 miles

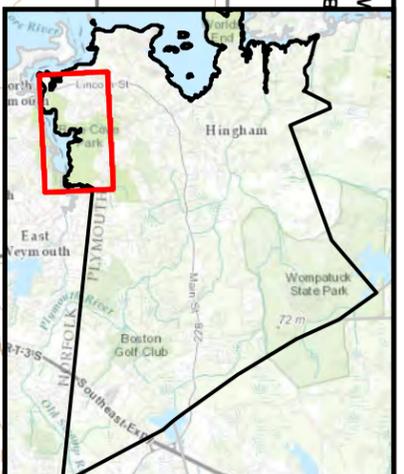


- ### Legend
- Narrow Trail <5'
  - Wide Trail >5'
  - Paved Trail
  - Gate
  - Bench
  - Trail Sign
  - Parking
  - Historic Site
  - Natural Feature
  - Recreation Area
  - Trailhead
  - Proposed Trailhead Kiosk
  - Vista
  - Schools
  - Roads
  - 3 meter Elevation Contours
  - Streams
  - Waterbodies
  - MADEP Wetlands
  - Hingham Parcels

**HINGHAM TRAILS**  
Connecting People to Great Places and Open Spaces.

Scale: 0 to 600 Feet

ISAAC SPUR, UF DR

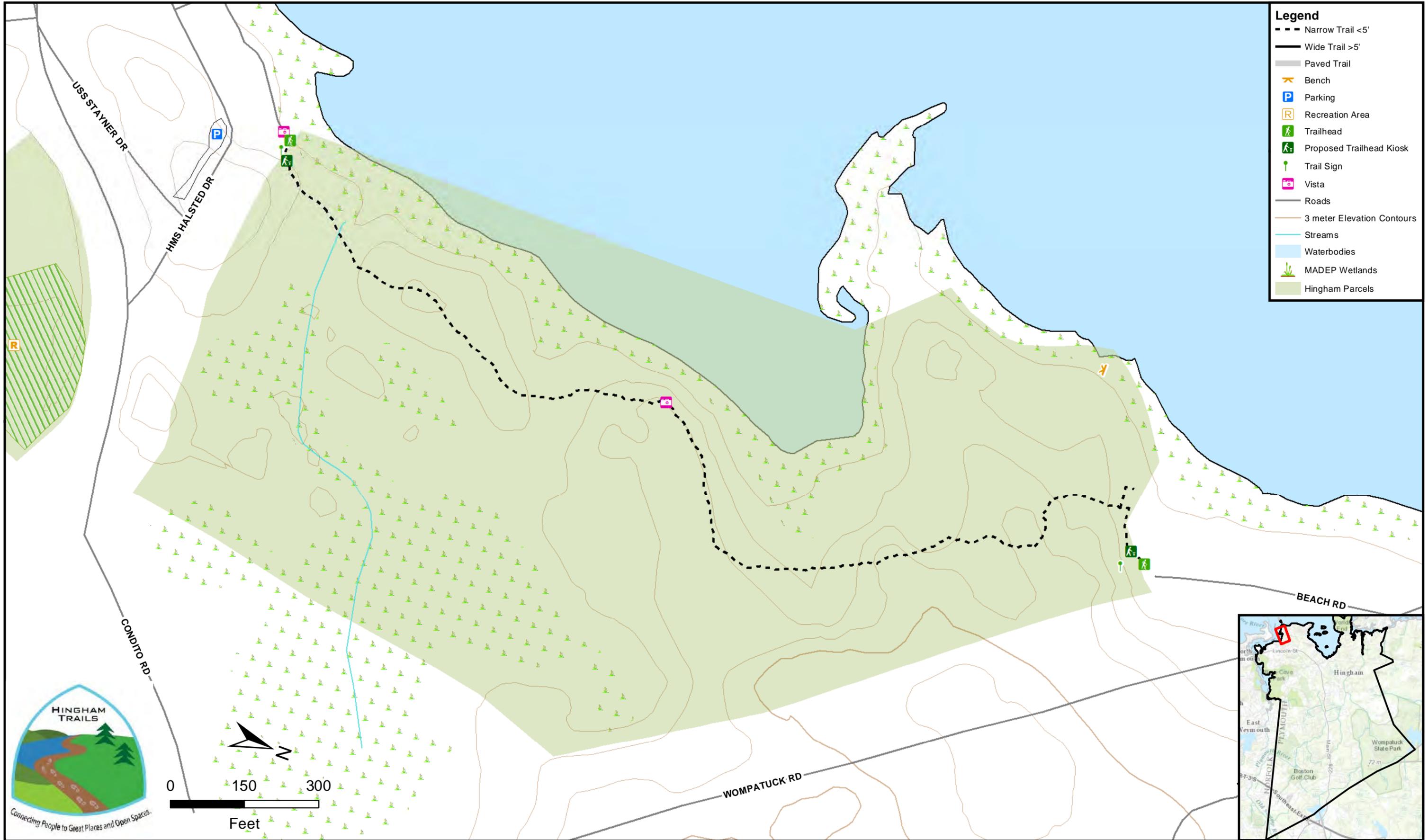


Source: MassGIS Basemap & Environmental Data. Field Delineated Data by BSC Group, Inc.

# BOUVE CONSERVATION AREA

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

Approx 0.49 miles  
HMS Halsted Drive/Beach Road

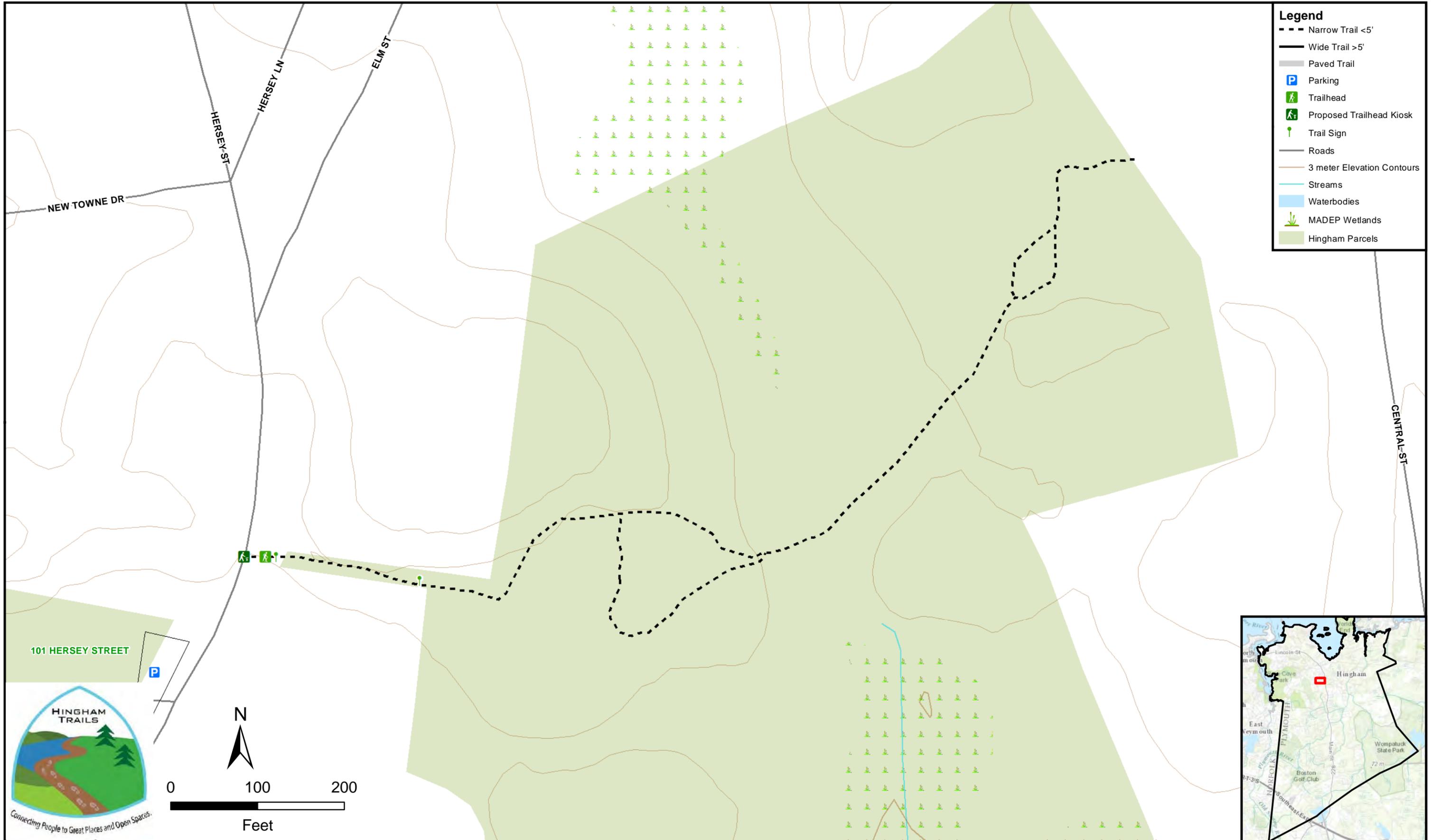


# BURNS MEMORIAL

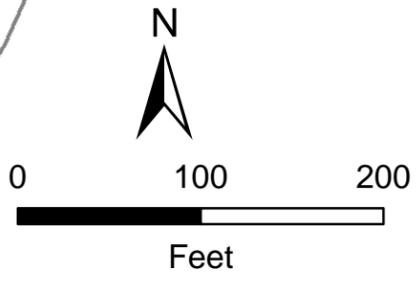
Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

Approx 0.35 miles  
Hersey Street

Deer hunting is allowed on this property between  
October 19 and November 28. Special permit by  
the Conservation Commission is required for this activity.



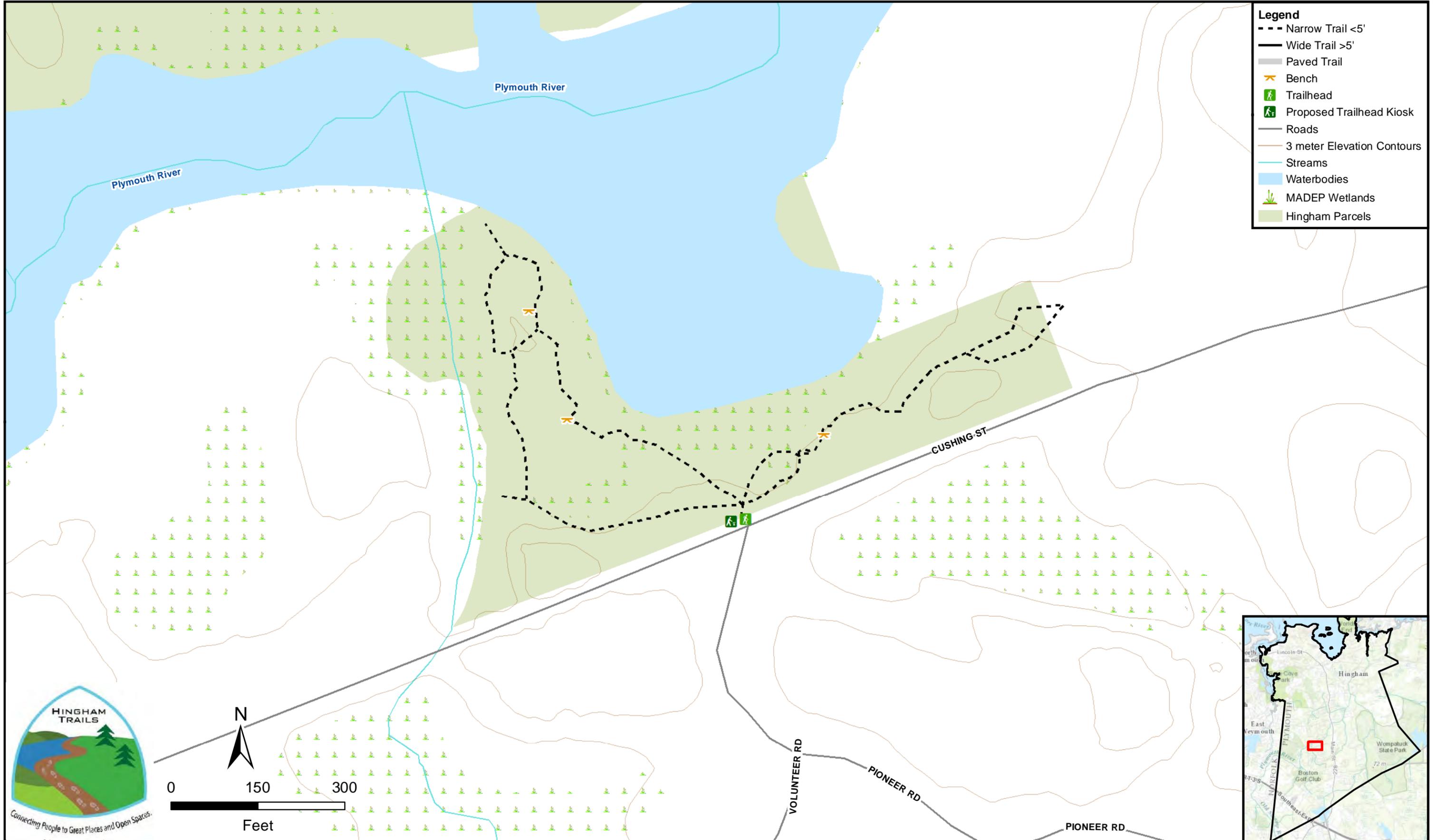
101 HERSEY STREET



# EEL RIVER WOODS

Open Dusk to Dawn  
Hingham Land Conservation

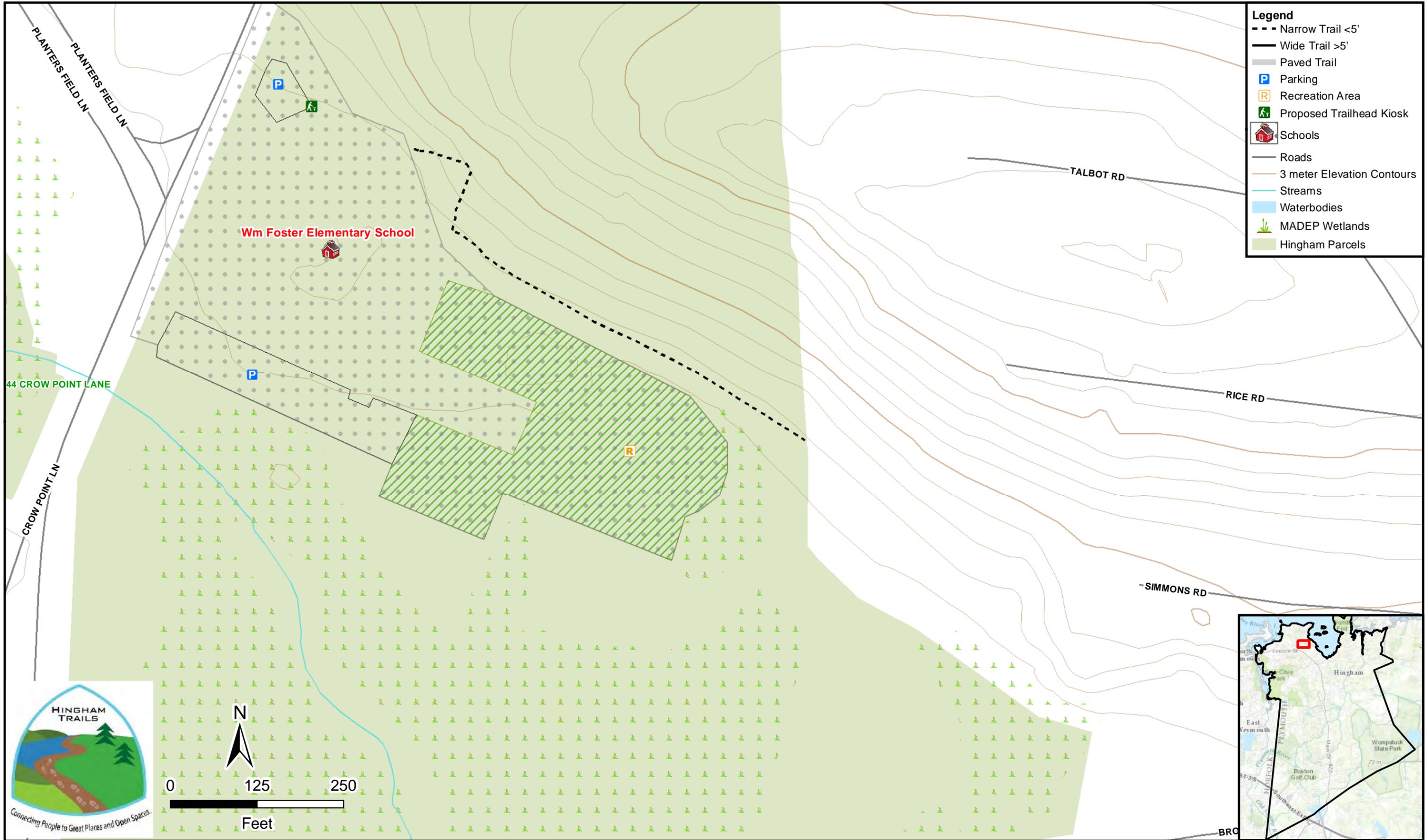
Approx 0.55 miles  
Cushing Street



# FOSTER SCHOOL

Open Dusk to Dawn  
Town of Hingham

Approx 0.15 miles  
55 Donher Ave



# FOUNDRY POND

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

Approx 0.77 miles  
Weir & 108 Kilby Street

Deer hunting is allowed on this property between  
October 19 and November 28. Special permit by  
the Conservation Commission is required for this activity.

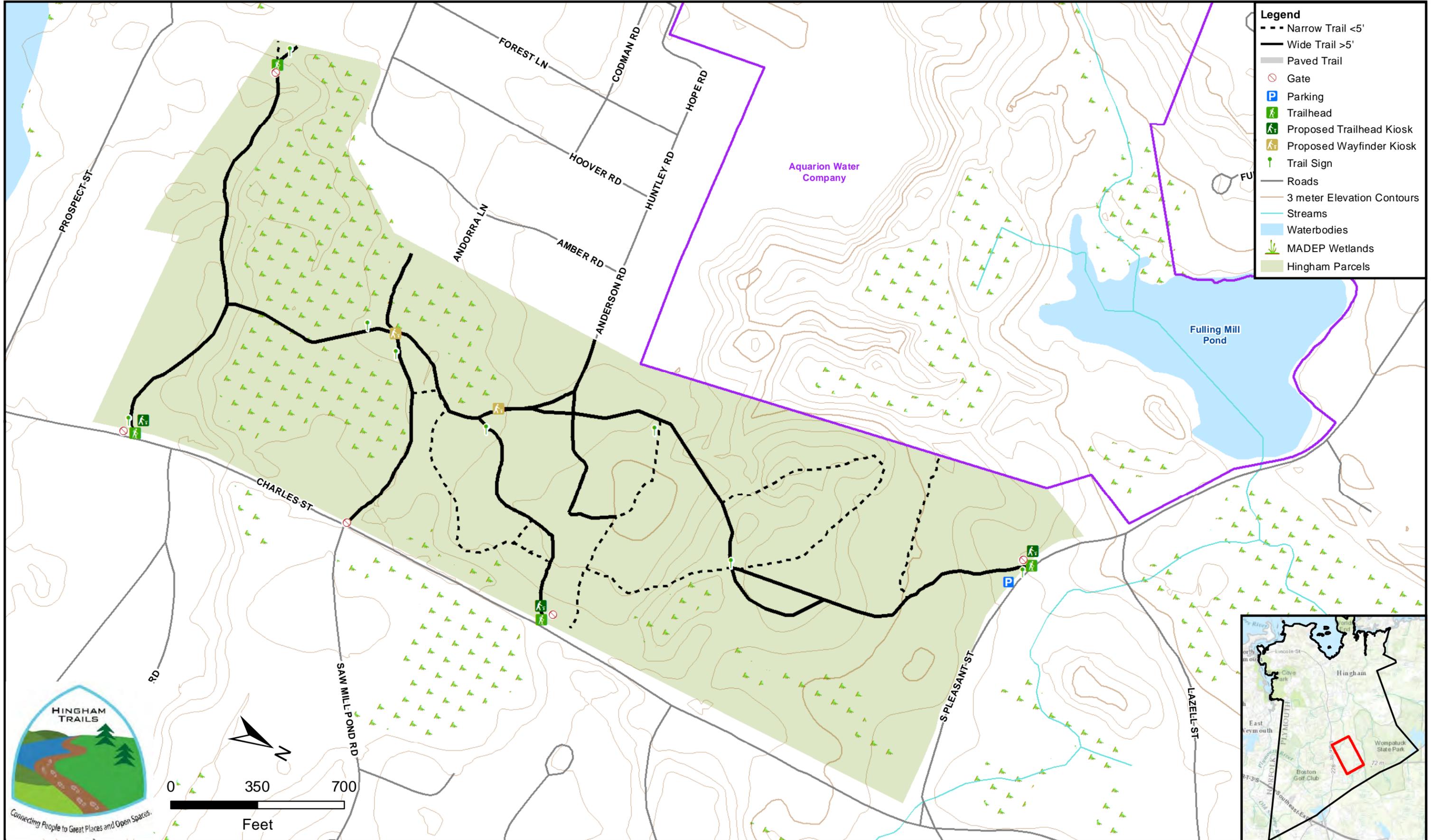


# GEORGE WASHINGTON FOREST

Open Dusk to Dawn  
 Town of Hingham, DPW  
 Contact: (781) 741-1430

Approx 3 miles  
 Pleasant Street

The George Washington Town Forest was diagnosed with "Red Pine Scale" and the "Pine Shoot Beetle" which has contributed to the widespread mortality of the Red Pine Trees in the forest. After extensive research and plant diagnostic site work performed by the University of Massachusetts Extension's diagnostic team it was determined that all trees that could potentially fall onto the roads or trails should be removed for Public Safety. The forest was closed for safety of the public during the work."



# GOVERNOR LONG BIRD

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

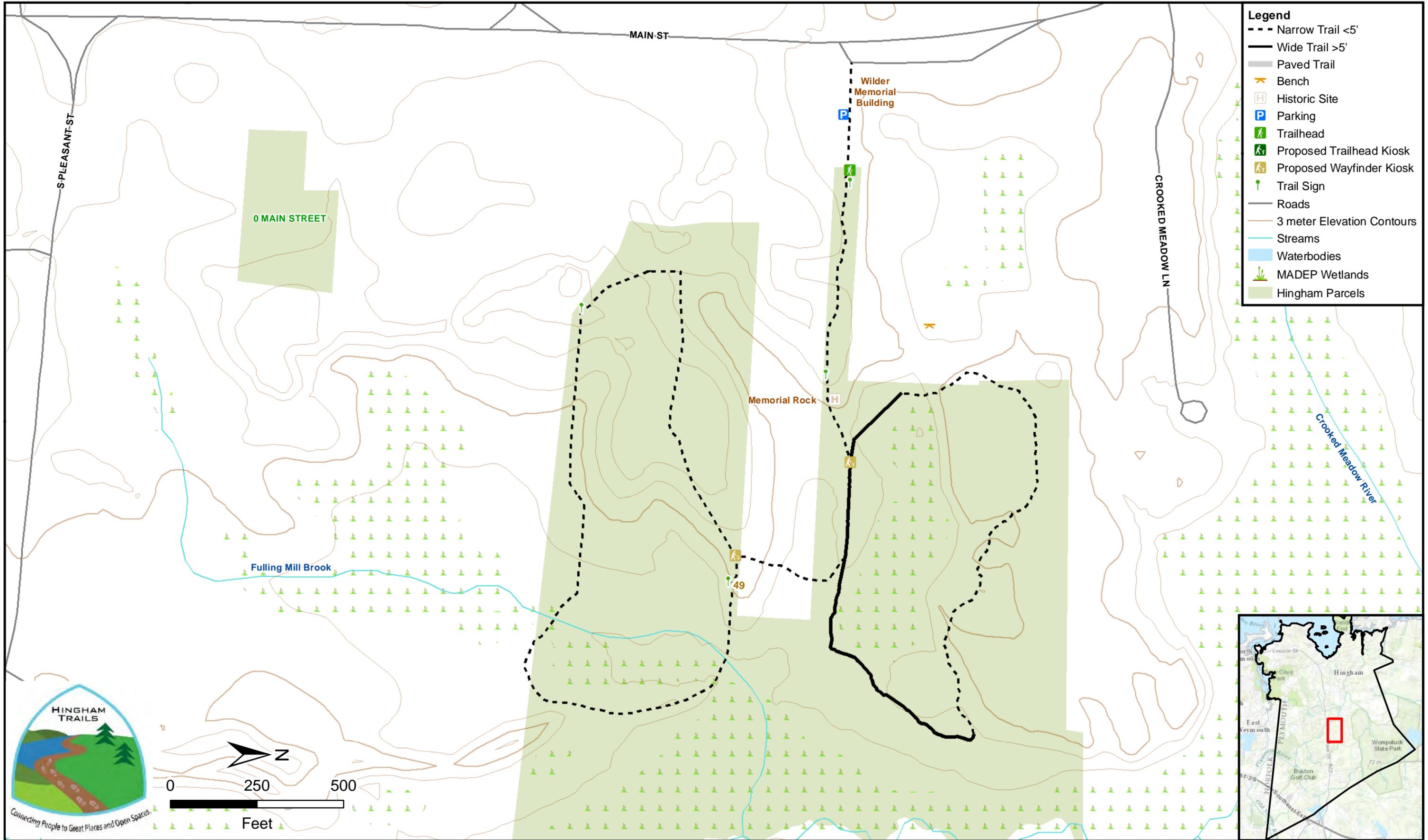
Approx 0.08 miles  
43 Cottage Street



# JACOBS MEADOW/TIDINGS PLAIN

Access through Wilder Hall  
during non Nursery School hours  
Hingham Land Conservation Trust

Approx 1.45 miles  
666 Main Street



- Legend**
- - - Narrow Trail <5'
  - Wide Trail >5'
  - Paved Trail
  - Bench
  - H Historic Site
  - P Parking
  - T Trailhead
  - K Proposed Trailhead Kiosk
  - W Proposed Wayfinder Kiosk
  - T Trail Sign
  - Roads
  - 3 meter Elevation Contours
  - Streams
  - Waterbodies
  - MADEP Wetlands
  - Hingham Parcels



Source: MassGIS Basemap & Environmental Data. Field Delineated Data by BSC Group, Inc. March 2015

Open Dusk to Dawn  
 Hingham Conservation Commission  
 Contact: (781) 741-1445

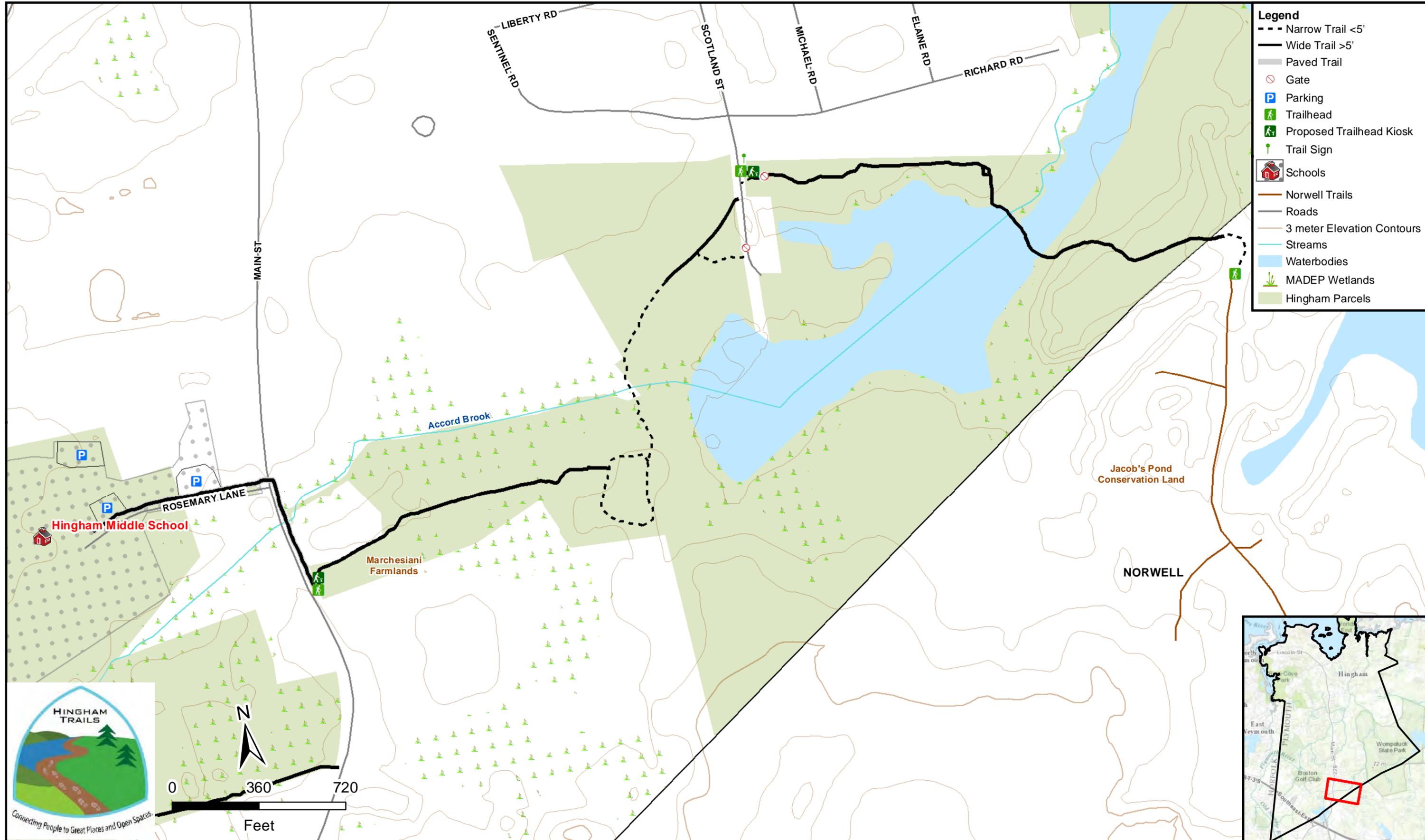
# MCKENNA MARSH

Marchesiani Parkland

Approx 1.47 miles

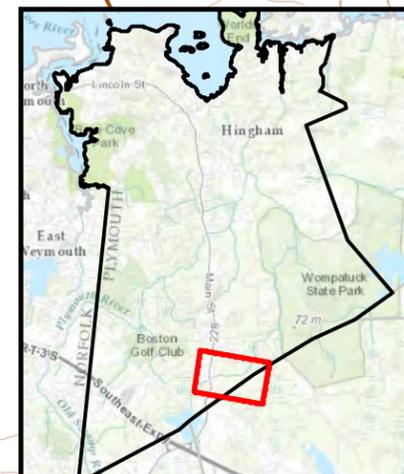
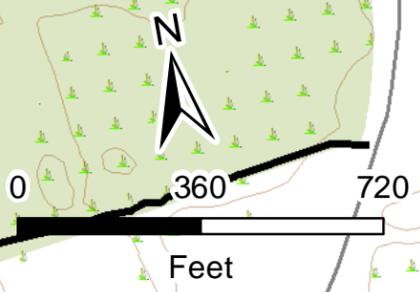
1148 Main Street

Deer hunting is allowed on this property between  
 October 19 and November 28. Special permit by  
 the Conservation Commission is required for this activity.



**Legend**

- Narrow Trail <5'
- Wide Trail >5'
- Paved Trail
- Gate
- Parking
- Trailhead
- Proposed Trailhead Kiosk
- Trail Sign
- Schools
- Norwell Trails
- Roads
- 3 meter Elevation Contours
- Streams
- Waterbodies
- MADEP Wetlands
- Hingham Parcels

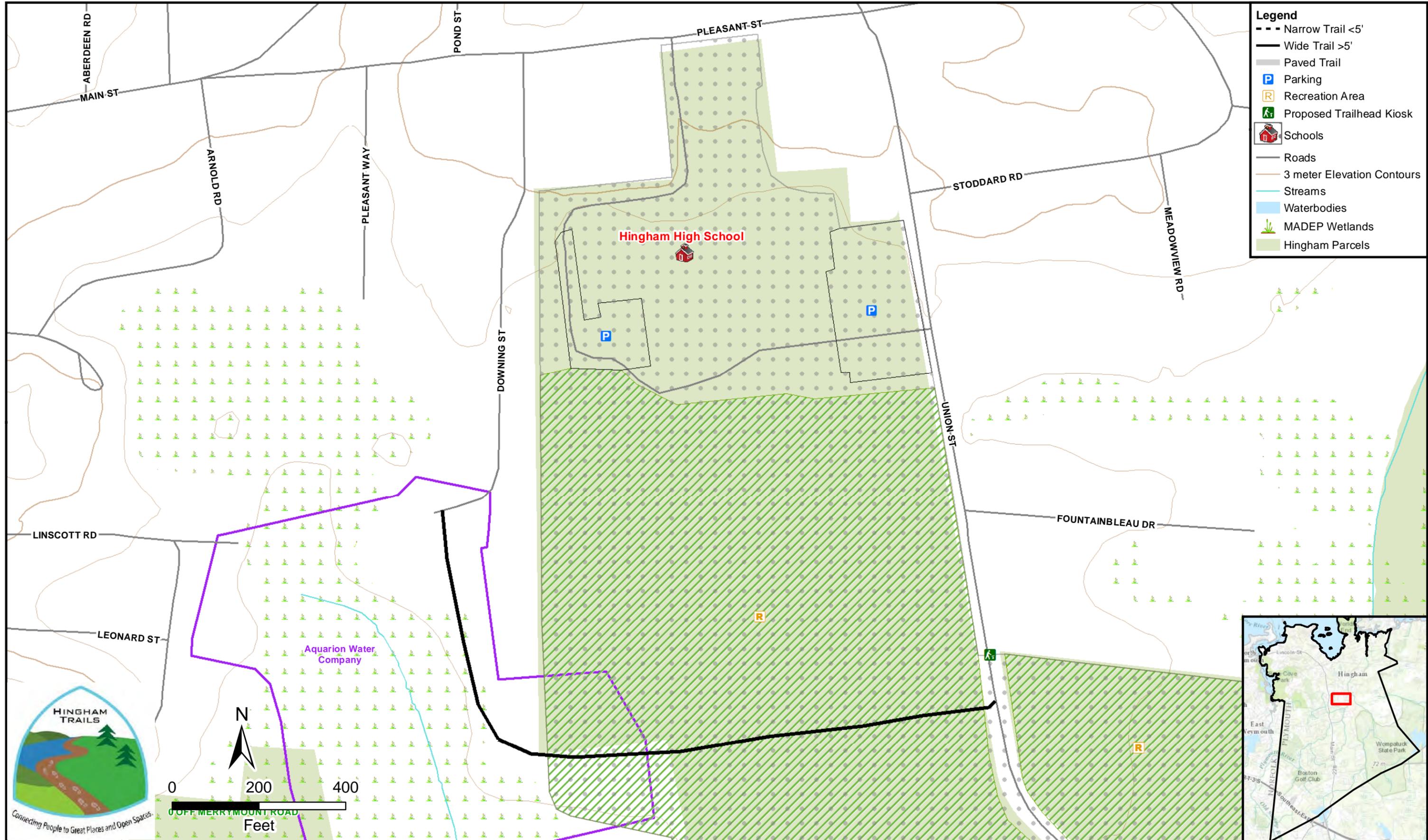


Source: MassGIS Basemap & Environmental Data. Field Delineated Data by BSC Group, Inc. March 2015

# MERRYMOUNT CONSERVATION

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

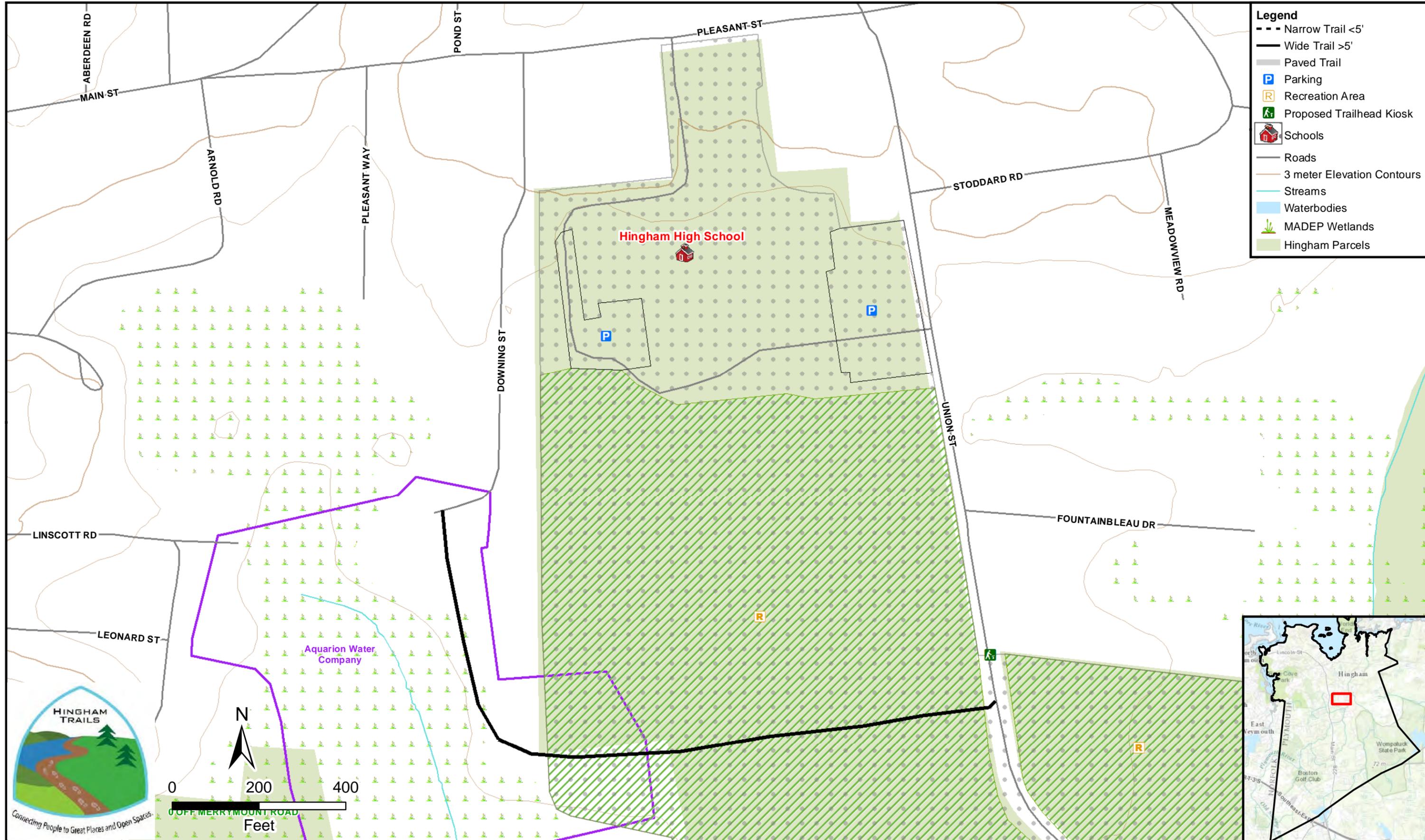
Approx 0.32 miles



# MERRYMOUNT CONSERVATION

Open Dusk to Dawn  
 Hingham Conservation Commission  
 Contact: (781) 741-1445

Approx 0.32 miles



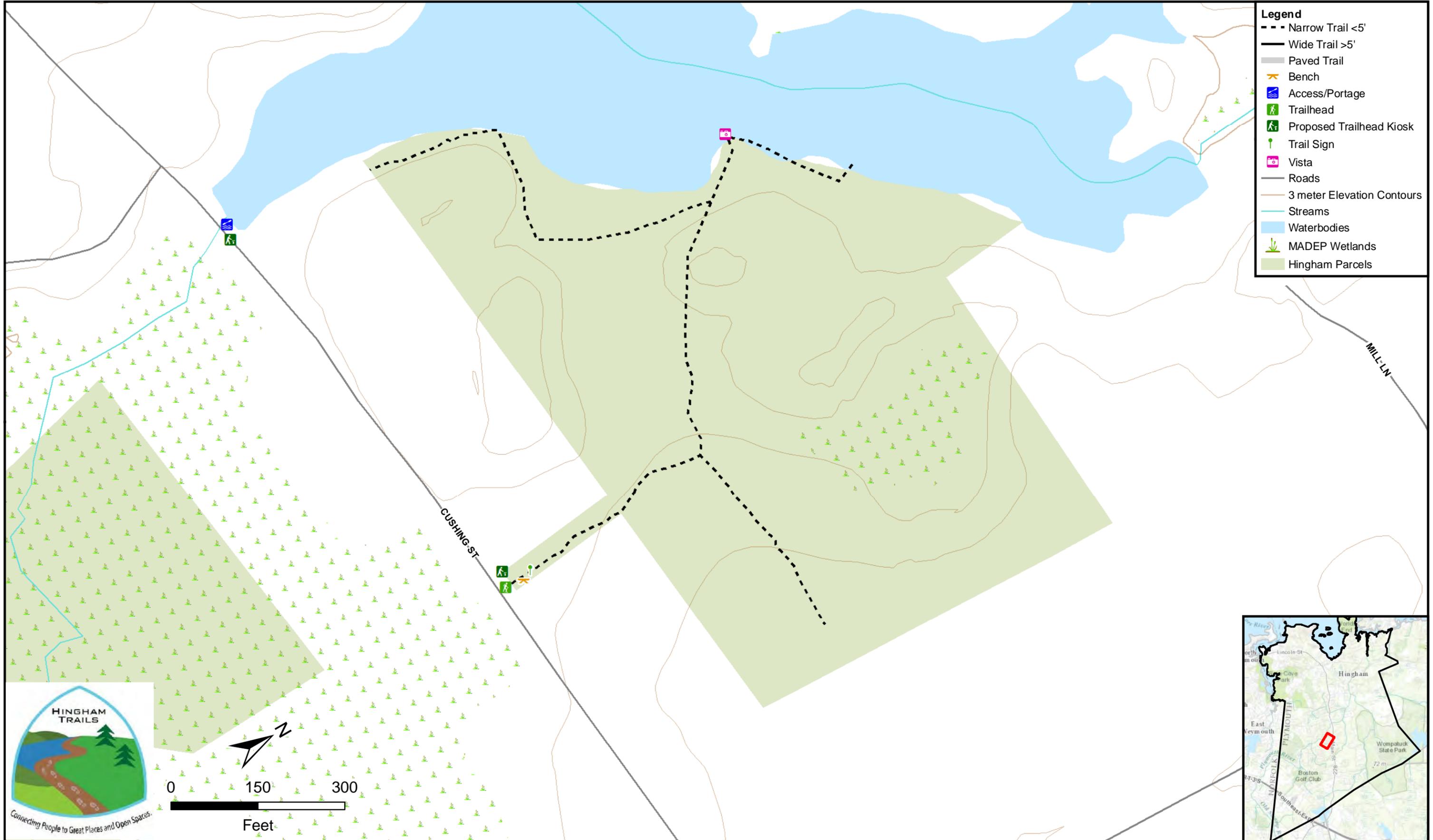
Source: MassGIS Basemap & Environmental Data. Field Delineated Data by BSC Group, Inc. March 2015

# MILDRED CUSHING WOODS

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

Approx 0.49 miles  
26 Cushing Street

Deer hunting is allowed on this property between  
October 19 and November 28. Special permit by  
the Conservation Commission is required for this activity.



Source: MassGIS Basemap & Environmental Data. Field Delineated Data by BSC Group, Inc. March 2015 - Park address is approximate

# MORE-BREWER PARK

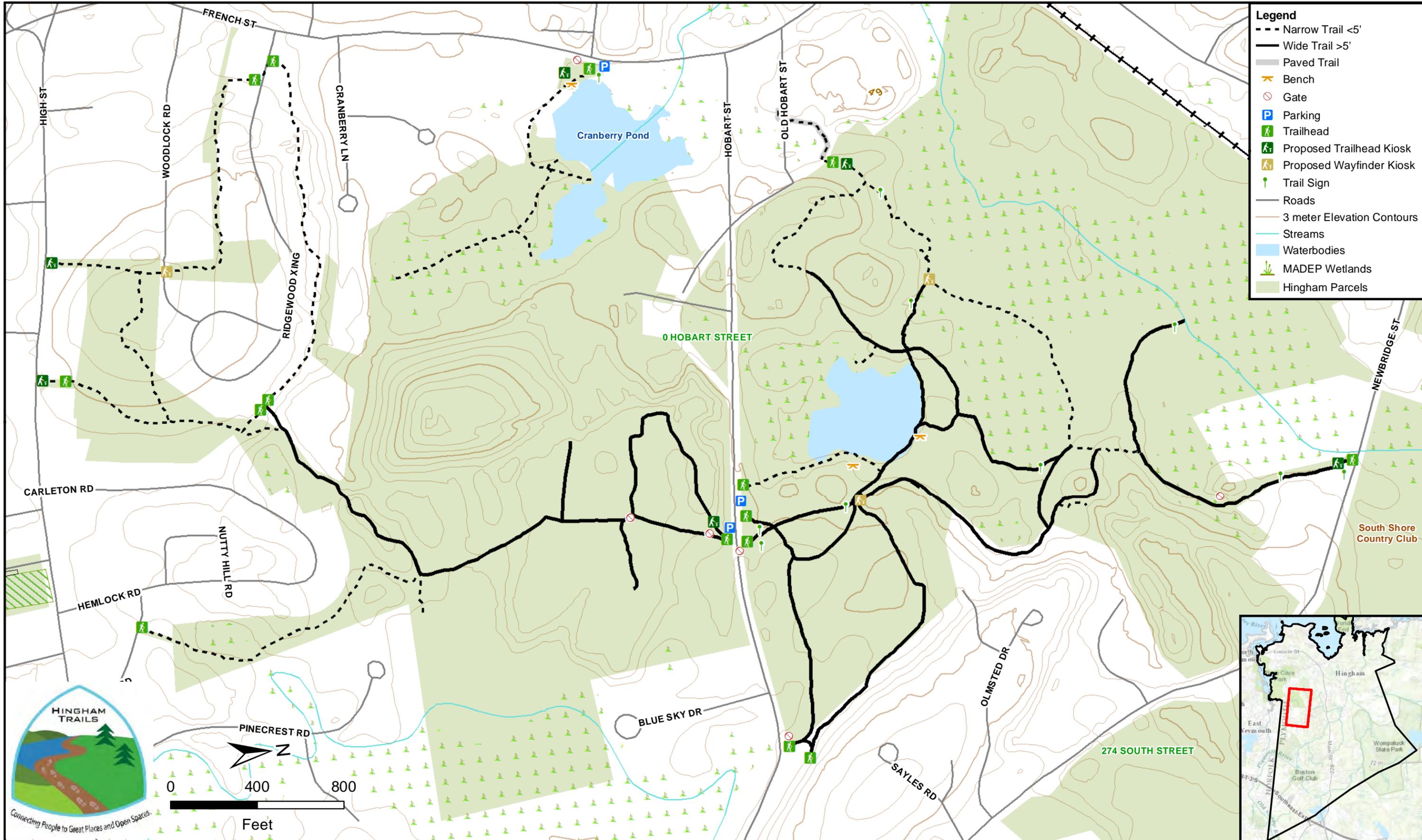
Cranberry Pond (Approx 0.4 miles)

Approx 4.9 miles

Hobart Street/French Street

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

Deer hunting is allowed on this property between  
October 19 and November 28. Special permit by  
the Conservation Commission is required for this activity.

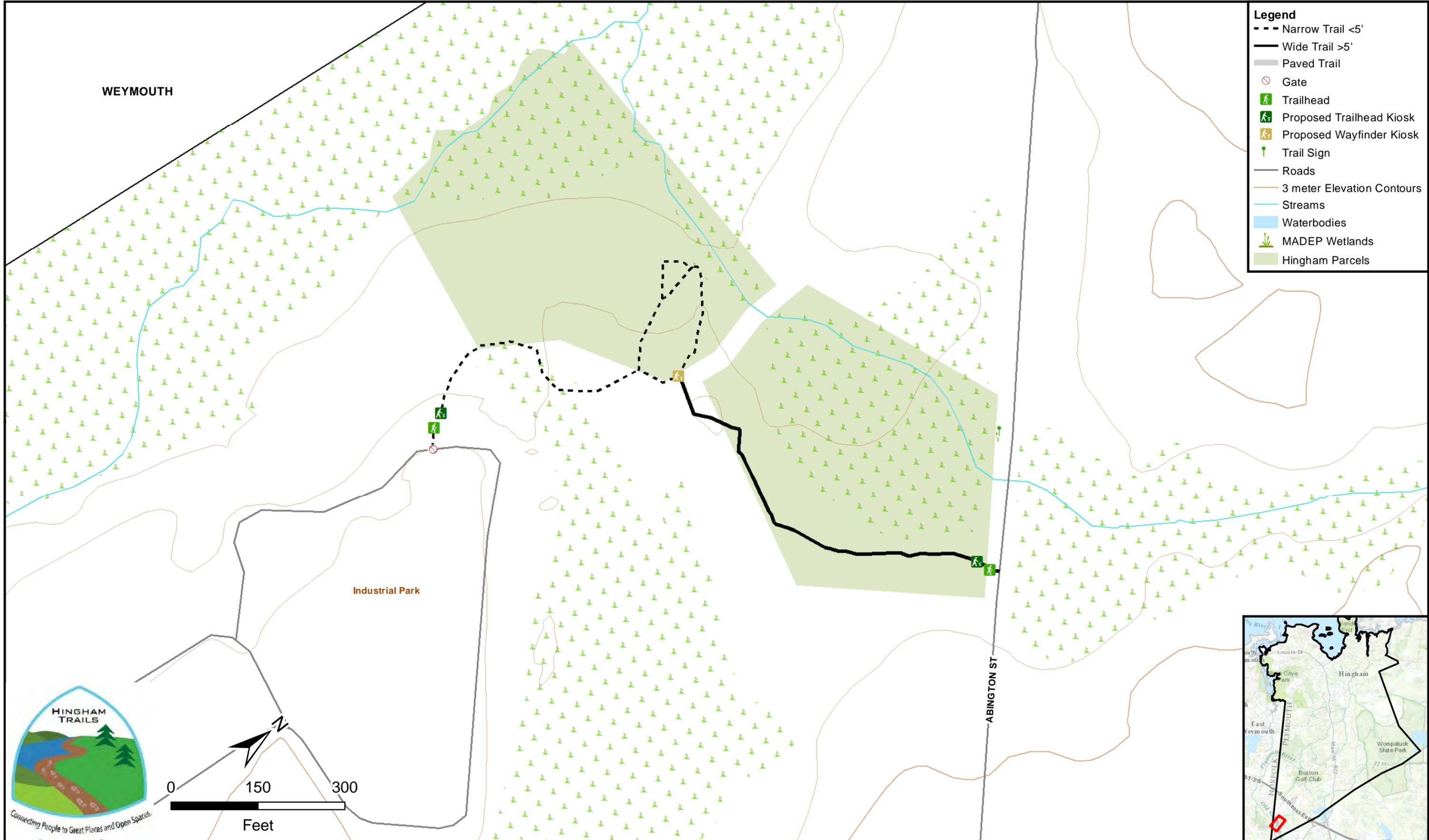


# OLD SWAMP RIVER

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

Approx 0.36 miles  
Abington Street

Deer hunting is allowed on this property between  
October 19 and November 28. Special permit by  
the Conservation Commission is required for this activity.

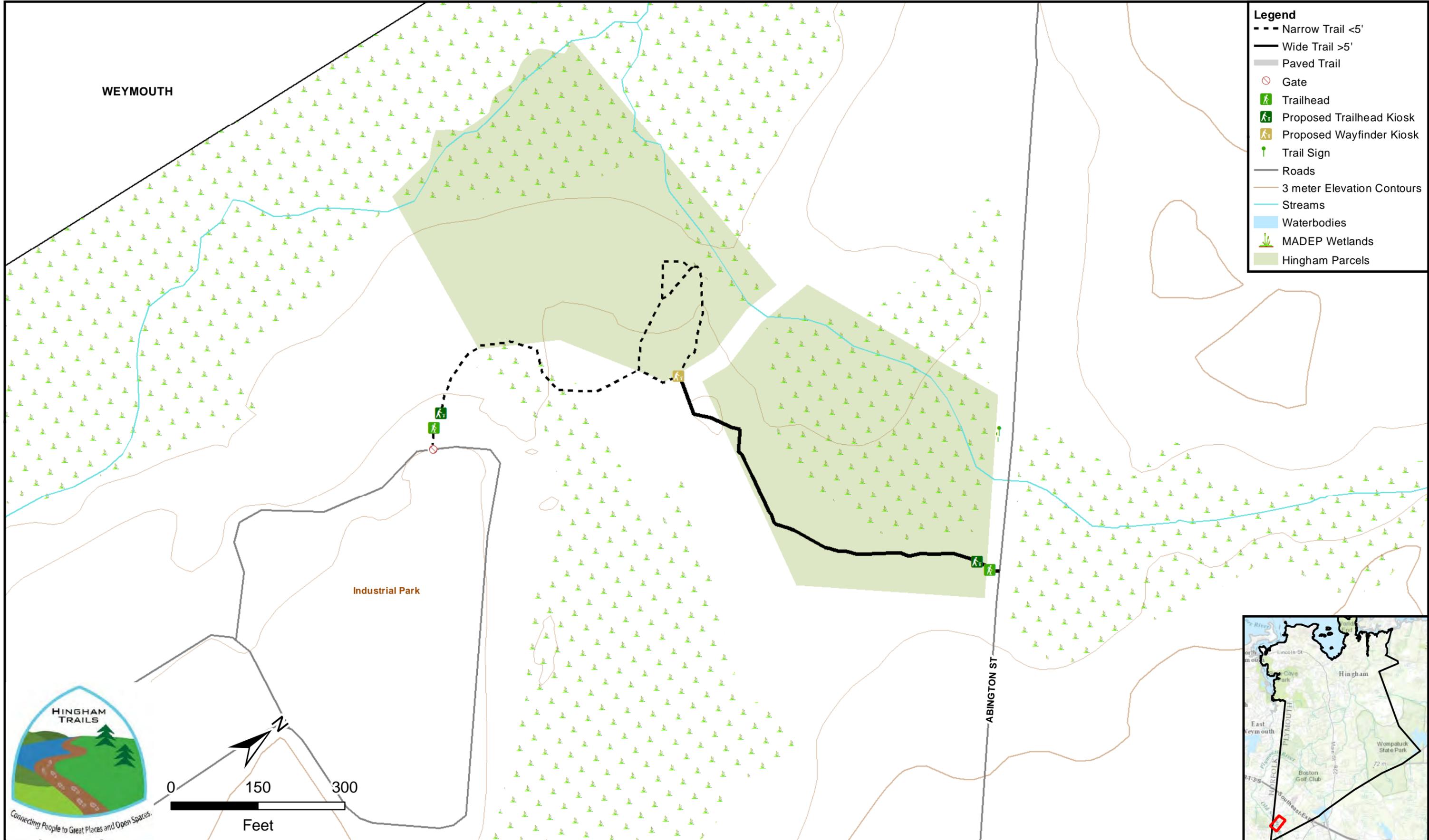


# OLD SWAMP RIVER

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

Approx 0.36 miles  
Abington Street

Deer hunting is allowed on this property between  
October 19 and November 28. Special permit by  
the Conservation Commission is required for this activity.



# PLYMOUTH RIVER COMPLEX

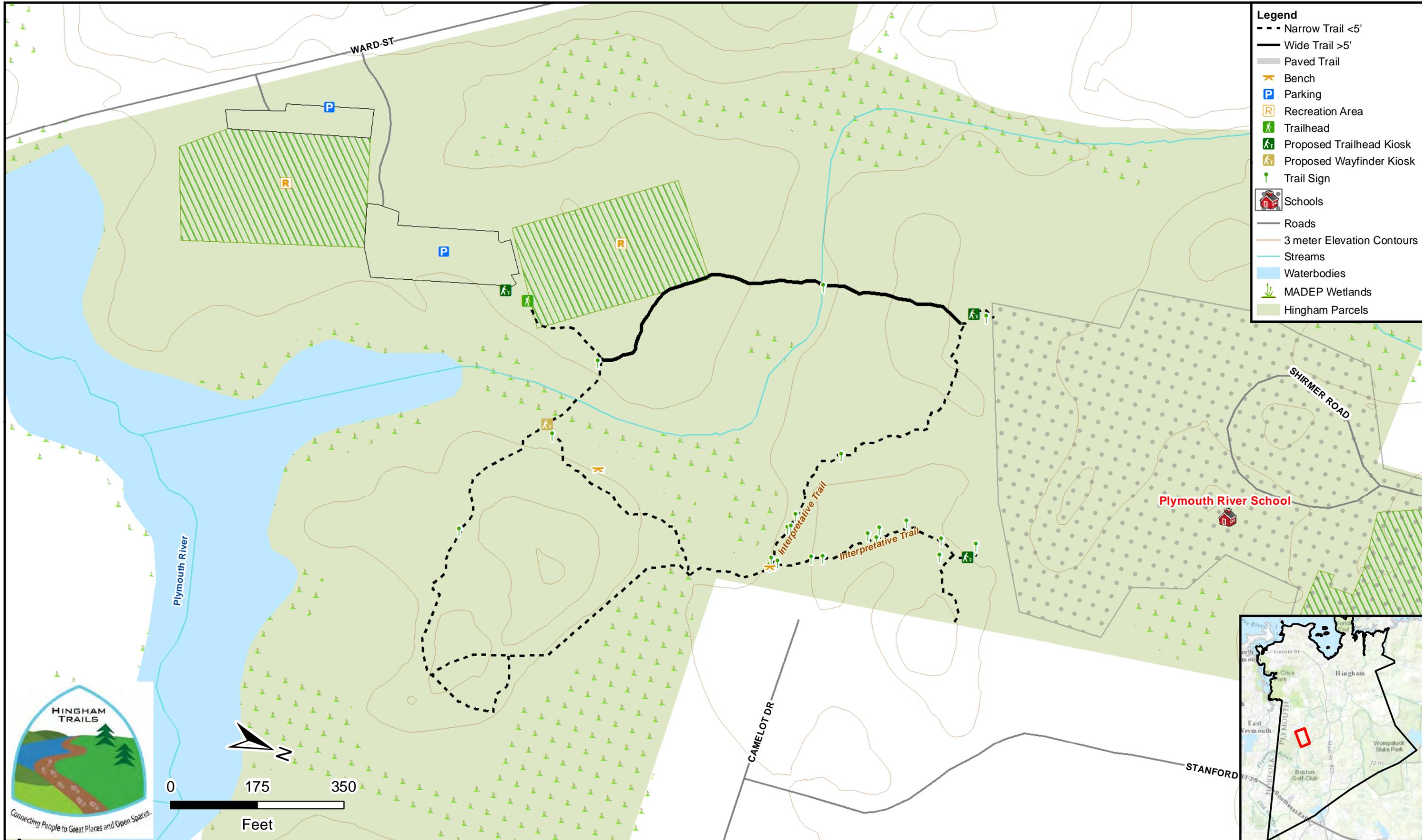
Plymouth River Conservation Area

Approx 0.92 miles

Ward Street

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

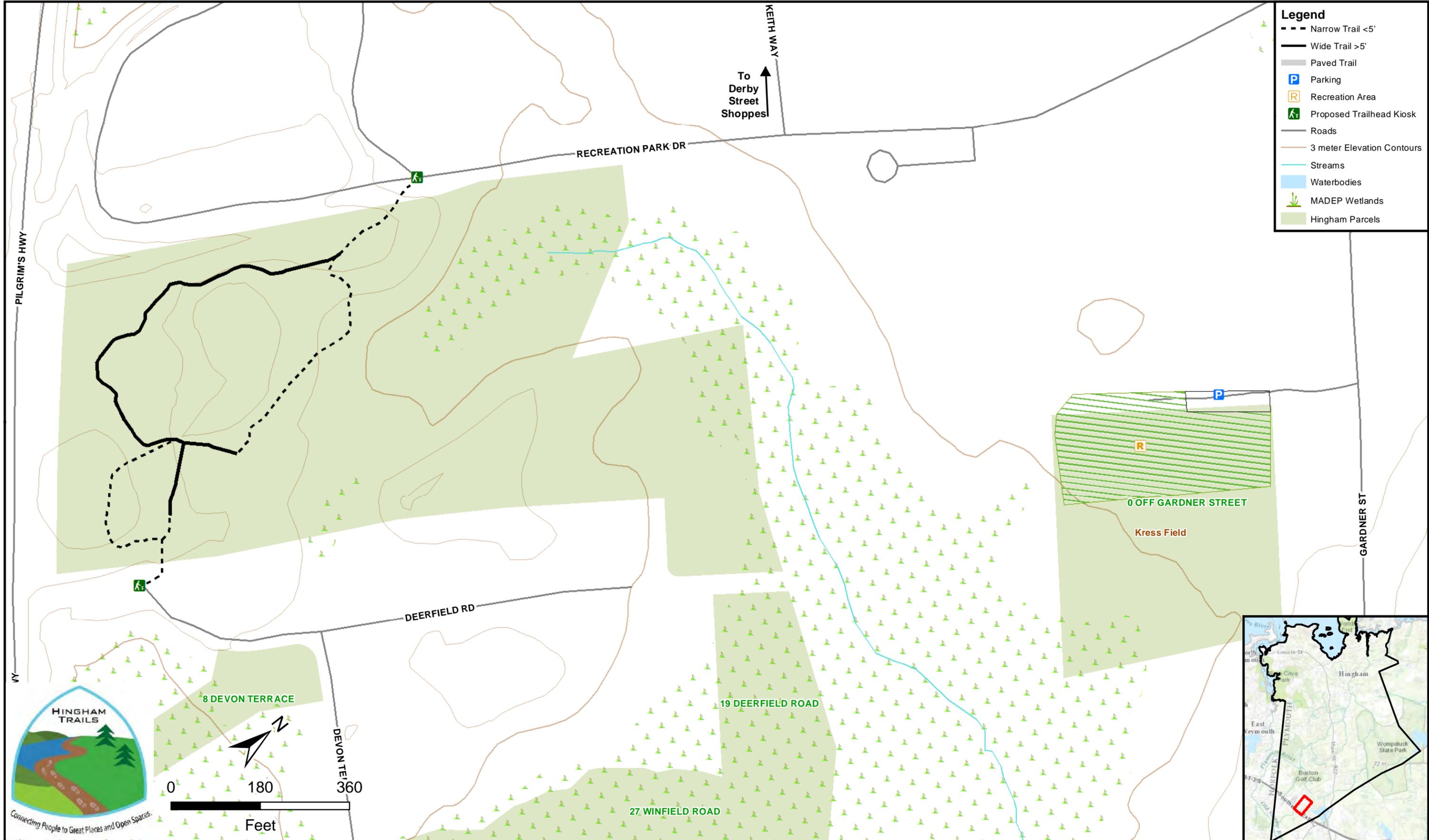
Deer hunting is allowed on this property between  
October 19 and November 28. Special permit by  
the Conservation Commission is required for this activity.



# RECREATION PARK DRIVE

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

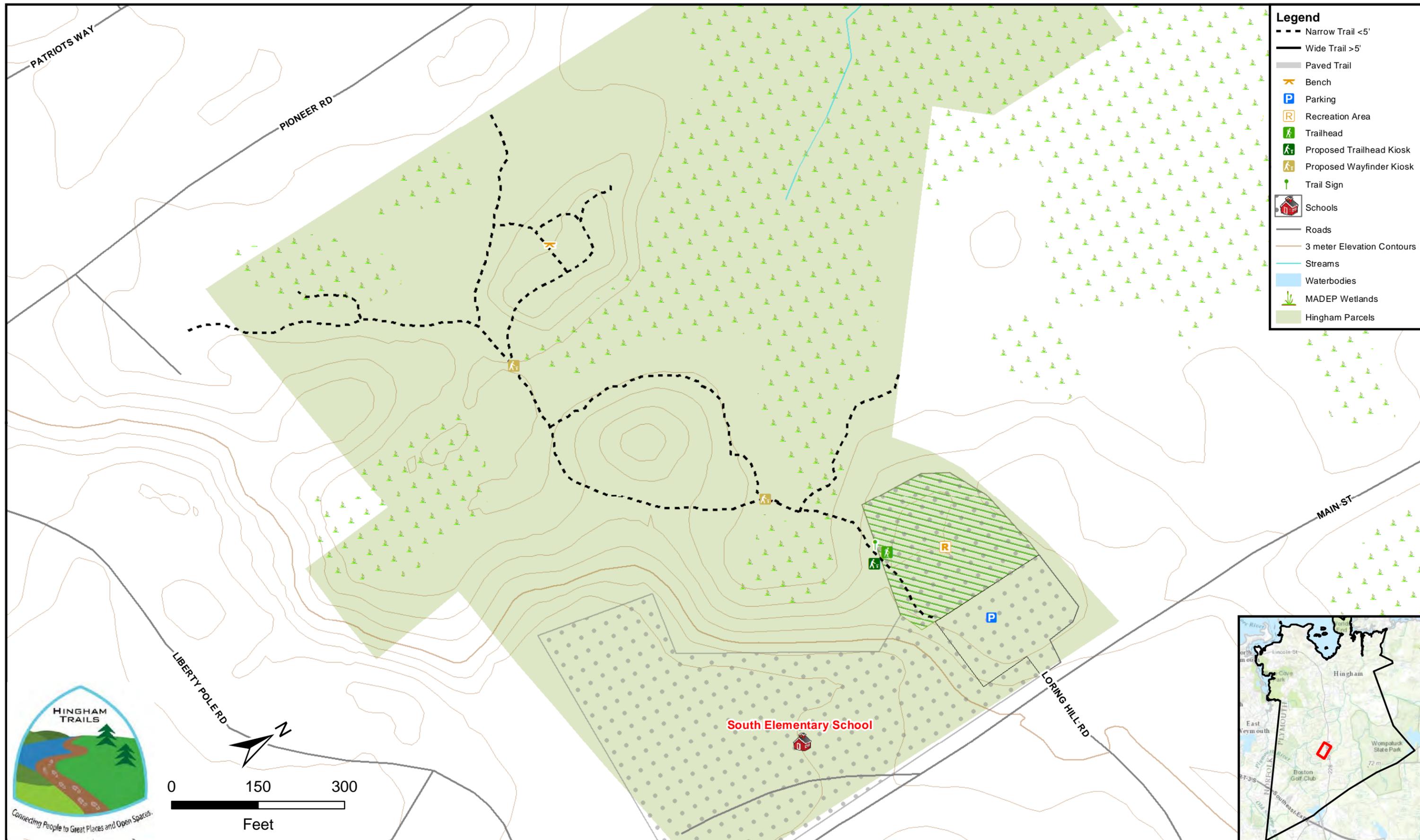
Approx 0.46 miles



# SOUTH ELEMENTARY SCHOOL

Open Dusk to Dawn  
Town of Hingham

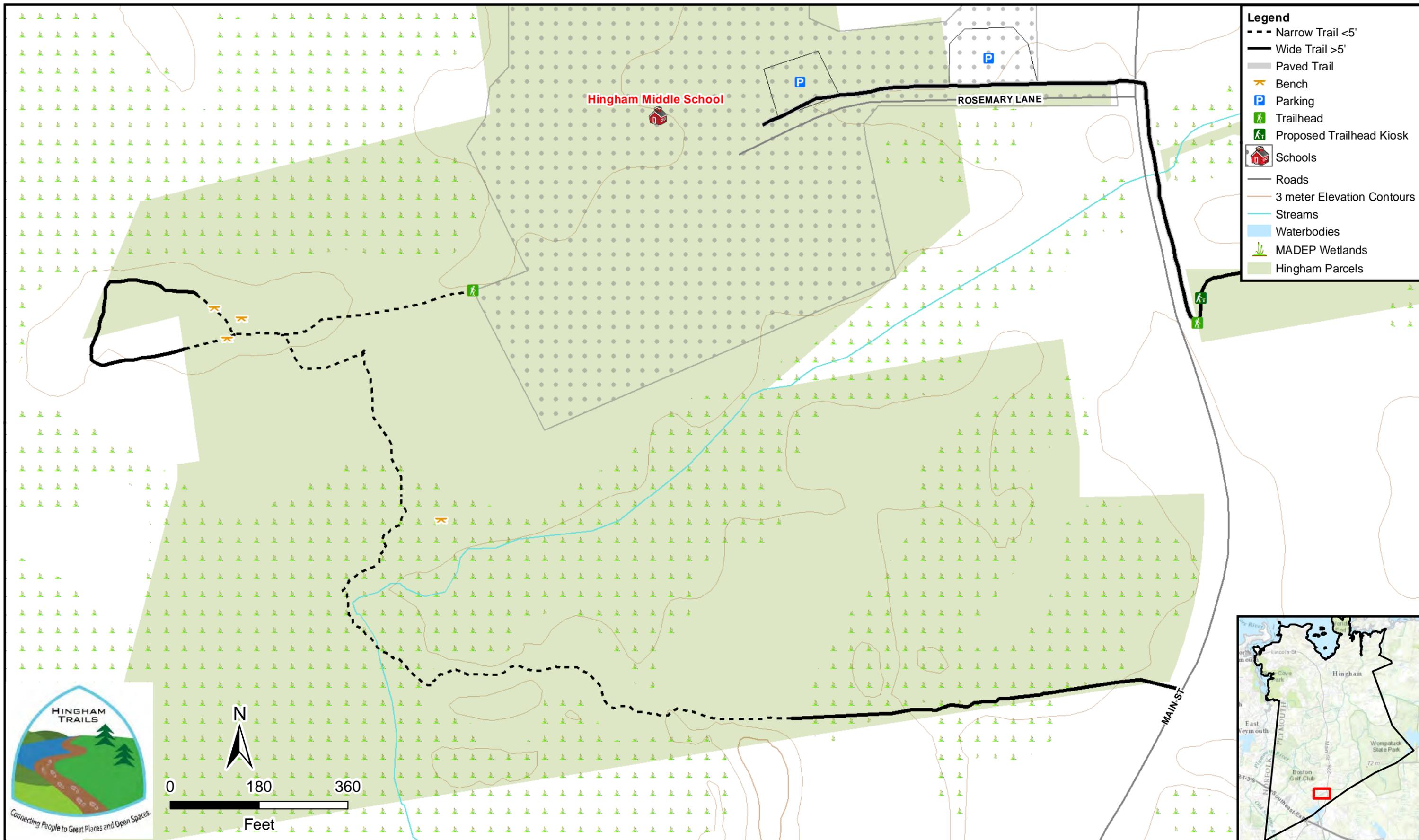
Approx 0.63 miles  
831 Main Street



# SOUTH JUNIOR HIGH SCHOOL AREA

Open Dusk to Dawn

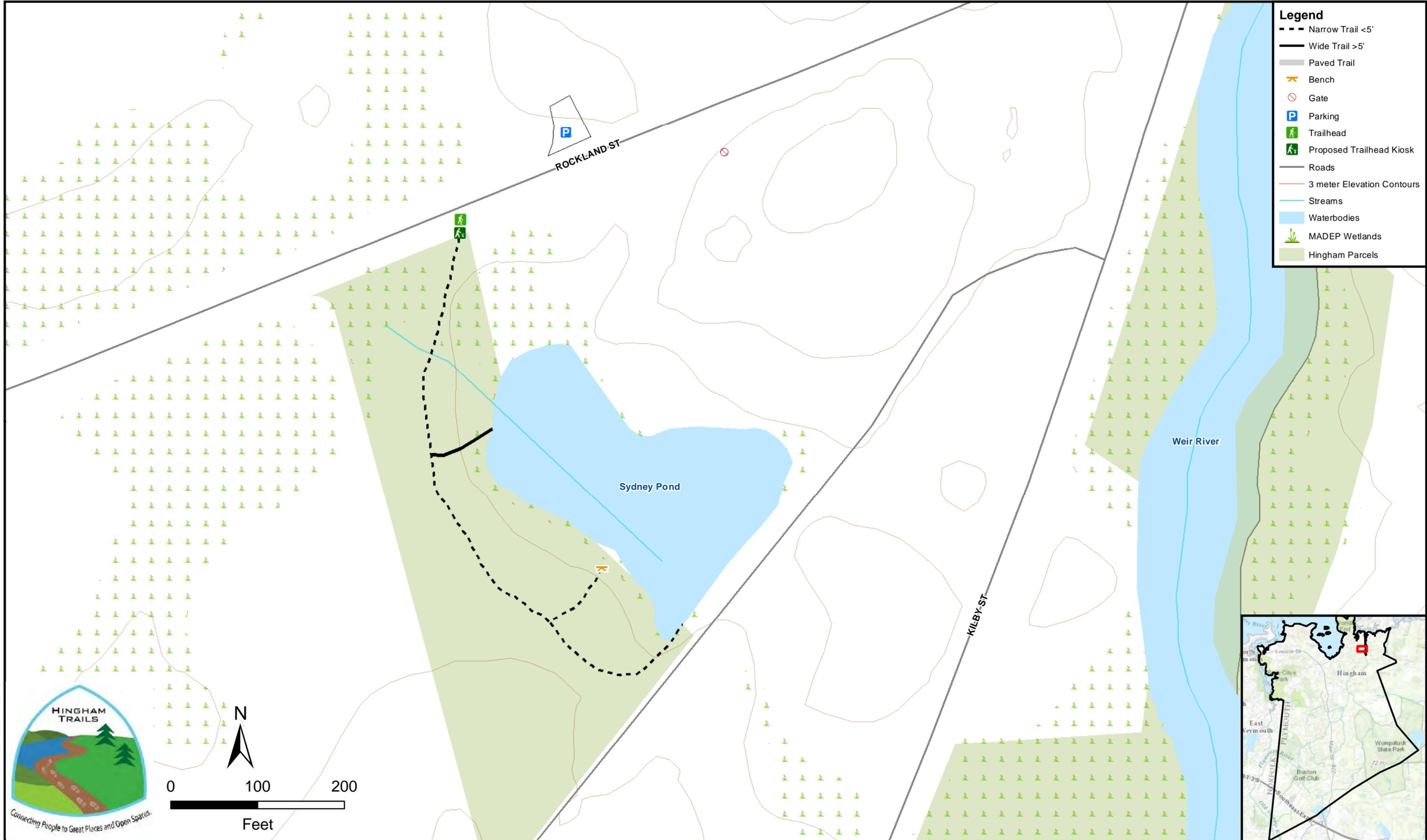
Approx 0.75 miles



# SYDNEY POND

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

Approx 0.17 miles  
Rockland Street

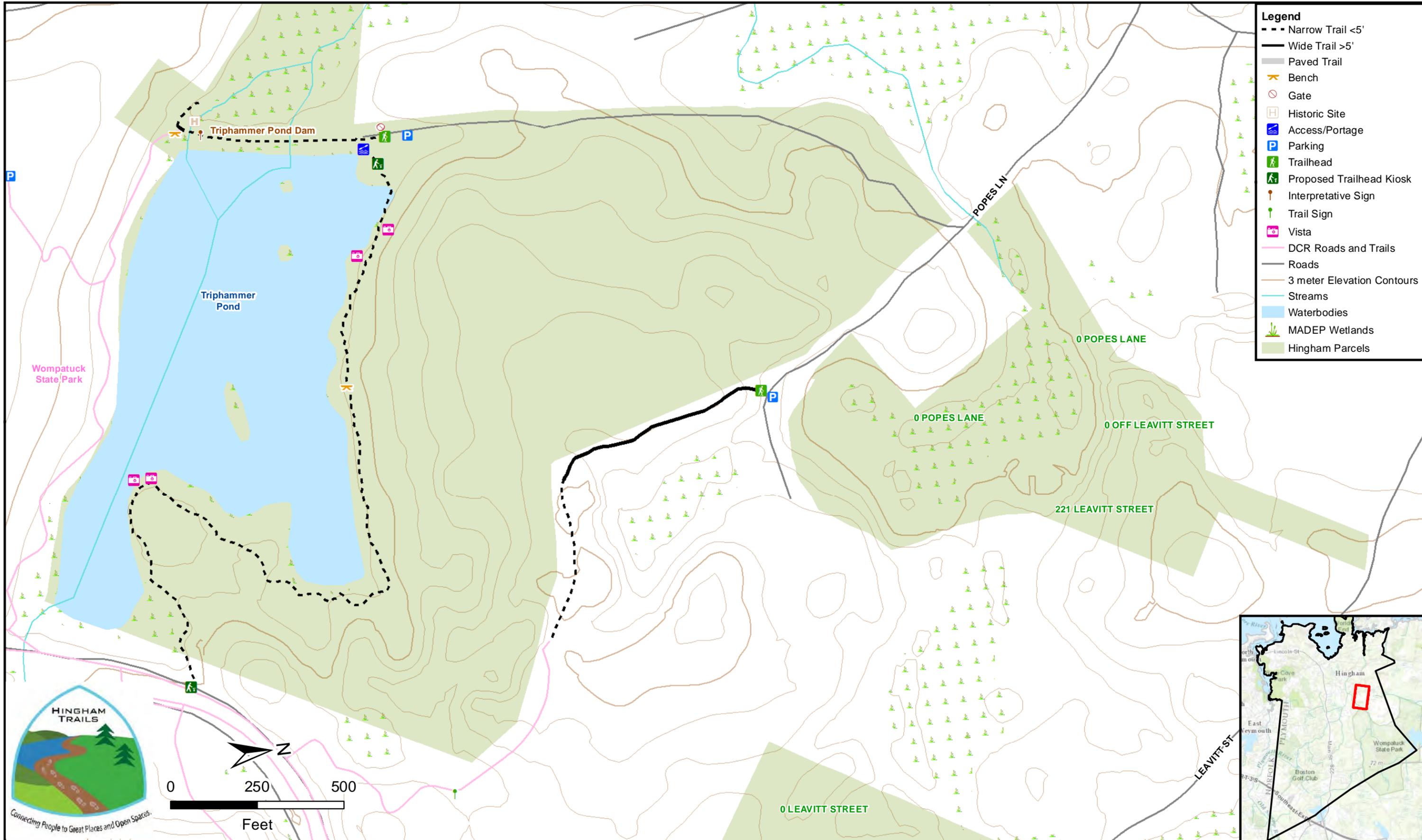


# TRIPHAMMER POND

Open Dusk to Dawn  
Hingham Conservation Commission  
Contact: (781) 741-1445

Approx 0.91 miles  
Popes Lane

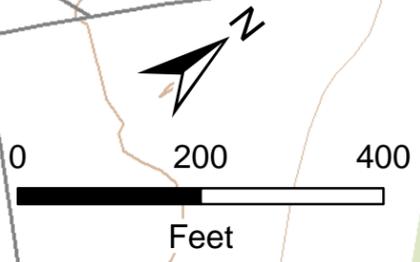
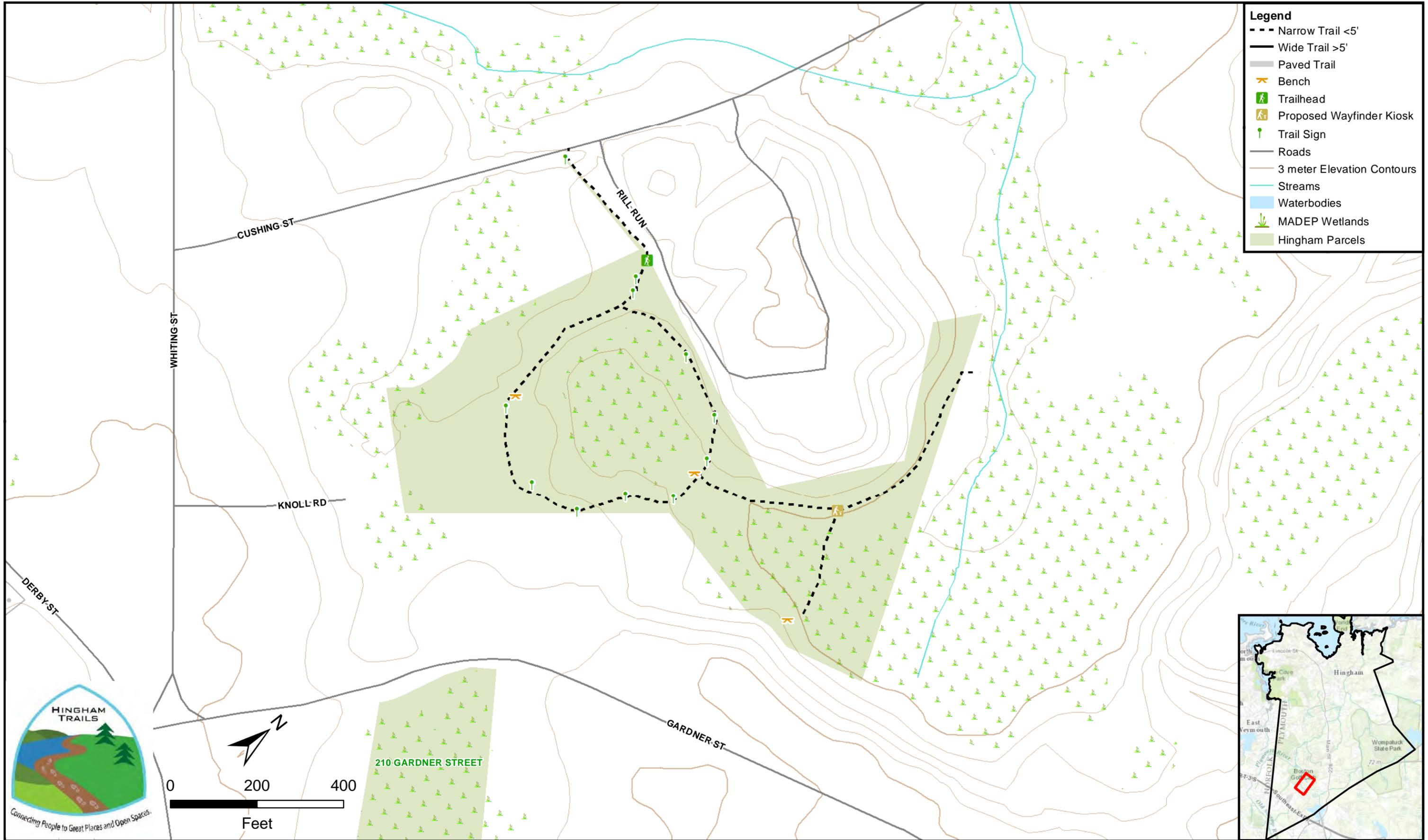
Deer hunting is allowed on this property between  
October 19 and November 28. Special permit by  
the Conservation Commission is required for this activity.



# WHORTLEBERRY HOLLOW

Open Dusk to Dawn  
Hingham Land Conservation Trust

Approx 0.57 miles  
Cushing Street





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# Hingham Comprehensive Trails Plan Appendix D

Trail Link Design Concepts  
Boardwalk, Trestle Bridge, Natural Surface Path

Bouve Conservation Area Trail Entrance  
Foundry Pond Connection



# Approximate Cost of Infrastructure

Boardwalk, Overlook, Stabilized Earth Paving, and New Trail Creation

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## Overview

The purpose of this document is to provide Hingham with general cost information for a variety of trail infrastructure materials. There are a variety of options related to the type of infrastructure and detail materials for infrastructure design including railing, decking, framing, and footings/foundations. Thus, the cost estimates presented below include rough estimates for all of these options. In order to provide project specific infrastructure cost estimates, site specific information is needed including topographical, geo tech, and environmental surveying, and town preference on weight bearing capacity/ structure use and materials.

## Overall Cost Estimates

### Boardwalks and Overlook Decks

#### Framing Materials

Prefabricated deck sections are recommended to minimize on site construction activities and disturbances. These prefabricate sections consist of galvanized tubular welded steel frame with either wood, plastic or composite decking attached directly to the frame with standard galvanized deck screws. The deck sections are provided in 12' lengths, with custom length sections or corners as needed. Each 12' section requires two helical piles for support. The helical piles are driven into place and connected to the steel deck frame with saddles. Each section of frame is connected to the next with a bolted connector plate.

Rail posts are added after deck placement, rail posts are fitted into post pockets and bolted. Post pockets are attached to the frame by the manufacturer. The deck sets 1+ foot above flood elevation, resulting in a height of approximately 7' above grade except at approaches. Cross braces are added approximately every 50 ft. on each side as determined by the manufacturer.

The entire system is laid out and engineered by the manufacturer for a streamline assembly process.



Helical pile and post attachment to frame.

# Approximate Cost of Infrastructure

Boardwalk, Overlook, Stabilized Earth Paving, and New Trail Creation

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## Deck material options

ACQ treated southern yellow or western pine (non-arsenic pressure treatment) wood decking has a 20 year warranty. Wood decking will wear better if it is sealed at least every 3 years. HDPE lumber is recycled plastic with fiberglass reinforcement. HDPE decking requires no maintenance and has a 50 year warranty. The frames will last 65-100 years, so the decking is the only thing that would need replacing. Both materials are readily available in the standard sizes used. Either system will support service vehicles if necessary.

The following link describes the attributes of the treated lumber.

[http://www.lakestateslumber.com/data/lakestateslumber/file/332\\_5207\\_2012%20MicroPro%20Top%2010%20Reasons.jpg](http://www.lakestateslumber.com/data/lakestateslumber/file/332_5207_2012%20MicroPro%20Top%2010%20Reasons.jpg)

The following link describes the HDPE lumber.

[http://www.plasticboards.com/up/prod-info/8/bedtech\\_fiber\\_bro\\_web\\_\(1\).pdf](http://www.plasticboards.com/up/prod-info/8/bedtech_fiber_bro_web_(1).pdf)

## Deck assembly & maintenance



Deck attachment to frame.

For either material 2"x4" runner boards are initially installed parallel to the metal frame, they are attached to the frame with standard self-tapping galvanized screws. Then, the 2"x6" decking is attached to the runner boards with standard galvanized deck screws with a 1/4" gap.

In regards to the design of the metal frame, the spacing of the stringers is wider for wood decking so if wood is selected, then switching to HDPE in the future is not possible since the frame will not support it properly, but composites may be an option. A composite is a combination of wood and plastic, has a similar price as HDPE, but

# Approximate Cost of Infrastructure

Boardwalk, Overlook, Stabilized Earth Paving, and New Trail Creation

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not as long a life span.

## Posts

Material options include wood, HDPE, or metal. Wood posts are the most common and affordable option, but require the most frequent replacement. HDPE posts require less maintenance but cost 3-5 times more. Metal posts provide the most options – round or square; painted, galvanized, or stainless; and aluminum versus steel. Prices and longevity vary..

In all cases posts are bolted into permanent pockets attached to the deck frame as described under framing. A standard pipe hand rail could be added to the rail posts if desired.

## Rails

One option is wood or HDPE post and rail with cable infill.. Cables would be bolted and tensioned at one end and run through the posts to the limit of each run of cable. There are a number of attachment methods including both standard bolt ends for ease of maintenance and custom swag tensioning tools for tamper resistant attachment. The standard end nuts could also be counter sunk into the post to limit visibility and access. Cable rails may require periodic re-tensioning due to people standing on them.



Wood post and rail with deck top and cable fill



Steel post with wood rail and cable fill

Another railing option is a Wire Mesh where the post and rail with welded wire mesh infill is a more affordable option than cable. Within this category there are a range of materials and assemblies to consider. Wire mesh panels are available in a number of styles and assemblies. The simplest would be flexible 14 gauge galvanized welded wire mesh attached directly to the posts and rails with standard galvanized staples. This would be inexpensive and easily repaired but more susceptible to vandalism than heavier rigid panels.

# Approximate Cost of Infrastructure

Boardwalk, Overlook, Stabilized Earth Paving, and New Trail Creation

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Wood post, 14 ga welded wire mesh panel with wood top and bottom rail.

The other welded wire option is heavier rigid panels of 8 ga welded wire in galvanized or stainless steel finish. These would require a frame and cost significantly more but will provide added strength and require the least maintenance.



## After install adjustments

The manufacturers recommend allowing the boardwalk to sit for one year to let the boardwalk settle naturally before making any adjustments. If there are sections of the boardwalk that happen to settle and adjustments are needed, simply back out the self-tapping screws on the leg sleeve, and loosen the set screw. Jack the boardwalk up to level, then re-set the set screw and install the self-tapping screws. This would be specified as part of the contractor's responsibility for the first year when settlement is most likely to occur. After this little to no frame maintenance should be required beyond inspection and repair.

# Approximate Cost of Infrastructure

Boardwalk, Overlook, Stabilized Earth Paving, and New Trail Creation

## Estimated Costs:

### Boardwalk Decking and Framing (8' wide corridor)

Unit	Description	Average Cost
LF	8' PT Decking with Wood Framing	\$115.00
LF	8' PT Decking with Galv Steel Framing	\$190.00
LF	8' HDPE Decking with Galv. Steel	\$323.00
EA	Pocket for Woods Posts 6' O.C. (required for Galv. Steel Frames)	\$15.00

### Overlook Framing

Unit	Description	Average Cost
SF	2"x6" Treated Wood with Wood Framing	\$25.00
SF	2"x6" Treated Wood w/ Galv Steel Frame	\$31.67
SF	2"x6" HDPE w/ Galv. Steel Frame	\$53.83

### Railing

Unit	Description	Average Cost
LF	Stainless Cable	\$250.00
LF	Wood Rail w/ 14 GA Galv Wire Mesh	\$125.00
LF	Wood Rail w/ 8 GA Galv Welded Wire Panels	\$175.00

### Footings

Unit	Description	Average Cost
EA	Helical Pier Anchors/Supports	\$550.00-\$1000*
LF	Sono Tube 30" (concrete not included)	\$29.60
EA	Precast Concrete Pier	
EA	Timber Pier	

\* Cost range varies by size and required support of each pier.

### Bridges

Unit	Description	Average Cost
EA	45' long x 8' wide, weathering steel connector truss	\$48,240
	Installation	\$20,000
EA	65' Long x 8' wide, weathering steel, connector truss	\$54,200
	Installation	\$20,000

### Stabilized Earth Paving

Unit	Description	Average Cost
SF/ 1"	Stabilizer Treatment	34cents
SY	Stabilized Earth Pavement	\$49.00

# Approximate Cost of Infrastructure

Boardwalk, Overlook, Stabilized Earth Paving, and New Trail Creation

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## New Natural Surface Trail Construction

The cost of new trail construction is difficult to estimate because of the many factors involved. Trail surface, width, condition, location, needed erosion control structures, signage and other amenities such as benches affect construction cost. The construction of a new natural surface trail is estimated at a minimum of \$1200 per mile. These costs incorporate trail delineation, shrub layer removal and manual grading of a single track trail (approximate 3' wide). Design elements for constructing a sustainable trail are included in Appendix B.

## Trail Maintenance

There are many factors that can affect trail maintenance from the type of maintenance activity to the surface of the trail. Information provided by American Trails provide the following maintenance cost from various sources:

- \$1,500 per mile provided in the Iowa Trails 2000 plan by the Iowa Department of Transportation (includes a mixture of different trail surfaces)
- \$2,525 per mile summarized by the Milwaukee County Park System (all asphalt paths)
- \$1,200 per mile (as an absolute minimal cost) in the Rail Trail Maintenance & Operation Manual provided by the Rails-to-Trails Conservancy.
- \$2,077 per mile for government run trails provided in the Rail Trail Maintenance & Operation Manual provided by the Rails-to-Trails Conservancy.
- \$2,042.06 per mile of unpaved trail in the Trail Cost Model - Draft by the Wisconsin Department of Natural Resources.

## Online Trail Structure Plan Resources

The Federal Highway Administration provides a catalog of trail structures that has been approved for public use. The catalog includes a simplified set of blue prints for structures and foundations as well as special site considerations. This catalog is available at:

[http://www.fhwa.dot.gov/environment/recreational\\_trails/publications/fs\\_publications/01232833/found01.cfm](http://www.fhwa.dot.gov/environment/recreational_trails/publications/fs_publications/01232833/found01.cfm)

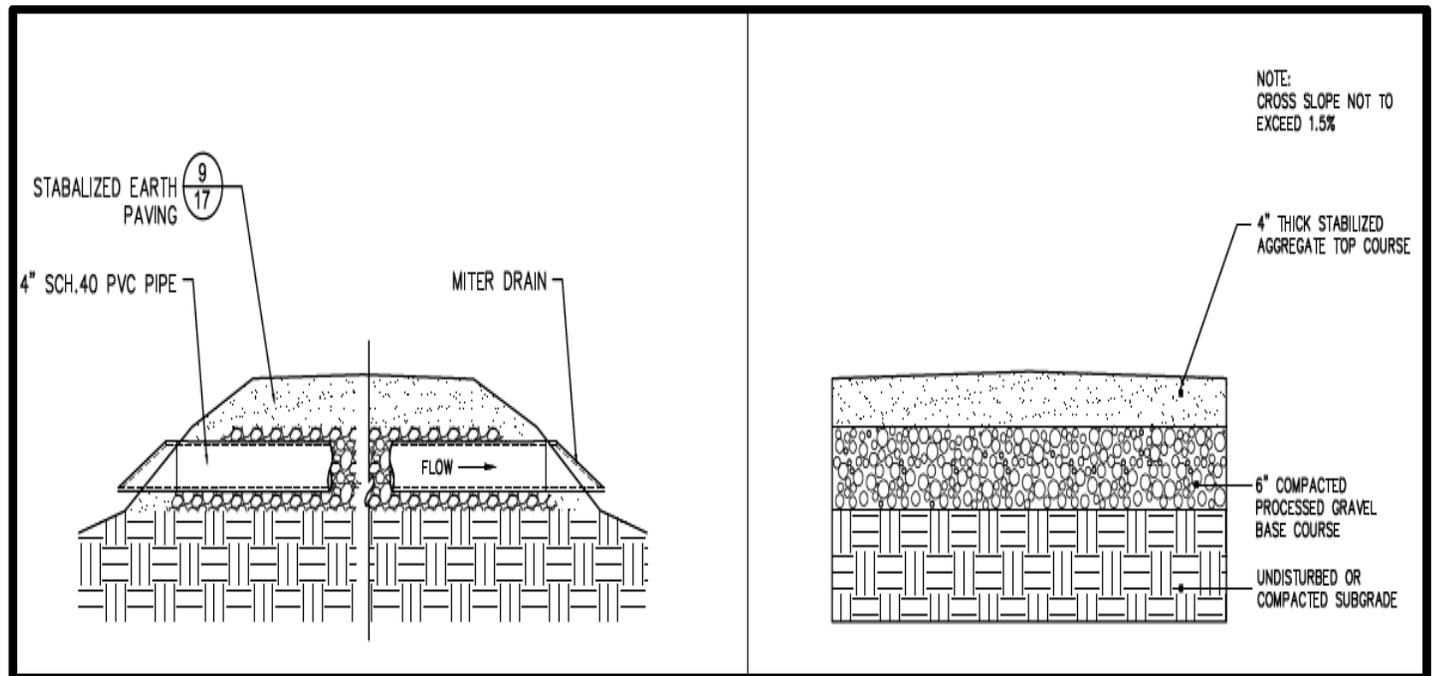
In addition, the US Forest Service provide Standard Trail Plans and Specifications for the design, construction, and maintenance of National Forest System trails and trail bridges. These plans and specifications are available for others to use. These Plans reflect the US Forest Service trail management efforts and are available at:

<http://www.fs.fed.us/recreation/programs/trail-management/trailplans/>

# Approximate Cost of Infrastructure

Boardwalk, Overlook, Stabilized Earth Paving, and New Trail Creation

Stabilized Earth Paving:

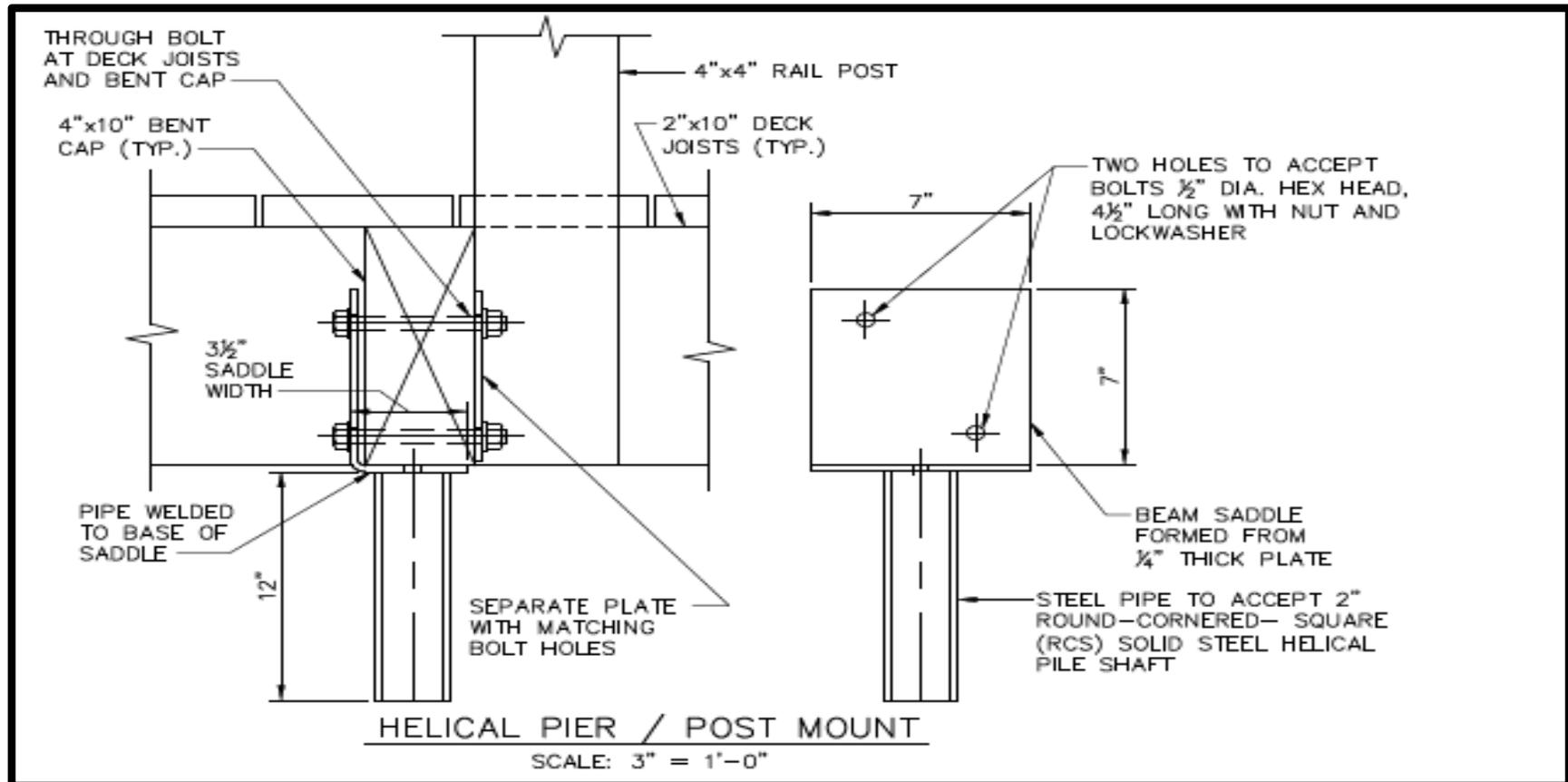




# Approximate Cost of Infrastructure

Boardwalk, Overlook, Stabilized Earth Paving, and New Trail Creation

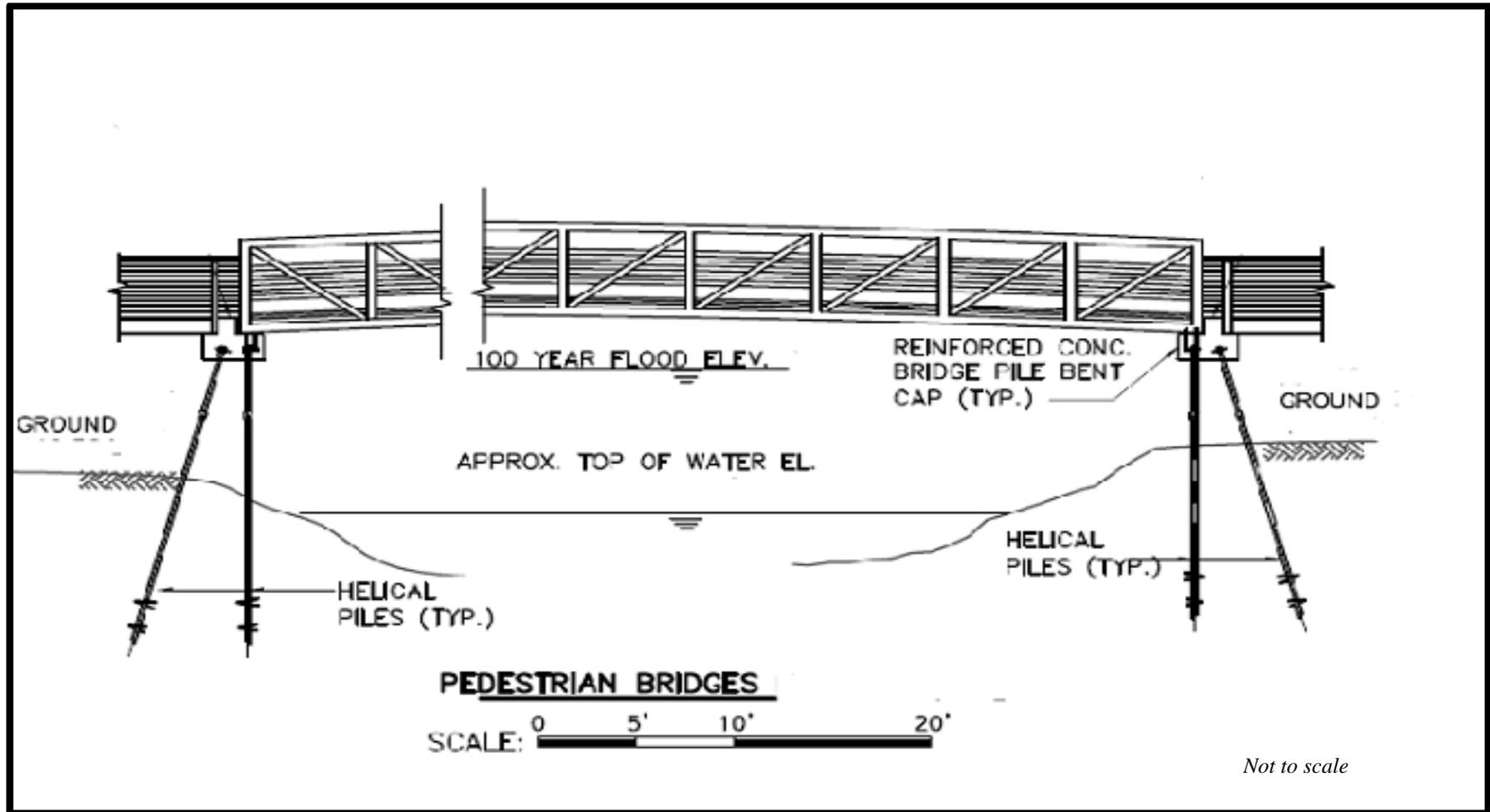
Helical Pier and Post Mount Cross View:



# Approximate Cost of Infrastructure

Boardwalk, Overlook, Stabilized Earth Paving, and New Trail Creation

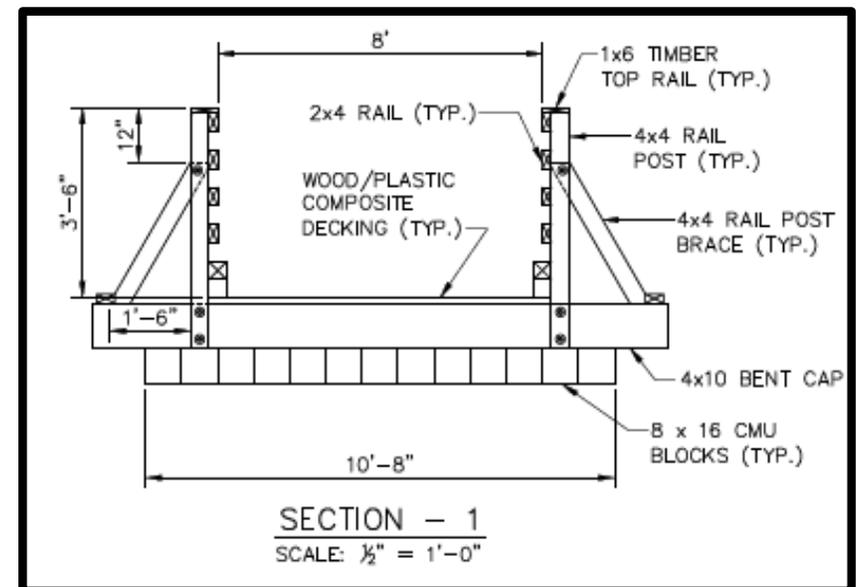
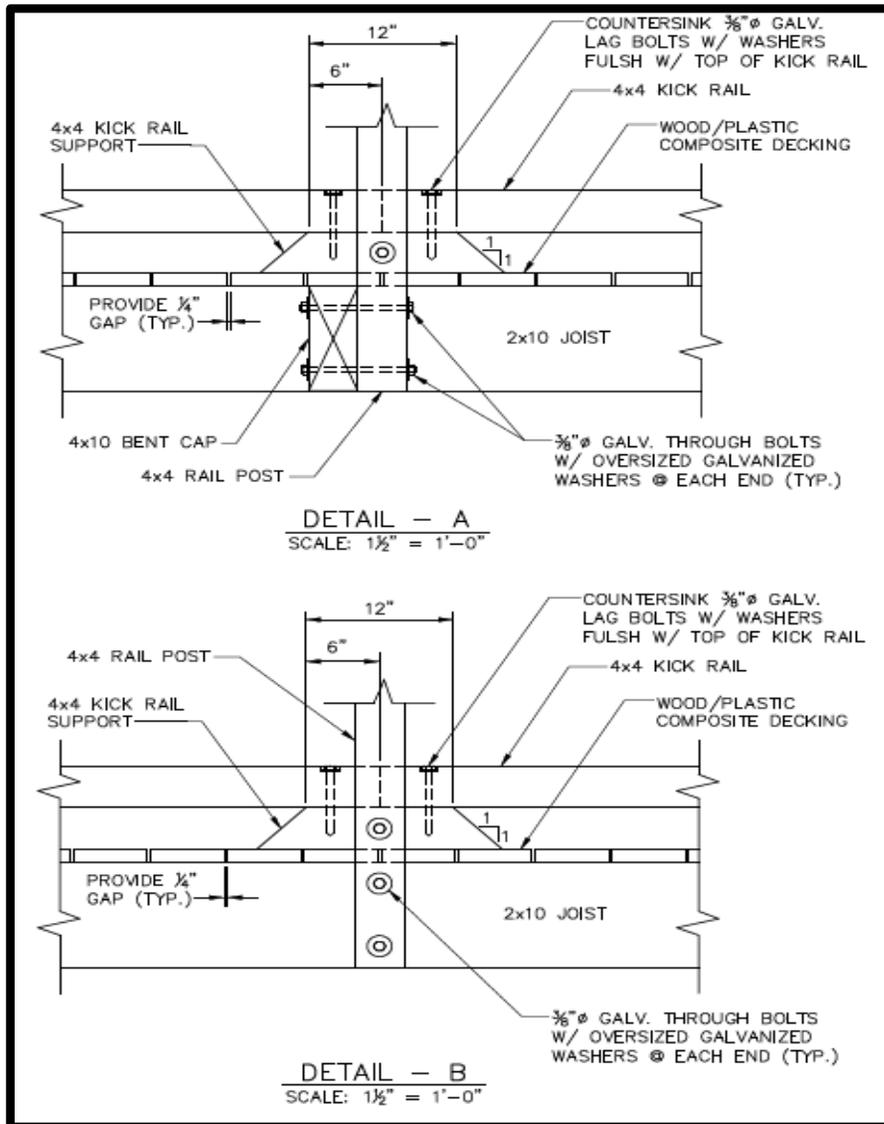
## Pedestrian Truss Bridge on Helical Piers



# Approximate Cost of Infrastructure

Boardwalk, Overlook, Stabilized Earth Paving, and New Trail Creation

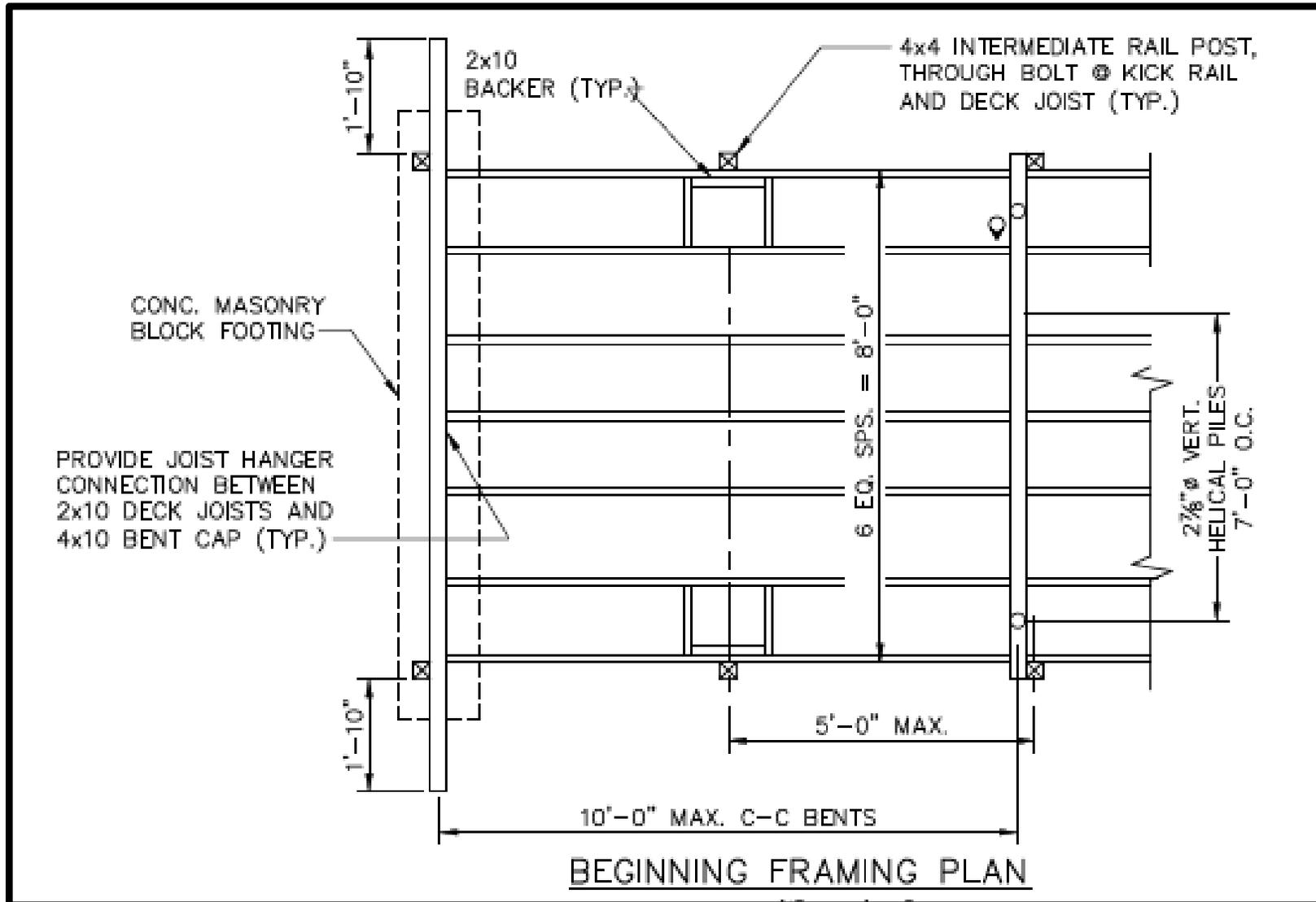
Boardwalk Cross Section:



# Approximate Cost of Infrastructure

Boardwalk, Overlook, Stabilized Earth Paving, and New Trail Creation

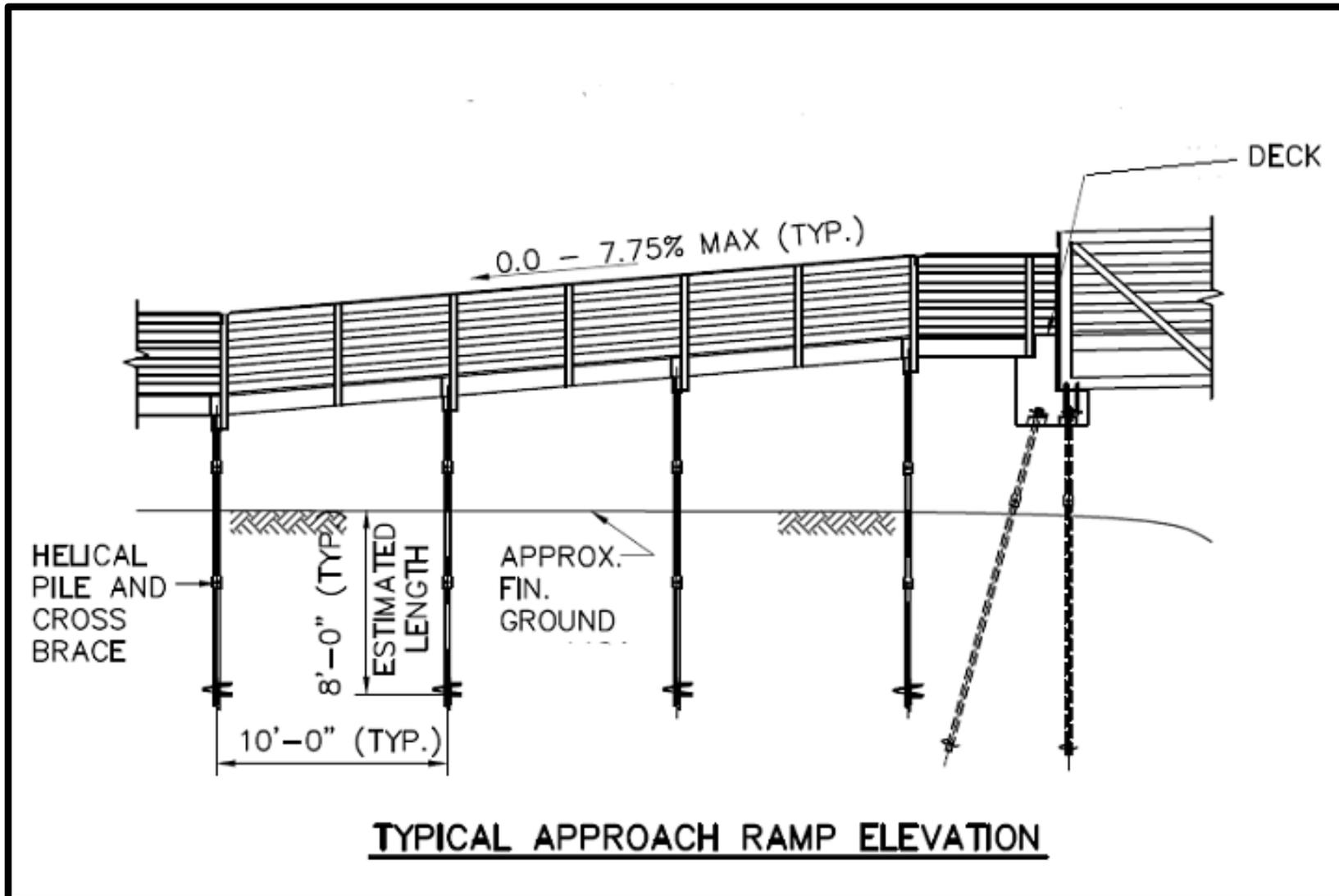
## Boardwalk Frame Layout



# Approximate Cost of Infrastructure

Boardwalk, Overlook, Stabilized Earth Paving, and New Trail Creation

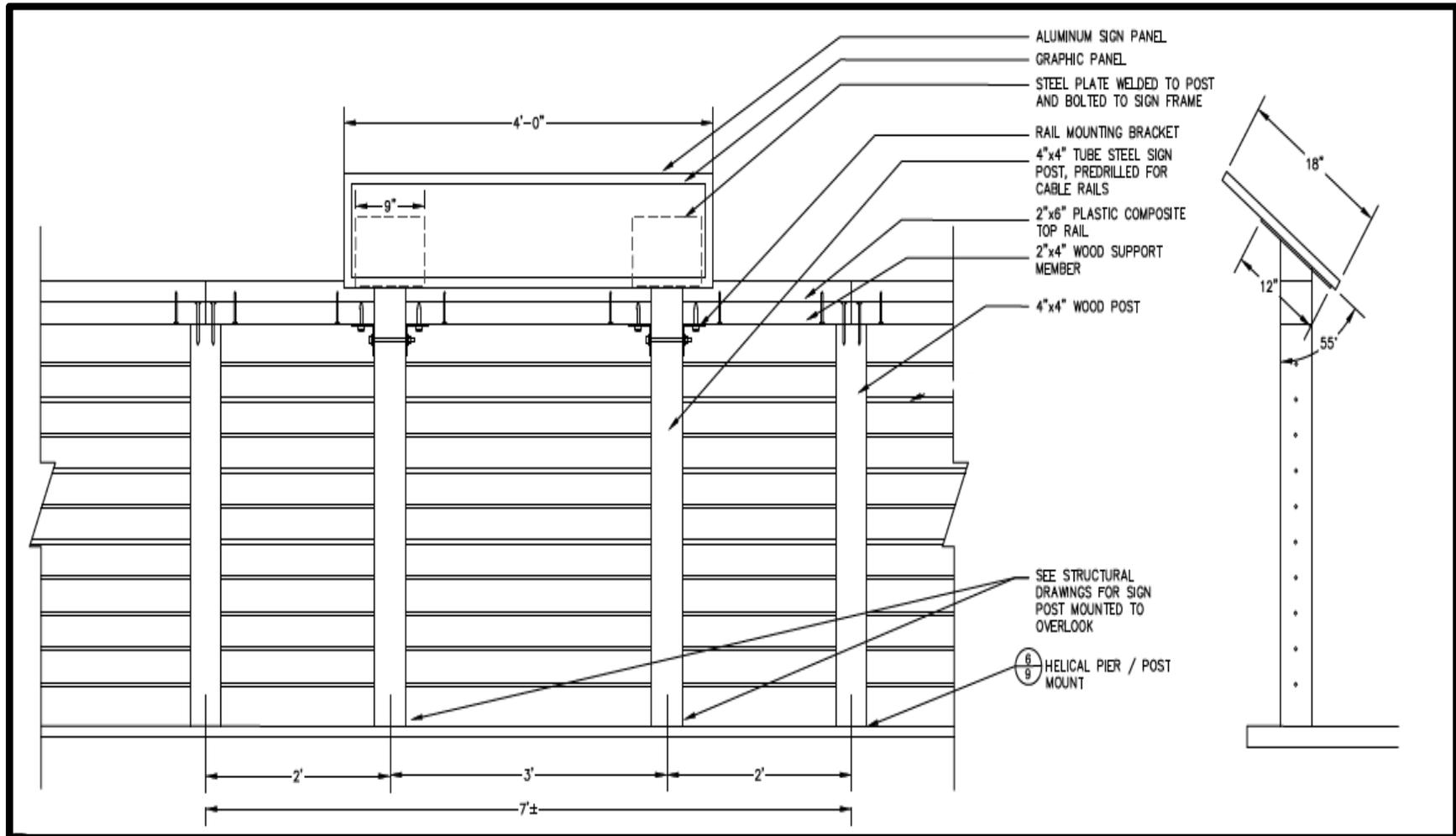
Ramp Approach (Boardwalk, Bridge, Observation Deck):



# Approximate Cost of Infrastructure

Boardwalk, Overlook, Stabilized Earth Paving, and New Trail Creation

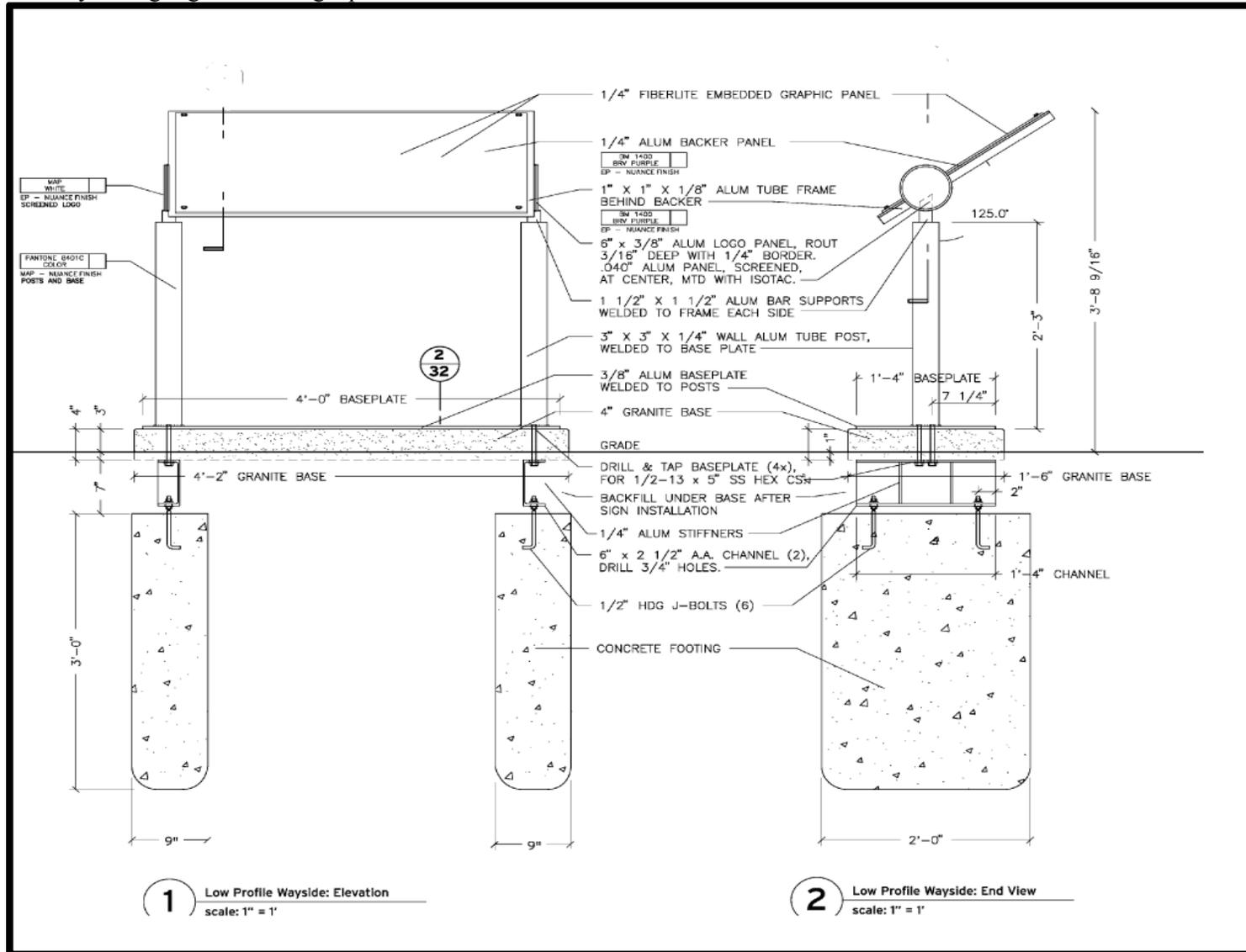
## Interpretative and Wayfinding Signs Mounting Option 1:



# Approximate Cost of Infrastructure

Boardwalk, Overlook, Stabilized Earth Paving, and New Trail Creation

## Interpretative and Wayfinding Signs Mounting Option 2:





# General Proposed Scope and Design

## Bouve Conservation Area Trail Connection

Structure (ramp and viewing platform) and Stabilized Earth Paving

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### Overview

The trail access to the Bouve Conservation Area from the Hingham Shipyard is in need of improvement. Currently, access to the Conservation Area's trail system occurs along private property. In an effort to provide for access along Hingham land, BSC Group has been working with the Town on different design concept ideas. Based on prior trail connection proposals at this location, the Town of Hingham specifically requested that the connection be: on Town owner property, be partially universally accessible, reduces impacts to coastal resources areas, incorporates available granite curbing material, and provides for increased abutter privacy. Parking for the Bouve Conservation Area is located on HMC Haldsted Drive, thus, keeping the access at the location where the Shipyard sidewalk ends and the Bouve property begins along the coast was also important to the Town.

The following design ideas have been presented to the Hingham Conservation Commission and the public:

#### 1. Bouve Trail Connection with Overlook and Steps

This design provides for a short ADA boardwalk ramp connecting the existing Shipyard Harbor sidewalk to an observation platform at approximately 9' in elevation. This observation platform would provide for accessible views of the harbor and an opportunity for educational displays. In addition, this observation platform would connect to the existing Bouve trail via a combination of recycled granite steps with permeable surface landings. Closure and restoration, via plantings of the existing entrance is also proposed as part of this design.

There are multiple options for boardwalk decking, railing and foundation. In an effort to minimize impacts to the wetlands upon where the boardwalk would be construction, the Town should consider helical piers. Timber pier installation requires at least nine square feet of temporary soil and vegetative disturbance as well as approximately six square feet of permanent impacts in the form of concrete footings per pier. In the alternative, helical piers require only one square foot of area of permanent disturbance for installation.

#### 2. Bouve Trail Connection with Elevated Overlook, permeable landing and steps

This design is similar to design #1 except that this design provides for an elevated overlook an elevation of approximately 11'. This elevation meets the height elevations recommended in the Hingham Climate Change Vulnerability, Risk Assessment and Adaptation Study (2015). As provided in design #1, this observation platform would provide for accessible views of the harbor and an opportunity for educational displays. . In addition, this observation platform would connect to the existing Bouve trail via a combination of recycled granite steps with permeable surface landings. Closure and restoration, via plantings of the existing entrance is also proposed as part of this design.

There are multiple options for boardwalk decking, railing and foundation. In an effort to minimize impacts to the wetlands upon where the boardwalk would be construction, the Town should consider helical piers. Timber pier installation requires at least nine square feet of temporary soil and vegetative disturbance as well as approximately six square feet of permanent impacts in the form of concrete footings per pier. In the alternative, helical piers require only one square foot of area of permanent disturbance for installation.

#### 3. Bouve Trail Connection Boardwalk

This design provides for the most universal access of the three proposed designs by proposing a 200' elevated boardwalk abutting the rocky ledges. The proposed boardwalk commences at the end of the paved Shipyard Harbor sidewalk and would connect to the existing system of trails at the Bouve Conservation Area. The alignment of the

# General Proposed Scope and Design

## Bouve Conservation Area Trail Connection

Structure (ramp and viewing platform) and Stabilized Earth Paving

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boardwalk would follow the existing preferred route that individuals have been following during the low tide periods to access the Shipyard Harbor Sidewalk. This alignment would allow for salt marsh vegetation to re-establish itself were it has become bare due to foot passage. By connecting the sidewalk to the existing trail network to the north of the cove, the boardwalk would allow for a complete closure of the existing access trail allowing for privacy to the abutting properties. In addition, it would allow for the removal of a stream crossing that is in poor condition and in need of replacement, thus, fully daylighting the stream. Trail closure would be completed using native plantings and educational signs.

There are multiple options for boardwalk decking, railing and foundation. In an effort to minimize impacts to the wetlands upon where the boardwalk would be construction, the Town should consider helical piers. Timber pier installation requires at least nine square feet of temporary soil and vegetative disturbance as well as approximately six square feet of permanent impacts in the form of concrete footings per pier. In the alternative, helical piers require only one square foot of area of permanent disturbance for installation. Thus, since part of this boardwalk would be located within a salt water marsh, the use of helical piers minimizes impacts to the resource area.

### Alternative Access

An existing unofficial trail could provide for alternative access to the Bouve Conservation Area. The Hingham trails assessment located a trail off of the paved fire road that connects Condito Road to HMS Halsted Drive. This trail extends from the fire road to the main Bouve property trail and extends approximately 800ft in length. The trail meanders through some low land areas lined with Winged Burning Bush (*Euonymus alatus*), an invasive shrub, up some short rocky outcrop/hills and along the edge of a bordering vegetated wetland eventually connecting to the main Bouve path.

The existing trail is in need of repair and a minor reroute to ensure ADA trail compliance and sustainable design and to minimize potential impacts to the narrow intermittent stream that empties into the cove. The upland sections of the path would consist of stabilized earth paving. This type of surface provides a firm, smooth, stable and slip resistant substrate. Approximately 800 linear feet of stabilized paving would be implemented. The application of the stabilized earth requires the removal of vegetation and the top organic soil layer at a width of 6-8 feet to provide enough clearance to grade and compact the trail surface to an outslope pitch between 1 and 1.5 %. This pitch minimizes pooling of water and accumulation of ice. A 6-foot wide section of the graded surface will receive a treatment of a 4 to 6 inch base course and a 3 inch thick stabilized earth top course. The earth top course is comprised of a combination of stabilizer and a decomposed aggregate. All disturbed or exposed areas would be seeded with appropriate native seed mix and shrubs.

In addition to trail upgrades, plantings are recommended along the southern portions of the trail to ensure privacy to the abutting properties along HMS Hamlstead Drive. Sustainable trail design best management practices, including information regarding ADA trail compliance, have been included in Appendix B. Trail enhancement could afford an opportunity for invasive species management and habitat improvement. In addition, increased use of the trail resulting from the improvements could help curtail unwanted activities such as drinking and partying. Evidence of these activities are apparent along the trail.

This location would continue to be accessible to the Bouve Parking Area on HMS Halsted Drive so long as permission for public access along the paved fire road and the adjacent property can be obtained.

# General Proposed Scope and Design

## Bouve Conservation Area Trail Connection

Structure (ramp and viewing platform) and Stabilized Earth Paving

---

### **Approximate Infrastructure Costs:**

Approximate costs for each structure is provided in a separate document within this Appendix. Estimates include costs for the variety of materials available for decking, railings and footings.

### **Other Costs and Considerations: Survey, Design and Permitting**

Design, surveying and permitting costs should also be considered in the overall scope. To provide with a more accurate design cost, environmental and property surveys, geotechnical investigation, and structure engineer site investigation must occur. Geotechnical investigation will determine the best support system for the bridge or boardwalk, such as helical piers or concrete footings. The environmental surveys will provide information regarding the limits of the wetland resource areas and their buffers for environmental permitting purposes. Environmental permitting that will likely be required include a Notice of Intent with the Hingham Conservation Commission, and the Massachusetts Department of Environmental Protection, a Chapter 91 license, and a United States Army Corps of Engineers General Permit. A Massachusetts Historical Review Application for authorization from the Mashpee Wampanoag Indian Tribe, Wampanoag Tribe of Gay Head Aquinnah, Massachusetts Bureau of Underwater Archeological Resources and Massachusetts Historical Commission will likely be required for coastal work as well as a shellfish survey and report for inclusion in permit submittals as required by the Hingham Shellfish Warden and the Division of Marine Fisheries.

# General Proposed Scope and Design

## Foundry Pond Trail Connection

Truss Bridge, Boardwalk and Stabilized Earth Paving

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### Overview

This proposed scope and design provides general recommendations and suggestions for connecting the eastern and western portions of Foundry Pond. Currently, these portions of the park are separated by the Weir River. Information gathered through the Hingham Comprehensive Trails Plan online survey and public meetings as well recommendations from the Open Space and Recreation Plan indicate that there is a desire for this trail connection. Based on preliminary information gathered in the field as well as a desktop assessment, the following items provide some recommendations for a trail connection.

Foundry Pond Dam is located at the head-of tide of the Weir River and has an estimated watershed area of approximately 15 square miles. The Dam impoundment has a surface of approximately 5 acres of which at least half is occupied by emergence and scrub shrub wetlands. The dam was first constructed at the site in the late 1700s for use in operating an iron foundry and was later used for a wood scouring plant. During the 1800s, a fish ladder was installed. Portions of the dam were apparently reconstructed as part of emergency repair work in 1998. This work included the installation of a concrete apron over the dam spillway, installation of rip rap and grading of the intertidal habitat downstream from the spillway. The dam is primarily constructed of dry laid stone masonry, with some cast in place concrete, masonry and precast concrete. The Kilby Street side of the dam is comprised of a masonry and earthen embankment. A concrete wall with stone armoring and a gravel path/road is located along the top of this section of the dam. The Weir Street side is comprised of dry laid stone masonry

A parking lot off of Kilby Street provides the closest access to the Foundry Pond Dam Spillway. In an effort to provide for full public access, this parking lot should be upgraded to ADA standards. In addition the approach to the proposals below from the Kilby Street parking lot should be improved to comply with the recommended ADA Trail Standards. A stabilized and permeable earth paved path is recommended for the Kilby Street approach to the following options:

1. Foundry Pond Spillway Overpass

One possibility for the trail connection is to span the 100' long Foundry Pond Dam Spillway with a truss bridge. The bridge would span approximately 120' to provide for accessible ramps on either end. It is recommended that the width of the bridge be at least 6' for accessibility purposes. Footings for such a bridge would occur along the sides of the spillway on the elevated portions of the dam. Geotech and structural investigations would have to occur to ensure that the sides of the dam can support the proposed bridge and its footings.

There are several alternatives for the type of truss bridge and its footings. Additional alternative exist for the decking and railing of the crossing.

Truss bridges are composed of a system of straight, connected elements. Trusses facilitate spanning greater distances with less material. Truss bridges are constructed of timber, wrought iron and steel. Available prefabricated truss bridges are modular and can span up to 300 feet. Prefabricated Truss bridges are available for purchase from the following companies: Contech Engineered Solutions, Big R Bridge, and Wheeler Con. The company websites provide images of available pre-fabricated bridges.

# General Proposed Scope and Design

## Foundry Pond Trail Connection

Truss Bridge, Boardwalk and Stabilized Earth Paving

Standard concrete foundations are typically used with prefabricated truss bridge systems. Anchor bolts can be cast in place or drilled to suit. However, helical piers with wood or concrete sills as well as gabions with wood or concrete sills can also be used for the foundation/footings.

The most effective decking is standard pressure treat wood. For pedestrian and bicycle applications, 2”x12” are recommended. For equestrian or small vehicle applications the standard is to use 3”x12.” Composite deck is also available but adds additional cost to the project. Recycled plastic lumber such as Trest and Trimax can also be used but will also increase the cost of the project significantly.

There are a variety of railing options available for truss bridges. Railings can be simple such horizontal wooden hand rails meeting AASHTO and safety guidelines with a handicap railing component. Railings can also integrate elements from the surrounding environment. York Bridge Concepts provide a variety of examples and design ideas for bridge railings all which meet AASHTO and safety guidelines.

### 2. Boardwalk/Bridge System over the Weir River

Another possibility to connect the east and western sides of Foundry Pond is the construction of a boardwalk/bridge system downstream of the Foundry Pond Dam along the Weir River and its associated wetlands. The boardwalk would extend over approximately 115’ of bordering vegetated wetlands inclusive of a 25’ span bridge from bank to bank over the Weir River. Boardwalk and bridge elevation of 10.2’ NAVD88 should allow for appropriate water flow in the event of a 100-year storm as well as river rise levels estimated by the Climate Change Vulnerability, Risk Assessment and Adaptation Study (2015). Elevating the boardwalk also allows for additional light penetration thus reducing shade impacts to the bordering vegetated wetlands and the Weir River.

Boardwalk approach and design should also allow for ADA access. In addition for providing a connection between the eastern and western sides of Foundry Pond, the boardwalk would provide a venue for interpretative and educational opportunities.

Just as the tressle bridge alternative, there are multiple options for boardwalk decking, railing and foundation. In an effort to minimize impacts to the wetlands upon where the boardwalk would be construction, the Town should consider helical piers. Timber pier installation requires at least nine square feet of temporary soil and vegetative disturbance as well as approximately six square feet of permanent impacts in the form of concrete footings per pier. In the alternative, helical piers require only one square foot of area of permanent disturbance for installation. Thus, since most of the boardwalk would be located within a Bordering Vegetated Wetlands, the use of helical piers minimizes impacts to the BVW.

The bridge section of the boardwalk should span the Weir River so as to have minor impacts to the inland bank and the flow of water. Bridge abutments could consist of timber piers, concrete foundations and /or helical piers. As detailed above, helical piers would result in the least impact to the wetland resource areas. A prefabricated tressle bridge should also be considered for this location as a tressle bridge would not require intermediate footings in the Weir River.

# General Proposed Scope and Design

## Foundry Pond Trail Connection

Truss Bridge, Boardwalk and Stabilized Earth Paving

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### **Stabilized Earth (Permeable) Paving**

This type of permeable paving provides a firm, smooth, stable, and slip resistant substrate. The application of stabilized earth paving requires the removal of vegetation and the top organic soil layer at a width of 6 to 8 feet to provide enough clearance to grade and compact the trail surface to an outslope pitch of at least 1% but no more than 1.5%. In addition to minimizing pooling of water, the slope pitch also minimizes the accumulation of ice. A 5 to 6 feet wide section of this graded surface will receive a treatment of a 4 to 6 inch base course and a 3 inch thick stabilized earth top course. The earth top course is comprised of a combination of stabilizer and decompose aggregate.

### **Approximate Infrastructure Costs**

Approximate costs for each structure is provided in a separate document within this Appendix. Estimates include costs for the variety of materials available for decking, railings and footings.

### **Other Costs and Considerations: Survey, Design and Permitting**

Design, surveying and permitting costs should also be considered in the overall scope. To provide with a more accurate design cost, environmental and property surveys, geotechnical investigation, and structure engineer site investigation must occur. Geotechnical investigation will determine the best support system for the bridge or boardwalk, such as helical piers or concrete footings. The environmental surveys will provide information regarding the limits of the wetland resource areas and their buffers for environmental permitting purposes. Environmental permitting that will likely be required for a bridge crossing over the spillway or a boardwalk over the Weir River include a Notice of Intent with the Hingham Conservation Commission, and the Massachusetts Department of Environmental Protection, a Chapter 91 license, and a United States Army Corps of Engineers General Permit. Property surveys will provide an on-the-ground survey to supplement existing horizontal and vertical control established for prior surveys.

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# Hingham Comprehensive Trails Plan Appendix E

## Hingham Open Space and Recreation Plan (2009-2016)



**TOWN OF HINGHAM, MASSACHUSETTS  
OPEN SPACE  
AND  
RECREATION PLAN**



**2009-2016**

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- B AMERICANS WITH DISABILITIES ACT
- C METROPOLITAN AREA PLANNING COUNCIL
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Community Snapshot Hingham

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Natural Heritage & Endangered Species Program (NHESP) Documentation

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Rare - Species Documented in Hingham

Pied-billed Grebe	Common Tern
Barn Owl	Spartina Borer Moth
Comet Darner	Wood Turtle
Eastern Box Turtle	Linear-leaved Milkweed
Adder's-tongue Fern	Pale Green Orchis
Tiny-flowered Buttercup	Bristly Buttercup

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Living Waters: Species and Habitats

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#### **D 3: Mass Audubon Society**

Massachusetts Breeding Bird Atlas 2 – 2007-2011 Interim results -Hingham

Bare Cove and Area Bird Census - June 2008

Hingham Biodiversity Days – Bird list

#### **D 4: MA Division of Fisheries and Wildlife**

Fish Species Occurrence in Fresh Water Ponds & Streams in Hingham – Feb. 2009

#### **D 5: USDA – Natural Resources Conservation Service – Plymouth County**

Some Dominant Soils of Hingham

Ipswich-Pawcatuck-Matunuck

Broadbrook Soils

Warwick Soils

Pittstown Soils

Newport Soils

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Natural Resources Inventory – Aug 2002

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Phase II Stormwater Management Plan – Town of Hingham, July 2003

Listed Waters in Hingham (Table 2-2)

303d Impaired Waters

MA Department of Environmental Protection

Reportable releases of Hazardous Waste – 1/21/09

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State and County Lands	Chapter 61 Lands
Non-profit Lands Protected	Conservation Restrictions (CR)
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Self Evaluation and Transition Plan of Conservation Commission Lands

Hingham Recreation Commission Open Space and Recreation Plan

ADA Assessment and Transition Plan

ADA Coordinator for the Town of Hingham

### **APPENDIX J: Preparing an Open Space and Recreation Plan Update**

### **APPENDIX K: Weir River Estuary Protection Plan**

### **APPENDIX L: MAP - Park Lands for the Public – Hingham Land Conservation Trust - 2010**

## **1.0 PLAN SUMMARY**

### **1.0 PLAN SUMMARY**

The Town of Hingham is approximately 15 miles southeast of Boston. The Town is 22.5 square miles (14,092 acres) in size, with its northern boundary extending into the sea to include five islands, Ragged, Sarah, Langley, (reputedly named for the owner's daughter "Ragged Sarah Langley") and Button in the Harbor, and the much larger Bumkin to the north. Hingham Harbor, at the north end of town, contributes a great deal to the community and natural history of the Town.

This Plan is an update of a series of previous Open Space and Recreation (OS&R) plans. It was developed through the efforts of an ad hoc subcommittee of the Conservation Commission. The OS&R was designed to deal with rapid development in Town and to strategize how to protect and maintain additional open space. The plan adheres to the Open Space and Recreation Plan requirements outlined by the Division of Conservation Services (DCS). The Plan is intended to be comprehensive and consistent with other plans and documents relating to open space and recreation. The 2001 Master Plan, the South Coastal Watershed Regional Open Space Plan, and the Weir River Area of Critical Environmental Concern Natural Resources Inventory and past Open Space and Recreation Plans were all reviewed, and components relevant to open space and recreation were integrated into this Plan.

As identified through the planning process, discussions with residents, and questionnaire results, the 2009 - 2016 Open Space and Recreation Plan goals are as follows:

**Goal 1:**

To protect Hingham's natural resources and the ecological and biological integrity of its wildlife through open space acquisition, development regulation, and collaboration with varied authorities and interests.

**Goal 2:**

To protect Hingham's scenic/aesthetic characteristics and its significant historical resources through open space acquisition, development regulation, and collaboration with varied authorities and interests.

**Goal 3:**

To continue to maintain and enhance formal and informal recreational opportunities in an environmentally sensitive way in order to ensure diverse recreation opportunities for Hingham's diverse residents. To implement an Americans with Disabilities Act (ADA) Transition Plan for recreation facilities and selected open spaces, and to identify and respond to any further needs.

**Goal 4:**

To restrict detrimental development impacts on Hingham's remaining open spaces.

## 1.0 PLAN SUMMARY

**Goal 5:**

To effect the following priorities/criteria when considering the purchase of open space:

- a. Drinking water protection
- b. Protection of vegetation and wildlife (habitat)
- c. Visual impact, and
- d. Passive recreation such as walking trail opportunities.

**Goal 6:**

To take the initiative in protecting open space

**Goal 7:**

To have some significant open space or recreation area adjacent to, or near every neighborhood.

**Goal 8:**

To connect isolated open space areas to make a more complete unified system for human use, hiking, riding, skiing and to provide wildlife corridors needed to link areas of fragmented habitat.

The main tools for pursuing these goals are full or partial acquisition, (the most effective protection if properly managed), regulation, and creative cooperation with various interests and stakeholders.

These led to the following Seven-Year Action Plan.

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**PLAN SUMMARY**

**SEVEN - YEAR ACTION PLAN**

**List of Agencies**

ADA	Town's Americans with Disabilities Coordinator
AQW	Aquarion Water Company
BA	Board of Assessors
BOH	Board of Health
BC	Beautification Committee
CC	Conservation Commission
CLF	Conservation Law Foundation
CPC	Community Preservation Committee
DAR	Department of Agricultural Resources
DCS	Division of Conservation Services
DMF	Division of Marine Fisheries
HLCT	Hingham Land Conservation Trust
HGC	Hingham Garden Club
HDPW	Hingham Department of Public Works
HMC	Hingham Maritime Center
HOSC	Hingham Open Space Committee
HSP	Hingham Sports Partnership
HDC	Historic District Commission
HHS	Historic Society
HSC	Hingham Sewer Commission
LRWMC	Long Range Waste Water Management Committee
MHD	Mass. Highway Department or successor
OSAC	Open Space Acquisition Committee
PB	Planning Board
PRC&D	Pilgrim Resource Conservation and Development Area Council
RC	Recreation Commission
SCD	School Committee/Department
SSCC	South Shore Country Club
TC	Town Counsel
TB	Trustees of the Bathing Beach
TOR	Trustees of Reservations
TM	Town Meeting
TNC	The Nature Conservancy
TPL	Trust for Public Land
ZBA	Zoning Board of Appeals
WRPC	Weir River Estuary Park Committee
WSC	Water Supply Committee
WTSEM	Wildlands Trust of SE Massachusetts

**1.0  
PLAN SUMMARY**

**Year One - 2010**

<b>Action</b>	<b>Goal/Objectives</b>	<b>Responsibilities from Chapter 9 (First is lead) /Possible Funding</b>
1. Hull St. Playground (R-9)-Add accessible playground equipment, improve drainage to allow ball field to be developed	3 / Increased accessibility; Transition Plan Implementation	RC / RC, CPC
2. Identify private water supply land and protect through zoning where possible	1 / Protect/expand the drinking water supply	PB / AWC
3. Publicize conservation techniques	1 / Protect/expand the drinking water supply	AWC, CC / AWC
4. Identify lands that joined or connected to protected lands, would create greenbelts and wildlife corridors	1 / Protect/promote biodiversity	CC, OSAC / TM CPC, DCR
5. Acquire or protect areas identified earlier using CPA funds, DCR funds or other resources to acquire land in fee or to acquire conservation restrictions or Easements-a continuing activity	1, 6 / Protect and promote biodiversity Protect or enhance wildlife corridors; reduce habitat fragmentation	CC, OSC, WTSEM, RC / CC, CPA, DCR, DF&W, HLCT, WTSEM, TNC, TPL and private gifts
6. Acquire available land around the Weir River Estuary Park along G. Washington Blvd., Rockland Street, and Kilby Street as described in Ch. V	1 / Protect the Coastal Zone	CC, OSC, WRPC / CPA, DCR, DFW, DMF, HLCT, non-profits
7. Work with local trust to explore options for restored access and increased public use of Rocky Beach and possible shared responsibilities.	1 / Protect the Coastal Zone 3 / Improve access to waterfront 7 / Provide significant open space and/or recreation land near every neighborhood	CC, HDC, RC / CPA, private owners, neighbors-----
8. Improve Foundry Pond fish ladder to avoid water spilling onto the smelt breeding area.	1 /Protect biodiversity from spillway	CC, DMF / DMF, CPA

**1.0  
PLAN SUMMARY**

**Year One – 2010 Continued**

<b>Action</b>	<b>Goal/Objectives</b>	<b>Responsibilities from Chapter 9 (First is lead) /Possible Funding</b>
<b>9.</b> Identify neglected Areas- Assign restoration work to town /private groups to use all resources	3 / Maintain Present Recreation Areas	RC, CC / TM, HSP, CPA
<b>10.</b> Identify needs, use CPA funds to acquire them	3, 6 / Acquisition of new recreation areas	RC, OSC / DCR, HSP, CPA
<b>11.</b> Support proposed acquisition of properties, and integration with the Weir River Estuary Park system.	1, 6 / Protect or enhance wildlife corridors, reduce habitat fragmentation	CC, WRPC / CPC, DCS
<b>12.</b> Develop shared staffing or other cooperation between RC and Hingham Maritime Center to extend sailing season (now ending in mid-August) through October's good sailing weather	3 / Expanded sailing opportunities	RC, HMC / TM

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PLAN SUMMARY**

**Year Two - 2011**

<b>Actions</b>	<b>Goals/Objectives</b>	<b>Responsibilities (first is lead) / Possible Funding</b>
<b>13.</b> At Bradley Woods Playground (R-8) add further accessible playground equipment complementing 1995 improvements; acquire any needed easements and develop accessible paths from Ivy Way and the playground to the Shipyard Drive and to the adjacent Bouve' property; improve the primitive ball field	3 / Increased accessibility; Transition Plan Implementation	RC, OSAC / RC, CPC, DCR
<b>14.</b> Increase required permeable to impermeable surfaces	1 / Protect/expand the drinking water supply 4 / Limit impact of development on open space or resources	PB, CC, BOH / Developers
<b>15.</b> Identify private open space areas that, when adjoined, create greenbelts and wildlife corridors.	6 / Take initiatives to protect open space	CC, OSC, HCLT, PB, Public
<b>16.</b> Acquire land on Charles St.	6 / Take initiatives to protect open space	OSC, CC / CPA, HCLT
<b>17.</b> Enhance key views e.g., by opening up the view of the Home Meadows from lower Winter Street or Water St.	2 / Acquire, protect or enhance visually significant areas, key areas	CC, BC, OSAC / CC, CPC
<b>18.</b> Acquire easements or land in fee. Use covenant/deed restrictions for conservation purposes	6 / Take varied initiatives in protecting open space	OSA, CC, CPA / CC, HCLT, CPC
<b>19.</b> Acquire fee or access easements to neighborhood beach at Melville Walk if needed	3 / Defend rights to historic beach access	CC, RC / CC, RC, CLF, CPA
<b>20.</b> Develop/improve path along edge of Bouve' land to Shipyard and Bradley Woods Playground	3 / Create better access to total waterfront	RC, CC, residents/ RC, CC, HDPW
<b>21.</b> Protect / acquire land on Popes Lane. Determine if parcel is buildable, continue negotiations with owners, examine community garden or agricultural potential	1 / Protect and promote biodiversity 1, 6 / Preserve, use valuable farmland 2 / Acquire/protect visually significant scenic areas 3 / Acquire new recreation areas	CC, WTSEM, HGC / CC, CPA, HCLT, WTSEM, TNC, TPL

**1.0  
PLAN SUMMARY**

**Year Two – 2011 continued**

<b>Action</b>	<b>Goal/Objectives</b>	<b>Responsibilities from Chapter 9 (First is lead) /Possible Funding</b>
<p><b>22.</b> Explore; then implement community garden spaces at level, accessible, open sunny areas.</p>	<p>3 / Support recreational gardening 1, 6/ Preserve, use valuable farmland</p>	<p>RC, CC, HGC / RC, CPA</p>
<p><b>23.</b> Design, Implement skate board/in-line skating park(s) at Carlson Field or elsewhere</p>	<p>3 / Broadened recreational offerings</p>	<p>RC, OSAC / TM</p>

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**Year Three - 2012**

<b>Actions</b>	<b>Goals / Objectives</b>	<b>Responsibilities (first is lead)/ Possible Funding</b>
<b>24.</b> At Hersey Field (R-1)create 2,3 ADA parking spaces for playground and ball field; improve drainage in northwest parcel and develop an added ball field; irrigate the main field and ease neighborhood dust issues on the access road; draw on Hersey house project water and electricity if possible; create an accessible field house	3 / Increased accessibility; implementation of ADA plan	RC, OSAC, /RC, CPC
<b>25.</b> Investigate recreation potential of the capped landfill, e.g., hiking, mountain biking, skiing, sight-seeing	3 / Expand varied recreation opportunities	RC, CC, OSAC, / DCR (PARC funds)
<b>26.</b> Implement grey water reuse mandates for new development	5 / Protect and Expand Water Supply	BOH, HSC
<b>27.</b> Develop an Irrigation By-law	5 / Protect and Expand Water Supply	CC, AWC, PB, PRC&D
<b>28.</b> Acquire and link identified greenbelt areas, e.g. Baker land and Nosiglia land along Crooked Meadow River; resolve access issue through adjacent Church parking lot or other routes	6 / Take initiatives to protect open space	CC, OSC, HCLT / CPA, DCR
<b>29.</b> Find interested candidates that would like to lead specific efforts focused on a site or issue, form group	6 / Establish/support community and local interest groups to ensure protection	CC, PBB, BS, HCLT
<b>30.</b> Acquire private river-front holdings between town parcels on Geo. Washington Blvd. in WREP area U-26	8 / Connect open space areas	CC, OSAC, WREP, PB, BS/ CPC, DMF
<b>31.</b> Increase ratio of impermeable to permeable surface to increase recharge	1 / Protect water supplies	PB, CC/ BOH
<b>32.</b> Acquire or protect areas identified above	1, 6 / Protect water supplies	CC, AWC, BOH / CPA, TM
<b>33.</b> Create tax incentives for sale of private land to Town; be in touch with Ch. 61 land owners	6 / Seek expanded means to acquire open space	BS, CC, BA, TM
<b>34.</b> Investigate legal status of rip rap around Crow Point; does public investment in it give the public access rights? Is it a public way? Investigate options for removal of present obstacles, act on them.	3 / Increase recreation possibilities especially walking	CC, RC, BS, HS, TC / CPC, DCS

**1.0  
PLAN SUMMARY**

**Year Three – 2012 continued**

<b>Action</b>	<b>Goal/Objectives</b>	<b>Responsibilities from Chapter 9 (First is lead) / Possible Funding</b>
<b>35.</b> Investigate size of tract, acquire sufficient rights along edge of Amonte Meadow; develop a trail along the river's edge crossing over to Sanctuary Pond area through further riverside land/rights if feasible	3 / Expanded hiking opportunities	CC, OSAC / CPA
<b>36.</b> Add Cassidy Field signage at the Brewer Reservation entrance on Hobart St. at the easement from White Horse Lane, at Hemlock Road and at a possible access from Pinecrest Road, improve present easement	3 / Improve access to existing opportunities easement	RC / CPA
<b>37.</b> Work to enhance and preserve scenic town entrance	2 / Protection of scenic values	DPW, HC, HDC, BS / CPC, MDPW

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PLAN SUMMARY**

**Year Four - 2013**

<b>Actions</b>	<b>Goals/ Objectives</b>	<b>Responsibilities (first is lead) / Possible Funding</b>
<b>38.</b> Improve East Street Skating Pond (Hingham Skating Club R-10); Create at least one ADA parking space near clubhouse; Seek CPA funds for dredging, weed control and porch reconstruction for non-winter fishing and boating use, and acquire the adjacent property if available	3 / Increased accessibility; Transition Plan implementation	RC, CC, OSC /CPC, TM
<b>39.</b> Continue with municipal grey water recycling plans	1 / Protect water supplies-quantity and quality	HDPW, BOH
<b>40.</b> Continue acquiring areas identified above as opportunities arise	1 / Continued open space acquisition	CC, WTSEM / CC, CPA
<b>41.</b> Work on Fish run protection /Restoration	1 / Strengthened fisheries	CC, HDPW / DMF, CPC
<b>42.</b> Add local tot lots including adult sitting areas, tables and exercise circuits, e.g. at Hull St. Playground, Kress Field	3 / Provide facilities for all ages	RC / CPC
<b>43.</b> Explore tide-free freshwater swimming opportunities	3 / Expanded opportunities, especially swimming	OSP, CC / CPC, DCR
<b>44.</b> Expand ice skating opportunities with a warm-up building (like that at the Skating Club) at Cushing Pond or Accord Pond	3 / Expanded, better distributed town-wide skating opportunities	RC, CC, OSC / CPA
<b>45.</b> Design & adoption of a town-wide system of pedestrian and bicycle trails, bridle paths, and snow mobile trails. The system would be binding on new development so that the paved off-street walkways and bikeways encouraged by the subdivision Rules and Regulations tie into the over-all system	3 / Expanded better-distributed hiking, biking opportunities	CC, PB, OSC, PW /CC, CPA, DCR. State trails funds and Safe Routes to School funds
<b>46.</b> Implement eased beach access via large wheeled chairs and other actions	3 / Diverse, accessible recreation	RC, TBB / CPC, DCR

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**Year Five - 2014**

<b>Actions</b>	<b>Goals / Objectives</b>	<b>Responsibilities (first is lead)/ Possible Funding</b>
<b>47.</b> Improve Cronin/Haley Fields (R-6); Create two ADA parking spaces; rebuild tennis courts and add accessible ramp from the space with grading to ease the slope; rebuild barn with accessible bathrooms; pave access road from Main St., and add an ADA accessible sidewalk; replace running track with a rubber surface	3 / Increased accessibility; Transition Plan implementation	RC, BS / CPC, RC
<b>48.</b> Identify private land that has a water supply potential and guide future development away through zoning where possible	1 / Protect water supplies	CC, OSP, CPC , PB / AWC, BOH, DCR
<b>49.</b> Study possibility of enclosing the Country Club Pool	3 / Expanded year-round recreation opportunities	RC / OSC, SCC / CPA, TM
<b>50.</b> Connecting the southern end of Bare Cove Park and Weymouth's Great Esker Park so that users can cross from one to the other and experience them as a whole	3, 8 / Expanded hiking, riding opportunities, connected isolated facilities	RC, CC, OSC, BRC, Weymouth / DCR, CPC
<b>51.</b> Open view at Town Brook at Route 3A	2 / Scenic vista enhancement	MDPW, BS / MDPW, CPC
<b>52.</b> Acquire stream-side land on the west side of Hersey St. for neighborhood open space	1 /6 Preserve/use valuable farmland	CC, OSAC, HGC/ RC / CPC

**1.0  
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**Year Six - 2015**

<b>Actions</b>	<b>Goals/Objectives</b>	<b>Responsibilities (first is lead) / Possible Funding</b>
<b>53.</b> Improve Cassidy Field (R-2); Get an access easement off of Hemlock Road for ADA and standard parking; seek accessible access from Pinecrest Rd.; build an accessible playground and ball field; if feasible, improve the present path in from Hobart St. through the Brewer Reservation	3 / Increased accessibility; Transition Plan implementation	RC, CC / CPC
<b>54.</b> Acquire / protect the coastal fringe of Bass Point off G. Washington Blvd./ Rockland St. on the Weir River	1, 5 / Expand holdings for multiple purposes	OSAC, CC, WREPC, PB / DCR, PC, Private Owner
<b>55.</b> Connect Bare Cove Park with Stodders Neck; and Great Esker Park with Abigail Adams Park via walkways under the Rte. 3A Bridge	3 / Expand hiking, riding opportunities	RC, OSAC, MHD / CPC, MHD, DCR
<b>56.</b> Reveal view of the Home Meadows from lower Winter St. and Water St. by selective clearing of intervening roadside vegetation	2 / Scenic, aesthetic exposure	CC, HC, DPW / CPA
<b>57.</b> Acquire protective strips wide enough to serve as wildlife corridors along major streams and between close but non-contiguous open spaces	1, 8 / Water supply protection, wildlife and stream corridor enhancement	CC, OSAC / DCR, CPA

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PLAN SUMMARY**

**Year Seven -2016**

<b>Actions</b>	<b>Goals/ Objectives</b>	<b>Responsibilities (first is lead) / Possible Funding</b>
<b>58.</b> Improve Kress Field (R-11); Create 1 ADA parking space, expand/improve parking and playing fields overall; rebuild trails to ADA specifications; add accessible playground equipment; work with neighbors to improve overall property, add community garden space if feasible	3 / Increased accessibility; Transition Plan implementation 1 / Protect and use fertile land	RC, DPW/CPC, DCR
<b>59.</b> Improve Margetts Field on Ward St. (R-5); Create at least two 2 ADA parking spaces; improve irrigation; improve path from Plymouth River School Parking lot.	3 / Increased accessibility; Transition Plan implementation	RC, BS, OSC /CPC, DCR, Residents
<b>60.</b> Seek Sanctuary Pond off the Weir River; Develop an access from Geo. Washington Blvd.	1, 2 / protection of key resources and scenic areas	CW, REC, OSAC, WREPC / DCR, CPA
<b>61.</b> Acquire Hersey St. back land earlier proposed for CPA action; develop for recreation, gardening and informal open space use	3, 7 / Provide multi-purpose open space near all neighborhoods	CC, OSAC, HGC / CPC, DCR
<b>62.</b> Continue expanding /implementing ADA Transition plan	3 / Provide diverse, accessible recreation facilities	RC, OSAC, ADA/CPC
<b>63.</b> Clarify public's right to walk along the Crow Point rip-rap; acquire any property, facilities or easements needed to remedy present obstacles	1, 2, 3 / Improve coastal walking	CC, RC, HDPW, HDC / CPC, DCR.

**Studies Actions for Later Years**

The program above may well exceed time and resources, and key items should be carried on to future action programs.

## 2.0 INTRODUCTION

### **2.0 INTRODUCTION**

#### **A Statement of Purpose**

The 2009-2016 Hingham Open Space and Recreation Plan arose from a need to update the 1996-2001 Open Space and Recreation Plan. Hingham's first Open Space and Recreation Plan was done in 1979 and was updated in 1987 and 1996. This present plan builds primarily and significantly on the open space, natural resources, and recreation knowledge found in the 1996 plan. It has been done to guide future open space and recreation investments and improvements and to keep Hingham eligible for State and Federal aid in such actions.

For the purposes of this plan the Committee adopted the Executive Office of Environmental Affairs' (EOEA) working definition of open space, which reads "public and privately owned undeveloped lands which are important for a variety of reasons, including recreation, agriculture, forestry, biological diversity or simply because of their scenic qualities and their contribution to the overall character of the town." There is a great need to have an updated Open Space and Recreation Plan, due to the rapid development of Hingham and the ever-increasing stress on all environmental resources. Hingham has two Areas of Critical Environmental Concern (ACEC), including the Weir River and the Weymouth Back River. The Massachusetts Water Resources Commission (WRC) recently designated the Weir River as a "highly stressed" basin.

The planning process has been designed to involve public participation and information gathered from various experts in town, and the resulting plan demonstrates a combined effort of dedicated local experts, Town staff members, and public opinion. This Plan is specifically designed to give the reader an overview of the history of the town and its regional context, and to present a more comprehensive understanding of the Towns' natural resources. In addition, the Plan presents future goals to protect, maintain, and enhance valuable open space lands and recreational resources in Hingham.

#### **B Planning Process/Public Participation**

The Hingham Open Space and Recreation Plan was prepared by a subcommittee of the Conservation Commission with the assistance of the staff members from Conservation, Planning, Health, and Recreation bodies as well as interested citizens. The Committee convened intermittently to discuss each step and participated in helping with the writing of the Plan. Members of the Conservation Commission also volunteered to assist in writing sections of the Plan in their areas of expertise. MAPWORKS of Norwell, MA, professional cartographers, was retained by the Conservation Commission to design the Plan's required maps.

In 2006, a questionnaire was designed to help gauge public thoughts on the current status and future of open space and recreation opportunities in Hingham. The Questionnaire, which was on one two-sided sheet, was placed at the library, Town Clerk's office, Conservation Commission

## 2.0 INTRODUCTION

office and on the Town website. Participants could complete the survey online and e-mail the results to the webmaster. Two press releases were published in the Hingham Journal to inform residents of the questionnaire's purpose and why their input was valuable. A copy of the questionnaire can be found in Appendix A. There were 145 returned surveys, for a 0.72 % return rate. Though tiny statistically, this it was comparable to other communities' results. More important, the effort revealed valuable insights and concerns from those interested and informed enough to participate.

The following individuals contributed to the Plan:

Michele Simoneaux, serving as initial (former) Chair and Coordinator of the Plan  
Abigail Childs, Assistant Conservation Officer, subsequent Plan Coordinator  
Suky Berry, Chair, Open Space Acquisition Committee  
Faith Burbank, Weir River Estuary Park Committee  
Scott Bosworth, Chair, Recreation Commission  
Ted Carroll, Former Hingham Recreation Department, ADA Survey  
Samuel Chapin, Former Chair, Conservation Commission  
Linda Morash DeFreitas, Conservation Secretary  
Regina Hickey, Wetlands Clerk  
Doug Harvey, Former Member, Conservation Commission  
Katy Lacy, Director of Community Development  
Scott McIsaac, Conservation Commission, Summary Table in Ch. V  
Carol Britton Meyer, Editing  
Richard Morgan, Former Building Commissioner (ADA assessments)  
Mark Thorell, Recreation Director  
Cindy Prentice, Hingham Land Conservation Trust  
Cliff Prentiss, Conservation Officer  
Katharine Reardon, President of Hingham Land Conservation Trust  
Kenneth Soltys, Former Member, Conservation Commission  
Benjamin Spruill, Former Member, Conservation Commission  
James R. Watson AICP, former Conservation Chair, Co-author of 1979 Plan  
Andrea Young, Historical Commission Administrator  
Town of Hingham Department Heads

2.0  
INTRODUCTION

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**Historic and geologic materials** by John Richardson and Phillip O. Swanson, drawn from the 1979 and 1995 Hingham Open Space and Recreation Plans.

**Cartographic/Mapping Services were provided by**

Herb Heidt and Eliza McClennen of MAPWORKS, Norwell, Massachusetts

*Dedication:*

*This Open Space and Recreation Plan is dedicated  
to Jim Watson.*

*Thank you Jim for all your hard work and  
dedication on this project.*

*With appreciation,*

*The Hingham Conservation Commission & Staff*

**3.0**  
**COMMUNITY SETTING**  
**(SEE Map 1)**

**3.0 COMMUNITY SETTING**

**A Regional Context (Map 1)**

Hingham is a semi-rural town located approximately 15 miles south of Boston and 43 miles east of Worcester (see Appendix A: Map 1). The Town is bound by the towns of Weymouth to the west; Cohasset to the east; Norwell, Scituate and Rockland to the south; and Hull to the northeast. The Town is approximately 22.5 square miles in area with a population of 21,507 according to the 2005 census. Hingham is a largely affluent community with many commuters traveling to Boston for work.

Located in Plymouth County, Hingham is positioned along the I-3/93 transportation corridor, with two convenient highway interchanges, one in Hingham and one in Rockland that connects Hingham to Boston and Cape Cod. The highway network also includes State Routes 53, 228, and 3A, all which traverse the Town. The Town is also served by Massachusetts Bay Transit Authority (MBTA) bus connections, including the #220 bus that runs from Quincy Center to the intersection of Station Street/Water Street in Hingham, and bus #714 that originates at Main Street at Pemberton Point in Hull and ends at Hingham Depot. The Plymouth & Brockton Street Railway Co. provides service to South Station and Logan Airport from the park and drive lot in Rockland.

The MBTA Greenbush Line currently serves Hingham, Braintree, Hull, Scituate, Cohasset, Weymouth and Quincy. There are two depots in Hingham and the line is expected to transport up to 697 passengers per day into the Greater Boston area. With the recent highway and tunnel improvements in Boston, as well as the commuter boat terminal at Hingham Shipyard (Hewitts Cove), there is also increasingly easy access the regions largest international airport, Boston's Logan Airport.

Hingham is located in two different major watersheds. The majority of the Town falls within the Boston Harbor Watershed and the Weir River sub-watershed, which discharges to Hingham and Hull Bays, and the southeast corner of Town falls into the South Coastal Watershed. Parts of northwest Hingham drain to the Weymouth Back River, and coastal areas drain directly into the Bay. Within the Weir River Watershed, there are 5 sub-watersheds within Hingham (Hingham Master Plan, December 2001). A South Coastal Watershed Regional Open Space Plan was created in December 2003 and includes information about Hingham and specific recommendations for natural resource and open space protection. The Weir River Area of Critical Environmental Concern (ACEC) Natural Resources Inventory was completed in August of 2002 and is intended to be a first step toward producing a comprehensive resource management plan for the ACEC.

Since Hingham is divided by two major watersheds, the Town also shares important and valuable natural resources with surrounding towns. Of the surrounding towns only Norwell and

**3.0**  
**COMMUNITY SETTING**  
**(SEE Map 1)**

Rockland have up-to-date Open Space and Recreation Plans. Hull, Scituate, Cohasset and Weymouth have expired Plans. Cohasset, Rockland and Weymouth were included in the South Coastal Watershed Regional Open Space Plan previously mentioned and therefore have open space acquisition and protection goals relevant to watershed protection. Hingham endorses the importance of collaborative relationships for protecting shared natural resources.

**B History of the Community**

Hingham is known for its rich historical and cultural heritage and its prodigious architectural and archeological resources. It is an unusually attractive town possessing amenities for living that attract new residents willing to make the substantial investment necessary to live in the town and to deal with the increasing costs of remaining here. The Town continues to attract both visitors and new residents alike.

The following material is adapted from John Richardson in the 1979 Plan.

How did it become so?

**The Early Period**

First, it had natural advantages that were obvious to its earliest settlers – originally Indian, and later European. Archeological exploration conducted along the Back River and other sites has revealed shell buildup and cultural artifacts. This indicates that aborigines were exploiting the convenient habitation sites and the shellfish bounty as far back as several thousand years ago. Accounts of land acquisitions by the English settlers from the local Indians reaffirm that the area's bountiful natural features, including access to the sea, ample fresh water and fertile land, have attracted humans at least since the retreat of the last continental ice shelf.

It would be difficult to overemphasize the importance of glacial deposition in determining the town's present physical character. Soundings done in connection with ground water surveys have revealed that before the last ice age a valley carved in the solid crust of the earth by the ancient predecessor of the Weir River ran from south to north along the center of what is now Hingham. The ancestral stream very likely reached the bay through what is now the Home Meadows - only to be diverted to the east side of World's end by later glacial action.

When the great continental ice sheet advanced southeastward, carrying its tremendous burden of rock debris, earth was eroded from its broad path. This old ledge-walled valley was then filled in with gravel and sand deposits, creating an underground reservoir or aquifer responsible for Hingham's unusually high quality water supply.

**3.0**  
**COMMUNITY SETTING**  
**(SEE Map 1)**

Precipitation falling upon Hingham flows inward from its borders, because the political boundaries, by fortuitous accident, approximate the borders (or divide) of its drainage system – the Weir River Basin. This natural catch basin provides water not only for Hingham but also for all of Hull and part of Cohasset.

As the leading edge (or face) of the glacier melted back at a slow and uneven pace, there were times when it appeared static because its advance from the north was balanced by melting along its southern extremity. At such times accumulation of rock debris, sand, gravel, and silt were deposited as rough edges along the face of the ice. When the ice finally disappeared, these ridges (or moraines) were left as positive features of the landscape. One of these dammed the old rock valley just south of the Home Meadows so that the Weir River had to make an end run to reach the sea. Another moraine, with several buried ice block ponds (or kettle-holes), was used imaginatively by the early designers of the Hingham water system to hold and filter water flowing north from Accord Pond and the other southern extremities of the town.

Southward of each of Hingham's moraines, more or less level expanses (or plains) were created by glacial melt water spreading sand and silt over temporary lakes that may have had the ice for their northern banks. The early settlers named these – Little Plain, Liberty Plain, Glad Tidings Plain.

These wide-scale deposits of glacial till on the pre-glacial landscape interrupted the established drainage pattern to such an extent that much of rainfall is now trapped in low pockets. The subsequently slower runoff promoted the absorption of water into the underground aquifer. The many acres of low, swampy land thereby act as sponges for the absorption and slow release of water during dry periods. Almost all of our wetlands that overlay peat were once small ponds or lakes formed when isolated and buried masses of ice melted, leaving depressions in the post-glacial landscape.

The great moving overburden of ice left its tracks on the ledges it exposed in many places. On their northern sides they are rounded, sculpted and abraded by the stone “tools” moving with the ice. The crust of the earth which is laid bare in most parts of Hingham is primarily crystalline and hard, clearly exhibiting sharp scratches (or striations) left by the grinding passage of the glacier approximately 8,000 years ago. They show a definite trend toward the southwest, as do the long dimensions of the drumlins, giving further evidence of the glacier's direction and course.

### **The Seventeenth Century**

Over 360 years ago, in 1633, a group of “God-fearing Puritans,” seeking the freedom to worship and govern themselves sailed into Bare Cove, a sheltered bay twelve miles southeast of Boston. Led by the Reverend Peter Hobart of Hingham, England, they passed by a group of wooded islands, and landed near the present foot of Ship Street. Yet they were not the first European

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settlers since the late local historian John P. Richardson reported that they were probably greeted by a group of Lincolns and other early arrivals.

The harbor had natural advantages that were obvious to its earliest settlers, both native Americans and then Europeans. Archeological exploration conducted along the Back River and other locations has revealed shell buildup and cultural artifacts. This evidence indicates that the aboriginal people were taking advantage of the convenient habitation sites and the shellfish bounty several thousand years ago. Historical accounts of land acquisition by the English settlers from the local Natives reaffirm that the area's bountiful natural features, including access to the sea, ample fresh water and fertile land, have attracted human habitation at least since the retreat of the last continental ice sheet.

In 1635, the Great and General Court recognized the settlement of Bare Cove, changed its name to Hingham, and incorporated it as the twelfth town in the Massachusetts Bay Colony. Settlers drew lots for the first land grants, which included a home lot, a planting lot and parcels of fresh and salt meadow located along Town Street (now North Street) and Broad Cove Lane (now Lincoln Street).

The economy of the new Town of Hingham was supported by farmers raising corn, salt and fresh meadow hay, and by the products of "mechanics," such as blacksmiths, wheelwrights, and coopers. Corn mills were in operation, and a report from 1654 makes clear that other occupations soon flourished as well: ... "the people have much profited themselves by transporting Timber, Planke and Mast for shipping to the town of Boston, as also cedar and Pine-board to supply the wants of other towns, and also to remote parts, even as far as Barbadoes."

#### **The Eighteenth and Nineteenth Centuries**

During the eighteenth century Hingham continued to prosper. More gristmills, as well as a flour and grain mill, appeared. Saw mills turned out boards, clapboards, and shingles, a fulling mill dyed and fulled cloth, and four Hingham businessmen set up an iron works. Much of Hingham's early industry was based on waterpower obtained by damming streams to create millponds, as was typical throughout Colonial America. Consequently, the names of many of Hingham's ponds (all man-made except for Accord Pond) tell of their former use - Triphammer, Fulling Mill, Bucket Mill, and Foundry. It is interesting to reflect that these early industrial activities using renewable power sources left no lasting scars on the Town but actually improved the aesthetic qualities of the countryside by making pleasant ponds where there were none before.

Ploughs, hammers, edge-tools, axes, and nails were cast in iron foundries with "Jacob's Hatchets," made by Joseph Jacobs, selling as far away as South America and Australia. From 1818 to 1842 there was a thriving umbrella and parasol factory, as well as the manufacture of upholstery and carriage trimmings. Perhaps the best-known nineteenth century Hingham products were buckets. Manufacturing since 1830, the bucket industry became so prevalent throughout the community that Hingham acquired the name of "Bucket Town."

**3.0**  
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**(SEE Map 1)**

In addition to large and small factories, there were many one or two-man home industries such as silversmiths. Joshua Wilder (1786-1860), known as the “famed clock maker of Hingham”, had his shop adjacent to his home on Main Street. There he made the tall case or long case clocks, now known familiarly as “grandfather” clocks, as well as banjo clocks, dwarf tall case clocks, and miniature tall case clocks. Martin Wilder, Joshua’s brother, was a well-known carriage smith.

Hingham owes its early settlement, its incorporation as a town and its earlier name, Bare Cove, to its seaside location. Following the Revolution, Hingham realized the economic potential of its coastal location as several large fleets fished cod, hake, and mackerel. Shipbuilding became an important new industry. At one time over 75 fishing boats, many of which were built in the shipyards of the Town, were counted in the harbor. Eleven wharves serviced the fishing fleet, coal yards, shipyards, and dockings. Numerous maritime industrial enterprises employed Hingham citizens to produce masts, spars, pumps and blocks, windlasses, and barrels. Salt works, cleverly designed to allow the sun to evaporate impounded seawater, annually produced tens of thousands of bushels of salt. Further new developments included the advent of the Hingham packets, running regularly between Hingham and Boston by 1802, and the steamship “Eagle,” in 1818.

Hingham Harbor continued to be the focus of the Town’s commercial and industrial livelihood in the early nineteenth century, with its Customs House a port of entry for the United States from 1831 to 1876. However, the 1849 opening of the Old Colony Railroad line heralded the demise of Hingham’s maritime industry.

The scenic and protected nature of the harbor plus its location so near metropolitan Boston led to wide recreational use as the urban population expanded during the 19<sup>th</sup> century. The Tivoli-like Melvin Gardens bloomed on the southeast border of Crow Point and luxurious tour boats cruised the harbor. A view of Hingham Harbor today in summertime still reveals great numbers of citizens whose boats fill the mooring facilities. The only reminders of the Harbor’s working past are the granite-ribbed wharves which now are oriented toward recreation.

Since 1792, when the parishioners of the Old Ship Meeting House “Voted: not to take down the Meeting House and build a new one on any principles” and “Voted to repair the Meeting House in its present form”, Hingham has been preservation oriented. The Old Ship Meeting House, constructed in 1681, is the only meetinghouse in the country to operate continuously since it was built. Thanks to the foresight of those parishioners, the first visitor’s stop in Hingham and the best known and the most admired structure in Town remains intact for all to enjoy.

In 1911, the Old Colony Chapter of the Daughters of the American Revolution published *Hingham, A Story of Its Early Development and Life* and wrote “Hingham is justly proud of its ancient dwellings, many of which have been protected from ruin by the pious care of the descendants of those who built them over two centuries ago.” It was in part because of these

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venerable survivors and the need to reaffirm faith in American civic virtues that Eleanor Roosevelt came to Hingham at the height of World War II, in 1942, to write *This Is America*. Hingham, an old established town, which successfully absorbed new “settlers” from many ethnic backgrounds, symbolized the archetypal New England community.

These ongoing sentiments of pride and concern were the basis for the founding of the Hingham Historical Society in 1914 and the establishment of the Hingham Historical Commission in 1974, the duty of which is to coordinate efforts to preserve, protect and develop the historical, architectural and archaeological assets of the Town. The Hingham Historic Districts Commission oversees the Town’s six Local Historic Districts containing over 600 listings. A Lincoln National Register District encompassing much of the area of original settlement was established with the aid of a matching grant from the Massachusetts Historical Commission. In 1992, the South Hingham National Register Historic District was established, which includes the Tower-Wilder and the Glad Tidings Local Historic Districts.

**Twentieth Century Hingham**

During the 20<sup>th</sup> century, Hingham transitioned from a farm based agricultural community to a suburban environment with a limited industrial base. In the early 1900’s there was much open land used for agricultural purposes and dairy herds. In the post World War II years, single family subdivisions were constructed on these former agricultural lands as better roads and public transportation made commuting to Boston and other cities and towns more accessible. The population of Hingham grew during the 20<sup>th</sup> century from 5,059 in 1900 to 21,479 in 1999.

The last active dairy farm, Honstra’s Farm, was converted to The Meadows, condominium housing with buffering open space along the surrounding roads. However the developed part of the farm (with a new barn) remains as the distribution center for the continuing retail dairy operation, distributing milk produced in New Hampshire as described in Chapter V. The Farm has been growing feed on nearby leased conservation land thus keeping that land in production. In addition the owners are returning cows to the Loring Farm in adjacent Norwell (preserved under the Agricultural Preservation Program-APR) where they plan a model dairy operation.

The Bethlehem Steel Shipyard, known as “Beth Hingham”, built destroyer escorts and Landing Ship Tank’s during World War II. At its peak, the shipyard employed over 24,000 workers. Currently, the former Hingham Shipyard is being transformed into a mixed-use residential/commercial development with public access to the waterfront area. This complex will include rental units, condominiums, retail and office space. Taking advantage of its coastal location, the Hingham – Boston commuter boat service, began in 1978, is located at Hewitt’s Cove which is part of the new shipyard complex.

The construction of Route 3 in 1964 in south Hingham opened that area to development of several large retail and industrial uses. This land includes the area adjacent to and south of Route 3 which is now home to the Industrial Park District and the Office Park District. Housing

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developments in the South end of town flourished as a result of the new highway. A new open air village concept shopping destination, The Derby Street Shoppes, recently opened in this section of town replacing an older shopping center. There are a number of small office developments as well as other retail space along the Derby Street corridor. Wetlands limit building on a good portion of land in the area.

The increased regional access encouraged traditional subdivision most notably Liberty Pole off of Main St. and the Polk Road/Scotland Street areas east of Main Street. Some, upscale subdivision activity has been on large lots in the north end of town with Conservatory Park built on old munitions depot land next to Bare Cove Park and the Canterbury Estates built between Rockland Street and Hull Street on the site of the former Tower Day Camp. The latter was done through a form of inclusionary zoning that allowed much of the flexibility in lot size and arrangement of a cluster development as long as some low-cost housing was built on the site or off-site, or if funds were contributed to such development elsewhere. Though this was a form of cluster development, the project did not abut any public land or add much usable open space to the neighborhood.

Other provisions have allowed multi-family market rate condominium projects such as Hingham Woods and Beal's Cove along Beal Street, near Route 3A and the Shipyard's commuter boat dock. Other provisions allowing the most recent nearby development, Back River, require some affordable units.

Most of the town's larger subdivisions such as Liberty Pole are off of major streets such as Main Street and are well treed, and affect the townscape less than might be expected.

Recent/current development combines a few major, very visible projects like the mixed-use Shipyard redevelopment, the Linden Ponds retirement housing, and the retail Derby Street Shoppes, along with moderate-sized subdivisions, and Form A ("Subdivision Approval not Required") in-fill development along existing roads. This range of development suggest a need to acquire and protect large environmentally significant pieces of backland regardless of their visibility; to provide some open space/recreation land near new development or existing neighborhoods generally; and to protect key scenic spots along major roads (like that across from Tomasi's Nursery). The last is important in order to maintain the scenic view from the roads and to provide relief from prospective further development on frontage lots.

These are appropriate policies for a town that has always been active in maintaining open space. In 1922, land was purchased to begin the town forest. This forest currently has 197.6 acres of conifer groves, winding eskers and fern-carpeted swales not found elsewhere in Hingham and has roads and trails that are used for walking. Triphammer Pond conservation area was acquired by the town in 1945 and expanded in the 1980s by the Metropolitan District Commission. The South Shore Country Club was purchased by the town in 1988 to insure that it not become a large housing development and to maintain its recreation and scenic value. This prime piece of

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property continues to offer an 18-hole golf course, a swimming pool, indoor function facilities, and winter time opportunities for sledding and cross-country skiing.

Hingham continues to accrue land for conservation purposes. The latest parcels (largely purchased with Community Preservation Act funds) include 3.3 acres on the Weir River bought in 2008, land around the Historic Cushing House on East Street (and historic preservation restrictions on the house and barn) bought in 2009, and a former Mobil Service station on Hingham Harbor also purchased in 2009. This building has since been demolished, opening additional access to the harbor. All acquisitions are discussed in Chapter V.

Eleanor Roosevelt, in her book, *This is America*, published in 1942, said of Hingham's Main Street, "this is the most beautiful Main Street in America." She was referring to the historic homes and canopy of elm trees that graced the street at the time. Unfortunately, the elms are no longer there due to the devastation of Dutch Elm disease. Hingham however continues to plant and maintain trees in town. For the last twenty-two years the Massachusetts Department of Conservation and Recreation (DCR) has designated Hingham a Tree City USA Award winner.

In October 2007, after many years of controversy, the first train of the Greenbush Commuter Rail ran from Scituate to Boston making stops at the two Hingham stations, Nantasket Junction and West Hingham. This commuter train follows the same rail bed as the Old Colony Railroad Line which discontinued service to Hingham in 1959. The restoration of the Greenbush line gives Hingham residents another option for commuting into Boston.

On the occasion of the Town's three hundredth anniversary in 1935, Hingham historian Mason Foley observed, "Though much has been taken, an air of permanence endures. The feel, the smell and the look of many things remain. There comes a sea turn in the wind on a summer's day... Protected by ancient elm and bordered by sloping lawn, rest a thousand quiet homes, the solid beauty of many of them dating from colonial times." Despite many changes, his observation holds true three quarters of a century later.

In the current year, 2011, the town of Hingham is vastly different from the rural/agricultural town of its past. Large, new residential developments (Linden Ponds and the Shipyard), two new golf courses, 55 plus condominium developments and a fourth new elementary school are but a few of the changes that have come to this community. When Hingham celebrated its 375<sup>th</sup> anniversary, from September 2009 to September 2010, it honored its historic past and will look forward to its exciting future.

*Adapted from the article "Historic Hingham and its Architectural Heritage" by Monique B. Lehner and Minnie J. Fannin*

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**C Population Characteristics (see Appendix C)**

Recent demographic trends in Hingham will have a clear impact on the Town's need for open space and recreation resources. As of February 2009, Hingham had an estimated population of 21,859. This number is a near 2000 person increase (9.9% in less than ten years) from the 2000 population of 19,882 which in contrast was a very slight increase from the 1990 population of 19,821.

Despite the miniscule increase in population (.03%) from 1990 to 2000, the number of households grew by 6.6%, from 6,915 to 7,368. This reflected a continuing decrease in persons/unit from 3.1 in 1980 to 2.7 in 2000 and probably even fewer people per unit today. In essence, between larger lots and smaller households any given number of residents consume far more land as noted below.

This trend has been made visibly manifest by the steady increase in the amount of land being developed, and the number of new, larger homes being built. According to the 2000 census, 21% of the households in Hingham consisted of a single person, and 32% had two people. The proportion of non-family households in Hingham rose from 15% in 1980 to 19% in 2000. This increase reflects the aging population, delayed marriages and other changes in the structure of household types.

**Ethnicity**

The town is overwhelmingly white and non-Hispanic, but 1990-2000 comparisons are thrown off by people now using the new "two or more race" category. Thus, the 2000 census had a self-described White population of 19,386, (down from 1990's 19,517), a black population of 79 (down from 91), a Hispanic population of 149 (down from 165) and a Native Indian/Alaskan population of 7 down from 28. These numbers contrasted with an increase in "some other racer" from 25 to 44, in Asians from 159 to 175, and the addition of 188 persons in the new "two or more races" category (up from 0.) There is also a long-established (post Civil War) very active Black population whose growth is probably in the "Two or More Races" responses.

**Densities**

The town's overall density (all population divided by all land) has risen from 1,406 persons/acre in 1990, to 1,411 persons/acre in 2000 and on to 1.55 persons/acre nine years later. This figure becomes higher, 1.74 persons/acre, when the 1540 acres of Wompatuck State Park are removed. Beyond this, it is important to realize that while town-wide densities are rising, (though still very low), the densities experienced in typical new neighborhoods are falling. This is because single-family detached houses are being built on much larger lots (30,000 sq ft. to 40,000 sq ft.+) than they were in the town's older neighborhoods. As discussed later, this does not remove the need for neighborhood open spaces and play areas to add variety to the setting, suburban experiences, and age structure.

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**Age Structure**

A review of the age structure in Hingham indicates a notable drop in the number of residents aged 15-30 years (possibly reflecting rising housing prices discouraging young households), and significant growth in the youngest and oldest residents. The fairly dramatic, and not fully anticipated, increase in the early school age population has been documented by the Hingham School Department, as they scramble to hire additional teachers and locate additional classroom space. Similarly, as is the trend throughout the region, the number of older residents, including “baby boomers” from 48-64 and “pre-boomers” (over 65), continues to increase. Indeed, the overall median age has risen steadily since 1980, from 32.8 years to 37.6 years in 1990, and on to 40.4 years in 2000. This suggests seeking open space and recreation opportunities appealing to a slightly older population.

**Employment, Industries and Incomes**

Hingham is becoming increasingly professional and upper income. The largest occupational group is Management, Professional and Related Occupations with 5,521 workers, or more than 74% of the total 2000 working population of 9,634; and this group grew by 19.9% from 1990 to 2000 while all other occupational groups declined.

Similarly, the town’s largest industries (as opposed to skill groups) in 2000 were Finance, Insurance and Real Estate with 1,490 persons; Professional, Scientific, Management, Administrative and Waste Management Services, 1,701; and Education, Health and Social services, 2,212.

The related income figures indicate an increasing stratum of very well off residents from even 10 years ago. The 2000 Census reports a 2000 median household income (based on 1999 incomes) of \$83,018, and a median family income of \$98,598 compared to \$60,274 and \$66,386, respectively, in 1990. The year 2000 median household income of \$83,018 was significantly higher than the overall Greater Boston Area figure of \$62,700 (as defined by the U.S. Department of Housing and Community Development). Still, a full 28% of Hingham’s residents earned less than 80% of the area’s median income in 2000 and could be eligible for assisted housing if enough were available. The 28% includes 814 households earning between 50%-80% of median income (classified as “low income”), and 1,100 households earning less than 50% of median income (classified as “very low income”).

**Neighborhood Patterns**

These income groups and ethnic groups are scattered throughout the town with pockets of high and low income in different parts of Hingham. A great range of incomes is often found within a block or two as is a range of age groups. These reflect scenic views, historic neighborhoods, other amenities, and varied housing stock. Thus, there are small areas that have been seen as particularly low-income or high-income or with a characteristic ethnic concentration, but they

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are quite small and close enough to different neighborhoods that mapped census tract data do little to suggest patterns of need or probable interests.

**Implications – Spatial Patterns of Need**

Density patterns in isolation may suggest areas where playgrounds or tot-lots might be most needed, but this must be compared with the present supply, and, as noted earlier, even low-density, high-income neighborhoods can benefit from the change of scene and the social contact with peers offered by local tot lots. Patterns of resources and needs are discussed later in Chapter VII, Needs.

**D Growth and Development Patterns (See Appendix A: Map 2)**

The results of Hingham's infrastructure investment, zoning and other influences are shown in its continuing development patterns. Development patterns in Hingham have closely reflected historical land use patterns. Whereas the evolution of the northern portions of Town was influenced more by its proximity to Hingham Harbor and associated fishing, shellfishing, and maritime uses, South Hingham's development was shaped by its predominantly land-based agricultural use. As a result, North Hingham evolved with a denser, village-like development pattern clustered around the Harbor, while South Hingham featured larger properties with significant amounts of relatively inaccessible back land used for fields, cropland, orchards and grazing, and more recently for highway-oriented residential, commercial and industrial development.

Over time this development pattern, with some exceptions, has been enforced by a combination of environmental characteristics, the provision of utilities, and public land use policy including zoning, subdivision controls, wetland protections, and open space acquisition as described below and later in this plan. In particular, the creation of the North Sewer District in the areas north and west of Hingham's downtown allowed for smaller lots and denser development in the northern portions of Town including West Hingham, the Crow Point and Wompatuck Road area, Hingham Square, and the "Cove" near Hingham Harbor. Similarly, the recent creation of a new sewer district in the northeastern corner of the Town has resulted in an increase in the pace of new development and increased densities in that area.

The more intense development of North Hingham continues today, due in large part to the availability of public sewerage. The Hingham Shipyard, located on the Harbor along Hingham's border with Weymouth, was developed in the early 1940s as a large shipbuilding operation to support the war effort. No longer active, as a Shipyard, this area has recently received permits for the creation of a massive development including retail, commercial and office space, along with hundreds of housing units. The Christina Estates Subdivision on Baker Hill, including 45

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luxury homes on approximately 70 acres, marked the development of one of the few larger parcels of open space remaining in this portion of Town.

In contrast, in South Hingham, where there is no sewer, new development (until recently) remained largely suburban in scale, with relatively large lot sizes required to meet state and local wastewater disposal requirements. A long stretch of large, older homes, many with large landholdings to the rear historically used for agriculture, extends the entire length of the Town along Main Street (Route 228). To the west, and, to a lesser extent, to the east of historic Main Street, there are various subdivisions and roadside lots developed over the past 50 years.

Hingham's primary industrial area is located in one large Industrial Park in South Hingham. Though the entire southern tip of Hingham is zoned for industrial use (with a small pocket of residential development), further development of this area has been held back by a lack of infrastructure and utilities. Current proposals for a new interchange off Route 3 passing through this area to serve the development of the former Weymouth Naval Air Station would undoubtedly have a huge impact on this currently underdeveloped area.

A significant factor in Hingham's 20<sup>th</sup> century development has been the historical ownership of large portions of the Town by the federal government for use by the military. The creation of Wompatuck State Park (2,877 acres) and Bare Cove Park (468 acres) from former federal land effectively locked up over 18% of Hingham's land area as dedicated open space. Other portions of the military land adjacent to Bare Cove Park (known as "The School Depot Tracts") have also recently been acquired by the Town and are being considered for recreational/open space use. Combined with the land controlled by The Trustees of Reservations, the Aquarion Water Company, and the Town of Hingham, over 30% of Hingham's land area is permanently protected; unless there is a very unlikely major change in water sources.

### **1. Infrastructure**

Hingham's infrastructure consists of its water supply and wastewater systems, other public utilities, the local circulation system and other transportation facilities.

#### **Water Supply**

The town's privately owned water supply consists of several wells near Fulling Mill Pond; and others just south of Free Street, and Well #4 in the northern end of town near the Weir River. These wells draw on the Weir River Watershed, which the Massachusetts Department of Environmental Protection considers to be stressed, by high withdrawals in comparison to its natural recharge. Such stress reflects loss of water recharge by extensive paved areas draining directly to storm drains or streams, and by sewers which transport local water to the ocean via the Massachusetts Water Resources Authority and Hull wastewater treatment plants.

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The system serves all of Hingham (except for the Linden Ponds Elderly development which draws on Cohasset water wheeled through Hingham, and for very few scattered private wells), as well as Hull and a small portion of Cohasset.

The system was originally the locally founded and owned Hingham Water Company; but, after a series of acquisitions by increasingly large entities, it is now part of the Aquarion Water Company serving communities across the nation. Local public acquisition has been suggested but not acted on.

The Fulling Mill wells draw on groundwater recharged by the nearby Accord Brook/ Weir River originating in Accord Pond at the junction of Hingham, Norwell, and Rockland. Since the system draws partially on a surface water supply through recharge by Accord Brook, the state's Surface Water Treatment rules have been applied to the entire system and all water is subject to a high degree of filtration at a major treatment plant just east of Main Street in South Hingham. The plant achieves a very high water quality but may be unable to deal with some soluble threats such as nitrates.

The system has a Safe Yield of 5.76 Million Gallons Day (MGD), an average daily demand of 3.72 MGD, and seasonal peak day demands of up to 5.96 MGD. The system has storage of 3,750,000 gallons or about one day's normal consumption of 60% of a day's peak consumption. Gates with adjacent communities allow limited assistance during emergencies.

The Aquarion Water Company continues to explore for new sources, particularly near well #4, and to support water conservation measures. Despite the stressed nature of the source basin, the Hingham water system is expected to meet for-seeable local needs directly or indirectly and should not be a major constraint on future development.

The town's water resources are shown on the Water Resources Map-Figure 5. The Accord Pond Watershed and Hingham Aquifer Protection Zoning District protecting present and prospective supplies are shown on the Zoning Map-Figure Map 2.

#### **Wastewater /Sewerage**

Present sewer patterns reflect the town's soil patterns and development pressures, and they affect future development and water resources.

As the discussion of soils in the next chapter indicates, the eastern and southeastern portions of the town, the Bradley Park/Otis Hill drumlins, and the greater Crow Point area north of Rte. 3A and scattered areas to the south are in tight glacial till soils. (See the Surficial Geology Soils map – Figure 3.) These areas are very build-able, being quite firm, and often have good coastal

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views. However they are very limited for septic systems due to slow percolation rates. This has lead to a series of sewer projects in the North Sewer District described below.

In contrast, a broad swath down the center of Hingham consists of sand and gravel deposits. Being coarse, these are often very productive sources of groundwater (See the Water Resources Map, Figure 5) and they accept septic leachate readily (sometimes too readily for groundwater quality.)

Failing septic systems and concerns with water quality (and presumably with development potential) led to sewer programs in the North Sewer District and the much smaller Weir River Sewer District.

The town has about 2200 sewered households. Most of these are in the North Sewer District. This covers the relatively densely developed northwest corner of the town about as far south as Weston Road. It includes the highest density single-family (20,000 sq. ft., lots) and multi-family zoning and the Hingham Square commercial area. Much of the older housing is on smaller lots ranging from 8,000 sq. ft. to 12,000 sq ft. The district generates about 4 MGD of sewage which flows through pumping stations, force mains and gravity lines and a major MWRA interceptor for treatment at the new Deer Island treatment plant and discharge beyond Boston Harbor via a long outfall pipe.

The District has been expanded in the past and new development has been added in accord with agreements with the MWRA. Further expansion of the District or addition of new users is possible within flow limits or requirements for reduced infiltration and inflow ("I I") set by the MWRA.

The newer, much smaller Weir River Sewer District serves the area roughly between George Washington Blvd., Rte 3A, and Hull St. The sewerage goes to the new Hull treatment plant for ultimate ocean discharge. The operation is governed by an inter-municipal agreement between Hingham, Hull and Cohasset. The total allowed flows and connections are limited by this agreement and the previously purchased treatment capacity. Present flows are estimated at 80,000 gallons/day. Very little expansion is possible.

The land use/development effects of the present sewers are to allow new moderate-density development subject to service agreements, (e.g. assistance in removal of infiltration and inflow) and to allow infill development on previously unusable lots, along with intensification of uses. The last takes the form of teardowns where moderate-size and moderate-cost housing previously on septic systems is replaced by much bigger houses when the street has sewers. The potential loss of such housing and of open space in sewered areas (observed in Crow Point following sewerage in the 1970s) suggests giving a higher priority to potential acquisition or protective measures in those areas.

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A fourth impact of the two systems is the loss of groundwater recharge and stream flows in the reportedly stressed Weir River basin due to the ocean discharge of treated waste water, and increased stormwater runoff from development.

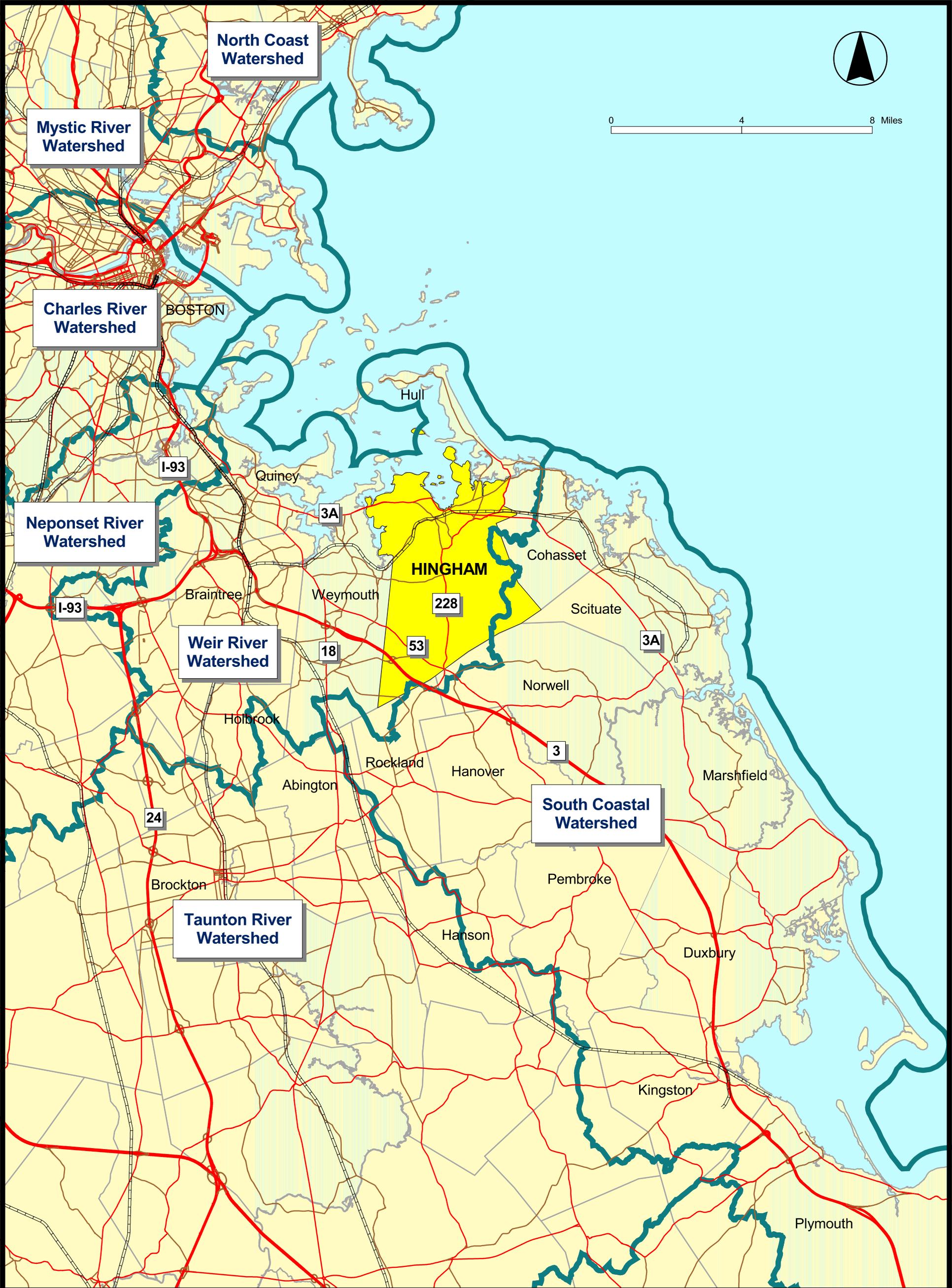
These effects can be partially mitigated by use of low impact development (LID) techniques such as recharging a maximum of stormwater as is done on a small scale by the new rain garden at the Hingham Public Library.

**Hingham Sewer Districts**

There are two distinct sewer districts in Hingham. They include the North Sewer District and the Weir River Sewer District. The North Sewer District is defined by geographical boundaries. The Weir River Sewer District is defined by and restricted to the available capacity of the Hull Treatment Plant.

**North Sewer District Geographic Boundary Description**

Admission of the Town of Hingham to the South Metropolitan Sewerage District occurred under the Acts 1945 - Chapter 591. The area of Hingham covered under the North Sewer district includes areas westerly of Hingham Harbor and northerly of a line drawn as follows: Commencing at the junction of Weymouth Back River, the United States Naval Reservation and Lincoln Street; thence running easterly, southeasterly, southerly, and easterly along the northerly and northeasterly and easterly boundary of said United states naval reservation (which in large part is coincident with or near to the southerly line of Beal street and part of West street and in other part divides the reservation from private property) to Fort Hill street at the northeasterly corner of the reservation near the entrance thereto on Fort Hill Street; thence on a straight line crossing Fort Hill street and running southeasterly to the westerly end of the southerly line of Lewis court; thence easterly on the southerly line of Lewis court to Hersey street; thence crossing Hersey street and running northerly on the easterly line of Hersey street to Elm street; thence running on the easterly line of elm street to its junction with Emerald street; thence running easterly on the southerly line of emerald street to its junction with Central Street: thence running southerly on the westerly line of Central street to Weston road; thence crossing Central street and running northeasterly and easterly on the southeasterly line of Weston road and on the southerly line of Bradford road to the end of Bradford road; thence northeasterly on a straight line through private property to the intersection of Main and Water streets; thence running northerly on the easterly line of Water street to Green street; thence running easterly on the southerly line of Green street and Eldridge court, to the end of Eldridge court; thence on a straight line northeasterly to the intersection of the southwesterly line of Chief Justice Cushing way with the northerly line of property of the Old Colony Railroad Company; thence running northwesterly on the southwesterly line of Chief Justice Cushing way through the traffic circle at Summer street and continuing on the same line to Hingham harbor; provided, that all properties on this boundary line other than the United States Naval reservation shall to a depth of two hundred feet be included in the Hingham north sewer district.



**North Coast  
Watershed**

**Mystic River  
Watershed**

**Charles River  
Watershed**

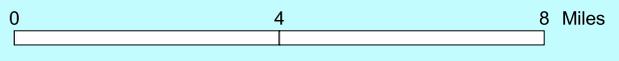
**Neponset River  
Watershed**

**Weir River  
Watershed**

**Taunton River  
Watershed**

**South Coastal  
Watershed**

**HINGHAM**



- State/Interstate Highway
- State Route
- Other Main Road
- Commuter Rail
- Watershed Boundary

18 March 2009  
Prepared for the Hingham Conservation Commission  
Map Compilation and Design: MapWorks  
MAPSatWORK@aol.com  
Source: MassGIS

**3.0**  
**COMMUNITY SETTING**  
**(SEE Map 1)**

**Weir River Sewer District**

The Weir River Sewer District is a separate line and is governed by an inter-municipal agreement between Hull, Hingham, and Cohasset. The South Sewer District services the following areas; Bonnie Brier Cir., Canterbury St., Chestnut Place, Chestnut Rd., Cliff Rd, George Washington Blvd., Hull St., Justice Cushing Hwy., Kilby St., Meadow Rd., Oak Rd., Pine St., Ringbolt Rd., Roc Fall Rd, Rockland St., and Weir St. Ext. This sewer line connects to the Hull Wastewater Treatment Plant and is limited by previously purchased capacity.

**Public Utilities**  
**Electricity**

The community is served by relatively inexpensive electricity provided by the Hingham Municipal Light Plant that, in turn, buys low-cost power, primarily from an association of municipal electric systems which has its own generating facilities.

The town is now exploring development of one or more wind turbines with a test tower at the landfill measuring wind patterns and strength. The multi-community, multi-agency owned top of Turkey Hill (see Whitney Woods in Chapter V), occupied by several radio and cell phone towers, has also been suggested as a generating site, perhaps by co-locating the present radio and cell phone facilities on any new turbine mast.

In any case, electric power is available town-wide and the relatively low cost could be an additional incentive to develop in Hingham.

**Natural Gas**

Natural Gas is supplied essentially town-wide by National Grid, a successor to the Boston Gas Company. The company extends service to houses when needed (e.g. by gas furnace installations) making this more efficient form of cooking and water heating available to most existing and new neighborhoods.

**Transportation**

The town is well served by highways and by public transportation. The local arterial, Rte 3A (Chief Justice Cushing Highway) runs roughly northwest – southeast connecting Hingham with Cohasset, Scituate and other communities as far south as Plymouth, and with Weymouth and Quincy to the Northwest. A second local arterial, Route 53 (Whiting Street), runs northwest-southeast through the southeastern tip of the town and connects Hingham with Norwell and other communities to the south, and with Weymouth and Braintree the north. The other major local arterial, Rte. 228, runs along Main Street and East Street. It connects Hingham with the limited access Rte. 3 to the south (and ultimately with Rte. 128 and the Mass Turnpike) and with the

**3.0**  
**COMMUNITY SETTING**  
**(SEE Map 1)**

towns of Cohasset and Hull to the north. Much of Rte. 228 is the original Rte. 128, and the Main Street portion is that memorialized by Eleanor Roosevelt as the most beautiful Main Street in America.

Main Street is Hingham's iconic street and much effort has gone into preserving its streetscape through establishment of local historic districts as shown on the map of Scenic Resources and Unique Features (Figure 4) and through selective open space acquisition.

One fortunate feature of the street system is that Route 3A comes close to the historic commercial and civic center, Hingham Square, but bypasses it. As a result, the Square is very accessible but is spared the most destructive through traffic.

High volume and higher speed regional connections are offered by the limited access Rte. 3 (the Southeast Expressway) running northwest-southeast through the town. It is served by interchanges at Queen Anne's Corner on the Norwell/Rockland Line and at Derby Street. Rte 3 connects the town with communities as far south as Cape Cod, and, via Rte 93, with Rte. 128 to the north, to Boston and beyond.

The town's varied transit service consists of:

- The MBTA's 220 bus running through the northern part of the town from Hingham Center and Hingham Square with some trips through the commuter boat terminal at the Hingham Shipyard and on through North Weymouth to Red Line heavy rail rapid transit in the Quincy Center station (formerly known as Quincy Square.)
- The MBTA's 222 bus running from Quincy Center to the Hingham/East Weymouth line turning around at High and Ward streets in Hingham and serving nearby Hingham neighborhoods as well as Weymouth.
- The MBTA's 714 bus operated by a contracted carrier, JBL Lines, and running the length of Hull to the 220 bus's Hingham Depot next to Hingham Square.
- Commuter boat service from the Hingham Shipyard to Rowe's Wharf near the Boston financial district, allowing riders to connect with the Blue Line, Red Line, and Silver Line (airport) subway and rapid bus connections. The Orange Line and Green Line can be reached at Downtown Crossing and Park Street respectively via the Red Line.
- Recently restored Greenbush Old Colony Commuter rail service from Greenbush in Scituate through Cohasset, Hingham, Weymouth, Braintree and Quincy to South Station. The train has two parking lot-oriented stations at Nantasket Junction and West Hingham. These stations bracket downtown and the train runs through a cut and cover tunnel under Hingham Square, but there is no station at the Square itself.

**3.0**  
**COMMUNITY SETTING**  
**(SEE Map 1)**

In all, the wealth of highway and transit modes make Hingham particularly attractive to commuters and others who prefer or need auto-free access to the region. This increases local development pressures, and with them, the importance of selective open space acquisition and protection.

**2. Zoning and Other Land Use Regulations**

Zoning and Subdivision Control are also major influences on development pressures and related need for open space protection.

As shown by the Zoning Map – 2, Hingham’s zoning only partly follows the traditional model of highest density in the highly accessible center and lower densities in successive outlying rings allowing lower density development there.

The highest single - family densities (20,000 square foot lots or 2+ units per acre in the Residential A District) are allowed in the older and more central parts of the town bracketing the highly accessible Square and running from Crow Point with its coastal amenities south to the intersection of Rte. 228 and High and Free Streets. While new lots are required to have 20,000 square feet, many of the older lots have 8,000 to 12,000 square feet or less.

The next highest density (Residential B with 30,000 square foot lots or about 1.5 units/acres) is allowed to the south and west of the Res. A District, going south of Fort Hill and New Bridge Streets between Main St. and French/Ward Streets to the neighborhood west of Accord Pond.

Then a portion of the lowest density single-family district (Residential C requiring 40,000 sq. foot lots for barely more than one unit/acre) is further outlying, being south of Free St. and west of French St. and Ward St., including neighborhoods south of Rte. 53 to the Weymouth line. This reflects the area’s tight underlying till soils as well as its outlying location.

The exception to this semi-concentric pattern is the mapping of the northeastern corner of the town, just east of the Square and the Center, in the low density R.C District rather than in the moderate density R B District. This reflects the area’s underlying till soils but ignores its proximity to the Square, its coastal amenities and its high accessibility by Rtes 3A and 228, Rockland Street and the Nantasket Junction commuter rail station. The Residential C District continues south between Wompatuck State Park and the Residential B District to South Pleasant Street. While 30,000 square feet of land is required per new unit, much of the area’s older housing, e.g. on Bonnie Brier Circle, Rockland St. or Croyden Road is on lots of 8,000 to 12,000 square-feet.

**3.0**  
**COMMUNITY SETTING**  
**(SEE Map 1)**

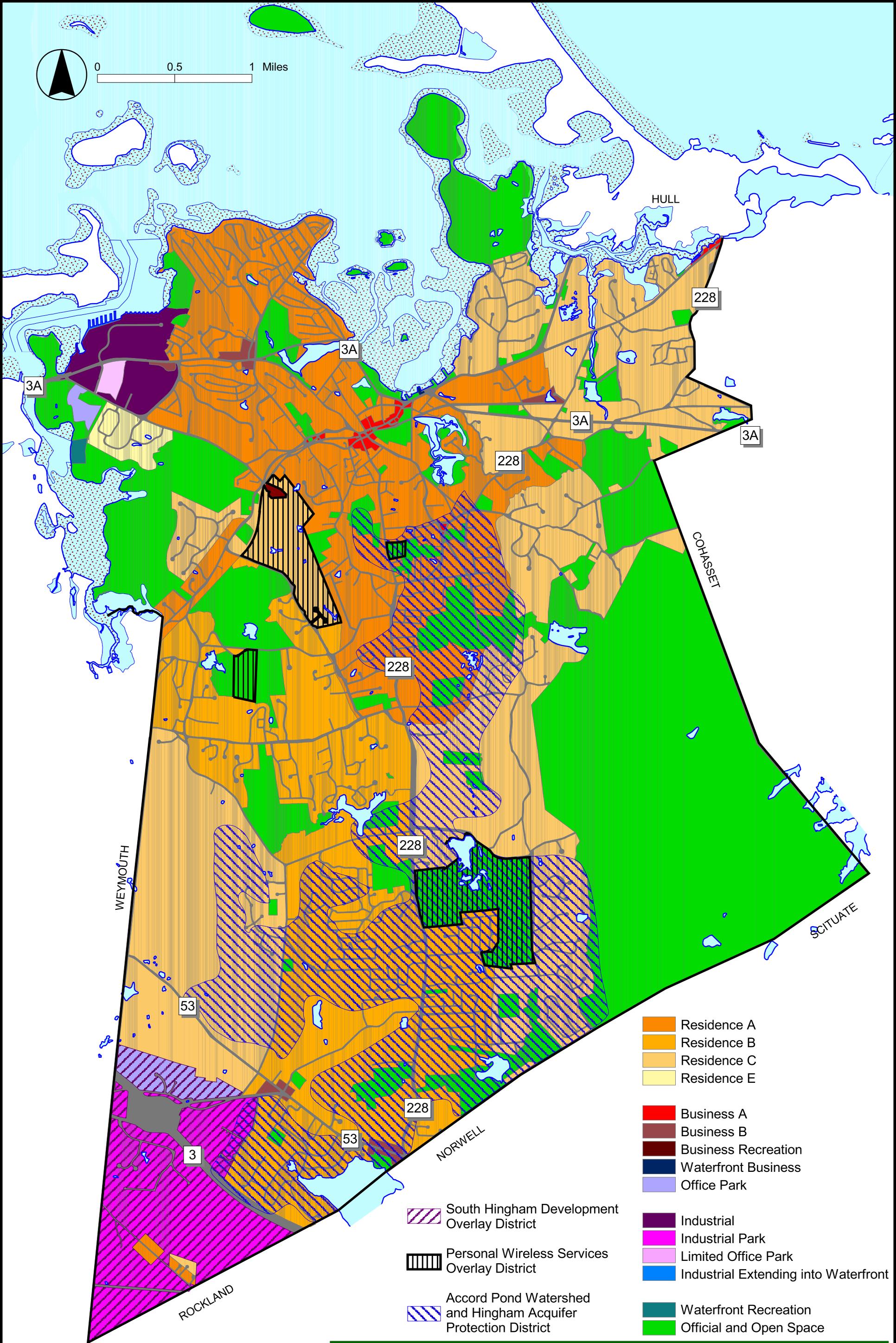
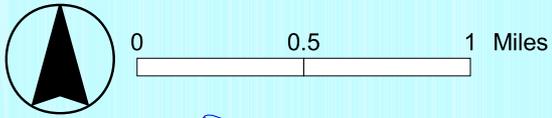
In addition to these single-family residential districts Hingham the town has:

- A Residential E District allowing moderate density multifamily housing and mapped along Beal St. backing on to the Bare Cove Park.
- Business A and B Districts mapped in the Square, the Center, and West Hingham, and along small portions of major roads.
- An extensive Industrial Park District mapped south of Derby Street and Rte. 3 in South Hingham.
- An extensive Industrial District mapped over former Hingham Shipyard land on both sides of the westernmost section of Rte 3A. Much of this is being developed for mixed residential /commercial uses by a special permit project under the “Mixed Uses in the Industrial District” special permit overlay district.
- Office park and Limited Office Park Districts off Rte. 3A and north of Derby St.
- Scattered special purpose Waterfront Business, Waterfront Recreation, “Industrial Extending into the Waterfront,” and Business Recreation Districts.
- The South Hingham Development Overlay District allowing the collection of impact fees in certain cases.
- A Personal Wireless Services Overlay District mapped over public land at the South Shore Country Club and the capped landfill/transfer station.
- The Accord Pond Watershed and Hingham Aquifer Protection District.

The town also has “Flexible Plan” special permit provisions combining inclusionary zoning for affordable housing with the open space saving benefits of very flexible cluster development provisions.

Apart from zoning provisions under Chapter 40A, the Zoning Act, Hingham has five local historic districts within which exterior changes to historic properties are regulated by the local Historic Districts Commission. See the Scenic Resources and Unique Features Map 4.

The long-term development patterns described below reflect all of these factors and policies, but soil conditions and the presence or absence of sewer greatly influence what is possible. In particular, the creation of the North Sewer District has supported much new development in and near some of the oldest neighborhoods.



- Residence A
- Residence B
- Residence C
- Residence E
- Business A
- Business B
- Business Recreation
- Waterfront Business
- Office Park
- Industrial
- Industrial Park
- Limited Office Park
- Industrial Extending into Waterfront
- Waterfront Recreation
- Official and Open Space

- South Hingham Development Overlay District
- Personal Wireless Services Overlay District
- Accord Pond Watershed and Hingham Acquirer Protection District

**ZONING - MAP 2**  
Town of Hingham - 2009 Open Space and Recreation Plan

18 March 2009  
Prepared for the Hingham Conservation Commission  
Map Compilation and Design: MapWorks  
MAPSatWORK@aol.com  
Source: Town of Hingham

**3.0**  
**COMMUNITY SETTING**  
**(SEE Map 1)**

**3. Recent Development Patterns**

In contrast to the relatively stable land use patterns for most of the 20<sup>th</sup> century, the past decade has witnessed the development of significant tracts of land in South Hingham, totaling nearly 850 acres of previously undeveloped or underdeveloped land. Because most of this development was permitted through special permitting procedures (including comprehensive permits) and not by as-of-right zoning, it has quickly rendered obsolete the Build-Out Maps generated by the Executive Office of Environmental Affairs in 2000. Specific projects include the 440-acre Black Rock Golf Club, which includes 138 housing units; the 330-acre Boston Golf Club, located on the former Dematteo property; Linden Ponds, a 1,175-unit retirement community located on 122 acres off Whiting Street; and the new Commerce Road office subdivision which opened up 100 acres south of Route 3.

Taken together, the new development in South Hingham represents a 20% reduction in the town's undeveloped and under developed land. (Fortunately, several of these developments, including Black Rock Golf Club and portions of Linden Pond retirement community, were developed on previously disturbed quarrying land.) While the two large golf courses (Black Rock and Boston Golf, described under Recreation in Chapter V), are a relatively benign land use, they do not add to the stock of publicly accessible open space in this portion of Town. Instead they may be seen as a form of private land banking. That is, if golf courses become significantly over-built the land could be available for other, residential, purposes under present zoning unless subject to conservation restrictions.

In summary, while growth remained fairly static for years in Hingham, the years from 1998 to 2008 (prior to the current recession) were marked by a sharp increase in building permits and large developments approved. Two areas in particular, the Hingham Shipyard and much of the open land in South Hingham, are now being developed after years of speculation. Still, due to the scarcity of remaining developable land and other environmental constraints, this recent level of growth is unlikely to continue. Instead, what is likely is the continuing creation of smaller, by-right developments resulting from the compilation of "back lands" and their subdivision into new house lots. Similarly, as land values (and assessments) rise, property owners will continue to attempt to divide larger lots through the Approval Not Required process.

The result of this will be the continued reduction in the amount of informal or "underdeveloped" open space, which now serves as animal habitat, informal play areas, neighborhood wild lands, small scale farms or gardens, or welcome breaks in the streetscape of suburban houses and lawns. Combined with the projected population growth from in-migration and development generally, these trends will increase the need for accessible and permanently protected open space.

**3.0**  
**COMMUNITY SETTING**  
**(SEE Map 1)**

**4. Regional and Multi-Community Activities and Concerns**

Hingham participates in regional planning and related activities through its involvement in Metropolitan Area Planning Council (MAPC) programs, particularly the Council's sub-regional grouping, the South Shore Coalition. Town officials and residents commonly attend such events as one recently held by the South Shore Forum on "Summer Smart Water Use Demand Management and Sustainable Landscapes."

The Council's current regional plan is the Metrofuture Plan which succeeds the previous MetroPlan 2000. It encourages a "Metrofuture" approach to growth and development.

**The Hingham Shipyard and Environs**

The intense mixed-use, transit-rich redevelopment of the Hingham Shipyard is a compelling example of the forward thinking mixed-use, transit-oriented Smart-Growth inspired "Metrofuture" design approach. The old shipyard, with its dilapidated vacant buildings and an old hazardous waste spill, is being transformed into a vital mix of residential and commercial uses. The new shipyard has been designed with new housing, including 23 affordable units in a 90-unit Ch.40B building. The hazardous waste sites have been remediated. Varied market rate rental and sales housing is being developed along with shopping, a marine supply store, restaurants, a cinema, boat slips, moorings, and water-dependent commercial fishing docks and slips.

Abundant public transportation is available through the commuter boat service, and through MBTA bus service that stops at the shipyard en route to the Quincy Square (now "Quincy Center") MBTA Red Line station. In addition, the West Hingham Greenbush commuter rail station is nearby and the East Weymouth and Nantasket Junction stations are within a moderate bike ride or a short drive.

The Shipyard's main transportation feature, the commuter boats, run to Rowe's Wharf in Boston (roughly between the South Station and Aquarium MBTA station), with Silver Line enhanced bus service connecting South Station to Logan Airport. The shipyard also has frequent seasonal boat service to the Boston Harbor Islands. This starts on June 20 and runs through the summer. Opportunities in the Harbor Islands State Park include interpretive services, historic buildings, hiking, bird watching, fishing, swimming, and picnicking.

The Hingham Shipyard is also adjacent to some of Hingham's best conservation and recreation areas. The Bouve Conservation property directly abuts the shipyard and has beautiful examples of puddingstone and slate rock outcrops on the shoreline and a forest with some outstanding examples of Eastern Hornbeam (*Ostrya virginiana*), Serviceberries (*Amelanchier* spp.) and many other interesting species.

**3.0**  
**COMMUNITY SETTING**  
**(SEE Map 1)**

The adjacent Back River Area of Critical Environmental Concern straddles Hingham and Weymouth, encouraging cooperation between the two towns. It can be easily reached by boat or on foot.

**Other Areas of Cooperation**

Hingham has also worked with Cohasset on stormwater issues and on pollution concerns surrounding the Cohasset Golf Course. The perennial Turkey River Run forms part of the Hingham/Cohasset town line and receives direct stormwater runoff. The golf course runoff was proposed to flow to a ditch which discharged directly to Turkey Hill Run, an anadromous fish run discharging to the Weir River ACEC. Accordingly the towns cooperate with the Hingham Conservation Commission working with the golf course to design natural stormwater detention areas.

One major multi-community, multi-agency project was the Trustees of Reservations' acquisition of the scenic 66-acre Turkey Hill holding adjacent to their Whitney and Thayer Woods and Weir River Farm described in Chapter V. The acquisition involved cooperation between Hingham and Cohasset, the Trustees, the Massachusetts Division of Conservation Services and the Trust for Public Land, and built on many past gifts by nearby landowners. It is co-managed by the Hingham and Cohasset Conservation Commissions and the Trustees.

The towns of Hingham and Norwell recently cooperated in reviewing the proposed Damon Farm Ch.40B housing development straddling the town lines and potentially affecting local wetlands as well as water resource areas important to Hingham, Hull, and Norwell.

**3.0**  
**COMMUNITY SETTING**  
**(SEE Map 1)**

**Present and Prospective Regional Cooperation**

The Weir Estuary River Park around the river and its tributaries reflects continuing cooperation between Hingham, Hull and Cohasset working through the multi-community Weir River Estuary Park Committee to establish and expand the evolving park. This encompasses land and water surface in the three towns. (See the description in Chapter V.)

Next to the Shipyard and in the Back River Estuary ACEC there are four parks; (1) Bare Cove Park in Hingham on the River upstream of the Rte. 3A bridge, (2) Stoddard's Neck in Hingham along the River just downstream of the Bridge; (3) Great Esker Park on the Weymouth side of the River upstream of the Bridge, (essentially complementing Bare Cove Park) and (4), Weymouth's new Abigail Adams Park downstream of the bridge just across from Stodders Neck. (See Chapter V.)

It is possible to cross between the parks on either side of the river by going under the bridges on the sloping stonework at the edge of the river, but it is awkward and potentially hazardous. Therefore Rick Corsi of the state Department of Conservation and Recreation has suggested improving the crossings with level walkways. The Conservation Commission supports this proposal.



The awkward Passageway under Rte. 3A from Bare Cove Park to Stodders Neck. The Great Esker Park - Abigail Adams Park crossing to the west is similar.

**3.0**  
**COMMUNITY SETTING**  
**(SEE Map 1)**

Another action to greatly improve the usefulness of the larger parks would be a crossing between the upstream ends of Great Esker Park and Bare Cove Park. This would allow hikers and cyclists to cross between the parks and experience them as one system. A boardwalk or a very low bridge, just high enough for the very small boats that go that far upstream, could connect the two parks. This approach would allow hiking or riding the length of Great Esker Park south from Route 3A and then going on through Bare Cove Park and back to Route 3A or Beal Street, rather than having to turn around and retrace steps to the beginning as is required now. Hence, cooperative two-community efforts at each end of the parks could greatly enhance the visitor's experience.

Related to these possibilities is the work of the Back River Study Committee formed by the Weymouth and Hingham Conservation Commissions. An ongoing joint study is compiling information on historic and contemporary influences on the River. It is financed by a grant from Weymouth and is being done by Dr. David White and by Dr. Brian Howes, head of the CMast Center for Coastal Studies in Dartmouth, Mass.

This effort is very much in the tradition of the Weymouth-Hingham effort through which Weymouth's (late) Mary Toomey, Hingham's Bob Beal Jr. and others worked to get the Estuary designated as an ACEC.



The narrow, hopefully bridgeable gap between Great Esker Park on the left and Bare Cove Park on the right

**3.0**  
**COMMUNITY SETTING**  
**(SEE Map 1)**

Hingham's Harbormasters and Conservation officers have attended regional meetings at UMASS Boston and then supported and implemented regional "No Discharge" Zones. In addition, an area of the Harbor near Worlds End Reservation is frequented by large groups of boats which tie up ("raft") to socialize in this part of the Weir River ACEC. The several towns' Harbormasters monitor activities, respond to calls including pump-out requests, medical emergencies, and any boating accidents, and give and receive mutual aid when needed.

The Hingham Harbormaster is also the Shellfish Warden and is responsible for overseeing a large, productive shellfish harvesting area which is sometimes closed due to low water quality. As Warden, the Harbormaster is involved with the Massachusetts Division of Marine Fisheries and its Newburyport Purification plant as well as with monitoring the special licenses issued for harvesting in Hingham Harbor, Boston Harbor overall, and the Merrimac River.

## 4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS

### **4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS**

#### **A. Geology, Soils and Topography (See Appendix A: Map 3)**

##### **Geology**

The Town of Hingham is located on the south shore of Massachusetts Bay (more specifically the southern end of Boston Harbor) the Seaboard Lowland section of Massachusetts. The general elevations run from sea level on the coastal northern border to 245 feet atop Prospect Hill in the southeastern part of Town. Glacially eroded bedrock knobs are a common topographical feature in the eastern and southwestern parts of the Town.

Bedrock in Hingham consists of Paleozoic metamorphic and igneous rocks. The southern part of Town is primarily underlain with Dedham granodiorite, an intrusive igneous rock similar to granite. The northern part is underlain with a similar metamorphic and igneous rock known as Salem gabbro diorite. Bedrock outcrops are quite numerous throughout the Town and it appears that only a shallow veneer of surficial unconsolidated material is present where there are no bedrock exposures.

Glacial and geologic processes have sculpted Hingham's landscape to include drumlins, shallow to bedrock areas, proglacial outwash, ice-contact outwash, marine silts and clays, organic deposits, and alluvial (floodplain) deposits.

Compact Glacial Till is composed of an unsorted mixture of boulders, cobbles, pebbles, sand, silt, and clay. The most striking landforms built of the compact till are streamlined drumlins which are common around Boston Bay. Hingham's drumlins are probably underlain by bedrock outcrops and /or clay based soils. During the glaciations the ice sheets moved over these outcrops and fashioned them into an egg shape landform molded in a southeast direction. The best local examples of these are Bumkin Island, World's End, Planters Hill, Baker Hill, Turkey Hill, Otis Hill, Squirrel Hill, Great Hill, and the Pine Hills of South Hingham.

Sandy loose glacial till is called Ablation Till and is the unsorted material which, in some areas, overlies the compact till in parts of Hingham. Finer textured soils such as finer sands, silts, and clays serve as a matrix for forming plantable soil. These good farming soils may occur in river floodplains, in windblown deposits of fine grain sands or silts, in further extents of glacial outwash areas where the slower moving meltwater streams drop the finer sediments. Ablation Till and stratified drift constitute the most prevalent surficial materials in Town. These consist of several large outwash plains such as Liberty Plain, Glad Tidings Plain, the flat south of Penniman Hill and the area north of Tuttleville.

The most recent deposits in Town are post glacial in age and consist of alluvium (floodplain deposits), swamp deposits, and tidal flats. A large area of alluvium occurs along the Weir River south and east of Cole Corner. A few small alluvial terraces also occur along other streams.

## 4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS

Alluviated areas are subject to periodic flooding and should be avoided as sites of commercial or residential development but may be good planting areas. Swamps cover about 10% of Hingham, mostly in the southern two-thirds of Town.

### **Soils**

The United States Department of Agriculture - Natural Resource Conservation Service (USDA-NRCS) recently completed its digitizing of soils in Hingham. This is the first soil series update since the 1969 USDA-NRCS Plymouth County soil survey and includes many more distinct soil types. Aerial photographs of the Town of Hingham (1990 & 1993) were digitized, analyzed, and verified by on ground surveys. The old survey was developed using aerial images at 1:24,000 sq. ft., which limited soil delineation to not less than 6 acres. The new survey is a 1:12,000 sq. ft. mapping can now target areas as small as 1.5 acres. This allows for a more accurate soil classification.

A brief description of the soil series occurring in the Town of Hingham include the sandy Warwick and Quonset soils in our Zone 2 aquifer protection district. The newly defined Broadbrook soil series is an example of soils formed on drumlins. Some other soil series found in Hingham include salt marsh soils classified as Ipswich/Pawcatuck/Matunuck. Soils series information provides important details useful for building and farming. Some examples of soil series characteristics are infiltration rates, seasonal duration and depth of perched water tables.

### **Topography and Land Use**

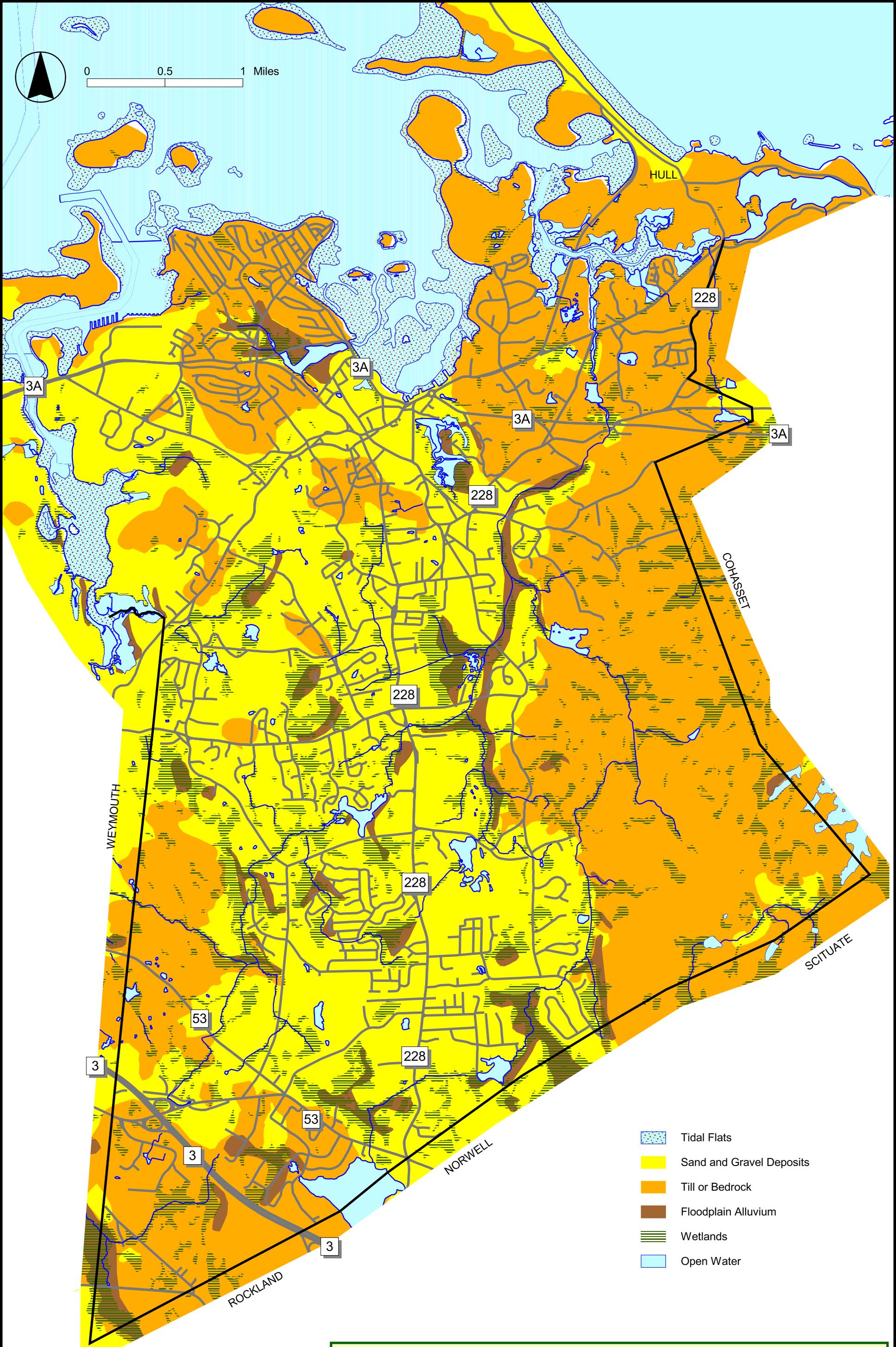
There are three topographic forms that define the Town: a belt of low irregular hills interspersed with fresh water wetlands in the southern part of Town; a coastal area with several rivers; and a group of islands.

1. A belt of low irregular hills is separated by swampy tracts in the southern part of Town. A certain portion of this land serves as a recharge area for the Town water supply and includes several large tracts of wetlands. Some of this area is coming under intense commercial development pressure.
2. The coastal area is 1 to 2 miles wide and serves as the northern border of Hingham. The coastal area is characterized by headlands with intervening broad, tidal estuaries, including Back River, Hingham Harbor and Weir River. The surficial topography of the coastal area on the southern border of Hingham Harbor is covered with mixed commercial development, grassy parkland and a bathing beach. The western coastal area is primarily occupied by residential dwellings and hardened embankments lining the harbor and bay.

The non-point pollution carried by runoff from Route 3A and other paved areas around the harbor is mitigated somewhat by the sandy beach and grassy parkland.



0 0.5 1 Miles



-  Tidal Flats
-  Sand and Gravel Deposits
-  Till or Bedrock
-  Floodplain Alluvium
-  Wetlands
-  Open Water

**SURFICIAL GEOLOGY - SOILS - MAP 3**  
 Town of Hingham - 2009 Open Space and Recreation Plan

18 March 2009  
 Prepared for the Hingham Conservation Commission  
 Map Compilation and Design: MapWorks  
 MAPS@WORK@aol.com  
 Source: MassGIS

## 4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS

There is very little open space in the other portions of the western coastal area that mitigates runoff from the residential dwellings and garages. On the north side of Otis Hill and at Crow Point are large residential dwellings with hardened embankments on the coastal slope. The Hingham side of the Weymouth Back River is host to a marina, commuter boat terminal and parking lot, Town conservation land and some residences. There is a major commercial residential development project under way at the old Hingham Ship Yard and there is a concern that this will have a negative impact on the marine environment in Hewitts Cove. The eastern coastal area is primarily bordered by the World's End Reservation conservation area with some coastal hardening in developed areas to prevent erosion. Runoff is not a source of pollution or siltation at World's End, and the eastern coastal area is not as densely populated as the western coastal area. It is essential, however, to discourage further commercial development of remaining open space on the coastal plain to protect the marine environment in the Weir River estuary, Hingham Harbor and Hewitts Cove.

3. The offshore area includes Button, Langley, Ragged, Sarah, and Bumkin islands, which serve as rookeries for sea birds and amphibian species. The islands also serve as recreation and wildlife exploration areas for local boaters and swimmers and are considered to be in the Harbor Island State Park. They are currently protected as Town conservation land. Tidal flats occur along the entire bay border and also extend far to the south along Weymouth Back River and Hingham Harbor. These flats are covered at high tide and exposed at low tide allowing for the limited harvesting of shellfish.

### **B. Landscape Character (See Appendix A: Map 3)**

The Town of Hingham is located at the southerly limit of the Boston Harbor Watershed within the much larger Gulf of Maine. Hingham's landscape is characterized by its 21 miles of coastline, which begins at the Weymouth Back River and ends at Straits Pond at the Cohasset town line. Hingham Harbor is flanked by World's End on the east and Crow Point on the west, two promontories thrusting seaward into Massachusetts Bay. Five uninhabited islands dot the harbor, the largest being Bumkin Island, which lies over 1 ½ miles north of the Hingham mainland.

Bedrock trending on a north/south axis underlies the undulating terrain from the harbor on the north to Prospect Hill in the south, the highest point in Town at 240 feet above sea level. The westerly boundary with Weymouth follows the northward flowing Weymouth Back River for much of its length. Streams in all of Hingham's sub-watersheds flow northerly, draining ponds, wetlands, forest and urbanized areas. The Weir River, the largest, drains 27 square miles of watershed or about 80% of Hingham.

The town's woodlands have visibly more pines and fewer hardwoods as one goes south, reflecting the increasingly coarse soils. These pines appear to be permanent, not the initial wave commonly succeeded by hardwoods on cleared land.

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Residential development along Hingham's many winding back roads has eclipsed much of the Town's antiquarian past in recent years. A few fields may be seen along South Pleasant Street, Main Street and on World's End, along with miles of stonewalls that provide a visible connection with that era. Large tracts of woodlands and numerous wetlands provide aquatic base flow for the numerous streams that segment the Town.

Salt marshes and embayments along the coast provide scenic vistas. A number of projects to renew salt marsh ecosystems by reconnecting this valuable resource with the sea are underway or are in the permitting process. The recent removal of tide gates, performed as part of the re-establishment of the Greenbush commuter rail line, has been renewing the Home Meadows as a salt marsh.

### **C. Water Resources**

#### **Watersheds**

Approximately 35% of the Town's area is made up of water and wetlands, including both fresh and salt water. Most of Hingham is in the Boston Harbor Watershed and parts are in the South Coastal Watershed. The Weir River and Weymouth Back River drain roughly 85% of the land area to Boston Harbor and the balance drains via the Aaron River to the South Coastal basin. The following lists the watersheds sub-basins found in Hingham:

- Accord Brook flows out of Accord Pond northerly into the Weir River.
- The Aaron River originates in Norwell, briefly courses through Hingham's eastern- most corner, and flows into the Aaron River Reservoir located in Hingham and Cohasset.
- The Old Swamp River picks up the drainage from Pine Hills in the southernmost corner of Hingham and delivers its flow to the Weymouth Back River in Weymouth.
- The Plymouth River/Eel River system drains to Cushing Pond and then, via the Crooked Meadow River, to the Weir River.
- Fulling Mill Brook drains Fulling Mill Pond into the Crooked Meadow River.
- Tower Brook joins the Crooked Meadow River just upstream of Union St., giving rise to the Weir River.
- The Fresh River picks up the flow from Cranberry Pond and Bear Swamp and carries it to the Weymouth Back River estuary in the northern quarter of Town.
- Overland flow enters Hingham Harbor, Weir River estuary, and the Weymouth Back River estuary via many small tributaries such as Turkey Hill Run, Town Brook and a number of unnamed perennial and intermittent streams.
- Numerous other unnamed perennial and intermittent streams and wetlands flow into the major streams named above. Under the Massachusetts Rivers Protection Act, the 200 foot setback Riverfront Area from perennial streams affords them special protection.

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### Surface Waters

#### **Ponds**

Hingham is dotted with numerous freshwater ponds and the remnants of several salt ponds. In most cases the ponds are man-made impoundments constructed to harness water power for water supply, ice making and fire suppression. The natural Accord Pond, the largest, lies partially in Hingham, Norwell and Rockland at the headwaters of the Weir River watershed. At approximately 100 acres, this pond is an integral part of Hingham and Hull's water supply since the Accord Brook/Weir River feeds the downstream So. Pleasant Street wells.

Many of the small ponds exhibit the classic signs of eutrophication, as aquatic vegetation, reduced stream flow; nutrient loading and sedimentation accumulate at an ever-increasing rate. Foundry or Western Pond is the last impoundment on the Weir River (the largest stream within Hingham) before it reaches the sea. A reconstructed dam (1998) with a fish ladder limits the tidal waters as the fresh water stream drops to the Weir River estuary, which is classified as an Area of Critical Environmental Concern (ACEC.)

This pond has received the products of centuries of agricultural runoff, developmental impact, street sanding and misguided stream channeling and cleanings and recent work below the dam which damaged a smelt breeding area there, as described later. Permitting to allow dredging of the pond is now in process. None of these ponds are suitable for swimming (except historically the fresh water Sanctuary Cove quarry hole next to the tidal Weir River) or motorized boating. Many are used for fishing and ice-skating. Several of these ponds, unfortunately, are listed on the 1998 Massachusetts Department of Environmental protection "303 (d)" list as impaired waterways due to "noxious aquatic plants" or turbidity.

The more recent Proposed 2006 list noted six sites along the Weir River, the Weymouth Back River, the Crooked Meadow River, Foundry Pond, and all or portions of Hingham Harbor, Hingham Bay, and Hull Bay which required definition of TMDLs (Total Maximum [allowable] Daily Loads) for various contaminants; and it also listed Accord Pond as Attaining Some Uses (aesthetics and non-contact recreation) with others to be assessed. See further discussion under G, Environmental Challenges, below.

Home Meadow contains the remnant of a salt pond, which is still influenced by the tides. Much of the western portion of this pond – a former tidal mill pond operating until the 1940s - was filled c. 1950 to provide parking for Hingham Square and the railroad. As part of the Old Colony – Greenbush rail restoration the hydrological connection to the harbor has been improved to allow greater flushing action by the tides, which will aid in limiting terrestrial plant growth and invasive plant species such as phragmites.

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### **Outstanding Resource Waters**

Hingham contains or abuts three DEP-designated Outstanding Resource Waters; the Weir River ACEC, the Back River Estuary, and surface water flowing to Accord Pond and thence to the Hingham/Hull water supply. Other significant surface water and groundwater recharge areas are the Zones A, B, and C. Surface Water Supply Protection Areas and the Zone II groundwater recharge area (drawn on in a 6-month drought) for the South Pleasant Street and Free Street wells. See Map 5- Water Resources.

### **The Weir River**

The Weir River is a tidal estuary to the fall line of Foundry Pond and is the largest stream in the Town. It picks up flow from the Eel River, Tower Brook, Plymouth River, Crooked Meadow River, Accord Brook and numerous other small tributaries. This drainage basin of 27 square miles, a portion of which lies in Norwell, provides the water supply for Hingham, Hull and approximately 50% of Norwell, about 1.8 billion gallons per year. The rapid development growth in the region has impacted this resource to a point where the Massachusetts Water Resources Council has declared it a stressed water basin. This designation implies that the aquatic base flow in the streams and attendant wetlands is so diminished that the health of this resource is threatened and the river is facing degradation.

The Weir River Watershed Association, a citizen based watershed organization, has made much headway in bringing the plight of the Weir River and its estuary to the public in a relatively short time span. The ongoing creation of the Weir River Estuary Park in cooperation with a three-town committee is one of its latest achievements.

### **Groundwater**

The town relies largely on groundwater - though water recharged by Accord Brook is classified as surface water. The groundwater is recharged by rain falling on the coarse sand and gravel deposits running north and south through central and northwestern portion of the town. See Figure 3 Surficial Geology-Soils. To protect these areas from contamination a large portion of these soils are protected by the Accord Pond Watershed and Hingham Aquifer Protection District. This is generally in the wells' Zone II recharge areas from which water is drawn during a 6-month drought.

It is important to protect both the quality and quantity of groundwater, particularly here in the Weir River watershed, since it is considered to be "stressed" by withdrawals exceeding reliable recharge. This calls for maximizing recharge by using low Impact Design (LID) techniques which increase on-site recharge of water that would otherwise quickly flow through storm drains to flashy streams and on to the ocean. Tools used include permeable pavement, detention ponds, grass swales and other absorbing features. More basically, recharge benefits from use of on-site waste disposal systems as compared to sewers, but water quality must be maintained.

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The need for more recharge should be partially met by the state's new Storm Water Management Regulations requiring maximum recharge of stormwater which would otherwise drain rapidly to storm sewers, to streams which would become increasingly flashy, and on to the ocean.

### **Flood Hazard Areas**

Hingham's flood hazard areas are limited since the Weir River and other streams are relatively small and the streams' flood plains are largely undeveloped. See the FEMA Q-3 Flood Hazard zone on the Water Resources map, Figure 5. Most of the mapped areas are along the immediate edges of the streams, not over extensive flood plains. None-the-less localized flooding can occur, particularly where heightened flows result from lost upstream flood storage or stream alterations (such as the ditching of the Weir River east of the high school) combined with restrictive culverts and impervious development in the floodplain. One example is the mapped flood hazard area along the channel of the Town Brook north of South St. Hence a good number of streamside properties are in the National Flood Insurance Program.

The largest mapped flood hazard area is along Tower Brook as it flows into the Weir River just north of Free Street. It contains several of the public water supply wells and is largely non build-able protected water supply land.

Open space funds might well be used to add or restore safe flood storage by acquiring low-lying riparian areas along major streams and modifying the channel enough (e.g. with a slotted weir) to cause a safe, temporary backwater with flood control and ground water recharge benefits.

Alternatively, existing dams, such as that at Cushing Pond, might be upgraded if necessary, and managed for flood control purposes. Such opportunities could be uncovered through a town-wide inventory of the stream system such as was proposed by the Conservation Commission some time ago.

Coastal flooding is also spotty. Most of the mapped coastal hazard areas are protected or not built upon. Thus the major areas include:

- The town owned Home Meadows salt pond/marsh with recently restored tidal flow
- The Foster School tidal marsh whose tidal range is limited by the small culvert under Rte 3A connecting Broad Cove with the Harbor.
- Marshy areas around the southern end of the Weir River ACEC
- Portions of the southern end of the Back River Estuary between Bare Cove Park and Great Esker park

The Weir River just below the Foundry Pond Dam is mapped as a flood hazard area, but there is little adjacent property to be damaged by a dam failure and the nearby houses appear to be high enough to be out of a severe high tide.

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One important reason for the limited coastal flooding in Hingham is the shielding of Hingham and Hull Bays from large storm surges by Nantasket Beach, a classic barrier beach, and by Peddock's Island. These limit flows into Hull Bay and lessen surges such as those experienced on the ocean side of Hull, Cohasset and Scituate during the 1978 blizzard/hurricane.

### **D. Vegetation**

#### **General Inventory**

##### **Forests**

Hingham has a wide diversity of natural communities and forest types. The Town has coastal influence along its northern border, and due to the inclusion of 5 barrier islands just north of the mainland, has some unique natural communities. In general, there are three common cover types in Hingham: (1.) the Northern Hardwoods, Oak Dominant (2.) Mixed Forest and (3.) Forested Wetland. The USGS Geographic Approach to Planning (GAP) analysis depicts approximately one fourth of the Town as "Suburban Forest". This suburban forest is the result of rapid development and fragmentation of habitats and forestlands.

The increasing loss of intact forests has an impact on habitat connectivity and on the health of the Town and its residents. Forests are the "lungs of the earth" in that they produce oxygen to breathe, help moderate the climate, absorb water, reduce soil erosion, and provide valuable passive recreational opportunities.

Hingham has a few notable and large contiguous blocks of forestland owned by federal, state and municipal agencies. Wompatuck State Park includes 1,540 acres in Hingham; the Whitney-Thayer Woods includes 114 acres in Hingham, Turkey Hill has 62 acres, and with the Weir River Farm, these make up over 1,700 acres of contiguous protected open space in the Town, much of it forest. The Conservation Commission also owns multiple parcels that form a contiguous and protected forest cover. The 97.8-acre Triphammer Pond Conservation Area and the abutting 16.3-acre Leavitt Street Conservation Land together make up approximately 114.1 acres of intact forestland. Triphammer Pond is approximately 19 acres and has many acres of surrounding forestland. Triphammer is also contiguous with Wompatuck State Park.

The individual tree species are too numerous to list and it is more useful to education and understanding to put this inventory in terms of natural communities. Using the Swain and Kearsley Natural Communities Classification, at least 15 different state recognized natural communities have been identified and confirmed in Town. Many, such as Successional White Pine and Mixed Oak are quite common, while others, such as Maritime Juniper Woodland/Shrubland are much less common.

In addition to these naturally re-grown second growth forests (coming back after cleared farmland was allowed to return to woods) there are the George Washington Town Forest of

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107.6 acres planted with Red and White Pine in 1922, and an estimated 10,000 public shade trees along roads

### **Public Shade Trees**

The Tree and Park Division of the DPW takes care of the estimated 10,000 trees along public ways, and manages shrubs and small trees in parks and public areas. It trims or removes damaged, ill-located, sick, or excessively invasive trees, and plants new ones. These are generally native species except where another has significant advantages.

The tree nurseries are described in Chapter V.

In 2007, the Division removed 131 trees for various reasons and planted 87 Pear Trees and Hedge Maples. These maples grow to only 25' to 30' and thus work well under street-side telephone wires and power lines.

In 2008, the Division removed 187 sick or ill-located street trees including many attractive, but invasive Norway Maples which spread into adjacent properties displacing native trees. It then planted 98 Valley Forge Elms, Green Spire Lindens, and Scarlet Oaks. The staff also planted 50 shrubs including dogwoods, Cranberry bushes and Virinium in parklands and other public spaces.

By September of 2009, the Department had removed many sick White Ash and Red Oaks and planted 27 new trees including Golden Rain, Red Buds and Zeckoba Livium. These are generally tolerant of roadside conditions.

Many attractive plantings in small parks and traffic islands are maintained by the Tree and Park Department, the Hingham Garden Club, the Beautification Commission and other volunteers.

While many trees are diseased, none so far have shown signs of the extremely destructive Asian Long Horned Beetle. The Department is looking out for such damage and is distributing information cards ("Look out for dime-sized holes") to help citizens join the surveillance.

### **Open Fields**

Much of the land that has historically been kept "open" for farming and fields is now being lost to development, mainly for single family homes in large residential subdivisions, fragmenting the natural communities, or to succession by shrubs, pines and later hardwoods. There is often little to no ecological value in what is left of a natural area once the subdivision has been completed.

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The few remaining fields in Town are being maintained for open vistas. Examples include portions of the Town-owned More-Brewer Park, Push Cart Farm, and Shultz's Field, and the Trustees of Reservations' Weir River Farm on Turkey Hill recently cleared to restore farm fields and grasslands. The Hingham Land Conservation Trust properties on Main Street include open fields, as does Stodder's Neck State Park.

Some of the privately owned lands in Chapter 61A provide open and scenic views due to their current use for agriculture. The Barry's property on Lazell Street is a good example of scenic agriculture lands. The largest open field in Town is Shultz's field, which is approximately 17 acres. Historically, ensilage was raised on this land and it is now owned by the Conservation Commission, which leases it to a dairy farmer to raise crops and silage, maintaining its use for agriculture.

The Trustees of Reservations (TTOR) have management plans for many of their lands which are usually focused on wildlife habitat management, including the control of invasive species. TTOR's Proposed Interim Mowing Plan for Turkey Hill (October 2002) notes that the "large fields capable of supporting grassland dependent wildlife are increasingly uncommon in the region, and fewer still are managed in a way that will provide viable habitat..." for grassland nesting birds, such as the bobolink. As noted above, TTOR received permits to increase the grassland habitat at Turkey Hill and has done so.

Other open lands in Hingham include golf courses such as Boston Golf, Black Rock, and the South Shore Country Club, and a portion of Cohasset Country Club. The ecological value of many of those lands has not been specifically evaluated but is most likely fairly low.

At a smaller scale, long-time Hingham Conservationist Stuart DeBard has proposed selective tree and shrub clearing on lower Winter Street to open the view of the signed, scenic, but hidden Home Meadows.

### **Wetlands**

In general terms, Hingham has three types of wetlands: (1.) marine, (2.) estuarine, and (3.) freshwater inland. All three types contribute a great deal to the biodiversity of the Town. Both Weir River and Weymouth Back River are major river systems that are tidally influenced. The Weymouth Back River just below Fresh River Avenue is tidal, and the Weir River below Foundry Pond is tidal.

There is a very high diversity of wetland resources just within the boundaries of Hingham but some of the most highly valued wetland resources are shared with other towns. Accord Pond, thought to be the only natural pond in Town, is a large freshwater pond that straddles the Hingham, Rockland, and Norwell town lines. The Accord Pond system, which has contributory sources from Norwell and Rockland, serves as the primary source of drinking water for Hingham and Hull, and a significant source for Norwell, Weymouth and Cohasset. Aaron River Reservoir

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occupies parts of Hingham, Cohasset and Scituate. The Aaron River Watershed has a large contributory watershed that spans Norwell, Scituate, Cohasset and Hingham. Town Brook and Turkey Hill Run are also important and significant wetlands resources in the Town.

Specific wetlands natural communities found in Hingham will be discussed at length in the next section.

The Natural Heritage and Endangered Species Program (NHESP) defines a Natural Community as “assemblages of species that occur together in space and time. These groups of plants and animals are found in recurring patterns that can be classified and described by their dominant physical and biological features”. NHESP developed a rarity ranking system for the natural communities of Massachusetts. This ranking system will be used in our inventory and is described as follows:

- S1 - Typically 5 or fewer occurrences, very few remaining acres or miles of stream, or especially vulnerable to extirpation in Massachusetts for other reasons.
- S2 - Typically 6-20 occurrences, few remaining acres or miles of stream, or very vulnerable to extirpation in Massachusetts for other reason.
- S3 - Typically 21-100 occurrences, limited acreage or miles of stream in Massachusetts.
- S4 - Apparently secure in Massachusetts.
- S5 - Demonstrably secure in Massachusetts.
- SU - Status unknown in Massachusetts.

Natural Communities present in Hingham range from the common White Pine (S5) and Oak-Hickory Woods (S4) to more rare communities such as Maritime Juniper Woodland/Shrubland. NHESP has verified that Hingham has a couple of exemplary occurrences of the Maritime Juniper Woodlands, which occur in salt spray zones of the coast, with some examples on conservation land (Pat Swain, Ecologist with the NHESP, personal correspondence, 2004). NHESP indicated that it is their hope that the Town recognizes the special character of this type of natural community and takes appropriate measures to protect and manage the areas.

Please note that all descriptions listed below are based on the Natural Heritage and Endangered Species “Classification of Massachusetts’ Natural Communities”, draft version July 2000.

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### Upland Natural Communities

#### **White Pine-Oak Forest (S5)**

White Pine and oak species dominate the canopy layer in different proportions. Other species such as Pitch Pine (*Pinus rigida*), red maple (*Acer rubrum*), white birch (*Betula papyrifera*) and black birch (*Betula lenta*) occur in association with this community but typically in low numbers. Examples of this natural community can be found in Wompatuck State Park.

#### **Pitch Pine-Scrub Oak (S2)**

Pitch-Pine-Scrub Oak natural community is dominated by shrubs such as scrub oak (*Quercus ilicifolia*) and sometimes dwarf chinquapin (*Quercus prinoides*) with scattered to dense trees and scattered openings. Pitch Pine-Scrub Oak communities are fire maintained and fire dependant. This community is very important, as a large number of lepidopterans (butterflies) are restricted to it with its scattered openings.

#### **Successional White Pine Forest (S5)**

White pine (*Pinus strobus*) dominates these types of natural communities, which are usually created by a several decades-old disturbance, such as abandoned agriculture land. The shrub layer also varies from sparse to thick and contains elderberry (*Sambucus canadensis*), black cherry (*Prunus serotina*), and maple-leaved viburnum (*Viburnum acerifolium*). The climbing fern (*Lygodium palmatum*) is a species of Special Concern associated with successional white pine forests. Examples of this natural community can be found all over Hingham and it is well represented in Wompatuck State Park and Whitney-Thayer Woods.

#### **Maritime Juniper Woodland/Shrubland (S1)**

This rare natural community is predominantly an “evergreen woodland shrubland” that is located within the coastal salt spray zone. Although this community is within the salt spray zone of the ocean, it does not receive direct flooding by salt water. Red Cedar (*Juniperus virginiana*) is dominant but occurs in generally low densities with scattered trees and shrubs typical of the surrounding forest such as Pitch Pine (*Pinus rigida*), various oaks (*Quercus spp.*), American Holly (*Ilex opaca*), black cherry (*Prunus serotina*), red maple (*Acer rubrum*), bayberry (*Myrica pensylvanica*) and winged sumac (*Rhus copallinum*).

World’s End, located on a peninsula in the extreme northern portion of Town, and owned by The Trustees of Reservations (TTOR), contains exemplary areas of Maritime Juniper Woodland/Shrubland.

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### **Oak-Hickory Forest (S4)**

According to the NHESP, oak-hickory woods are the most common type of vegetation in the eastern and central part of Massachusetts. In general, oak-hickory woods have a continuous canopy cover at about 20 meters high. The well-developed subcanopy includes smaller individuals of the canopy species, witch hazel (*Hamamelis virginiana*), hop hornbeam (*Ostrya virginiana*) and American chestnut (*Castanea dentata*) sprouts. There is typically also a well-developed shrub layer consisting of huckleberry (*Gaylussacia baccata*), blueberry (*Vaccinium angustifolium*), maple-leaved viburnum (*Viburnum acerifolium*) and a number of other species that occur as scattered individuals. Mountain laurel (*Kalmia latifolia*) makes a more dense continuous shrub colony and lowbush blueberry often forms a lower denser layer. (NHESP, Oak-Hickory Woods Fact Sheet).

The Foundry Pond Conservation area (owned by the Hingham Conservation Commission) and the Whitney and Thayer Woods and Weir River Farm (owned by the Trustees of Reservations) contain excellent examples of Oak Hickory Forest natural community. In a report by Garrett Van Wart of TTOR, this community is also found at TTOR's World's End.

### **Cultural Grasslands (no S-rank)**

Cultural Grasslands is defined as a human created and maintained open community "dominated by grasses, normally maintained by mowing". Cultural grasslands can be very important habitat for grassland birds. Depending on the mowing and maintenance regime as well as proximity to other landscape features, cultural grasslands provide habitat to various species of grassland birds, as well as mice, moles and the long-tailed weasel.

### **Wetland Natural Communities**

#### **Salt Marsh (S3)**

The salt marsh is a graminoid dominated, tidally flooded coastal community with several zones including low marsh, high marsh, salt shrub and salt panne. The low marsh, found between low and mean tide is dominated by saltmarsh cord-grass (*Spartina alternifolia*) and saltmarsh hay (*Spartina patens*). These grasses define the lower slope of the saltmarsh. Several tides are higher than the normal high tide and they occur on the upper slope of the saltmarsh. *Spartina* grasses do not dominate in this area instead Marsh Elder a.k.a. High Tide Bush (*Iva frutescens*) grows as well as other salt tolerant grasses and plants. Above this area is called the transition zone or upper border of saltmarsh which is only subject to storm tides.

Hingham may have other estuarine natural communities such as Brackish Tidal Marsh, Freshwater Tidal Marsh, Fresh/Brackish Tidal Shrubland or Fresh/Brackish Tidal Swamp. They are all classified by the NHESP as S1 communities but have not, at the writing of this Plan, been confirmed in Town. Because these communities are fairly rare in the state, field research would need to be conducted to confirm these possibilities. The NHESP would then be notified of any

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positive identification of these or any other S1 communities. Home Meadows, Governor Long Bird Sanctuary, Walton Cove, Beal Cove tidal area, Dammed Meadows, Broad Cove, and Hewitts Cove are good examples of a salt marsh.

### **Eelgrass Beds**

Eelgrass (*Zostera marina*) beds are not independently defined as a natural community, though they occur within other natural communities recognized by Swain and Kearsley. Some of the most extensive eelgrass beds can be found in the waters around the South Shore. The seafloor between Bumkin Island of Hingham and Grape Island in Weymouth is recognized by the NHESP as Eelgrass beds. The area north of Langlee Island is also identified as eelgrass beds habitat. Unfortunately, these eelgrass beds have experienced a significant decline in the past decade and lost up to 65-70% of grass in the area where it previously thrived. The reason for this decline is a reduction in the amount of sunlight reaching the eelgrass. This is likely due to increased amounts of sediment in the water column or nutrient input causing excessive algae growth around the eelgrass.

### **Marine Intertidal Rocky Shore (S2)**

Maritime Intertidal Rocky Shore is described by Swain and Kearsley as a community dominated by invertebrates and non-vascular plants, in a high-stress environment alternately covered by tides and exposed to desiccation and thermal stress. These communities are dominated by crustaceans, mollusks, and macroscopic algae (seaweed). The algae provide important cover and food for the crustaceans and mollusks.

Garrett Van Wart of TTOR identified Marine Intertidal Rocky Shore natural community in tidal areas around Rocky Neck where exposed rock extends into the Weir River (Van Wart, 2001).

### **Marine Intertidal Flats (S4)**

Marine Intertidal Flats are protected from intense wave action, sediments are relatively stable and silt, clay, sand and organic materials occur in various proportions. Some areas of Marine Intertidal Flats have saltmarsh cord grass (*Spartina alterniflora*) but others have sparse to no vegetation. Migratory shorebirds are quite dependant on the flats for foraging.

Garrett Van Wart identified this natural community in World's End, owned by the TTOR.

### **Red Maple Swamp (S5)**

Red Maple Swamps, dominated by Red Maple (*Acer rubrum*) are the most common forested wetlands in Massachusetts and are very common in Hingham. Red maple swamps vary widely in terms of physical settings and can occur as a "hillside seep, upland drainage ways fed primarily by groundwater seepage and overland flow; seasonally flooded basin swamps in un-

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drained basins; and alluvial swamps”. Red maple swamps can also commonly function as vernal pool habitat, provided that there is ponding/ for two to three months and the absence of fish.

**Shallow Emergent Marsh and Deep Emergent Marsh (both S4)**

Shallow Emergent Marsh and Deep Emergent Marsh are two separate natural communities but for the purposes of this inventory they will be grouped together. They have similar vegetation and occur in similar settings, essentially, in broad, flat areas bordering low-energy rivers and streams.

Emergent marshes are confirmed in Hingham but without extensive biological inventories, it is not known which marshes are classified as “Shallow” and which marshes are classified as “Deep”. Both Shallow and Deep Emergent Marshes have a high variety of rare, threatened and endangered species of plants and animals associated with them.

**Rare, Threatened and Endangered Species (RTE) Plants List (See Appendix D 1)**

Rare, Threatened and Endangered Species have been documented in Hingham. As of February 2009 the NHESP had listed six vascular plants found on the state’s RTE list. It is important to note, however, that all but the Seabeach Dock (*Rumex pallidus*) are currently considered “historical”. The Seabeach Dock is a plant that occurs along beach strands.

**Vascular Plants:**

<b>Common Name</b>	<b>Latin Name</b>	<b>Status</b>
Linear-leaved milkweed	<i>Asclepias verticillata</i>	Threatened
Adder’s-Tongue Fern	<i>Ophioglossum pusillum</i>	Threatened
Pale Green Orchis	<i>Platanthera flava var. herbiola</i>	Threatened
Tiny-flowered Buttercup	<i>Ranunculus micranthus</i>	Endangered
Bristly Buttercup	<i>Ranunculus pensylvanicus</i>	Threatened
Seabeach Dock	<i>Rumex pallidus</i>	Threatened

**Mapping Projects**

There are a number of vegetation mapping projects that have been undertaken on a regional and statewide basis that help inform decision makers. The Commonwealth’s Natural Heritage and Endangered Species Program (NHESP) has created a number of valuable data-layers and maps that depict unique natural communities and habitats. Non-governmental organizations, such as The Manomet Center for Conservation Sciences, have also created various maps that have helped increase our knowledge and understanding of the valuable natural resources of the state.

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### **BioMap and Living Waters-NHESP**

The BioMap and Living Waters project, both produced by the Natural Heritage and Endangered Species Program (NHESP) with funding from the Executive Office of Environmental Affairs and through the State Wildlife Grants Program of the US Fish and Wildlife Service, are conservation plans based on documented observation of rare species, natural communities, and exemplary habitats. The goal of the BioMap and Living Waters projects was to “identify and delineate the most important areas for the long-term viability of terrestrial, wetland, and estuarine elements of biodiversity in Massachusetts.”

The aim was to set conservation priorities and produce focused maps of which land is most important to conserve. These projects resulted in the production of two maps and data layers and an interactive map and online presentation.

### **Priority Natural Vegetation Communities**

The NHESP has identified Priority Natural Communities across the state, which have been digitized and mapped. The layers are available through the Mass GIS website and NHESP provides the maps to municipalities. Priority natural vegetation communities include vernal pools, sea grass beds, barrier beaches, brackish tidal wetlands, coastal forests and acidic peat-land community system.

### **Statewide Open Space Plan for Massachusetts**

The Executive Office of Environmental Affairs (EOEA) and their non-profit partners developed an Open Space Plan for Massachusetts in 2001 under the leadership of then-Secretary Durand. The result of this effort is the mapping of 1.5 million acres of open space land. Utilizing the EOEA Buildout Analysis, it was determined that 1 million of those acres were “developable”, and therefore subject to a change in land use. The goal of this statewide open space plan is to conserve 1 million acres over the next 20 years. It is undetermined whether the goals, objectives and action items outlined in this Plan are currently a priority with the State.

### **E. Fisheries and Wildlife**

Hingham is fortunate to have been the focus of a number of biological studies and species inventories. There is a wealth of information on the biological resources of the Town because of such studies as the “Weir River Area of Critical Environmental Concern-Natural Resources Inventory”, the Breeding Bird Survey, and the World’s End Management Plan, all of which include valuable information on the species and habitats that can be found there (See Appendix D3 and D6). As with most semi-rural communities in southeastern Massachusetts, Hingham has a diversity of birds, mammals, reptiles, amphibians, fish, shellfish, insects, and aquatic macroinvertebrates. It is challenging to develop an exhaustive list of each category of wildlife so we will

## 4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS

discuss the most common in each group and then focus on state listed rare, threatened and endangered species that have been confirmed in Hingham.

### **Fisheries**

#### **Hingham Harbor**

The Harbor has historically been home to great recreational fishing as a result of the diversity of marine species inhabiting this bay area. Recreational fishing in Hingham Harbor may have been at its peak in the mid to late 1960's when Flounder fishing in the greater Quincy Bay area became a popular sport. People flocked to the Quincy Bay and the adjacent Hingham Bay area in small rented motorboats for a guaranteed harvest of doormat flounder (large black-backed flounder (*Pseudopleuronectes americanus*)). Currently, Hingham Harbor continues to attract sport fishermen when the Bluefish (*Pomatomus saltatrix*) are running in the summer. Striped bass (*Morone saxatilis*) are abundant in late spring, summer and early autumn and there is the traditional winter harvest of rainbow smelt (*Osmerus mordax*) off the docks at the Hingham shipyard. Flounder are still a sought after species although currently much less abundant at the legal harvest size.

The Hingham Harbor intertidal mudflats are traditionally and currently a very productive shellfish habitat. There is an abundance of soft-shelled clams (*Mya arenaria*), blue mussels (*Mytilus edulis*) a smaller amount of quahogs (*Mercenaria mercenaria*) and razor clams (*Ensis directus*).

Hingham Harbor shell fishing is a restricted fishery due to higher bacteria levels in the water. This condition is found throughout the greater Boston Harbor metropolitan area. Due to human waste and animal waste entering the harbor, deleterious bacteria are found in filter feeders such as soft shelled clams and mussels. The MA Division of Marine Fisheries requires that all soft-shelled clams harvested in Hingham Bay be sent to the Newburyport shellfish purification plant to reduce the risk of harmful bacteria.

Contributing to the variety of marine species is the annual migration of anadromous and catadromous fish. Anadromous fish in Hingham include river herring such as alewives (*Alosa pseudoharengus*) and blueback herring (*Alosa aestivalis*) and Rainbow smelt which until recently have been abundant in Hingham's perennial rivers. Large numbers of both river herring and smelt have utilized the unique habitat of rocky substrate, rippling flows, and pond impoundments in the rivers as vital spawning habitat. The catadromous American eels (*Anguilla rostrata*) are currently still found in large numbers in fresh water habitats around Hingham.

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### **Weir River**

Important spawning habitat includes the Weir River drainage basin, which encompasses 27 square miles. This basin collects flow from the Eel River, Tower Brook, Plymouth River, Crooked Meadow River, Accord Brook and other smaller tributaries. Foundry Pond, created by a dam, is at the lower end of the fresh water Weir River. Below the Foundry Pond dam is the upper reach of a salt marsh. Prior to dam reconstruction in 1998, the area downstream of the dam was very productive rainbow smelt spawning habitat. Additionally, fishermen previously harvested young American eels during the late autumn below Foundry dam.

The reconstruction of the dam at Foundry Pond did not take into account the productive smelt-spawning habitat at the base of the dam. The widening of the basin below the dam resulted in the demise of the spawning habitat by reducing the water depth needed for smelt eggs to remain covered by stream water until hatching, and reduced the velocity of water that provided oxygenation of eggs and scouring of substrate. In addition, the removal of a vegetated island in the middle of the spawning riffle below the dam and the leveling of the grade for base of the river reduced habitat value, as did the disruption and removal of cobble in deeper channels. All these actions together decimated the once very productive smelt-spawning habitat. In addition, the fish ladder at this site is placed where heavy flow over the dam spillway strikes large granite stones and disrupts herring passage and jeopardizes juvenile herring.

One of the objectives for this open space plan is to find the funding to correct these problems and restore herring passage as well as repair traditional smelt spawning habitat at the base of the dam.

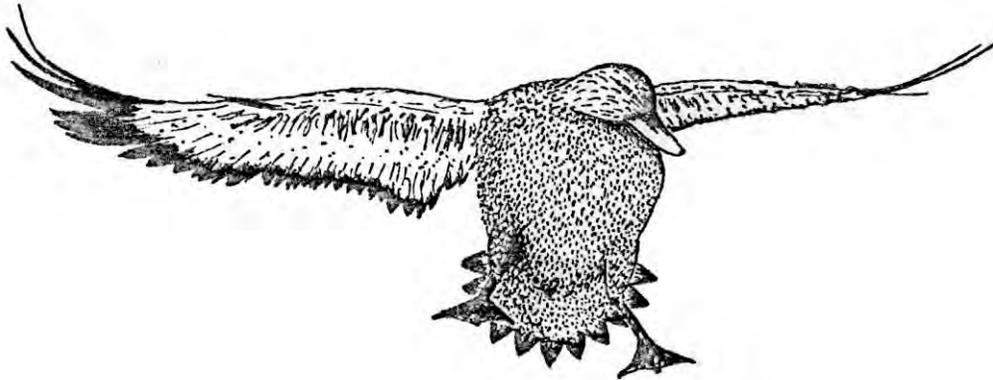
### **Turkey Run Brook**

Turkey Run Brook drains into the Weir River estuary at the furthest extent of the saltmarsh by West Corner in Hingham near the Hull and Cohasset line. The lower part of Turkey Run is also smelt spawning habitat. In recent years phragmites (*Phragmites australis*) has taken over the lower reaches of this brook and interfered with smelt passage. Restoration of smelt spawning should include removing invasive phragmites and reassessing substrate in areas where riffles occur. This brook should be evaluated to determine if river herring are using it. Neighbors have reported small numbers of river herring have been seen in the lower end of this river. Alterations of wetland and floodplain areas along the newly re-constructed Greenbush rail line should be monitored for impacts to Turkey Run Brook. The Cohasset Golf Course, which occupies part of the headwaters for this brook, has proposed to fill some floodplain that could affect both water pollution and flood levels being diverted into Turkey Run Brook. Turkey Run Brook is traditionally smelt spawning habitat a long-term management plan to protect this resource should be implemented.

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### Fresh River

Fresh River is a tributary to the Back River and is a smelt run. This river is formed by the drainage from Cranberry Pond and Bear Swamp. The smelt need to pass through several feet of dark culverts before reaching the preferred spawning habitat. Above the culverts is a construction company storage yard and parking lot. At this construction yard, storm water laden with sediments and contaminants wash directly into Fresh River spawning run. The smelt spawning area is also becoming overrun with invasive species encroaching into the smelt spawning habitat. Additionally, leachate from the Hingham Landfill would eventually drain into Fresh River. A Fresh River Watershed Management Plan should be developed to address these issues impacting the smelt run.



### Birds

Using a combination of the Breeding Bird Atlas data, Biodiversity Days information and the knowledge of local naturalists and ecologists, a reliable list of birds confirmed in Hingham has been compiled. For the purposes of the discussion, only the common species will be mentioned but a more complete list is attached in Appendix D3.

At least three species of hawks are commonly found in Hingham. Sharp-shinned hawks, which generally prefer woodland habitats, especially coniferous-dominated woods can be found in a variety of areas in Town, including Wompatuck State Park. Red-tailed hawks prefer a woodland edge or isolated trees in fields such as at the Weir River Farm. Broad-winged hawks, which prefer broad-leaf and mixed woods, were also confirmed during the 2003 Biodiversity Days in various places. Osprey (*Pandion haliaetus*) find habitat along coastal estuaries, rivers and lakes.

Many songbirds have been confirmed in Hingham. Some common ones include: Tufted Titmouse (*Baeolophus bicolor*), Cedar Waxwing (*Bombycilla cedrorum*), American Goldfinch (*Carduelis tristis*), House Finch (*Carpodacus mexicanus*), Hermit Thrush (*Catharus guttatus*) and Common Yellowthroat (*Geothlypis vermivorus*).

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**ENVIRONMENTAL INVENTORY AND ANALYSIS**

Due to the high diversity of types of wetlands, both open and vegetated, there is an equally high diversity of bird species that prefer these habitats. For instance Green Heron (*Butorides virescens*), Great Blue Heron (*Ardea herodias*) and Great Egrets (*Casmerodius albus*) can all be found in the various fresh, brackish and saltwater environments in Hingham.

Hingham is rich in shoreline and coastal wildlife habitats. Many species have been confirmed in the shoreline waters of the Hingham Harbor. In a bird survey at Damde Meadows conducted by TTOR between December 2003 and October 2004, two species of shorebirds were confirmed. Greater Yellowlegs and the Spotted Sandpiper utilize the intertidal zone for feeding resources. One shorebird, the Lesser Yellowlegs, was observed outside of the survey period but can still reliably be added to the list of shorebirds that rely upon habitat in Hingham for some part of their lifecycle. Additionally, common terns and herring gulls are commonly found near the shoreline.

Wompatuck State Park is recognized as an Important Bird Area (IBA) by the Massachusetts Audubon Society Important Bird Area Program, which seeks to “identify, nominate, and designate key sites that contribute to the preservation of significant bird populations or communities”. The program was initiated in 2001 by establishing an IBA Technical Committee made up of bird experts from state, local, and private sectors. They worked to identify sites, and do networking and outreach to other knowledgeable birding experts and enthusiasts. This process, known as Phase I, resulted in the development of a list of sites for nomination to the IBA Program. This program has been instrumental in helping bring recognition to areas that are critical to large numbers of birds (Shore Bird Club website “<http://home.comcast.net/~ssbirdclub/voa.html>)

**Mammals**

Common large mammals include White-tailed Deer (*Odocoileus virginianus*), Red Fox (*Vulpes vulpes*), Coyote (*Canis latrans*), and Fisher (*Martes pennanti*). Medium sized mammals include Eastern Grey Squirrel (*Sciurus carolinensis*), Red Squirrel (*Tamiasciurus hudsonicus*), Woodchuck/Eastern Marmot (*Marmota monax*), and Eastern Cottontail (*Sylvilagus floridanus*). Common small mammals include Eastern Chipmunk (*Tamias striatus*), Meadow Vole (*Microtus pennsylvanicus*), White-footed mouse (*Peromyscus leucopus*), and Masked Shrew (*Sorex cinereus*).

Rare, Threatened and Endangered Species Wildlife List (See Appendix: D1)

Rare, Threatened and Endangered Species have been documented in Hingham. As of April 6, 2006 the NHESP had two birds, two turtles, and three invertebrates that are found on the state’s Rare, Threatened and Endangered Species list:

	<b>Common Name</b>	<b>Latin Name</b>	<b>Status</b>
<b>Birds</b>	Pied-billed Grebe	Podilymbus podiceps	Endangered
	Barn Owl	Tyto alba	Special Concern
<b>Turtles</b>	Wood Turtle	Clemmys insculpta	Special Concern
	Eastern Box Turtle	Terrapene carolina	Special Concern

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	<b>Common Name</b>	<b>Latin Name</b>	<b>Status</b>
<b>Invertebrates</b>	Comet Darner (dragonfly)	Anax longipipes	Special Concern
	Elderberry Long-Horned Beetle	Desmocerus palliates	Special Concern
	Spartina Borer Moth	Spartiniphaga inops	Special Concern

**Vernal Pools**

Vernal pools are typically defined as depressions with no inlet or outlets that hold water ephemerally for as long as 2 months and are absent of fish species. There are quite a few species, mainly amphibians that are considered “obligate” species, meaning that they can only breed in a vernal pool. The fairy shrimp is a small crustacean that completes its entire lifecycle in a vernal pool and does not have the ability to live anywhere else. There is no minimum or maximum size of a vernal pool but NHESP criteria have to be met for certification as a vernal pool. Some vernal pools are completely isolated from other wetlands systems but other vernal pools function as part of a larger bordering vegetated wetland.

As of Feb. 2009, Hingham had 30 certified vernal pools (CVP) but there are hundreds of potential vernal pools (PVP) distributed throughout the Town. Approximately a third of the PVP’s are on protected open space parcels. The Conservation Commission is interested in certifying more vernal pools using the Potential Vernal Pool (PVP) datalayer to inform possible locations.

**Wildlife Corridors**

A wildlife corridor, as defined by landscape ecologists Forman and Godron, is a “linear path that differs from its surroundings” within the context of a heterogenous land area consisting of three fundamental elements: patch, corridor, matrix. (USDA, NRCS, Corridors-An Overview). Corridors are of variable length, width and overall size but serve important ecological functions including providing habitat, a conduit for movement between patches of habitat, acting as a filter or barrier, and sources or sinks of materials or substances that originate in the larger habitat matrix (USDA-NRCS). Examples of wildlife corridors include windbreaks, field buffers, hedgerows, riparian/stream corridors, and grassed waterways.

Corridors are important for many species of wildlife as well as a biotic components of an ecosystem, such as soil and nutrients. Wildlife habitats have become highly fragmented due to development, construction and agriculture. Highly mobile wildlife such as deer, fox, and coyote may be able to partially adapt to this fragmentation of habitat; however, less mobile types of wildlife such as turtles and amphibians have a much smaller home range and when fragmentation occurs in some or all of their home range, their entire life cycle may become disrupted. Barriers to wildlife movement include large residential developments, highways and highly traveled local roads. Hingham has many barriers to wildlife movement, including major roads and some of its

## 4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS

larger residential developments, which displace many species of wildlife and permanently alter or destroy their habitat.

A wildlife corridor is not arbitrarily determined but must be scientifically proven to be a functional wildlife corridor. Just because a particular species travels along a specific pathway at a given time does not mean that it is a documented wildlife “corridor”. To the knowledge of the authors of this document, there are no demonstrated terrestrial wildlife corridors that have been revealed through scientific study in Hingham. It can, however, be assumed that there are riverine corridors within the major perennial streams in Town, including the Weir River, Weymouth Back River, Crooked Meadow, Accord Brook and Tower Brook. Anadromous fish use the Weir River and Weymouth Back River as a corridor and it can be assumed that river otter and perhaps fisher use other freshwater streams in Town as corridors.

The authors of this document would encourage any scientific project, including graduate or undergraduate thesis, to explore biological corridors in Hingham so that information could be used to help strategize areas for protection. This information could be used in any priority criteria for open space protection.

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A scenic coastal resource – The Crow Point Rip Rap walk starting at the Yacht Club.

### **F. Scenic Resources and Unique Environments**

Hingham is very diverse in its historical, natural and cultural features and therefore possesses scenic vistas and amazing natural resources that deserve protection. There are a number of places that draw residents and visitors for nature appreciation and both passive and active recreational opportunities. In an informal poll, all respondents mentioned either Hingham Harbor or World's End as the most valuable scenic resource or area of natural beauty. Although development pressures have removed some of the most outstanding areas of ecological integrity and natural beauty, including Baker Hill (now a residential development), some areas remain points of pride for the residents of Hingham. A few highlights are described in the following section.

#### **Major Geologic Features**

The town's scenic glacial features include eskers, moraines, major erratic and drumlins.

## 4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS

Eskers are found where melt waters running under the ice deposited a surprisingly stable, long, narrow, steep-sided ridge of sand, gravel, boulders and soil. One example is along the Home Meadows's side of Winter Street, and another nearby one is Weymouth's Great Esker in Great Esker Park across the Back River from Bare Cove Park.

Moraines (end moraines, terminal moraines) are masses of mixed material accumulating at the end of a glacier where it is melting as fast as it is moving. One major moraine upstream of the Home Meadows is thought to have diverted the outlet of the Weir River from the main part of the Harbor to its present outlet on the far side of World's End. Thus the flow out of the Meadow and through Harbor is limited.

Erratics are large stones or boulders glacially deposited on the top of the soil so that they do not protrude through the surface as bedrock would. One of several examples is off Rockland Street at Muzzi's Corner and has a commemorative plaque.

Drumlins (Irish for Back or Ridge) are glacially deposited/shaped oval hills comprised of clay, sand, gravel other soils and some boulders. They generally run north-south reflecting the direction of glacial travel. Their dense material makes them good building sites but poor locations for septic systems. Prominent scenic drumlins are Otis Hill, Bradley Hill, Worlds End and Baker Hill. Baker Hill, as the town's last un-built coastal drumlin at the time (except for World's End) was recommended for town acquisition by study committee in the mid- 1970s; but other worthy opportunities, particularly the South Shore Country Club, took precedence.



### **Cultural and Historic Features**

Cultural and historic features include the oldest continuing church in the United States, the 1679 Old Ship, its Hingham offspring, Second Parish in South Hingham (1746), and Bullfinch's New North Church founded by Gen. Benjamin Lincoln, along with the compelling and dramatically-sited St. Paul's Church, a monument to the town's industrious 19<sup>th</sup>-Century Catholic population. There is also the historic Lincoln House on North Street, Old Derby Academy - home to Hingham Historical Society - the Old Ordinary (an early form of inn and watering hole) and the varied 18<sup>th</sup>- and 19<sup>th</sup>-Century houses along Main Street. Monique Lehner of Fannin-Lehner Associates, points out that there are some surviving 17th-Century houses, but most are unrecognizable under modernized late 18<sup>th</sup> Century Colonial and Federal facades.

## 4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS

Ms. Lehner notes that Second Parish Church itself evolved from a simple side-entrance meetinghouse to one with a relocated, front entrance and attached tower/steeple, to with an expanded, pillared symmetrical front entrance, wrapped around the tower and steeple, finally making it a “traditional” Bullfinch-like New England church.

Missing are signs of the towns industrial past, such as the very long rope walk which ran behind the present Town Hall, the former Hingham Bucket Works on Cushing Pond (and the related hydropower tailrace across Main Street) and the various former grist mills, fulling mills, triphammers and foundries remembered only for their namesake neighborhoods and streets.

The locations discussed below are described further in Chapter V.

### **Hingham Waterfront and Harbor**

Hingham Harbor is not only an important source of economic growth for the Town but it is also a place where many residents and visitors go to enjoy natural beauty and scenic vistas. From the Harbor, a viewer can see a number of islands and headlands. There are both public and private boat launches and access to the water as well as privately owned marinas. There is also a public bathing beach, a bandstand, expanses of lawn and a few benches for scenic viewing of the Harbor and the islands.

A separate part of the waterfront, on the far side of Crow Point, is Hewitt’s Cove. It is the site of the former Bethlehem-Hingham Shipyard where hundreds of Destroyer Escorts (DEs) and Landing Ships (LSTs) were built for United States and British navies during World War II. This area includes the town’s Bouve’ land, described in Chapter V



**The Harbor viewed from the Broad Cove Whirlpool off of Otis Street.**

## 4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS

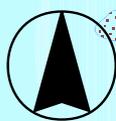
World's End, a 251-acre property owned by The Trustees of Reservations (TTOR), is a great source of pride for the residents of Hingham. It is ecologically diverse and is comprised of four coastal drumlins. It encompasses tidally influenced and freshwater wetlands as well as upland grasslands important for the survival of grassland bird species.

Farmed in the 19<sup>th</sup> century by the Brewer family, Worlds End was acquired by The Trustees of Reservations in 1967 after a broad-based fund-raising campaign lead by Samuel Wakeman, former Superintendent of the Shipyard. This important landscape had survived proposals for its development, including one for an early residential subdivision designed by the great landscape architect Frederick Law Olmsted, who laid out the present roadways and directed the planting of many ornamental trees; one, in 1945, for the United Nations Headquarters, and one in 1965 for a nuclear power plant on the site. The Reservation great scenic vistas of the Hingham Harbor, Boston skyline and the Weir River estuary, and it is one of the 30 islands and properties of the Boston Harbor Islands State Park and a more recently National Recreational Area, designated in 1996.

### **Weir River and Associated Area of Critical Environmental Concern (ACEC)**

The Weir River Area of Critical Environmental Concern (ACEC) is designated as such by the Secretary of Environmental Affairs under the state ACEC program following great local efforts. The designation carries with it more stringent requirements for minimizing environmental effects within its 922-acres.

There are areas of ecological diversity and of great beauty within the Weir River ACEC. Both Hingham Harbor and a portion of World's End lie within the boundaries of the ACEC. The ACEC boundary also encompasses the tidal portion of the Weir River, the estuary, inner Hull Bay and Straits Pond. The volunteer Weir River Watershed Association works to gather data on the Watershed's condition using monitoring programs, carries out local projects to maintain and improve the water quality, aesthetic values and enjoyment of the Weir River Watershed and conveys findings to the public, governmental committees, and other agencies. The Association and the official Hingham, Cohasset, Hull Weir River Watershed Park Committee have done much to establish a park with extensive River frontage in all three communities



0 0.5 1 Miles

Bumpkin Island

HULL

Worlds End (TTOR)

Weir River ACEC

3A

3A

3A

228

3A

Lincoln H.D.

Hingham Waterfront & Harbor

Weir River

Home Meadows

Town Brook

Fresh River

Weymouth/Hingham Back River ACEC

Hingham Center H.D.

Tower Wilder H.D.

Glad Tidings H.D.

Wompatuck State Park

WEYMOUTH

53

228

SCITUATE

3

53

228

228

53

NORWELL

3

3

53

3

3

53

3

3

ROCKLAND

**ENVIRONMENTAL:**

- NHESP 2009 Massachusetts Certified Vernal Pool
- Anadromous Fish Run
- Stream
- Open Water
- Wetlands
- Tidal Flats
- Shell Fish Area
- ACEC - Area of Critical Environmental Concern

**HISTORICAL:**

- Scenic Road
- State Register of Historic Places and/or Local Historic Districts
- State Register of Historic Places - Building
- 1 W. Allan Gay House
- 2 Lincoln House
- 3 Gen. Benjamin Lincoln House
- 4 Old Ship Meetinghouse
- 5 Cushing Homestead
- 6 Thomas Chubbuck, Jr. House
- 7 Perez Whiting House

**SCENIC RESOURCES and UNIQUE FEATURES - MAP 4**

Town of Hingham - 2009 Open Space and Recreation Plan

2 June 2009  
Prepared for the Hingham Conservation Commission  
Map Compilation and Design: MapWorks  
MAPSatWORK@aol.com  
Source: MassGIS

## 4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS

### **Wompatuck State Park**

Many residents and visitors value the availability of Wompatuck State Park as a local resource for nature appreciation, passive recreation and some active recreation. It park contains 3,602 acres in the towns of Hingham, Cohasset, Norwell and Scituate, including 1,540 acres in Hingham. It is heavily wooded and is interspersed with wetlands systems. Wompatuck provides many opportunities for hiking, biking, camping, cross-country skiing and boating with a ramp on Cohasset's Aaron River Reservoir.

### **Bare Cove Park/ Weymouth Back River (ACEC)**

Town-owned Bare Cove Park is the site of the former U.S. Naval Ammunition Depot. Its 468 acres protect tidewater and salt marsh along the Weymouth Back River and provides paved bicycle paths, picnic sites, and woodland trails for public enjoyment. The park, as well as Great Esker Park across the Weymouth Back River, falls within the Weymouth Back River Area of Critical Environmental Concern. They have been proposed to be connected over the narrow southern portion of the Back River.

### **Home Meadows**

Home Meadows conservation area, owned by the Hingham Conservation Commission, provides a scenic view of the tidally influenced marsh. It is just off of Winter Street near downtown Hingham and provides a scenic overlook in an otherwise densely developed area as well as providing protection for a large marsh system. Tidal flushing has been restored through mitigation efforts of the MBTA's Greenbush Commuter rail restoration project.

### **Certified Vernal Pools**

According to the records of the Natural Heritage and Endangered Species Program (NHESP) as of February 2009, there were 30 Certified Vernal Pools in Hingham. Certified vernal pools are regulated as Outstanding Resource Waters under the Wetlands Protection Act.

### **Scenic Roads (2004)**

There are 6 scenic roads in the Town of Hingham officially designated through the Scenic Road Designation Program (M.G.L. Ch. 40, s.15c): Free Street, Lazell Street, Leavitt Street, Turkey Hill, Popes Lane and Union Street. (See Map 4) The designation of a road as Scenic helps it maintain and retain much of its historic and rural characteristic. A public Planning Board hearing is required before a property owner can remove a tree or alter a stone-wall within the right-of-way of a designated scenic road.

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### **G. Environmental Challenges**

There are both temporary and permanent environmental challenges that we face when planning for open space protection and recreation in Hingham. For example, floodplain areas might be considered desirable for protection in order to avoid inadvertent building or development in areas that have chronic problems with flooding or storm water, but these areas might be appropriate for some recreational uses. Land that contributes to groundwater protection and recharge, particularly surrounding stressed water basins, might be on a Town's priority protection list. In a similar vein, many towns consider capped landfills a desirable area to create playgrounds or ball fields that can increase a community's available recreational opportunities.

Other environmental challenges, such as waste disposal sites regulated under M.G.L. Chapter 21E or federal Superfund sites, or areas of heavy sedimentation and pollution problems could be considered undesirable for open space protection or recreation opportunities. It is up to the residents and planners of each town to decide where their priorities lie and what criteria should be used in achieving open space protection and recreation opportunity goals.

### **Disposal Sites**

Hingham has no federal Superfund Sites identified within its boundaries. A review of the Department of Environmental Protection (DEP) Bureau of Waste Site Cleanup database of release sites lists 151 reportable releases that were assigned Release Tracking Numbers (RTNs) in Hingham. These are sites where a release or potential release of oil and/or hazardous material was identified that met the regulatory reporting requirements of the Massachusetts Contingency Plan (MCP). The database provides general information identifying the release location, date of notification, release classification and compliance status. Nearly 100 of the release sites are listed as having achieved a Response Action Outcome (RAO). These are sites that have been investigated and/or remediated in accordance with the MCP and where it has been determined that a condition of "no significant risk" of harm to human health, safety, public welfare and the environment exists at the site. Another 17 sites were listed as requiring "No Further Action" or as having the RTN closed or retracted. These are generally sites where a relatively minor release may have occurred that was determined to not require further response actions. Four sites were identified as having Down gradient Property Status (DPS).

Of the nearly 33 active disposal sites in the Town, eleven were listed as having Special Project Status. These sites are associated with the ongoing Greenbush Rail line project.

Nine sites were listed as "Unclassified". Sites are usually classified into Tiers using the Numerical Ranking System (NRS). Sites are scored by the NRS on a point system based on a variety of factors. These factors include the site's complexity, the type of contamination, and the potential for human or environmental exposure to the contamination. In addition, some sites are

## 4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS

automatically classified as Tier 1 sites if they pose an imminent hazard, affect public water supplies, or ignore regulatory deadlines.

The highest scoring sites are classified as Tier 1A and generally present the most complexity and potential hazard. Tier 1A sites are under the direct supervision of the DEP. Tier 1B and 1C sites present less potential hazard and response actions are supervised by a Licensed Site Professional (LSP). Tier 1D sites are sites that are out of compliance due to various reasons, usually for missing key MCP submittal deadlines. The lowest scoring sites are classified as Tier II disposal sites and response actions are supervised by an LSP.

Two Tier 1A sites were identified in the Town of Hingham, both within Wompatuck State Park (formerly a military munitions facility). One was identified as a former dump and the second a former burning ground. The Hingham DPW was identified as the only Tier 1B site in the Town, and Hewitts Cove Marina was identified as the only Tier 1C site. Five Tier 1D sites and four Tier II sites were identified in the Town.

Based on review of readily available data from the DEP, the Town appears to have few concerns in regards to adverse impacts from hazardous waste sites. Over two-thirds of disposal sites identified in the Town require “no further action” and the few “open” sites under investigation do not appear to present a significant threat to Areas of Critical Environmental Concern or to water supplies (Zone II or Interim Wellhead Protection Areas).

### **303d Impaired Waters**

Under Section 303(d) of the Clean Water Act, states must identify and rank waters impaired by pollution and contamination. “Impaired water” is defined as a surface water that does not meet water quality criteria as defined by the Massachusetts DEP. Impaired waters are classified into different categories according to the types of known pollutants found in them.

The July 2003 Hingham Phase II Stormwater Management Plan found six 303d listed waters in Hingham based on the proposed year 2002 integrated list of waters.

**4.0**  
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**2002 Section 303d Hingham Water bodies on the Integrated List of Waters**

<b>Water Body</b>	<b>Impairment</b>
Foundry Pond	Nutrients, siltation and noxious aquatic plants
The Weymouth Back River from its the Old Colony Railroads tracks to its mouth east of Wompatuck Road in Hingham	Pathogens
Weir River from the confluence of the Crooked Meadow River and Fulling Mill Brook to the Estuary at Rockland Street.	Nutrients and Pathogens
Weir River – from Rockland Street and the outlet of Straits Pond to its mouth at Worlds End between Hingham and Hull	Pathogens
Crooked Meadow River from the outlet of Cushing Pond to the beginning of the Weir River	Nutrients, Organic Enrichment, / Low Dissolved Oxygen (DO) and Noxious Aquatic Plants
Hingham Harbor inside a line from Crow Point to World’s End	Pathogens
Hingham Bay—from the end of Hingham Harbor at a line from World’s End to Crow Point, and the end the Estuary at a line from Sunset Point in Hull to World’s End, and water outside of the mouth of the Weymouth Back River from Hingham’s Beach Lane to Weymouth’s Lower Neck, and on the a line between Peddock’s Island and Hull’s Windmill Point	Pathogens

The more recent Proposed 2006 list noted a similar six sites along the Weir River, the Weymouth Back River, the Crooked Meadow River, Foundry Pond, and all or portions of Hingham Harbor, Hingham Bay, and Hull Bay which required definition of TMDLs (Total Maximum [allowable] Daily Loads for various contaminants; and it also listed Accord Pond as Attaining Some Uses (aesthetics and non-contact recreation) with others to be assessed. This suggested that little change has occurred.

## 4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS

The federal National Pollution Discharge Elimination System (NPDES) Phase II Stormwater Management Plan requirements include the implementation of Best Management Practices (BMP's) to address all Category 5 303d waters. These require a TMDL and all of the 303d classified waters in Hingham are Category 5 and hence require TMDL Studies. Category 4a waters have a completed Total Maximum Daily Load (TMDL) study.

### **Chronic Flooding**

As discussed under Water Resources and shown on the Water Resources (Map-5), the town has very few developed areas with chronic flooding. This is because its streams are small, there is very little development in the flood plain or next to low-lying beaches, and coastal storm surges are limited by the barriers created by Hull (essentially a classic barrier beach), Peddock's Island, and Hough's Neck in Quincy. Storm surges must make their way through the Hull Gut and the West Gut (between Peddock's and Nut Island at the end of Houghs Neck.) before raising tides in Hingham and Hull Bays.

Some inland streamside yards and cellars are frequently flooded by backwaters above culverts or by high groundwater, but damage to buildings or threats to people are negligible as shown by the few non-coastal policies and minimal claims under the National Flood Insurance Program.

Present and past Conservation Officers and Public Works officials report repeated local flooding in areas such as:

- The Town Brook in West Hingham
- Yards along the edge of Crooked Meadow Brook downstream of Cushing Pond and upstream of Friend Street
- The Weir River at East Street above the railroad abutments and Foundry Pond – now eased by the MBTA's installation of a box culvert easing flows from the River to the Pond
- Some houses and yards along the Eel River in the Liberty Pole subdivision due to local drainage issues
- Tower Brook just North of Free Street

## 4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS

From 1978 to 7/31/2009, the National Flood Insurance Program reported 106 losses (3-4/year) and paid \$598,715.66 for claims in 31 cases. The average payment for these few cases was \$19,313; far less than the state average of \$52,070 per case for the same period. This demonstrates the limited losses in the town.

As suggested in the Water Resources section, open space funds might be used to modify channels to create low-lying habitat/open space/ flood storage areas through temporary backwaters with flood control and groundwater recharge benefits.

In addition, existing public and private dams, such as that at Cushing Pond, might be upgraded, if necessary, and managed for local flood control purposes. Thus, rather than dropping a pond when storm levels got high and threatened property, the town or private owner would drop the pond before a major storm and then replace the boards or close the gates to hold much of the storm water for a few days. The flow could then be restored - unless groundwater recharge was sought and the underlying soils were suitably coarse.

Such a storm water management program would take negotiation, repair or upgrading of some dams and considerable coordination. The result could restore the water management function of the town's mill dams and give some flood protection, as advocated by some present or past conservation and public works officials. Such opportunities could be uncovered through a town-wide stream system inventory as proposed by the Commission some time ago, and could possibly be further defined and implemented with Community Preservation Act funds (given historic, recreation or open space values), Economic Stimulus money, or Community Development Block grants. Surprisingly, Federal Emergency Administration pre-disaster mitigation funds are presently not to be used for work on dams.

## 4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS



Long-term railroad bridge abutment and the new box culvert added by the MBTA. Note the high water line above the top of the culvert, indicating constrained flows.

### **Hingham Landfill and Transfer Station**

Hingham has one recycling facility and solid waste transfer station, located on Hobart Street adjacent to the former Town landfill. The Department of Public Works and the Long Range Solid Waste Disposal and Recycling Committee urge residents to maximize their recycling efforts for both economic as well as environmental benefits. More than this, the Town requires recycling of all clean paper, cardboard, most plastics, glass, and metal cans. Places are provided to drop off items such as computers, television sets, car batteries, used motor oil, tires and large metal items. There are also places for hazardous items such as compact fluorescent bulbs and areas for leaves and brush for composting. There is also a swap area and a set of donation bins for usable items, and occasional access to felled trees for fire wood, and to wood chips for mulch. All of this reduces the amount to be disposed of. This waste no longer goes to a landfill but to the SEMASS waste-powered electricity generating plant.

## 4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS

The capped landfill is a sizable hill - a man-made drumlin- and has been proposed for recreation uses; sliding, cross-country skiing, mountain bike riding, hiking to see the view. Such uses would require coordinating responsibilities for maintaining the integrity of the cap while sculpting the surface to a less angular, more “natural” appearance. It would be complicated, but such recreational re-uses have been done elsewhere and the landfill’s high, open character could be a good contrast to the nearby, largely wooded More-Brewer Park and Brewer Reservations. The varied forms, heights, vegetation, and views could make for memorable, varied hiking experiences.

The landfill is also being studied for wind power - hence the anemometer on top of a mast – and similar landfills elsewhere are being planned for wind-power and for solar power through photovoltaic arrays on their sunnier sides.

With so many possibilities, one further environmental challenge is keeping this hill, sometimes called Mount Fuda for its former overseer, from going to waste.

### **Erosion and Sedimentation**

Erosion and sedimentation of water bodies from construction sites is a chronic problem and can severely impair water quality, wildlife habitat, and holding capacity of wetlands and water bodies. The main historic instance of local sedimentation was the deposit of much silt, sand, and gravel from the Weir River into Foundry Pond by past ditching of the River.

New regulations put forth by the NPDES (National Pollution Discharge Elimination System) Phase II Program require additional permitting for developers or homeowners seeking to disturb more than one acre of land. The NPDES permit requires a developer to identify potential point source discharges and set forth a plan to control erosion and sedimentation on the site. The goal of Phase II is to improve the water quality of receiving waters.

Foundry Pond Siltation: As discussed earlier, past ditching of the Weir River near the High School (and other stream-cleaning upstream) led to much transport of sand, silt and gravel from the stream bed to Foundry Pond. This greatly reduced the Pond’s surface, volume and habitat value.

However, this sedimentation probably contributed only marginally to historic flooding along East Street upstream of the old railroad bridge abutments. It was noticed in the past that stormwater was a foot or higher above the abutment than below it and that this water was well above the Pond level. The more recent installation of a box culvert bypassing the abutments has reportedly reduced this flooding but the sediment deposited in the pond just below the abutments obstructs the flood flows through the pond.

## 4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS

### **Stressed Water Basins**

Water supply is a highly important and significant issue in each municipality. Demand often exceeds the carrying capacity of watersheds to provide quality water to communities. The Massachusetts Water Policy recommends a “Stress Framework” approach to water policy to encourage local towns and other entities that regulate or control water to develop a pro-active approach to water policy and management. To this end, the Water Policy identifies permitting issues of concern to municipalities. The Stress Framework would set performance standards for entire basins based on stream flow and, later, biological and chemical integrity. (Massachusetts Water Policy, 2004). There are three levels of stress designation for basins, based on factors affecting quantity, quality and habitat factors, such as presence of target fish populations. Through the Stress Framework process, the State recommends that all communities develop an “Integrative Water Resource Management Plan” that looks to balance the inflow and outflow of water within that community in order to support sensible growth and planning. This approach should benefit from the new State Storm Water regulations requiring maximum groundwater recharge of water presently running off large impervious surfaces going more or less directly into streams.

The Weir River watershed was designated in July 2005 as a “high-stressed” basin, which is the highest of three classification designations. The following statement by Board of Health member Dr. Kirk Shilts sums up the strategy and what the Town needs to do to comply with the Massachusetts Water Policy:

“Developing new water supply sources is a long-term planning effort that involves conservation first, followed by recharge and reuse of recycled water. It should not be overlooked that Hingham and Hull’s water supply needs are irrevocably tied to wastewater recharge and reuse, as well as stormwater recharge. Fortunately, Hingham has already begun this evaluation process.”

“Current guidelines and practices are already in place to provide Hingham and Hull’s water supplier, Aquarion Water Company, with clear and concise management criteria for fulfilling our two communities’ needs. Balancing water withdrawals with actual stream flow conditions is central to the State’s water policy. Measures to identify and prioritize stressed habitat areas within our watershed must also be tied to water supply management. In our towns, the underground water pipes are relatively old. The State’s 2004 Water Policy prioritizes state resources to repairing water supply infrastructure, supporting a “fix-it-first” mentality of maintenance and early repair.”

Since waste water treated at the Hull or MWRA treatment plant goes to the ocean it is particularly important to maximize recharge of water from other sources, e.g through Low Impact Design (LID) principles.

## 4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS

### **Forestry Issues**

While over 300 sick, damaged or ill-located street trees have been removed over the past three years (as discussed above under “Public Shade Trees”), these have reflected various diseases, but no one major threat. In particular there has been no sign to date of the very destructive Asian Long-Horned Beetle. The Tree and Park Division of the Public Works Department remains very watchful and seeks citizen support. The Department has reduced planting of maple trees for a few years since the beetles like them.

There are fewer data about the condition of the town’s public and private woodlands away from roads. Examination of trees in parks shows some long-term effects of Saw Fly Borers, which attack maples, and of Emerald Ash Borers. Norway Maples also suffer from borers over a long period. The Hingham Tree Warden explains that the Ash Borer attacks some White Ashes but that those away from roadside stresses (salt, etc.) are generally healthy. Trees set away from the roadside generally do better, as indicated by little defoliation.

The condition of the more remote trees is checked by flights by Plymouth County. These can detect “hot spots” of defoliation which the Tree Department then investigates. Recently there has been some evidence of Canker Worms in the spring.

In all, the town’s roadside trees get much care, and the more extensive non-roadside forests are in relatively good condition despite long-term insect threats. While no Asian Long-Horned Beetles or their holes have been observed, the Tree Warden urges continued vigilance.

One unique situation is that of the George Washington Town Forest, which was planted in Red Pine in 1922 as an intended commercial crop for paper pulp. The trees have never been harvested and there has long been a concern that this mono-culture of trees, which live for 80 to 90 years, will fail over a short period. This has not happened yet, and as pines they may be less susceptible to the threat of hard-wood-oriented beetles.

### **Environmental Equity**

Environmental Equity or Environmental Justice refers to the sometimes disproportionate exposures of low income or minority communities to noxious or hazardous facilities or land uses such as incinerators, landfills, sewage treatment plants, piggeries, railroad tracks or major highways; or to their being under-supplied with open space and recreational amenities.

Hingham’s neighborhoods are diverse enough that there are no large low-income or minority concentrations to be uniquely affected by such influences, or to be readily mapped, and these influences affect a range of neighborhoods. The smaller historically lower-income pockets of housing are generally near other income groups and have few negative neighborhood impacts.

## 4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS

One major potential blighting influence, the former landfill, is bordered by open space on three sides, and the nearest neighborhood, a new single-family condominium development, is relatively affluent. There is no incinerator since non-recycled waste goes to the SEMASS waste-to-energy plant in Rochester.

Similarly, there is no sewage treatment plant in the town since the North and Weir River Sewer Districts flow to the out-of-town MWRA and Town of Hull treatment plants. There are some small, generally odor-free and quiet pumping stations, commonly in middle-income neighborhoods or commercial areas. The one at Downer Avenue and Route 3A is a low, ivy-covered brick building surrounded by grass, shrubs and trees. The one at Downer Avenue and Otis Street is more institutional looking but is also landscaped with a lawn, trees and shrubs and adjoins older and new middle- or upper middle-income houses. It was previously enclosed by a forbidding chain-link fence preventing access to its grounds but that has been replaced by a low rail fence.

The downtown brick station on South Street is set back slightly from a popular upscale pizzeria. Finally, the Weir River station in West Corner looks like a very small house – porch and all – and is noisy for about 50 feet but barely noticeable from nearby houses. It abuts moderate- to middle-income housing and a convenience store. Thus the pumping stations affect no low-income or “Environmental Justice” neighborhoods and are generally located within middle-income surroundings.

The restored commuter rail service unavoidably affects trackside housing through the immediate historic neighborhood in West Hingham and where it emerges from the tunnel under Hingham Square. This neighborhood was largely built after portions of the Town Brook were filled for railroad construction in the 19<sup>th</sup> Century. There was little choice about the route of this restored service, and some sound barriers have been installed so that the impact is less than with previous service. Local housing reportedly continues to be upgraded, countering past fears that the neighborhood would revert to much earlier pockets of deterioration.

The one new highway, Route 3, built in the 1950s, ran past a few streets in a middle- to upper-income area since that was part of the overall route. There has been recent concern along middle-income Beal Street that traffic from increased nearby multi-family housing and the large, mixed-use Hingham Shipyard project will harm their neighborhood. In response, the town performed a traffic study. As a result, the road is being modified to slow traffic, and the town is considering ways to keep through traffic on Route 3A whenever possible. Again, traffic growth is not being allowed out of disregard for the neighborhood; the neighborhood is not disadvantaged; the growth reflects continuing development; and the town is working to ameliorate its limited impacts.

In all, the town’s few small, historically low-income or minority neighborhoods have not been subjected to noxious environmental, health, or social impacts from major public or private

## 4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS

decision making. There are also few issues under the related Environmental Justice topic of Open Space Equity. This is discussed in Chapter V.

### **New Development**

Perhaps the biggest environmental challenge facing the Town of Hingham and the Commonwealth in general is new development. Massachusetts laws and their regulations such as the Rivers Protection Act, the Wetlands Protection Act and regulations, and the MA DEP Stormwater Management regulations, and federal laws and regulations such as the Clean Water Act and the National Pollution Discharge Elimination System, mandate that developers institute Best Management Practices (BMP's) to control additional pollution to wetlands and waterways and prevent any further degradation. Although regulations have improved over the years, the fact is that new development does, cumulatively, have an effect on the Town's environmental quality, water quality, habitat quantity and quality and even a Town's overall character.

There are currently over 1,600 acres of land under development in Hingham. The cumulative effect of such concurrent and wide-scale alteration to the ecology of an area assuredly has an impact on its functionality. We might not know the exact ramifications of this amount of development for years to come. Only when water quality is degraded and wildlife and plants that are native to the area begin to change or disappear altogether, will the overall impact of this large-scale development become obvious. The science behind water quality degradation and wildlife habitat alteration is always ongoing and, as we learn more, we can begin to adjust policy and regulations accordingly.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

Note: Codes for **Zoning** districts containing the parcels are listed below. See Figure 2 **Zoning Map**

**Zoning Codes**

RES – A - Residential 20,000 square-foot lots	RES – B - Residential 30,000 square foot lots
RES – C - Residential 40,000 square foot lots	OOS - Official and Open Space

The 2001 Hingham Master Plan uses the following definitions of open space. For the sake of consistency, this Plan uses the same definitions.

**P** = Protected in perpetuity by legal ownership mechanisms (i.e. is protected regardless of the local Zoning). We will further define those lands that are “Article 97” protection

**Z** = Protected currently by virtue of being within Hingham’s OS (Official Open Space) or WR Waterfront Recreation zones (no legally binding or regulatory Protection)

**T** = Limited or temporary protection by the Chapter 61, 61A or 61B tax abatement programs or by being owned by a public or private body for other purposes

**N** = No protection

**HP** = Historical Preservation Lands - Not a designation in the Master Plan inventory but important to note

Open space acquisition is vitally important to every community’s health, vitality and sense of well-being. By setting aside open lands, the community protects its water supplies, air quality, scenic and historic values. Naturalized areas absorb and filter the cacophony of noise and light pollution that is part of life in the 21<sup>st</sup> century. Open land attenuates stormwater flow and helps in groundwater recharge. These open lands, in addition, provide a safe haven for numerous species of flora and fauna, providing food, cover and habitat along streams, ponds and field edges.

Once the inhabitants of a town have the pleasure of experiencing properties that are slated to remain open and natural for all time they soon learn that nature’s fabric is under assault by our consumptive life style. Protected lands provide outdoor classrooms to educate the populace on nature’s diversity and vulnerability. Protecting open space enhances property values in a community and gives the inhabitants an increased feeling of well-being.

This section is an inventory of Hingham’s protected, minimally protected, and unprotected open space. We will describe ownership, current use, condition, recreation potential, public access, type of public grant accepted if any, Zoning, and degree of protection for each parcel of interest.

The inventory of present holdings is important to show what we have now and to describe the current setting. However the crucial information is the inventory of significant, unprotected and partially-protected land since this leads to the plan’s purpose; guiding future acquisitions and other protective actions leading to the Seven Year Action Plan.

Many privately owned undeveloped parcels have a high potential for either protection or development. This inventory looks at undeveloped lands of conservation and recreation interest regardless of their ownership or present level of protection, but lists them as public, non-profit and private holdings. Ownership and assessment information is from fiscal year 2005 Hingham Assessors records.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

Note: Apart from land held by the Conservation Commission, Recreation Commission and related bodies, a number of properties in Town are protected by historical deed restrictions held either by the Historical Commission or by the Society for the Preservation of New England Antiquities now known as Historic New England.

**Degrees of Protection**

There are varying levels of protection for Hingham’s open space.

**“Protected Lands” (P)**

These refer to land that is permanently committed to conservation or recreation use by ownership and/or permanent conservation restriction or other deed restriction. Examples are lands held by the Town’s Conservation Commission or through an open space-oriented non-profit organization, such as The Trustees of Reservations or the Hingham Conservation Land Trust.

A degree of added protection of land held for broadly-defined “Park” and conservation purposes is provided by the Massachusetts Constitution’s Article 97. This prohibits a change in use of such land, even for other public purposes, without a local legislative approval through a Town Meeting or City Council vote, and a 2/3<sup>rds</sup> vote by the General Court. This could be a courtesy vote if local members request it. While land under Article 97 is sometimes considered to be protected in perpetuity, coming under it alone does not protect a site if the community and owner decide to use it differently and get the required votes.

Further partial protection is provided by the requirement that land acquired with State or Federal aid such as the PARC Program (former Self Help program) may not be used for a different purpose – even a public purpose such as a new school - without being replaced by land of comparable size and value.

Unprotected lands refer to any land that has no official conservation or historical restrictions and could be sold and developed at any time. Both categories include public and privately owned land.

The following types of property are considered to be **“Protected.”**

- Town owned conservation lands
- Town owned recreation lands
- Non - Profit Organization/Land Trust owned lands
- Town Owned Historical Preservation Lands
- State Owned Parks, or town-owned Forests depending on their purpose
- Private lands with Conservation or Historical Restrictions

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Partially or Temporarily Protected Lands (T)**

This refers to land whose present use and ownership keep them open and delay probable development, but which could be developed or sold for development if the owners' needs changed. The following types of land are considered to be "Partially or Temporarily Protected". This is land held by the town for other purposes such as the former DPW, a school site which might be closed or a chance tax-title acquisition. Most of these are under less development pressure than comparable private lands, but given hard times, they could be sold or converted to other uses.

- Chapter 61 Lands: These are private forest, agricultural or recreation lands which are under Massachusetts General Laws Chapters 61, 61A or 61B respectively. Such land is taxed at its current use value rather than at a speculative development value so long as the owner commits to inform the town (or delegate) of any pending sale or change in use by letter to the Conservation Commission, Selectmen, and Planning Board and allow the town or delegate to meet any bona-fide offer and acquire the site. However owners may remove land from the program by repaying a portion of the avoided taxes.

Hence such land is seen as only partially/temporarily protected.

- Land under time-limited Conservation or Historic Preservation Restrictions
- Drinking Water Protection lands: owned by the Aquarian Water Company and potentially not needed if alternative source is found.
- Land held by private schools, churches or other institutions that might be sold if the needs of the owner change.
- Town land held for other than open space and recreation purposes and without even the limited protection of Article 97, such as cemeteries, non-recreational school lands, or Police, Fire and Public Works facilities, and miscellaneous town holdings or tax – title properties.

**Unprotected Lands (N)**

These are public and private lands that have no official conservation or historic preservation restrictions and could be sold and developed regardless of their present use or ownership.

The inventory lists the following types of properties as "Unprotected" lands:

- Private non-profit lands with no conservation restrictions
- Strategic tracts of private land of all sizes with no conservation restrictions

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

Note: Land held by the Town for other purposes, such as the former DPW yard, a school site which might be closed, chance tax-title acquisitions or miscellaneous little-needed town holdings are ultimately unprotected, but are at less immediate risk than comparable private land, and are considered to be Partially or Temporarily Protected.

Because of the open space and recreational opportunities they may offer, the miscellaneous town holdings and tax-title leases are shown on the Map of Lands of Open Space and Recreation Interest. (Map 6)

**Lands under Permanent Conservation Restrictions**

Entities such as the Conservation Commission, The Trustees of Reservations and the Hingham Land Conservation Trust hold Conservation Restrictions (CRs) or Easements on private land in Town or on public land; particularly that acquired through the Community Preservation Act, to further safeguard it. Landowners that put a Conservation Restriction on their property do so to enhance and retain the natural beauty and intrinsic value of their land, to assure that it will not be developed in the future, and often to get reduced property taxes. Some earlier holdings are protected by Conservation Easements.

Recent restrictions on land purchased under the Community Preservation Act are being held and monitored by the HCLT.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

The following are 15 Conservation easements mostly along Fulling Mill Brook granted to Commission 1964-1970, mostly for access Source: Page 170 of 1979 Plan, and others given later.

**Table V-1**  
**Conservation Easements**

<b>Year</b>	<b>Seller or Donor</b>	<b>Location</b>	<b>Dimensions</b>
1966	John Codman III	Mast Hill Rd./ Accord Brook leading to Triphammer Pond	50' strip
1970	Richmond & Baruto for Barich Family Realty Trust	Crooked Meadow Brook	-
1964	Emilie P.Harrison	Westerly of Fulling Mill Brook	100'
1967	Helen Burns	Westerly of Fulling Mill Brook	600'
1965	Phillip B. & Marion Terry	Easterly of Fulling Mill Brook	100'
1964	Nathaniel S. & Elizabeth A.Terry	Easterly of Fulling Mill Brook	100'
1964	Wallace M. & Elizabeth B. Kemp	Westerly of Fulling Mill Brook	100'
1970	Wallace M. & Elizabeth B. Kemp	Westerly of Fulling Mill Brook	200'
1964	Hans Lehner	Westerly of Fulling Mill Brook	100'
1962	Wallace & Marjorie Marden	Leavitt St./Weir River	1.2 acres
1964	Peter & Elizabeth Lehner	Westerly of Fulling Mill Brook	100'
1964	Richard Tonry	Plymouth River Road	100'
1964	Tucke & Katherine Curtiss	Westerly of Fulling Mill Brook	100'
1967	Harold Davis	Westerly of Fulling Mill Brook	100'
1964	Walter & Violet Malcolm	Westerly of Fulling Mill Brook	100'
1970	Richmond/Barbuto	Crooked Meadow Lane	Scenic Easement
1982	Armstrong Const.	Cranberry Pond	Easement
1994	S. and R. Vazza	Hingham Gardens	Easement
2006	Russell, Blanchet, Forker, Bennett Hastings	712, 718, 726, 730, 748 Main St	Easements at Jacob's Meadow
2009	John Riley	269-271 North St	Easement(License)
2009	John Riley	269-271 North St.	Easement
2004	Mass Electric	Oakcrest Road powerline	Easement
2009	Bates Bros. and others	7,8,10 Stevens Way, Fresh River Landing	Easement
2008	West Corner	West Corner	Culvert Replacement easement

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

The following table lists current Conservation Restrictions. These have no public access or recreation use. All except those on Mast Hill Road and Willow Circle are shown on the source lists as protected in perpetuity.

**Table V-2**  
**Conservation Restrictions**

<b>Map/Lot</b>	<b>Location</b>	<b>Zoning</b>	<b>Area</b>	<b>Ownership</b>	<b>Mngmnt</b>	<b>Use/Condition</b>
128/2	99 Lazell Street	Res.C	-	John F. & Penny White	HLCT	Protection/Floodplain
128/3	115 Lazell Street	Res.C	-	Wm.Calhoun	HLCT	Protection/Floodplain
128/10	131Lazell Street	Res. C	-	Thomas J. & Ann F. Murtagh	HLCY	Protection/Floodplain
128/1	83 Lazell Street	Res. C	-	David and Nancy Barry	HLCT	Protection/Floodplain
38/2	36 Talbot Road	Res. A	1 acre Est..	Jon B. D'Allasandro	HLCT	Scenic/ Grass
136/58	85 Cushing St.	Res. B	8.5	Mary Niles	HLCT	Pond protection/ Scenic
127/24	Behind 666 Main St.	Res. B	-	HLCT	HCC	Protection/Floodplain
127/25	Behind 676 Main St.	Res. B	-	HLCT	HCC	Protection/Floodplain
118/64	11 Crooked Meadow Rd.	Res. C	2.5	11 Crooked Meadow Trust	HCC	Protection/Floodplain Woods
119/19	59 Lazell Street	Res. C	-	Fulling Mill Brook Farm Trust	HCC	Riverbank protection Floodplain
118/44	117 Free Street	Res. C	-	Kenyon Farm Living Trust	HCC	Riverbank protection Floodplain
91/15	15R Studley Rd.	Res.A	-	Peter & Andrea Dunlap	HCC	River bank protection /Scenic
171/6	15 Mast Hill Rd.	Res. C	-	Laura & Eduardo Varas	HCC	River bank protection /Scenic
171/7	17 Mast Hill Rd.	Res. C	-	Paul & Carol Troy	HCC	River bank protection /Scenic
171/19	25 Mast Hill Rd.	Res.C	-	David Vargo & Sheila Collins	HCC	River bank protection /Scenic
171/20	23 Mast Hill Rd.	Res. C	-	Jenifer & Brooks Brown	HCC	River bank protection /Scenic
171/21	21 Mast Hill Rd.	Res. C	-	Astrid Thomas	HCC	River bank protection /Scenic
171/22	19 Mast Hill Rd.	Res. C	-	Dwight & Louise Wahr	HCC	River bank protection /Scenic
155/7	5 Willow Circle	Res. C	-	Edward & Mary Murphy	HCC	River bank protection /Scenic
166/16	6 Willow Circle	Res.C.	-	A.Mooradian & L. Surovick	HCC	River bank protection /Scenic
32/5	Rockland Street	Res.A	5.53	David & Nancy Bryan	HCC	Estuary prot./marsh
31/	Ringbolt Road	Res. C	-	Ringbolt Farm	HCC	Estuary prot./marsh

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**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

				Homeowners		
32/	Ringbolt Road	Res. C	-	Ringbolt Farm Homeowners	HCC	Estuary prot./marsh
57/17	230 Beal St.	Office Park	8.32	Hingham Mutual Fire Ins Co.	HCC	Scenic Buffer/Woods
110/1	Union & Free Streets	Res. C	-	The Meadows Condo Assn.	HCC	Scenic Buffer, River Prot./Field
57 / 58/	Off Beal Street	Res. E	9.8	Hingham Woods Condo Assn.	HCC	Wildlife Prot./Herron Rookery
98/37	3 Brewer Way	Res. B	-	James & Joan Gilson	HCC	Vegetated Buffer/Woods
81/90	10 Irving Street	Res. A	See # 28	Owen McConville	HCC	Wildlife Prot./ Scenic
72/17	28 Irving Street	Res. A	1.01	Owen McConville	HCC	Wildlife Prot./ Scenic
	204 Rockland St. Lot A divided to Lots 1 & 2	Res. C	-	Christopher Yule	HCC	Wildlife Prot./ Scenic
	Beal Street	O& O S	8.32	James Salah	HCC	Pt .of Bare Cove Park
	Charles Street	Res. B		Corcoran Const..	HCC	Brandon Woods
	Irving Street	Res. A		Joanne Norton	HCC	#10 and #28Bird habitat
712, 718, 726, 730, 748 Main St.	Jacobs Meadow	Res. B		Russell Blanchet Forker Bennett Hasting	HCC	Protects Jacob's Meadow  2006 TM

HCC = Hingham Conservation Commission

HLCT = Hingham Land Conservation Trust

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**(SEE Map 6)**

**Conservation/Open Space Resources - Significant Open Space Parcels**

The inventory matrix (See Appendix: G) following this overview will provide additional details about protected and unprotected open space lands in the Town of Hingham lands:

**Protected Open Land**

The town had 77 protected holdings in 1979 and now has over 100.

**MUNICIPAL**

**CONSERVATION COMMISSION**

The Hingham Conservation Commission was established in 1960 and acquired its first piece of land shortly thereafter. The Conservation Commission works with the Hingham Land Acquisition Committee to identify and protect important tracts and holdings with a variety of tools including outright purchase, acceptance of donations and conservation restrictions.

The Hingham Conservation Commission currently owns outright approximately 1,077+ acres of land and holds another 15+ acres in Conservation Restrictions (CR). There is no exact tally on acreage under CR's because not all CR documents specify acres. This list also includes some holdings which are in the Town's name but managed by the Commission.

**C-1 Bouve Conservation Area**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 32

**Zoning:** Municipal and Open Space

**Setting:** Shoreline between the Wompatuck Road/Beach Lane neighborhood and the shipyard.

**Access:** From end of Shipyard Drive or, informally, from the end of Beach Lane with forbearance of owners of abutting neighborhood association land.

**Facilities/Activities:** This waterfront parcel provides access to Hewitt's Cove on the Weymouth Back River. It includes a historically dredged swimming beach, vistas of the waterfront and the Boston skyline, and geologically interesting slate cliffs. The change in ownership of the adjacent Hingham Shipyard, and following wave of permitting allowed the Town to negotiate with the shipyard developers to help clean up the Bouve Conservation Area. Recent coastal storms had caused much debris to accumulate, heavy floats, pieces of docks, and large timber pilings littered the entire shoreline and salt marsh. In the summer of 2008, a large scale clean up at the Bouve Property was undertaken and heavy timbers and floats were removed.

**Significance:** This rare piece of public shoreline in the Crow Point area offers a possible walkway from the neighborhood to the Shipyard and commuter boat terminal, and

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**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

gives residents without waterfront access the shore. A recent concern here is that the interior section has become overgrown with invasive species such as bittersweet vine, Japanese Knotweed, and other plants making it almost impossible to reach some areas of this conservation property.

**Recommendations:**

- Negotiate access over the bordering 2-foot wide strip off Beach Lane owned by the Wompatuck Neighborhood association and develop an improved walkway from the neighborhood to the Shipyard.
- Seek a path to the nearby Bradley Woods Playground and that neighborhood.
- Develop an improved path from Beach Lane to the Shipyard for residents and visitors.

**C-2 Foundry Pond Conservation Land**

**Ownership/Management:** Town/Conservation Commission

**Map:** 53/Lots 40, 41, 42, 43, 44, 47, 52, 53, 57; Map 63/Lot 35

**Acres:** 32

**Zoning:** Municipal and Open Space

**Setting:** At lower end of Weir River between an old Colony railroad grade and the Foundry Pond Dam

**Access:** By foot from Weir Street and over the “Log Road” from Kilby Street, both well signed.

**Facilities/Activities:** Viewing the recently reconstructed Foundry Pond dam (1998) and Fish ladder (2010) and an adjacent abandoned quarry, hiking, nature study, fishing, birding, and scenic enjoyment of the waterfall at the spillway.

**Significance:** The Pond was given to the town by the Sportsman’s Club in 1961. It was originally called Thomas’s Pond after Benjamin Thomas’s 1825 ironworks furnace. This burned and the site later accommodated the 1840 Hingham Malleable Iron Company which burned in 1876, and then Colonel Weston’s wool processing factory which burned in 1888. It presumably has not been used as a power source since but it might have a potential as a “Low Head Power” source.

This land provides critical wildlife habitat in the upper reaches of the Weir River estuary, and is home to mink, muskrat, turtles, waterfowl, shore-birds and many migratory animals. The River supports a much diminished herring run which depends upon the recently upgraded fish ladder and significant smelt spawning habitat below the dam.

The pond is heavily silted from previous stream straightening, road sand, and deposits from various upstream sources of runoff. This greatly reduces the pond’s surface and impedes storm water flow to the spillway.

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**(SEE Map 6)**

The MBTA recently added culvert capacity at the upstream railroad bridge abutments, but observers feel that the silted pond still slows storm water flows to the spillway and lessens the protective benefit to immediate upstream properties.

The long-proposed dredging of silt in the pond to restore the pond's surface area and its floodwater handling capacity (described under Environmental Challenges) is yet to be given permits. The work to restore a smelt spawning area just below the dam which was inadvertently degraded during past work is in process.

Others have suggested eventually removing the dam to restore a free flowing river. However the new fish ladder well accommodates species seeking to go upstream.

To enhance the site and allow crossing over the flowing water, a walkway over the spillway on timber and planks or via a freestanding bridge or catwalk as been suggested.



The Foundry Pond Spillway-proposed for a boardwalk/bridge to allow crossing over the flowing water

**Recommendations:**

- Complete the pond dredging and smelt breeding area restoration.
- To better understand the pond's functioning future pressures on it, review prospective stormwater flows given increased impervious upstream development on one hand, and efforts to use Low Impact Design (LID) intended to increase recharge and to slow runoff from existing and new development.
- Build an elevated boardwalk across the spillway to allow hiking across and enjoying the flowing water. (Proposed earlier as a Bicentennial Year Improvement.)

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**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**C-3 McKenna Marsh**

**Ownership/Management:** Town/Conservation Commission

**Map:** 190 /Lot 25; Map 191/Lots 2, 4, 22; Map 198 /Lots 19, 20; Map 199 /Lot 4.

**Acres:** 103

**Zoning:** Municipal and Open Space

**Setting:** Uplands, opens woods, a freshwater marsh and a major beaver dam abutting the 25-acre Marchesiani Farmland, the more recent CPC-funded joint Housing Authority/Conservation Commission acquisition of a house and land on Scotland Street, and 20.9 acres of downstream Water Company land. It includes much of the Accord Brook channel.

**Access:** From Scotland St. and from Main Street via the Marchesiani Farmlands

**Facilities/Activities:** Wildlife observation, hiking. As noted on the Parklands for the Public Map “considerable high ground and opens woods provide easy walking and vantage points to observe wildfowl. Large White cedars can be seen from the trail that skirts eskers toward the northern margin.”

**Significance:** The largest part of a varied 125-plus acre complex of woods and wetlands protecting Accord Brook and including the former Rifle Range land and the recent Scotland Street acquisition. The extensive wetland regimes benefit Hingham and Norwell’s nearby wells.

**Recommendations:**

- Integrate management of these holdings in cooperation with adjacent land of the Norwell Water Department.
- Consider establishment of cooperative school-conservation guided nature trail or outdoor classroom as suggested in the previous plan.



More-Brewer Park from Hobart Street

**C-4 More-Brewer Park**

**Acres:** 186.5

**Zoning:** Municipal and Open Space

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**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Setting:** With the addition of the “Higgins parcel” adjacent to More-Brewer, this 112-acre park and the adjoining Brewer Reservation, generous gifts of Wilmon Brewer and Kathleen More Brewer, may be reached from Hobart Street as well as from New Bridge Street. The property was formerly a farm estate and still contains a rolling meadow fringed by pine, larch, sugar maple, and dogwood, along with a pond and many carriage roads.

**Access:** From Hobart Street with its parking area and from New Bridge Street.

**Facilities/Activities:** Brewer Pond is used for ice skating, while the numerous carriage roads through the property are used for walking and cross-country skiing. This Olmsted-designed park has a unique plant collection including many mature trees.

**Significance:** An extraordinary resource complementing the earlier Brewer Reservation to the south across Hobart Street. Beyond its own value the More – Brewer Park forms a connector between the Brewer Reservation, the South Shore Country Club and the Fort Hill Street access to Bare Cove Park.

**C-5 Brewer Reservation**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 48.1

**Zoning:** Municipal and Open Space

**Setting:** On Hobart street, east of the landfill and across from the more recent More–Brewer Park, the scenic Reservation contains approximately 39 acres of well-drained upland with abundant open woods of mixed oaks and white pine. At the crest of the hill has an open meadow bordered by cart paths while the eastern edge of the site features nine acres of maple swamp. The upland portion, King Cedar Field, features revered and well-maintained 160+ year old Red Cedar (*Juniperus virginiana*).

**Access:** By small parking area and cart path off Hobart Street.

**Facilities/Activities:** Well-traveled cart paths, kettle-holes near the landfill, site is ideal for nature walks while the crest of the hill offers prime picnic spots.

**Significance:** This area adjacent to the former landfill is an important relief to recent and potential nearby development. It is also a key link in a major north-south chain of open spaces with More-Brewer Park to the north and the Plymouth River School and related open space and recreational areas to the south. It also has the potential for a complementary integration with the open hillside presented by the adjacent capped landfill - if the open space and recreation potential of that land is ever realized.

**Recommendations:**

- Examine opportunities for integration with potential open space and recreation areas on the former landfill. Consider the use of some of related King Cedar Field for community gardens since it was used for crops by the Brewer Family and for Victory Gardens during WW-II and since the burning of much brush during the 80’s improved the soil.

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**(SEE Map 6)**



**King Cedar Field, a special place in the Brewer Reservation**

**C-6 Triphammer and Shingle Mill Pond and Access**

**Ownership/Management:** Conservation Commission (with DCR owning the south side of the Pond)

**Acres:** 97.8

**Zoning:** Municipal and Open Space

**Setting:** These two parcels, which total about 98 acres in size, provide a critical link in a greenway extending from Wompatuck State Park west to the Hingham High School land. The property is also the historic site of a former mill, and provides an unusual variety of aquatic and terrestrial habitats.

**Access:** By car from Union Street and or Pope's Lane; by foot from Leavitt Street Conservation land or the Golf Driving Range. By foot via an easement between two houses lots donated by Mrs. McSweeney after the loss of Triphammer Lane to the public, or by a low wet easement behind two new houses intended to replace the Lane.

**Facilities/Activities:** The 18 plus acre mill pond, reconstructed old mill dam, and fish ladders, spill-way, sluiceway and mill remnants are deserving of study. Acquisition of the higher Libby Thompson property by the MDC (now DCR) allows hiking and exploring of the whole site. The site is used for hiking, fishing, canoeing picnicking, bird watching, and skating.

**Significance:** The site is important for varied habitat and its key position in an open space network extending from Whitney Woods and Wompatuck State Park to the High School.

**Recommendations:**

- Study and preserve mill remnants and add an interpretive display.

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**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**C-7 Cranberry Pond (Bouve' Pond)**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 13.8

**Zoning:** Municipal and Open Space

**Facilities/Activities:** No facilities other than the pond itself that supports many natural recreation uses; fishing, birding and skating.

**Significance:** This prime area has many values and its mixed hardwoods screen it from the former landfill. Together the landfill, the Pond, and the Brewer Reservation make a significant town-owned open space block, further enhanced by the More-Brewer Park. There have been past concerns about leaching from the landfill affecting the pond.

**Recommendations:**

- Examine possible connections the landfill and the Brewer Reservation.
- Resolve past concerns with leaching contamination.
- Consider lighting, shelter or benches to enhance skating.



**A family enjoys the Triphammer Pond Dam**

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**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**C-8 Grossman Property**

**Acres:** 31.4

**Ownership/Management:** Town/ Conservation Commission

**Zoning:** Residential

**Setting:** This extremely attractive area is characterized by a striking series of small summits adjacent to a low-lying swamp. Black oak, pitch pine, white pine and red cedar are among the tree species present. Paper birch, attractive for its slender white stems and delicate foliage, occurs in these former agricultural fields as well.

**Access:** Via More-Brewer Park

**Facilities/Activities:** Well-worn trails and lack of litter testify to limited passive recreation.

**Significance:** This site is a significant conservation holding, as it is one of the Commission's few parcels with a substantial amount of high ground and well-drained soils. Of special note: Both the Fringed and Bottle Gentian existed here early in this century. Yellow Lady's Slipper now survives within Bear Swamp.

**Recommendations:**

- Clarify Connection to More-Brewer Park.

**C-9 Bucket Mill Pond**

**Ownership/ Management:** Town/Conservation Commission

**Map:** 126 / Lot 69

**Acres:** 9.1

**Zoning:** Open Space District

**Setting:** Once a small, semi-isolated wetland, this area was dredged to create a pond, with lasting benefits in aesthetic appeal for the neighborhood, as well as feeding and nesting grounds for waterfowl populations. Although it is a small parcel located within an area of newer well-spaced large homes, a screen of hardwoods and shrubs make this an attractive natural setting. Adjacent wetlands occur on several abutting house lots and further expand the wildlife habitat area.

**Access:** Via Bucket Mill Lane, with no formal parking other than along the street.

**Facilities/Activities:** Easy access encourages pond-life study, bird watching and neighborhood skating.

**Significance:** Given to the town by the Dattman Brothers, this site is an excellent example of how a far-sighted developer might handle a small wetland within a sub-division. In this case, dredging to form a small pond created assets for both neighborhood and wildlife population.

**Recommendations:**

- Be open to possible connections to future nearby acquisitions.

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**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**C-10 Crooked Meadow River Conservation Land**

**Ownership/Management:** Town/ Conservation Commission

**Acres:** 6

**Zoning:** Open Space District

**Setting:** This generous gift of Miss Helen Burns is an old established open space area that shows little evidence of human use despite its distinctive appeal. The property borders a quiet arm of the otherwise fast-flowing Crooked Meadow Brook. A waterfall north of the restored mill lies within plain view and earshot. Strikingly old ledge outcrops occur in and around the site, while substantial old hardwoods give the area a tranquil park-like atmosphere.

**Access:** Historically through land owned by Second Parish Church on Main Street.

**Facilities/Activities:** Passive exploration of an unusual natural area.

**Significance:** The land, between the Conservation and Church ownerships, is similar in character with huge ledges and glacial boulders. The Conservation Commission is always actively soliciting waterfront property regardless of size and parcels adjacent to this one would complete the protection of and access unique park land.

**Recommendations:**

- Be open to possible nearby or adjacent acquisitions.
- Work to achieve dedicated access.

**C-11 Mildred Cushing Woods**

**Ownership/Management:** Town/ Conservation Commission

**Acres:** 19

**Zoning:** Open Space Development

**Setting:** Bordering a good portion of Cushing Pond's eastern edge, this property includes a varied mix of rolling open woods with large conifers and hardwoods, old fields and attractive ledge outcrops. A minor portion of the property consists of lowlands with intermittent streams. Residents in the immediate area take a strong proprietary interest in this tract, which was a gift from a former abutter.

**Access:** A 40' right-of-way footpath off Cushing Street; footpath access only should limit use to passive recreation. The nearest parking is located along Cushing Street.

**Facilities/Activities:** Noted activities include general exploring, fishing, berry picking, canoeing, row boating and bird watching. People come in small numbers, but, quite often, to enjoy this appealing area.

**Significance:** Given by Mildred Cushing, this attractive and extensive acreage preserves the natural integrity of a good portion of Cushing Pond's shoreline. It represents a valuable acquisition, usually made possible only through the admirable generosity of a public-spirited citizen. The Conservation Commission has felt that such expensive tracts were virtually beyond their resources to purchase, and this substantial gift was a wonderful contribution. This parcel is additionally important as it provides public access to a

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**(SEE Map 6)**

considerable length of the pond's shore through attractive terrain. While serving as a neighborhood park to abutters on Main and Cushing Streets, it simultaneously preserves the natural aspect of the pond ecosystem.

**Recommendations:**

- Seek another, more visible access at the southernmost tip of the Pond on Cushing St.
- Curtail use of property as a repository for yard waste.

**C-12 South Side of Cushing Street-(Part of South School Area on Parklands map)**

**Ownership/Management:** Town/ Conservation Commission

**Acres:** 6.52

**Zoning:** Municipal and Open Space

**Setting:** When viewed in conjunction with abutting school property and panoramic Cushing Pond, just across the street, this red maple swamp maintains a good sense of open space along busy Cushing Street.

**Access:** By foot through South School grounds

**Facilities/Activities:** Passive use only; habitat for nature observation.

**Significance:** Aside from being an excellent green buffer zone, the property is important for flood control and water recharge. Before Cushing Street was constructed in the 1850's, this swamp was part of Cushing Pond. Water also flowed beneath Main Street to the Schute Farm and through a 600' aqueduct to Fulling Mill pond.

**Recommendations:**

- Maintain as is.
- Consider previously proposed adjacent acquisition on Cushing Street to northwest.

**C-13 Plymouth River Conservation Land**

**Ownership/Management:** Town/ Conservation Commission

**Acres:** 27.7

**Zoning:** Open Space District

**Setting:** The diverse terrain of this parcel supports a variety of plant and animal communities. An abandoned agricultural field on the western side of the property gives way to mixed hardwoods and pine on the adjacent ridge. A low stone-wall indicates contrasting uses such as cropland on one side and a containment area for animals on the other. The Plymouth River enters and forms the southern boundary and has a longstanding reputation as a prime trout fishing spot. The overall public complex includes Plymouth River School land, (under the Selectmen), Recreation Land described under Recreation as R-5, and this Conservation Land,

**Access:** Via Ward Street onto a car path.

**Facilities/Activities:** Strictly a passive use area.

**Significance:** Wildlife habitat is the most outstanding value of this appealing property. Beavers, Wood and American Black Duck, Great Blue Heron, ring-necked Pheasants, Woodcock

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and other people shy-creatures find haven here. Abuts Ward Street (Margetts') recreation land proposed for expansion into School/Selectmen's land to the north. Presently these make one major Open Space and Recreation Complex.

**Recommendations:**

- A maintenance plan is needed to preserve the habitat.

**C-14 Fulling Mill River Conservation Land and Glad Tidings Rock**

**Ownership/Management:** Town/ Conservation Commission

**Acres:** 23.09

**Zoning:** Open Space District

**Setting:** The bulk of this area is composed of red maple swamps bordering the Fulling Mill River. A beautiful small esker in the middle portion makes the site memorable.

**Access:** Through Wilder Hall parking lot on Main Street and a small stretch of private land.

**Facilities/Activities:** Natural swampy area and esker/ Cross-country skiing, nature walks, horseback riding.

**Significance:** This multiple site serves primarily the neighborhood population and contributes to a larger open space block along Main St.

**Recommendations:**

- Clarify and Map holdings.
- List with Hingham Conservation Land Trust (HCLT) Jacobs Meadow area.
- Get access rights through the noted stretch of private land.

**C-15 Scotland Street Conservation Land**

**Ownership/Management:** Conservation Commission

**Map:** 190/Lot 26, Next to McKenna Marsh

**Acres:** 3 acres

**Zoning:** Official and Open Space

**Setting:** Woodlands to rear of house acquired by Housing Authority, contiguous with McKenna Marsh

**Access:** From Scotland St.

**Facilities/Activities:** Woodlands, wetlands/nature observation, habitat

**Significance:** Expands McKenna Marsh area with this addition, part of a joint CC/HHA 2006 CPA-funded acquisition of house and land.

**Recommendations:**

- Continue to manage as part of the McKenna Marsh holdings.

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**(SEE Map 6)**

**C-16 Richard Road Conservation Land**

**Ownership/Management:** Town/ Conservation Commission

**Acres:** 8.6

**Zoning:** Open Space District

**Setting:** While the lion's share of this parcel is a flat maple swamp bordering Accord Brook, oak and pine covered hills line the western edge. The higher ground affords an easy and pleasant walk with a nice view of the freshwater marsh wildlife.

**Access:** By foot via the cul-de-sac at the end of Richard Road.

**Facilities/Activities:** Passive recreation – walking; nature observation

**Significance:** While providing a natural buffer between Richard Road and Wanders Drive, this tract also forms a contiguous strip of open space in conjunction with the Water Company land to the north.

**Recommendations:**

- Improve trails.

**C-17 Weir River Walkway**

**Ownership/Management:** Town/ Conservation Commission

**Acres:** 1.3

**Zoning:** Residential

**Setting:** Although largely unknown to the general public, this thin strip of the Weir River flood plain provides a pleasant water vista and bird watching spot. Predominately low vegetation such as marsh grass, woody shrubs, and slender saplings help give a feeling of airy open expanse.

**Access:** Leavitt Street and east side of Village Lane.

**Facilities/Activities:** Passive use – no formal trails.

**Significance:** This is a good beginning for a riverside trail system.

**Recommendations:**

- Examine possibilities to extend trail system.

**C-18 Merrymount Road Conservation Land**

**Ownership/Management:** Town/ Conservation Commission

**Map:** 100/Lot 48

**Acres:** 13.41

**Zoning:** Open Space District

**Setting:** This low-lying wooded swamp of red maple is located north of Tower Brook and south of the Water Company's Downing Street tract.

**Access:** Via Merrymount Road

**Facilities/Activities:** Passive recreation and nature study.

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### INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST (SEE Map 6)

**Significance:** As a major portion of the three contiguous public holdings including the Aquarion Water Company land and the High School, this parcel also serves an important open space buffer function. It also serves as a wildlife habitat to the Weir River corridor.

**Recommendations:**

- Access should be improved to allow foot travel from Merrymount Road land to Downing Street and the High School area.

**C-19 Leavitt Street Conservation Land**

**Ownership/ Management:** Town/ Conservation Commission

**Acres:** 16.3

**Zoning:** Open Space District

**Setting:** Steep terrain, rocky slopes, and wooded swamp draining to the Weir River are characteristic of this tract. Mixed oak and pine predominate on the higher better-drained slopes, while hardwoods fill the swampy depressions.

**Access:** By car and foot from Leavitt Street on Pope's Lane.

**Facilities/Activities:** Nature study, hiking, horseback riding.

**Significance:** This site is a link in an open space chain from Whitney Woods to the High School and beyond.

**Recommendations:**

- Mark access points on Leavitt Street and Popes Lane to increase awareness of the area.

**C-20 Cushing Land**

**Map:** 64/lot 11 including conservation restrictions on most of the buildings  
Acquired by CPC for Conservation purposes.

**Ownership/Management:** Town/Conservation Commission

**Acres:** 9.1

**Zoning:** Residence C

**Setting:** On scenic East Street across from Trustees' of Reservations' Weir River Farm

**Access:** On East Street just south of Route 3A

**Facilities/Activities:** Viewing and visiting the sites, walking the fields.

**Significance:** Great scenic and historic values being preserved. Conservation Restrictions are on the historic Cushing family house (with the longest, continuous occupation by one family); the barn (reputedly, the oldest in the country) and on the field and cornfield which is planned for continued cultivation.

**Recommendations:**

- Manage as is.
- Seek coordinated programs with Trustees.

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**(SEE Map 6)**

**C-21 Eel River Reservation**

**Ownership/Management:** Town/ Conservation Commission

**Acres:** 7.17

**Zoning:** Open Space District

**Setting:** Attractively outlined by enduring stonewalls, this parcel is physically very similar to the adjacent Troop #4 B.S.A. land. It consists predominately of maples with some higher ground at the perimeter. The terrain is generally level and a small brook adds greatly to the visual appeal. The channelization of the Eel River, many years ago, which arises here, has lowered the water level two to three feet in the swamp. Vegetation requiring substantial standing water appears to be doing poorly.

**Access:** Dead end at Brewster Drive or Old County Road.

**Facilities/Activities:** Walking; cross-country skiing.

**Significance:** This tract is significant (in conjunction with the Boy Scout tract) as it represents the expanding nexus of a Liberty Pole open space network. The area has good potential for passive recreation but there is much evidence of dumping leaves, grass and other garden trash.

**Recommendations:**

- Some restoration of the water level in the swamp.
- Educating the public regarding using the premises for dumping trash.



Schultz Field, an Agricultural Resource behind the Golf Driving Range. The Accord Brook flows along the distant tree line.

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### INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST (SEE Map 6)

#### **C-22 Hatch - Dunlap Land (Schultz Fields)**

**Area:** 17.5 acres east of Weir River

**Ownership/Management:** Town/ Conservation Commission

**Acres:** 17.5 acres

**Zoning:** Official and Open Space

**Setting:** Pasture land close between Accord Brook and Weir River.

**Access:** From end of Stoddard Rd.

**Facilities/Activities:** 14 acres of fields/ Now leased for corn growing.

**Significance:** A major riverside tract; saved and kept in agricultural production. Acquired in 2003 with CPA funds

#### **Recommendations:**

- Continue agricultural license.
- Explore acquisition of other lands east of the River.

#### **C-23 Nokomis Road Marsh**

**Ownership/Management:** Town/Conservation Commission

**Map:** 37/Lot131

**Acres:** 6.46

**Zoning:** Residential A

**Setting:** Saltmarsh west of Downer Avenue

**Access:** From Nokomis Road

**Facilities/Activities:** Marshland with habitat. Scenic and flood control values

**Significance:** Acquired with CPC funds in 2004. Protects upper reach of marsh and preserve setting for residents.

#### **Recommendations:**

- Manage minimally, monitor filling/or dumping.

#### **C-24 Amonte Meadow**

**Ownership/Management:** Town/Conservation Commission

**Map:** 42/Lot 06a

**Acres:** 3.3

**Zoning:** Residential B

**Setting:** Low wetlands and woods north of Weir River and north of Weir River

**Access:** 144 Rockland Street

**Facilities/Activities:** Fields, woods next to river; but not quite on it.

**Significance:** Open meadow along the river.

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### INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST (SEE Map 6)

#### **Recommendations:**

- Consider developing a trail along the Weymouth Power Company's fringe of land between Amonte Park and the River as acceptable to the Company. This befits the site as it is considered to be included the Weir River Park. See WRP-1
- Explore agricultural use to maintain openness of site.

#### **C-25 Jacobs Meadow**

**Map:** 137/Lot 10

**Ownership/Management:** Town/Conservation Commission

**Acres:** 2.4 acres of backland

**Zoning:** Residential B

**Setting:** Land behind several houses on Main Street near Wilder Hall but not contiguous with other public or non-profit open space.

**Access:** From Main Street by informal passage over Wilder Hall land and intervening private land

**Facilities/Activities:** Land /No special facilities or activities

**Significance:** Acquired through CPC in 2006 to protect 18<sup>th</sup> century streetscape by preventing building behind present frontage; acquisition triggered several supportive Conservation Restrictions by owners of adjacent back land.

#### **Recommendations:**

- Seek acceptable public access by easement or acquisition.

#### **C-26 Former Mobile Station on the Harbor**

**Ownership/Management:** Town/Board of Selectmen

**Acres:** .51

**Zoning:** Business B (to be Official and Open Space)

**Setting:** On harbor, fronting on Route 3A, very scenic

**Access:** From Route 3A or from adjacent Whitney Wharf and Harbor parks

**Facilities/Activities:** Open lawn since clearance of old Mobile station,

**Significance:** Opens up harbor view. It was acquired in 2008 with CPA funds "for open space and recreation".

#### **Recommendations:**

- Integrate the site with the adjacent Harbor Park.
- Explore active marine recreation use, possibly as part a town marina.
- Explore compatible small scale recreation-supporting commercial use.
- Consider adding the buffering low berm along Rte. 3A like that proposed for the Harbor Park, as discussed below.

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**(SEE Map 6)**

**C-27 Harbor Park**

**Ownership/Management:** Town /Conservation Commission

**Acres:** 1.3; 17,500 square feet of upland and 39,100 square feet of mud flats next to a dredged channel

**Zoning:** Municipal and Open Space

**Setting:** On the harbor off Route 3A, between the Town Brook/Home Meadows outlet and the recently acquired former Mobil station

**Access:** By car or foot from Route 3A with parking at the adjacent Whitney Wharf Park. Access from Rte. 3A requires crossing awkward intersection of Water St. and Route 3A. Also by a paved walkway from the adjacent Whitney Wharf Park to the flag pole and Veterans' Memorial plaque (improving handicapped access.)

**Facilities/Activities:** Benches and wall for sitting and viewing the harbor; a row of pines separating the Park from Route 3A, but partially blocking harbor view; flag-pole and marker commemorating veterans.

**Significance:** This is a very valuable part of Harbor open space system between the more recent and formal Whitney Wharf Park and the newly acquired and cleared former Mobile station. The Park was originally planned to celebrate the Bicentennial, being cleared, covered with wood chips, and partially planted for 1976. Design was completed and park was built in 1981 including tree planting along Route 3A but without a proposed low screening roadside berm proposed in the final plan.

**Recommendations:**

- Reconstruct intersection to make a right angle crossing.
- Consider adding originally proposed low berm to partially screen the park interior from Route 3A traffic while allowing drivers to glance at the harbor.
- Integrate design with future design of adjacent former Mobil station and rest of Harbor walkway.

**C-28 Indian Spring - North of Liberty Pole next to South School**

**Ownership/Management:** Town/ Conservation Commission

**Acres:** .8

**Zoning:** Official and Open Space District

**Setting:** Primarily composed of red maple swamp, this parcel contributes to the larger open space block formed by the South Elementary School grounds. Indian Spring is one of the few natural springs to be found in Hingham. It is a free-flowing spring located at the base of the moraine supporting the homes on Liberty Pole Road.

**Access:** Through the lower fields at South Elementary School with parking in the school lot.

**Facilities/Activities:** Passive recreation and nature study.

**Significance:** This fraction of an acre is an excellent wildlife habitat and nature study area.

**Recommendations:**

Manage as is

**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST  
(SEE Map 6)**

**C-29 Marchesiani Property Main St. (Traded for Black Rock Quarry land)**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 25

**Zoning:** Official and Open Space

**Setting:** This historic farmland was once a part of Pushcart Farm originally purchased by the Marchesiani family in 1934. As with many currently wooded properties, these lands were mostly held open for pasture and agriculture. Through the good will of the Marchesiani family and the developer of Black Rock Golf Course, this property was obtained in 2001 in exchange for an inaccessible conservation tract on Old Ward Street. The property now connects Main Street to over 100 acres of conservation land in Hingham and to 400 acres in the Norwell well fields. It borders Accord Brook and McKenna Marsh and includes a spectacular pine grove. The mown field on Main Street recalls the agricultural history of the town and the cart paths through the property make for easy walking.

**Access:** Main Street where two granite posts and stone wall mark the entrance. Parking is available at the Middle School across the street.

**Facilities/Activities:** Nature study, equestrian trails

**Significance:** At one time, over 10,000 tomato plants were grown here, along with strawberries, cucumbers and other vegetables. The site of the old asparagus bed is still open on the left of the path leading to the woods.

**Recommendations:**

- Explore use of open land for agriculture.
- Integrate management of rest with greater McKenna Marsh holdings.

**C-30 Martin's Lane Conservation Land**

**Ownership/Management:** Town/ Conservation Commission

**Acres:** 1.43

**Zoning:** Residential

**Setting:** This meadow is covered with meadow grasses interspersed with pockets of mixed oaks and red cedar.

**Access:** Martins Lane and George Washington Boulevard; no parking

**Facilities/Activities:** No trails; limited passive use

**Significance:** This gift, from Mrs. Verna Ross Orndorff, is an abandoned field tract and gateway to World's End Reservation. It is the link in an open space buffer strip along Rockland Street and George Washington Boulevard to the Hull border. Due to heavy summer pedestrian and automobile traffic to the beaches, Mass Highway Department constructed a bicycle path and roadway improvements along this conservation buffer and nearby Boulevard Border Park. The bicycle path was constructed mainly due to the vision and determination of Bob Beal, former Chairman of the Hingham Conversation Commission.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Recommendations:**

- Seek extension of bike path.
- Remove illegal trespass by neighbor.

**C-31 Chief Justice Cushing Highway Route (3A) Border**

**Ownership/Management:** Town/ Conservation Commission

**Acres:** 10.81

**Zoning:** Open Space District

**Setting:** The strip runs between Route 3A and the Greenbush Railroad. It is a small but active oasis that buffers development along the 3A and rail corridor.

**Access:** Along Route 3A to Summer Street

**Facilities/Activities:** Passive recreation and wildlife refuge

**Significance:** The flooded area contains much wildlife including sightings of the Pileated Woodpecker. The area contains the only known occurrence of the Maidenhair Fern in Hingham. Small vernal pools, Spotted Salamander and other interesting flora and fauna border the railroad track.

**Recommendations:**

- Add identifying signs at either end of this holding.

**C-32 The Home Meadows**

**Ownership/Management:** Town/ Conservation Commission

**Acres:** 70 plus

**Zoning:** Municipal and Open Space

**Setting:** Salt marsh and pond area east of Winter and Water Streets and connected to the Harbor by the recently upgraded culvert and tide gate increasing natural tidal flow. Contrary to its name the area is more marsh than meadow. Limited past tidal flushing and accumulated nutrients and decayed matter had diminished salinity allowing invasive species such as phragmites. Recently increased flows are expected to reverse this. This was once the pre-glacial outlet of the Weir River, as discussed earlier. The low central portion is surrounded by sloping uplands. Vegetation includes marsh grass, scattered brush, and small trees on islands of high ground and along the edges.

**Access:** By car and then foot from the Winter Street frontage and from a public entrance strip of the Andrew's Isle subdivision which is surrounded by the Meadow on three sides. Travel into and through the marsh would be facilitated by an access point on vacant private land near the railroad crossing east of Water Street. Visual access could be greatly improved by selective tree and brush clearing behind the Home Meadow sign at the foot of Winter Street

**Facilities/Activities:** No formal facilities; just the marsh and meadows themselves. Activities include hiking on the perimeter, bird watching and nature photography, skating when flooded in winter, and canoeing or kayaking during flood tides or periods of impoundment.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Significance:** This is a major visual and environmental asset. Past odors from inadequate tidal flushing led to demand to keep the water high but were earlier eased by installation of an adjustable tide gate. This has been further remedied by the more recent culvert installed as MBTA Old Colony Rail restoration mitigation activities.

**Recommendations:**

- Increase visual access by selective tree and shrub clearing at the lower end of Winter Street.
- Increase pedestrian access by a small land acquisition east of Water Street just above the railroad crossing.

**C-33 Wadleigh's Rill**

**Ownership/Management:** Town/ Conservation Commission

**Acres:** .59

**Zoning:** Open Space District

**Setting:** A small stream or rill and rocky hill.

**Access:** On Lazell Street

**Facilities/Activities:** Parking is not immediately available due to the heavily traveled road.

**Significance:** Given by Edward "Tuck" Wadleigh, this oasis preserves a spring and rambling stream that cuts through a rocky hillside. Its beauty is in its size. This area also affords an opportunity in the future for linkage from Jacobs Meadow Conservation area to Wompatuck Park with the addition of other parcels that are now in private hands.

**Recommendations:**

- Explore possible connections between Jacobs Meadow and Wompatuck State Park.

**C-34 Burns Memorial Park (Tranquility Grove)**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 24.1

**Zoning:** Municipal land Open Space

**Setting:** The varied "wild" terrain is excellent wildlife habitat. Much of the area is Fresh water marsh-meadow and Red maple swamp, but the northern and western parts have a high ledge, mature pines and ancient individual hard woods. Old Red Cedars are losing the contest for light to faster growing pines and hardwoods. This "Old Field" species composition indicates that the northern section was once a cleared pasture.

**Access:** Off Hersey Street, across from the former Highway barn, difficult to find without an apparent sign, though reportedly has been marked by a large hanging sign.

**Facilities/Activities:** An open space buffer and neighborhood park with definite wildlife value; it allows natural activities such as bird watching and nature photography.

**Significance:** This gift of Helen Burns is a "wilderness" neighborhood park. Well-used foot trails show its use by residents whose property backs up to the site from Central, Emerald, Elm and Hersey Streets. Its rugged nature precluded its former use for crops or housing with the happy result that a sizable natural area remains close to Hingham Square.

## 5.0

### INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST (SEE Map 6)

#### **Recommendations:**

- Explore a connection from this site through woods to nearby Central Street.
- Improve signage.

#### **C-35 Fee Pond**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 2.58

**Zoning:** Residential A

**Setting:** Behind houses along Park Circle and Fee Street

**Access:** By foot or bicycle off Park Circle or by Fee Street (a woodland path signed as a street and running from Grove Street to the end of Blackberry Lane.) There is no signed entrance. The Blackberry Lane end of the path is much closer to the pond.

**Facilities/Activities:** A small heavily vegetated freshwater pond bordered by thick shrubs; a year round haven for songbirds and water fowl. Shallow in depth it has historically been used for ice-skating and occasionally for fishing.

**Significance:** An uncommon freshwater pond in this coastal neighborhood. Long used as Chisholm's Pond or Fee Pond, this former ice pond is a winter playground nestled in a densely populated area and has been heavily used for varied activities. Past vandalism and littering and aquatic vegetation, covering the northern end of the pond, need attention. Somewhat isolated by post-sewer development along the Planters Field Lane/Park Circle frontage.

#### **Recommendations:**

- Confirm this valuable open space and recreation resource in a relative dense neighborhood.
- Determine amount of remaining clear water surface and potentially needed actions.
- Post identifying signs at each end of the Fee Street path.
- Implement a program to control excessive invasive species.

#### **C-36 Broad Cove**

**Ownership/Management:** Town/Conservation Commission, Tree and Park Division of DPW

**Acres:** 17.2

**Zoning:** Municipal and Open Space

**Setting:** Partially dammed tidal cove and adjacent salt marsh with wet-site shrubs along the perimeter, and a range of upland trees along the Lincoln Street boundary. The Cove is connected to the Harbor by a small culvert under Route 3A creating a dramatic whirlpool with each tide.

**Access:** By car or bus from Broad Cove Road (Rte. 3A), or by boat from Derby Academy.

**Facilities/Activities:** Dry ground along Lincoln St. is used for picnicking and walking.

**Significance:** The Broad Cove lands allow a scenic view from Lincoln Street of open water against a backdrop of Otis Hill. Connecting Derby Academy land with town holdings, this land makes about two-thirds of Broad Cove publicly or semi-publicly accessible. It is a haven for birds including Snowy Egrets, ducks, Great Blue Heron, and a pair of nesting swans.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Recommendations:**

- Broad Cove is currently being studied to assess the possibility of restoring the flushing capacity within the cove. This may be accomplished by opening up the culverts under Rt. 3A to increase the flow volume within the cove. This study was undertaken due to the accumulation of sediment and loss of habitat in Broad Cove. The invasive plant phragmites is over taking critical saltmarsh habitat (*Spartina* spp.) and obscuring the scenic view.

**C-37 Gov. Long Bird Sanctuary/ Tree Nursery**

**Ownership/Management:** Town/Managed by Conservation Commission and Tree and Park  
**Acres:** 11.1

**Zoning:** Municipal and Open Space

**Setting:** Wooded upland and marsh off Route 3A and Cottage St. Upland has a fine harbor view. The flanks of the knoll are marked by ledge and mixed hardwoods with marsh grass and phragmites in the marsh area.

**Access:** From Route 3A with a large identifying sign in the marsh, but with no apparent access. Intended access is via a long gravel drive off Cottage Street with curb parking on the street or at end of the drive. An identifying Conservation Commission sign is at end of drive.

**Facilities/Activities:** Conservation administered wildlife anctuary

**Significance:** An unusual balance of uses complementing the neighborhood, offering harbor views, and protecting wildlife. The marsh depends on a relatively small culvert connecting it to the harbor, risking diminished salinity and flows. A partially-filled house lot on the corner of Ship Street offers possibilities for expansion protecting the site and allowing pedestrian movement around the upland edge of the site.

**Recommendations:**

- Move entrance sign closer to Cottage Street
- Examine the condition and function of the culvert to the harbor.
- Examine opportunities to expand the site.

**C-38 Rockland Street Marsh - Lyford's Lyking**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 6.63

**Zoning:** Municipal and Open Space

**Setting:** Salt marsh bordered by the Bonnie Brier neighborhood, Rockland Street and the Weir River. Site has wetlands, an herb and shrub community, reed grass, saltmarsh cord grass and bayberry, and includes or abuts several marsh islands.

**Access:** From Rockland Street by car and foot and from rear yards along Bonnie Brier Circle and adjacent Derby Academy marsh.

**Facilities/Activities:** Walk-able marshes between tides, opportunities for birding- especially snowy egrets. It includes 2.88 acres on the south given to the town by Derby Academy in 1979.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Significance:** The marsh makes a valuable open space buffer to Bonnie Brier where housing is being intensified following the laying of sewer pipes. It is a valuable scenic resource for the neighborhood. The land combination could be further enhanced given addition of marsh strip to the north up to the first house.

According to Bouve's history of the town quoted in the 1995 Open Space Plan, the name refers the nearby "Lyford's Liking or Licking River" which flows to Straits Pond which in turn was named by Rev. John Lyford who about 1625-26 preached to the people of Nantascot. Bouve notes that in a 1649 deed it was referred to as a "four acre meadow more-less at Laiford's Likeing" though it is no longer hayed.

**Recommendations:**

- Examine possible expansion of the combined holdings to include private marsh to the north.
- Consider addition of boardwalks to ease walking over the marsh and across small ditches to the islands.

**C-39 Gardner Street Conservation Land (See HT-5)**

**Ownership/Management:** Town/ Conservation Commission

**Acres:** 3

**Zoning:** Open Space District

**Setting:** A winding narrow stream bisects this shrub and Maple swamp and then is channeled under the road.

**Access:** 210 Gardner Street

**Significance:** This small parcel of land, given by Suvia Whittamore, is a good example of how even limited acreage plots can serve an important water resource protection and open space buffer protection.

**Recommendations:**

- Manage as is.

**C-40 Eel River Reservation**

(Formerly 7.2 acres of surplus School land - Brewster Drive and the 6.3-acre Boy Scout Land)

**Ownership/Management:** Town and Boy Scouts/Conservation Commission

**Acres:** 13.5 acres; 7.2 Town and 6.3 Boy Scouts

**Zoning:** Town portion; Official and Open Space; Scouts portion-Residence B

**Setting:** Level woodlands with stone walls at headwaters of Eel River which was lowered through channelization in the past. This eases walking but strains water-dependent maple Swamp.

**Access:** From the ends of Brewster Road and Colonial Road

**Facilities/Activities:** Woods, brook, stone walls/ cross country skiing, hiking

**Significance:** Valuable neighborhood open space

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Recommendations:**

- Clarify management responsibilities.
- Seek expansion north along Eel River.

**C-41 Boulevard Border Park**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 11.69 +3.5 acres at WRELPP's site 22 which the Parklands Map includes as part of the Boulevard Border Park for 15.19 acres

**Zoning:** Official and Open Space District

**Setting:** This natural setting offers a green space and buffer to the start of the Worlds End neighborhood. In 1995 the state upgraded the area and in the process realigned the Boulevard access.

**Access:** Starting at George Washington Boulevard at the entrance to Martins Lane and continuing down to Muzzi's Corner, (Map 41/ Lots 36, 50, and 51A) and then to riverside land on G. Washington Blvd. (Map 31 /Lot 01).

**Facilities/Activities:** This area is the beginning of a bicycle path to Hull. Other than this, it acts as an open area.

**Significance:** This area serves as a buffer against the heavy Nantasket Beach traffic. It also beautifies the approach to Worlds End.

**Recommendations:**

- Seek extension of bike path.

**C-42 Wigwam Swamp**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 32

**Zoning:** Open Space

**Setting:** Dense maple swamp with rare White Cedar, hemlock and some spruce; several clumps of scarce Yellow Lady Slipper (*Cypripedium calceolus*.) Accord Brook flows through the site.

**Access:** Off Scotland Street

**Significance:** This area unites several parcels of conservation and water company land into a cohesive unit of over 100 acres in Hingham. The open space unit is well over 400 acres if adjacent Norwell Water Company lands are included. The unified parcel contains diverse wetland and upland habitat.

**Recommendations:**

- Manage as part of McKenna Marsh (C-3)

**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST  
(SEE Map 6)**

**C-43 Dowden Conservation Land**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 31.25

**Zoning:** Residential

**Setting:** The area is primarily a dense deciduous swamp.

**Access:** Through parcels of conservation property at the end of Richard Road from Scotland Street through McKenna Marsh.

**Facilities/Activities:** No facilities are available due to the wilderness nature of the land. If one were to traverse the land, he/she would find wildlife to observe.

**Significance:** In conjunction with adjacent Conservation Commission lands and water company property, this land ties together protected and open space on the south side of Hingham from east to west. Well over 100 acres of significant wetland and habitat are now protected in this area where both Hingham and Norwell have well fields.

**Recommendations:**

- Merge these adjoining properties.

**C-44 Richard Rd. Water Fields**

**Ownership/Management:** Town of Hingham/Con. Com. & the town of Norwell Water Depart.

**Acres:** 3.48

**Zoning:** Open Space

**Setting:** This swamp area is adjacent to Accord Brook and conservation land.

**Access:** From Richard Road conservation land.

**Facilities/Activities:** No formal facilities due to the remoteness of the area.

**Significance:** This area is for watershed protection and is a buffer for Norwell's well water fields.

**Recommendations:**

- Manage as is.

**C-45 19 Wanders Drive**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 1.39

**Zoning:** Open Space

**Setting:** This swamp area is adjacent to the Richard Road water fields and conservation land.

**Access:** This land is on 19 Wanders Drive.

**Facilities/Activities:** There are no formal facilities on this land.

**Significance:** This land was donated to the town in December of 1994 by the Bucken family. The area adds to the natural buffer watershed protection for the well fields owned by both Aquarion Water Company and Norwell. It continues the contiguous strip between Richard Road, Wigwam Swamp and Wanders Drive.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Recommendations:**

- Merge with McKenna Marsh.

**C-46 Industrial Park**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 4.4

**Zoning:** Open Space District

**Setting:** Large hemlock trees give protected cover for wildlife.

**Access:** Industrial Park Road with limited on-street parking.

**Facilities/Activities:** No facilities are available; the only activity would be passive recreation and bird-watching; wildlife preserve.

**Significance:** This small hemlock studded area acts as a natural buffer for a busy industrial park. A winding brook adds to the aesthetic value of the property. Joseph Noe donated this piece in December of 1995. A large tract of land adjacent to this property contains a beautiful White Cedar swamp.

**Recommendations:**

- Seek expansion to White Cedar Swamp.

**C-47 Whortleberry Hollow**

**Ownership/Management:** Hingham Land Conservation Trust and Conservation Commission

**Acres:** 16

**Zoning:** Official and Open Space District

**Setting:** Wooded area with intermittent streams abutting Boston Golf Course

**Access:** From 424 and 444 Cushing Street or from County Dr. off Whiting Street

**Facilities/Activities:** May be accessed by a marked footpath. Information on the area is on a sign at the start of the path.

**Significance:** This area serves as a neighborhood park and a wildlife refuge. The three acres across Cushing Street, by their very nature, are heavily overgrown and better suited for wildlife and water supply than for recreation. The land was a gift of Suvia P. Whittemore. In 1995 John P. Richardson observed, in this place, a sign of both mink and muskrat and also a “fine Glossy Ibis”.

**Recommendations:**

- Manage as is.

5.0

INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST  
(SEE Map 6)

**C-48 2 President's Road**

**Map:** 168/ lot 150

**Ownership/Management:** Town/ Selectmen

**Acres:** 1.11

**Zoning:** Residential

**Setting:** A small parcel of open space that lends itself to neighborhood nature walks.

**Access:** 2 President's Road

**Facilities/Activities:** Passive use for nature study; water protection; wildlife protection.

**Significance:** The town of Hingham acquired the land in 1985. It is an extension of the green belt for the Liberty Pole area.

**Recommendations:**

- Manage as is.

**C-49 Wirkala Tract**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 3.84 (Map 123 / Lot 28)

**Zoning:** Residential District 'C'

**Setting:** Mostly wetlands with an unmarked brook

**Access:** 10' wide pedestrian easement along Weymouth Power Company corridor for Oakcrest Road (unmarked)

**Facilities/Activities:** There are no facilities available; the land serves as a wildlife habitat.

**Significance:** Wetland and wildlife protection are the chief designations for this area.

**Recommendations:**

- Manage as is.

**C-50 Whitcomb Ave.**

**Ownership/Management:** Town/ Conservation Commission

**Acres:** 1.75

**Zoning:** Open Space District

**Setting:** A small jewel on the north side of Cushing Pond filled with wetland plants.

**Access:** Off Whitcomb Avenue

**Facilities/Activities:** Access to Cushing Pond for the neighborhood.

**Significance:** Donated by Mary Niles, this neighborhood buffer is a piece of Cushing Pond frontage.

**Recommendations:**

- Manage as is

**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST  
(SEE Map 6)**

**C-51 18 Camelot Drive (Abuts C-50)**

**Map:** 135/ lot 62

**Ownership/Management:** Town/ Conservation Commission

**Acres:** 1.83

**Zoning:** Residential

**Setting:** Wooded area of maple, oak and birch as a canopy over swamp bushes.

**Access:** Off 20 Camelot Drive

**Facilities/Activities:** Neighborhood access to Cushing Pond with a 20' walkway easement across the property.

**Significance:** This land, donated by Harriet and Stephen Baker Jr., ties into the land on Whitcomb Avenue donated by Mary L. Niles. Full of wetland plants, the land also borders on Cushing Pond.

**Recommendations:**

- Manage as is.

**C-52 Blue Sky Drive**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 8.71

**Zoning:** Residence B

**Setting:** A dead end street into woods

**Access:** From a drainage easement at end of Blue Sky Drive

**Facilities/Activities:** Low-lying woodlands merged with the Brewer Reservation

**Significance:** Expands Brewer reservation.

**Recommendations:**

- Sign access point and improve it, if needed.
- Map it.

**C-53 Lot 4 New Bridge St.**

**Map:** 98/Lot 51

**Ownership/Management:** Town/Conservation Commission

**Acres:** 2.8

**Zoning:** Official and Open Space/ Watershed Protection

**Setting:** Level wooded wetland next to South Shore Country Club

**Access:** From Smith Road or through Country Club land off New Bridge Street

**Facilities/Activities:** No formal facilities or activities but according to the 1995 plan "it is a beautiful little wetland ideally suited for walking and bird watching. Lovely little birds reside here and sing melodious carols to sooth the weary soul."

**Significance:** A 1994 gift of Viola H. and Wendell L. Hayden, this peaceful area complements the more active Country Club.

5.0  
INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST  
(SEE Map 6)

**Recommendations:**

- Manage as it is.

**C-54 McCormack Land**

**Map:** 92/lot 17

**Ownership/Management:** Town/Conservation Commission

**Acres:** 5.83

**Zoning:** Residence C

**Setting:** Rocky woods buffering the Leavitt Street entrance to the State Park

**Access:** Off Leavitt Street, adjacent to Wompatuck State Park

**Facilities/Activities:** Nothing formal, habitat/ experiencing nature

**Significance:** Acquired with CPC funds in 2003 and held for Conservation purposes

**Recommendations:**

- Manage as is.

**C-55 Fulling Mill River Conservation Land and Glad Tidings Rock**

Probably part of the Jacob's Meadow holding shown on the Parkland Map See HT-4.

**Ownership/Management:** Town/Conservation Commission

**Acres:** 23.09 (68 acres in 1979)

**Zoning:** Official and Open Space

**Setting:** Red maple swamp bordering the Fulling Mill River and a beautiful small esker

**Access:** Through the Wilder Hall parking lot on Main Street and a small stretch of private land

**Facilities/Activities:** Natural swampy area and esker /Cross country skiing, nature walks and horseback riding

**Significance:** This multi-use area serves a local population and contributes to a larger open space block along Main Street

**Recommendations:**

- Pursue access rights through the noted stretch of private land.

**C-56 Weston Donation**

**Ownership/Management:** Town/Conservation Commission; Acquired from the Weston's in 1964/1965

**Acres:** ¼ acres

**Zoning:** Res. B

**Setting:** Off Central Street.

**Access:** From Central St. and Burns Memorial land

**Facilities/Activities:** Natural woodlands, with two small house lots next to Burns Memorial land / Habitat observation

**Significance:** Access to Burns Memorial land

5.0

INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST  
(SEE Map 6)

**Recommendations:**

- Identify, add signs and manage as is.

**C-57 44 Crow Point Lane**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 6.46

**Zoning:** Res. A

**Setting:** Nokomis Road Marsh

**Access:** From the Lane

**Facilities /Activities:** Open woodland

**Significance:** Acquired from Conditto Estate in 2004

**Recommendations:**

- Install sign.

**C-58 Gordon Cushing St. Donation**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 38 Cushing St. 6.6 acres; 68 Cushing St., 2.08 acres; 74 Cushing Street, .89 acres

**Zoning:** Res. B

**Setting:** Woods near Pond

**Access:** From Cushing Street

**Facilities/Activities:** Passive use only

**Significance:** 1965 gift: #38 and #74 were gifts of Donald James and Audrey P. Gordon. (Gordon's south side of Cushing St.) excellent green buffer zone; important for flood control and water recharge.

**Recommendations:**

- Manage as is.

**C-59 Bouve or Cranberry Ponds Lots 34/41 and 55/62**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 13.8

**Zoning:** Res. B

**Setting:** Woodland and pond

**Access:** French Street

**Facilities /Activities:** Ice skating, nature study

**Significance:**

**Recommendations:**

- Manage as is.

## 5.0

### INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST (SEE Map 6)

#### **C-60 26 Harvest Lane, Devon Terrace**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 2.2

**Zoning:** Res. B

**Setting:** Near Rte.3 Built up area

**Access:** From Harvest Lane

**Facilities/Activities:** Wooded wetland

**Significance:** Gift of Paul Hughes 2007. Wetland buffers Accord Pond drainage – public water supply.

#### **Recommendations:**

- Manage as is.

#### **C-61 297 Main St.**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 3.08

**Zoning:** Res. A

**Setting:** This woodland abuts the Town recreation fields, a wooded oasis in the center of Town.

**Access:** From the Athletic fields.

**Facilities/Activities:** Potential vernal pool and wooded upland.

**Significance:** 2008 gift of Jennifer and Scott Reed.

#### **Recommendations:**

- Signage.

#### **C-62 45 New Bridge Street \***

**Ownership/Management:** Town/Conservation Commission

**Acres:** 5+

**Zoning:** Res. B

**Setting:** The property is slightly over 5 acres in size and is almost all wetland. This portion of Bear Swamp is arguably the source of the Fresh River, which flows into Weymouth Back River to the west. The land is surrounded by More Brewer Park. This holding will round out the protection of Bear Swamp and the Fresh River head waters.

**Access:** From New Bridge St.

**Facilities/Activities:** Wildlife habitat, cross country skiing.

**Significance:** \*Gift of Estate of Gertrude M. Higgins – donation pending due to title issues.

#### **Recommendations:**

- Manage as part of More-Brewer

5.0

INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST  
(SEE Map 6)

**C-63 6 Rosewood Lane**

**Ownership/Management:** Town/ Conservation Commission

**Acres:** 19,603+/- sq. feet

**Zoning:** Res. B

**Setting:** Near Landfill

**Access:** From Cranberry Rd.

**Facilities/Activities:** Wooded

**Significance:** wooded lot

**Recommendations:**

- Manage as is.

**C-64 17 Ward Street David Land**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 4.9

**Zoning:** Res. C

**Setting:** Next to Wirkala Land

**Access:** From Ward Street

**Facilities/Activities:** Shrub swamp

**Significance:** Gift of Steven David

**Recommendations:**

- Manage as is.

**C-65 27 Winfield Road**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 4.88

**Zoning:** Res. B

**Setting:** Near Harvest Lane/Devon Terrace

**Access:** Winfield Rd.

**Facilities/Activities:** Wooded wetland

**Significance:** 2007 gift of Paul G. Hughes

**Recommendations:**

- Watershed protection.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**C-66 4 Woodbridge Road**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 42,189 sq. feet

**Zoning:** Res. B

**Setting:** Residential

**Access:** Woodbridge Road

**Facilities/Activities:** Green space in residential area

**Significance:** 2007 gift of Joseph R. Kennedy, Trustee

**Recommendations:**

- Manage as is.

**C-67 Hayden Property (See C 53)**

**Map:** 65 Lot 27, 101 lot 15

**Ownership/Management:** Town/Conservation Commission

**Acres:** 2.44

**Zoning:** Residence C

**Setting:** Triphammer Pond

**Access:** From Popes Lane or Triphammer Road

**Facilities/Activities:** Woodlands near the Accord Brook

**Significance:** Expansion of Triphammer holdings

**Recommendations:**

- Manage as is.

**C-68 Swanson Hollow**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 6.6

**Zoning:** Res. C

**Setting:** Five acres of rare level hardwoods contained by steep banks of glacial till; the results of a great glacial ice block that melted like those that formed kettle hole ponds elsewhere. It is valued for holding water in the wet season; a walk in the dry season reveals large ferns along with hardwoods and hemlocks.

**Access:** From a path off Cushing Street which is difficult to find the along the edge of a new house lot.

**Facilities/Activities:** As described above/habitat, nature observation

**Significance:** Valued for ecological/geologic features. Also significant as the only public open land between Plymouth River Road and Main Street as the golf courses to west are private. Named for long-term Conservationist, geologist, teacher, tennis coach, leader of rigorous, informative hikes and former abutter, Phillip O. Swanson.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Recommendations:**

- Work with new owner of access to make the access more inviting

**SELECTMEN**

**BS-1 250 Central St.**

**Ownership/Management:** Town/Selectmen

**Acres:** 1.5

**Zoning:** Residence A

**Setting:** Upland area of new woods

**Access:** From Central Street and Haley Field parking lot

**Facilities/Activities:** Passive recreation

**Significance:** Former 2-acre High School site, reduced to 1.5 acres by Town's donation of .5 acres to South Shore Habitat for Humanity for construction of two affordable houses

**Recommendations:**

- Manage as is.

**BS-2 Former Beal Street School Tracts**

Note: The Former Beal Street School Tracts Site 101 in the 1995 Plan under Selectmen became the School Depot Land and has been divided and used as below:

**Ownership/Management:** Originally Selectmen through School Depot Committee; then divided as below.

**Acres:** Originally 39.59 acres expanded by an additional 55 acres of Federal land which reverted back to the town in 2003

**Zoning:** Official and Open Space

**Setting:** Old Naval munitions depot south of Beal Street

**Access:** Different portions and facilities from Beal Street and Fort Hill Street

**Facilities/Activities:** Varied recreational, educational, institutional and municipal uses with recreational uses described below.

**Significance:** The 94.59+ acres has been divided and distributed with:

6+ acres to Hingham Affordable Housing Trust for affordable housing,

15+ acres to Recreation Commission through School Depot Committee for the development of Carlson field. (See Recreation)

7+ acres traded with Hastings Company in exchange for development of Lynch Field and its field house. See Recreation.

20+ acres to Town Department of Public Works for new barn, yard and offices.

**Recommendations:**

- Continue developing/managing these sites as described below.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**BARE COVE PARK**

**BC-1 Bare Cove Park**

**Ownership/Management:** Town (owned) / Bare Cove Park Committee

**Acres:** 469.3

**Zoning:** Official and Open Space

**Setting:** Between Beal Street and the Weymouth Back River. As noted in the 1979 and 1995 plans: "A vast panorama of water stretches from one side of the park to the other. The southern portion consists of glacial eskers, kettle-holes, drumlins, and swamps. The northern portion is alternately level and ridge-like since it was substantially altered when it was an ammunition depot. Many acres are cleared fields succeeding to woodland with red cedar, gray birch and white pine seeding in as well as oak and red cedar. Approximately 100 acres along the Weymouth Back River are salt marsh dominated by the common cord grass species, *Spartina alterniflora* and *Spartina patens*."

The park is in the Weymouth Back River Area of Critical Environmental Concern (ACEC). The terrain is diverse and scenic, ranging from salt marsh to upland forest to the open meadows that are reverting to forest. The park supports a wide array of wildlife. It is contiguous with Weymouth's Great Esker Park (on the other side of the river) and with Stodder's Neck (across route 3A).

**Access:** Regionally, by auto along Route 3A; by transit via the Red Line to Quincy Center and the 220 bus to Hingham. Locally, by car to a parking area and gate at the rear of Lynch Field on Beal Street and Clifford Court off Fort Hill Street; by foot, from within the Beal's Cove and Hingham Woods apartment developments as well as from the junction of Rt. 3A and Beal Street.

**Facilities/Activities:** Several miles of scenic riverside bicycle loops and pedestrian trails, fields, woods, and wetlands, scattered remains of former munitions facilities; and a popular fishing spot on the river near Route 3A. An elevated riverside observation deck was popular but was vandalized beyond use. Several pockets of grassland could lend themselves to outdoor concerts. Most importantly, hazardous materials left from military use have been cleaned up over the entire park.

**Activities:** Hiking, bicycling, fishing, nature observation, boating, and past and potential camping

**Significance:** This area, long known as Hockley was used for farming, fishing and peat bog harvesting by prehistoric people and later European settlers. From 1906 on the US Navy purchased land for a Naval Magazine and developed a major facility that was later closed and finally turned over to the town in 1971 for open space and wildlife use. The Hingham Bare Cove Park Committee, the Weymouth Back River Committee and the Massachusetts Department of Environmental Management designated the adjacent Weymouth Back River an official Massachusetts Scenic River in 1985.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

Recently, new recreational fields, Lynch Field on Beal Street and Carlson Field off of Fort Hill Street, were developed nearby as discussed under Recreation and a new DPW complex was built off of Fort Hill Street.

**Recommendations:**

- Continue the excellent park management.
- Examine possible expanded/improved facilities and related activities such as camping, concerts, boating and fishing.
- Develop a low bridge/boardwalk crossing between Bare Cove Park and Great Esker Park, possibly where the river is narrowest at the southern end of the two parks. This would allow visitors to walk or cycle on a loop through both parks rather than to have to double back as they must now.
- Develop a safely passable connection between Bare Cove Park and Stodder's Neck under Route 3A (It now can be done only awkwardly) and support a similar crossing between Great Esker Park and Abigail Adams Park on the Weymouth side.

**COMMONWEALTH OF MASSACHUSETTS**

**S-1 Wompatuck State Park**

Almost half of the Town's total protected open space is contained within Wompatuck State Park, which spans portions of Hingham, Norwell, Cohasset and Scituate. The Park is located in the southeast part of Hingham. In addition, Stodder's Neck State Park, located on a peninsula the north side of Route 3A in the northeast part of Hingham, is 39.18 acres. Both these parks are protected under Article 97.

**Ownership/Management:** Commonwealth/Department Conservation and Recreation (former Dept. of Environmental Management (DEM) and Metropolitan District Commission (MDC))

**Acres:** 1540 acres in Hingham, a total of 3002 in Hingham, Cohasset, Norwell and Scituate

**Zoning:** Official and Open Space

**Setting:** Extensive varied woods, wetlands, fields and hills in the former Naval Munitions Depot. It is on the edge of Hingham and extends into Norwell, Scituate and Cohasset, and includes Cohasset's Aaron Reservoir. It abuts the Trustees of Reservations' Whitney Woods Reservation and nearly touches the Weir River Farm to the North, and abuts various town holdings to the west, including the Triphammer Pond Area. The heavily wooded park provides important wildlife habitat for large mammals such as deer, coyote and fox as well as wildlife requiring non-fragmented woodlands

**Access:** By car or bicycle from Union Street, Leavitt Street, and South Pleasant Street in Hingham, by foot or bicycle from various gated entrances in Hingham and Cohasset. By foot from back yards along Lazell and Charles Streets and smaller streets to the east in Hingham.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Facilities/Activities:** campground, visitor center with meeting rooms, on and off road biking, skiing and hiking trails, Mount Blue Spring, and part of Cohasset's Aaron Reservoir / Various activities using all off these facilities including bicycling, hunting, horseback riding, hiking, nature observation, boating (with a ramp at the Reservoir), and camping.

**Significance:** A great local and regional resource preserved largely because its low agricultural value (except for wood lots) kept it open until the Navy needed it for a safe, remote munitions depot. It also helps to protect Norwell's Grove Street wells.

**Recommendations:**

- Continue overall management.
- Seek to make camping area more spread out and inviting.
- Develop trails connecting with Whitney Woods, Turkey Hill, and Triphammer Pond.

**S-2 Stodder's Neck (DCR)**

**Ownership/Management:** State/DCR

**Acres:** 20

**Zoning:** Official and Open Space

**Setting:** A moderately rolling peninsula north of Route 3A and Bare Cover Park.

It has natural old field species along with ornamental plantings including red cedar, pitch pine, white pine, bayberry, staghorn sumac, and raspberry bushes. It was originally used for pasture and then for gravel before being converted to a park by the MDC. Some observer feel that its graded, manicured park-like style loses some of the rough, wild character of the previous scarred peninsula

**Access:** By car, foot, bicycle, or the MBTA's 220 bus service from Quincy Center, and by small boat from the surrounding water ways. It is welcoming to the elderly or handicapped.

**Facilities/Activities:** Trails, hillside, shoreline, picnic tables, a fishing pier, chance refuge for a small boat in a storm, and a discrete MWRA pumping station.

**Significance:** A very valuable resource on its own (particularly for people preferring the security of its open, visible areas. It is a gateway to Bare Cove Park and to Great Esker P ark and Wildlife Refuge across Route 3A, and a companion piece to Abigail Adams Park on the north of the Back River.

**Recommendations:**

- Continue present management.
- Pursue proposed connection to Bare Cove Park under the Route 3A bridge.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**PUBLIC WORKS DEPARTMENT**

**HD-1 Sanitary Landfill**

**Ownership/Management:** Town/Public Works Department

**Acres:** 34.07

**Zoning:** Official and Open Space

**Setting:** Large man-made drumlin south of Hobart Street and between the Brewer Reservation and Cranberry Pond off French Street.

**Access:** By foot from the Brewer Reservation and Cranberry Pond. By car and foot from Hobart Street or Sam Ryder Road

**Facilities/Activities:** Partly closed and capped landfill

**Significance:** This partially capped landfill is a major landscape feature, especially as seen from within the adjacent Brewer Reservation. The site is important for its visual and water quality impacts on surrounding areas. It has significant potential for recreational development and landscape restoration.

**Recommendations:**

- Continue any needed monitoring of leachate in surrounding water bodies or wetlands.
- Examine and pursue opportunities to integrate the former landfill into the surrounding landscape and open space/recreation system. For example modify the final grading plan to accept recreational use of the surface, .e.g, altering drainage channels, gas vents ,side slope grades, planting ,and overall shaping to allow uses such as sledding, skiing, hiking, trail bike riding and view enjoyment.

**TREE AND PARK DIVISION OF DPW**

**TP-1 Town Common**

**Ownership/Management:** Town/Tree and Park Division of Public Works Department

**Acres:** 1.27

**Zoning:** Municipal and Open Space

**Setting:** Well-groomed lawn bordered by a rustic rail fence and divided by Middle Street in Hingham Center. The site was originally, much larger, being bounded by Leavitt, Spring, School, Pleasant and Main Streets. It was earlier called “The Playne” and used as a training field as far back as 1646.

**Access:** By foot, car or bus with entrances on Middle, Common, Short, and School Streets

**Facilities/Activities:** Park benches, small playground area, lawn/varied casual uses, gatherings such as the July Fourth pancake breakfast, and informal play.

**Significance:** This important historic, cultural and aesthetic site is well appreciated and well cared for though it is divided by Middle Street.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Recommendations:**

- Resume the tree planting program
- Explore restoration of historic bandstand.

**TP-2 Veterans' Memorial Park**

**Ownership/Management:** Town/Tree and Park Division of DPW

**Acres:** .49

**Zoning:** Official and Open Space

**Setting:** In Hingham Center across Middle Street from Town Common. It looks like part the Common though divided by Middle Street.

**Access:** By surrounding streets, Middle Street, Main Street, and Common Street

**Facilities/Activities:** Open Field with memorial trees, a brick wall built by former Tree and Park Superintendent, and varied commemorative flowering trees and shrubs /Used for Memorial Day exercises and casual recreation

**Significance:** Site of first and second public libraries before library relocation, it now serves a significant memorial function.

**Recommendations:**

- Manage as is.

**TP-3 George Washington Forest**

**Ownership/Management:** Town/Tree and Park Division of DPW

**Acres:** 107.56

**Zoning:** Official and Open Space

**Setting:** Gently rolling land planted with even rows of red and white pine along the roadside with smaller portions of Norway spruce. Oak is abundant in the canopy and under-story in the drier interior. Maple and shrub swamps fill wetland depressions. Glacially formed ridges and hills provide an interesting backdrop for the uniform plantations. The Forest is east of Fulling Mill Pond water lands and a residential subdivision

**Access:** From Prospect, Charles and South Pleasant Streets and Amber Road /Andorra Lane

**Facilities/Activities:** Cultivated forest and natural areas/birdwatching, walking, jogging, and horseback riding along well maintained cart-paths.

**Significance:** The land was acquired in the 1920s for reforestation (of former farmland) and prospective commercial harvest inspired by then Tree Warden Timothy L. Murphy. 50 acres were donated by William Codman in 1922 and planted in pine and spruce. After further acquisitions, three miles of roads were added in 1932.

The Tree and Park Division removes excess undergrowth and deadwood but does no intensive harvesting as it proved unprofitable. Site remains a great aesthetic and cultural resource. Additional thinning could encourage new pine growth (hurricanes have helped) but despite past fears of simultaneous decline of trees of one age, the forest is healthy.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Recommendations:**

- Continue selective thinning to allow new growth and provide some edge habitat.
- Seek a passable connection between Forest and Wompatuck State Park perhaps along with board walk segments along side the Sawmill Pond Subdivision.

**TP- 4 Monument Park (Iron Horse Park)**

**Ownership/Management:** Town/Tree and Park and Highway Divisions of the Department of Public Works; and the Harbor Development Committee

**Acres:** 5.8

**Zoning:** Municipal and Open Space

**Setting:** Like the Bathing Beach, on Route 3A and the Harbor, it is a knoll with Iron Horse and rider overlooking lawns and beach, next to town landing

**Access:** By foot or car from Route 3A (Otis St.) fronted by a parking lot, and by the adjacent MBTA's 220 bus from Quincy Square.

**Facilities/Activities:** Beach (without lifeguards), park, boat launching ramps, large parking lot with trailer- sized parking spaces, Town landing (pier)

**Significance:** This area complements the Bathing Beach but with more of a park-like character to it. Combined with the Bathing Beach and Whitney Wharf Park it is a significant part of the downtown-related open space block along with the Home Meadows and Hingham Cemetery.

**Recommendations:**

- Continue to maintain the facilities.
- Resolve use of parking (defined as part of the waterfront park) by boaters using the nearby commercial slips and/or mooring launch service for access to the Harbor-a closely related waterfront recreation.
- Cooperate with Plan of the Harbor Development Committee for harbor walks.
- Rejuvenate and add to the existing plantings.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Unprotected Lands of Special Conservation and Recreation Interest**

This is a major section since it identifies possible acquisitions or other actions affecting under-protected areas possibly including repetition of key sites noted above. Some of these sites are protected to a degree by Official and Open Space Zoning limiting uses.

**U-1 Weir Street Land**

**Map:** 54/Lot 40

**Ownership/Management:** Benedictine Fathers/Abbey

**Acres:** 33

**Zoning:** Res. C

**Setting:** Adjacent to Foundry Pond land.

**Access:** From Weir Street

**Facilities/Activities:** Wooded upland, nature study.

**Significance:** Attractive varied land with multiple open space, wildlife habitat.

**Recommendations:**

- Determine status and relationship to Abbey grounds and activities.

**U-2 Turkey Hill Property**

**Map:** 46 /Lot 13

**Ownership/Management:** Private residence

**Acres:** 15.05

**Zoning:** Official and Open Space

**Setting:** Agricultural land on Turkey Hill (close to Weir River Farm)

**Access:** From Turkey Hill Lane

**Facilities/Activities:** Agriculture, potential trails

**Significance:** Wildlife corridor, farm land

**Recommendations:**

- Work with TTOR to protect agricultural potential.

**U-3 Boy Scouts Colonial Road Land**

**Map:** 167 / Lot 49

**Ownership/Management:** Troop 4, BSA/Same

**Acres:** 6.31

**Zoning:** Residential.

**Setting:** Wetlands

**Access:** From Colonial Road

**Facilities/Activities:** Potential trails

**Significance:** Headwaters of the Eel River

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Recommendations:**

- Work with Boys Scouts of America to establish trails.

**U-4 South Shore Conservatory Land**

**Map:** 77 / Lot 2

**Ownership/Management:** SS Conservatory/Same

**Acres:** 3.45

**Zoning:** Res. C

**Setting:** Varied woodlands and wetland near Bare cove Park

**Access:** From Fort Hill Street

**Facilities/Activities:** Conservatory/ Unknown Potential Trails

**Significance:** Abuts Bare Cove Park

**Recommendations:**

- Work with Conservatory to develop trails to Bare Cove Park.

**U-5 Town Harbor Land**

**Map:** 51/Lot 2

**Ownership/Management:** Town/Conservation Commission

**Acres:** .56

**Zoning:** Official and Open Space

**Setting:** Shoreline

**Access:** Summer Street

**Facilities/Activities:** Sitting Area/Harbor view

**Significance:** Potential part of Harbor walkway

**Recommendations:**

- Determine status and potential.

**U-6 Hingham Boat Yard**

**Map:** 51/Lot 4

**Ownership/Management:** Hingham Boatyard LLC; B& K Enterprises, LLC

**Acres:** .54

**Zoning:** Waterfront Business

**Setting:** Key location at head of Harbor, next to town's former Mobil station site

**Access:** Off Summer Street, Route 3A

**Facilities/Activities:** Boatyard, office building/Boat yard, marina

**Significance:** Key shore line site, next to former Mobile station site

**Recommendations:**

- Determine status and potential for dry docks / public access

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**U-7 Rocky Beach (PNP - 4) (also CPT-1)**

**Ownership/Management:** Governor's Road, LLC replaced Crow Point Nominee Trust

**Acres:** .24 on Map 27, Lot 72 according to the Assessors Map

**Zoning:** Res. A.

**Setting:** Long, thin, stony beach along the edge of the Harbor below Otis Street, a small but valuable window on the harbor and access point formerly served by a stairway to the south.

**Access:** By car, bus or foot from Otis Street or from abutting private parcels.

**Facilities/Activities:** New Stairway to the beach, informal dinghy storage area, and the beach itself/ historic activities included swimming, boating, discrete beach walks from the Causeway/dam at Walton's Cove to Bouve's Boatyard and related shoreline recreation.

**Significance:** A valuable access to the beach and adjacent shoreline. Much use by the Otis Hill neighborhood in the past.

**Recommendations:**

- Work with Trust to equitably expand public use.



A view of Rocky Beach

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**U-8 Aquarion Water Co. Land (WC-4)**

**Ownership/Management:** Aquarion Water Co.

**Acres:** 10.91

**Zoning:** Res. B

**Setting:** Woodland north of site (WC-4)

**Access:** Mapped path from Linocut Road to Downing Street

**Facilities/Activities:** Woodlands/neighborhood open space, habitat and nature observation

**Significance:** Public water supply

**Recommendations:**

- Protection of public water supply and recharge area.



View along path into land north of water company land off Linscott Street. Note small brook crossing and gauging station

**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST  
(SEE Map 6)**

**U-9 Gaps in Crow Point Rip-Rap Walk**

**Ownership/Management:** Many owners where rip-rap is between the historic high tide line and the low tide line

**Acres:** Minimal

**Zoning:** Res. A

**Setting:** Informal walkway around the edge of Crow Point from the Yacht Club to North Beach

**Access:** From the end of Downer Ave at Yacht Club parking lot and ends of local Streets; e.g., Malcolm St., Cushing Ave, Jarvis Ave.

**Facilities/Activities:** A wide flat-topped rip-rap storm barrier built with Federal funds and a section of concrete seawall at North Beach. These serve as a safe, level shoreline walkway except where blocked by private fences or piers as at Malcolm Street or Parker Driveway.

**Significance:** A valuable recreation resource giving shoreline walking access with little impact on upslope private owners, except where blocked by fences or piers.

**Recommendations:**

- Investigate legal status of rip-rap.
- Investigate any other public rights.
- Seek options for equitable removal of present obstacles.

**U-10 Land Behind The Scarlet Oak Tavern**

**Ownership/Management:** Private

**Acres:** 40 acres

**Zoning:** Res. B

**Setting:** Woods behind restaurant, South of South School, along Accord Brook

**Access:** From rear of restaurant or from School

**Facilities/Activities:** Woodlands and wetland and Accord Brook

**Significance:** 40 acres of privately held open space/wetlands. Proposed by the Open Space Committee, extending school open space.

**Recommendations:**

- Research possibilities and options.

**U-11 Gratta Land along the Weir River @ Rockland Street**

**Ownership/Management:** Private

**Acres:** 25

**Zoning:** Res. C

**Setting:** Woods and meadows along Weir River, east of Schultz' Field

**Access:** Studley Road and Schulz' Field and from Triphammer Lane off Pope's Lane

**Facilities/Activities:** 2/3rds mowed meadows and 1/3rd woods complementing the 17.5 acre Hatch-Dunlop ("Schultz Field") acquisition and connecting with Triphammer Pond lands.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Significance:** Valuable former farm land abutting the cultivated Schultz Field and adding to a major swath of natural and agricultural land close the heart of the town. Especially scarce grasslands habitat in conjunction with Schultz land.

**Recommendations:**

- Continue negotiations with owners, seek CPA funds.
- If acquired, manage land for agricultural and wildlife values.

**U-12 Mill Lane near Crooked Meadow River**

**Ownership/Management:** Private Owners

**Acres:** 15+ acres with two proposed to remain as owners' house lot

**Zoning:** Residence B; 30,000 square-foot lots

**Setting:** Wooded streamside wetlands west of Main Street, backing on to Crooked Meadow River, downstream from Cushing Pond, and intervening private land discussed below. It is downstream from the private dam at Cushing Pond, and abuts a .6-acre rocky scenic holding.

**Access:** From owner's lot at 667 Main Street or from adjacent church land (long used for access to nearby Crooked Meadow River land) if negotiable

**Facilities /Activities:** Pine woods with an open stroll-able under story, hardwoods and wetlands (marsh) along the River / Enjoying varied habitat and the stream, scenic hiking, visiting rock outcroppings on the nearby Crooked Meadow River Conservation land, and wildlife observation

**Significance:** Site is a key portion of a possible streamside reservation between the Mill Dam and Main Street. It could protect varied open space and habitat bracketing the River and allow more potential uses in conjunction with Nosiglia land discussed later and intervening pieces of wetland.

**Recommendations:**

- Re-open negotiations with owners and abutters if available and access can be resolved.

**U-13 Bennett Land**

**Ownership/Management:** Private

**Acres:** 9.14 acres

**Zoning:** Res. C

**Setting:** Woods; mature maple, oak and white pine, also vernal pools and streamside land along a low-density portion of Charles Street diagonally across from the Town Forest, and near Wompatuck State Park.

**Access:** From 34 Charles St.

**Facilities/Activities:** Varied habitat with forest, granite boulders, old stone walls, and small wetlands and Fulling Mill Brook / Farming, habitat preservation, hiking, and possible access to Wompatuck State Park with acquisition of a small intervening private parcel

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Significance:** Varied wildlands filling a gap between the State Park and the Town Forest with much scenic beauty preserving a portion of our shrinking rural landscape.

**Recommendations:**

- Stay in touch with owners, resume discussion of a possible development rights acquisition allowing continued farming or other options meeting the owners' needs.

**U-14 Tower Road Land / Crooked Meadow Land**

**Ownership/Management:** Private

**Area:** 4.82 acres and an adjacent 1.55 acres occupied by the owner's house

**Zoning:** Res. B, 30,000 sq. ft. lots

**Setting:** Sloping woodland and meadow between Tower Road and the Crooked Meadow River flood plain.

**Access:** From a private driveway on Tower Road

**Facilities/Activities:** Attractive varied land, potentially bracketing the Crooked Meadow River in conjunction with intervening private flood plain and the land across the stream.

**Significance:** A key portion of a possible streamside reservation between the Mill Dam and Main St.

**Recommendations:**

- The site is worth acquisition.
- Renew discussions with the owners.

**U-15 The Field West of Hersey Street**

**Ownership/Management:** Private Owners/Private Owners

**Acres:** An estimated 4.4 acres

**Zoning:** Residence A

**Setting:** An historic neighborhood and a meadow backing onto woods, wetlands and a brook.

**Access:** By a partly overgrown driveway off Hersey St.

**Facilities/Activities:** A wetland meadow with housing to the front and woods and wetlands to the rear. Potential is there for informal recreation, neighborhood open space, nature observation.

**Significance:** A valuable local open space and wildlife habitat.

**Recommendations:**

- Contact the neighboring owners; explore acquisition and use for these purposes.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**



Meadow, marsh and woodland with potential for neighborhood open space.

**U-16 Melville Walk**

**Ownership/Management:** Abutting property owners/abutting owners

**Acres:** 1500± square feet

**Zoning:** Res. A

**Setting:** Moderate density shoreline neighborhood with a traditional walkway to a neighborhood Beach and connecting shoreline–Alice Walk

**Access:** From Downer Ave.

**Facilities /Activities:** A path and beach where a court decision recently confirmed the rights of at least some residents to use the path after an abutter blocked access with a gate. Access to the water for informal recreation swimming, shoreline walks. A window on the harbor for people without waterfront lots.

**Significance:** A very valuable access point to the shore, and an opportunity to confirm and preserve access rights for all neighbors or residents. A companion to the Rocky Beach access point discussed above.

**Recommendations:**

- Negotiate with abutting owners and acquire any needed easements along the path and at the beach.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**



The destination - The beach at the end of Melville Walk and next to Alice Walk.

**U-17 East of Jacobs Meadow if open, riverside as Water Supply protection areas**

**Ownership/Management:** Private owners/Private owners

**Acres:** 60± acres

**Zoning:** Residence C

**Setting:** Streamside Wetlands along Fulling Mill Brook, east of the Jacob's Meadow holdings and west of Wompatuck State Park

**Access:** From Jacobs Meadow or Lazell Street.

**Facilities/Activities:** Streamside open space, wildlife habitat. Water supply protection, wildlife observation and a potential connection from Main Street to Wompatuck State Park via the Jacob's Meadow land to the west and the town's Lazell Street Conservation land connecting to the Park to the east.

**Significance:** An opportunity to increase streamside holdings and to create a link in an east-west greenway and protect the wildlife corridor.

**Recommendations:**

- View the site, define an appropriate acquisition and pursue.

## 5.0

### INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST (SEE Map 6)

- Discuss with Chapter 61 land owners along stream

#### **U-18 24 SE/NW of Liberty Pole**

**Ownership/Management:** Private owners

**Acres:** 6+

**Zoning:** Res. B

**Setting:** Woodland

**Access:** Adjacent streets or easements

**Facilities /Activities:** Wildlife habitat

**Significance:** The intent is to expand the Eel River Reservation to the south east and the South School area to the northwest.

#### **Recommendations:**

- Check possibilities with Open Space Committee.

#### **U-19 Greater Swanson's Hollow**

**Ownership/Management:** Town/Conservation Commission

**Acres:** 5 Acres at present

**Zoning:** Residence C

**Setting:** Land surrounding five acres of rare level hardwoods contained by steep banks of glacial till; the results of a great glacial ice block that melted like those that formed kettle hole ponds elsewhere. It is valued for holding water in the wet season; a walk in the dry season reveals large ferns along with hardwoods and hemlocks.

**Access:** From a mapped path off Cushing Street which is difficult to find the along the edge of a new house lot.

**Facilities /Activities:** As described above/Habitat, nature observation

**Significance:** Present holding is valued for ecological/geologic features. Also significant as the only public open land between Plymouth River Road and Main Street as the golf courses to west are private. The hollow was named for long-term Conservationist, geologist, teacher, tennis coach, leader of rigorous, informative hikes and former abutter, Phillip O. Swanson. The intent was to expand Swanson Hollow (C-68).

#### **Recommendations:**

- Work with abutters.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Weir River Estuary Park Sites recommended in Weir River Estuary Park Land Protection Plan (WRELPP)**

**Weir River Estuary Park Area.** The Weir River Estuary Park area is an ecological unit—an area defined by ecology rather than town boundaries or land ownership. The Weir River Estuary Park (WREP) is one of Boston Harbor’s most valuable natural resources and includes almost 600 acres of undeveloped land within the three towns of Hingham, Hull, and Cohasset. It includes the Weir River Estuary Area of Critical Environmental Concern (ACEC) and related land areas in the three towns from Foundry Pond Dam to the Black Rock Beach end of Straits Pond to the mouth of the estuary between the tips of World's End and Sunset Point. Its land and aquatic habitats include herring, smelt, shellfish beds, over-100 species of birds, and its rare volcanic geology.

The protected and needs to be protected estuary land is identified in the *Weir River Estuary Park Land Protection Plan*, developed by UMass, Urban Harbors Institute and utilized by Hingham, Hull, Cohasset Town Boards. The Plan is located in the Hingham Open Space Plan 2010 Appendix or at <http://www.hingham-ma.gov/conservation/index.html>.

Within an urban metropolitan area, the Weir River Estuary Park offers an opportunity to teach environmental stewardship and a chance for kayakers, bikers, and pedestrians to experience its quiet by using the waterway as a path; a Paddling Guide revised 2009, is available at Town Hall, Hingham Library, and on the Town of Hingham website, [http://www.hingham-ma.gov/towngov\\_comm\\_weirriv.html](http://www.hingham-ma.gov/towngov_comm_weirriv.html). Bike lanes and pedestrian path through the estuary is in progress (a map is included in Land Protection Plan).

**U-20 Weir River Estuary Park Land Protection Plan (WRELPP) site #18:**

**Boyle Property on Porter’s Cove**

**Ownership/Management:** Private/Private Proposed for Town/ Conservation Commission

**Acres:** 3.5 acres

**Zoning:** Residence C

**Setting:** The waterfront acreage on Porters Cove and along GWB links Town Conservation property at Border Park with Porter’s Cove Point.

**Access:** Geo. Washington Boulevard, across from the Hingham Court House.

**Facilities/Activities:** Salt marsh with a little upland; Estuarine ecosystem protection.

**Significance:** Abuts shellfish beds and provides protection to shellfish habitat.

**Recommendations:**

- Contact owner for negotiations.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**U-21 George Washington Boulevard** (old gasoline station site across from Hingham Court House) WRELPP site #20

**Ownership/Management:** Received by the town predicated on site clean-up by the state, funded by DCR and clean-up by DEP (Clean-up nearly completed).

**Acres:** .46 acre

**Zoning:** Residence C

**Setting:** Links Conservation Property, Porter's Cove Point, along GWB to proposed acquisition U-20 along George Washington Boulevard.

**Access:** Geo. Washington Boulevard, across from the Hingham Court House parking lot.

**Facilities/Activities:** The property offers access to and view of shoreline on Porter's Cove Point. The site provides an access for canoes and kayaks, and a possible information Kiosk and pedestrian-bike resting site.

**Significance:** The property is in the ACEC, drains to Porter's Cove shellfish beds, and provides access to Conservation Properties along GWB and Porter's Cove in the WREP.

**Recommendations:**

- Transfer land to Conservation Commission.
- Provide an access path for canoes and kayaks, an information kiosk or interpretative signage/materials, and pedestrian-bike resting site.

5.0  
INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST  
(SEE Map 6)

**U-22: Sanctuary Pond and abutting area in ACEC WREPLPP Site #18 Note:**

There are two Sites # 18, one on either side of GWB

**Ownership/Management:** Private/Private

**Acres:** 16-Acre pond plus bordering land

**Zoning:** Residence C

**Setting:** Pristine quarry pond in the ACEC with surrounding informative geologic cuts, outcroppings, and vegetation

**Access:** Proposed from Geo. Washington Blvd. and possibly from Rockland St.

**Facilities/Activities:** Site is within walking distance to the Estuary Center and would provide an outstanding educational site; this was a favorite geological education site for educator Phil O. Swanson.

**Significance:** A unique geological site, nesting feeding area for birds, and habitat for fresh water fish, and informal freshwater swimming area.

**Recommendations:**

- Contact owner for negotiations.
- Acquire or secure Conservation Restriction (CR) around the 16-acre quarry pond and adjacent shoreline (previously agreed with owner in H V 111-1322006.)



Diverse Sanctuary Pond in foreground, Weir River to rear.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**U-23 Bass Point WRELPP site #18.** Note: There are two Sites # 18, one on either side of the George Washington Bridge

**Ownership/Management:** Private/private

**Acres:** 15.63 acres

**Zoning:** Res. C

**Setting:** A prominent piece of ledge and salt marsh shoreline and upland predominantly in the ACEC Landside. It is north of the Court House extending from the parking lot to the George Washington Boulevard Bridge around the point to acreage along Weir River; all this land is known as Bass Point.

**Access:** From Geo. Washington Blvd or by kayak on Weir River beach side.

**Facilities /Activities:** A handsome strategic shoreline holding. Enjoy hiking, swimming, nature study in areas of shoreline and upland habitat

**Significance:** The largest remaining and most ecologically sensitive property along the Hingham shoreline and in the Weir River Estuary. The importance of protecting this property cannot be overstated in terms of its location and relationship to the whole Weir River Estuary. The tidal Weir River flows around its eastern and northern edges, with estuarine wetlands circling most of the peninsula into Porter's Cove.

**Recommendations:**

- Contact owner to protect this estuarine wetlands and adjacent upland in the ACEC.



Bass Point seen from the George Washington Bridge

## 5.0

### INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST (SEE Map 6)

#### **U-24 Parcel on Foundry Pond (map 53/ Lot 48) WRELPP site #16**

**Ownership/Management:** Aquarian Water Co./ Aquarian Water Co.

**Acres:** .15-acre

**Zoning:** Official and Open Space edge of Res. C land

**Setting:** Abuts present Foundry Pond holdings.

**Access:** Foundry Pond Road off Kilby Street

**Facilities/Activities:** Small pond-side parcel/provides continuous wildlife habitat in perpetuity and Aquarian has said it is of no benefit to them.

**Significance:** Mature white pine stand that abuts Conservation property and pond

#### **Recommendations:**

- Contact Aquarian Water Co. for possible transfer.

#### **U-25 Expansion of Lyford's Lyking to north**

**Ownership/Management:** Private abutter /Private abutter

**Acres:** 3+

**Zoning:** Res. C

**Setting:** Salt marsh and creek adjacent to Lykford's Lyking marsh off Rockland Street.

**Access:** From Rockland Street

**Facilities/Activities:** Marsh and creek/walking at low tide, swimming at high tide.

**Significance:** Scenic, recreationally usable marsh is about 2/3 public (to south of marsh creek) and 1/3 private between creek and development to the east. Development is impossible, but complete public ownership would prevent conflicts. Proposed by the Open Space Committee.

#### **Recommendations:**

- Contact owner; seek a conservation restriction or fee.

#### **U-26 Weir River Salt Marsh: Edge of Amonte Meadow**

**Ownership/Management:** National Grid

**Acres:** A total of 17 acres on both sides of river (Assessors Map 42-003, 42-004)

**Zoning:** Res. C

**Setting:** Strip of marsh land between the recently acquired Amonte Meadow and the Weir River.

**Access:** From Rockland St. or the Amonte Meadow. National Grid is reportedly open to an access stairway from the River into the Amonte Meadow here, but opposes access along the old railroad on west side.

**Facilities/Activities:** Strip of marsh and steep river bank between Meadow and River / Access to River and completion of meadow acquisition to River's edge.

**Significance:** Present Meadow appears to run the River's edge but does not; thereby limiting legal and physical access.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Recommendations:**

- Acquire riverside land/rights if feasible.
- Discuss possibilities of access to west side of the river with owners.
- Develop a set of stairs along new forthcoming bridge from Amonte Meadow to the River.



Land on either side of Weir River, west of Amonte Meadow, seen from Rockland Street. Powers Lane site (U-27) seen to rear

**U-27 River Frontage and Historic use at end of Powers lane WRELPP site 179**

**Ownership/Management:** Private/Private

**Acres:** 2.6

**Zoning:** Res. B

**Setting:** Riverside land off Powers Lane

**Access:** From Powers Lane off Rockland Street or from river

**Facilities/Activities:** Historic House and tidal river frontage/ Shoreline access

**Significance:** Site would be link in continuous Weir River shoreline access/protection.

Owners have reportedly expressed interest in a CR or partial land sale.

**Recommendations:**

- Discuss possibilities with the owner.

## 5.0

### INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST (SEE Map 6)

#### **U-28 Noonan Property/ WRELPP site 177** (Assessors Map 42-15)

**Ownership/Management:** Private, ready to sell/Private

**Acres:** 7.91

**Zoning:** Res. C

**Setting:** Low density housing and undeveloped wetland and upland between Rockland Street and Railroad R.O.W. next to Kilby Street. In ACEC, wet meadow, woods, rock outcroppings and pond draining to the Weir River, and smelt run.

**Access:** By car from Rockland St.; by foot from Kilby Street.

**Facilities/Activities:** Woods, wetlands, former Sydney ice pond now used for skating and habitat especially by migrating birds, vestiges of former narrow gauge railroad and a house potentially available with the site / Ice skating, nature observation, past ice harvesting and smelt habitat, bird habitat and informal recreation.

**Significance:** Multi-valued land, a link within the Weir River ACEC ranked in the highest category for protection in the 2004 Weir River Estuary Protection Plan. Varied valuable site mapped as in the Weir River Area of Critical Environmental Concern (ACEC); Owner wants to stay in house on smaller of two parcels, but it might become available for sale for affordable housing if plans change. It has been recommended for acquisition with Community Preservation funds.

#### **Recommendations:**

- Support proposed acquisition.
- Integrate with Foundry Pond and the Weir River Estuary Park system.
- Encourage affordable use of house if available in the future.
- Stay in touch with owner for future.

#### **U-29 Salt Marsh/woodland on the East side of Weir River above Rockland St. as part of WRE Park (WRELPP sites 10, 11, 12)**

**Ownership/Management:** Private/Private

**Acres:** 15.4 acres

**Zoning:** Residence C

**Setting:** Marsh and wooded upland abutting river just below the dam

**Access:** From Rockland St. for viewing from Foundry Pond path system; from Weir Street and Cherry Street by road

**Facilities/Activities:** Marsh and wooded upland at edge of ACEC and along beginning of the Estuary. Includes NHESP-defined Estimated Rare Species habitat and is partly protected by River's Protection Act

**Significance:** Connecting habitat and adding depth to Weir River holdings

#### **Recommendations:**

- Acquire, if available land is not protected by River's Protection Act and Wetland Protection Act.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**



Recently built private stairway to Rocky Beach

**GOVERNOR'S ROAD, LLC**

**CPT-1 Rocky Beach**

**Ownership/Management:** Governor's Road, LLC replaced Crow Point Nominee Trust

**Acres:** .24 (Map 27, lot 72, according to the Assessors Map)

**Zoning:** Res. A

**Setting:** Harbor shoreline and a stony beach down a steep slope from Otis Street

**Access:** By car, bike or foot from Otis Street via a private trust-owned stairway replacing an earlier one to the south built by a local resident for general use when land was under previous ownership, by water from harbor, limited curbside parking.

**Facilities/Activities:** Rocky shore and stairway/swimming, shoreline walks, previously-allowed general sailing though storage on shore of dinghies (for nearby moorings) and small boats, e.g. sunfish, sailfish; and access to shore for clam diggers.

**Significance:** A valuable window on the Harbor with value far beyond its small area. The site was paired with Bouve's boat yard as an access point allowing legal walking from Boat Yard to Causeway below seawalls and high tide line.

**Recommendations:**

- Explore allowable uses with Trust.
- Consider cooperative management.
- Explore potential public acquisition to remove any private liability and restore public use.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**THE TRUSTEES OF RESERVATIONS**

The Trustees own 497.87 acres of land in Hingham. The Weir River Farm, a 75 acre parcel which includes a 10-acre working farm, and World's End at 251 acres are two of its largest holdings.

**TR-1 Weir River Farm**

**Ownership/Management:** Trustees/Trustees

**Acres:** 84 [1995 plan refers to two sites, #30 with 82 acres and #31 with 2 acres]

**Zoning:** Official and Open Space

**Setting:** Former working farm of Ezra Thayer on rolling fields sloping down from Turkey Hill to the Weir River at East Street. The Trustees recently cleared trees at the upper end to restore former open fields

**Access:** By auto, bike or foot from East Street at bottom or from Turkey Hill Lane at top

**Facilities/Activities:** House, barns, large community garden/and "a foot path meanders downhill though open fields and woods" (from the Parklands for the Public" Map)/ private activity on farm with occasional public events, gardening and harvesting at the hilltop community garden.

**Significance:** A major scenic asset as seen from East Street and the Cushing Property, these two gifts to the Trustees by Polly Thayer Starr connect the Weir River, Turkey Hill and the Whitney and Thayer Woods. They also protect the Weir River banks just above Foundry Pond.

**Recommendations:**

- Continue present management and programs.

**TR-2 World's End Reservation**

**Ownership/Management:** Trustees/Trustees

**Acres:** 251 according to Parklands Map. Trustees have 255 acres at Map 20/ Lot 60, and 2.25 acres on Map 20/Lot 57, both on listed on Martin's Lane on the Non-Profit land table. 1979 Plan says 260.8 acres.

**Zoning:** Official and Open Space

**Setting:** Peninsula between Hingham Harbor and Weir River Estuary formed by two drumlins

**Access:** By auto, foot or bike from Rockland Street to Martins Lane; by small boat to various points where a small boat may be pulled up as there is no dock; by swimming from Sarah Island (ill-advised due to boat traffic) or from the nearest point in Hull on Weir River Park

**Facilities/Activities:** Cart paths with benches, meadows, woods, wetlands, rocky shores, beautiful scenery and a warden's shack and parking lot; relaxing, hiking, cross country skiing, kite flying, viewing scenery, mountain bike riding, dog walking, and boating – as a destination for very small boats-and special events like Solstice celebrations.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Significance:** A major multi-purpose regional and local resource and technically part of the Harbor Islands State Park. A fee is charged which helps to maintain other, free, Trustees' facilities. The fee is sometimes informally waived or refunded for people who carry out others' trash. The site was originally two drumlin islands, connected by a causeway and dam, in the 17<sup>th</sup> Century.

According to the 1995 Plan it has been known as Worlds End since at least 1664 when Samuel Lincoln sold to Daniel Cushing three acres "upon the Hill in the Playne called the Worlds End." By 1886 John P. Brewer of Boston had acquired the two islands and hired Frederick Law Olmsted to lay out a subdivision for 150 houses. These were never built but Olmsted's access road system and double row of trees remain key features. The Brewers farmed the land and hunted there. In 1967, a revived subdivision plan led to a fundraising campaign lead by Samuel Wakemen (former head of WWII's Bethlehem-Hingham Shipyard) so that the Trustees could acquire the land. As a result, the Trustees gave their annual conservation award to "The People of Hingham and the South Shore"

**Recommendations:**

- Continue present management including mowing the meadows and removal and timely replacement of damaged trees along the carriage roads.

**TR-3 Whitney and Thayer Woods**

**Ownership/Management:** Trustees of Reservations

**Acres:** 114.5 acres in Hingham with the rest of the 824-acre total in Cohasset.

**Zoning:** Official and Open Space

**Setting:** A densely wooded tract reflecting several gifts and having conspicuous rock outcroppings. The properties abut the recently acquired Turkey Hill, Weir River Farm and Wompatuck State Park, and are across the Greenbush line tracks from the Hingham Skating Club.

**Access:** By car from Route 3 Across from Side Hill Road, or across from Sohier Street in Cohasset, from Turkey Hill at the end of Turkey Hill Lane or through James Hill Lane from Leavitt Street, or from Elizabeth Lane; by foot from Turkey Hill or from adjacent parts of the State Park.

**Facilities/Activities:** Extensive re-grown woodlands replacing a pre-1870 sheep pasture, and trails/walking, birding, and horseback riding.

**Significance:** Site is a major multi-community asset connecting Turkey Hill and the Weir River Farm to Wompatuck State Park, creating a four-mile stretch of unbroken woodland. The holding reflects gifts by the Whitney Wood Association and Mrs. Ezra Thayer.

**Recommendations:**

- Continue present management in conjunction with Turkey Hill and the Weir River Farm.
- Improve trail connections to Wompatuck State Park if needed.

## 5.0

### INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST (SEE Map 6)

#### **TR-4 Turkey Hill**

**Ownership/Management:** Trustees of Reservations/Trustees

**Acres:** 62 acres (30 in Hingham and 32 in Cohasset)

**Zoning:** Municipal and Open Space

**Setting:** Dramatic open hilltop with views of Hingham Harbor, Boston Harbor, the Atlantic Ocean, and parts of Hingham, Hull and Cohasset. Site connects Weir River Farm to the Whitney-Thayer woods.

**Access:** By car or foot from Turkey Hill and, from adjacent Weir River Farm and Whitney-Thayer Woods.

**Facilities/Activities:** Dramatic open hilltop blending with the adjacent Weir River Farm holdings, previous Hingham Riding Stables of the late Joseph Saponaro are gone; site surrounds two radio or cell phone towers.

**Significance:** A major scenic resource attracting people to other nearby Trustees resources. The Trustees acquired these parcels with state and private funds in cooperation with the Hingham and Cohasset conservation commissions and respective local land trusts. It is managed by the Trustees with guidance and advice from the participants as a whole.

#### **Recommendations:**

- Continue present management.

#### **HINGHAM CONSERVATION LAND TRUST (HLCT)**

The Hingham Land Conservation Trust was founded in 1961 and owns 60 acres of conservation land outright and holds easements on parcels totaling more than 117 acres. It is also the monitoring agent for conservation restrictions held by the town or the Conservation Commission on land acquired with CPC funding (5 Parcels).

#### **HT-1 Fulling Mill River Parcel**

**Ownership/Management:** Hingham Land Conservation Trust/Trust

**Acres:** 12.3

**Zoning:** Official and Open Space

**Setting:** Between Spreading Marshes on Fulling Mill River and historic Main St.;  
A mixture of old fields and second growth hazelwood.

**Access:** Through Wilder Hall parking lot and a small stretch of private land

**Facilities/Activities:** Fields and woodlands/nature walks, cross-country skiing and horseback riding.

**Significance:** This was a generous gift of Helen Burns. It shows as part of Jacobs Meadow on Parklands for the Public Map. [See C-14] It seems to be to the south of the Fulling Mill Conservation Land

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Recommendations:**

- Manage as is.

**HT-2 Home Meadows Access Strip from Andrew's Isle**

**Map:** 072/ Lot 7, 10R Rockwood Road

**Ownership/Management:** Hingham Land Conservation Trust/Hingham Land Conservation Trust

**Acres:** 1.46 (plus 63 Sq. ft.)

**Zoning:** Official and Open Space

**Setting:** A strip of marsh bordered by brush and trees giving access to the Home Meadows from residential Andrews' Isle

**Access:** Off private property on Andrew's Isle and Rockwood Road; by car to Lots 3A and 4A on Andrew's Isle and then by foot into the Meadows.

**Facilities/Activities:** A patch of land giving access to the Meadows from the easterly side; a path gives access but the view is partially screened by trees masking the route so that it is probably used less than it might be.

**Significance:** A useful access to the Home Meadows. Lots were given by developer Wallace Marden and the 63 Square feet off Rockwood Road were given by William B. Canterbury

**Recommendations:**

- Clear trees and brush enough to open the view and encourage use.

**HT-3 Eel River Woods**

Shown on the Parklands Map as part of the "Plymouth River Complex".

**Ownership/Management:** Town and HLCT/HLCT

**Acres:** 12.2+

**Zoning:** Municipal and Open Space

**Setting:** Site borders the Eel River and Plymouth River where they flow to Cushing Pond. 1995 plan list two gifts from Mary Niles of 10.8 acres and 60,000 sq. ft. though they total about 12.2 acres. A trail has been cleared and a boardwalk installed.

**Access:** From Cushing Street with limited parking.

**Facilities/Activities:** Unimproved natural area with 1100' of forested frontage on Cushing Street/ open space protection and nature observation

**Significance:** Helps to preserve Cushing Pond's natural setting.

**Recommendations:**

- Examine opportunities for complementary nearby acquisitions.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**HT-4 Jacobs Meadow Area**

(Includes HT- 1 above)

**Ownership/Management:** HCLT 45.42 acres; Conservation Commission 25 acres  
(total in 1995 text, possibly come to more)

**Acres:** 65.01 from 1995 plan, but parcels there add to 74.67 acres or to 66.67 acres without the Conservation acres. That plan says Helen Burns gave 30.41 acres and 15.01 acres to the Trust and 8 acres to the town. The town purchased a northerly 10 acres from abutters, the Goodlatte family added a 1.25 acre gift and an important access easement to Main Street. The Kurtzman and Garvie families donated a southeastern area of over 10 acres for 74.67 acres.

The Parklands Map refers to “50 acres”; 30 from Helen Burns to the Trust and 8 to the town, a northern 10 acres purchased from abutters, the donate Gooddlatte access strip, and 10.15 acres from the Kurtzmans and Garvies for a total of 58.15 acres apparently missing the 15.01-acre Burns donation. This is possibly included C-14 above,

**Zoning:** Official and Open Space

**Setting:** Open fields and varied woodlands between Main Street and the Fulling Mill Brook/River

**Access:** Through Wilder Hall parking lot on Main Street

**Facilities/Activities:** Fields, woodland and marsh

**Significance:** Ideally situated for multiple use as it is between spreading Fulling Mill River marsh and busy Main Street.

**Recommendations:**

- Clarify ownership and holdings.
- Ensure legal access from Wilder Hall if needed.

**HT-5 Whortleberry Hollow (See C-39)**

**Ownership/Management:** HCLT/HCLT

**Acres:** 16

**Zoning:** Municipal and Open Space

**Setting:** Woods and intermittent streams off of Cushing Street

**Access:** By car from 424 and 444 Cushing Street and Knoll Road

**Facilities/Activities:** Woodlands with a foot path and identifying marker at the start/ Hiking, observing nature.

**Significance:** A neighborhood park and wildlife refuge donated by Suvia Whittemore along with three overgrown acres on Gardner Street given to the Conservation Commission.

**Recommendations:**

- Continue to manage as is.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**



The Landfill seen from the edge of the Brewer Reservation – the Hill Next Door waiting to be climbed

**SCHOOL DEPARTMENT**

**See School Lands Under C. Recreation Uses**

**Private Non-Profit Institutions**

Local institutions such as the Notre Dame Academy control significant parcels that currently function as open space, but are residentially-zoned and could be developed in the future. Hingham’s 2001 Master Plan summarizes the status of undeveloped unprotected lands in Hingham:

“Unaffiliated private landowners control the greatest share of Hingham's unprotected open space. These lands range from a few acres of woods behind a suburban backyard to forests, wetlands and old fields many dozens of acres in size. With a few exceptions, this open space is zoned for development (e.g., residential or industrial) and is not protected”.  
(Hingham Master Plan)

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**DERBY ACADEMY**

**DA-1 Derby Academy Grounds**

**Ownership/Management:** Derby Academy

**Acres:** 21.6

**Zoning:** R-20, 20,000 square foot lots

**Setting:** A plateau along Fearing Road dropping down to sea level at the /Broad Cove. Meadow species are in the area is along the level fields while pine, mixed hardwoods and white birch have seeded along the fringes.

**Access:** By auto or foot from adjacent Fearing Road off Route 3A or by foot from Broad Cove land along Lincoln Street

**Facilities/Activities:** A private school -the first coed private school in the country with school buildings, athletic fields, a gym and related facilities

**Significance:** The play fields are used by the public as well as by the School. The land abuts the Conservation land along Broad Cove and Lincoln Street.

**Recommendations:**

- Continue cooperative relationships.
- Examine closer integration with adjacent protected lands.

**GLASTONBURY ABBEY**

**GA-1 Glastonbury Abbey**

**Ownership/Management:** Benedictine Fathers/Benedictine Fathers

**Map:** 54/Lot 40

**Acres:** 60.6

**Zoning:** Res. A

**Setting:** Hilly, rocky woodlands and five acres of cleared land at the junction of Hull St. and the Old Colony Railroad tracks

**Access:** By car from Hull Street or Weir Street, or by rail from the nearby Nantasket Junction Greenbush line station

**Facilities/Activities:** Chapel, dormitory, book store, meeting rooms and related religious facilities; also tennis and basketball courts/skating rinks, picnic tables and a “station walk”/religious activities, public conferences, occasional public fairs, historic agricultural activities, and informal recreation.

**Significance:** This major scenic site abutting the Commission’s Foundry Pond holdings is very valuable as it is, and has great potential for limited development combined with open space preservation.

**Recommendations:**

- If the Abbey chooses to release any land, work with it and with the Hingham Affordable Housing Trust to explore mixed-use options preserving the best of the open space.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**BOY SCOUTS**

**BSA-1 Boy Scouts – Troop 1**

**Ownership/Management:** Boy Scouts of America, BSA Troop 1

**Acres:** 1.15

**Zoning:** Res. C

**Setting:** A woodland cabin and trails close to Wompatuck State Park

**Access:** By car from Leavitt Street

**Facilities/Activities:** Cabin and woodland trails/ Headquarters for Scout activities

**Significance:** This is maintained by one of oldest troops in Massachusetts and the country.

**Recommendations:**

- Manage as is.

**BSA-2 Liberty Pole Boy Scout Land Troop 4 (next to C-40)**

**Ownership/Management:** Boy Scouts of America, BSA Troop 4, Old Colony Council/BSA and Conservation Commission as part of the Eel River Reservation

**Acres:** 6.31

**Zoning:** Res. B

**Setting:** Located in Liberty Pole at the headwaters of the Eel River this is almost entirely maple swamp with a bit of upland near Old County Road. Channelizing the River here has lowered the swamp's water level, facilitating walking, but changing the vegetation

**Access:** By car to the intersection of Colonial Road, Brewster Road and Brewster Drive with 5 or 6 parking spaces, or by foot from the surrounding neighborhoods.

**Facilities/Activities:** Wooded swamp and a bit of upland for bird watching, nature study.

**Significance:** This is included in the Eel River Reservation (Site C-40) and could be the beginning for expanded greenbelts in Liberty Pole.

**Recommendations:**

- Continue present management unless the Scouts wish to transfer the land to the Town/Commission.

**NA-1 Notre Dame Academy**

**Ownership/Management:** Sisters of Notre Dame/ Notre Dame Academy

**Acres:** 69.7

**Zoning:** Res. B

**Setting:** Rocky rolling hills behind the school covered with white pine and mixed hardwood, and low-lying relatively undevelopable maple swamp to the rear. Some hilly sections have been leveled for recreation areas. Site is just south of Resurrection Church in South Hingham, and just north of the Hingham Middle School which it abuts to the rear of Pine Grove Road. It extends all the way back to Gardner Street, according to the 1979 Plan.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Access:** By car from driveway off Main Street in South Hingham

**Facilities/Activities:** School Buildings, a track surrounding a soccer field, large low multi-purpose field, with a softball backstop and bleachers, and two tennis courts.

**Significance:** The Academy, founded in Roxbury in 1853 and relocated to Hingham by the early 1960s, uses only a portion of the site.

**Recommendations:**

- Be in contact with the school's Directors to anticipate any development proposals and work to preserve key open space values.
- Explore a possible connection through to the Gardner Street Conservation land donated by Suvia Whittemore (See C-47).

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Chapter 61 Lands**

Chapter 61 lands (i.e., lands under Chapters 61, 61A, and 61B) are temporarily protected under the state's present use taxation program so long as they are committed to forestry, agriculture, or recreational use. The land may be removed from the program well before a planned change in use by paying a portion of avoided taxes plus interest thus allowing the uses to change without triggering the town's first refusal rights. Otherwise when the land is proposed for sale and/or a change in use the Town (Selectmen, Conservation Commission and Planning Board) must be informed and the town must be given first refusal rights to meet any bonafide offer within 120 days. The Town may assign this right to a public or non-profit land conservation group which may be able to act more quickly.

As the 2001 Master Plan notes, in reality, towns often have trouble taking advantage of the right of first refusal, because they must have available a large cash reserve to buy the land, as well as a political structure that can quickly approve the purchase. For example, even when recommended by the Community Preservation Committee, the Community Preservation Act funds must be voted at Town Meeting. Thus Chapter 61 lands are protected to the extent that the program lessens tax pressures to sell, but major offers may lead to land being removed from the program rather than being offered to the town, or the town and partners may be unable respond in time. Thus Chapter 61 lands are considered to be protected only tenuously and temporarily.

Hingham has 11 parcels in Chapters 61, 61A and 61B held by 8 owners and totaling 94.69 acres. The inventory matrix will show which parcels are in Chapter 61, 61A and 61B. These parcels need to be mapped against other holdings and lands of interest so that opportunities to connect other holdings, to preserve even small pieces of valuable farm land, or to preserve a neighborhood can be identified and seized.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Table V-3**  
**Lands in Chapters 61, 61A and 61B**

Number	Map/ Lot	Location	Zoning	Acres	Ownership	Management	Use/Condition/ Abutters/Potential
1		65 Lazell Street	Res. B	21.6	Peter B. Bickford	The Fulling Mill Brook Farm Trust	Ch.61A
2	49/49	22 Bremer Circle	Res. A	8.58	Frederickson Family Funding Trust	Patricia C. Frederickson, Trustee	Ch. 61B
3	55/13	East St.	Res. C	9.42	Cohasset Golf Club		Ch.61 B
4	64/11	210 East St.	Res. C	9.86	Michael Charles Cushing		Ch. 61B
5	64/6	C. J. Cushing Hwy	Res. C	10.44	Michael C. Cushing		N.A. Cornfield Farming, preserved House with Agricultural uses.
6	66/2	345 East St.	Res. C	5.98	Stein Family Realty Trust	Geraldine & Lawrence Stein Jr.	Ch 61B
7	119/1	83 Lazell St.	Res. C	7.88	David A. & Nancy B. Barry		Ch. 61
8	128/1	91 Lazell St.	Res. C	6.6	David A. & Nancy B. Barry		Ch. 61
9	138/8	Charles St.	Res. B.	8.0	David Bennett		Ch. 61A
10	148/6	Charles St.	Res. B	1.14	David Bennett		Ch. 61A
11	138/ 27	Lazell St.	Res. C	8.6	Ann R. Healy		N.A
		<b>Total</b>		<b>98.1</b>			

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Evaluations of the More Important Chapter 61 Lands**

(This draws on evaluations from the Open Space Acquisition Committee.)

- (1.) **Significance:** The largest parcel of land still in agricultural use in the Town. Fields along Fulling Mill Brook.
  
- (5.) **Significance:** The Weir River wetlands dominate this parcel; covered by bush briar, bittersweet, and swamp maples. Its location in the riparian zone protects the lot as open space and the environmental system of the River.  
  
(The property was transferred to the Conservation Commission in 2010.)
  
- (6.) **Significance:** This parcel has failed two percolation tests indicating that it cannot be developed [without being sewerred], however it is within 100 yards of the Hingham Skating Club pond and it is an important recharging area when the pond floods its boundaries. Environmentally its value to the pond system is significant.
  
- (7., 8.) **Significance:** These 7.88 and 6.6-acre parcels have been divided into two lots for the purpose of sale. One lot contains the house and garage, the other lot has a barn and guest house with access to three lots to the rear. These lots have passed percolation tests, however to the rear of these lots the land is wet with skunk cabbage and a rippling stream, a tributary of the Fulling Mill Brook. Situated in a rural area of town, it borders sixteen acres of open land. Although it is not accessible, its value to the environment is significant.

The adjacent 21.06-acre parcel at 65 Lazell Street is currently a working farm with open rolling fields which are hayed three times a year. Fulling Mill Brook runs through a low area next to the residence in the southeastern corner of the property. This and the Barry property (nos. 83 and 91 above) comprise a total of [34.54] acres holdings which would be a highly beneficial conservation property.

- (9., 10.) **Significance:** There are two parcels which make up this acreage. It backs up to Wompatuck State Park with a six-foot wetland separating the land from the Park. Its proximity to the George Washington Forest and to Fulling Mill Pond, a major drinking water source for Hingham, determines the high conservation value of this land. There is a small wetland in the northeastern corner of the property with a spring which flows into Fulling Mill Brook. Should this property be developed, it would disturb the important ecosystem which the land supports. Accessibility of this land would be from Charles Street, should the town acquire it.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Unprotected Lands of Conservation Interest**

**Town Lands held due to Tax Takings**

The following lands have been taken for unpaid taxes and are generally may be sold by the town unless needed for a specific purpose. Some are subject to redemption by the owner within a year of the taking, but most are already past that point. Their possible open space or recreation use is noted to identify needs for further study.

**Table V-4 - Tax Title Possessions - \*Source: Treasurer/Collector's Office**

	<b>Address</b>	<b>Map/Lot</b>	<b>Date Foreclosed</b>	<b>Area In Acres</b>	<b>Assessment At Foreclosure</b>	<b>Use/Condition/Abutters/Potential</b>
1	1 Andrews Isle	73/54	FY 96	.46	\$1,200	A corner lot on Andrews Isle and Rockland St. The street marker lot, it adds a vegetative entrance to the street.
2	3 Andrews Isle	62.59	FY 96	.47	\$28,100	Rocky Ledge and marsh next to Home Meadows.
3	9 Andrews Isle	62.72	FY 96	.85	\$12,100	
4	0 Beal Street	58/10	FY 08	.30	\$22,600	Wetland
5	73 Blaisdell Rd.	179/6	FY 78	.29	\$22,900	Located between houses.
6	0 Blaisdell Rd.	179/13	FY 99	.03	\$1,700	Isolated; limited potential except for small habitat.
7	12 Brewster Rd.	168/88	FY 08	.09	\$4,000	Wetland/habitat
8	0 Cedar Street	89/54	FY 96	.82	\$237/200	Wooded with ledge outcropping-green space in built up neighborhood
9	18 Deerfield Rd.	202/17	FY 03	.77	\$11,700	Disturbed land most useful for buffer area.
10	19 Deerfield Rd.	202/8	FY 02	1.61	\$13,000	Wetland
11	8 Devon Terrace	208/30	FY 02	1.46	\$32,000	Wetland and buffer
12	18 Harvard Rd.	125/96	FY 03	.69	\$33,400	Wooded wetland
13	2 Hitching Post Lane	156/82	FY 03	.47	\$11,200	Perennial stream/wildlife habitat
14	2 Presidents Rd.	168/150	FY 85	1.1	\$15,000	Wetland.
15	0 Rockland Street	22-33	FY44	3.75	\$11,200	Saltmarsh
16	9 Stagecoach Rd.	156/58	FY 03	.82	\$11,800	Valuable for recharge and wildlife protection
17	11 Stagecoach Rd.	156/59	FY 03	.65	\$11,600	Valuable for recharge and wildlife observation
18	22 Stagecoach Rd.	156/75	FY 03	1.6	\$13,900	Valuable for recharge and wildlife observation
19	26 Stagecoach Rd.	156/73	FY 03	1.0	\$12,600	Valuable for recharge and wildlife observation
20	11 Woodridge Rd.	117/15	FY 98	.46	\$4,800	Wetland

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

Since these parcels are generally mostly wetlands or with only one or two house lots or less in size, they do not offer great expanses of open space. However, some which are adjacent to other open spaces or between two holdings could help to make a more complete open space/trail system or wildlife corridor, while other small sites might add a valuable neighborhood retreat or a tot lot /adult sitting area. Mapping these sites against other holdings and areas of interest will help to identify such opportunities. The right hand column suggests possible opportunities for closer examination based on present information and field observations.

**Evaluations of the More Important Tax Title Holdings**

(This draws on evaluations from the Open Space Acquisition Committee.)

5. This parcel is in a neighborhood, is wooded and surrounded by houses on both sides. Because of its location, its value may lie in an opportunity for children to play, to study nature and [it] may also provide wildlife habitat. It is accessible from the street.

6. This small parcel sits in a neighborhood and is wooded and surrounded by houses on both sides. Because of its isolated location, benefits to the towns would be minimal. Accessibility is limited as it is filled with briar, however it provides as small wildlife habitat.

9, 10, 11. These parcels on Deerfield Road and Devon Terrace comprise a corner lot and vacant lots in the Hingham Industrial Park. Some of the land has been disturbed; the remaining acreage is a mixture of wetlands and a few uplands with hardy trees. This open land offers wildlife habitat, buffer zone and watershed protection.

16,17. **Setting:** A small parcel of open space which is very wet and significant for its groundwater recharging. It could be used for nature study and wildlife protection. Accessibility: Roadside

18. A small pocket of wetland whose value is its ability to recharge groundwater. It could be used for nature study and serves as wildlife protection. Accessibility: Roadside

19. **Setting:** Once again, this small pocket of land offers recharge for groundwater, provides a small space for frogs, and lends itself to nature study and wildlife habitat, Accessibility: roadside.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Private Property**

Hingham contains many large parcels of private, undeveloped land with little to no protection. Open unprotected land has decreased significantly since the last Open Space and Recreation Plan. There are almost 2,000 acres of private lands currently under development for residential and golf course use.

**Private/For-Profit Institutions**

**THE AQUARIAN WATER COMPANY**

The Aquarian Water Company of Massachusetts (successor through acquisitions and consolidations to the original locally-organized and owned Hingham Water Company) provides water to Hingham, Hull and part of Cohasset from wells and surface water in Hingham's portion of the Weir River basin. The Company holds about 250 acres for water quality protection. There is no permanent or guaranteed protection for these lands because needs might change. At present much of the acreage must remain undisturbed to protect the present wells.

**WC-1 Fulling Mill Pond (Sometimes called Duck Pond)**

**Ownership/Management:** Aquarian Water Company/ Aquarian Water Company

**Acres:** 116.2

**Zoning:** Official and Open Space

**Setting:** Beautiful steep eskers and deep kettle holes in a recessional moraine characterize this striking area. White pine and oak are the most abundant species bordering the pond. This is one of Hingham's loveliest places. It abuts the Town Forest to the east, Main Street to the West, and residential areas to the northwest and southeast.

**Access:** From a gate and small parking area on South Pleasant Street, by a path from Main Street, and from the Company's water treatment plant off the Lutheran Church driveway. The site is officially closed for legal reasons.

**Facilities/Activities:** Water supply wells and pumping stations; and the above noted scenic woods and pond/fishing, picnicking, ice skating and nature study. (Former duck feeding is now prohibited.) Local historian/naturalist John P. Richardson observed Spotted Salamanders and Spotted Turtles here in the 1960s and an endangered plant Golden Seal was noted in 1979.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**



Fulling Mill Pond and a vestigial water works gate house

**Significance:** Site is a major part of the Aquarian water system; ditches formerly brought water from Accord Brook, clear cool springs bubble from the glacial drift to the rear of the pond and an underground aqueduct now connects the pond to Accord Brook. The pond dates from 1705 when permits were granted to Captain Abel Cushing to build a dam and mill for the fulling and dyeing of cloth. Site is a major part of NW-SE chain of protected lands.

**Recommendations:**

- Seek to regularize public access while protecting water resources.

**WC-2 Captains Lane Water Company Land**

**Ownership/Management:** Aquarian Water Co. / Aquarian Water Co.

**Acres:** 7.43

**Zoning:** Municipal and Open Space

**Setting:** Level land south of Prospect Street and near Town Forest, covered with White Pine, Red Cedar and scrub oak and bordering wooded yards of abutting houses.

**Access:** By car or foot via a paved road from the end of Captains Lane with parking at the end of the cul-de-sac.

**Facilities/Activities:** Woodlands and a small brick well pumping station used as neighborhood open space for short strolls.

**Significance:** Though primarily water supply land it was noted in 1995 as “a good model for planning more neighborhood vest-pocket parks.” Consistent low-intensity local use demonstrates the important need it fills for adjacent residents.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Recommendations:**

- Maintain/manage as is.
- Examine and seek any possible pedestrian connection to the Town Forest.

**WC-3 Prospect Street Water Company Land**

**Ownership/Management:** Aquarian Water Co. / Aquarian Water Co.

**Acres:** 21.9

**Zoning:** Official and Open Space

**Setting: Map:** Shrub swamp with pine and oak on higher former sand pits. It is east of Elaine Road and abuts the western bank of Accord Brook on land which was added in the 1970s.

**Access:** By car via Elaine Road and a dirt road with limited parking, or by foot from adjacent major McKenna Marsh conservation land to the east and south.

**Facilities/Activities:** Woods, swamp, wells and pumping station/Passive outdoor use and habitat.

**Significance:** 1995 Plan notes that “The Water Company’s expanded holdings form the northern edge of a nearly connected chain of protected wetlands extending from the Norwell line almost to Prospect Street. With easements or acquisitions along Prospect Street, the system could reach to the Town Forest and beyond to South Pleasant Street. The western edge of the Water Company land has the best trail potential.”

**Recommendations:**

- Manage as at present.
- Explore possible connections noted under “Significance.”

**WC-4 Downing Street Water Company Land**

**Ownership/Management:** Aquarian Water Co. / Aquarian Water Co.

**Acres:** 10.91 in 1999 Plan

**Zoning:** Municipal and Open Space

**Setting:** Surrounded by High School land and Merrymount Rd. conservation land on two sides, this is largely red maple swamp with some ash and tuplo; shrubs and fallen trees, and drains to Tower Brook

**Access:** From end of Downing Street and the Aquarian Company driveway and conservation land

**Facilities/Activities:** Swamp and water company well/ water resource protection, flood storage, potential firewood harvesting, and provision of a wooded backdrop to the High School Fields.

**Significance:** Site complements conservation lands and school lands and offers benefits noted above.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Recommendations:**

- Examine acquisition of similar land directly to north, if still vacant.
- Improve foot passage to allow walking from Merrymount Road to Downing Street and the High School fields.

**WC-5 South Bradford Road Water Company Land**

**Ownership/Management:** Holy Mary Mother of Light/ Aquarian Water Co.

**Acres:** 66.56

**Zoning:** Municipal and Open Space

**Setting:** North of Free St., and east of South Shore Baptist Church, this has wooded swamp, excavated gravel deposits, marshy meadows and hardwood swamp pockets with oaks and white pine on upland ridges.

**Access:** By car from Free street and a dirt extension of South Bradford Road; by canoe from the nearby Weir River

**Facilities/Activities:** protective wetland, two pumping stations, water intake and filtration structure, parking lot and garage/water supply protection, exploration of varied natural habitat, horseback and trail bike riding.

**Significance:** A major water supply and water resource protection area with surface water diversion and filtration systems treating groundwater.

**Recommendations:**

- Consider possible expansion to the north.

**WC-6 Water Company Accord Pond Land**

**Ownership/Management:** Aquarian Water Co. / Aquarian Water Co.

**Acres:** 140.91

**Zoning:** Municipal and Open Space

**Setting:** Around the northern, eastern and southern edges of the Pond, this land has a beautiful pine-studded esker rising steeply from the shoreline. It forms a backdrop for the Pond helps to buffer it from surrounding businesses and housing.

**Access:** By chained off dirt road on Route 228 and by foot from Accord Pond Drive and other surrounding roads.

**Facilities/Activities:** Water pumping station, water tower and pond-side lands/Protection of supplies

**Significance:** This is the town's only natural pond and contains the headwaters of Accord Brook

**Recommendations:**

- Protect any available vacant pond-side land.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Recreation Resources**

**Protected Public Land**

**RECREATION COMMISSION**

**RC-1 Hersey Field**

**Ownership/Management:** Recreation Commission/Recreation Commission

**Map:** 60 / Lot 150

**Acres:** 4.73

**Zoning:** Municipal and Open Space

**Setting:** A long narrow playfield running parallel to Thaxter St. in West Hingham, and attractively bordered by red maple, white pine and mixed oaks

**Access:** By car via a driveway and parking lot off Thaxter St.; by foot from street and surrounding properties.

**Facilities/Activities:** Small tot-lot play area with modern equipment, new baseball field with shelter, dugouts, and bleachers; two more primitive baseball diamonds, and a field for informal soccer and football games. Poor drainage on NW parcel limits use of this section much of the year.

**Significance:** This is a very well used facility in a well built-up area.

**Recommendations: (From ADA Transition Plan)**

- Resolve drainage issues in the northeast corner and develop another ball field.
- Seek on-site water and electricity (possibly from Hersey House project) and create a small field house.

**RC-2 Cassidy Field**

**Ownership/Management:** Town/Recreation Commission

**Map:** 116 /Lot 11

**Acres:** 14.76

**Zoning:** Official and Open Space

**Setting:** An open field set in white pine woodlands south of the Brewer Reservation and between two neighborhoods; White Horse Lane/Hemlock Road and Pinecrest Road, and abutting the visually prominent landfill to the west.

**Access:** By foot from unsigned easement/path between 17 and 19 White Horse Lane, or from adjacent backyards; informally from Pine Crest Road lots or through undeveloped land on Pine Crest Road; or by foot through the Brewer Reservation from Hobart St. Note: There is no signage anywhere and the Whitehorse Lane easement is barely noticeable. A sign at the Hobart Street Brewer Woods entrance would help.

**Facilities/Activities:** An open field referred to as a baseball diamond in the 1979 and 1995 plans. Woodlands have supported the open field area. Used for exploring the surrounding woods and Brewer Reservation, especially King Cedar Field.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Significance:** This is an attractive unimproved field to all appearances, but the limited direct access and the proximity of large houses to the rear on Pinecrest Road can make a visitor feel under observation. The ADA survey reports that part of the land is a wetland.

**Recommendations:**

- Add signs at White Horse Lane and Hobart Street.
- Consider developing an access from Pine Crest Road.



The path from the Plymouth River School to Margett's Field

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**



Five minutes later at Margett's Field

**RC-3 Margett's Field**

**Ownership/Management:** Town/Recreation Commission

**Acres:** 6.22

**Map:** 134/Lot 16

**Zoning:** Res. B

**Setting:** Recreation land north of Conservation land. (See C- 13 and SC-2)

**Access:** Ward Street

**Facilities/Activities:** Soccer Field

**Significance:** Recreational facilities near school and conservation land

**Recommendations:**

- Manage as is

**RC-4 Cronin Field/Haley Field**

**Ownership/Management:** Recreation Commission/Recreation Commission

**Map/lots:** 81/28, 81/46, 80/96 90/1, 89/70

**Acres:** 17. 21

**Zoning:** Official and Open Space

**Setting:** To rear of Town Hall complex (former Central Junior High School) extending to Main Street, south of Haley Field portion

**Access:** From Burr Road by car, from Main Street by foot via Playground Road from Main Street to the south by foot via Haley Field.

**Facilities/Activities:** 5 tennis courts, a street hockey rink, Cronin regulation baseball Field, Cronin Soccer Field, 1 Farm League Field (Burr Field), Haley Little League Field, sand

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

volleyball court, 1 Football field and surrounding track, imaginative, volunteer-built “Hingham Community Playground”, and a Victorian equipment storage barn at the end of Playground Rd., restrooms, and picnic benches, along with an indoor recreation /exercise facilities.

**Significance:** This is a major town-wide resource.

**Recommendations:**

- Continue to manage as is.
- Replace cinder running track with a rubber (no-spikes).
- Act on ADA recommendations/Transition Plan:
  - Create 2 accessible parking spaces at Haley Field
  - Add an accessible ramp from HP parking spots to the barn with a reduced slope
  - Rebuild/recondition barn, add handicapped bathrooms
  - Pave Playground Road access way from Fire Station and add an accessible sidewalk.

**RC- 5 Bradley Woods Playground**

**Ownership/Management:** Recreation Commission/Recreation Commission

**Map:** 36 /Lot 101

**Acres:** 4.2

**Zoning:** Municipal and Open Space

**Setting:** Between the Bradley Woods neighborhood and the Shipyard and close to the Bouve’ land. These level, grassy playing fields are somewhat secluded and surrounded by woods which screen the Harbor House / Allerton House assisted living elderly development.

**Access:** From the ends of Holly Street and Ivy Street; a neighborhood facility needing only limited on-street parking. Official access through this property to the shipyard neighborhood and commuter boat dock is circuitous

**Facilities/Activities:** Basketball court, large field with no markings, goal posts etc. for specific games, baseball backstop but no developed diamond, bleachers or other supporting facilities. Two picnic tables and a small shelter for bad weather.

**Significance:** Site is a valuable open space and recreation resource in a relatively dense neighborhood. A connection to the nearby Bouve’ Property fronting on Hewitts Cove could ease access to the water front and to the Shipyard. An access from the eastern end of the Playground through to Holly Street could make the site seem less isolated to parents, while a connection to the newer Hingham Gardens Development could increase its usefulness. Similarly, a walk way to Allerton House/Harbor House might give the elderly a chance to watch kids’ games.

**Recommendations:**

- Explore possible connections to the other end of Holly Street, to Allerton House/Harbor House and to the Hingham Gardens Development.

5.0

INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST  
(SEE Map 6)

**RC-6 Hull Street Playground**

**Ownership/Management:** Recreation Commission / Recreation Commission

**Map:** 43/Lot 19

**Acres:** 5.8

**Zoning:** Municipal and Open Space

**Setting:** Along Hull Street on Cohasset line. Heavily wooded to west and north. A ledge out-cropping serves as the southern edge and makes a natural play area for small children.

**Access:** From Hull Street with street side parking

**Facilities/Activities:** Neighborhood park and playground with slides and other play equipment, and a multi-purpose ball field sometimes flooded for winter-time skating.

**Significance:** A valuable neighborhood asset.

**Recommendations:**

- Continue as is.
- Add tables and/or an exercise circuit for adults.

**RC-7 Hingham Skating Club**

**Ownership/Management:** Recreation Commission /Recreation Commission

**Map:** 66/ Lot 6

**Acres:** 8.83

**Zoning:** Municipal land Open Space

**Access:** Of east Sr. near Cohasset line

**Facilities/Activities:** Skating pond, warming building with wood stove.; Winter skating, summer fishing

**Significance:** Turkey Hill Run, a stream that irrigates Cohasset Golf, once drained to the Weir River. A former man-made ice pond it was bought by the Hingham Skating Club in 1932 and later turned over to the town. A great asset.

**Recommendations:**

- Continue managing as at present.

**RC-8 Kress Field**

**Ownership/Management:** Recreation Commission/Recreation Commission

**Map:** 203 / Lot 100

**Acres:** 5.03

**Zoning:** Official and Open Space

**Setting:** Off Gardner St., South of Rte. 53, residential surroundings with a large field and kennels to the west.

**Facilities/Activities:** a new two-basket basketball court also used by kids for wheeled vehicle play, a small playground with colorful plastic play structures, Women's Softball Field, used in Spring, a multi-purpose play field and a 30-car parking lot off of Gardner Street.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Significance:** Valuable as the only “substantial public recreation facility in the southwest section of Hingham” according to the 1995 Plan. In past Recreation Commission has considered expansion into a large level field to the west.

**Recommendations:**

- Add adult sitting area or exercise circuit at playground and add a sunshade.
- Consider community garden use of sunny peripheral land.
- Provide goals for soccer. Lacrosse, etc. as need.

**RC-9 Golf Driving Range**

**Ownership/Management:** Recreation Commission/Recreation Commission

**Acres:** 11.72

**Zoning:** Official and Open Space

**Setting:** Off Union Street, across from High School and backing on to Triphammer Pond Area

**Access:** From parking lot off Union Street

**Facilities/Activities:** Large level field/Grasslands habitat/ Golf practice, grasslands habitat activity and access to Triphammer Pond area

**Significance:** Valuable potential multi-use field and defacto grassland habitat depending on mowing practices.

**Recommendations:**

- Manage as is for golfers.
- Review mowing practices to balance bird and human needs.

**HINGHAM SPORTS PARTNERSHIP**

**SP-1 Carlson Field**

**Ownership/Management:** Town/ Hingham Sports Partnership

**Acres:** 16+

**Zoning:** Municipal and Open Space

**Setting:** Off Fort Hill Street, between Conservatory Park subdivision and remaining School Depot land and new DPW complex

**Access:** By auto off Fort Hill Street with a good-sized parking lot

**Facilities/Activities:** Large multipurpose field, basketball court,  
Two small developed (Little League) baseball fields

**Significance:** A major sports complex built on part of the School Depot Land

**Recommendations:**

- Manage as is.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**SP-2 Lynch Field**

**Ownership/Management:** Town/Hingham Sports Partnership Commission

**Acres:** 8+

**Zoning:** Official and Open Space

**Setting:** Off Beal Street, at Back River Park.

**Access:** From Beal Street

**Facilities/Activities:** One large, one small football field, one major league and one Minor League Little League baseball fields, T-Ball area, Field House, parking lot and access to Bare Cove Park. All of these sports plus park usage.

**Significance:** A major site, committed largely to baseball and football, though with a multi-purpose field.

**Recommendations:**

- Examine any potential pedestrian connection to Carlson Field.

**HARBOR DEVELOPMENT COMMITTEE**

**HDC-1 Barnes Wharf**

**Ownership/Management:** Town / Harbor Development Committee and DPW; Leased (for a dollar) to Hingham Maritime Center (former Lincoln Sailing Club)

**Acres:** 1.2

**Zoning:** Official and Open Space

**Setting:** At head of the Harbor across from the traffic circle; contained by picturesque granite seawalls forming a level quay with scattered plantings of pine trees and grass.

**Access:** By Car from Route 3A via a relocated entrance just east of the rotary. It is improved from before, but still can be dangerous unless approached from the East allowing a right turn into the site. By transit from the MBTA's 220 Hingham bus from Quincy and a walk from Station Street, or by a walk from the Nantasket Junction Rail station, or by foot along Route 3A and Summer Street. Pedestrians should cross at the signal across from Water Street.

**Facilities/Activities:**

Facilities: Maritime Center building, floats and gangways, storage racks, mooring area, flag pole, flood lights, parking area, welcoming sign and potential use of a adjacent Steamboat Wharf.

Activities: Continuing youth sailing lessons and events from when this was the Lincoln Sailing Center, combined with an adult rowing program, and small sail boats available for use by members at certain periods until mid-August when student staff leave. As public property the site is open to the general public consistent with safety.

**Significance:** Site is highly valued waterfront open space while non-profit center provides invaluable sailing opportunities. Town has expanded agreement to allow expansion to adjacent Steamboat Wharf.

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**(SEE Map 6)**

**Recommendations:**

- Continue basic program while ensuring general public's access to site.
- Expand staffing, possibly through use of older workers or through cooperation with the Recreation Commission to continue sailing programs through the October's good sailing weather.

**HDC-2 Steamboat Wharf**

**Ownership/Management:** Town / Harbor Development Committee and DPW; Leased to Hingham Maritime Center (former Lincoln Sailing Club)

**Acres:** 1.8

**Zoning:** Official and Open Space

**Setting:** At head of the Harbor east of Barnes Wharf; contained by picturesque granite seawalls forming a level quay with considerable mixed vegetation; little bluestem grass, raspberry bushes, red cedar and pitch pine giving privacy .

**Access:** By foot along edge of Summer Street and then along a slightly deteriorated paved path below road level to the wharf. Not fully handicapped accessible

**Facilities/Activities:** No facility beyond wooded wharf / A pleasant place to sit, fish or enjoy the view and seclusion.

**Significance:** An historic wharf built for the Boston and Hingham a Steamboat Company in 1845 and now leased (for a dollar) to the Maritime Center which has committed to make major repairs and improvements.

**Recommendation:**

- Improve walk way and install signage

**TRUSTEES OF THE BATHING BEACH / HARBOR DEVELOPMENT COMMITTEE**

**TBB-1 Hingham Bathing Beach**

**Ownership/Management:** Town/Trustees of the Bathing Beach, Harbor Development Committee

**Acres:** 6.1

**Zoning:** Municipal and Open Space

**Setting:** Off Route 3A next to Monument Park ("The Iron Horse") and on the Harbor

**Access:** By foot or car from Route 3A (Otis St.) with a large parking lot, and by the adjacent MBTA's 220 bus from Quincy Square.

**Facilities/Activities:** Public beach, bathhouse, lawn, trees and picnic tables, a raft anchored off shore, and an arc of floating markers delineating the area under lifeguard protection and a bandstand. This abuts the further beach, launching ramps and park under the Selectmen discussed below. Parking lot also accommodates seasonal farmers' market and occasional craft shows.

**Significance:** One of the town's greatest assets, a popular swimming, sunning and

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**(SEE Map 6)**

picnicking area for residents and visitors. This was the site of Rufus Lanes' and Hudson's Salt Works evaporating sea water to produce salt for curing fish.

**Recommendations:**

- Continue intermittent beach nourishment program.
- Upgrade bath house with skylight or other better lighting; add an outdoor shower and outdoor accessible bathroom for when lifeguards are away before and after high tide.
- Study integration with Harbor Development Committee's beach boardwalk proposal.
- Address continuing coastal bank erosion near bath house

**Partially/Temporarily Protected Land**

**SCHOOL DEPARTMENT**

**SC-1 South Elementary School**

**Ownership/Management:** Town/School Dept.

**Acres:** 28.3

**Zoning:** Official and Open Space

**Setting:** Off Rte. 228. Close to Liberty Pole neighborhood. Grounds drop off steeply behind school to a substantial maple swamp (a former 19<sup>th</sup> Century millpond) crossed by two meandering brooks, and a small pond. The most striking feature is a 70-foot esker isolated near the center of the parcel.

**Access:** By a driveway from Main St. and by foot from surrounding streets in Liberty Pole; a short distance south of Cushing St.

**Facilities and Activities:** School buildings, two baseball fields, a basketball court on the lower level behind the school, a large wooden playground on the upper level, and many well-used trails.

**Significance:** A valuable resource for the adjacent Liberty Pole area; as part of a recessional moraine the site is an excellent place next to the school to study glacial feature and processes and contrasting habitat. Abutting conservation land to the north shows how swamps form in glacial depressions. See Conservation Land C-28

**Recommendations:**

- Manage as is unless study shows need for more facilities.
- Respect natural feature in making any changes.
- Acquire protective easement Accord Brook south from school to Accord Pond.

**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST  
(SEE Map 6)**

**SC-2 Plymouth River School**

**Ownership/Management:** Town/School Department

**Acres:** 62.06

**Zoning:** Official and Open Space

**Setting:** Off of High Street, the former Schirmer Farm includes tall grass meadows, mixed oak and pine woods, maple swamp and enduring stone walls marking the previous owners' boundaries. The contrasting second growth forest and open fields offer pleasant walks and wild life observation particularly along a marked nature trail. This school site is one of three school, recreation and conservation holdings running from High St. to the Plymouth River and the extend across the river to the Eel River Woods on Cushing St.

**Access:** From the High Street school entrance and frontage on Ward St. A cart road runs from the school south to the Recreation land

**Facilities and Activities:** Plymouth River Elementary School, 6 tennis courts, baseball fields, a older playground a roofed basketball court /play shed used for winter time ice skating, cross country ski slopes and a large wooden playground added in the early 1960. Activities include elementary education and the use of all of these varied facilities, along walking and enjoying nature

**Significance:** The School Committee offered a portion of this surplus school land to the Hingham Housing Partnership Committee for affordable housing in 1989 but the transfer failed to get town meeting approval. A portion of this land is controlled by the Selectmen which is now under construction for a lacrosse/soccer field. A sports group made a very large donation.

**Recommendations**

- Continue with the present facilities and activities.
- Develop any added facilities with respect for the present setting.
- Minimize added parking by using the school lot and connecting pedestrian walkway to reach the fields.

**SC-3 East School**

**Ownership/Management:** Town/School Department

**Acres:** 11.52

**Zoning:** Official and Open Space

**Setting:** A river-side site south of East Street and bordered by the Weir River, the bowl-shaped recreation area is rimmed by a series of ridges, ledges and swamp, with White Pine, black cherry, red cedar, white oak and red maple bordering well-mowed lawns

**Access:** From the school driveway off East Street.

**Facilities and Activities:** New East School, Basketball courts, large sloping multi-purpose field suitable for varied informal games

**Significance:** The open space and recreation area is a neighborhood asset but some land was lost to the construction of a new and larger East Elementary School.

## 5.0

### INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST (SEE Map 6)

#### **Recommendations:**

- Add footbridge to allow pedestrians access from residential areas south of the Weir River.

#### **SC-4 Hingham High School**

**Ownership/Management:** Town/School Committee

**Acres:** 71.6

**Zoning:** Official and Open Space

**Setting:** Level or gently rolling river bottom land along the Tower Brook and the upper Weir River. This former dairy land is mostly grassland, maintained as playing fields (plus parking lots) with some wildlife habitat provided by some shrubs and trees along the streams. The football field land track abuts compact Downing Street Neighborhood.

**Access:** From Union Street or by foot via the Merrymount Road Conservation land to the west street

**Facilities/Activities:** The High School, one football field with bleachers and a surrounding track, one baseball field, tennis courts, four men's softball fields, six women's softball fields and, across Union Street, two soccer fields, and a combination Pony League/regulation baseball field. Activities are part of the education at the High School.

**Significance:** The site abuts the Golf Driving range and the extensive Triphammer Pond properties to the east, which in turn tie into Wompatuck State Park and the Whitney/Thayer Woods, making a valued chain of open spaces. It also extends west to the Merrymount Road conservation land and adjacent water lands approaching Central Street. This site is both the town's biggest recreation complex and a major visual element as the meadow-like school fields stretch to the river suggesting the Michaelson and Hornstra dairy farmland they were.

#### **Recommendations:**

- Continue present management.
- Make discrete facility improvements appropriate to the setting.
- Seek to restore informal riverside hiking opportunities where the River borders the The Meadows development.

#### **SC-5 Hingham Middle School ( Ex- South Junior High)**

**Ownership/Management:** Town/School Department

**Acres:** 31

**Zoning:** Official and Open Space

**Setting:** Off busy Rte. 228, low density neighborhood and Notre Dame Academy to north, swampy land with maples to rear, white pine and oaks "blanket gentle hills at periphery of the property" according to the 1995 plan. Accord Brook courses through the woods at south edge of site allowing nature observation.

**Access:** By School Driveway off of Rte. 228.

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### INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST (SEE Map 6)

**Facilities/Activities:** four tennis courts, large multi-purpose field with lights, many portable goal structures, two basketball courts in parking lot, no apparent baseball back stop, and a large gymnasium.

**Significance:** A major facility in this outlying area, lighted field well buffered from residents by trees may help to meet demand for evening sports.

**Recommendations:**

- Consider replacement/addition of a baseball/soft ball backstop.

**SC-6 Foster School Grounds /Simmons Path**

**Ownership/Management:** Town/ School Department and Recreation Commission

**Acres:** 40.9

**Zoning:** Municipal and Open Space

**Setting:** A large and unusually varied combination of steep, wooded hillside to the north, a salt marsh to the south and west of the school, and level playing fields in the central portion of the site. Hardwoods blanket the hillside while scattered shrubs and trees, notably gray birches abut the playfields. Reed grass, marsh grass and wet-site shrubs cover the marsh.

**Access:** From Downer Avenue school parking lot, by foot from Downer Avenue, Broad Cove Road (Rte 3A) and via Simmons Road and a connecting traditional path to the school crossing private land.

**Facilities/Activities:** Small playground, a softball field, two outdoor basketball courts, one court under a play shed roof in an area also used for other; games, ice-skating, and bicycle riding in bad weather, three tennis courts, nature trails and an outdoor classroom,

**Significance:** This site in a dense community has potential for more intensive and varied uses including a more extensive hillside trail system and a boardwalk through the marsh. There was hope of a trail over Otis Hill and down through private land for a Broad Cove to Harbor walk.

**Recommendations:**

- Review condition of facilities and any pressure treated wood play equipment.
- Examine any remaining potential for a Cove to Harbor trail over the hill.

**SS-1 South Shore Country Club (Described above in Open Space)**

**Ownership/Management:** Town of Hingham/ South Shore Country Club Committee

**Acres:** 154.2

**Zoning:** Official and Open Space

**Setting:** Varied rolling terrain west of Fort Hill Street and South of New Bridge Street.

**Access:** By auto from South Street and New Bridge Street, by transit from the adjacent Greenbush Commuter rail line's West Hingham station, and informally by foot from the adjacent neighborhoods

## 5.0

### INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST (SEE Map 6)

**Facilities/Activities:** An eighteen hole golf course and pro shop, swimming pool, three tennis courts, restaurant, function space, a bowling alley, and a golf simulator and very popular sledding slopes off New Bridge Street.

**Significance:** The formerly private club, zoned for 20,000 square foot house lots, was purchased by the Town under the leadership of John Riley.

**Recommendations:**

- Continue overall management.
- Consider enclosing the swimming pool for the winter months.

**Private Non-profit**

#### HINGHAM YACHT CLUB

**PNP-1 Hingham Yacht Club**

**Ownership/Management:** Yacht Club Members/ Yacht Club Officers

**Map:** 11 / Lot 13

**Acres:** 4.8

**Zoning:** Residential A

**Setting:** At the tip of Crow Point and protected by a jetty, the club has a spectacular view of World's End, Hingham Harbor and the Boston Skyline, and 270 feet of shore offering a unique waterside strolling spot.

**Access:** At the end of Downer Avenue, with two parking areas.

**Facilities/Activities:** Pier, floats and moorings with deepwater access along with a clubhouse, boatlift crane, club launch and protective jetty serving a fleet of approximately 300. Activities include competitive racing by 210s and other sailboats, yachting by owners of large deep keel boats, fishing off the jetty, various social events, and walking along the rip rap bordering the parking lot west of Downer Avenue.

**Significance:** Founded in 1895 “to promote the interests of yachting in Hingham Bay and vicinity” the club “has survived various turns of fortune including Hurricanes, fires, and women’s suffrage, consistently emerging with renewed élan”. The site earlier was a steamboat landing for coal and goods, and for passengers to the Melville Gardens’ 19<sup>th</sup> Century “recreational paradise.”

**Recommendations:**

- Confirm the adequacy of environmental facilities; address washing of hulls and floats in the fall and year round fuel storage, sewage pump out stations.
- Work for protection of walking rights along the storm protection rip-rap beginning at the Club’s parking lot north of Downer Avenue and running around the edge of Crow Point to North Beach.

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**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**DERBY ACADEMY**

**PNP-2 Derby Academy**

**Facilities/Activities:** A private school - the first coed private school in the country with school buildings, athletic fields, a gym and related facilities.

See DA-1 under conservation lands

**NOTRE DAME ACADEMY**

**PNP-3 Notre Dame Academy**

**Facilities/Activities:** School Buildings, Track surrounding a soccer field, large low multi-purpose field, with a softball backstop and bleachers, and two tennis courts.

See NA-1 under lands of interest above

**GOVERNOR'S ROAD, LLC**

**PNP-4 Rocky Beach**

**Ownership/Management:** Governor's Road, LLC replaced Crow Point Nominee Trust

**Acres:** .24 on

**Map:** 27, Lot 72 according to the Assessors Maps

**Zoning:** Res. A.

**Setting:** Long, thin, stony beach along the edge of the Harbor below Otis Street, a small but valuable window on the harbor and access point formerly served by a stairway to the south.

**Access:** By car, bus or foot from Otis Street or from abutting private parcels.

**Facilities/Activities:** New Stairway to the beach, informal dinghy storage area, and the beach itself/ Historic activities included swimming, boating, discrete beach walks from the Causeway/dam at Walton's Cove to the Bouve Boatyard, and related shoreline recreation.

**Significance:** A valuable access to the beach and adjacent shoreline. There was much use by the Otis Hill neighborhood in the past.

**Recommendations:**

- Explore equitable options for increased general use and shared responsibilities with the Trustees.
- Explore possible acquisition by the town or by a more general neighborhood group.

In addition to the above, there are several beaches in Crow Point maintained by neighborhood organizations for local use. These are significant resources, though they only benefit a limited local member population and guests. Equitable means to broaden their availability would give every one more choices and should be explored.

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**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**WEIR RIVER ESTUARY PARK (WREP) COMMITTEE**

**WREP-1 Tri-Town Weir River Estuary Park**

**Ownership/Management:** Hingham, Hull, Cohasset-appointed Town representatives to the Weir River Estuary Park Committee. Committee work is guided by the Weir River Estuary Land Protection Plan (WRELPP) updated in 2008 and written by Urban Harbors Institute, UMass, Boston 2006.

**Acres:** Approximately 591 acres of land mostly within the Area of Critical Environmental Concern (ACEC) 100 year flood line, plus another 331 acres of water sheet. (Data from WRELPP, 2006; The appendix includes new acquisitions through 2009 <http://www.hingham-ma.gov/conservation/index.html>)

**Zoning:** Official and Open Space

**Setting:** Extensive land along the edge of the Weir River Estuary including Straits Pond and tidal river front to the Foundry Pond dam. This is located in all three towns and includes all of the Weir River Area of Critical Environmental Concern (ACEC).

The Weir River outer estuary empties into Hingham Bay at World's End (Hingham) and Sunset Point (Hull.) It ebbs and flows through the inner estuary under the George Washington Boulevard (GWB) bridge, past the Estuary Center, splitting to head toward Strait's Pond and/or to bend toward the Weir River channel where it ends at the Foundry Pond dam and fish ladder. The upstream fresh water portion of the Weir River Watershed is overseen by the Weir River Watershed Association.

**Access:** from Hingham: By car, foot, and bicycle from George Washington Boulevard, Rockland Street, East Street (Route 228), and from Kilby Street at Foundry Pond dam. By transit via JBL bus lines running between the Station Street depot in Hingham to the end of Hull via Rockland Street or Hull Street. By rail from the Nantasket Junction Greenbush commuter rail station via Kilby Street to Rockland Street or via Summer St. and Geo. Washington Boulevard. By boat/kayak from Weir River estuary; kayaks to explore the Estuary can be rented at Steamboat Wharf, Hull.

**Facilities/Activities:** An Estuary Center located at 333 George Washington Boulevard, Hull providing access to extensive Estuary water frontage, shore lands and surrounding roads/ A wide variety of estuary-oriented canoeing, kayaking, biking, walks, wildlife conservation activities, along with education, visiting green and estuarine exhibits, and research activities planned and publicized on the Weir River Watershed Association website.

All activities involve protection and appreciation of healthy native species, wildlife habitat, and environs; and the use of existing roads, sidewalks, waterways, and paths are central to preserving the natural environment.

Present Hingham Holdings (described earlier) include:

- Martin's Lane Conservation land C-30

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**(SEE Map 6)**

(This is called “Rockland Park” in the 2006 WRELPP, #23 and includes a small piece of intervening private land shown on the Parklands Map.)

- “Border Park” 3.5+acres, on Geo. Washington Boulevard and Porter’s Cove called #22 in WRELPP. This includes Rockland Park as part of Boulevard Border Park. C-41
- Adjacent to Porter’s Cove Point, an additional 0.46 acres on George Washington Boulevard (WRELPP #20) has been conditionally accepted by the Town dependent on DEP clean-up of the 21E designated site. It is now U-27 pending a Town listing.
- Porter’s Cove Point, 7+acres, next to George Washington Bridge. This is called #19 in WRELPP (Assessors Map 21-001, 21-003). This land was transferred from the Town to Conservation Commission at Town meeting 2005. C-69
- Foundry Pond Conservation Land, numbers 13, 14 and 17 in WRELPP. C-2
- Lykford’s Lyking Marsh, 6.63 acres along Rockland St. C-38
- Amonte Meadow, Weir River at Rockland St., WRELPP 178. C-24

Land sought to complete the Park includes WRELPP parcels listed below according to the Plan’s numbering system and later in D. Unprotected Lands of Special Conservation and Recreation Interest where U- numbers are used.

Site 16: 0.16-acre piece of Aquarian Water Co. land, WRELPP #16 (Assessors’ Map 53/ Lot 48) abuts present Foundry Pond holdings. U-28

Site 18: WRELPP #18 has three parcels:

Bass Point. U- 29

15.6 acres, the largest remaining and most ecologically sensitive property along the Hingham shoreline and in the Weir River Estuary.

Sanctuary Pond. U-30

A pristine quarry pond in the ACEC with surrounding informative geologic cuts, outcroppings, and vegetation. It provides nesting and feeding area for birds and habitat for fresh water fish.

Remaining Porter’s Cove Parcel needing protection.

3.5 acres of salt marsh and a little upland abuts shellfish beds and provides protection to shellfish habitat. U-26

Site 20: Owned by the Town conditional to clean-up of this 21E site by state DEP (almost completed ’09). The 0.46 acre area of flat upland with some sloping shrubs, trees, and wetlands (Assessor’s Map 31/Lot 16) is located on G.W. Blvd., across from the Court House parking lot; it is between WRELPP sites 19 and 22. U-27

Site 177: Noonan (7.91 acres of land and ice pond draining to Weir River - part of the Weir River ACEC -WRELPP Lot 177 (Assessor Map 42-15) U-34

Site 9: National Grid’s Weir River Salt marsh: Edge of Amonte Meadow; part of 17 acre parcel on both sides of river. U-32

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

Site 10, 11, 12: Salt marsh on the East side of Weir River above Rockland St. as part of WRE Park Protected under River's Protection Act. U-35

**Significance:** The Park is a major three-community effort led by the Weir River Estuary Park Committee and the Weir River Watershed Association. As described by the Committee in the 275 Anniversary Town Report:

The Weir River Park is an ecological unit - an area defined by ecology, not by town boundaries or land ownership. (It) is one of Boston Harbor's most valuable natural resources and includes almost 600 acres of undeveloped land within Hingham, Hull and Cohasset. It includes the Weir River Area of Critical Environmental Concern (ACEC) and related land areas in the three towns from Foundry Pond Dam to the Black Rock Beach end of Straits Pond, to the mouth of the estuary between the tips of Worlds End and Sunset Point. Its land and aquatic habitats include herring, smelt, shellfish beds, over 100 species of birds, and its rare volcanic geology. The protected and needs-to-be-protected estuary land is identified in the *Weir River Estuary Park Land Protection Plan*, developed by UMASS' Urban Harbors Institute and utilized by the Hingham, Hull and Cohasset town boards. Within an urban metropolitan area it offers an opportunity to teach environmental stewardship and a chance for kayakers, bikers, and pedestrians to experience its quiet peace on bike paths and sidewalks (in development) and by using the waterway as a path.

**Recommendations:**

- Acquire Bass Point, Porter's Cove and a Conservation Restriction for the Sanctuary Pond property –a fresh water quarry pond; all are located in the ACEC.
- Acquire the Noonan land and ice pond draining to Weir River - part of the Weir River ACEC WRELPP # 177 U-34.
- Transfer WRELPP #20 from Town to Conservation Commission. U-27.  
Acquire .046 acres from Aquarian Water Co. on Foundry Pond. U-28.
- Get permission from National Grid to develop steps next to the proposed replacement Rockland St. bridge to allow access to the Amonte Meadow and the River and provide a possible boat landing to protect bank from erosion. U-32
- Consider expanding nearby Lyford's Lyking through adjacent private marshland to the north. U-31
- Act on the previous recommendation to add a boardwalk/shallow bridge to allow crossing the Foundry Pond Dam spillway between the Conservation Commission's Foundry Pond lands at any level of flow between (WRELPP #13 and #14). C-2
- Consider full or partial acquisition or conservation restrictions of private lands on either side of the Estuary above and below Rockland Street, as they become available and not protected by River's Protection regulations.

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**(SEE Map 6)**

**Table V-5**  
**Recreation Resources**

<b>Site/Acres</b>	<b>Ballfields</b> S-Soccer LC-Lacrosse B-Baseball LL-Little League FL-Farm Lg. SB-Softball Ft-Football	<b>Multi-purpose fields/ Other</b>	<b>Other</b>	<b>Tot lot/ Play Ground</b>	<b>Track</b>	<b>Swimming Boating</b>	<b>Basketball</b>
<b>Under Recreation Commission</b>							
RC-1 Hersey Field/ 4.73	1 LL			1 tot-lot	-	-	-
RC-2 Cassidy Field/ 8.4		Open Space field for free pay		-	-	-	-
RC-3 Margetts' Field	2 LC	-	-	-	-	-	-
RC-4 Cronin/ Haley Field/17.21	1 B 1 S 1 LL	-	Plus street Hockey Rink, Sand Volley-ball court and indoor rec. area, 5 tennis courts	Play-ground	Around Soccer. Field	-	-
RC-5 Bradley Woods Play-ground/4.2	B (Backstop only, no diamond)	Large un-marked field	2 picnic tables and a bad weather shelter	Play-structure	-	-	1 court
RC-6 Hull St, Playground/5.8		1 for varied sports	Some-times flooded for skating	-	-	-	-
RC-7 Hingham Skating Club/8.83		-	Ice Skating, Warming hut with hot chocolate	-	-	-	-
RC-8							
RC-9							
RC-10 Kress Field/5.03	1 Women's Softball	Multi-purpose playfield	-	Small Play-ground	-	-	1 court

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

<b>Site/Acres</b>	<b>Ballfields S-Soccer LC-LaX B-Baseball LL-Little League FL-Farm Lg. SB-Softball Ft-Football T-T Ball</b>	<b>Multi- purpose fields</b>	<b>Other</b>	<b>Tot lot/ Play Ground</b>	<b>Track</b>	<b>Swimming Boating</b>	<b>Basketball</b>
R-11 Golf Driving Range/11.72		Much room when not in golf use	Golf Driving range; Access to Schultz Field and Triphammer Pond				
<b>Tree and Park Division of DPW</b>							
TP-1 Old Center School Park/Donna Powers Field/ 4.13	1 SB	Other informal use	-	Small Play- ground	-	-	-
TP-4 Monument Park (Iron Horse Park)/5.8		-	Park, related parking area, Town Landing	-	-	Beach Swimming w/o lifeguards- - boat launching ramp	
<b>Under Sports Partnership</b>							
SP=1 Carlson Field	1 LL 1 SB	2-4 multi- purpose fields,	Field House And forthcoming Skateboard park	-	-	-	1 court
SP-2 Lynch Field/	1 full size Ft; 1 small Ft, 1major league LL 1 minor League LL T-ball area		Field House	-	-	-	--

5.0

INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST  
(SEE Map 6)

Site/Acres	Ballfields S-Soccer LC-Lacrosse B-Baseball LL-Little League FL-Farm Lg. SF-Softball Ft-Football	Multi- purpose fields/ Other	Other	Tot lot/ Play Ground	Track	Swimming Boating	Basket Ball
<b>Under Harbor Development Committee</b>							
HDC-1 Barnes Wharf/1.2		-		-	-	Sailing and Hingham Maritime Center rowing-	-
HDC-2 Steamboat Wharf		Pleasant undevelop ed wharf	Potential Maritime Center expansion area	-	-	-	-
<b>Trustees of the bathing Beach</b>							
TBB-1 Hingham Bathing Beach /6;1	-	Informal play areas on lawn	Large parking area, farmers' market in season, band-stand	-	-	Beach, raft, Bath house	-
<b>School Department</b>							
SC-1 South Elementary School/28.3	2 B	-	Trails	Large wooden play- ground	-	-	1 court
SC-2 Plymouth River School/49.04	2 Bs	-	Play shed used for wintertime ice skating; Cross country ski slopes	Older play Ground and large wooden play- ground from the 60s (same facility)	-	-	6 courts and a roofed court/ plashed

5.0

INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST  
(SEE Map 6)

Site/Acres	Ballfields S-Soccer LC-Lacrosse B-Baseball LL-Little League FL-Farm Lg. SF-Softball Ft-Football	Multi- purpose fields	Other	Tot lot/ Play Ground	Track	Swimming Boating	Basket Ball
SC-3 (New) East School/11.52	-	Large sloping field for informal games -		Play structure for pre- schoolers	-	-	2 courts
SC-4 High School/71.6	1 Ft, 1 B, 4 Men's SB 6 Women's SB 2 S across Union St. 1 combination Pony League/ Regulation B	Also used for misc activities like kite flying	tennis courts; large gymnasium	-	1 around Ft	-	1 court in Gym
SC-5 Middle School (Ex South Junior High)/31	No marked fields-or apparent baseball backstop	Large field with lights' Many portable goal structures	4 tennis Courts. large gymnasium	--	--	-	2 courts in parking lot; 1 in Gym
SC-4 W.L Foster School/40.9	1 SB		Play shed for winter ice skating, bike riding in bad weather and misc games, 3 tennis courts also trails and an outdoor classroom	Small play ground			2 outdoor courts; one under plashed
<b>Under S.S. Country Club Committee</b>							
SSC-1 South Shore Country Club/		Slopes used for sledding in winter -	18 Hole Golf Course, 3 Tennis courts, swimming pool, Bowling Alleys Sledding, skiing	-	-	Pool for Swimming and lessons	-

5.0

INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST  
(SEE Map 6)

Site/Acres	Ballfields S-Soccer LC-Lacrosse B-Baseball LL-Little League FL-Farm Lg. SF-Softball Ft-Football	Multi-purpose fields	Other	Tot lot/ Play Ground	Track	Swimming Boating	Basket Ball
<b>Total public facilities</b>	LL-5 LC-1 B-7 S-3 SB-14 FT-3 T Ball-1	10-12 varied fields (Depending on Carlson Field count)	St.Hockey-1 Sand Volleyball-1 Tennis Courts-17 (if 2 at HHS) 4 ice skating areas(1 pond-2 sheds & a pond) Golf driving range Iron horse park Planned Skateboard park Band Stand Sledding, Cross country skiing-2 2 school gyms & indoor rec. area at rec. center 18 hole golf course Bowling Alleys	8 tot lots or small Play-ground 2 play-grounds.	One at Cronin-Haley Field	2 beaches (one w/o life guards) and one outdoor pool	16 outdoor courts if 2 at East School; 2 in play sheds or gyms,
<b>Private Non-Profit</b>							
PNP-1 Hingham Yacht Club/4.8		-	Pier ,floats , moorings protective jetty also used for fishing and the beginning of interrupted walkable rip rap around Crow Point	---	-	Extensive boating facilities and programs for members	-
PNP-2 /DA-1 Derby Academy/ 21.6	Fields used by public		Gym				
PNP-3 Notre Dame Academy/ 69.7	SF backstop and bleachers	Large low field	Two Tennis courts	-	I around soccer field	-	

5.0

INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST  
(SEE Map 6)

Site/Acres	Ballfields S-Soccer LC-Lacrosse B-Baseball LL-Little League FL-Farm Lg. SF-Softball Ft-Football	Multi- purpose fields	Other	Tot lot/ Play Ground	Track	Swimming Boating	Basket Ball
PNP-3 Crow point Nominee Trust	-	-	Rocky beach With stairs used for swimming walking, boat storage, enjoying the shore	-	-	Past neighbor- hood swimming, and boating, also clam digger access-	-
Also Foley Beach Assn. Wompatuck Beach Assn., North Beach, Melville walk to beach.....	Various neighborhood assoc beaches and piers and the customarily used beach at Melville walk	-	Varied beaches -	-	-	Swimming Boating	
<b>Private commercial clubs -</b>							
Blackrock Golf Course/			Private membership golf course				
Boston Golf Course			Private Membership golf course				

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**TOWN - HARBOR DEVELOPMENT COMMITTEE**

**HDC-1 Button Island**

**Ownership/Management:** Town/Harbor Master

**Acres:** .75(+)

**Zoning:** Official and Open Space

**Setting:** Small, rocky island at southern end of the Harbor off the Bathing Beach with a dense brush cover, marsh vegetation along the bank and mixed hardwoods and soft woods on the high center.

**Access:** By small boat, swimming, or walking at low tide

**Facilities/Activities:** Natural setting; no dock or facilities but part of shore is suitable for landing a small boat. Nature observation, picnicking and other informal recreation, historical pageants (site of Bicentenary re-enactment of the Battle of Grape Island) and Fourth of July fireworks launching site

**Significance:** A small but very accessible island. Though the 1893 history of the town called it “a heap of rock and gravel” it has considerable vegetation. The 1995 plan notes that, “Though the smallest harbor island, Button is closest to the Hingham Bathing Beach and adds to the scenery and the range of recreational possibilities there. It is a small yet attractive oasis.”

**Recommendations:**

- Continue present management.

**HDC-2 Ragged, Sarah, Langlee and Bumkin Islands**

**Ownership/Management:** Harbor Master/National Park System

The islands are listed in the Boston Harbor Islands State Park but there is little direct involvement.

**Acres:** Ragged-2.5; Sarah-3.88; Langlee-4.07, Bumkin-32.7

**Zoning:** Official and Open Space

**Setting:** At the North end of the harbor, east of Crow Point and around deep water mooring areas. These small, narrow islands have prominent rock outcroppings looking like ledge or bedrock and support a mixture of hardwoods, softwoods and shrubs

**Access:** To beach by auto along Route 3A and Downer Avenue; or by transit via the MBTA’s 220 bus along Otis Street and Downer Avenue - then to the island by small boat or by swimming from Otis Street or Downer Avenue. There are no docks but small boats can be safely beached. A difficulty for swimmers is the lack of fully public access along Otis Street’s Rocky Beach or at Melville Walk.

**Facilities/Activities:** Natural setting; no dock or facilities but part of shore is suitable for landing a small boat. Nature observation, picnicking and other informal recreation benefiting from scenic seclusion.

**Significance:** Small but handsome and very accessible islands given to the town by the Brewer family in 1947. Earlier owner John Langlee purchased in the 1680s and reputedly

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

named Ragged and Sarah for his daughter's way of dressing. Langlee Island has a small beach and is a favorite for picnicking as its south side is shielded from northerlies. Sarah Island is a noted nesting area of egrets with as many as 800 nesting pairs counted at a time. Ragged Island is the only one known to have been inhabited and Langlee connected it to the mainland with a foot bridge. In the late 1800's it was part of the Melville Gardens resort with a restaurant, observation deck and service by the small ferry "Melville".

Bumkin Island was the site of Barrage Hospital, 1902-1945 for crippled children. The island is used for camping, hiking, picnics and has restrooms and summer interpretive staff.

**Recommendations:**

- Continue management of these valuable scenic, recreational, and wildlife habitat resources.

**HDC-3 Steamboat Wharf (Also Recreation)**

**Ownership/Management:** Town / Harbor Development Committee and DPW; Leased to Hingham Maritime Center (the former Lincoln Sailing Club) See Barnes Wharf under Recreation.

**Acres:** 1.8

**Zoning:** Official and Open Space

**Setting:** At head of the Harbor east of Barnes Wharf; contained by picturesque, granite seawalls forming a level quay with considerable mixed vegetation. This includes little bluestem grass, raspberry bushes, red cedar and pitch pine giving privacy.

**Access:** By foot along edge of Summer Street and then along a slightly deteriorated paved path below road level to the wharf. Not fully handicapped accessible  
**Facilities/Activities:** No facility beyond wooded wharf / A pleasant place to sit, fish or enjoy the view and seclusion.

**Significance:** An historic wharf built for the Boston and Hingham a Steamboat Company in 1845 and now leased (for a dollar) to the Maritime Center which has committed to make major repairs and improvements.

**Recommendations:**

- Maintain at least a small natural area at the end of the wharf.
- Repair walkway from Barnes Wharf for general pedestrian and handicapped accessibility.
- Maintain general public access to wharf.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**HDC-4 Whitney Wharf Park**

**Ownership/Management:** Town/Harbor Development Committee and Conservation Commission

**Acres:** 1.86

**Zoning:** Official and Open Space

**Setting:** An historic commercial wharf at the head of the harbor and east of the Town Brook outlet and a private marine service business and slips. This former active wharf and later auto dealership has been converted into a formal waterfront park. *In front* it has large planters for flowers, grass shrubs and trees, adjoining a paved brick entrance and small parking area with bricks bearing names of donors. There is decorative anchor, a large interior area and benches and a surrounding pipe rail fence and light poles.

The park is a major link in a greenbelt around the harbor from the bathing beach to Steamboat Wharf with a public access-way running most of the way behind an adjacent marine service business. A footbridge over the town brook has been proposed to allow shoreline walkers from the north to come to the Town Pier without walking along the highway. The Park has fine views of the harbor somewhat limited by the visual barrier and afternoon glare from pipe fencing which was not required at the adjacent, more natural Harbor Park.

A small boat landing area with floats and a ramp up to the park has been proposed to increase access to the water, and restore some of the Wharf's maritime function, whether or not the previously proposed town marina is developed.

**Access:** By car or MBTA 220 bus or foot/bike from the adjacent Route 3A. By foot or bike from the waterfront walkway and sidewalks going in both directions. As long noted, access to Route 3A at Water Street requires crossing the over-sized, awkwardly-angled intersection of Route 3A and Water St. This has been eased with a pedestrian signal but a reconstructed squared off intersection would still increase safety.

**Facilities/Activities:** Decorative planters and compass rose, a small parking area, perimeter benches with an excellent harbor view except for the intrusion and afternoon glare of the railings. To date there is no ramp or float system giving water access

**Significance:** A valuable, handsome piece of public harbor frontage with much potential for increased use.

**Recommendations:**

- Add a ramp and float system restoring Wharf's function by giving access to the water.
- Study feasibility of the related town marina earlier proposed by the Conservation Commission's Stuart DeBard.
- Examine ways to reduce the visual intrusiveness of the railings in front of the best harbor views at the end of wharf.
- Work to develop the proposed footbridge to town landing area.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**C. Open Space Equity/Environmental Justice**

This refers to the distribution of Open Space and Recreation resources in relation to low income and minority communities or to any mapped Environmental Justice neighborhoods. As noted in Chapter IV, there are no major contiguous low-income communities that would show on a Census Tract Basis. The smaller traditional relatively low-income or minority neighborhoods are scattered throughout the town as are the open space and recreation areas, as can be seen on Map 6, Lands of Conservation and Recreation Interest. While not every neighborhood has contiguous open space (as sought in the Goals statement) most low-income or minority neighborhoods have some nearby open space or recreation areas as follows:

- The moderate-income Wompatuck Road, Kimball Beach Road, Foley Beach Road area abuts the Bouve' land on Hewitt's Cove, and is near the shore and the respective beaches.
- The moderate income, largely duplex Fottler Road/Bulow Circle neighborhood area is close to Bare Cove Park and to the new Lynch Athletic fields complex
- The three multi-family and townhouse developments south of Beal Street are surrounded by Bare Cove Park on three sides.
- The traditional Native-American and African-American neighborhood along Ward Street adjoins the Margetts playing field, the Plymouth River School land and the Plymouth River Conservation area.
- The mobile home development along Powers Lane abuts the new Amonte Meadow Park on Rockland Street
- The moderate-income traditional ethnic community along Hull Street has the Hull Street Playground and is near the grounds of Glastonbury Abbey and the Cohasset Country Club.
- The traditional moderate-income section of Rockland Street east of Kilby Street, and the Bonnie Briar, Cliff Road/Meadow Lane neighborhoods abut town-owned scenic marsh, the riverside Amonte Park and the river itself, and are close to the emerging Weir River Park along with the Foundry Pond holdings off nearby Kilby Street.

**5.0**  
**INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**  
**(SEE Map 6)**

**Grants used to purchase or renovate Hingham Properties:**

**Self-Help #1** Hewitt's Cove

31.8 acres acquired in 1980 with frontage on Beach St.

**Self-Help #2** Turkey Hill

30 acres acquired in 1997

Part of a larger 55 acre property with 20 acres in Cohasset

**PARC Grant** South Shore Country Club

**Land and Water Conservation Fund**      Hingham Water Front Acquisition

**Land and Water Conservation Fund**      South Shore Country Club

## **6.0 Community Vision**

### **6.0 COMMUNITY VISION (See Appendices A: Map 7; H and J)**

#### **A Description of the Process**

The Town of Hingham's recreational and conservation needs have changed over the decades. Because of shifting demographics and increased development, Hingham's Open Space and Recreation (OS&R) Plan needs to have undoubtedly changed in scope and objective. The most recent ad hoc Committee assembled to assess Hingham's current open space needs evaluated previous plans and determined that these older plans were outdated, and felt it sensible to start with a fresh outlook toward the 2009 - 2016 OS&R Plan.

Because the OS&R Plan exists to serve the public, the Committee distributed an OS&R Questionnaire throughout Town to gauge public opinion regarding existing and potential open space and recreational opportunities. Modeled on Norwell and Attleboro's open space surveys, the Questionnaire was available at the Town Hall, the Public Library, and posted electronically on the Town website. A total of 145 surveys were returned. Although the questionnaire response was not substantial in comparison to the Town population, the Committee believes that it is representative of the vision that exists today, and represents the residential majority's value for open space and recreation.

The purpose of the Community Vision section is to highlight the predominant trends seen in the returned Questionnaires. The Committee gained insight into current and potential open space opportunities valued by residents throughout Town. Relying heavily on the tabulated results and write-in comments of the Questionnaires, the Committee was equipped to draft the broad goals and specific objectives of this Plan.

#### **B Statement of Open Space and Recreation Concerns and Goals**

In the 1960s the Conservation Commission first began to purchase and accept as gifts open space for the enjoyment of the residents of Hingham. This proactive approach toward the protection of biological diversity, watershed quality, wildlife habitat, and aesthetic value represents the vision the Conservation Commission and other groups had in attempting to preserve Hingham's natural lands for future generations.

The results of the survey indicate that residents continue to value protection of open space for the reasons the Conservation Commission first started acquiring land. In the course of developing this OS&R Plan, conversations with residents indicated there is a sense of urgency in the need to protect what little open space is left. Residents particularly value the large, easily accessible, contiguous blocks of protected land, including Wompatuck State Park, World's End, and Turkey Hill, and desire more public access to the ocean. Survey results show that residents support the acquisition of additional open space to preserve or recapture the semi-rural character of the Town.

## 6.0 Community Vision

As identified through the planning process, discussions with residents, and questionnaire results, the broad goals for the OS&R Plan are:

**Goal 1:**

To protect Hingham's natural resources and the ecological and biological integrity of its wildlife through open space acquisition, development regulation, and collaboration with varied authorities and interests.

**Goal 2:**

To protect Hingham's scenic/aesthetic characteristics and its significant historical resources through open space acquisition, development regulation, and collaboration with varied authorities and interests.

**Goal 3:**

To continue to maintain and enhance formal and informal recreational opportunities in an environmentally sensitive way in order to ensure diverse recreation opportunities for Hingham's diverse residents. To implement an ADA Transition Plan for recreation facilities and selected open spaces and identify and respond to any further needs.

**Goal 4:**

To restrict detrimental development impacts on Hingham's remaining open spaces.

**Goal 5:**

To effect the following priorities/criteria when considering the purchase of open space:

- a. drinking water protection
- b. protection of vegetation and wildlife (habitat)
- c. visual impact
- d. passive recreation such as walking trail opportunities.

**Goal 6:**

To take the initiative in protecting open space

**Goal 7:**

To have some significant open space or recreation area adjacent to or near every neighborhood.

**Goal 8:**

To connect isolated open space areas to make a more complete unified system for human use such as hiking riding, skiing and to provide needed wildlife corridors to link areas of fragmented Habitat.

The main tools for pursuing these goals are full or partial acquisition, (the most effective protection if properly managed) regulation, and creative cooperation with various interests and stakeholders.

## **7.0 Analysis of Needs**

To complete an open space and recreation plan fitting Hingham's unique characteristics, it is critical to identify the needs of the town and its residents. Building on the broad goals and concerns in Section VI, Community Vision; this section reviews Hingham's open space and recreation resources to identify the needs implied in those goals.

The town's needs are three-fold. First, and most important, is analysis of its natural resources and determination of how this plan can best protect and advance Hingham's water resources, biodiversity, unique aesthetic character, and other open space and recreation values. Second, is analysis of the town's open space needs and recreation needs and how residents can best pursue these by protecting, expanding and building on its resources. Third, is the need for a municipal management approach to supervising and implementing resource protection, recreation enhancement, and this plan's overall objectives.

### **A. Resource Protection Needs**

#### **1. Water Resources**

Foremost on the minds of Hingham's residents is the protection of its drinking water resources. Hingham needs to ensure a continued supply of suitable drinking water. The town is in two watersheds, the Weir River and the Weymouth Back River, but its drinking water comes only from one multi-town reservoir and wells in the Weir River basin. These are operated by the Aquarian Water Company. The system serves Hingham and Hull and a small portion of Cohasset as discussed under Infrastructure in Chapter III.

Hingham's water comes indirectly from the Accord Pond reservoir, requiring protection of areas flowing into the Pond, and directly from groundwater wells. The surface water includes water indirectly drawn from Accord Brook and drains into the Pond. Hence the system is considered to be partially a surface water supply and is treated more thoroughly than it would be if drawing only on groundwater.

This basin is "stressed" according to the Massachusetts Water Resources Commission. This means that inputs from absorption of rain water, from inflowing streams, and from septic system fields are less than the withdrawals from the wells. Thus, Hingham must ensure that its supplies are protected from pollutants affecting water quality and from loss of water from increased, unabsorbed runoff from development affecting its quantity. Residents must also practice water conservation and the Town should proceed with a potential "waste water-recycling program" by ensuring groundwater recharge from any future independent treatment systems. Additionally, the Town should protect water supplies from uses on public or private land, and acquire new conservation land with both open space and water supply protection values.

The Town's protective Zone II area encompasses the middle to southern sections of Hingham. This broad, flat, sandy area has abundant very deep sands and gravels. It is an outwash plain

## **7.0 Analysis of Needs**

which was formed by glacial melt water streams. The residences here are not sewered so that most of the water used will eventually return to the groundwater via septic systems.

When a property is sold, state regulations require upgrading all septic systems that do not meet Title V. in order to protect water supplies. These rely on recharge of water back into these deep deposits of sand and gravel, particularly in the Zone II areas. These are the areas drawn on in a six-month drought. It is important to keep this land open and pervious to allow continued recharge.

On the water quality side, even optimum Title V systems can allow nitrogen and possible pathogens, e.g., from animal wastes, to enter the groundwater. At the same time, the Water Company's current treatment methods cannot remove nitrogen-based contaminants, leaving a concern for the firm to address.

Since the town relies almost entirely on groundwater, it is important to maintain that supply by increasing recharge through Low Impact Development principles. This is particularly important when groundwater used in sewered areas is discharged to the sea via the MWRA and Hull waste water treatment plants. For that reason expanded sewerage should be accompanied by increased groundwater recharge, especially near the wells. Sewerage should also be complemented by open space acquisition in anticipation of heightened development.

### **2. Biodiversity**

Hingham is rich with both fresh and saltwater habitats. Examples include several perennial rivers, streams, river floodplain, red maple swamps, wet meadows, vernal pools, cattail swamps, cedar swamps, shallow freshwater impoundments, ponds, seeps on drumlin slopes, lower and higher salt marshes, coastal mudflats, rocky intertidal shores, coastal beaches and banks, coastal islands and bluffs, land under the ocean, eelgrass beds, shellfish flats, flounder spawning habitat, and anadromous and catadromous fish runs as well as many different forest associations at various successional stages. All these different habitats provide varied ecosystems which enrich the town with great plant and animal biodiversity.

Questionnaire results indicate that preserving open space to protect the abundance and variety of wildlife and vegetation is another high priority for residents. Hingham already has expanses of conservation land that contribute to its biodiversity. These provide natural habitats, support Hingham's unique aesthetic appeal, and prevent the further encroachment of development. The desire to acquire more such land for these purposes indicates that residents highly value these attributes of open space.

The need to acquire and connect more open space in general is also evident. As more land is lost to development, the opportunity to join large sections of conservation land is severely diminished. Creation of large expanses, or "greenbelts" of varied habitats is the best means to

## 7.0 Analysis of Needs

increase biodiversity and preserve the semi-rural nature of Hingham. In addition to maintaining the currently protected tracts, the Town must consider ways to secure further lands from development.

Private landowners control the greatest amount of vulnerable open space in Hingham including a small portion partially protected under Chapters 61,61A and 61B as discussed in Chapter V.

Other small areas are held by the town as tax title land, or as unprotected land held for general municipal purposes as described in Chapter V. By securing selected parcels interspersed throughout Town, Hingham could create a network of greenbelts connecting otherwise fragmented habitat, and meeting some of the residents' desires.

### **3. Coastal Zone Protection**

A special geological feature of Hingham is Hingham Bay. The bay is subject to the influence of large daily ocean tides of approximately 10'. These expose the inner harbor's extensive tidal flats at low tide. These flats are habitat for mollusks such as clams and mussels that provide fisherman with recreation and livelihood. The Weir and Back Rivers were once host to migratory fish species such as salmon. Studies of sensitive fish species such as trout, salmon, and other anadromous fish (i.e., fish that migrate from the sea up rivers to spawn) have shown that they disappeared once impervious surfaces covered 10 to 12 percent of the watershed.<sup>1</sup> This indicates the ecological health of the estuaries and the bay and it influences on all activities centered on the marine environment.

In addition to varied habitat, Hingham's considerable coastal zone offers many recreational opportunities. Residents and visitors can enjoy an expansive shoreline, dotted with beaches and other shoreline features, though some areas are for private use.

In order to protect this coastal habitat from further decline and to maintain the harbor's recreational opportunities, the Town must protect as much of the open space bordering the bay and estuaries as possible. It should also encourage abutters to practice pollution prevention and land conservation, e.g., protecting land through conservation restrictions, etc. The shore area is one of Hingham's strongest defining features, and the harbor has influenced the town's cultural and industrial history. It is important that public access to the water and the water's biodiversity are preserved.

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<sup>1</sup> Schueler, T., and H.K. Holland. 2000, *The Practice of Watershed Protection*. Center for Watershed Protection, Ellicott City, Maryland.

## 7.0 Analysis of Needs

### **B. Community Needs**

#### **1. Open Space Needs/Opportunities**

The consensus is that the residents favor the acquisition of more open space to preserve Town aesthetics. A major concern is continuing development; particularly as large lot development consumes an increasing amount of land for any given increase in population. As traditionally rural areas of Town, such as South Hingham, become subdivided, the town's aesthetic appeal declines. This alteration of Hingham's traditional appeal is also true town-wide, as wildlife habitat and recreational areas are lost to residential and commercial interests. Because such aesthetic appeal is so important to residents, it is critical to preserve Hingham's current open spaces, and to acquire new conservation lands when possible. More broadly, there is a general need to have some open space in or near every neighborhood.

Handicapped access is needed at least at a cross section of major open spaces and at recreational areas.

#### **2. Recreation Needs/Opportunities**

Questionnaire results indicate that Hingham residents are generally satisfied with their recreation areas, while conservation lands are ranked highest in use. However, as more land is lost to development, the population grows, and sports participation increases, this sentiment will likely change.

Beyond this, all recreation facilities should be accessible to all potential users through implementing the ADA Assessment and Transition plan in the Appendix and meeting other needs that are encountered.

#### **Standards**

There is no easy way to measure the need for recreation facilities. The state has quantitative guidelines suggesting the number of acres of a particular facility type needed for a given population. These are found in past Statewide Comprehensive Outdoor Recreation Plans (SCORP) and are applied below. However, as can be seen when reviewing varying regional interests and demands, such standards do not recognize that the demand for a facility or activity reflects many factors including the population's age groups, sex, income, and ethnic traditions; local patterns of interests; and the present opportunities. Also, the past standards focus on facilities for competitive team sports and are less helpful in measuring the need for places for individual, less formal, activities such as hiking, fishing, swimming, bicycling, gardening, or camping.

## 7.0 Analysis of Needs

In addition, reliance on such published standards alone could lead to missing unique local opportunities such as:

- Gardening on former farm fields
- Hiking, sledding or skiing over a properly-shaped capped landfill
- Canoeing on local streams
- Motorized sports like dirt bike riding in an old sand pit.

The traditional public recreation facility definitions and standards from the 2000 SCORP and earlier editions follow:

- **Tot Lots:**  
One half-acre for each 1000 persons in densely-populated neighborhoods. The population served would live within one-quarter mile. Facilities should include swings, slides and other equipment for five-year olds.

(Ideally they would also have facilities or activities for accompanying adults, e.g., sitting areas, tables and benches, and/or exercise circuits.) In a low-density town like Hingham, smaller numbers would need to be served by each lot in order to get a better distribution town-wide.

- **Playgrounds:**  
Playgrounds serve as outdoor games centers for their particular neighborhood. Facilities should include play devices, running areas, swings and benches. Larger playgrounds should include an area for tot lot activities. Some standards require a 5-acre minimum size. SCORP standards require one acre per 250 children of elementary school age in densely populated neighborhoods, and a service area radius of one-quarter mile.

Comment: The need for playgrounds and tot lots may seem to be less in low-density, relatively affluent communities where many families have large yards, but such facilities still can allow children (and parents) more interaction than is available in isolated private yards.

- **Neighborhood Parks:**  
Neighborhood Parks are similar to community parks, but serve smaller geographic areas. The purpose of such parks is to provide water, forest, or landscaped settings as an aesthetic release from development. The 2000 standards for neighborhood parks are one half-acre serving a one-quarter to one-half mile radius. This need maybe less when individual house lots are large, but there still could be value to a gathering place.
- **Community Parks:**  
These serve the entire community and provide a large contiguous open space area for town residents. Some standards call for 20 or more acres for a community park. At 48.1 acres the

## 7.0 Analysis of Needs

Brewer Reservation alone more that satisfies the area requirement. However, as a reservation, it does not have the cultural and active recreation facilities (band stands, amphitheaters, picnic groves, intensive play areas, children's rides) that might be found in a park serving a high-density community with a tradition of public gatherings rather than of private activities. In a way, the smaller Bathing Beach/Bandstand/Iron Horse Park area comes closer a community park in spirit and activities.

- **Playfields:**  
Playfields are a community's centers for sports competition for all ages, but especially for teenagers and adults. They can be all-purpose (available for both spontaneous and organized activities) or specialized, i.e., designed for a specific use such as baseball, football, soccer or lacrosse to meet the respective dimensional standards. Some fields have multiple markings for different sports. The 2000 SCORP guidelines called for 3 acres per 1,000 residents, with a minimum size of 10 acres. Playfields also require parking areas with adequate number of parking spaces.

### **Regional Demands or Needs**

These are suggested by the present use of facilities in Southeastern Massachusetts. An extract from the discussion in Massachusetts Outdoors 2000 (a recent SCORP) follows:

#### **Demand in the Southeastern Region**

##### *Activities*

By a wide margin, the three most popular individual activities in the Southeastern Region are close in percentages: swimming at 60.1%, sightseeing, tours and events at 57.3% and walking at 57.1%. In fact, the sightseeing, tours, and events category received its highest level of interest statewide in this region. Well below that level of participation, substantial numbers also enjoy playground activities (37.9%), fishing (34.2%), and hiking (32.6%). Nearly one quarter of the population of this region has experience during the year with golfing (24%), and watching wildlife and nature study (23.7%). Lesser, but still significant, numbers (10-20%) also experience picnicking, sunbathing, biking (both types), skiing (downhill), non-motorized boating (motor boating is just under 10%), and canoeing.

When grouped by type of activity, the water-based activities predominate, but as in other regions, there is strong participation in some dimension of each type. A rough rank order would be water-based, passive, trail-based, field-based, and wilderness activities.

While one community with a small population cannot be expected to meet all the regional needs or desires, this extract does suggest continuing to meet desires such as swimming, hiking and biking that can be done locally, as well as making some provision for field sports and other more organized activities.

**7.0**  
**Analysis of Needs**

**Local Needs**

In the table below, past published SCORP standards suggest the following present and future needs; other uses lacking standards are noted and discussed for balance and completeness.

Hingham has:

<b>Facilities/Standards</b>	<b>Populations</b>	<b>Supply</b>	<b>Calculated Total Need/Net Need</b>
Playgrounds/One acre per 250 Elem. age Children	2000 pop. 5-14 years old = 3172	Two sites totaling an est. 6 acres	12.5 acres or more to get a good distribution / 6.5 acres
Tot lots Half an acre per 1000 pop. Preferably within a ¼ mile	Est. 2005 Pop.=21,507	Eight, including some small playgrounds	11Lots on 22 acres @ an estimated 2 acres each/ 3 tot lots and small playgrounds
Community Park 20 acres for one community	One per town	48.1 acres at Brewer Reservation, 186.5 at More – Brewer park	One park / To meet the urban high density/high activity-model, town would need more participatory facilities in one more-developed park
Playfields for football, soccer, lacrosse, baseball, softball, street hockey etc. 3 acres / 1000 pop.; some at 10 acres each	Est. 2005 pop.= 21,507	Town has 34 facilities on an est. 3 acres each, at 11 sites for an est.1 2 acres.	On a population basis, town may need only 66 acres, but strong citizen interests suggest needs for one or two more soccer/lacrosse fields.
Tennis Courts One per 2000 persons	Est. 2005 pop.=21,507	Town has 17 courts given 2 at the H.S. So there are 6 beyond the standard	A calculated surplus but many are concentrated at a few sites. Better coverage suggests adding one at each school that now has none.
Ice Skating  No Known SCORP Standard		Town has the Skating club, 2 occasionally used play sheds and several informally used ponds	No calculated need/A better distribution of complete facilities suggests a second skating club with a warming hut at Cushing Pond or Accord Pond

**7.0**  
**Analysis of Needs**

<b>Facilities/Standards</b>	<b>Populations</b>	<b>Supply</b>	<b>Calculated Total Need/Net Need</b>
Ice Hockey rinks  No Known SCORP Standard		Town has use of indoor commercial rinks	No calculated need. Reported scheduling difficulties suggest adding public or private rinks.
Beaches, Swimming Pools  No Known SCORP Standard		Town has an outdoor pool at Country Club (potentially covered) and access to Nantasket Beach, Weymouth's MDC Pool, commercial pools in adjacent towns and its own extensive town beach frontage	Observations suggest that the Bathing Beach, Trustees Beach, the Selectmen's Beach, and the Country Club pool, (along with the nearby MDC (DCR) pool in Weymouth appear to meet demands. Better distribution with access to local private or non-profit neighborhood beaches would add convenience.
Skateboard, Rollerblade Parks  No known SCORP Standards since potential users make do with public paved areas		Town has one at Carlson Field.	More dispersed sites would be more accessible and may get more local use.
Public sailing for non-boat owners, boat rentals  No Known Standards	Unknown Population	Maritime Center (ex. Lincoln Sailing Club) has small boats for members use and residents may join, but season ends in August for lack of staff	Need a longer season possibly with augmented staffing and possibly with more small boats.
Bike, Pedestrian, skiing & bridle trails  No known Standards	Most of population Could use some facilities	Minimal facilities, e.g. along G.W Blvd. and Rockland St. and roads in State Park; Skiing at Country Club	Need more of all, as discussed elsewhere, but not quantified.
Camping opportunities	Much of local population and many out-of-town visitors camp at the state park, and there is some local temporary residential use.	Large campground in State Park	The tightly laid out campground may discourage use; examine more dispersed opportunities in State Park and other large holdings

**7.0  
Analysis of Needs**

<b>Facilities/Standards</b>	<b>Populations</b>	<b>Supply</b>	<b>Calculated Total Need/Net Need</b>
Community Gardens	No known standard but some people have small, ledgy or shaded yards with little garden potential	Presently none though the Housing Authority allows small tenant gardens and the Weir River Farm has a staff /volunteer- run, pick your own garden.	Lacking estimates, the Plan suggests two or three sites across town with perhaps ten 100 to 300 sq. ft. plots each

Since these standards generally were designed for dense neighborhoods with little informal open space and small yards (and since they omit other interests such as skate boarding), they may greatly overstate measured needs, while missing more current needs and possibilities. Hence they only suggest Hingham’s needs.

The 2006 SCORP offers no new standards, but it discusses interests and needs on a regional basis. It uses an extensive survey of open space usage and interests statewide and on a regional basis; notes needs and preferences on a regional basis (as quoted above for the Southeast Region in 2000); outlines existing resources and suggest appropriate policies.

Hingham is at the southern edge of the SCORP’s Metropolitan Boston region, and its proximity to similar Southeastern Region towns make that Region relevant too. Hence both the Metropolitan and Southeastern findings are noted below, with the greater reliance placed on the findings for the Southeastern Region in the 2000 SCORP.

That study used 1995 survey data on facilities and opportunities desired by local residents given present supplies and usage. The following table indicates the percentage of respondents desiring a given activity or facility in Metropolitan Boston and in the Southeastern Region and notes the top ten desires state-wide.

These data suggest the interests of residents of Greater Boston and Southeastern Massachusetts (South of Hingham and Cohasset to Rhode Island). However they cannot indicate local needs without being compared to Hingham’s present open space and recreation assets and resources as described above in the Chapters IV and V.

Despite the past high demand for golf in the Southeast, Hingham’s, one public course and two new private courses my well meet local and sub-regional needs. Similarly, the town’s generous ocean swimming opportunities presumably meet the total high demand for swimming, but in this case it might be desirable to offer a greater variety and convenience with available neighborhood beaches and inland fresh water opportunities.

## 7.0 Analysis of Needs

Conversely, there is as small reported regional demand for sailing opportunities, but the observable great local interest combined with the present non-profit investment in the Maritime Center's fleet of small sailboats suggest making better use of that fleet over a longer season.

**Table VII-1  
Facilities and Opportunities for Activities Desired Statewide and in  
Metropolitan Boston and the Southeastern Region – 1995**

<b>Statewide Top 10</b>	<b>%</b>	<b>Metro Boston %</b>	<b>Southeast Region %</b>
Swimming	14.8	14.9	14.8
Walking	13.8	14.8	12.1
Road Biking	12.9	10.5	17.6
Playground Activity	9.9	9.0	8.3
Tennis	8.0	11.8	4.3
Golf	7.9	6.9	10.7
Hiking	7.1	3.9	10.2
Mountain Biking	6.7	6.2	5.3
Basketball	6.2	8.7	1.8
Baseball	5.3	5.9	6.7
Other			
Football		2.2	1.1
Rink Skating		2.5	2.7
Soccer		2.7	4.0
Tot Lots		1.0	2.1
Volleyball		1.7	.6
Picnicking		3.2	1.4
Wildlife		1.2	3.4
Horseback Riding		1.1	1.7
Roller Blading /Skating		3.5	2.6
Cross Country Skiing		.7	.6
Downhill Skiing		.8	.6
Motor Boating		1.4	1.4
Non-motorized Boating		1.3	0
Canoeing		1.2	5.9
Sailing		1.2	0
Fishing		2.3	.6
Pond Hockey		2.6	.9
Pond Skating		1.3	.6
Camping		.9	3.8

These general data and findings have been reviewed and accepted by the Recreation Commission drawing on its experience managing its own facilities and on its observations of the usage of other facilities town-wide. The Commission noted no specific needs for other facilities.

## 7.0 Analysis of Needs

In addition to the needs suggested by the past SCORP standards and the surveys, this Plan's goals and a review of present resources suggest local needs/opportunities for:

- Varied recreation facilities serving all population groups and exploiting many local opportunities.
- Swimming facilities – Studying expansion or protection of neighborhood public swimming opportunities beyond the Bathing Beach, e.g., at North Beach, Foley Beach, Hewitts Cove, Melville Walk, Worlds End, Otis Street (the former “Rocco’s Beach” or “Rocky Beach”) and others.
- Space for motorized “Bad Lands” activities such as riding all terrain vehicles (ATVs), trail bikes or snowmobiles - possibly along selected power lines.
- A centrally located skate board and in-line skating park, and possibly one in South Hingham too.
- An adopted town-wide system of single-use or joint-use pedestrian and bicycle trails, and bridle paths, along with potential trail bike and snow mobile trails. The bike/pedestrian system should be binding on new development so that the paved off-street walkways and bikeways encouraged under the subdivision Rules and Regulations can be tied into the over-all system.
- Space for community gardens, possibly at Amonte Meadow, on part of the Hatch-Dunlap (Schultz Field) land, or off of Hersey Street, for people whose yards are too rocky, wet, or shaded for a home garden.
- Handicapped accessibility to all feasible sites and facilities, including facilities for entering the water at the Bathing Beach, e.g., immerse-able plastic wheelchairs with oversize tires, and better graded paths in large holdings.
- Local family tot lots with adult sitting areas, tables, and exercise circuits.
- Exploration of possible multi-community open space/ recreation use of the capped, landfill, possibly through Small Town Urban Self Help funds - now called PARC funds.
- Extending the sailing season at the Hingham Maritime Center from the present mid-August closure through the good sailing months of September and October, possibly through joint HMC/Recreation Commission staffing. This might use “Senior Sailors” to replace departing college-age staff.

## 7.0 Analysis of Needs

- Increased access to present or potential trails along streams such as the Fulling Mill Brook by the Meadows condominium development.
- Filling gaps in routes to school with sidewalks, bike paths and off-road trails where appropriate. Examples would be from within Liberty pole to South School (if needed); from Berkeley Circle to Plymouth River School; and from Bradley Woods through Hingham Gardens to Foster School.
- Analysis of usage of sports fields and selective expansion to serve any growing, possibly unmet needs for example, for lacrosse or soccer.
- Connecting the southern end of Bare Cove Park and Weymouth's Great Esker Park so that users can cross from one to the other and experience them as one system. See photo at end to Chapter III.
- Exploration of tide-free freshwater swimming opportunities, possibly at Triphammer Pond with access from Wompatuck State Park, at Sanctuary Pond/off of George Washington Blvd. or at Cushing Pond now that weeds are controlled; or comparable tide-free salt water swimming opportunities such as previously proposed at Broad Cove by conservationist Stuart DeBard.
- Improving the present awkward crossings under Rte. 3A from Bare Cove Park to Stodders Neck Park and (on the Weymouth side) from Great Esker Park to Abigail Adams Park. See photograph just before the end of Chapter III.
- Expand ice skating opportunities with a warm-up building (like that at the Skating Club) at Cushing Pond or Accord Pond.
- Protecting / expanding opportunities to walk along the shores of our coastal town. Removing obstacles to shoreline walks around Crow Point, particularly along the flat topped rip rap from the Yacht Club to North Beach and beyond.

The right to walk along the publicly-owned shoreline is clear and residents have such rights almost all of the way from the 3A Rotary (around a real estate office and two marinas) through the Iron Horse Park and the town beaches to the whirlpool at the Broad Cove outlet. (And with resolution of some Chapter 91 issues, there will probably be such a walkway behind these obstacles, as there now is part way behind the former Keogh's Ships' Chandlery.)

Beyond the end of the town land, shoreline access opportunities are more problematic. The often-noted Colonial Ordinance of 1648 gave coastal landowners ownership to the low tide line, reputedly to encourage the building of piers, docks and wharves for much-needed commerce. At the same time the Ordinance defined the public's right to pass along the shore below the high

## 7.0 Analysis of Needs

tide line for “fishing, fowling or navigation.” Thus the public may walk through private property below the high tide line in pursuit of these (broadly-defined) activities.

The historic pattern along Otis Street supports this. Many of the waterfront houses along that street have low sea walls, and ( except at high tide) one could enter through Bouve’s boatyard and walk below the walls in the inter-tidal zone without intruding on private upland yards and improvements, and go as far as the vestigial dam containing Walton’s Cove. One could also enter or leave this strip of “Rocky Beach” through a former privately-built stairway. Some residents reportedly have deeded rights to use the beach, but the Ordinance and sea walls were enough to allow informal, non-intrusive passage (with or without a fishing pole, a fowling piece, or an oar.)

In contrast, most of the houses along Downer Avenue are too close to the water for such comfortable passage, but an apparent opportunity exists beyond the Yacht Club where flat-topped rip-rap offers a tempting safe shoreline path.

To be sure, this is above the high tide line, but the land rises so steeply that the nearby houses are all but out of sight. For a long time walkers did not feel intrusive before coming to a private area between the wall and the local street, Parker Driveway. The road then led past another small private patio area. This blocked the wall, but it was easy to go past it along the street and on to the adjacent North Beach. Local children reportedly used the road and wall as an off-street route to the Yacht Club, and adults enjoyed walking it for pleasure. Now, the enclosed access to a recently-built dock blocks the rip rap path. It requires some scrambling to even walk below the low tide line.

One major need or objective is to find a legal, equitable means to remove such obstacles to shoreline walks around Crow Point and elsewhere. And to restore access to previously available neighborhood beaches and walks.

One possible question to research would be whether any easement granted to allow the public construction of storm protection could be clarified to allow public passage along it, at least where not intrusive on the use of the underlying private land.

## **7.0 Analysis of Needs**

### **C. Management Needs**

#### **1. Communication**

Communication across Town commissions, offices, and private interest groups is critical to the implementation of this plan. The plan attempts to synthesize the interests of different entities in identifying and satisfying the open space needs of the Town. It is important for Town agencies such as the Conservation Commission, the Community Preservation Committee, the Recreation Commission/Department, and the Department of Public Works, to collaborate around this plan to met the interests of the diverse residents. Non-governmental owners of open space, including The Trustees of Reservations and the Hingham Land Conservation Trust, are also a major part of this effort.

#### **2. Regulatory Action**

The most direct way to preserve open space is through public or non-profit acquisition or public regulation. Hingham has taken positive steps in this direction through the enactment of the Community Preservation Act (CPA). Other statutory steps can also be implemented. The survey results demonstrated that the residents would be open to mandatory dedication of open space by developers and new bylaws for greater preservation. Adoption of such tools would represent a majority of the residents' views through public debate and passage at Town Meeting.

### **D. The needs of the Elderly and Handicapped**

#### **The Elderly**

As of 2000 there 2803 (14.2%) persons age 65 and over compared with 2486 (12.5%) in 1990. This group has undoubtedly grown significantly since 2000 with the advent of the large Linden Ponds elderly community. While Linden Ponds provides extensive recreational activities, the residents remain part of the large community and can be expected to use its resources too.

The need/interests of the elderly reflect those of the general population but with less emphasis on organized field sports and more on sports that can be played at all ages and conditions; tennis, bocce', lawn bowling, moderate stress exercise circuits, and safe walking, cycling and swimming, all given appropriate accessibility. In addition, there often is interest in indoor board games, discussion groups, meals and social activities such as are provided in the Senior Center and the Thaxter Park (elderly housing) lounge, as well as at the private Linden Ponds development.

Safe accessibility is important to a population with some limited mobility and brittle bones. These needs are partially noted in the following ADA Self-Assessment and will be noted further in the Transition Plan discussed below.

## **7.0 Analysis of Needs**

### **The needs of the Handicapped**

There are many handicaps; limited mobility, vision, hearing, balance, memory, or learning problems but the available US Census information simply refers to “disabilities.” It tells us that in 2000 the town had 224 persons from 5 to 20 years old with a disability, 1055 persons from 21 to 64 years with a disability (of whom 764 were employed), and 761 persons over 65 years old with a disability, for a total of 2040 or 10.3% of the town.

These residents can need access and in some cases other appropriate accommodations such as ramps or elevators, modified picnic tables, or beach access via large-wheeled wheel chairs. These combined needs are noted in the ADA Self Assessment and Transition Plan in the appendix.

## 8.0 Goals and Objectives

### **8.0 GOALS AND OBJECTIVES**

These are based on the Community Vision and Goals discussed in Chapter VI expanded to include the sub-goals, means and specific objectives identified in Chapter VII's discussion of the needs implied by the Vision and Goals.

#### **Goal 1**

**To protect Hingham's natural resources and the ecological and biological integrity of its wildlife through open space acquisition, development regulation, and collaboration with varied authorities and interests.**

#### **Sub-Goals, Means and Objectives:**

- To protect and expand drinking water supply
- To protect and promote Hingham's biodiversity
- To protect or enhance wildlife corridors, and reduce habitat fragmentation
- To protect key open spaces
- To protect the Coastal Zone/Fisheries
- To preserve/ use valuable farmland.

#### **Goal 2**

**To protect Hingham's scenic/aesthetic characteristics and its significant historical resources through open space acquisition, development regulation, and collaboration with varied authorities and interests.**

#### **Sub-Goals, Means and Objectives:**

- To acquire/protect visually significant scenic areas
- To enhance key views e.g., by opening up the view of the Home Meadows from lower Winter Street.
- To support restoration of historic parts of the townscape such as the buried granite steps at Old Derby Academy, being studied by the Academy's owners the Historic Society
- To maintain screening between major open spaces and large developments such as between Bare Cove Park and adjacent multi-family housing developments
- To acquire more conservation lands.

#### **Goal 3**

**To continue to maintain and enhance formal (e.g., organized sports) and informal (nature-oriented) recreational opportunities in an environmentally sensitive way in order to ensure diverse recreation opportunities for Hingham's diverse residents, and access to recreation areas and major open spaces.**

## **8.0 Goals and Objectives**

### **Sub-Goals, Means and Objectives:**

- To maintain present recreation areas
- To acquire new recreation areas to meet facility needs
- Create better public access to Hingham's waterfront
- Fill gaps in facilities by adding features such as a skateboard park
- Expand the availability of present resources such as the Maritime Center's small boat fleet - now unavailable after mid-August for lack of staff
- Resolve shoreline access issues along Otis Street and around Crow Point to restore or expand opportunities to walk along the shore – generally below private seawalls or on the storm protection rip rap - without conflicting with property owners.
- To implement the ADA Transition Plan for recreation facilities and selected open spaces.

### **Goal 4**

**To restrict detrimental development impacts on Hingham's remaining open space areas.**

### **Sub-Goals, Means and Objectives:**

- To establish/support community interest groups to ensure safekeeping and investigate Town acquisition of open space e.g., The Trustees of Reservations, Community Preservation Committee, Weir River Watershed Association and the Weir River Estuary Park Committee
- To require varied, context-sensitive protective planting between developments and open space while providing inviting links between them.

### **Goal 5**

**To effect the following priorities criteria when considering the purchase of open space.**

- Protection of drinking water quantity and quality
- Protection of vegetation and wildlife (habitat)
- Maintenance of positive visual impacts
- Provision of passive recreation opportunities such as walking trails.

### **Sub-Goals, Means and Objectives:**

- Explore any unique opportunities
- Review expiring conservation restrictions
- Promote ground water recharge through educational programs
- Work to maintain base aquatic stream flow by reducing poor irrigation practices

## 8.0 Goals and Objectives

### **Goal 6**

**To take the initiative in protecting open space.**

#### **Sub-Goals, Means and Objectives:**

- To seek protection of multi-use parcels
- To evaluate candidate acquisitions according to the above values as well as general attractiveness and potential
- To use the three-year freeze in subdivisions to preserve key parcels even without mandatory dedication of open space by developers
- To partner with private and public entities with similar goals
- To achieve more conservation restrictions
- To modify and implement existing Flexible Plan for increased effective use
- To increase the use of Chapters 61, 61A and 61B property tax reduction for farm, forest, and recreation land, and act on key parcels when available
- To work with the Planning Board to examine the functioning of the Flexible Plan zoning provisions for opportunities to increase open space protection and to better integrate such spaces with nearby public land.

### **Goal 7**

**To have some significant open space or recreation area adjacent to or near every neighborhood.**

#### **Sub-Goals, Means and Objectives:**

- To examine subdivisions for opportunities to increase access to nearby open spaces e.g., to Wompatuck State Park from adjacent cul-de-sac off of Charles Street or access adjunct public woodlands from streets like Blue Sky Drive
- To identify local significant pockets of undeveloped land for protection.

### **Goal 8**

**To connect isolated open space areas to make a more complete unified system for human use, hiking riding, skiing and to provide needed wildlife corridors linking areas of fragmented habitat.**

#### **Sub-Goals, Means and Objectives:**

- To acquire or confirm public rights to walk along streams such as Fulling Mill Brook / Tower Brook along the Meadows development
- To acquire protective strips wide enough to serve as wildlife corridors along major streams, and between close, but non-contiguous open spaces.

**9.0**  
**SEVEN YEAR ACTION PLAN**

**9.0 SEVEN YEAR ACTION PLAN**

**Goal 1:**

To protect Hingham's natural resources and the ecological and biological integrity of its wildlife through open space acquisition, development regulation, and collaboration with varied authorities and interests.

**Goal 2:**

To protect Hingham's scenic/aesthetic characteristics and its significant historical resources through open space acquisition, development regulation, and collaboration with varied authorities and interests.

**Goal 3:**

To continue to maintain and enhance formal and informal recreational opportunities in an environmentally sensitive way in order to ensure diverse recreation opportunities for Hingham's diverse residents. To implement an Americans with Disabilities Act (ADA) Transition Plan for recreation facilities and selected open spaces, and to identify and respond to any further needs.

**Goal 4:**

To restrict detrimental development impacts on Hingham's remaining open spaces.

**Goal 5:**

To effect the following priorities/criteria when considering the purchase of open space:

- a. Drinking water protection
- b. Protection of vegetation and wildlife (habitat)
- c. Visual impact, and
- d. Passive recreation such as walking trail opportunities.

**Goal 6:**

To take the initiative in protecting open space

**Goal 7:**

To have some significant open space or recreation area adjacent to, or near every neighborhood.

**Goal 8:**

To connect isolated open space areas to make a more complete unified system for human use, hiking, riding, skiing and to provide wildlife corridors needed to link areas of fragmented habitat.

The main tools for pursuing these goals are full or partial acquisition, (the most effective protection if properly managed), regulation, and creative cooperation with various interests and stakeholders.

These led to the following Seven-Year Action Plan.

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**List of Agencies**

ADA	Town's Americans with Disabilities Coordinator
AQW	Aquarion Water Company
BA	Board of Assessors
BOH	Board of Health
BC	Beautification Committee
CC	Conservation Commission
CLF	Conservation Law Foundation
CPC	Community Preservation Committee
DAR	Department of Agricultural Resources
DCS	Division of Conservation Services
DMF	Division of Marine Fisheries
HLCT	Hingham Land Conservation Trust
HGC	Hingham Garden Club
HDPW	Hingham Department of Public Works
HMC	Hingham Maritime Center
HOSC	Hingham Open Space Committee
HSP	Hingham Sports Partnership
HDC	Historic District Commission
HHS	Historic Society
HSC	Hingham Sewer Commission
LRWMC	Long Range Waste Water Management Committee
MHD	Mass. Highway Department or successor
OSAC	Open Space Acquisition Committee
PB	Planning Board
PRC&D	Pilgrim Resource Conservation and Development Area Council
RC	Recreation Commission
SCD	School Committee/Department
SSCC	South Shore Country Club
TC	Town Counsel
TB	Trustees of the Bathing Beach
TOR	Trustees of Reservations
TM	Town Meeting
TNC	The Nature Conservancy
TPL	Trust for Public Land
ZBA	Zoning Board of Appeals
WRPC	Weir River Estuary Park Committee
WSC	Water Supply Committee
WTSEM	Wildlands Trust of SE Massachusetts

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SEVEN YEAR ACTION PLAN**

**Year One - 2010**

<b>Action</b>	<b>Goal/Objectives</b>	<b>Responsibilities from Chapter 9 (First is lead) /Possible Funding</b>
<b>1.</b> Hull St. Playground (R-9)-Add accessible playground equipment, improve drainage to allow ball field to be developed	3 / Increased accessibility; Transition Plan Implementation	RC / RC, CPC
<b>2.</b> Identify private water supply land and protect through zoning where possible	1 / Protect/expand the drinking water supply	PB / AWC
<b>3.</b> Publicize conservation techniques	1 / Protect/expand the drinking water supply	AWC, CC / AWC
<b>4.</b> Identify lands that joined or connected to protected lands, would create greenbelts and wildlife corridors	1 / Protect/promote biodiversity	CC, OSAC / TM CPC, DCR
<b>5.</b> Acquire or protect areas identified earlier using CPA funds, DCR funds or other resources to acquire land in fee or to acquire conservation restrictions or Easements-a continuing activity	1, 6 / Protect and promote biodiversity Protect or enhance wildlife corridors; reduce habitat fragmentation	CC, OSC, WTSEM, RC / CC, CPA, DCR, DF&W, HLCT, WTSEM, TNC, TPL and private gifts
<b>6.</b> Acquire available land around the Weir River Estuary Park along G. Washington Blvd., Rockland Street, and Kilby Street as described in Ch. V	1 / Protect the Coastal Zone	CC, OSC, WRPC / CPA, DCR, DFW, DMF, HLCT, non-profits
<b>7.</b> Work with local trust to explore options for restored access and increased public use of Rocky Beach and possible shared responsibilities.	1 / Protect the Coastal Zone 3 / Improve access to waterfront 7 / Provide significant open space and/or recreation land near every neighborhood	CC, HDC, RC / CPA, private owners, neighbors
<b>8.</b> Improve Foundry Pond Fish ladder to avoid water spilling onto the smelt breeding area	1 /Protect biodiversity from spillway	CC, DMF / DMF, CPA

**9.0  
SEVEN YEAR ACTION PLAN**

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**Year One – 2010 continued**

<b>Action</b>	<b>Goal/Objectives</b>	<b>Responsibilities from Chapter 9 (First is lead) /Possible Funding</b>
<b>9.</b> Identify neglected Areas- Assign restoration work to town /private groups to use all resources	3 / Maintain Present Recreation Areas	RC, CC / TM, HSP, CPA
<b>10.</b> Identify needs, use CPA funds to acquire them	3, 6 / Acquisition of new recreation areas	RC, OSC / DCR, HSP, CPA
<b>11.</b> Support proposed acquisition of properties, and integration with the Weir River Estuary Park system.	1, 6 / Protect or enhance wildlife corridors, reduce habitat fragmentation	CC, WRPC / CPC, DCS
<b>12.</b> Develop shared staffing or other cooperation between RC and Hingham Maritime Center to extend sailing season (now ending in mid-August) through October's good sailing weather	3 / Expanded sailing opportunities	RC, HMC / TM

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**SEVEN YEAR ACTION PLAN**

**Year Two - 2011**

<b>Actions</b>	<b>Goals/Objectives</b>	<b>Responsibilities (first is lead) / Possible Funding</b>
<b>13.</b> At Bradley Woods Playground (R-8) add further accessible playground equipment complementing 1995 improvements; acquire any needed easements and develop accessible paths from Ivy Way and the playground to the Shipyard Drive and to the adjacent Bouve' property; improve the primitive ball field	3 / Increased accessibility; Transition Plan Implementation	RC, OSAC / RC, CPC, DCR
<b>14.</b> Increase required permeable to impermeable surfaces	1 / Protect/expand the drinking water supply 4 / Limit impact of development on open space or resources	PB, CC, BOH / Developers
<b>15.</b> Identify private open space areas that, when adjoined, create greenbelts and wildlife corridors.	6 / Take initiatives to protect open space	CC, OSC, HCLT, PB, Public
<b>16.</b> Acquire land on Charles St.	6 / Take initiatives to protect open space	OSC, CC / CPA, HCLT
<b>17.</b> Enhance key views e.g., by opening up the view of the Home Meadows from lower Winter Street or Water St.	2 / Acquire, protect or enhance visually significant areas, key areas	CC, BC, OSAC / CC, CPC
<b>18.</b> Acquire easements or land in fee. Use covenant/deed restrictions for conservation purposes	6 / Take varied initiatives in protecting open space	OSA, CC, CPA / CC, HCLT, CPC
<b>19.</b> Acquire fee or access easements to neighborhood beach at Melville Walk if needed	3 / Defend rights to historic beach access	CC, RC / CC, RC, CLF, CPA
<b>20.</b> Develop/improve path along edge of Bouve' land to Shipyard and Bradley Woods Playground	3 / Create better access to total waterfront	RC, CC, residents/ RC, CC, HDPW
<b>21.</b> Protect / acquire land on Popes Lane. Determine if parcel is buildable, continue negotiations with owners, examine community garden or agricultural potential	1 / Protect and promote biodiversity 1, 6 / Preserve, use valuable farmland 2 / Acquire/protect visually significant scenic areas 3 / Acquire new recreation areas	CC, WTSEM, HGC / CC, CPA, HCLT, WTSEM, TNC, TPL

**9.0  
SEVEN YEAR ACTION PLAN**

**Year Two – 2011 continued**

<b>Action</b>	<b>Goal/Objectives</b>	<b>Responsibilities from Chapter 9 (First is lead) /Possible Funding</b>
<b>22.</b> Explore; then implement community garden spaces at level, accessible, open sunny areas.	3 / Support recreational gardening 1, 6/ Preserve, use valuable farmland	RC, CC, HGC / RC, CPA
<b>23.</b> Design, Implement skate board/in-line skating park(s) at Carlson Field or elsewhere	3 / Broadened recreational offerings	RC, OSAC / TM

**9.0  
SEVEN YEAR ACTION PLAN**

**Year Three - 2012**

<b>Actions</b>	<b>Goals / Objectives</b>	<b>Responsibilities (first is lead)/ Possible Funding</b>
<b>24.</b> At Hersey Field (R-1)create 2,3 ADA parking spaces for playground and ball field; improve drainage in northwest parcel and develop an added ball field; irrigate the main field and ease neighborhood dust issues on the access road; draw on Hersey house project water and electricity if possible; create an accessible field house	3 / Increased accessibility; implementation of ADA plan	RC, OSAC, /RC, CPC
<b>25.</b> Investigate recreation potential of the capped landfill, e.g., hiking, mountain biking, skiing, sight-seeing	3 / Expand varied recreation opportunities	RC, CC, OSAC, / DCR (PARC funds)
<b>26.</b> Implement grey water reuse mandates for new development	5 / Protect and Expand Water Supply	BOH, HSC
<b>27.</b> Develop an Irrigation By-law	5 / Protect and Expand Water Supply	CC, AWC, PB, PRC&D
<b>28.</b> Acquire and link identified greenbelt areas, e.g. Baker land and Nosiglia land along Crooked Meadow River; resolve access issue through adjacent Church parking lot or other routes	6 / Take initiatives to protect open space	CC, OSC, HCLT / CPA, DCR
<b>29.</b> Find interested candidates that would like to lead specific efforts focused on a site or issue, form group	6 / Establish/support community and local interest groups to ensure protection	CC, PBB, BS, HCLT
<b>30.</b> Acquire private river-front holdings between town parcels on Geo. Washington Blvd. in WREP area U-26	8 / Connect open space areas	CC, OSAC, WREP, PB, BS/ CPC, DMF
<b>31.</b> Increase ratio of impermeable to permeable surface to increase recharge	1 / Protect water supplies	PB, CC/ BOH
<b>32.</b> Acquire or protect areas identified above	1, 6 / Protect water supplies	CC, AWC, BOH / CPA, TM
<b>33.</b> Create tax incentives for sale of private land to Town; be in touch with Ch. 61 land owners	6 / Seek expanded means to acquire open space	BS, CC, BA, TM
<b>34.</b> Investigate legal status of rip rap around Crow Point; does public investment in it give the public access rights? Is it a public way? Investigate options for removal of present obstacles, act on them.	3 / Increase recreation possibilities especially walking	CC, RC, BS, HS, TC / CPC, DCS

**9.0  
SEVEN YEAR ACTION PLAN**

**Year Three – 2012 continued**

<b>Action</b>	<b>Goal/Objectives</b>	<b>Responsibilities from Chapter 9 (First is lead) / Possible Funding</b>
<b>35.</b> Investigate size of tract, acquire sufficient rights along edge of Amonte Meadow; develop a trail along the river's edge crossing over to Sanctuary Pond area through further riverside land/rights if feasible	3 / Expanded hiking opportunities	CC, OSAC / CPA
<b>36.</b> Add Cassidy Field signage at the Brewer Reservation entrance on Hobart St. at the easement from White Horse Lane, at Hemlock Road and at a possible access from Pinecrest Road, improve present easement	3 / Improve access to existing opportunities easement	RC / CPA
<b>37.</b> Work to enhance and preserve scenic town entrance	2 / Protection of scenic values	DPW, HC, HDC, BS / CPC, MDPW

**9.0**  
**SEVEN YEAR ACTION PLAN**

**Year Four - 2013**

<b>Actions</b>	<b>Goals/ Objectives</b>	<b>Responsibilities (first is lead) / Possible Funding</b>
<b>38.</b> Improve East Street Skating Pond (Hingham Skating Club R-10); Create at least one ADA parking space near clubhouse; Seek CPA funds for dredging, weed control and porch reconstruction for non-winter fishing and boating use, and acquire the adjacent property if available	3 / Increased accessibility; Transition Plan implementation	RC, CC, OSC /CPC, TM
<b>39.</b> Continue with municipal grey water recycling plans	1 / Protect water supplies-quantity and quality	HDPW, BOH
<b>40.</b> Continue acquiring areas identified above as opportunities arise	1 / Continued open space acquisition	CC, WTSEM / CC, CPA
<b>41.</b> Work on Fish run protection /Restoration	1 / Strengthened fisheries	CC, HDPW / DMF, CPC
<b>42.</b> Add local tot lots including adult sitting areas, tables and exercise circuits, e.g. at Hull St. Playground, Kress Field	3 / Provide facilities for all ages	RC / CPC
<b>43.</b> Explore tide-free freshwater swimming opportunities	3 / Expanded opportunities, especially swimming	OSP, CC / CPC, DCR
<b>44.</b> Expand ice skating opportunities with a warm-up building (like that at the Skating Club) at Cushing Pond or Accord Pond	3 / Expanded, better distributed town-wide skating opportunities	RC, CC, OSC / CPA
<b>45.</b> Design & adoption of a town-wide system of pedestrian and bicycle trails, bridle paths, and snow mobile trails. The system would be binding on new development so that the paved off-street walkways and bikeways encouraged by the subdivision Rules and Regulations tie into the over-all system	3 / Expanded better-distributed hiking, biking opportunities	CC, PB, OSC, PW /CC, CPA, DCR. State trails funds and Safe Routes to School funds
<b>46.</b> Implement eased beach access via large wheeled chairs and other actions	3 / Diverse, accessible recreation	RC, TBB / CPC, DCR

**9.0  
SEVEN YEAR ACTION PLAN**

**Year Five - 2014**

<b>Actions</b>	<b>Goals / Objectives</b>	<b>Responsibilities (first is lead)/ Possible Funding</b>
<b>47.</b> Improve Cronin/Haley Fields (R-6); Create two ADA parking spaces; rebuild tennis courts and add accessible ramp from the space with grading to ease the slope; rebuild barn with accessible bathrooms; pave access road from Main St., and add an ADA accessible sidewalk; replace running track with a rubber surface	3 / Increased accessibility; Transition Plan implementation	RC, BS / CPC, RC
<b>48.</b> Identify private land that has a water supply potential and guide future development away through zoning where possible	1 / Protect water supplies	CC, OSP, CPC , PB / AWC, BOH, DCR
<b>49.</b> Study possibility of enclosing the Country Club Pool	3 / Expanded year-round recreation opportunities	RC / OSC, SCC / CPA, TM
<b>50.</b> Connecting the southern end of Bare Cove Park and Weymouth's Great Esker Park so that users can cross from one to the other and experience them as a whole	3, 8 / Expanded hiking, riding opportunities, connected isolated facilities	RC, CC, OSC, BRC, Weymouth / DCR, CPC
<b>51.</b> Open view at Town Brook at Route 3A	2 / Scenic vista enhancement	MDPW, BS / MDPW, CPC
<b>52.</b> Acquire stream-side land on the west side of Hersey St. for neighborhood open space	1 /6 Preserve/use valuable farmland	CC, OSAC, HGC/ RC / CPC

**9.0**  
**SEVEN YEAR ACTION PLAN**

**Year Six - 2015**

<b>Actions</b>	<b>Goals/Objectives</b>	<b>Responsibilities (first is lead) / Possible Funding</b>
<b>53.</b> Improve Cassidy Field (R-2); Get an access easement off of Hemlock Road for ADA and standard parking; seek accessible access from Pinecrest Rd.; build an accessible playground and ball field; if feasible, improve the present path in from Hobart St. through the Brewer Reservation	3 / Increased accessibility; Transition Plan implementation	RC, CC / CPC
<b>54.</b> Acquire / protect the coastal fringe of Bass Point off G. Washington Blvd./ Rockland St. on the Weir River	1, 5 / Expand holdings for multiple purposes	OSAC, CC, WREPC, PB / DCR, PC, Private Owner
<b>55.</b> Connect Bare Cove Park with Stodders Neck; and Great Esker Park with Abigail Adams Park via walkways under the Rte. 3A Bridge	3 / Expand hiking, riding opportunities	RC, OSAC, MHD / CPC, MHD, DCR
<b>56.</b> Reveal view of the Home Meadows from lower Winter St. and Water St. by selective clearing of intervening roadside vegetation	2 / Scenic, aesthetic exposure	CC, HC, DPW / CPA
<b>57.</b> Acquire protective strips wide enough to serve as wildlife corridors along major streams and between close but non-contiguous open spaces	1, 8 / Water supply protection, wildlife and stream corridor enhancement	CC, OSAC / DCR, CPA

**9.0  
SEVEN YEAR ACTION PLAN**

**Year Seven -2016**

<b>Actions</b>	<b>Goals/ Objectives</b>	<b>Responsibilities (first is lead) / Possible Funding</b>
<b>58.</b> Improve Kress Field (R-11); Create 1 ADA parking space, expand/improve parking and playing fields overall; rebuild trails to ADA specifications; add accessible playground equipment; work with neighbors to improve overall property, add community garden space if feasible	3 / Increased accessibility; Transition Plan implementation 1 / Protect and use fertile land	RC, DPW/CPC, DCR
<b>59.</b> Improve Margetts Field on Ward St. (R-5); Create at least two 2 ADA parking spaces; improve irrigation; improve path from Plymouth River School Parking lot.	3 / Increased accessibility; Transition Plan implementation	RC, BS, OSC /CPC, DCR, Residents
<b>60.</b> Seek Sanctuary Pond off the Weir River; Develop an access from Geo. Washington Blvd.	1, 2 / protection of key resources and scenic areas	CW, REC, OSAC, WREPC / DCR, CPA
<b>61.</b> Acquire Hersey St. back land earlier proposed for CPA action; develop for recreation, gardening and informal open space use	3, 7 / Provide multi-purpose open space near all neighborhoods	CC, OSAC, HGC / CPC, DCR
<b>62.</b> Continue expanding /implementing ADA Transition plan	3 / Provide diverse, accessible recreation facilities	RC, OSAC, ADA/CPC
<b>63.</b> Clarify public's right to walk along the Crow Point rip-rap; acquire any property, facilities or easements needed to remedy present obstacles	1, 2, 3 / Improve coastal walking	CC, RC, HDPW, HDC / CPC, DCR.

**Studies Actions for Later Years**

The program above may well exceed time and resources, and key items should be carried on to future action programs.

**10.0 Public Comments**

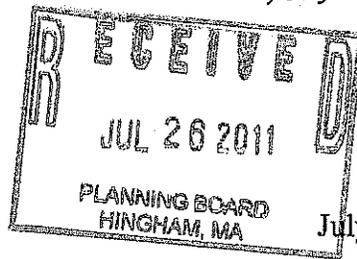


*The Commonwealth of Massachusetts*  
*Executive Office of Energy and Environmental Affairs*  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Deval Patrick  
GOVERNOR

Timothy Murray  
LIEUTENANT GOVERNOR

Richard K. Sullivan, Jr.  
SECRETARY



July 25, 2011

Tel: (617) 626-1000  
Fax: (617) 626-1181

W. Clifford Prentiss  
Conservation Commission  
210 Central Street  
Hingham, MA 02043-2759

Re: Open Space and Recreation Plan

Dear Mr. Prentiss:

Thank you for submitting Hingham's Open Space and Recreation Plan to this office for review for compliance with the current Open Space and Recreation Plan Requirements. I am pleased to write that the plan is approved. This final approval will allow Hingham to participate in DCS grant rounds through June 2016.

Congratulations on a great job. Please call me at (617) 626-1171 if you have any questions or concerns about the plan.

Sincerely,

Melissa Cryan  
Grants Manager

cc: Katy Lacy – Community Planning Director



*The Commonwealth of Massachusetts*  
*Executive Office of Energy and Environmental Affairs*  
*100 Cambridge Street, Suite 900*  
*Boston, MA 02114*

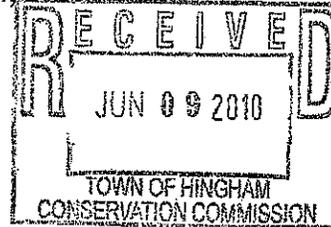
Deval Patrick  
GOVERNOR

Timothy Murray  
LIEUTENANT GOVERNOR

Ian Bowles  
SECRETARY

Tel: (617) 626-1000  
Fax: (617) 626-1181

June 4, 2010



Cliff Prentiss  
Conservation Commission  
210 Central Street  
Hingham, MA 02043-2759

Re: Open Space and Recreation Plan

Dear Mr. Prentiss:

Thank you for submitting Hingham's expanded Open Space and Recreation Plan Action Plan to this office for review. I am pleased to write that the plan has been approved for an additional two-years. This will allow Hingham to participate in DCS grant rounds through June 2016. Please keep in mind that the plan still has only conditional approval. For the OSRP to receive final approval, the issues brought up in my letter of June 9, 2009 must still be addressed.

Congratulations on a great job. Please call me at (617) 626-1171 if you have any questions or concerns about the plan.

Sincerely,

Melissa Cryan  
Grants Manager

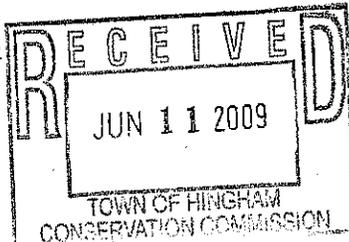


*The Commonwealth of Massachusetts*  
*Executive Office of Energy and Environmental Affairs*  
*100 Cambridge Street, Suite 900*  
*Boston, MA 02114*

Deval Patrick  
GOVERNOR

Timothy Murray  
LIEUTENANT GOVERNOR

Ian Bowles  
SECRETARY



Tel: (617) 626-1000  
Fax: (617) 626-1181

June 9, 2009

Samuel Chapin  
Conservation Commission  
210 Central Street  
Hingham, MA 02043-2759

Re: Open Space and Recreation Plan

Dear Mr. Chapin:

Thank you for submitting the draft Open Space and Recreation Plan for Hingham to this office for review and compliance with the current Open Space and Recreation Plan Requirements. This plan was particularly thorough and has been conditionally approved through June 2014. Conditional approval will allow the town to participate in DCS grant rounds through June 2014, and a grant award may be offered to the town. However, no final grant payments will be made until the plan is completed.

Once the following items are addressed, your plan will receive final approval:

1. History of the Community – please expand this section to include information on the 20<sup>th</sup> century.
2. Population Characteristics – please include information on population density, industries, and employment trends, as well as the effect that the information has on open space and recreation.
3. Growth and Development Patterns – the Infrastructure section is missing. This should include information on transportation, water, and sewer systems in the town. The Long-term Development Patterns section should have a general discussion on zoning.
4. Water Resources – information on flood hazard areas and aquifer recharge areas is needed.
5. Vegetation – please include information on public shade trees.
6. Scenic Resources and Unique Environments – this section should be expanded to include sections on unusual geologic features and cultural and historic areas.
7. Environmental Challenges – this section is missing information on chronic flooding, forestry issues, and environmental equity issues.
8. Section 5 – this section should start with an explanation of why open space protection is important. The table of town-owned conservation and recreation lands should include an additional column on the type of grant, if any, used to purchase/renovate the property. A section on open space equity is also needed.
9. Analysis of Needs – the Community Needs should include information on the SCORP and how it pertains to Hingham. It can be found online at

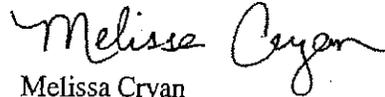
<http://www.mass.gov/Eoeea/docs/eea/dcs/massoutdoor2006.pdf>. The needs of special groups, such as the elderly and the handicapped, must also be addressed.

10. Goals and Objectives – why don't these goals match up to Section 6's goals?

11. Five-Year Action Plan – funding sources should be included for each goal and objective.

Congratulations on the great start that you've made on this important project! Please contact me at (617) 626-1171 or [melissa.cryan@state.ma.us](mailto:melissa.cryan@state.ma.us) if you have any questions or concerns, and I look forward to reviewing your final plan.

Sincerely,



Melissa Cryan  
Grants Manager

cc: Board of Selectmen  
Recreation Department

## DRAFT COMMENTS

May 20, 2009

Linda Morash Defreitas  
Administrative Secretary - Conservation Department  
Town of Hingham  
210 Central Street  
Hingham, MA 02043-2757

Dear Ms. Defreitas:

Thank you for submitting the Hingham Open Space and Recreation Plan 2009-2014 to the Metropolitan Area Planning Council (MAPC) for review.

The Division of Conservation Services (DCS) requires that all open space plans must be submitted to the regional planning agency for review. This review is advisory and only DCS has the power to approve a municipal open space plan. While DCS reviews open space plans for compliance with their guidelines, MAPC reviews these plans for their attention to regional issues generally and more specifically for consistency with *MetroFuture*, the regional policy plan for the Boston metropolitan area.

### **Recommended revisions to the plan**

The following are MAPC's recommendations for amendments to the Hingham Open Space and Recreation Plan that will serve to bring a more regional perspective to the plan.

***Surrounding Communities*** - Within the discussion of the regional context, there should be mention made of the open space planning activities and open space plans of surrounding communities. Connections between those communities and the open space needs and objectives of Hingham should be explored. We encourage all communities to consult with their neighbors concerning their open space plans and initiatives especially since open space parcels and similar resources often occur near municipal boundaries and can be influenced by the actions of neighbors.

***Subregion*** - The open space plan does not mention that Hingham is a member of the South Shore Coalition (SSC) which is one of eight MAPC subregions. SSC is a group of 13 communities that meet regularly to discuss issues of common interest and is an excellent forum for discussing regional open space issues and opportunities.

***MetroFuture*** - The section on regional context should include information on *MetroFuture*. More information on *MetroFuture* is provided below.

***Environmental Justice*** – We note that the plan does not address the issue of environmental justice as required by the new 2008 guidelines for preparing an open space plan. The environmental justice guidelines are spelled out in more detail in the 2008 Open Space and Recreation Planners Workbook.

In brief, the guidelines indicate two levels of addressing EJ. If a municipality includes EJ populations as defined by the state (for more information please see the list of communities at <http://www.mass.gov/mgis/ej.htm>), you must include the data/information specified in Section 2 (Introduction), Section 3 (Community Setting), and Section 5 (Inventory of Lands of Conservation and Recreation Interest). If your city or town does not have identified EJ populations you are still required in the inventory section to consider and describe park and recreation inequities within the community as well as strategies to address those inequities. Although Hingham does not include any EJ populations as defined by the state, it does need to address park and recreation inequities.

You should consult the workbook for more details on these requirements and discuss these new requirements with the staff at the Division of Conservation Services. The workbook is on-line at [http://www.mass.gov/envir/dcs/pdf/osrp\\_workbook.pdf](http://www.mass.gov/envir/dcs/pdf/osrp_workbook.pdf).

### ***Consistency with MetroFuture***

*MetroFuture* is the official regional plan for Greater Boston, adopted consistent with the requirements of MGL Ch. 40B. The plan includes goals and objectives as well as thirteen detailed implementation strategies for accomplishing these goals. We encourage all communities to become familiar with the plan by visiting the web site at <http://www.metrofuture.org/>.

The following comments are provided to help your community understand how your plan fits within the *MetroFuture* framework. Overall, we see many positive connections between your plan and *MetroFuture*.

***Community Preservation Act*** – Hingham's adoption of the Community Preservation Act is consistent with implementation strategy #3E of *MetroFuture*. As you may be aware, state matching funds for CPA are now in steep decline. Senator Cynthia Creem (D-Newton) and Representative Stephen Kulik (D-Worthington) have filed legislation to address this issue, with the strong support of MAPC. For further information about how the town could help to advance this legislation, please contact MAPC's Government Affairs Manager Rebecca Davis.

***Protecting scenic roads*** – *MetroFuture* implementation strategy #7 G 28 relates to protecting scenic roads. The Hingham plan does a good job of focusing on this prime aspect of the town's character.

Thank you for the opportunity to review this plan.

Sincerely,

# TOWN OF HINGHAM

## CONSERVATION COMMISSION



To: Distribution Listing

From: Samuel Chapin, Chair – Conservation Commission

A handwritten signature in black ink, appearing to read "Samuel Chapin", is written over the printed name.

Date: May 4, 2009

**RE: Open Space and Recreation Study 2009-2014**

Please find the attached draft Hingham Open Space and Recreation Plan that has been drafted by the Hingham Conservation Commission, citizen volunteers and staff members of various town land use agencies to fulfill the requirements of the Executive Office of Environmental Affairs.

Hundreds of hours have been spent to meet plan requirements as outlined by the Office of Environmental Affairs. Previous Open Space and Recreation Plans, the Town's Master Plan, and information from municipal agencies as well as state and federal land use agencies were researched for data.

This draft document includes the updating of the community's land use patterns and contains a five-year action plan. Your comments are necessary to fulfill the EOEA plan requirements. The Commission requests your *written* comments by May 22, 2009 so that Hingham will be eligible for open space acquisition funds as well as other state and federal programs. Please contact the Conservation Office if you need clarification or have additional input.



**Distribution**

Town Administrator - Kevin Paicos

Board of Selectmen - Laura M. Burns, John A. Riley, Bruce Rabuffo

Planning Board - Katy Lacy

Board of Appeals - Sue Letizia-Eddy

Board of Health - Bruce Capman

Building Department - Richard Morgan

Harbor Development Committee - Nick Amdur

Open Space Acquisition Committee - Susan Berry

Recreation Commission - Frank Jones

Executive Office of Energy & Environmental Affairs - Melissa Cryan, Grants Manager

Metropolitan Area Planning Council - Martin Pillsbury, Manager of Environmental Division

The Trustees of Reservations - Wayne Beitler - Land Conservation Department

The Trustees of Reservations - Ed Pitcavage, Superintendent, South Shore Management Unit

# TOWN OF HINGHAM

## CONSERVATION COMMISSION



April 28, 2009

Hingham Open Space and Recreation Plan Committee  
c/o Cliff Prentiss, Conservation Officer  
Town of Hingham  
210 Central Street  
Hingham, MA 02043

Dear Members of the Open Space and Recreation Plan Committee:

The Hingham Conservation Commission wishes to grant their endorsement of the draft of the Hingham Open Space and Recreation Plan 2009-2014. We have found the report to be both thorough and thoughtful.

Please thank all involved for their outstanding work in creating this 5-year plan for the protection and use of the town's natural resources.

Sincerely,

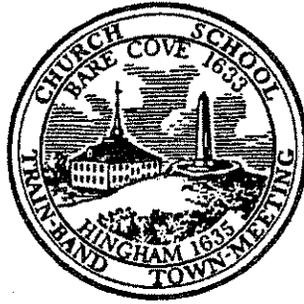
A handwritten signature in black ink, appearing to read "Samuel Chapin".

Samuel Chapin, Chair  
Hingham Conservation Commission



# Town of Hingham

OFFICE OF BUILDING COMMISSIONER



210 Central Street  
Hingham, MA 02043-2759

Telephone: (781) 741-1420  
Fax: (781) 741-1460

TO: Hingham Conservation Commission

FROM: Richard E. Morgan, Building Commissioner 

DATE: May 22, 2009

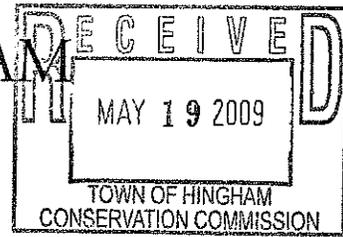
RE: Open Space and Recreation Study 2009 – 2014

I have received a copy of the Open Space and Recreation Plan. There was a tremendous amount of work that went into this and the document was well put together.

Congratulations to all who had a part in the study. This plan will be a great asset to the Town.



TOWN OF HINGHAM  
PLANNING BOARD



May 19, 2009

To: Samuel Chapin, Chair, Conservation Commission

From: Katy Lacy, Town Planner *KL*

Re: Open Space and Recreation Plan

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On behalf of the Hingham Planning Board, I have reviewed the "Open Space and Recreation Plan 2009-2014", and would like to offer my congratulations for a job well done. The plan includes a wealth of information and will serve as tremendously useful resource for all future planning efforts.

I have two specific comments that I would like to bring to your attention. First, on page 48, at Section 9.0, Goal #1, Objective A ("Protect and Expand Water Supply") Action Item #5 currently reads "Prevent private land that is a future water supply from future development through zoning regulations." As currently written, this Action Item attributes unrealistic (and perhaps illegal) authority to a local Zoning By-Law to "prevent" development. A more accurate reflection of what zoning can do to promote this laudable goal would read as follows:

"Amend the Zoning By-Law to include provisions which prevent negative impacts on the Town's water supply through appropriate restrictions on intensity and use of potential development."

If you want to get even more specific, you could charge the Planning Board with revising and bringing up-to-date Section III-D, "Accord Pond Watershed and Hingham Aquifer Protection District", which really needs to be done!

Second, on page 50, Goal #3, Objective C (Create Public Access to the Hingham's Water Front) please add "Planning Board" to the Harbor Development Committee under "Responsible Agency". The two groups have been meeting jointly and have committed to working together on this goal.

Thank you for the opportunity to comment, and for all of your hard work preparing this plan.



TOWN OF HINGHAM  
BOARD OF APPEALS



Date: June 8, 2009  
To: Conservation Commission  
From: *sls* Suzanne Letizia-Eddy, Zoning Administrator  
Re: Open Space and Recreation Study 2009-2014

The Board of Appeals recognizes the effort put forth by the Conservation Commission, citizen volunteers and staff members of town land use agencies in drafting the Open Space and Recreation Study 2009-2014.

Over the past several years, the Board of Appeals has approved projects under M.G.L. Chapter 40B which enables the Board to approve affordable housing developments under flexible rules and with greater density if at least 20-25% of the units have long-term affordability restrictions. In 2008 and 2009 Hingham has been able to add over 100 affordable housing units to its' Subsidized Housing Inventory, many of which include "local preference" for Hingham residents and Town employees as eligibility requirements for the affordable units. This brings Hingham's total SHI units to 540, which represents 7.4% of its total housing units.





*The*  
HINGHAM LAND CONSERVATION TRUST

To: Samuel Chapin, Chair – Hingham Conservation Commission  
From: Katharine Reardon, President – Hingham Land Conservation Trust  
Date: May 28, 2009

Re: Open Space and Recreation Study 2009-2014

Thank you for the opportunity to comment on the Open Space Study. First of all, my congratulations at this accomplishment! I know that it has been long in coming and involved a lot of work. Hopefully now it is in a format that can be more easily updated!

I do have a just a few comments as follows:

Page 3 – My name is spelled Katharine and it is the Hingham Land Conservation Trust

Page 28 – Scenic Resources. Was the inclusion of Main Street streetscape as a scenic resource considered? In our efforts to acquire land there in the past, that has been part of our criteria even though Main Street is not officially designated a scenic road (I wonder why?).

Page 50 – Goal # 3 – Ensure Recreation Opportunities. There is no mention of the Town's obligation to create and maintain trail systems on the conservation land that the town holds. This goes beyond the Recreation Commission maintenance of public active recreation spaces.

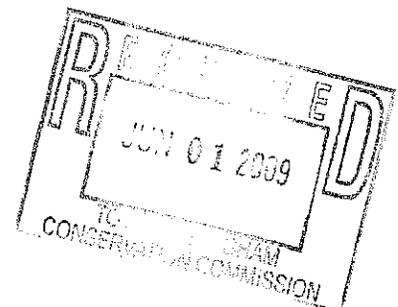
Finally, I noted that on the 5 Year Action Plan map (Map 7) there are several potential vernal pools east of Main Street on a large tract of land. To the extent possible, identification of these pools and designation as certified vernal pools could be very important in preserving this land.

Thank you again for the opportunity to review this document. I trust that it will be useful as we work together to continue to preserve important open spaces in Hingham. Thanks also to you for your work for the town these last few years and as well as your help to the Land Conservation Trust.

Sincerely,

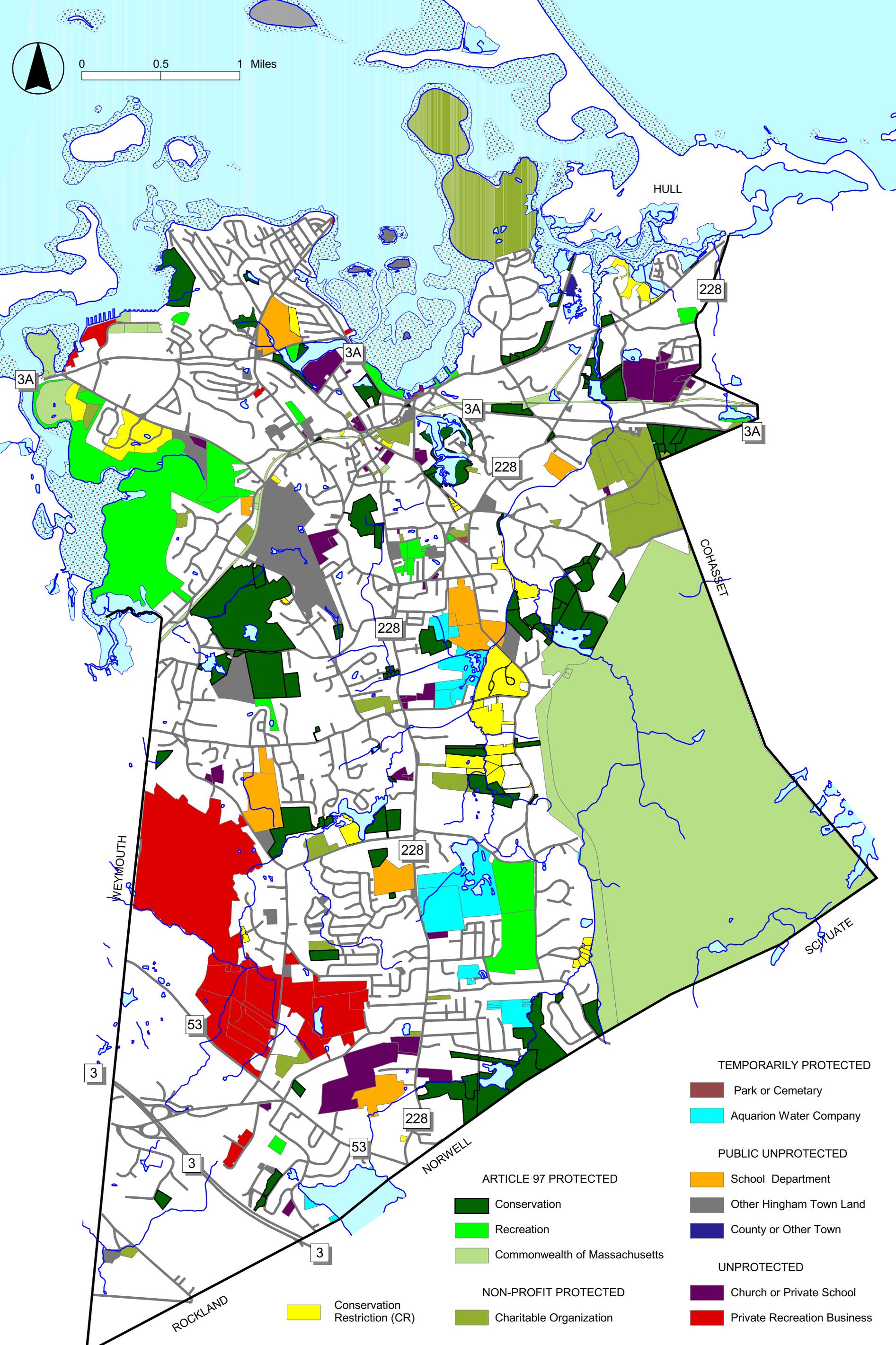
A handwritten signature in cursive script that reads "Katharine Reardon".

Katharine W. Reardon  
President, Hingham Land Conservation Trust





0 0.5 1 Miles



TEMPORARILY PROTECTED

- Park or Cemetary
- Aqurion Water Company

PUBLIC UNPROTECTED

- School Department
- Other Hingham Town Land
- County or Other Town

UNPROTECTED

- Church or Private School
- Private Recreation Business

ARTICLE 97 PROTECTED

- Conservation
- Recreation
- Commonwealth of Massachusetts

NON-PROFIT PROTECTED

- Charitable Organization

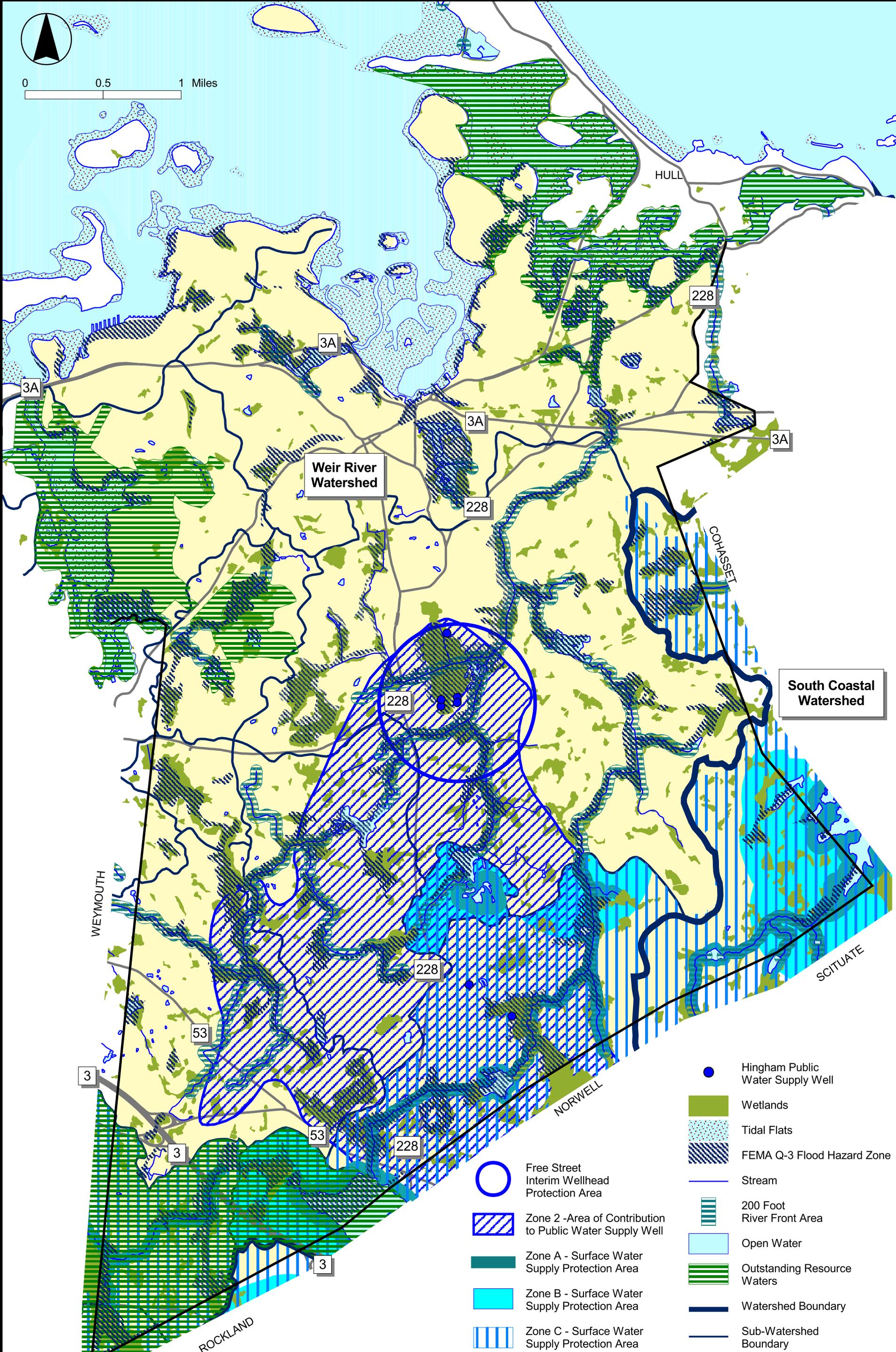
- Conservation Restriction (CR)

**LANDS OF CONSERVATION and RECREATION INTEREST - MAP 6**  
 Town of Hingham - 2009 Open Space and Recreation Plan

18 March 2009  
 Prepared for the Hingham Conservation Commission  
 Map Compilation and Design: MapWorks  
 MAPSatWORK@aol.com  
 Source: Town of Hingham



0 0.5 1 Miles



South Coastal Watershed

Weir River Watershed

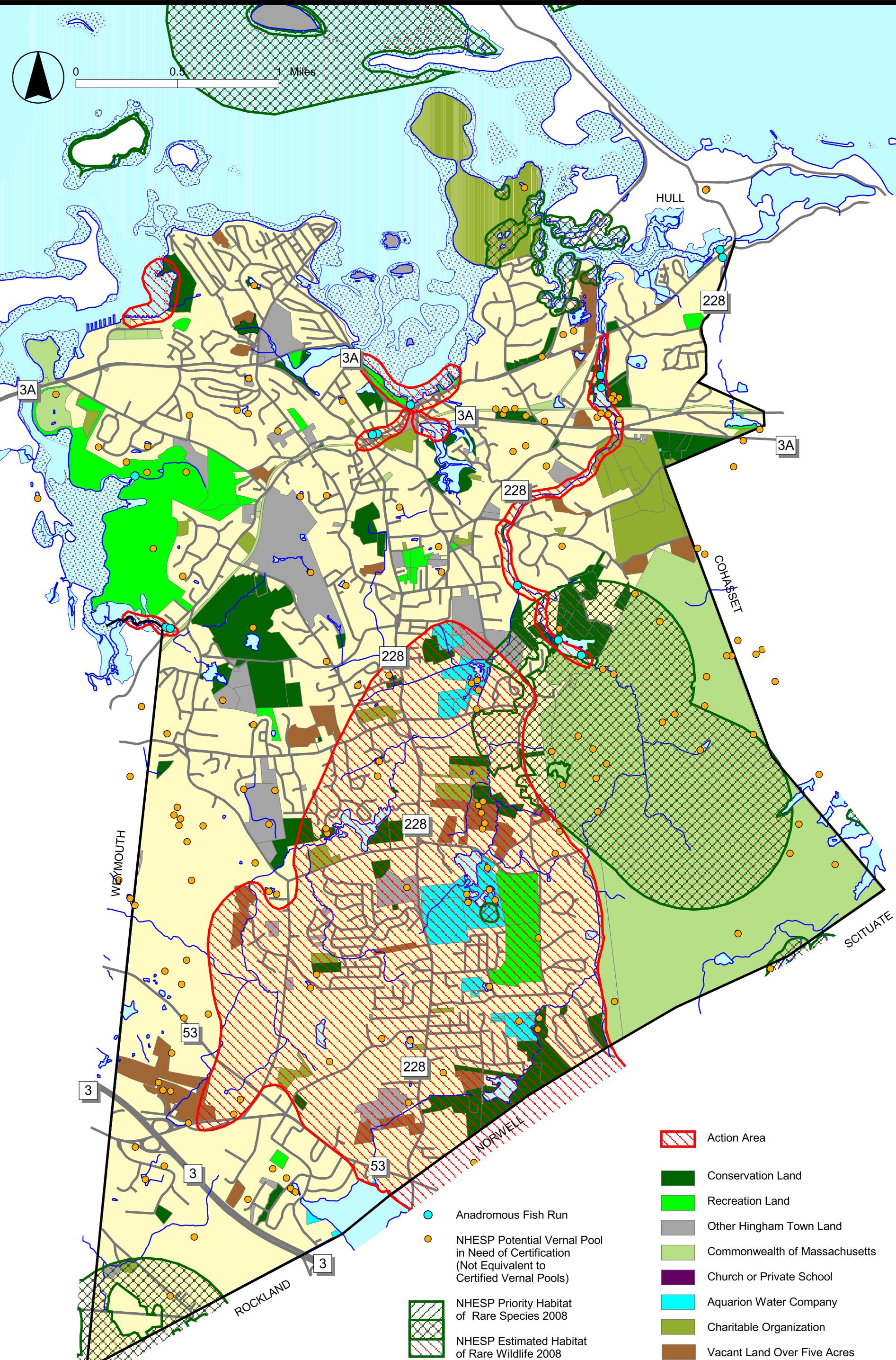
-  Free Street Interim Wellhead Protection Area
-  Zone 2 - Area of Contribution to Public Water Supply Well
-  Zone A - Surface Water Supply Protection Area
-  Zone B - Surface Water Supply Protection Area
-  Zone C - Surface Water Supply Protection Area

-  Hingham Public Water Supply Well
-  Wetlands
-  Tidal Flats
-  FEMA Q-3 Flood Hazard Zone
-  Stream
-  200 Foot River Front Area
-  Open Water
-  Outstanding Resource Waters
-  Watershed Boundary
-  Sub-Watershed Boundary

### WATER RESOURCES - MAP 5

Town of Hingham - 2009 Open Space and Recreation Plan

18 March 2009  
Prepared for the Hingham Conservation Commission  
Map Compilation and Design: MapWorks  
MAPSatWORK@aol.com  
Source: MassGIS



-  Action Area
-  Conservation Land
-  Recreation Land
-  Other Hingham Town Land
-  Commonwealth of Massachusetts
-  Church or Private School
-  Aquarion Water Company
-  Charitable Organization
-  Vacant Land Over Five Acres

-  Anadromous Fish Run
-  NHESP Potential Vernal Pool in Need of Certification (Not Equivalent to Certified Vernal Pools)
-  NHESP Priority Habitat of Rare Species 2008
-  NHESP Estimated Habitat of Rare Wildlife 2008

18 March 2009  
 Prepared for the Hingham Conservation Commission  
 Map Compilation and Design: MapWorks  
 MAPSatWORK@aol.com  
 Sources: MassGIS and Town of Hingham

**FIVE YEAR ACTION PLAN - MAP 7**  
 Town of Hingham - 2009 Open Space and Recreation Plan



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# Hingham Comprehensive Trails Plan Appendix F

The Hingham Master Plan Update (2014)



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# The Hingham Master Plan Update

Funding provided by the Metro Boston Consortium for  
Sustainable Communities

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Prepared for the Town of Hingham

March, 2014

---

**Prepared by**  
Metropolitan Area  
Planning Council  
60 Temple Place, 6<sup>th</sup> Floor  
Boston, Massachusetts 02111  
[www.mapc.org](http://www.mapc.org)



## **Acknowledgements**

This report documents the Hingham Master Plan Update Initiative planning process. This project was a joint effort between the Town of Hingham Department of Community Planning, the Hingham Planning Board, MAPC, various stakeholder organizations, and Hingham residents. Professional technical assistance provided by the Metropolitan Area Planning Council: Joan Blaustein, Land Resources Planner, Jennifer Raitt, Assistant Director of Land Use Planning and Chief Housing Planner, Emily Torres-Cullinane, South Shore Coalition Coordinator, and Tim Reardon, Assistant Director of Data Services. The work that provided the basis for this publication was supported by funding under an award with the U.S. Department of Housing and Urban Development. The substance and findings of the work are dedicated to the public. The author and publisher are solely responsible for the accuracy of the statements and interpretations contained in this publication. Such interpretations do not necessarily reflect the views of the Government.

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## Executive Summary

This report documents the first stage of the Hingham Master Plan Update Initiative. This project was a joint effort between the Town of Hingham Department of Community Planning, the Hingham Planning Board, MAPC, various stakeholder organizations, and Hingham residents. The purpose of the project was to assist the Town of Hingham in updating its master plan goals in the context of the South Shore Coalition subregion and *MetroFuture: Making a Greater Boston Region*, the regional plan for sustainable and equitable development and preservation in the MAPC region.

### Master Plan Goals Update

- The goals update consolidated 57 goals into 24 goals, eliminating some level of duplication and creating a consistent hierarchy across all goals categories. The update also considered goals related to the required and optional elements of a master plan under House Bill 1859: The Zoning Reform Act.
- **Housing Goals:** The housing goals were updated to reflect statewide and regional emphasis on housing production and fair housing.
- **New goals:** New goals were written to reflect planning for reduced energy consumption.

### Regional Plan Self-Assessment

- The Hingham Master Plan goals were found to be highly congruent with the MetroFuture goals.
- The alternative scenarios that were modeled varied with regards to how they contributed to housing growth and additional work should be done with CommunityViz to continue to explore potential development and redevelopment options.
- Of the four opt-in requirements, Hingham clearly meets the requirement for establishing an economic development district but would need to make changes to zoning and other regulations to meet the requirements related to housing and low impact development.

### Public Participation

- The plan utilized an extensive public participation and outreach program including an on-line survey which received 380 responses, twelve public meetings and two scenario planning workshop.
- **Survey results:** The on-line survey helped to identify the top five strengths and challenges in Hingham.

### **Top Five Strengths**

Location by the ocean  
Schools  
Open space/natural resources  
Location in the region  
Community pride

### **Top Five Challenges**

High cost of living  
Traffic  
Lack of commercial tax base  
Elected officials  
Lack of arts/cultural offerings

## **Scenario Planning Workshops**

- Modeling software (Community Viz) was used to analyze alternative development scenarios for the Hingham Shipyard, South Hingham, and Hingham Square.
- The two workshops attracted a total of 110 attendees who discussed the alternatives in small groups.

## **Master Plan Update Implementation Plan**

The implementation plan consists of suggested actions for the town to undertake as it moves forward with reviewing and updating the master plan.

- Potential new master plan sections
  - Energy
  - Implementation
  - Water management
  - Public health
- Incorporate Low Impact Development stormwater regulations into site plan review.
- Discuss implications of zoning reform.
- Work with MAPC to use scenario modeling tool (CommunityViz) for future analysis of development options.
- Draft, adopt, and implement a housing production plan.
- Explore economic development options related to regional tourism.
- Continue with work on impacts of flood zone mapping changes.

## Chapter One: Introduction

### **Project Funding: the Sustainable Communities Regional Planning Grant**

In October of 2010, [MAPC](#) was awarded a \$4 million [Sustainable Communities Grant](#) from the U.S. Department of Housing and Urban Development (HUD). The grant supports the implementation of MetroFuture, the region's 30-year plan. MetroFuture is a smart growth plan that promotes efficient transportation systems; conserving land and natural resources; improving the health and education of residents; increasing economic development and equitable opportunities for prosperity.

To administer this grant, MAPC created the Metro Boston Consortium for Sustainable Communities, a coalition whose purpose is to implement the grant's planning work. Membership in the consortium was open to all municipalities as well as non-profit organizations. Hingham became a member of the consortium which enabled the town to submit a proposal to receive a place-based grant under the program. The town submitted a successful proposal for the Hingham Master Plan Update Initiative.

This report documents the Hingham Master Plan Update Initiative planning process. This project was a joint effort between the Town of Hingham Department of Community Planning, the Hingham Planning Board, MAPC, various stakeholder organizations, and Hingham residents. The purpose of the project was to assist the Town of Hingham in updating its master plan goals in the context of the South Shore Coalition subregion and MetroFuture, the regional development plan.

### **Project Introduction**

The Metro Boston Consortium for Sustainable Communities' goals include promoting local planning and zoning for compact growth and promoting municipal or multi-municipal land use planning. A broader goal of the Consortium is the advancement of regional equity by encouraging regional connections and promoting access to high opportunity communities. As part of the Consortium's efforts to advance regional equity and MetroFuture through place-based planning efforts, the Metropolitan Area Planning Council (MAPC) will work with municipal planning staff and community stakeholders from the Town of Hingham and interested stakeholders from neighboring communities to develop a new Goals section of the Town's Master Plan. Creation of the new Goals section will involve three elements:

1. Implementation of a public participation process that will involve a local and regional network of stakeholders in the process of developing the Town's new Master Plan Goals
2. Local scenario planning to facilitate the understanding of potential impacts and benefits from the selection of new Master Plan Goals
3. Comparison of the new Master Plan Goals standards to MetroFuture Goals in order to identify challenges and opportunities relative to the implementation of regional goals at the municipal level.

Each of these tasks is described in more detail in later chapters of this report.

## **About Hingham and the South Shore**

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The Metropolitan Area Planning Council has created a classification system of municipalities in Massachusetts to support planning, analysis and policy development. MAPC has identified five basic community types and nine sub-types. Hingham is classified as a Maturing Suburb with a sub-type classification of Established Suburb. This community type is characterized by lower density development which is approaching buildout. These lower density suburbs are comprised primarily of owner-occupied single family homes on  $\frac{3}{4}$ -1 acre lots. Less than 20% of the land area is vacant and developable. New growth comes from teardowns, greenfield development and some redevelopment. The population is stable or growing moderately.

Figure 1 shows Hingham and the entire South Shore. Figure 2 shows Hingham.

Figure 1: The South Shore Coalition



Figure 2: Hingham



## About Hingham

Basic information on population, income, education and housing are provided below. At the start of this project, MAPC prepared an analysis of basic demographic data that showed Hingham in relationship to the South Shore subregion. This information can be found in Appendix A.

**Total population** – The total population according to the 2010 Census was 22,157. The increase from 2000 to 2010 was 2,275 people. Hingham is the fourth most populated community in the South Shore.

As is the trend across the region, average household size declined by 5%, from 2.72 in 2000 to 2.59 in 2010.

**Age** - Hingham has the highest percentage of people over 65 in the South Shore. Between 2000 and 2010 the number of Hingham residents aged 65 and over increased by 55% compared to 16% statewide. Much of this might be the result of Linden Ponds and other age-restricted developments in Hingham built during that interval, which attracted new seniors to the town. This trend is highlighted in the report “Aging in Hingham: A Community Affair” which has a wealth of statistics about the older population of Hingham.

**Race and Ethnicity** - 95% of Hingham’s population is White, Non-Hispanic. In contrast, the MAPC region is only 72% White, Non-Hispanic and 28% Black, Hispanic, Asian, or another non-White race. Only 5% of Hingham’s population is made of these groups. At 1.5%, Asians make up the second-largest group by race.

**Future Population** - In January 2014, MAPC released population and housing demand projections for Metro Boston out to the year 2040, and provisional forecasts for individual cities and towns out to the year 2030. Our projections include two scenarios for regional growth, each reflecting different assumptions about key trends. The “Status Quo” scenario is based on the continuation of existing rates of births, deaths, migration, and housing occupancy. Alternatively, the “Stronger Region” scenario explores how changing trends could result in higher population growth, greater housing demand, and a substantially larger workforce.

According to the Status Quo scenario, Hingham will add 1,562 residents, a 7% increase, between 2010 and 2030. According to Stronger Region, Hingham will add 1,085 residents, for a 5% increase over those two decades. The MetroFuture projections also show that Hingham will likely grow older over time. The population over 65 will grow by 69% between 2010 and 2030 under the Status Quo scenario, and by 67% under Stronger Region. Notably, the population under 15 will decrease by 18% under Status Quo and by 20% under Stronger Region, consistent with regional trends toward a smaller school-age population.

**Income** - Hingham is a community with relatively high levels of income and educational attainment. Half of Hingham households make more than \$100,000 per year but one in five Hingham households makes less than \$40,000 per year. An estimated 2.3% of Hingham households have incomes below the poverty line, the lowest poverty rate on the South Shore. In contrast, the poverty rate in the MAPC region was 10.3% in 2010.

**Education** - Over 60% of people 25 years and older have a bachelors degree or higher, third highest among South Shore communities.

**Employment** - Nearly one in four employed Hingham residents work in the Education/Health Care/Social Assistance industries. One in three employed Hingham residents work in finance or management-related industries. Between 4.5% and 7.7% of Hingham residents over 16 are unemployed, a rate similar to other South Shore communities.

**Housing** - While Hingham is primarily a community of owner-occupied single-family houses, one quarter of all units are in multifamily housing, either apartments, condominiums, townhouses, or attached dwellings. Multifamily housing is split evenly between units in structures with more than 20 units, and units in smaller buildings. 80% of Hingham housing units are owner-occupied.

When analyzing housing, it is important to look at a measure of *housing cost burden*. Households that spend more than 30% of income on housing are considered to be *housing cost burdened*. About 32% of Hingham homeowners are cost-burdened, a rate lower than all but one South Shore community. Households that spend more than 50% of income on housing are considered to be severely *housing cost burdened*. About 12.5% of Hingham homeowners are severely cost-burdened, a rate lower than most South Shore communities.

This measure can also be applied to renters. More than 55% of Hingham renters are cost-burdened, a rate higher than most South Shore communities. More than one in three Hingham renters is severely cost-burdened (spending 50% or more), the second-highest rate among South Shore communities.

## Chapter Two: Updated Master Plan Goals, 2014

### The Scope of Work: An Overview

The scope of work for this project included the writing of a set of draft goals that address the required elements of a Master Plan under the Comprehensive Land Use Reform and Partnership Act (CLURPA), a piece of legislation first introduced in 2011, intended to update antiquated planning and zoning laws to facilitate prompt and predictable permitting for jobs and housing, strong community planning, and natural resource and public health protection. The bill went through several iterations and the most recent version is House Bill 1859: An Act Promoting the Planning and Development of Sustainable Communities. It is this bill that the draft master plan goals are written to address. It will be referred to as the zoning reform bill in this report.

This streamlined zoning reform bill authorizes new zoning techniques for municipalities, provides more certainty to land owners and developers, and authorizes strong financial and regulatory incentives for creating walkable, vibrant centers, housing development, and protecting open space. Master planning requirements are modernized by giving communities the ability to tailor planning to local circumstances including linking public health and planning. Additionally, the bill grants cities and towns the option to substitute a minor subdivision process for Approval Not Required (ANR) developments, which are a primary driver of inefficient, low density growth.

The proposed zoning reform bill has five required elements and seven optional elements for a master plan. This review is for the purposes of helping guide any additional work that Hingham may undertake on their master plan in the future. Recommendations for future work are also included in Chapter Seven: Master Plan Update Implementation Plan.

### The Required Elements of a Master Plan Under the Zoning Reform Bill

1. **Goals and Objectives** – The current master plan includes goals and objectives.
2. **Housing** – The current master plan contains a section on housing.
3. **Natural resources and energy management** - The current master plan includes a section on natural resources but does not include energy management. Energy goals have been drafted for consideration by the town but there should be a new section written on energy management.
4. **Land use and zoning** – The current master plan includes a section on land use and zoning.
5. **Implementation** – The current master plan does not have a section that specifically addresses implementation of the plan.

## **The Optional Elements of a Master Plan under the Zoning Reform Bill**

1. **Economic Development** – The current master plan includes a section on economic development.
2. **Cultural resources** – The current master plan includes a section on cultural and historic resources.
3. **Open space protection and recreation** – The current master plan includes sections on open space protection and recreation.
4. **Infrastructure and capital facilities** – The current master plan includes a section on public facilities but does not address other types of infrastructure specifically.
5. **Transportation** – The current master plan includes a section on transportation.
6. **Water management** – The current master plan does not include a separate section on water management.
7. **Public health** – The current master plan does not include a section on public health.

## **Recommended Revisions to the Hingham Master Plan Goals**

The 2002 Hingham Master Plan - MAPC began the process by reviewing the most recent Master Plan for Hingham from 2002. The 2002 Hingham Master Plan was an update of a plan prepared in 1986. The process of creating this updated version of the Master Plan began in 1996, with the creation of a Zoning By-Law Committee to evaluate and revise the Hingham Zoning By-Law. In 1998, the Zoning By-Law Committee received funding from the Executive Office of Communities and Development (now the Massachusetts Department of Housing and Community Development) for a Community Survey which provided basic information for the master plan. The 1998 Town Meeting created the Master Planning Committee and funded a “Needs Analysis” to kick off the Master Planning Process.

The plan update was completed in several phases during 1999 -2001. It included a visioning session for the general public and significant input from all boards and departments. The Master Plan Committee also employed several consultants including John Brown Associates and the Bluestone Planning Group.

The 2002 Master Plan had a total of fifty-seven (57) goals in nine major categories, a wealth of background data and many recommendations. Since this planning process involved only an update of the master plan goals, only the 2002 goals are addressed in this report.

The *Metropolitan Area Planning Council representatives'* proposed revised master plan goals as follows:

- I. Articulate a Vision Statement for Hingham that supports who we are as a community and the proceeding general and specific goals: **Preserve and nurture community and Hingham's unique sense of place.**
- II. Retain the goals of the 2001 Master Plan in alignment with this vision statement.
- III. Retain any general and specific goals of the 2001 Master Plan in alignment with this vision statement and as articulated in town-wide surveys undertaken by Metropolitan Area Planning Council as part of the master plan goals update process and the 2013 Community Preservation Committee Town Survey.

**A. Guiding Land Use Goals**

**A.1) Promote balanced growth while preserving Hingham's community character**

- A.1.1: Maintain and preserve the unique characteristics of the communities, neighborhoods and districts in Hingham.
- A.1.2: Ensure that future planning initiatives and the commensurate land use planning and zoning regulations protect and enhance the aspects of Hingham's existing image and character that most citizens surveys indicate epitomize the positive physical character of the community, including the town's village character, attractive and vital residential areas, scenic vistas, protected open spaces, historic buildings, historic districts, streetscapes, and coastal resources.
- A.1.3: Increase the amount of protected open space at properties in the Accord Pond Aquifer Protection District, in which the percentage of impervious development over the aquifer is 25% or greater, to increase recharge of the aquifer and to mitigate the increased development risks.
- A.1.4: Increase the amount of protected open space in key locations to connect open spaces that encourage passive leisure use and protect iconic vistas, such as the waterfront and the meadows at Glad Tidings Plain.
- A.1.5: Encourage land use planning and zoning regulations that concentrates buildings on a parcel and maximizes any open space surrounding the built environment, similar to the 18<sup>th</sup> and 19<sup>th</sup> century system of plains and wide shoulders found along Main Street, in appropriate locations.

A.1.6: Encourage land use planning and zoning regulations that supports a diversity of housing types, mixed-use residential and commercial development, and concentrates development at transportation nodes such as train stations.

A.1.7: Ensure that zoning regulations and economic development initiatives promote development that balances growth and economic benefits with the need to protect the scenic and historic character of existing neighborhoods.

A.1.8: Encourage and support high-quality commercial, retail and residential development in South Hingham and the Hingham Shipyard while balancing the needs of abutting neighborhoods and protecting the environment with Hingham's long-term fiscal needs.

**A.2) Promote quality design**

A.2.1: Support and strengthen the design review process to maintain high standards in all development projects.

A.2.2: Develop design standards geared towards historic districts that will facilitate new energy technologies while maintaining historic character.

**A.3) Improve the gateways to Hingham**

A.3.1: Improve primary entrances to the town from major roadways to create gateways that are welcoming, consistent with the Town's sense of place, and enhance visitors' first impressions of the town.

A.3.2: Eliminate sprawl and minimize the number of new curb cuts along major roadways by amending zoning regulations to require clustering of commercial and residential uses.

**A.4) Strengthen the town's capacity for planning and management**

A.4.1: Establish and staff the position of professional Town Planner to assist the Planning Board in developing and facilitating planning initiatives and drafting zoning regulations to support the Town's Master Plan vision and goals.

A.4.2: Maintain adequate staffing of all key town departments to ensure a high level of planning, management, and oversight.

A.4.3: Utilize technology such as Geographic Information Systems, and other computer mapping software, to support planning board reviews and current and long-range planning.

A.4.4: Continually review and amend zoning regulations to ensure that they support current general land use goals as stated in the Master Plan.

## **B. Economic Development Goals**

**B.1) Facilitate and sustain the development of local businesses: Businesses that are owned and operated locally are an important component of the local economy; studies show that more of the money spent in a local business stays in the community. Local businesses also provide a unique destination for visitors and area shoppers.**

B.1.1: Involve business owners and the Chamber of Commerce in a town-led review of current zoning, permitting, and licensing regulations and accompanying policies to ensure that the town is encouraging balanced business district(s) rather than hindering local business creation, siting, and activity.

B.1.2: Review zoning, permitting and licensing regulations in the Business B Districts to encourage mixed-use commercial, retail, and residential uses.

**B.2) Capitalize on the unique strengths of each commercial district.**

B.2.1: Enhance the tax base by encouraging a continued balance of commercial, industrial and residential development in South Hingham and the Hingham Shipyard to take advantage of their respective key locations and existing amenities and infrastructure. Develop a comprehensive master plan in each proposed commercial and industrial district to expand the areas' infrastructure to protect against detrimental environmental impact and mitigate future unintended consequences of these development initiatives such as congestion, reduced property values and higher municipal service costs at variance with the intended objective.

B.2.2: Evaluate each independent project and district/site master plan in the context of the lifecycle of the proposed facility assessing the constraints, opportunities and benefits derived from the adjacent projects and district/site master plans. Evaluate the infrastructure capacity, the detailed financial and cost analysis, municipal services financial cost impact analysis, environmental impact and social consequences. Address the projects collectively to mitigate greater costs, resolve potentially incompatible elements and greater congestion, construction and environmental impacts of longer duration.

B.2.3: Preserve the historic village character and walkability of Downtown Hingham and the harbor area while seeking ways to encourage appropriate retail and residential development and make connections between downtown and the waterfront.

B.2.4: Undertake a market analysis to inform future economic development initiatives.

## **C. Natural Resources and Energy Management Goals**

**C.1) Protect and enhance Hingham's natural environment for the benefit of all.**

- C.1.1: Protect additional land and open space of all types to sustain viable populations of native plant and wildlife species.
- C.1.2: Develop land management plans for conservation properties to minimize human impact while encouraging passive recreational uses.
- C.1.3: Protect additional coastal land in consideration of the potential impacts of sea level rise, acquire properties as needed.

## **C.2) Protect water resources**

- C.2.1: Protect groundwater aquifers and surface water supplies to ensure sufficient clean water for current and future users.
- C.2.2: Protect Hingham's freshwater and saltwater resources from pollution and incompatible development.

## **C.3) Reduce energy consumption in residential and municipally-owned buildings**

- C.3.1: Educate residents about how to achieve energy savings at home and programs available to assist with weatherization.
- C.3.2: Undertake energy audits in municipal buildings.
- C.3.3: Develop a municipal energy reduction and action plan.
- C.3.4: Develop photovoltaic electric resources on commercial, industrial and institutional building roofs and wind energy sources at the landfill.

## **D. Historic and Cultural Resources Goals**

### **D.1) Protect Hingham's historical and cultural resources**

- D.1.1: Establish additional Historic Districts, connect existing Historic Districts, and establish Main Street as a Historic District listed on the State and National Register of Historic Places.
- D.1.2: Continue to update Hingham's historic property inventory, databases, and handbooks to help educate residential and commercial property owners about the historical significance and historic treatment techniques and resources for their properties.
- D.1.3: Provide adequate administrative staffing resources and support to the Historical Commission and Historic Districts Commission.

D.1.4: Identify and add resources to Hingham's existing historic property inventory, including historical buildings and scenic thoroughfares.

D.1.5: Continue to leverage Community Preservation Act funds to preserve historic properties.

**E. Open Space Goals**

**E.1) Expand Hingham's network of protected open spaces**

E.1.1: Determine priority parcels for open space protection and develop criteria for identifying lands that meet multiple criteria.

E.1.2: Develop a land protection plan that preserves priority landscape types and provides a connected system of conservation open spaces and recreation areas throughout the town.

E.1.3: Expand the Open Space Map with updated open space parcels locations, access locations and pedestrian pathways connecting contiguous open space parcels.

**E.2) Utilize a variety of methods to finance open space protection**

E.2.1: Develop partnerships between the public and private sectors to support land protection efforts.

E.2.2: Review zoning and subdivision regulations to determine any necessary revisions in support of land protection efforts.

E.2.3: Improve public awareness and educational outreach initiatives on the benefits of open space protection.

E.2.4: Leverage Community Preservation Act funds to acquire additional open space.

**F. Active Recreation Goals**

F.1.1 Provide new recreational venues to expand the variety of athletic/sports options available to Hingham's citizens on a town-wide basis.

F.1.2 Adequately finance improvements to existing and previously planned recreational venues.

F.1.3 Seek new parks and playground sites in now underserved neighborhoods and densely populated neighborhoods.

F.1.4 Improve maintenance and coordination of recreation activities at Hingham's many recreational sites.

## **G. Housing Goals**

### **G.1) Provide and maintain economically-diverse housing while continuing to meet State M.G.L. Chapter 40B requirements of 10% affordable units.**

G.1.1: Develop and adopt a Department of Housing and Community Development-approved Housing Production plan to assess housing needs and housing demand, determine the constraints and opportunities of the existing housing inventory, and identify strategies to create and preserve new affordable housing units.

G.1.2 Identify locations to encourage the proactive development of diversified affordable housing opportunities similar to friendly 40Bs through the Local Initiative Program.

G.1.3 Ensure that existing deed-restricted housing is monitored for compliance with restrictions, including occupancy by income-eligible households.

G.1.4 Leverage Community Preservation Act funds to create and preserve housing for low- and moderate-income individuals and families.

### **G.2) Encourage and maintain a mix of housing types in various locations throughout the town by supporting development that provides for households at all income levels and encourages a diversity of age and families and housing types of a scale and character consistent with Hingham's character.**

G.2.1: Enact an accessory unit bylaw in the Downtown Overlay District tailored to Hingham's specific needs that will allow secondary units while respecting this neighborhood character.

G.2.2: Research options for regulating "teardowns" and building appropriate replacement housing and enact dimensional controls in the residential zoning districts.

G.2.3: Promote mixed-use development in Downtown Hingham and the Hingham Shipyard to ensure a vibrant community.

G.2.4: Develop design guidelines that address, appropriate neighborhood-level densities.

### **G.3) Affirmatively further fair housing throughout the town.**

G.3.1: Ensure use of affirmative fair marketing plans and processes for the rental or sale of affordable housing units.

G.3.2: Educate land use decision makers on fair housing requirements and their specific fair housing obligations

## **H. Transportation Goals**

### **H.1) Accommodate all modes of transportation**

H.1.1: Adopt a “Complete Streets” policy which focuses on accommodating all roadway users by creating a road network that meets the needs of individuals utilizing a variety of transportation modes.

H.1.2: Improve bicycle and pedestrian access to the commuter boat terminal and commuter rail stations.

H.1.3: Adopt measures to encourage or require new commercial developments to implement traffic demand management (TDM) strategies to reduce reliance on single-occupant vehicles.

H.1.4: Encourage the development of a local trolley bus system for local transportation needs that will mitigate the need for single vehicle trips to all Town locations.

### **H.2) Make capital improvement to Hingham’s roadways for the safety of all users**

H.2.1: Prioritize roadway projects that provide safety improvements over those that expand roadway capacity. Participate in the historic roadway program that allows the reconstruction of streets within the existing minimum width right of way.

H.2.2: Address safety concerns at key locations, including the 3A rotary. Continue planning initiatives to replace the 3A rotary with an intersection.

### **H.3) Ensure that context-sensitive solutions are used to address transportation needs**

H.3.1: Utilize design guidelines for roadway improvements to maintain the historic character of the community.

H.3.2: Make improvements to the gateways to the town.

H.3.3: Review parking at the commuter rail stations and commuter boat terminal to ensure that there is adequate capacity and to minimize impacts on adjacent neighborhoods.

H.3.4: Coordinate transportation improvements with municipalities that share transportation infrastructure.

## **I. Infrastructure and Capital Facilities Goals**

### **I.1) Maintain a high standard of municipal services.**

I.1.1 Ensure that adequate facilities and staffing are available to maintain a high standard of municipal services.

I.1.2: Continue to provide an excellent educational system.

I.1.3: Clarify maintenance responsibilities for town-owned facilities, properties and recreational sites to ensure timely and cost-effective maintenance.

**I.2) Plan for future capital and human resource needs**

I.2.1: Retain ownership of town-owned properties to provide sites for new municipal facilities that may become needed in the future.

I.2.2: Continue to plan for and anticipate future major capital facility construction needs.

I.2.3: Establish a Town Facilities Management Committee. Focus on Capital Renewal planning and limit Capital Projects to program required projects.

## Chapter Three: Regional Plan Self Assessment

This section of the report evaluates the Hingham master plan and its goals in relationship to MetroFuture, the regional development plan. This is done at three levels:

- Comparing the recommended master plan goals to the MetroFuture goals.
- An assessment of the alternative scenarios with regards to the housing and jobs projections.
- An analysis of Hingham’s regulations with regards to the opt-in provisions of the proposed zoning reform legislation.

### Purpose of the task

The current version of the proposed (but not yet enacted) zoning reform legislation states that all elements of a master plan must be assessed against a regional plan. This Hingham Master Plan Update provides an opportunity for this assessment and to consider the relationship between Town goals and the Region-wide goals set forth in MetroFuture, the adopted regional plan for the Boston Metropolitan Region. The self assessment task of the project will serve to inform both the Town and MAPC about challenges and opportunities relative to the implementation of current regional goals at a municipal level.

The scope of work called for the self assessment to be performed by using the preferred scenario based on the draft goals for Hingham and a MetroFuture scenario for the town. The results of the assessment will be reviewed with the Hingham Planning Staff to determine where the draft master plan goals can be adjusted and where changes to the draft goals would be a greater challenge given public input and other information collected through the process.

The alternative scenarios planning process was very informative and engaged members of the public as well as the Planning Board. It did not formally result in the adoption of a preferred scenario but presented an opportunity to explore a variety of options for different parts of the town.

The following self-assessment begins with an analysis of the recommended Hingham master plan goals as they relate to the 65 MetroFuture goals. This analysis shows where the recommended Hingham goals are congruent with the MetroFuture goals, points to MetroFuture goals that are more appropriately addressed at a state-wide policy level rather than by municipalities and highlights areas where the town may want to do additional work to align the town’s master plan more closely with MetroFuture.

### Summary of the self-assessment

**MetroFuture** is built on 65 goals which describe a vision for the entire region whose implementation requires many actions by a wide array of stakeholders including municipalities,

regional entities, state agencies, institutions and non-profits. These goals also speak to a range of community types from the densest urban communities, regional urban centers, suburban and rural communities. Therefore, one would not expect a municipal master plan to cover all of the goals and one would expect that some goals would be more relevant to urban or suburban communities. This analysis focuses on highlighting the Hingham goals that are most congruent with MetroFuture goals and indicating areas where there may not be goals but where the town’s actions are congruent with the goals. There are also other MetroFuture goals that are not relevant at the municipal level.

In general, the Hingham Master Plan shows a high degree of congruence with the MetroFuture goals.

**Regional self-assessment: goals**

Metro Future Goals	Hingham Goals
<b>The Region will Build on Sustainable Growth Patterns</b>	
1. Population and job growth will be concentrated in municipalities already well served by infrastructure, with slower growth in less developed areas where infrastructure is more limited.	Goal A (1): Promote balanced growth and objective 1.2: Encourage high-quality mixed use development in South Hingham and the Hingham Shipyard.
2. Throughout the region, most new growth will occur through reuse of previously developed land and buildings.	Through the alternatives scenario planning process Hingham identified Hingham Square and the Hingham Shipyard as two areas for further development. The Shipyard is a re-use area and the Square would involve some re-use. The recent expansion of the South Hingham Overlay District promotes development on currently undeveloped parcels and is inconsistent with this regional goal.
3. Brownfields and other polluted sites will be cleaned up and re-used for development or parks.	Redevelopment of the Shipyard and Hingham Square may require remediation of contamination.
4. In suburban municipalities, most new growth will occur near town and village centers.	The proposed emphasis on redevelopment in Hingham Square and Hingham Shipyard is consistent with this regional goal.
5. Most new homes and jobs will be near train stops and bus routes, and new growth will be designed to promote transit use	The additional development anticipated for the Hingham Shipyard area will have access to the commuter ferry. Current zoning does not allow substantial new development near either train

Metro Future Goals	Hingham Goals
	station.
6. High-quality design will help compact development enhance the region's character and livability.	Goal A (2): Promote quality design.
7. Cities, towns and neighborhoods will retain their sense of uniqueness and community character.	Goal A (1): Promote balanced growth.
8. Historic resources will be preserved and enhanced.	Goal D (1): Protect Hingham's historical and cultural resources.
9. The region's landscape will retain its distinctive green spaces and working farms.	Goal E Objective 1.2: Develop a land protection plan that preserves priority landscape types and provides a connected system of conservation and recreation areas throughout the town.
10. Growth in the region will be guided by informed, inclusive and proactive planning.	There are no specific master plan goals in the Hingham plan that address this but the master plan update process involved extensive resident outreach and participation.
11. The region will be prepared for and resilient to natural disasters and climate change.	Goal C Objective 1.3: Acquire or protect additional coastal land in consideration of the potential impacts of sea level rise.
12. Communities will work together to plan for growth and share resources.	There are no specific master plan goals related to this but the town is a regular participant in the South Shore Coalition; one of 8 MAPC subregions.
<b>Residents will Find Better Housing Choices</b>	
13. Families looking for suburban single-family homes will have a greater choice of smaller homes in more traditional neighborhood settings.	Goal G (2): Encourage and maintain a mix of housing types in various locations throughout the town by supporting development that provides for households at all income levels.
14. An increasing share of the housing in each municipality will be affordable to working-class families and fixed-income seniors.	Goal G (2): Encourage and maintain a mix of housing types in various locations throughout the town by supporting development that provides for households at all income levels.
15. There will be less regional segregation as all municipalities increasingly reflect Metro Boston's growing diversity.	Goal g (3): Affirmatively further fair housing throughout the town.
16. Low-income households will be able to find affordable, adequate, conveniently located housing, in suburbs as well as cities, and they will be able to avoid displacement.	Goal G (1): Provide and maintain economically-diverse housing while meeting the State M.G.L. Chapter 40B requirements.
17. Homelessness will be effectively eliminated	This goal is more relevant at the state and

<b>Metro Future Goals</b>	<b>Hingham Goals</b>
from the region.	regional policy level than at the level of a local master plan.
18. The region’s seniors will have more housing choices and opportunities to downsize while staying in their own community.	Goal G (2): Encourage and maintain a mix of housing types in various locations throughout the town by supporting development that provides for households at all income levels.
19. Persons with physical or mental disabilities will be able to find housing that meets their needs in terms of design, services, and affordability.	The master plan goals address housing broadly with an emphasis on income diversity but do not specifically address housing for individuals with physical or mental disabilities.
20. Urban neighborhoods will boast more appealing housing options for young professionals and their families.	This goal is not relevant because Hingham is not an urban community.
<b>People Will Live in Vital, Well-Education Communities</b>	
21. All communities will be safe, including areas currently afflicted by high rates of crime.	No Hingham goals address public safety as this is usually not part of a master plan.
22. Urban and minority residents will not be disproportionately exposed to pollutants and poor air quality.	No Hingham goals address the issue of environmental equity. Due to the low percentage of minorities and the suburban nature of Hingham, concurrence with this goal is not relevant.
23. All neighborhoods will have access to safe and well-maintained parks, community gardens, and appropriate play spaces for children and youth.	Goal F (3): Seek new parks and playground sites in now underserved neighborhoods and densely populated neighborhoods.
24. Residents in all communities and of all incomes will have access to affordable healthy food.	No Hingham goals address access to food. During the course of this project, this issue was not raised.
25. More residents will build regular physical activity into their daily lives.	The Hingham master plan does not have a public health component and does not address this issue.
26. All residents will have access to affordable health care	This goal is more relevant at the state policy level than at the municipal level.
27. Children and youth will have access to a strong system of early education programs, after school programs, teen centers, and youth organizations.	Goal I Objective 1.2: Continue to provide an excellent educational system.
28. Public schools will provide a high-quality education for all students, not only in the fundamentals, but also in areas like health education, physical education, art, music, civics	Goal I Objective 1.2: Continue to provide an excellent educational system.

Metro Future Goals	Hingham Goals
and science.	
29. More students will graduate from high school and go on to college or career training opportunities.	Goal I Objective 1.2: Continue to provide an excellent educational system. Statistics show that educational attainment levels in Hingham are well above state levels.
30. Municipalities will operate efficiently and will have adequate funding with less reliance on the property tax.	Goal I (1): Maintain a high standard of municipal services. While operational efficiency is a municipal function, the role of the property tax is more of a state-wide policy concern.
31. The region's residents – including youth, seniors and immigrants – will be well informed and engaged in civic life and community planning.	The Hingham master plan does not specifically have a goal that addresses this issue but the master plan update process has included extensive community outreach. Although the immigrant population in Hingham is very low, there are many seniors in town and the master plan outreach included a presentation at the Senior Center.
32. Seniors will remain active members of their communities.	The Master Plan does not include a goal that specifically address this issue but the town contracted with UMASS Boston to prepare a report entitled “Aging in Hingham: A Community Affair”.
<b>Everyone Will Benefit from Increasing Regional Prosperity</b>	
33. Metro Boston will be globally competitive in the knowledge economy.	This goal is best addressed at the regional or state level rather than at the level of a municipal master plan.
34. The region will be a national leader in the green technology and clean energy sectors.	This goal is best addressed at the regional or state level rather than at the level of a municipal master plan.
35. Small business owners and entrepreneurs will play a major role in the region's economy and innovation.	Goal B (1): Facilitate the development of local businesses.
36. Businesses will grow expeditiously thanks to consistent and predictable economic development policies set by an informed public sector.	Hingham has adopted Chapter 43D which mandates expedited permitting for selected development sites.
37. A strong supply of educated and skilled workers – of all ages – will encourage businesses to locate and expand here.	Although this is not specifically a goal of the master plan, the Town is committed to maintaining a quality educational system and educational attainment levels for town residents are above average.

<b>Metro Future Goals</b>	<b>Hingham Goals</b>
38. More minority and immigrant workers will have opportunities to advance on the career ladder, acquire assets, and build wealth.	This is a goal more relevant at the state and regional level. Hingham does not currently have a high minority or immigrant population.
39. More workers will participate in the labor force, earning a living wage through secure employment.	This is a goal more relevant at the state and regional level.
40. Fewer of the region's residents will live in poverty.	While this is not a specific master plan goal the median family income in Hingham is well above the state average.
41. Corporations and institutions will see civic engagement and sustainability as central to their own success.	This is not specifically addressed in the master plan as it is not something that the town has control over.
42. The region's agricultural economy will grow through a focus on sustainable farming and by bringing more locally produced foods to the market.	Although there are no master plan goals specifically related to agriculture Hingham does have a farmers market.
43. More people will take advantage of the region's artistic and cultural resources.	The master plan does not have goals specific to artistic resources but does have goals related to cultural and historic resources.
<b>People Will Have More Transportation Choices</b>	
44. An expanded transit system will provide better service to both urban and suburban areas, linking more home and jobs.	Goal H (1): Accommodate all modes of transportation. Objective 1.2: Improve bicycle and pedestrian access to the commuter boat terminal and commuter rail stations.
45. More people will use transit for work and personal services.	Goal H (1): Accommodate all modes of transportation. Objective 1.2: Improve bicycle and pedestrian access to the commuter boat terminal and commuter rail stations.
46. Commuters will have more options to avoid congestion.	Goal H (1): Accommodate all modes of transportation. Objective 1.2: Improve bicycle and pedestrian access to the commuter boat terminal and commuter rail stations.
47. Most people will choose to walk or bike for short trips.	There are no specific goals for mode choice. Objective 1.1: Adopt a Complete Streets policy which focuses on accommodating all roadway users by creating a road network that meets the needs of individuals utilizing a variety of transportation modes.
48. The average person will drive fewer miles every day.	There are no specific goals for mode choice. Objective 1.1: Adopt a Complete Streets policy which focuses on accommodating all roadway

Metro Future Goals	Hingham Goals
	users by creating a road network that meets the needs of individuals utilizing a variety of transportation modes. A Complete Streets policy could facilitate this goal.
49. Outlying areas will see little increase in traffic congestion.	It is difficult to address this issue at the municipal level because Hingham is part of a larger regional transportation network. Objective 3.4: Coordinate transportation improvements with municipalities that share transportation infrastructure.
50. People with disabilities will find it easier to get around the region.	There are no specific master plan goals related to this issue but the “Aging in Hingham” report addresses issues of transportation for seniors.
51. Regional transportation planning will be linked with sustainable land use planning.	Goal 3, Objective 3.4: Coordinate transportation improvements with municipalities that share transportation infrastructure.
52. The transportation system will be reliably funded and transportation agencies will demonstrate accountability to the public.	This is a regional goal which no one community can address alone. Therefore, it is not relevant to the Hingham master plan goals.
53. Transportation projects will be designed and built cost-effectively.	This issue is less a municipal one than a state issue because most larger projects are designed and constructed by state agencies over which municipalities have little leverage.
54. Roads, bridges, and railways will be safe and well-maintained.	This is a regional goal which no one community can address alone. Therefore, it is not relevant to the Hingham master plan goals.
55. The region’s businesses will access the global marketplace through an efficient freight transportation network.	Hingham does not have master plan goals related to freight transportation because this is rarely a municipal function.
<b>Residents and wildlife will enjoy a healthy environment.</b>	
56. The region will be a national leader in reducing greenhouse gas emissions.	This goal is less relevant at the local level than it is at the state and regional policy level. Hingham is addressing this issue through its Energy Committee.
57. The region will use progressively less energy for electricity, heating, cooling and transportation.	Goal C (3): Reduce energy consumption in residential and municipally-owned buildings.
58. The region will produce less solid waste, and more of that waste will be recycled or composted.	Solid waste is not addressed as a goal in the Hingham master plan.

<b>Metro Future Goals</b>	<b>Hingham Goals</b>
59. The region will produce more renewable energy and will obtain more of its energy from renewable sources.	This goal is less relevant at the local level than it is at the state and regional policy level.
60. The region will have better air quality, both indoors and out.	This goal is less relevant at the local level than it is at the state and regional policy level.
61. Water resources will be carefully budgeted and sustainably managed so that clean water is available for appropriate uses and development.	Goal C (2): Protect water resources. Objective 2.1: Protect groundwater aquifers and surface water supplies to ensure sufficient clean water for current and future users.
62. The region's rivers, streams, lakes, and ponds will have sufficient clean water to support healthy aquatic life and recreational uses.	Goal C (2): Protect water resources. Objective 2.1: Protect groundwater aquifers and surface water supplies to ensure sufficient clean water for current and future users.
63. The ecological condition of wetlands will improve, and fewer wetlands will be lost to development.	Goal C (1): Protect and enhance Hingham's natural environment for the benefit of all.
64. The regional will retain its biodiversity and will have healthy populations of native plants and animals, and fewer invasive species.	Goal C Objective 1.1: Protect additional land of all types to sustain viable populations of native plant and wildlife species.
65. A robust network of protected open spaces, farms, parks, and greenways will provide wildlife habitats, ecological benefits, recreational opportunities, and scenic beauty.	Goal E (1): Expand Hingham's network of protected open spaces.

### **Regional self-assessment of the alternative scenarios**

To help support comprehensive and integrated planning in Hingham, MAPC has prepared a parcel-level buildout model for the town and also created different scenarios of future development for three focus areas that are critical to the town's future: Hingham Shipyard, Hingham Square/Waterfront, and South Hingham. These scenarios, created using a computer model that allows for rapid refinement and review, are based on the characteristics of recent developments in Hingham and nearby communities and link together the land use, tax revenue, water demand, and other impacts of possible development into a comprehensive picture. MAPC will deliver the computer model used to develop these scenarios to the town for its continued use and will be available to assist with its application. Scenarios for two of the focus areas were refined and presented at the public workshop in November; these scenarios are described below.

### **South Hingham/Derby Street in 2030: Three Alternative Futures**

MAPC developed three alternative scenarios for the South Hingham/Derby Street area for 2030. These were named Economic Engine, Commercial Expansion, and Derby Gateway, and were presented at the second public meeting in November.

The *Economic Engine* scenario anticipates a future in which South Hingham has become a major job center for the South Shore, attracting high-value corporate office, medical office, and advanced industrial development. The *Commercial Expansion* scenario describes the patterns of development that might occur if the sought-after office and advanced industrial development does not materialize, due to regional competition and changing employer location preferences. Eager to recoup the cost of infrastructure investments, the town is compelled to entertain less-desirable development proposals. The *Derby Gateway* scenario envisions what might occur if new zoning was enacted to focus new development into targeted areas along Derby Street, while leaving other areas undeveloped. Sewer service might only be needed north of Route 3. Details on the three alternative scenarios can be found in the South Hingham/Derby Street worksheet in Appendix D.

Office development was preferred by 65% of residents who “voted” at the first public meeting. The Economic Engine scenario has the potential to generate the maximum amount of new office development (605,000 sf), but would require the creation of a new sewer treatment facility and collection system at a cost of \$21 million dollars, at least one third of which would be borne by Hingham taxpayers, according to the Comprehensive Wastewater Management Plan. Estimates of new tax revenue based on recent developments in Hingham and nearby indicate that the Economic Engine scenario might generate \$1 million of tax revenue annually, thereby reducing the average single family tax bill by \$117 per year. However, it would also generate more than 14,000 new auto trips per day and would require a quarter-million gallons of water per year—a volume not possible given the water utility’s current withdrawal limits. If the anticipated level of economic development did not materialize, the town might also be required to finance a larger portion of the sewer treatment facility planned for South Hingham, thereby eroding any tax benefits.

The Derby Gateway scenario has the potential for 200 units of new housing which would contribute to the projected 2020 target for Hingham of 667 new housing units. This scenario would generate 25% less tax revenue than the Economic Engine scenario, and would likely add 54 school-age children to the town’s population, helping to mitigate the projected enrollment declines and resulting surplus capacity.

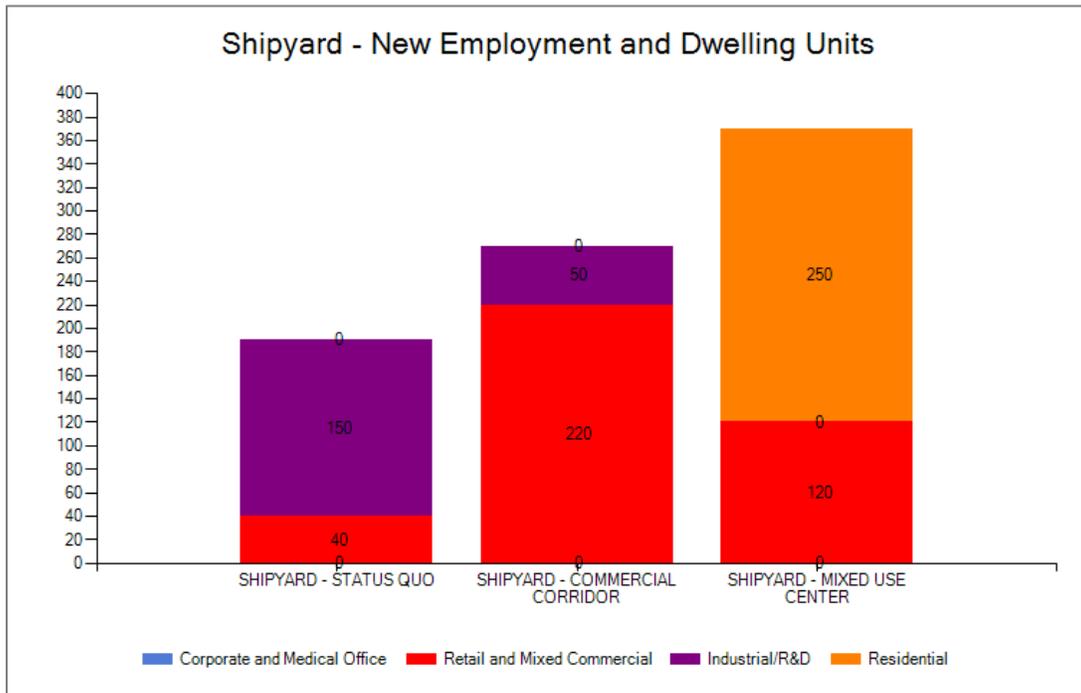
## **Shipyard Area**

At the second public meeting MAPC presented three alternative futures for the Hingham Shipyard area for 2030. These were named *Status Quo*, *Commercial Corridor*, and *Mixed-Use Gateway*.

The *Status Quo* scenario involves no major changes in the land uses, community character, or circulation patterns around the Shipyard area and Lincoln Street. New growth would be limited to small-scale reuse of vacant parcels. The *Commercial Corridor* scenario involves the reuse of vacant and underutilized parcels on Lincoln Street for retail and commercial uses attracted to the large amount of auto traffic moving through the area. The *Mixed-Use Gateway* scenario extends the concept of the Hingham Shipyard development with creation of additional multifamily

development, compact commercial growth, and limited office development on vacant or underutilized area

The figure below depicts new jobs and dwelling units. Only the Mixed-Use scenario would include additional housing.



The Mixed-Use Center scenario would entail the largest amount of development, including residential uses, and would also generate \$550,000 in tax revenue per year—more than three times the amount of either of the alternative scenarios. This scenario would also create much-needed housing opportunities for seniors, younger adults, and families, in a location where new or relocated residents would be close to supermarkets, entertainment, and transit directly to Boston, thereby reducing the amount of new traffic and reliance on automobiles.

**Overview of the opt-in provisions of Chapter 40Y: the Planning Ahead for Growth Act.**

The proposed zoning reform bill includes Chapter 40Y also known as the “Planning Ahead for Growth Act”. It would provide communities with additional tools for smart-growth planning on a voluntary basis to communities who choose to opt-in. Chapter 40Y has been written because current zoning codes are not resulting in smart-growth development that creates adequate new housing and jobs across the Commonwealth, while protecting environmental resources and community character. The “town and country” landscape of Massachusetts is being lost to sprawl development patterns. The new chapter 40Y provides strong incentives for communities to allow

prompt and predictable by-right housing and commercial development, focused in appropriate smart-growth locations, coupled with environmental and open space protections. Participating municipalities will get access to additional regulatory and fiscal resources and tools to realize their plans for sustainable development.

To obtain “opt-in” status under Chapter 40Y, a community must take the following actions, and demonstrate to the regional planning agency (RPA) that it has conformed. \$2 million is budgeted to communities for preparation of implementing regulations and RPAs for their reviews. Oversight, implementing regulations, and resolution of disputes would be through the Secretary of the Executive Office of Housing and Economic Development.

The following regulatory and financial tools would be authorized and available for a community’s use after it has opted in:

- Reduction of the vested rights period for subdivisions from 8 to 5 years.
- Enhanced use of impact fees to support public schools, libraries, municipal offices, affordable housing, and public safety facilities.
- Authorization to enter into development agreements.
- Adoption of rate of development measures (annual caps on building permit issuance) in areas inside and outside of housing development districts.
- Adoption of natural resource protection zoning (NRPZ) at area densities of 10 acres or more per dwelling unit to protect identified lands of high natural resource value.
- Preference for state discretionary funds and grants; priority for state infrastructure investments, such as water and sewer infrastructure, school building funds, and biking and walking facilities; and requirements that the state take into consideration regional plans and local master plans in its capital spending.
- Eligibility to receive state planning funds to reimburse for costs of developing and reviewing implementing regulations.

### **Analysis of Hingham’s regulations relative to the four opt-in requirements**

#### **Requirement One:**

- Establishing a housing development district(s) in a smart-growth location(s) that can accommodate, through by-right development, a 5% increase over the community’s total number of existing housing units by-right. Minimum densities are set for single-family, duplex-triplex, or multi-family housing.

*Hingham analysis:* Hingham does not currently allow any significant multi-family housing by right. Some multi-family housing is allowed in certain districts by special permit and the Residence D district allows townhomes by right. In order to meet this opt-in requirement, Hingham would have to change its zoning.

### **Requirement Two:**

- Establishing an economic development district in smart-growth locations that permits prompt and predictable permitting of commercial / industrial development.

The proposed bill states that any area that has been designated as a priority development site under chapter 43D shall automatically qualify as an “eligible location” for an economic development district.

*Hingham analysis* - At Town Meeting in 2010 Hingham approved the designation of the South Shore Industrial Park as a 43D priority development site. The designation is pending state review and approval but if approved, this will satisfy the opt-in requirement. However, major economic development in South Hingham may negatively impact achievement of many local and regional goals—it would entail the loss of substantial amounts of open space, major developments near the town’s gateway, a 50% increase in traffic on Derby Street, and major sewer investments that would need to be funded by the taxpayers if the desired economic development does not materialize. An expedited permitting designation in the Shipyard area to promote mixed use development would be far more consistent with *MetroFuture* and would likely result in far fewer negative impacts and far less risk for the town.

### **Requirement Three:**

- Mandatory use of open space residential design (OSRD) for developments of 5 units or more on land zoned for a minimum lot-size of 40,000 s.f. per unit.

*Hingham analysis:* Hingham has a flexible residential development regulation which requires a special permit but does not appear to be mandatory. It is applicable to sites with a minimum of three acres and therefore, does not appear to satisfy this opt-in requirement.

### **Requirement Four:**

- Mandatory use of low impact development (LID) techniques for developments that disturb over one acre of land.

Low impact development techniques means stormwater management techniques appropriate to the size, scale, and location of the development proposal that limit off-site stormwater runoff (both peak and non-peak flows) to levels substantially similar to natural hydrology (or in the case of a redevelopment site, that reduces such flows from pre-existing conditions), by emphasizing decentralized management practices and the protection of on-site natural features.

*Hingham analysis* – Hingham’s Planning Board Rules and Regulations under the Subdivision Control Law requires developments to be in compliance with the most current version of the Massachusetts Department of Environmental Protection stormwater management policy and standards as well as the MA Erosion and Sediment Control Guidelines. These policies and standards encourage communities to implement LID techniques but do not require them. Hingham would probably need to review and update a variety of regulations to bring its stormwater regulations into full compliance.

## Chapter Four: Plan Engagement

### Stakeholder Outreach and Engagement Strategy

Early on in the process, MAPC, in conjunction with the Director of Community Planning, developed a draft list of stakeholders who should be involved in the project. The project was put on hold for a number of months while Hingham transitioned to a new Director of Community Planning. The Director of Community Planning took responsibility for the majority of the outreach and worked with MAPC to develop a schedule of meetings for MAPC. She also attended numerous other meetings without MAPC and relayed critical information back to the project team. Outreach included distribution of a card listing the link to the on-line survey, information displayed on the Department of Community Planning's web page, e-mail blasts to town boards and departments as well as press releases.

### Meetings and Public Forums

<b>Date</b>	<b>Who With</b>	<b>Purpose</b>	<b>Approximate number of attendees</b>
May 1, 2013	Mary Savage-Dunham, Joan Blaustein, Emily Torres, Jenny Raitt	Review project scope and schedule	4
May 21, 2013	Senior Men's Breakfast, Mary Savage-Dunham, Joan Blaustein	Overview of project, resident input	15
June 3, 2013	Planning Board	Introduction and demographics	9
June 7, 2013	Mary Savage-Dunham with the Hingham Downtown Association.	Introduce the project and feedback on master plan goals.	10
June 10, 2013	Planning Board Housing Forum	Discuss housing issues.	5
June 11, 2013	Harbor Development Committee	Discuss master plan and waterfront issues.	7
June 19, 2013	Weir River Environmental Forum	Discuss Weir River watershed issues	NA
June 19, 2013	South Shore Business Committee	Discuss economic development issues.	21

**Table 1  
List of Meetings**

Date	Who With	Purpose	Approximate number of attendees
June 24, 2013	Planning Board forum	To discuss historic preservation, economic development and open space issues.	4
October 17, 2013	South Shore Coalition	To brief the SSC on the project and to discuss regional housing issues.	10
October 22, 2013	Public forum	To discuss potential and future land use in Hingham.	80
November 13, 2013	Public forum	Follow-up to October 22 to consider alternative futures.	30
January 27, 2014	Planning Board	To review the recommended goals	

### **The On-Line Survey**

MAPC created and administered an on-line survey which was available from May through July 2013. A summary of the survey results are provided here. A complete copy of the survey responses can be found in Appendix B.

- Approximately 380 respondents: 84% were homeowners, 3.7% renters and 8% business owners.
- Of 317 homeowner respondents, 20.5% have lived in Hingham less than 5 years, 17.3% 6-10 years, 24% 11-20 years and 37% more than 20 years.
- When asked about the rate of development, 47.4% said it was about right; 37.2% said it was too much; 13.8% said it was far too much and 1.5% said it was too little.
- Top five strengths:
  - Location by the ocean (89.3%)
  - Schools (78.2%)

- Open space/natural resources (75.4%)
- Location in the region (73%)
- Community pride (69.2%)
- Top five challenges:
  - High cost of living (78.6%)
  - Traffic (49.8%)
  - Lack of commercial tax base (19.6%)
  - Schools (15.9%)
  - Elected officials (15.9%)
  - Lack of arts/cultural offerings (9.6%)
- Familiarity with land use regulations:
  - 6.4% very familiar
  - 26.4% moderately familiar
  - 41.6% slightly familiar
  - 25.5% not familiar
- Preferred locations for future development:
  - Affordable housing: Hingham Shipyard
  - Market rate residential: Hingham Shipyard
  - Mixed use: Hingham Shipyard
  - Industrial: South Shore Industrial Park
  - Retail/office: Derby Street/Route 3, Shipyard, Queen Anne's Corner.
- Locations not desired for future development: Hingham Center, Hingham Harbor, Queen Anne's Corner.
- Very important to the success of Hingham's future:
 

Schools	233
Town services	178
Parks and recreation	149
Traffic	145
Zoning enforcement	134
Youth activities	132
Planning for the aging population	121
Clean energy	110
Downtown development	100
Sea level rise	92
Arts and culture	68
Parking in commercial areas	43

## Outreach Outcomes

This section of the report summarizes what we heard from residents, town staff and representatives of community organizations at the various meetings attended, as outlined above. The verbatim comments are grouped under the headings that represent the nine goal categories of the 2002 Master Plan and, to the extent it was possible, informed the updated goals in Chapter 2. Further details can be found in Appendix C.

### A. Land Use

**Land Use** – Future development in Hingham Square needs to be in harmony with the existing development. The area has potential and the town should look at under-utilized parcels, ways to increase second-story residential development and new models of zoning such as 40R and the compact neighborhood zoning model. Some of the challenges faced in the downtown include lack of parking and the age of the buildings with the attendant cost of bringing older buildings up to code. This is an area that could benefit from mixed-use development. There are specific challenges due to the number of historic buildings in downtown. It can be difficult for owners to imagine how to work with a historic building and still have a viable business. It is also important to find a way to link the downtown and the water and overcome the barrier created by Route 3A.

**B. Economic Development** - Taxes are high and have a major economic impact on the senior population. Seniors are being forced out of their homes due to high taxes. There is some concern that there are abandoned properties in town that are not paying taxes and that the new development is not truly offsetting the tax burden but runs the risk of substantially changing the character of Hingham through over-development. There are good reasons to concentrate future development in South Hingham on Derby Street because it will minimize the impacts on the rest of the town. The Route 3A rotary is an economic development issue because it makes it difficult for pedestrians to get to the waterfront and patronize businesses.

**C. Natural Resources** - Water supply, particularly summertime water usage, is a key issue in Hingham and somewhat of a limiting factor for future development. Throughout the Weir River watershed, there are many dams that are no longer needed that prevent fish migration and degrade river habitats. Water quality is also impacted by stormwater runoff. There is a great need for ongoing education about stormwater and water quality issues.

**D. Open Space** - One on-going concern is the number of different town departments and commissions that have jurisdiction over different aspects of open space and recreation maintenance, protection, conservation, and management. There may be a need to better communicate roles and responsibilities. Land management plans would be helpful for overseeing and achieving land conservation and management goals. Access to conservation lands could be improved with the provision of a few parking spaces at each site. There is also a need for better connectivity between hiking trails.

**E. Recreation-** There is a need to provide more recreation for seniors with more opportunities for passive recreation. Walking paths for seniors need to be safe and inviting.

**F. Historic and Cultural Resources -** The town needs to look at what other towns are doing as far as providing tax incentives for preservation. Because historic districts are a stabilizing force the town should extend the following historic districts:

- Main Street to finish Liberty Plain district
- Phase III East Street
- Going up Summer Street

More needs to be done to keep the town beautiful and maintain its historic character. This includes the preservation of trees and scenic vistas. It is important to look at the whole picture of historic streetscapes rather than individual properties. Hingham is historically unique because of its history as a day-to-day, working New England Town. The town may want to look at extending the demolition delay bylaw from 6 months to 12 months but should also look at whether communities with 12 month delays have significantly different outcomes.

**G. Housing -** There needs to be more affordable options for seniors because many are forced to leave town. Tear-downs are a major problem and they are causing the town to lose its stock of relatively affordable starter homes. Furthermore, the new homes are significantly larger and this has a major impact on the character of the town. The town needs to re-visit the issue of in-law/accessory units as a way for seniors to stay in town and for younger residents. The discussion of in-law/accessory units needs to consider the best location for these units, how to incorporate these units into historic structures or smaller lots and how to regulate them. There is a lot of debate over how much more growth the town can handle and whether the push to affordability in Hingham is realistic. Higher density around the train stations would be desirable. There is also concern that the residential neighborhood near Derby Street is relatively affordable but could be impacted by the rise in property values if more commercial development takes place.

**H. Transportation -** The Route 3A rotary is viewed as dangerous and cuts off the town from the waterfront. There is a parking problem at Town Hall. Traffic through Hingham is heavy and much of it is from other towns (regional traffic). The bicycle and pedestrian infrastructure in town is inadequate and does not encourage walking and biking. Sidewalks are too narrow and close to the road to be make walking safe and enjoyable for seniors.

**I. Public Facilities -** Parking is a problem at Town Hall and this is a problem for seniors who are visiting the Senior Center.

## Scenario Planning Workshops: Envisioning the Future

This task of the Master Plan project focused on evaluating alternative development futures for Hingham based on resident input. In a two part process, residents were invited to weigh in on where future development should go and then to further evaluate several scenarios.

### Hingham Master Plan Workshop #1

The scenario planning process began with a workshop on October 22, 2013. This workshop was open to the general public and focused on housing and economic development trends. A copy of the agenda for this meeting as well as the PowerPoint presentation can be found in Appendix D.

The first part of the meeting was an introduction to the project as well as a presentation of basic demographic data. A few of the key trends that were reviewed included:

- The doubling of the over 65 population from 2000-2010 and the decline of the population under 15.
- Net migration of 1,400 people into Hingham in the 2000s.
- The trend towards more households over the age of 65; a 47% increase by 2030.
- Hingham may need 330 apartments or condos and 450 single family homes by 2020.
- Hingham is a growing job center but many of those jobs are in the lower-wage categories such as retail, arts and entertainment, accommodations and food services.
- Hingham may add 1,000 jobs by 2020 but these will increasingly be in retail and services.

Another aspect of the workshop was to present an overview of the amount and type of development that could occur under existing zoning. This is generally termed a buildout analysis. Buildout takes into consideration zoning requirements such as minimum lot area, setbacks and frontage as well as land that is permanently protected open space, floodplain and watershed protection districts and current development. For residential development, the buildout analysis showed that Hingham has the capacity for **950 single family homes by-right**. On the commercial side of buildout, there is a potential for **5 million square feet of non-residential development and 12,000 new jobs**.

### Small Group Discussions

At the conclusion of the presentation, participants broke up into small groups and were asked to address two key questions:

1. Where should the town facilitate the following types of housing development?
  - Apartments, condominiums, age-restricted, single family, accessory units.
  - Discuss the pros and cons of different types and locations of housing development.
2. Where should the town promote economic development?

- Consider locations most accessible to residents, shoppers from elsewhere, commuters, and transit riders.
- Discuss what can be done to maximize economic benefits.

A summary of the comments from the small group discussions can be found in Appendix D.

The final part of the meeting including key pad polling to determine what attendees felt were the best development options for specific areas in town.

<b>Shipyard Area</b>	52% favored mixed use infill/reuse (multi-family and retail).
<b>Hingham Square/Waterfront</b>	77% favored mixed use (housing & retail) infill and redevelopment.
<b>South Hingham</b>	65% favored office development.

## **Hingham Master Plan Workshop #2**

This workshop was a follow-up to the workshop held on **November 13, 2013**. A copy of the agenda for this meeting as well as the PowerPoint presentation can be found in Appendix D.

The workshop began with a brief recap of the demographic trends first presented in October. This was followed by a presentation of alternative scenarios for Hingham Square/Hingham Harbor in order to demonstrate the data available and the scenario planning process that would be used in the small group discussions. Following a brief question and answer session, attendees broke up into two discussion groups. One group discussed South Hingham and the other group discussed the Hingham Shipyard area. The participants were asked to respond to three discussion questions:

1. Which scenario is most preferable? Which is most likely to occur?
2. In what ways would each scenario advance or hinder the goals above?
3. What new goals or policies should be adopted to help achieve your preferred scenario?

**South Hingham**- The following is a summary of the discussion concerning South Hingham.

- Water supply is a concern but it can be solved over the long term.
- South Hingham provides a good tax base for the town but development has been exploding.
- Traffic is a concern from Queen Anne's Corner to Derby Street.
- There needs to be more attention paid to gateways.

- Further retail is not realistic.
- The area needs a balance of commercial and residential development.
- It is possible to develop the area as an economic engine and as a gateway.
- We need to figure out where people are going to live.
- Route 53 should be zoned for commercial and residential.

**The Shipyard Area** – The following is a summary of the discussion of the Shipyard area.

- There is a cost to providing services for new residents.
- Historic preservation is a big factor in this town, maybe more so than in other towns.
- The commuter ferry, the train and the school system are important to the economic health of Hingham.
- Traffic on 3A is a major concern.
- Some commercial development is struggling; we need to be careful about over-building commercial space.
- There is a great need for housing for aging residents and the Shipyard area might be a good location for affordable senior housing. Senior residents would provide more customers for local retail.
- Building 19 is a big opportunity.
- It would be desirable to seek out a high-end corporate replacement for Talbots.
- The status quo is not a desirable option.
- Be cautious about recommending multi-family development.
- Restaurants in the shipyard are doing well but the retail is not the type that was originally envisioned.
- The Shipyard needs to be better connected with the neighborhood.
- Open space is a huge asset – need to connect commercial to Bear Cove and other spaces.

## Chapter Five: Master Plan Update Implementation Plan

### Scope of Work

The scope of work for this project calls for MAPC to work with the Hingham planning staff to develop an implementation plan to assist in guiding the rest of the Master Plan Update process. The plan will focus on identifying a schedule, anticipated tasks and associated milestones for the update of the remainder of the Master Plan, such as additional goal setting and completion of subsequent sections of the plan. This task will also look to identify additional technical assistance and/or funding resources to support the Hingham planning staff in implementing the rest of the update process.

### Recommended Actions for a Master Plan Update Meeting the Requirements for a Master Plan under the Zoning Reform Bill

The scope of work for this project included the writing of a set of draft goals that address the required elements of a Master Plan under CLURPA. CLURPA is an acronym for a piece of legislation first introduced in 2011 known as the Comprehensive Land Use Reform and Partnership Act. The purpose of the legislation was to update antiquated planning and zoning laws to facilitate prompt and predictable permitting for jobs and housing, strong community planning, and natural resource and public health protection. The bill went through several iterations and the most recent version is House Bill 1859: An Act Promoting the Planning and Development of Sustainable Communities.

Currently the legal basis for master planning in Massachusetts remains Chapter 41, Section 81D of the General Laws. MAPC recommends bringing the master plan up to the standards of the proposed Zoning Reform Bill because the sections that the Hingham Master Plan lacks are all important and valuable additions to how municipalities plan and newer issues that have arisen over the years.

**Develop an energy chapter** – MAPC recommends that the town develop a chapter devoted to energy savings as per the requirements of the proposed zoning reform bill which are outlined below.

- (a) A general overview of the significant natural and energy resources of the municipality.
- (b) Identification of protected and unprotected wetlands and water resources, lands critical to sustaining surface and groundwater quality and quantity, environmentally sensitive lands, critical wildlife habitat and biodiversity, agricultural lands and forests. Priorities for protection of wildlife habitat, water resources, vistas and key landscapes, outdoor recreation facilities, and farm and forestry land shall be identified.
- (c) An outline of local

laws, regulations, policies, and strategies to address needs for the protection, restoration, and sustainable management of these resources and to promote development that respects and enhances the state's natural resources. (d) An energy component that explores locally feasible land use strategies to: maximize energy efficiency and renewable energy opportunities; support land, energy, water, and materials conservation strategies, local clean power generation, distributed generation technologies, and innovative industries; and address global climate change by reducing greenhouse gas emissions and the consumption of fossil fuels.

**Develop an implementation chapter** - The proposed zoning reform bill also requires that a master plan contain a chapter devoted solely to how the master plan will be implemented. The requirements of this chapter are outlined below.

Implementation: An implementation program that defines and prioritizes the specific municipal actions necessary to achieve the goals and objectives of the master plan in accordance with the policies outline therein. This program may be separately written or integrated into the required and selected subject matter. This implementation program shall specify the recommended course of action by which the municipality's regulatory structures, including zoning and subdivision control regulations, may need to be amended in order to be consistent with the master plan. This section may examine the current land use permitting process in a community and, if necessary, make recommendations for the development of clear, predictable, coordinated, and timely procedures thereunder, including an assessment of the adequacy and effectiveness of the existing structure of and roles and responsibilities of elected and appointed boards, officers, and personnel to implement the master plan through land use ordinances, by-laws, regulations, and procedures.

**Update the chapter on public facilities to include non-public infrastructure needs** – The current master plan only addresses public facilities when discussing infrastructure needs. This chapter should be expanded to include other infrastructure needs.

**Develop a water management chapter** – The proposed zoning reform bill suggests that communities include a section on water management. This is defined as follows:

(a) An inventory of current and potential municipal sources of water supply, including capacity and safe yield, and an assessment of water demand including types of water users, changes in water consumption over time, and water billing rate structure. (b) An assessment of the adequacy of existing and proposed water supplies to meet projected demands, water quality and treatment issues, existing measures for water supply protection, water conservation, drought management and emergency interconnections. (c) An assessment of the ability of stormwater regulations and practices to limit off-site stormwater runoff to levels substantially similar to natural hydrology through decentralized management practices and the protection of on-site natural features. (d) An analysis of municipal need and capacity for wastewater disposal, including the suitability of sites and

water bodies for the discharge of treated wastewater. (e) Recommended strategies for water supply provisions and protection, water conservation, wastewater disposal, stormwater management, drought management and emergency interconnections, and needed improvements to meet future water resource needs.

**Develop a public health chapter – Public health can mean different things in different contexts. The draft zoning reform bill defines public health (for the purposes of the elements of a master plan) as follows:**

Public Health: (a) An inventory of conditions and assets in the natural and built environment which contribute to or constitute a barrier to health. These conditions may include parks and recreational facilities; local agriculture; walking, bicycling and public transit options, including the safety and walkability of streets and public spaces; access to affordable housing, economic opportunities, and medical and other services; environmental quality; and sustainable development. The inventory should describe conditions with a disproportionate impact on residents based on geography, ethnicity, income, immigration status, or other characteristics. Where applicable, this inventory may reference other sections of the master plan. (b) An assessment of opportunities and barriers to increasing access to conditions and assets in the natural or built environment that contribute to health. (c) Recommendations of available implementation policies and strategies, including zoning and other local laws and regulations, affecting health needs related to the natural or built environment.

MAPC's Public Health Department integrates public health perspectives into our planning and policy work. Our team helps to ensure that residents throughout our region have access to open space and healthy food, that they utilize modes of transportation that encourage healthy lifestyles, live in violence-free communities with safe and clean housing, have equal access to health care services, and have limited exposure to environmental contaminants and pollution. The public health work at MAPC is guided by our regional plan, [MetroFuture](#), recognizing the growing importance of linking health and planning. For more information on public health planning at MAPC please click [here](#).

### **Additional Implementation Steps**

Many of these additional implementation steps were suggested by survey responses or other feedback received from a variety of sources. These steps are offered to the town to help inform future work on updating the master plan.

1. **Tax rate:** The Town should identify ways to offset tax increases or mitigate the current tax rate.

2. **Zoning reform:** This report includes many references to House Bill 1859: An Act Promoting the Planning and Development of Sustainable Communities. While this legislation has not yet been enacted, it embodies many of the concepts and reforms that have been under discussion for many years. The town should educate itself about this proposed bill and consider how it might proceed if the bill is enacted.
3. **Work with MAPC on how to use Community Viz** - This modeling software was used to develop and analyze the alternative scenarios presented at the workshops. It is very powerful software that can provide the town with guidance when evaluating development proposals. MAPC will provide the tool and all of the data and analysis to the town and could offer training to the planning staff on how to utilize this tool.
4. **Prepare a housing production plan** - The Commonwealth has made housing production a major goal that is considered vital to the economic health of the state. MAPC has a great deal of expertise in this area and frequently works with communities to undertake analyses and prepare housing production plans. For more information on MAPC's housing work, click on [housing](#).
5. **Consider formation of a Master Plan committee** - If the town is interested in substantial additional work on the master plan it should consider re-convening a master plan committee to oversee this work.
6. **Sewer expansion** - The Town should continue to work on sewer policy, expansion of system and betterments.
7. **Marketing and regional tourism** - The Town should work on improved marketing and branding as a coastal tourist destination. As part of this effort, the town should examine regulations and zoning relating to accommodations for tourists such as boutique hotels.
8. **Incorporate [LID](#) guidelines into SP review** - This effort will have environmental benefits and help the town achieve greater compliance with the opt-in provisions of the zoning reform bill.
9. **The Town should continue working on model erosion and sediment control regulations.**
10. **The Town should continue to assist owners of properties in flood zones** - The town has taken a first step by hiring the consulting firm of GZA to re-review flood mapping. The issue of higher flood insurance premiums creates housing insecurity for owners of smaller, affordable homes who previously did not have to purchase flood insurance.

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# Hingham Comprehensive Trails Plan Appendix G

## Climate Change Vulnerability, Risk Assessment and Adaptation Study (2015)





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## INTRODUCTION

The Town of Hingham is particularly vulnerable to sea level rise being a coastal community located on Hingham Bay and the edge of Boston Harbor. The Hingham coastline has extensive floodplains and estuaries that reach into the inland areas of the town and extensive salt marshes associated with rivers as well as beaches that are subject to tidal action and the effects of storm surge. Sections of the Town subject to potential flooding contain public infrastructure, commercial development and residential areas that can be severely affected by flooding.

Given its exposure to the combined effects of sea level rise and storm surge from extreme storm events, the Town of Hingham applied for and was awarded a Coastal Community Resilience Grant from the Massachusetts Coastal Zone Management Agency (CZM) under CZM's Pilot Grants Program for Fiscal Year 2014.

This project has four primary goals:

1. Identify areas of the town that are vulnerable to the combined effects of sea level rise and storm surge from extreme storm events
2. Assess the vulnerability of municipally-owned public infrastructure and natural resources
3. Identify adaptation strategies that will help to mitigate the long-term effects of sea level rise and storm surge.
4. Educate the public, town officials and state legislators about those potential impacts

## Project Team

The Town of Hingham selected the team of Kleinfelder and Woods Hole Group through a Request for Proposal process. Kleinfelder, located in Cambridge, MA, was the prime consultant responsible for client liaison, vulnerability assessment, adaptation planning, and public process. Woods Hole Group, located in Falmouth, MA, was responsible for inundation modeling and natural resource impacts. The team's primary members included:

- Andre Martecchini, PE – Kleinfelder - Project Manager, Public Process
- Nasser Brahim – Kleinfelder - Project Scientist, Vulnerability Assessment, Adaptation Planning
- Indrani Ghosh, PhD – Kleinfelder – Project Engineer, Inundation Modeling and Vulnerability Assessment
- Kirk Bosma, PE – Woods Hole Group – Inundation and Natural Resources Modeling

Kleinfelder worked closely with a Town Steering Committee which included the following members:

- Abby Piersall (Town Project Manager)
- Mary Savage Dunham
- Monica Conyngham
- Roger Fernandes
- Scott McIsaac
- Jim Murphy
- Walter Sullivan
- Randy Sylvester
- Richard Cook
- Ken Corson
- Brian Knies

## **Public Outreach**

As noted above, one of the primary goals of the project was to raise public awareness of both the escalating flood risks posed by sea level rise and storm surge, and the strategies available to adapt to those changes over time. The Town organized public outreach events at each project milestone to keep the public abreast of the latest findings, gather input at crucial junctures, and facilitate active engagement over the lifetime of the project. At these events, the Project Team shared information on climate change, flood modeling, Hingham's coastal flood hazards, vulnerability and risk of Hingham's public infrastructure and natural resources, and adaptation options and costs. Following is a list of the public outreach events organized as part of the project:

- Steering Committee meetings
  - September 15, 2014 (Kick-off)
  - October 20, 2014 (Phase I: Study Parameters)
  - February 3, 2015 (Phase II: Vulnerability Assessment)
  - April 6, 2015 (Phase II: Vulnerability Assessment)
  - June 10, 2015 (Phase III: Adaptation)
  - July 2015, TBD (Final meeting)
- Board of Selectmen briefings
  - November 6, 2014
  - July 2015, TBD
- Joint meetings of the Planning Board and Conservation Commission (Board of Selectmen invited)
  - November 17, 2014 (Phase I: Study Parameters)
  - April 6, 2015 (Phase II: Vulnerability Assessment)
  - July 2015, TBD
- Project-specific Public Meetings
  - April 16, 2015 (Phase II: Vulnerability Assessment)
  - July 2015, TBD (Phase III: Adaptation) with Planning Board/Conservation Commission

## **Acknowledgements**

We wish to acknowledge the contribution of the Massachusetts Department of Transportation under the direction of Steven Miller, Project Manager, and the Federal Highway Administration related to the modeling associated with the Boston Harbor – Flood Risk Model (BH-FRM).

We also wish to acknowledge the participation of Jason Burtner and Tricia Bowen of the Massachusetts Coastal Zone Management (CZM) during Steering Committee meetings and public presentations for this project.

# INUNDATION MODELING

## Sea Level Rise and Storm Surge Model

The hydrodynamic modeling utilized for this study is based on mathematical representations of the processes that affect coastal water levels including tides, waves, winds, storm surge, sea level rise, wave set-up, etc. at a fine enough resolution to identify site-specific locations that may require adaptation alternatives. The water surface was modelled using the ADvanced CIRulation (ADCIRC) software to predict storm surge flooding coupled with the Simulated WAves Nearshore (SWAN) software, a wave generation and transformation model. Water surface modeling was performed by the Woods Hole Group as part of the Boston Harbor Flood Risk Model (BH-FRM), which was developed for the Massachusetts Department of Transportation (MassDOT) and the Federal Highway Administration (FHWA) to assess potential flooding vulnerabilities in the Central Artery tunnel system and other transportation infrastructure. Since the BH-FRM model domain includes the entire greater Boston area, including the Town of Hingham, this model was ideally suited to assess the vulnerability and risk of coastal flooding to Hingham's infrastructure and natural resources. Using this existing model was beneficial to the Town of Hingham since much of the upfront work in developing the model was already conducted as part of the MassDOT/FHWA project.

The ADCIRC model is tightly coupled with SWAN, dynamically exchanging physical processes information during each time step, to provide an accurate representation of water surface elevations, winds, waves, and flooding along the Hingham coastline and surrounding upland areas. The spatial resolution of the model is 10 meters or less, sometimes as low as 2-3 meters to capture important changes in topography and physical processes related to storm dynamics. This high-resolution model offers more accuracy than other storm surge models, such as SLOSH. This modeling approach is also far superior compared to a more rudimentary "bathtub" approach, since the latter does not account for critical physical processes that occur during a storm event, including waves and winds, nor can it determine the volumetric flux of water that may be able to access certain areas.

The model explicitly and quantitatively incorporates climate change influences on sea level rise, tides, waves, storm track, and storm intensity for the present (2013), 2030, and 2070 time horizons. It models a statistically-robust sample of storms, including tropical (hurricanes) and extra-tropical (nor'easters), based on the region's existing and evolving climatology, calculates associated water elevations, and runs mathematical and geospatial analyses on the water elevations generated to estimate the probability of different water elevations being exceeded at nodal points within the model boundary. The resulting flood risk maps and probability curves can be interpreted using geographic information systems (GIS) to identify the estimated annual probability, or likelihood, that any node within the model will experience flooding, and if so, up to what elevation.

The proposed modeling approach is probability-based, which will be beneficial to the Town to assess the vulnerability and risk of infrastructure, evaluate its resiliency, and plan for adaptation options to mitigate future flooding damage for the Town of Hingham. It will also produce information that can be used to inform engineering design criteria since it provides the probability of an event occurring in this changing regime, such as the "new" 1% event flood levels (equivalent to a 100 year recurrence event). This risk-based approach uses a fully optimized Monte Carlo approach, simulating a statistically robust set of storms (both tropical and extra-tropical) for each sea level rise (SLR) scenario. Results of the Monte Carlo simulations are used to generate Cumulative probability Distribution Functions (CDFs) of the storm surge water levels at a high degree of spatial precision. In particular, an accurate and precise

assessment of the exceedance probability of combined SLR and storm surge is provided that can help decision makers to identify areas of existing vulnerability requiring immediate action in Hingham, as well as areas that benefit from present planning for future preparedness.

Some of the unique aspects of the BH-FRM model include the following:

- An extensive understanding of the physical system as a whole.
- Inclusion of significant physical processes affecting water levels (e.g., tides, waves, winds, storm surge, sea level rise, wave set-up, etc.).
- Full consideration of the interaction between physical processes.
- Characterization of forcing functions that correspond with real world observations.
- Resolution that will be able to resolve physical and energetic processes, while also being able to identify site-specific locations that may require adaptation alternatives.

## Storm Events and Storm Climatology



**Figure 1 - Storms input into ADCIRC/SWAN model**

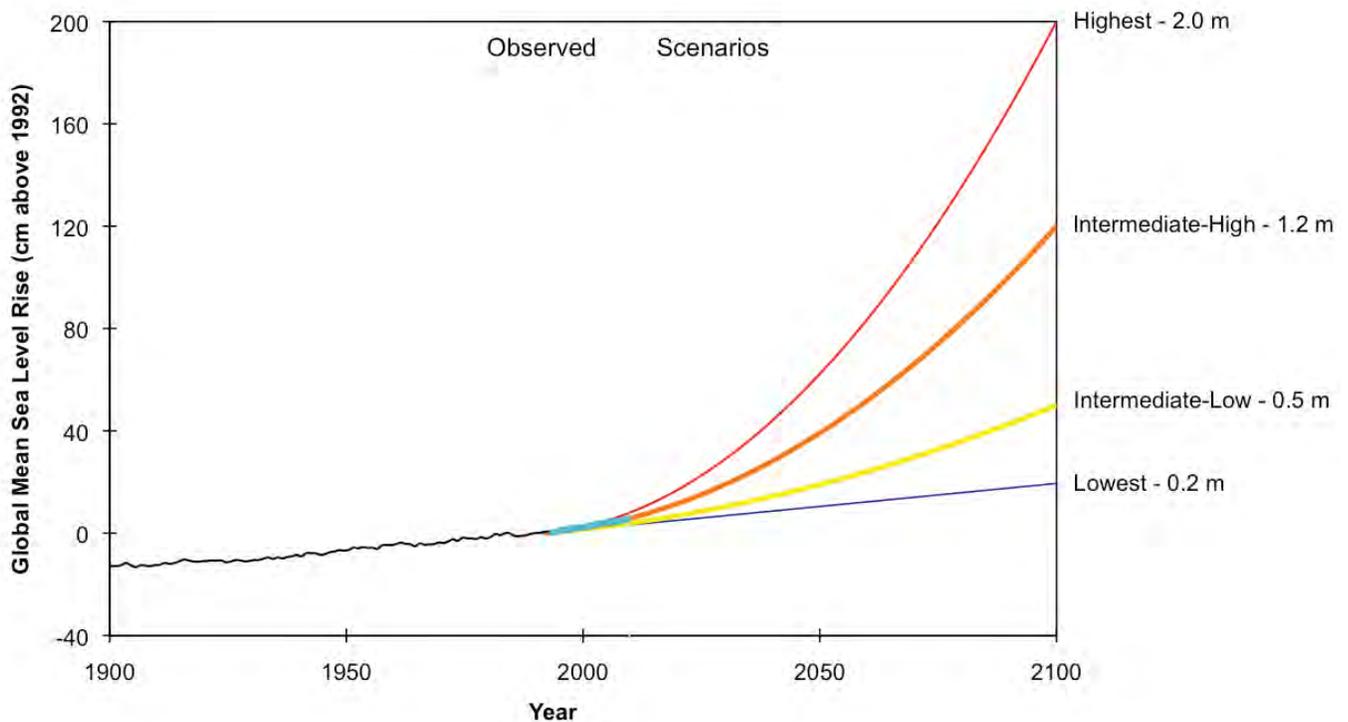
The types of storms included in the Monte Carlo simulations include both tropical storms (hurricanes) and extra-tropical storm (nor'easters). Figure 1 shows the track lines of some of the associated hurricanes included in the model. The storm climatology parameters that are included in the BH-FRM model include, but are not limited to, wind directions and speeds, radius of maximum winds, pressure fields, and forward track of the storms in the Boston region. While hurricanes are typically shorter duration events that often last over only one tidal cycle, nor'easters are longer duration events that typically last over multiple tidal cycles spanning multiple days. So the probability of a nor'easter occurring or lasting through a high tide is more likely than a hurricane. Also, the diameter of a nor'easter is usually 3-4 times that of hurricanes, and therefore they impact much larger areas of inland as well. The inclusion of nor'easters is one of the unique aspects of the BH-FRM model that is not available in other storm surge models, such as SLOSH. Figure 1 shows a representation of storms included in the model. The probability of flooding due to both hurricanes and nor'easters was

estimated by developing composite probability distributions for flooding. Under current (circa 2013) and near-term future (2030) climate conditions, the probability of flooding due to nor'easters dominates because the annual average frequency of nor'easters (~2.3) is much higher than that of hurricanes (~0.34).

The storm climatology for the hundreds of different types of storms are all factored in the Monte Carlo simulations of these storm events. The storm climatology is based on present climate for planning horizons until 2050, but for storm simulations beyond 2050, 21<sup>st</sup> century climatology is used to simulate the storms. The latter half of 21<sup>st</sup> century climatology projections factored into the BH-FRM model are based on climatology projections by the notable MIT professor Dr. Kerry Emmanuel.

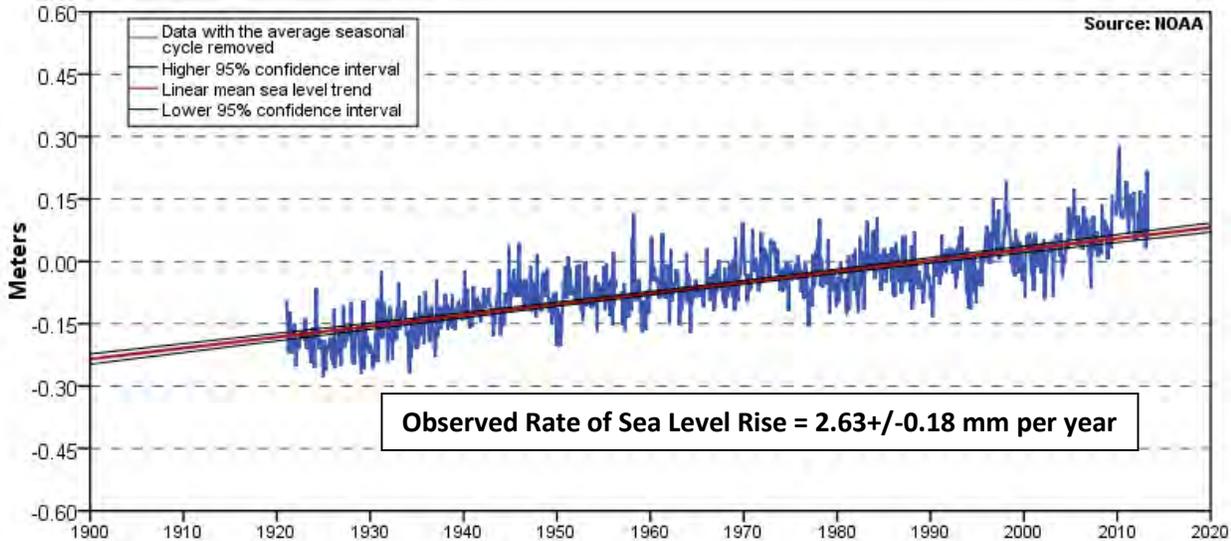
## Sea Level Rise Scenarios

Sea level rise (SLR) scenarios recommended by Parris et al. (2012) for the U.S. National Climate Assessment (Global Sea Level Rise Scenarios for the United States National Climate Assessment, NOAA Technical Report OAR CPO-1, December 12, 2012) were utilized in this study (Figure 2). These scenarios are the same scenarios recommended by Massachusetts CZM for assessing sea level rise, as well as those being used by the Massachusetts Department of Transportation and other state agencies and communities for vulnerability assessments.



**Figure 2 - Global mean sea level rise scenarios**

In addition to global SLR, local mean sea level changes are also factored in. Local mean sea level changes were estimated by considering local tide gage records in combination with models or actual measurements of the Earth's local tectonic movements. The NOAA tidal gage at Boston Harbor (station ID 8443970) has recorded an increase in relative mean sea level of 2.63 mm (+/- 0.18 mm) annually based on monthly mean sea level data from 1921 to 2006 (Figure 3). Over that same time period, the global rate of sea level rise was about 1.7 mm annually. This difference implies that there is about 1 mm (0.04 in./yr) per year local land subsidence in the relative sea level record for the Boston area (MA Adaptation report 2011). Since there are no long-term (> 50 years) tidal gages available for the Hingham Bay area, the rate of subsidence recorded at Boston Harbor was deemed appropriate to be factored in with the global SLR scenarios to determine the relative SLR projections for Hingham.



**Figure 3 - Mean sea level trend at Boston Tide Gage (#8443970)**

Figure 4 below presents the total relative SLR values (global SLR and local land subsidence rate of 0.04 in./yr) for years 2020 through 2100 in 10 year increments for the Town of Hingham, considering a start year of 2013 (since 2013 was used as the start year for the SLR calculations in the BH-FRM model). Calculations were also performed using 2015 as the start year, considering 2015 will be the completion year of this project, and it was found that the difference in SLR projections between using 2013 and 2015 as the start years is less than one-tenth of a foot. Hence it was agreed to use the same SLR values that have been used in the BH-FRM model. Figure 4 presents the SLR projections for Hingham using the NOAA “Highest”, “Intermediate-High” and “Intermediate-Low” scenarios for the purposes of comparison.

While selection of the “Highest” scenario may be interpreted as conservative, this selection also allows for representing a range of scenarios that allows decision makers to consider multiple future conditions and to develop multiple response options. For example the value for the “Highest” scenario at 2030, is also similar to the “Intermediate-High” value at that same time period, and approximately the “Intermediate-Low” value for 2070.

The SLR scenarios that were utilized in the Hingham vulnerability assessment are:

- Existing conditions for the current time period (considered to be 2013).
- The value for the “Highest” scenario at 2030 (0.66 ft of SLR), which is also close to the “Intermediate-High” value at that same time period, and approximately the “Intermediate-Low” value for 2050.
- The value for the “Highest” scenario at 2070 (3.39 ft of SLR), which is also approximately the “Intermediate-High” scenario value for 2090.

Scenarios	2020	2030	2040	2050	2060	2070	2080	2090	2100
Global SLR (from 2013-year of interest) "Highest" (feet)	0.21	0.61	1.10	1.70	2.40	3.21	4.11	5.12	6.23
Global SLR (from 2013-year of interest) "Intermediate-High" (feet)	0.14	0.38	0.68	1.04	1.46	1.93	2.46	3.05	3.69
Global SLR (from 2013-year of interest) "Intermediate-Low" (feet)	0.07	0.18	0.32	0.47	0.63	0.82	1.02	1.24	1.48
Land subsidence (feet) @ 0.04 in./yr	0.02	0.06	0.09	0.12	0.15	0.19	0.22	0.25	0.29
Total Relative SLR - "Highest" (feet)	0.24	<b>0.66</b>	1.19	1.82	2.56	<b>3.39</b>	4.33	5.37	6.52
Total Relative SLR – "Intermediate-High" (feet)	0.16	0.44	0.77	1.16	1.61	2.12	2.68	3.30	3.98
Total Relative SLR – "Intermediate-Low" (feet)	0.09	0.24	0.40	0.59	0.79	1.01	1.24	1.50	1.77

Figure 4 – Sea level rise estimates for Hingham using the 2012 NOAA NCA SLR scenarios

## Planning Horizons

2030 and 2070 were selected as appropriate planning horizons for Hingham’s vulnerability analysis to provide an estimate of short-term and mid-term vulnerabilities. As discussed above, risk-based scenarios are used to assess potential vulnerabilities in the Town of Hingham.

The BH-FRM model was developed for the years 2030, 2070, and 2100. Since the Steering Committee requested the study to include only two planning horizons, 2030 and 2070 planning horizons with corresponding sea level rise projections were chosen for the following reasons:

- The BH-FRM model developed for the greater Boston area includes the Town of Hingham. The Town of Hingham benefits from using best-available model results at a lower cost than it would take to run any other modeling scenario. In addition, the model’s performance and accuracy has already been peer-reviewed by MassDOT’s scientific advisory team.
- 2030 (15 years from 2015) planning horizon for near-term inundation modeling are consistent with planning horizons used in the majority of studies in Eastern Massachusetts, therefore allowing for easy comparisons.
- 2070 (55 years from 2015) was recommended as a more useful long-term planning horizon for the following reasons:
  - (a) The level of uncertainty associated with sea rise projections for the end-of-century (2100 and beyond) are quite high.
  - (b) The expected service life of most infrastructure to be evaluated for risk is well below 100 years, and 2070 is closer to the expected life of typical infrastructure.
  - (c) The 2070 timeframe is more consistent with other regional climate change vulnerability studies (e.g. Cities of Cambridge and Boston, MassDOT/FHWA).

## Modeling the Effects of Coastal Storms and Climate Change

The first step in building the BH-FRM ADCIRC/SWAN model was construction of the modeling grid. The grid is a digital representation of the domain geometry that provides the spatial discretization on which the model equations are solved. The grid was developed at three resolutions:

- 1) a regional-scale mesh, which is a previously validated model mesh used in numerous Federal Emergency Management Agency (FEMA) studies, National Oceanic and Atmospheric Administration (NOAA) operational models, and most recently the United States Army Corps of Engineers North Atlantic Coast Comprehensive Study (NACCS);
- 2) a local-scale mesh providing an intermediate level of mesh resolution to transition from the regional-scale mesh to the highly resolved mesh along the Massachusetts coastline; and
- 3) a site-specific mesh of sufficient resolution to ensure that all critical topographic and bathymetric features that influence flow dynamics along the near shore are captured. The site-specific mesh includes areas of open water, along with a substantial portion of upland subject to present and future flooding. A screenshot of the model mesh for part of Hingham is shown in Figure 5.



Figure 5 - Model mesh for BH-FRM ADCIRC/SWAN model

## Model Calibration and Validation

The BH-FRM model was calibrated and validated at three levels. First, the BH-FRM model was calibrated to average tidal conditions over the entire model domain, Caribbean Islands to Canada to ensure the model was capable of reproducing water levels and coastal hydrodynamics. The magnitude of the bias is equal or less than 0.02 feet at all locations meaning that the calibration simulation reproduced average water levels within a quarter of an inch at all locations. Second, the model was calibrated to both water surface elevation time series data (measured at NOAA gages) and observed high water marks from the Blizzard of 1978, which had significant impact in the Hingham area. The water surface elevation time series comparison had a bias of less than a ¼ inch, root mean square error (RMSE) of 3 inches, and a percent error of 2.5%. The model had an 8% relative error to the observed high water mark data, which is quite reasonable considering the uncertainty associated with the high water mark observations. Greater error is expected when comparing model results to observed high water marks due to the uncertainty associated with the high water marks themselves, which are subject to human interpretation and judgment errors (e.g., wet mark on the side of a building). Finally, the model was validated to the Perfect Storm of 1991, to observed water surface elevation time series with bias of ¼ inch and RMSE of ¾ of an inch. This storm also had significant impacts in the Hingham area, hence was an appropriate storm for validation in this area as well.

In order to select appropriate historical storm events for model calibration and validation, a number of key factors were considered, including:

- The historic storm must be considered a significant storm for the Boston area (a historic storm of record) that was of large enough magnitude to produce substantial upland flooding.
- The historic storm must have adequate meteorological conditions to be able to generate pressure and wind fields for ADCIRC input. This required the use of global reanalysis data, which were generally available for historic storm events post-1957.
- The historic storm must have sufficient observations and/or measurements of flooding within the northeast and Boston area. This could consist of high water marks data, tide station observations, wave observations, and other data measures.

Complete details on the calibration and validation of the model can be found in the MassDOT-FHWA Pilot Project Report: Climate Change and Extreme Weather Vulnerability Assessments and Adaptation Options for the Central Artery (2015), which is available from MassDOT. In addition, the model was reviewed by a technical advisory committee made up of experts from the USGS, EPA, NOAA, USACE, and Woods Hole Oceanographic Institute.

## Inundation Maps

The results of BH-FRM simulations for 2013, 2030 and 2070 were used to generate maps of potential flooding and associated water depths throughout the Town of Hingham. Two different types of maps were produced:

- Percent Risk of Flooding Maps - These maps can be used to identify locations, structures, assets, etc. that lie within different flood risk levels. For example, a building that lies within the 2% flood exceedance probability zone would have a 2% chance of flooding occurring in that study year. Stakeholders can then determine if that level of risk is acceptable, or if some action

may be required to improve resiliency, engineer an adaption, consider relocation, or implement an operational plan.

- Depth of Flooding Maps – These maps show the estimated difference between the projected water surface elevation for a given percent risk of flooding during the study year and existing ground elevations derived from the 2011 Northeast LiDAR (Light Detection and Ranging) survey. For this study, two sets of Depth of Flooding Maps were produced:
  - Depths at 1% Probability of Exceedence which has approximately a 100 year recurrence interval.
  - Depths at 0.2% Probability of Exceedence which has approximately a 500 year recurrence interval.

Depths of flooding maps were also developed for the effects of sea level rise alone, which do not include any effects from storm surge. These maps were developed as “bath-tub models” by creating a planar water surface consisting of the predicted sea level rise (global SLR plus land subsidence) for the years 2030 and 2070 plus the current Mean Higher High Water (MHHW) elevation. As described above, the total SLR values based on the “high” scenario used to develop the sea level rise alone maps are as follows:

- 2030: 0.66 feet
- 2070: 3.39 feet

The following inundation maps are included in Appendix A:

- A-1: 2030 – Percent Risk of Flooding
- A-2: 2070 - Percent Risk of Flooding
- A-3: Present – Depth of Flooding at 1% Annual Probability (≈100 year recurrence)
- A-4: 2030 – Depth of Flooding at 1% Annual Probability (≈100 year recurrence)
- A-5: 2070 - Depth of Flooding at 1% Annual Probability (≈100 year recurrence)
- A-6: Present - Depth of Flooding at 0.2% Annual Probability (≈500 year recurrence)
- A-7: 2030 - Depth of Flooding at 0.2% Annual Probability (≈500 year recurrence)
- A-8: 2070 - Depth of Flooding at 0.2% Annual Probability (≈500 year recurrence)
- A-9: 2030 - Depth of Flooding – Sea Level Rise Only
- A-10: 2070 - Depth of Flooding – Sea Level Rise Only

## **3D Image Renderings**

Based on the inundation results, three critical roadway intersections were identified to generate 3D image renderings to better visualize the flooding impacts in these areas. For each image, the visualization specialist chose key points, and then collected data for each point’s exact location and elevation. The elevation data provided the means for creating a 3D terrain of the landscape in each image. Next, massing models were created for all major objects in the images. A digital camera was aligned to view the same vantage point for each image. Sea level rise was simulated to projected levels for each scene, and then the projected water levels were rendered and the rendering was composited into the original photograph to show the results.

# NATURAL RESOURCES MODELING

## Modeling

Impacts to natural resources including beaches, coves and salt marsh, were assessed on a qualitative basis. Woods Hole Group is currently working for the Massachusetts Office of Coastal Zone Management (CZM) to model the effects of sea level rise on coastal wetlands and natural resources statewide. The software Sea Level Rise Affecting Marshes Model (SLAMM) is being used to assess the impacts to natural resources for that project. The SLAMM results are also being linked to results from the Marsh Equilibrium Model (MEM). Final model simulations are currently being run for both sub-site and state-wide simulation for four out-year scenarios and four projected sea level rise curves. The results of this statewide project were incorporated into this study.

## Elevation Information

High resolution elevation data are the most important SLAMM model data requirement, since the elevation data demarcate not only where salt water penetration is expected, but also the frequency of inundation for wetlands and marshes when combined with tidal range data. Input elevation data also helps define the lower elevation range for beaches, wetlands and tidal flats, which dictates when they should be converted to a different land-cover type or open water due to an increased frequency of inundation.

For this project, LiDAR was acquired from MassGIS. The majority of the state was covered with the 2011 USGS LiDAR for the Northeast project, and this covers the Hingham area. In order to reduce processing time within the SLAMM model, areas of higher elevation within each regional panel that are unlikely to be affected by coastal processes, such as sea level rise, were excluded prior to processing; all areas above an elevation of 60 feet (NAVD88) were clipped from the input files.

## Wetland Classification Information

The 2011 wetland layer developed by the National Wetlands Inventory (NWI) is used as the baseline source for the wetlands input file for marsh migration modeling.

Utilizing the NWI data had two key benefits over the 1990s MassDEP wetland layer. First, the NWI data not only provided a more recent dataset, but also matches that of the LiDAR datasets. Although different input years were used, most of the LiDAR data used was collected in or around 2011.

The second benefit to utilizing the NWI data is that it streamlined the conversion between source wetland categories and SLAMM model wetland codes. The documentation provided with the SLAMM software contains a key to convert each NWI classification to the wetland classification system used by SLAMM. A summary of this conversion key is present in Table B1 included in Appendix B.

## Sea Level Rise Projections

The sea level rise (SLR) projections used in the marsh migration modeling are consistent with those used in the BH-FRM modeling to produce the inundation risk maps.

## Additional Data Input

Additional model input includes, but is not limited to, accretion rates (marsh, beach, etc.), erosion rates, tidal range and attenuation, freshwater parameters, dikes and dams, and impervious surfaces. For complete details, see the Statewide Modeling: the Effects of Sea Level Rise on Coastal Wetlands for Massachusetts Coastal Zone Management. (ENV 14 CZM 08 in publication, 2015).

## Impacts to Natural Resources

Figures B1 through B3 in Appendix B show the wetland classification areas for 2011, 2030, and 2070 respectively based on the marsh migration modeling. Figure B1 presents the current conditions, as defined by the NWI (with the exception of non-tidal upland swamp). Figure B2 shows the change in wetland classification locations projected to 2030, impacted by SLR. Similarly, Figure B3 shows the change in wetland classification locations projected to 2070 impacted by SLR. Both the results shown in Figures B2 and B3 for 2030 and 2070, respectively, are based on the marsh migration SLAMM modeling.

*Primary Areas where natural resources are evolving in response to SLR:*

- Broad Cove
  - By 2030, Broad Cove shows a reduction in transitional marsh, which has been converted to a mix of low and high marsh. Fringing high marsh begins to transition to low marsh and the estuarine open water (subtidal portions of the Cove) has expanded. There is also a relatively significant loss of upland area in the region.
  - By 2070, there is a major loss of upland area, all existing high marsh has essentially disappeared and has transitioned to low marsh and/or un-vegetated tidal flats. While there is some room for marsh migration, Broad Cove has become a degraded system by 2070.
- Home Meadow - The Home Meadow system shows growth of the Tidal Creeks/ Estuarine Open Waters resources in 2030, and continued expansion by 2070. Due to the restricted tidal signal in this region, the existing marsh regions (including low, high, and transitional areas all remain relatively constant through time.
- Hingham Harbor Shoreline – The shoreline shows retreat through 2030, with conversion of beach and upland to open water areas. By 2070, there is a significant loss of shoreline area transitioning to open water resources. There is also the start of some transitional marsh resources in areas that were previously upland.
- World's End – The World's End area, which currently consists of estuarine open water with fringing transitional marsh area, converts to all open water by 2030, and then expands into upland areas and forms un-vegetated tidal flats and some fringing marsh area.
- Foundry Pond and Lyford Lyking Area – These areas, in the northeast corner of Hingham show minor changes by 2030 with slight loss of upland and marsh expansion. By 2070; however,

there is a significant transition of high marsh to low marsh, loss of major upland areas, and connection of various marsh regions along the river. Tidal creeks have also expanded and created a system that is transitioning to open water from marsh.

- Back River and Beal Cove – The areas along the Back River show minimal changes between 2011 and 2030, with the exception of minor shoreline retreat. By 2070, the tidal creeks have expanded and there is loss of upland area and estuarine beach. All high marsh has either transitioned to open water or low marsh in this area.

*Major changes from 2011 to 2030:*

Town-wide there is a significant loss of area identified in three major classifications:

- Loss of approximately 13 acres of irregularly flooded marsh (high marsh). This is loss of high marsh that is transitioning to low marsh, which is not necessarily a problem, at least initially.
- Loss of approximately 10-30 acres of upland area. As expected, this loss occurs along the edges of water bodies (in the areas discussed above).
- Loss of 28 acres of transitional marsh, where marsh is converted to high marsh.

Town-wide there is a significant gain of area identified in two major classifications:

- Gain of approximately 28 acres of regularly flooded marsh (low marsh).
- Gain of approximately 25 acres of tidal flats.

*Major changes from 2030 to 2070:*

Town-wide there is a significant loss of area identified in three major classifications:

- Loss of approximately 92 additional acres of irregularly flooded marsh (high marsh). This is loss of high marsh that is transitioning to low marsh, which is not necessarily a problem, at least initially.
- Loss of approximately 70 to 100 additional acres of upland area. As expected, this loss occurs along the edges of water bodies (in the areas discussed above).
- Loss of 26 acres of estuarine beach. This occurs along the edge of estuaries and results in the expansion of Tidal Creeks.

Town-wide there is a significant gain of area identified in three major classifications:

- Gain of approximately 100 additional acres of regularly flooded marsh (low marsh), a lot of area that was formerly upland has transitioned all the way to low marsh, especially in the Broad Cove region.
- Gain of approximately 32 additional acres of tidal flats, most occurring in the Broad Cove region.
- Gain of approximately 38 acres of Tidal Creeks, likely expansion of existing creeks and formation of new creeks.

# INFRASTRUCTURE VULNERABILITY ASSESSMENT

## Scope of Infrastructure Vulnerability Assessment

A vulnerability assessment was performed on municipally-owned infrastructure subject to flooding. Municipally-owned infrastructure includes sewer pump stations, roads, bridges, wharves, seawalls, major drainage outfalls, and other critical facilities such as schools, police stations, fire stations, etc. owned and operated by the Town of Hingham. Critical infrastructure was selected based on the inundation modeling results, using infrastructure information obtained from the Town of Hingham Hazard Mitigation Plan Update (2012), and by information provided by various Town departments. Infrastructure that is not municipally owned (e.g. federal, state or privately owned) that is subject to flooding is shown on the maps, but vulnerability assessments are not performed on these assets. In some limited cases, several state-owned roadways, which are critical transportation links in Hingham, are included in the vulnerability assessment.

Survey data for both public coastal stabilization structures, including sea walls, revetments and groins, were obtained from Hingham Department of Public Works, as well as the Massachusetts office of Coastal Zone Management (CZM) as part of a report titled *Mapping and Analysis of Privately Owned Coastal Structures Along the Massachusetts Shoreline* (March, 2013).

A risk-based vulnerability assessment was performed for each of the municipally-owned assets impacted by flooding. These assets are built assets and do not include natural resources. The impacts of flooding were assessed for each asset deemed to be susceptible to flooding during any one of the time periods being investigated. The following is a description of the vulnerability assessment methodology for infrastructure.

## Using Risk to Understand the Vulnerability of Infrastructure Susceptible to Flooding

Risk is defined here as the probability of an asset failing times the consequence of that asset failing. Put into mathematical terms:

$$\text{Risk (R)} = \text{Probability of Failure (P)} \times \text{Consequence of Failure (C)}$$

or

$$R = P \times C$$

For this flood-related vulnerability assessment application, the Probability of Failure (P) is considered as the Percent Risk of Flooding. Each node in the mesh for the ADCIRC model has a unique Probability of Exceedance curve associated with it, which gives the probabilities of exceeding various water elevations at that node.

Using risk to assess the vulnerability of infrastructure allows one to take into account both how likely a damaging flood event is, and also, what the consequence of that damaging flood is to the community. Relative risk rankings are an excellent way for helping to prioritize scarce capital funds.

## Risk Assessment - A Five Step Process

The risk assessment process is implemented using the following five basic steps:

1. Determine Critical Assets Subject to Flooding
2. Determine Critical Elevations
3. Obtain Probability of Exceedance Data
4. Determine Consequence of Failure Score
5. Calculate Risk Scores and Rankings

### 1. Determine Critical Assets Subject to Flooding

All identified municipally-owned infrastructure are located as an overlay in the GIS project map. The Percent Risk map for flooding for 2070 was then used to screen out assets that show no probability of flooding in 2070. Any assets that show no probability of flooding are excluded from further analysis, but still remain as reference points on the inundation maps.

The following municipally-owned infrastructure assets have been identified in Figures 6, 7 and 8 as being vulnerable to flooding at the indicated time between the present time and 2070:

Time Horizon	Facility/Building Name
Present	Helipoint at Bathing Beach
	West Corner Pump Station
	Hingham Bathing Beach Parking Lot
2030	William L. Foster Elementary School
	Mill St. Pump Station
	Bel Air Pump Station
	Broad Cove Sewer Pump Station
2070	Whitney Wharf
	Beal St Sewer Pump Station
	Downer Ave Sewer Pump
	Howe St Pump Station
	Walton Cove Sewer Pump Station

**Figure 6 - Facilities/Buildings Vulnerable to Flooding**

Time Horizon	Location	Structure Type	CZM Coastal Stabilization Structure Number
Present	Bridge Street	Revetment	034-045-000-002-100
	Bridge Street	Bulkhead/ Seawall	034-045-000-002-200
	Bridge Street	Revetment	034-045-000-002-300
	Bridge Street	Groin/ Jetty	034-045-000-002-400
	Broad Cove Entrance	Revetment	034-039-000-009-100
	Hingham Shipyard	Revetment	034-036-000-106-200
	Hingham Yacht Club Peninsula	Bulkhead/ Seawall	034-016-000-183-100
	Hingham Yacht Club Peninsula	Bulkhead/ Seawall	034-017-000-113-100
	Hingham Yacht Club Peninsula	Revetment	034-016-000-183-200
	Iron Horse Park Area	Bulkhead/ Seawall	034-051-000-003-100
	Iron Horse Park Area	Bulkhead/ Seawall	034-051-000-005B-200
	Iron Horse Park Area	Bulkhead/ Seawall	034-051-000-059-100
	Iron Horse Park Area	Bulkhead/ Seawall	034-051-000-001-200
	Iron Horse Park Area	Bulkhead/ Seawall	034-051-000-004-100
	Iron Horse Park Area	Bulkhead/ Seawall	034-050-000-050-200
	Iron Horse Park Area	Bulkhead/ Seawall	034-051-000-005-100
	Iron Horse Park Area	Revetment	034-050-000-050-100
	Martin's Well	Revetment	034-030-000-011-100
	Martin's Well	Bulkhead/ Seawall	034-030-000-011-200
	Walton Cove	Bulkhead/ Seawall	034-027-000-059-100
2030	Hingham Yacht Club Peninsula	Bulkhead/ Seawall	034-017-000-099-100
	Hingham Yacht Club Peninsula	Revetment	034-011-000-005-100
	Iron Horse Park Area	Bulkhead/ Seawall	034-051-000-001-300
	Iron Horse Park Area	Bulkhead/ Seawall	034-051-000-001-100
	Iron Horse Park Area	Bulkhead/ Seawall	034-051-000-005B-100
	Iron Horse Park Area	Bulkhead/ Seawall	034-051-000-001-400
	Stodders Neck	Revetment	034-034-000-000-100
	Stodders Neck	Revetment	034-035-000-001-100
	Hingham Shipyard	Bulkhead/ Seawall	034-036-000-106-300
2070	Broad Cove Entrance	Revetment	034-050-000-051-100
	Broad Cove Entrance	Revetment	034-039-000-008-100
	Hingham Shipyard	Bulkhead/ Seawall	034-036-000-106-100
	Stodders Neck	Revetment	034-046-000-001-100

**Figure 7 – Coastal Stabilization Structures Vulnerable to Flooding**

Time Horizon	Roadway Name(s)
Present	Rockland St and Kilby St
	Beach Road and Beach Lane
	Otis St (Rt 3A) at Hingham Bathing Beach
2030	Broad Cove Road (Rt 3A)
	Downer Ave and Condito Rd
	Downer Ave and Planters Field Ln
	Howe St and Parker Dr
	Summer St (Rt 3A) Rotary
	North St
	Eldridge Ct
	Main St and Winter St
	Hull St and Rockland St
	Rockland St and Meadow Rd
Lincoln St and Broad Cove Rd	
2070	Water St
	Andrews Isle
	Fresh River Ave
	Otis St at Walton Cove
	Wompatuck Rd and Wokomis Rd
	Blackberry Ln and Park Circle
	Condito Rd and Langlee Rd
	Hingham Shipyard Rd
	Green St
	George Washington Blvd Bridge (Approach)
	Tupelo Rd and Langlee Rd

**Figure 8 – Roadways Vulnerable to Flooding**

**2. Determine Critical Elevations**

Critical elevations (NAVD88 datum) for each asset that may be subject to flooding at some point were then determined. Critical elevations are defined as that elevation at which flood water will cause the asset to cease to function as intended. For example, the critical elevation may be the first floor of a building. In another case, the critical elevation could be a basement window sill elevation, above which water can enter the basement and damage critical mechanical equipment located in the basement. In another case, the critical elevation could be the bottom of a critical electrical transformer or electrical panel, above which flood water would damage the equipment and shut down the facility.

For buildings, pump stations and similar facilities, critical elevations are determined using a variety of data sources, including:

- Survey information provided by the Town of Hingham staff.
- As-built drawings or other similar documents provided by Hingham staff
- LiDAR survey and aerial photography

Critical elevations for roads and bridges are determined using LiDAR survey data. The low points of a roadway section subject to flooding are used as the critical elevation. Critical elevations for bridges are set as the lowest approach road elevations at the ends of the bridge.

Critical elevations for coastal stabilization structures are determined using either survey data and as-built drawings provided by the Town of Hingham staff or survey elevations included in CZM's *Mapping and Analysis of Privately Owned Coastal Structures Along the Massachusetts Shoreline* (March, 2013).

### 3. Obtain Probability of Exceedance Data

Probability of Exceedance data for the present, 2030 and 2070 time horizons for each critical infrastructure asset was obtained directly from the BH-FRM ADCIRC model. Data is obtained from the closest mesh node to the asset.

A representative example of Probability of Exceedance data from the Mill Street Pump Station is shown in Figure 9. For this facility, the critical elevation is 8.69 NAVD88. This data shows some of the following information:

- For the present year time frame, the pumping station does not show any probability of flooding.
- In the 2030 time frame, there is a 5% chance that water will exceed the critical elevation of 8.69 feet, and at a 1% (100 year recurrence interval) the water level could be approximately 1.61 feet above the critical elevation.
- In the 2070 time frame, the probability of exceeding the 8.69 feet critical elevation increases to 50% while the depth of water above the critical elevation at a 1% (100 year recurrence interval) increases to about 4.11 feet.

% Probability	Present		2030		2070	
	Flood elevation	Depth above critical elev.	Flood elevation	Depth above critical elev.	Flood elevation	Depth above critical elev.
0.1	dry	0	11.8	3.11	14.1	5.41
0.2	dry	0	11.5	2.81	14	5.31
0.5	dry	0	11	2.31	13.5	4.81
1	dry	0	10.3	1.61	12.8	4.11
2	dry	0	10	1.31	12.5	3.81
5	dry	0	9.3	0.61	12.1	3.41
10	dry	0	dry	0	11.5	2.81
20	dry	0	dry	0	11.1	2.41
25	dry	0	dry	0	10.9	2.21
30	dry	0	dry	0	10.8	2.11
50	dry	0	dry	0	9.3	0.61
100	dry	0	dry	0	dry	0

**Figure 9 – Probability of Exceedence Data for Mill Street Pump Station**

4. Determine Consequence of Failure Score

The Consequence of Failure for each infrastructure asset subject to flooding was rated for six different potential impacts in accordance with the guide shown in Figure 10. Each impact is rated separately and then a composite consequence of failure score is determined by summing the scores and normalizing to 100 using the following equation:

$$\text{Composite Consequence of Failure Score} = \frac{\sum \text{all six ratings}}{30} \times 100$$

Figure 11 shows a representative example of the Consequence of Failure rating for the Mill Street Pump Station with a total rating of 63 out of a possible 100. The higher the rating, the higher the consequence of failure of the asset.

Rating	Area of Service Loss	Duration of Service Loss	Cost of Damage	Impact on Public Safety & Emergency Services	Impact on Important Economic Activities	Impact on Public Health & Environment
5	Whole town/city	> 30 days	> \$10m	Very high	Very high	Very high
4	Multiple neighborhoods	14 - 30 days	\$1m - \$10m	High	High	High
3	Neighborhood	7 - 14 days	\$100k - \$1m	Moderate	Moderate	Moderate
2	Locality	1 - 7 days	\$10k - \$100k	Low	Low	Low
1	Property	< 1 day	< \$10k	None	None	None

**Figure 10 – Consequence of Failure Rating Guide**

	Area of Service Loss	Duration of Service Loss	Cost of Damage	Impacts to Public Safety Services	Impacts to Economic Activities	Impacts to Public Health/ Environment	Consequence score
Rating	2	4	2	1	5	5	63

**Figure 11 – Consequence of Failure Scoring Example for Mill Street Pump Station**

5. Calculate Risk Scores and Rankings

The risk score for an infrastructure asset subject to flooding for a given time horizon was calculated using the following equation:

$$R_{tn} = P_{tn} \times C_{tn}$$

Where:

- R<sub>tn</sub> = Risk Score at a given time horizon
- P<sub>tn</sub> = Probability of Exceedence at a given time horizon
- C<sub>tn</sub> = Consequence of Failure rating at a given time horizon
- tn = Time horizon n (present, 2030 or 2070)

This risk score can be used to rank an asset’s vulnerability to flooding for a given time horizon. A composite ranking can also be developed taking into account the rankings from all time horizons using the following equation:

$$R_{comp} = (R_{present} \times W_{present}) + (R_{2030} \times W_{2030}) + (R_{2070} \times W_{2070})$$

Where:

- R<sub>comp</sub> = Composite risk score for all time horizons
- R<sub>Present</sub> = Risk score for present day time horizon
- R<sub>2030</sub> = Risk score for 2030 time horizon
- R<sub>2070</sub> = Risk score for 2070 time horizon
- W<sub>Present</sub>, W<sub>2030</sub> W<sub>2070</sub> = Weighting factors for each respective time horizon

A weighting factor is used to give more emphasis to assets vulnerable to flooding in the nearer time horizons. For example, a facility which is susceptible to flooding today and more flooding in the future, should get more priority than a facility that is only vulnerable to flooding starting in 2070. The weighting factors can be adjusted, but for the purposes of this study the following factors were selected:

- W<sub>Present</sub> = 50% ( or 0.50)
- W<sub>2030</sub> = 30% ( or 0.30)
- W<sub>2070</sub> =  $\frac{20\%}{100\%}$  ( or 0.20)

An Excel spreadsheet was developed which incorporated the Probability of Exceedance data, Consequence of Failure scores and the Risk formulas to automate the ranking process. An example of the Risk Scoring for the Mill Street Pump Station is shown in Figure 12.

	Probability of Exceedance	Consequence Score	Risk Score	Weight	Composite Risk Score
Present	0	63	0	0.5	728
2030	5	63	317	0.3	
2070	50	63	3167	0.2	

**Figure 12 - Risk Scoring Example Matrix for Mill Street Pump Station (Note - Multiplication not exact due to round-off of Consequence Score)**

Note that the Consequence of Failure score remains constant for an asset over the life of the asset, and that only the Probabilities of Flooding change over time. The only instance where the Consequence of Failure score would change is if some known changes can be anticipated in the future, such as construction of a redundant facility, which would make failure of the asset in question less consequential. For the purposes of this study, we have not anticipated any future changes that would change the Consequence of Failure scores.

## Vulnerability Assessment Results

Using the risk-based ranking methodology described above, the top 20 ranked assets in terms of vulnerability to flooding based on composite scores are shown in Figure 13.

The top 20 ranked assets in terms of vulnerability to flooding based on risk scores for the present day time horizon are shown in Figure 14.

The top 20 ranked assets in terms of vulnerability to flooding based on risk scores for the 2030 time horizon are shown in Figure 15.

The top 20 ranked assets in terms of vulnerability to flooding based on risk scores for the 2070 time horizon are shown in Figure 16.

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Asset Name	Type	Consequence Score	Present Probability (%)	2030 Probability (%)	2070 Probability (%)	Composite Risk Score
Walton Cove 034-027-000-059-100	Bulkhead/ Seawall	37	100	100	100	3667
Iron Horse Park Area 034-051-000-003-100	Bulkhead/ Seawall	60	25	50	100	2850
Iron Horse Park Area 034-051-000-005B-200	Bulkhead/ Seawall	57	30	50	100	2833
Bridge Street 034-045-000-002-100	Revetment	50	30	50	100	2500
Iron Horse Park Area 034-051-000-059-100	Bulkhead/ Seawall	33	50	50	100	2000
Iron Horse Park Area 034-051-000-001-200	Bulkhead/ Seawall	60	5	30	100	1890
Bridge Street 034-045-000-002-200	Bulkhead/ Seawall	50	10	30	100	1700
Bridge Street 034-045-000-002-300	Revetment	50	10	30	100	1700
William L. Foster Elementary School	Facility	63	0	10	100	1457
Iron Horse Park Area 034-051-000-004-100	Bulkhead/ Seawall	60	2	10	100	1440
Iron Horse Park Area 034-050-000-050-200	Bulkhead/ Seawall	40	10	30	100	1360
Rockland St and Kilby St	Roadway	30	10	50	100	1200
Otis St (Rt 3A) at Hingham Bathing Beach	Roadway	50	1	10	100	1175
Martin's Well 034-030-000-011-100	Revetment	23	30	50	100	1167
Bridge Street 034-045-000-002-400	Groin/ Jetty	23	30	50	100	1167
Iron Horse Park Area 034-051-000-005-100	Bulkhead/ Seawall	50	1	10	100	1163
Broad Cove Entrance 034-039-000-009-100	Revetment	47	2	10	100	1120
West Corner Pump Station	Facility	50	1	5	100	1088
Broad Cove Rd (Rt 3A)	Roadway	47	0	10	100	1073
Beach Rd and Beach Ln	Roadway	33	5	25	100	1000

**Figure 13 – Top 20 Ranked Infrastructure Assets Vulnerable to Flooding, Ranked by Composite Risk Score**  
(Note – Multiplication not exact due to round-off of Consequence Score)

**Climate Change Vulnerability, Risk Assessment and Adaptation Study  
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Asset Name	Type	Consequence Score	Present Probability (%)	Present Risk Score
Walton Cove 034-027-000-059-100	Bulkhead/Seawall	37	100	3667
Iron Horse Park Area 034-051-000-005B-200	Bulkhead/Seawall	57	30	1700
Iron Horse Park Area 034-051-000- 059-100	Bulkhead/Seawall	33	50	1667
Iron Horse Park Area 034-051-000-003-100	Bulkhead/Seawall	60	25	1500
Bridge Street 034-045-000-002-100	Revetment	50	30	1500
Martin's Well 034-030-000-011-100	Revetment	23	30	700
Bridge Street 034-045-000-002-400	Groin/Jetty	23	30	700
Bridge Street 034-045-000-002-200	Bulkhead/Seawall	50	10	500
Bridge Street 034-045-000-002-300	Revetment	50	10	500
Iron Horse Park Area 034-050-000-050-200	Bulkhead/Seawall	40	10	400
Iron Horse Park Area 034-051-000-001-200	Bulkhead/Seawall	60	5	300
Rockland St and Kilby St	Roadway	30	10	300
Beach Rd and Beach Ln	Roadway	33	5	167
Iron Horse Park Area 034-051-000-004-100	Bulkhead/Seawall	60	2	120
Broad Cove Entrance 034-039-000-009-100	Revetment	47	2	93
Martin's Well 034-030-000-011-200	Bulkhead/Seawall	33	2	67
Otis St (Rt 3A) at Hingham Bathing Beach	Roadway	50	1	50
Iron Horse Park Area 034-050-000-050-100	Revetment	23	2	47
Hingham Yacht Club Peninsula 034-016-000-183-100	Bulkhead/Seawall	33	1	33
Heliport at Bathing Beach	Facility	27	1	27

**Figure 14 – Top 20 Ranked Infrastructure Assets Vulnerable to Flooding, Ranked by Present Day Risk Scores  
(Note – Multiplication not exact due to round-off of Consequence Score)**

Asset Name	Type	Consequence Score	2030 Probability (%)	2030 Risk Score
Walton Cove 034-027-000-059-100	Bulkhead/Seawall	37	100	3667
Iron Horse Park Area 034-051-000-003-100	Bulkhead/Seawall	60	50	3000
Iron Horse Park Area 034-051-000-005B-200	Bulkhead/Seawall	57	50	2833
Bridge Street 034-045-000-002-100	Revetment	50	50	2500
Iron Horse Park Area 034-051-000-001-200	Bulkhead/Seawall	60	30	1800
Iron Horse Park Area 034-051-000-059-100	Bulkhead/Seawall	33	50	1667
Bridge Street 034-045-000-002-200	Bulkhead/Seawall	50	30	1500
Bridge Street 034-045-000-002-300	Revetment	50	30	1500
Rockland St and Kilby St	Roadway	30	50	1500
Iron Horse Park Area 034-050-000-050-200	Bulkhead/Seawall	40	30	1200
Martin's Well 034-030-000-011-100	Revetment	23	50	1167
Bridge Street 034-045-000-002-400	Groin/Jetty	23	50	1167
Beach Rd and Beach Ln	Roadway	33	25	833
Martin's Well 034-030-000-011-200	Bulkhead/Seawall	33	20	667
Hingham Yacht Club Peninsula 034-016-000-183-100	Bulkhead/Seawall	33	20	667
William L Foster Elementary School	Facility	63	10	633
Iron Horse Park Area 034-051-000-004-100	Bulkhead/Seawall	60	10	600
Otis St (Rt 3A) at Hingham Bathing Beach	Roadway	50	10	500
Iron Horse Park Area 034-051-000-005-100	Bulkhead/Seawall	50	10	500
Broad Cove Entrance 034-039-000-009-100	Revetment	47	10	467

**Figure 15 – Top 20 Ranked Infrastructure Assets Vulnerable to Flooding, Ranked by 2030 Risk Scores (Note – Multiplication not exact due to round-off of Consequence Score)**

Name/Number	Type	Consequence Score	2070 Probability (%)	2070 Risk Score
William L Foster Elementary School	Facility	63	100	6333
Iron Horse Park Area 034-051-000-003-100	Bulkhead/Seawall	60	100	6000
Iron Horse Park Area 034-051-000-001-200	Bulkhead/Seawall	60	100	6000
Iron Horse Park Area 034-051-000-004-100	Bulkhead/Seawall	60	100	6000
Iron Horse Park Area 034-051-000-005B-200	Bulkhead/Seawall	57	100	5667
Bridge Street 034-045-000-002-100	Revetment	50	100	5000
Bridge Street 034-045-000-002-200	Bulkhead/Seawall	50	100	5000
Bridge Street 034-045-000-002-300	Revetment	50	100	5000
Otis St (Rt 3A) at Hingham Bathing Beach	Roadway	50	100	5000
Iron Horse Park Area 034-051-000-005-100	Bulkhead/Seawall	50	100	5000
West Corner Pump Station	Facility	50	100	5000
Broad Cove Entrance 034-039-000-009-100	Revetment	47	100	4667
Broad Cove Rd (Rt 3A)	Roadway	47	100	4667
Hingham Bathing Beach Parking Lot	Facility	43	100	4333
Iron Horse Park Area 034-050-000-050-200	Bulkhead/Seawall	40	100	4000
Walton Cove 034-027-000-059-100	Bulkhead/Seawall	37	100	3667
Hingham Yacht Club Peninsula 034-017-000-113-100	Bulkhead/Seawall	37	100	3667
Iron Horse Park Area 034-051-000-059-100	Bulkhead/Seawall	33	100	3333
Beach Rd and Beach Ln	Roadway	33	100	3333
Martin's Well 034-030-000-011-200	Bulkhead/Seawall	33	100	3333

**Figure 16 – Top 20 Ranked Infrastructure Assets Vulnerable to Flooding, Ranked by 2070 Risk Scores**  
(Note – Multiplication not exact due to round-off of Consequence Score)

# ADAPTATION STRATEGIES

## General

There are three general approaches for adapting to the long-term effects of flooding due to sea level rise and storm surge from extreme weather events:

- Protection
- Accommodation
- Retreat

Protection - Protection includes adaptation strategies that try to prevent damage to essential infrastructure by creating a barrier between the flood water and the infrastructure being protected. Sea walls, dikes, bulkheads, levees, revetments, flood gates, temporary flood protection barriers, and hurricane barriers are all examples of protection strategies that aim to prevent water from reaching sensitive areas. To be truly effective over the long term, many of these types of structures need to be massive to withstand the forces of the sea and can be costly and difficult to get permitted under our current regulatory system. Infrastructure outside of these structures is left unprotected.

Accommodation - Accommodation adaptation strategies allow flood waters to reach essential infrastructure, but damage to the infrastructure is minimized and controlled. Accommodation strategies acknowledge that structures and infrastructure will be exposed to flood water and will get wet, but actions are taken to minimize potential damage. Examples of accommodation adaptation strategies include raising structures above flood elevations, constructing sacrificial dunes and structures that are designed to absorb the impact of large storms to prevent major damage to infrastructure behind them with the understanding that they will need repair or replacement if destroyed, protecting utilities in waterproof enclosures; flood-proofing structures, instituting new building codes and zoning, such as increased setbacks, that require accommodation strategies to be implemented for all new construction and major renovation projects.

Retreat - Retreat adaptation strategies recognize the fact that in some areas it may be too costly, technically not feasible, or politically unrealistic to prevent damage from rising sea levels and storm surge, and that the best strategy is to remove the structures and infrastructure from harm's way. Retreat strategies relocate affected infrastructure away from the ocean to higher ground and transform the affected areas back to natural barriers which can migrate landward naturally. Examples of retreat adaptation strategies include property buyouts, relocation of roads, buildings and infrastructure, and implementation of new zoning or other regulations limiting new construction, reconstruction, or expansion of existing structures.

Adaptation strategies investigated in this study are a combination of protection and accommodation strategies. In the Town of Hingham, true retreat strategies do not appear to be warranted or will likely not be politically feasible given the extent of expected inundation by 2070. However, retreat strategies may become more important by 2100 if sea levels continue to rise as currently predicted.

## Recommended Base Flood Elevations

Prior to developing adaptation strategies, it is important to select a base flood elevation that will be the level to which a structure or infrastructure asset is adapted to.

Figure 17 shows representative flood elevations at different probabilities of exceedance for present, 2030 and 2070 time horizons. These flood elevations do not include additional height for wave run-up, nor do they include “freeboard” - height often added above the expected flood level for additional safety.

For the purposes of this study, we have based recommended adaptation options on a base flood elevation equivalent to the 0.2% probability of exceedance flood levels in 2030 and 2070 (approximately 500 year recurrence interval). This decision reflects the high criticality of the facilities in question and sets a relatively conservative design parameter from which to begin planning. These recommendations should periodically be reviewed (e.g., once every five to ten years) and adjusted as needed based on the latest climate change science and sea level rise observations and projections.

Selecting a conservative base flood elevation can have an impact on the feasibility and cost of adaptation strategies, especially if planning for the longer term (i.e., 2070). In 2030, the difference between the 1% and 0.2% events is only 0.2 feet. However, in 2070, the difference between the 1% event (12.8 ft) and the 0.2% event (14.0 ft.) is much greater at 1.2 ft. In addition, the 0.2% event in 2070 is 3.8 ft. higher than the 2030 0.2% event, whereas the 1% event in 2070 is only 2.8 ft. higher than the 1% event in 2030. Higher base flood elevations introduce more significant design challenges and costs to modify what exists today in vulnerable areas.

Exceedance Probability (%)	Present Water Surface Elevation (ft-NAVD88)	2030 Water Surface Elevation (ft-NAVD88)	2070 Water Surface Elevation (ft-NAVD88)
0.1	9.1	11.8	14.1
0.2	9	10.2	14
0.5	9	10.1	13.5
1	8.5	10	12.8
2	8.4	9.9	12.5
5	8	9	12.1
10	7.7	8.8	11.6
20	7.2	8.3	11
25	7.1	8.2	10.8
30	6.9	8.1	10.7
50	5	7.2	10.2
100	3.4	4.5	9.1

Recommended  
Base Flood  
Elevations

**Figure 17 – Water Levels at Different Probabilities of Exceedance for Present, 2030 and 2070**

## Recommendations for Infrastructure

The highest risk municipal infrastructure assets, according to Composite Risk ranking, are shown in Figure 13. They are predominantly seawalls and other coastal stabilization structures. These structures are located right at the water's edge and have higher probabilities of flooding than most roadways and facilities, which are generally located further inland and upland. However, there are a few low-lying critical facilities and roadways with high composite risks scores. One characteristic that all of these assets share is that they are projected to flood annually by the 2070 timeframe, if climate change continues as projected. In the sections below, adaptation priorities and options for high risk assets are described.

### **Coastal Stabilization Structures**

Inner Harbor/Iron Horse Park

*Recommended Base Flood Elevation for 2030:*

- 10.2 ft NAVD88

*Recommended Base Flood Elevation for 2070:*

- 14.1 ft NAVD88



Figure 18 - Inner Harbor Seawalls

The seawalls along the Inner Harbor/Iron Horse Park are of varying heights, condition, and construction type (Figure 18). Due to this variation, they provide an inconsistent level of protection for Route 3A, public spaces, and the various public and private infrastructures in the downtown business overlay district behind them. Eight of the twelve structures have critical elevations (meaning the lowest elevation along the top of the structure) which are too low to prevent the 1% flood from exceeding them, even based on present day climate and sea levels (Figure 19). Inundation maps in Appendix A show that, over time, sea level rise due to climate change will increase the likelihood that the downtown area will experience flooding due in part to the insufficient height of these structures.

Type	Name/Number	Critical Elevation	Conseq. Score	Present Prob. (%)	2030 Prob. (%)	2070 Prob. (%)	Comp. Risk Score
Bulkhead/Seawall	034-051-000-003-100	7.0	60	25	50	100	2850
Bulkhead/Seawall	034-051-000-005B-200	6.6	57	30	50	100	2833
Bulkhead/Seawall	034-051-000-059-100	4.8	33	50	50	100	2000
Bulkhead/Seawall	034-051-000-001-200	7.8	60	5	30	100	1890
Bulkhead/Seawall	034-051-000-004-100	8.4	60	2	10	100	1440
Bulkhead/Seawall	034-050-000-050-200	7.3	40	10	30	100	1360
Bulkhead/Seawall	034-051-000-005-100	8.5	50	1	10	100	1163
Revetment	034-050-000-050-100	8.3	23	2	10	100	560
Bulkhead/Seawall	034-051-000-001-300	10.6	60	0	0	30	362
Bulkhead/Seawall	034-051-000-001-100	10.4	60	0	0	30	362
Bulkhead/Seawall	034-051-000-005B-100	9.7	33	0	2	50	353
Bulkhead/Seawall	034-051-000-001-400	10.9	60	0	0	20	242

**Figure 19 - Inner Harbor/Iron Horse Park Seawall and Revetment Flood Risk**

*Recommendation:*

- (Present) Design, permit, and construct improvements to existing waterfront structures and landscape:
  - Raise top elevations of seawalls, grounds, wharves, and revetments to provide a continuous and consistent level of protection no lower than the base flood elevation of 10.2 NAVD88.
  - Take into account additional design variables (e.g., wave run-up) in the determination of the design flood elevation to determine an acceptable freeboard level.
  - Incentivize or compel (e.g. through betterment) private seawall owner to meet the adjoining structures at the appropriate height.
  - If possible, design seawall upgrades to lie landward of existing seawall footprint to minimize permitting effort. An example of this would be to leave the existing seawalls and construct new sheet-pile supported seawalls on the landward side. This will minimize the need to dewater and allow all construction to be land-based.
  - Design new seawalls to be modular to allow incremental construction over time to meet rising sea levels. Building new walls to meet high flood levels in 2070, which may or may not actually occur, can be costly and very disruptive today. However, designing a system that can accommodate the future potential heights, but not building it all at once, allows for future planned adaptation capability with minimal disruption.
  - Assuming a total wall length of approximately 5,000 ft. and unit costs ranging from \$1,000 - \$3,000 per foot to raise and replace the existing seawalls, the estimated cost to raise the sea walls to elevation 10.2 NAVD88 would be in the range of \$5,000,000 to

\$15,000,000. The 5,000 ft. wall length does not include Kimball's Wharf which is privately owned. The length of seawall along Kimball Wharf is approximately 450 ft. The cost range to raise and replace the Kimball's Wharf seawall would be approximately \$450,000 to \$1,350,000.

#### Lincoln Street/Bridge Street/Route 3A Bridge

*Recommended Base Flood Elevation for 2030:*

- 10.6 ft NAVD88

*Recommended Base Flood Elevation for 2070:*

- 14.1 ft NAVD88

The seawalls and revetments located around the base of the Lincoln Street/Bridge Street/Route 3A Bridge are in relatively good condition, according to CZM (2013). Despite the relatively high probability of flood waters exceeding the heights of these structures and the significant consequences for mobility if the bridge itself were to fail, neither the bridge nor the roadway approach are predicted to be exceeded by flood waters, even under the 0.2% event in 2070.

*Recommendation:*

- (Present) Continue monitoring structures for condition and scour, which could be worsened by more frequent and extreme flooding events.
- (2030) Carry out regular maintenance as needed over the lifetime of the structures.
- (2070) During next bridge replacement, design all associated structures according to the 2070 base flood elevation plus appropriate wave run-up and freeboard, taking into account their long-term design life.

#### Walton Cove

The dilapidated seawall structure at Walton Cove has not been in service for some time. The Town has indicated that this it is unlikely to be restored to service and may eventually be removed.

*Recommendation:*

- No adaptation is recommended.

### **Facilities/Buildings**

#### William L. Foster Elementary School

*Recommended Design Flood Elevation for 2030:*

- 10 ft NAVD88

*Recommended Design Flood Elevation for 2070:*

- 14 ft NAVD88

The Foster School is located at the northwest corner of the Broad Cove wetland. The parking lot on the south side of the school, directly adjacent to the wetlands, ranges in elevation from approximately 5.5 ft

NAVD88 to 6.5 ft NAVD88. Flooding at the school from sea level rise and storm surge would emanate from the Broad Cove wetland, pass across the parking lot, and flow down a small staircase that leads from the parking lot down to the HVAC crawl space below the building. If flood levels were higher, they could enter the crawl space through vents in the building exterior close to the ground. The first floor of the school building is about 2 ft. higher in elevation than the parking lot, but in the 2030, the 0.2% flood water would inundate the first floor (Figure 20). While it is unlikely that the school grounds will experience flooding from sea level rise and storm surge in the present time frame due to tidal attenuation at the Broad Cove culvert, by 2030 projections show water overtopping Route 3A at the Broad Cove entrance putting the Foster School at greater risk of flooding. By 2070, sea level rise alone could cause daily flooding of the parking lot and sports facilities at high tide (Figure 21).

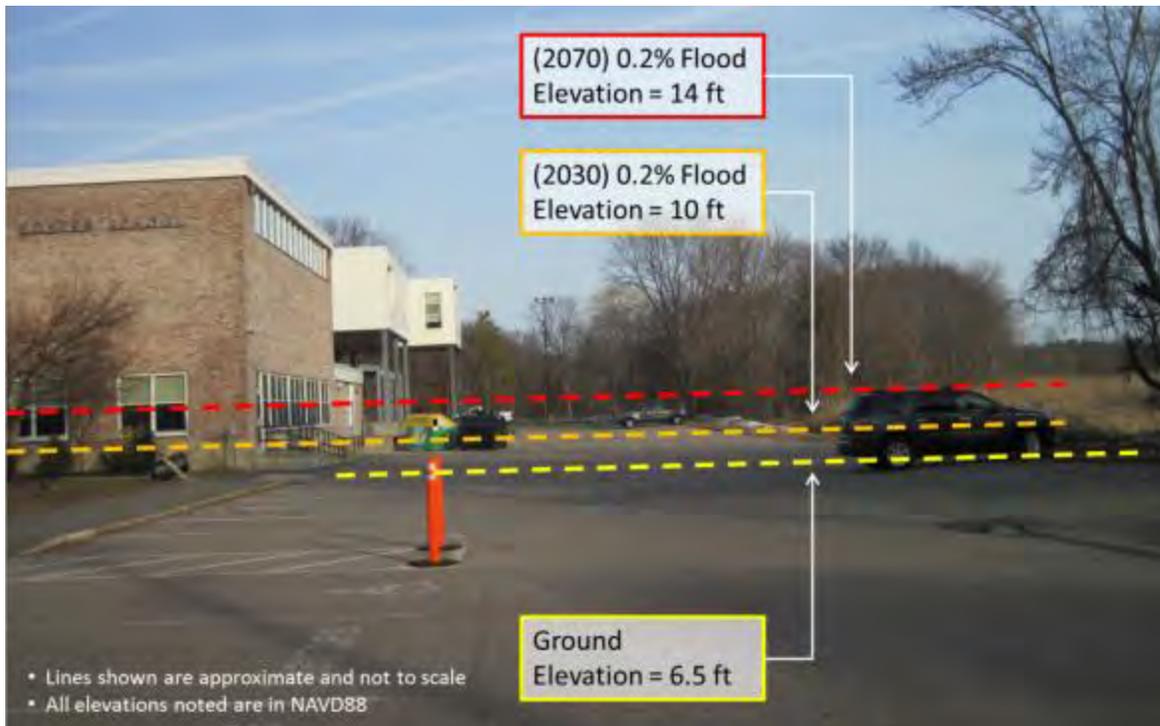


Figure 20 - Foster Elementary School Elevation and Flood Risk (SLR and Storm Surge)

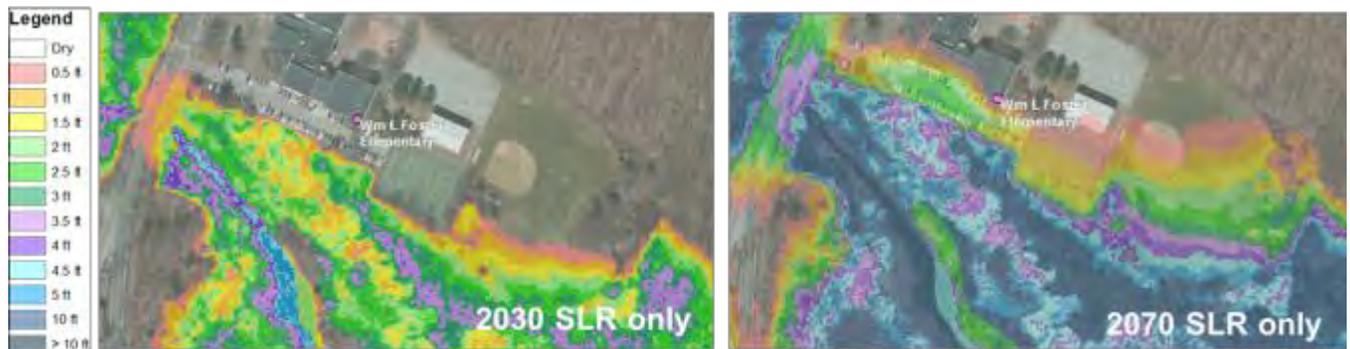
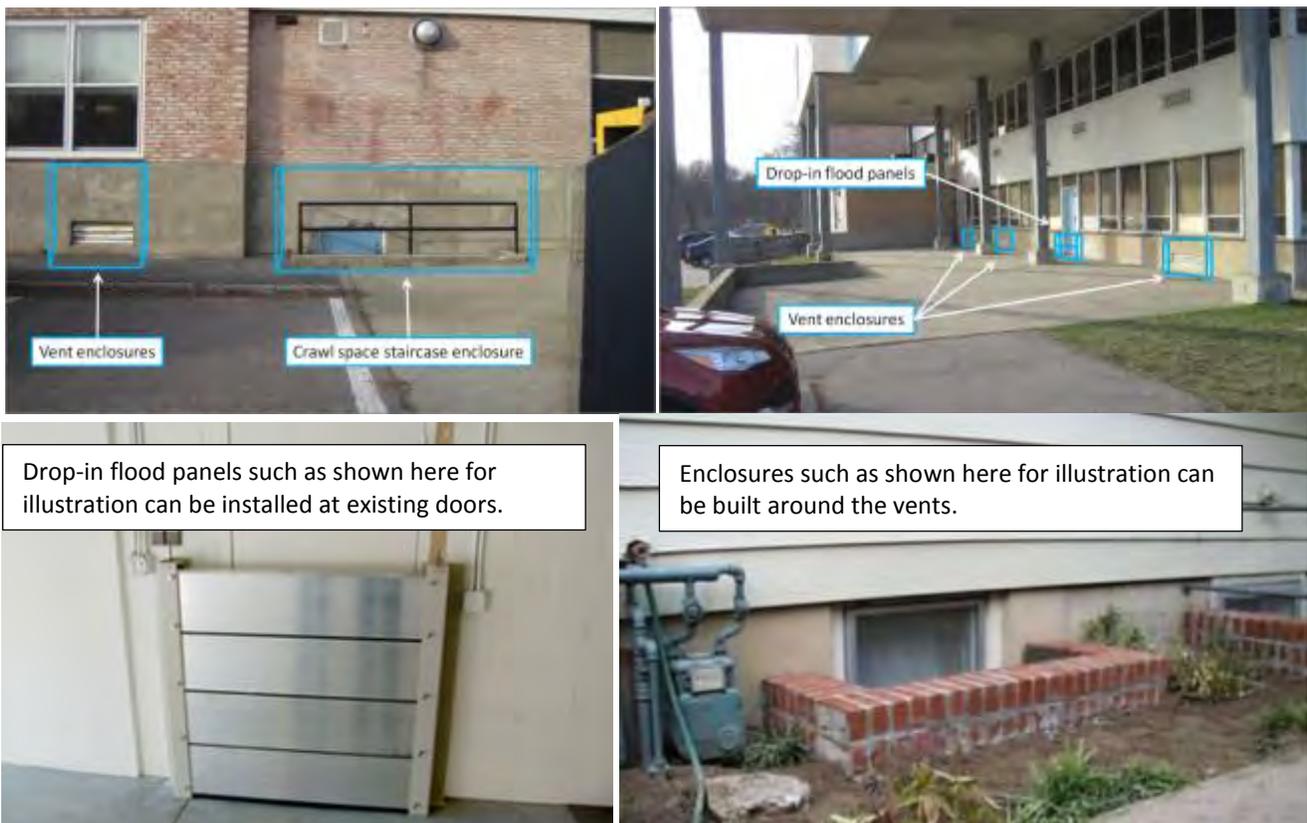


Figure 21 - Depth of Flooding at High Tide in 2030 and 2070 at Foster Elementary School with Highest SLR

*Recommendation:*

- (Present) Develop an emergency student relocation plan for the scenario that the school is flooded and unable to be occupied for an extended period of time.
- (2030) Install a high level water alarm and sump pump system tied to an emergency generator to allow for monitoring of and pumping out of any water that leaks into the crawl space. (Approximate cost = \$10,000)
- (2030) Replace metal railings around HVAC crawl space staircase with concrete enclosure walls to 10 ft NAVD88. Add drop-in flood panel at opening to staircase prior to storm events to prevent water from entering HVAC crawl space. (Approximate cost = \$10,000)
- (2030) Build concrete enclosures to 10 ft NAVD88 around vents to prevent water from entering HVAC crawl space. (Approximate cost = \$15,000)
- (2030) Install drop-in flood panels at vulnerable doorways. (Approximate cost = \$15,000)
- (2030) Seal or install shut-off valves for other conduits for water entry. (Approximate cost = \$5,000)
- (2070) Design, permit and construct perimeter flood protection barrier system to 14 ft NAVD88, using retaining walls and/or levees. (Approximate cost = \$820,000)



**Figure 22 - Foster School Adaptation Options for 2030**

*Alternative Recommendations:*

- By raising Route 3A at the Broad Cover culvert and installing a tide gate control as described later in the roadway adaptation section, the flooding at the Foster School can be eliminated and the adaption measures described above would not be required.

### West Corner Pump Station

*Recommended Design Flood Elevation for 2030:*

- 9.7 ft NAVD88

*Recommended Design Flood Elevation for 2070:*

- 13.9 ft NAVD88

West Corner Sewer Pump Station is located near the intersection of Rockland Street and Hull Street, adjacent to a marsh. The wet well rim elevation is located under the manhole shown in Figure 23, while much of the pumping equipment is located on the first floor of the building elevated approximately 4 ft above grade. There are two other manholes located at grade. Utility meters are attached to the building exterior.



**Figure 23 - West Corner Pump Station**

*Recommendation:*

- (2030) Install water-tight manhole covers over the wet well and others to prevent above ground flood waters from entering the well and others. (Approximate cost = \$4,500)
- (2030) Seal underground utility connections and other conduits for water entry. (Approximate cost = \$2,000)
- (2070) Raise/relocate utility meters on building exterior to 13.9 ft NAVD88. (Approximate cost = \$5,000)

### Mill Street Pump Station

*Recommended Design Flood Elevation for 2030:*

- 11.5 ft NAVD88

*Recommended Design Flood Elevation for 2070:*

- 14 ft NAVD88

The Mill Street Sewer Pump Station is located in a parking lot on the corner of Mill Street and Water Street. An emergency generator, raised 1-2 ft above grade, is located adjacent to the main pump station building (Figure 24). The ground elevation is approximately 9.3 ft NAVD88, while the wet well rim, located inside the building, is at the lower elevation of 8.7 ft NAVD88. For this facility to flood from sea level rise and storm surge, water would have to pass over or around the Inner Harbor/Iron Horse Park seawalls, over Route 3A and down North Street and/or Water Street. Water would then enter through building exterior openings and into the wet well. In 2030, the probability of flood water exceeding Route 3A is projected to be 5%.



Figure 24 - Mill Street Pump Station

*Recommendation:*

- (2030) Purchase and have ready to deploy a 5 ft. high temporary flood barrier (approximately 160 ft. long) around perimeter of pump station and generator. (Approximate cost = \$56,000)
- (2030) Seal interior conduits for water entry (e.g., through-floor/wall pipes, utility conduits) to 14.0 ft NAVD88. (Approximate cost = \$2,000)
- (2030) Install a high level water alarm and sump pump system tied to the emergency generator to allow for monitoring of and pumping out of any water that leaks through the temporary flood barrier. (Approximate cost = \$10,000)

*Alternative Recommendation:*

- By raising Route 3A as described later in the roadway adaptation section, the flooding at the Mill Street Pump Station can be eliminated and the adaption measures described above would not be required.

Broad Cove Pump Station

*Recommended Design Flood Elevation for 2030:*

- 10 ft NAVD88

*Recommended Design Flood Elevation for 2070:*

- 14 ft NAVD88

Broad Cove Sewer Pump Station is located on the corner of Downer Ave and Lincoln Street, adjacent to the Broad Cove wetland (Figure 25). To flood from sea level rise and storm surge, water would have to overtop Route 3A and raise the Broad Cove water elevation sufficiently to spill over its current banks and into the pump station building via exterior openings. The first floor of the pump station is sufficiently elevated to prevent flooding predicted for 2030 with a 0.2% probability of exceedance.



**Figure 25 - Broad Cove Pump Station**

*Recommendation:*

- (2070) Seal interior conduits for water entry (e.g., through-floor/wall pipes, utility conduits) to 14 ft NAVD88. (Approximate cost = \$2,000)
- (2070) Install drop-in flood panels on doorways. (Approximate cost = \$6,000)
- (2070) Raise or enclose utility boxes on the building exterior. (Approximate cost = \$5,000)
- (2070) Alternative: Purchase and have ready to deploy a temporary flood barrier around the pump station and purchase portable fuel-powered pumping system to pump out any leakage through the temporary barrier (Approximate cost = \$56,000).

Bel Air Pump Station

*Recommended Design Flood Elevation for 2030:*

- 10.1 ft NAVD88

*Recommended Design Flood Elevation for 2070:*

- 14 ft NAVD88

Bel Air Sewer Pump Station is located on the edge of a marsh in a wooded, low-density residential area (Figure 26). The wet well access hatch (elevation 11.4 ft NAVD88) is located on the top of a concrete pad adjacent to the main pump station building in which the equipment is located. The building and wet

well are located on a sufficiently elevated area so as to be protected from the 0.2% coastal flood in 2030. However, by 2070 it becomes significantly more vulnerable to flooding.



**Figure 26 - Bel Air Pump Station**

*Recommendation:*

- (2070) Construct a low flood wall inside the perimeter fence with a temporary access closure for drop-in flood panels at the gate. (Approximate cost = \$120,000)
- (2070) Seal interior conduits for water entry (e.g., through-floor/wall pipes, utility conduits) to 14.0 ft NAVD88. (Approximate cost = \$2,000)
- (2070) Purchase portable fuel-powered pumping system. (Approximate cost = \$2,000)

**Roadways**

**Route 3A/Otis Street/Summer Street**

*Recommended Design Flood Elevation for 2030:*

- 10.2 ft NAVD88

*Recommended Design Flood Elevation for 2070:*

- 14 ft NAVD88

In the 2030 time horizon and beyond, sections of Route 3A in Hingham are at relatively high risk of flooding, including at the entrance to Broad Cove, at Hingham Bathing Beach, between North Street and Water Street, and at the Rotary (Figure 27). In addition to the negative impacts for mobility, the flooding of these roadway sections would have significant impact on public and private infrastructure located on the landward side of Route 3A.

If Route 3A is exceeded at the Broad Cove entrance, for example, the following assets could be flooded (Figure 28):

- Broad Cove Road, Downer Ave, and Lincoln Street
- Foster Elementary School and Derby Academy
- Broad Cove Sewer Pump Station

- Harbor House Nursing Center
- Pharmacy, gas station, and other businesses, and
- Residences.

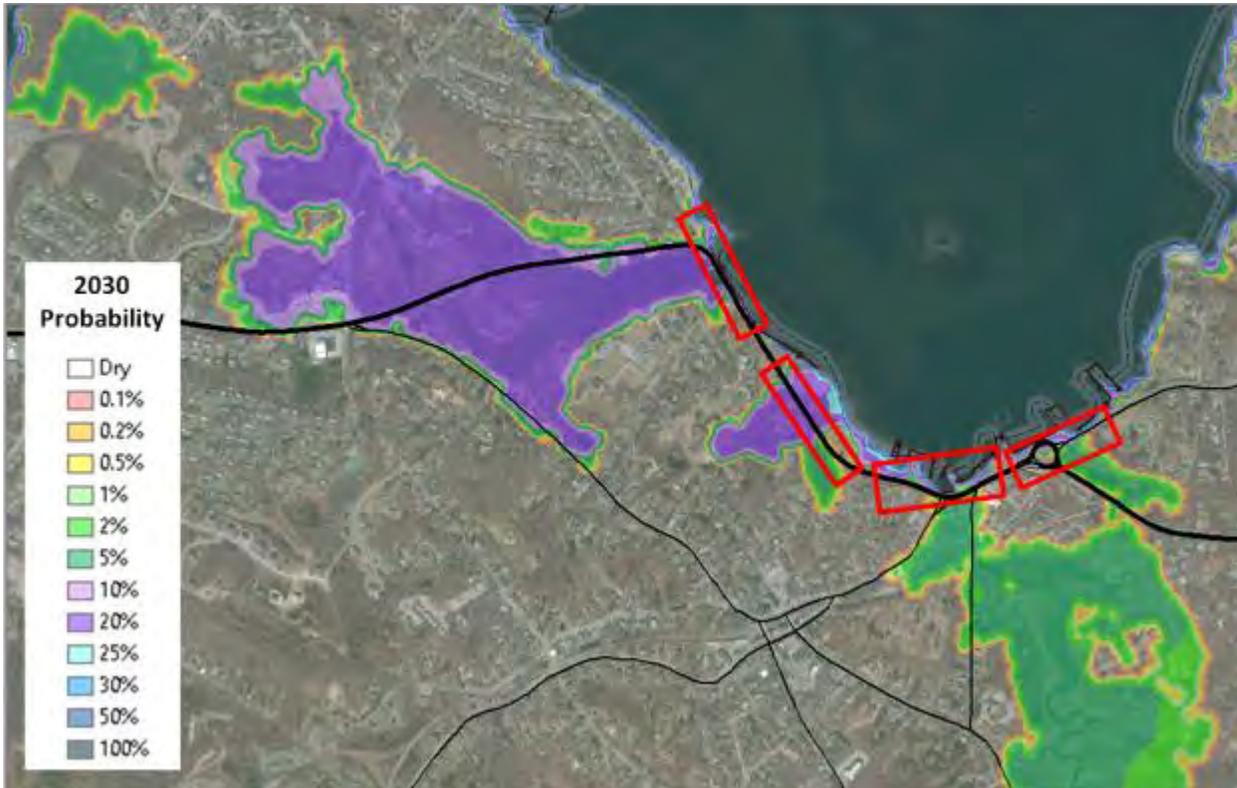


Figure 27 - Probability of Flooding along Route 3A in 2030



**Figure 28 - Route 3A at Broad Cove Entrance in 2070 1% Flood (Elevation 12.8 ft NAVD88)**

Inundation of Route 3A between North Street and Water Street could result in flooding of the following critical assets (Figure 29):

- Route 3A, North Street, Water Street, Mill Street, Green Street, Eldridge Court and Station Street
- Downtown overlay district
- Mill Street Pumping Station
- Telephone and natural gas infrastructure
- MBTA rail line

Route 3A is a State roadway, so the Town of Hingham does not have direct control over how it is adapted over time. However, the Town can influence the planning process. While Route 3A poses a significant risk, it also provides an opportunity to shore up Hingham's long-term resilience if addressed as a matter of priority. Route 3A could be repurposed and redesigned as a levee from rising sea levels and more intense storm surge. Because of the relatively low density of development along the roadway right-of-way and the presence of large public spaces and natural systems, MassDOT and the Town of Hingham have a number of adaptation options not available in other municipalities and at other locations.

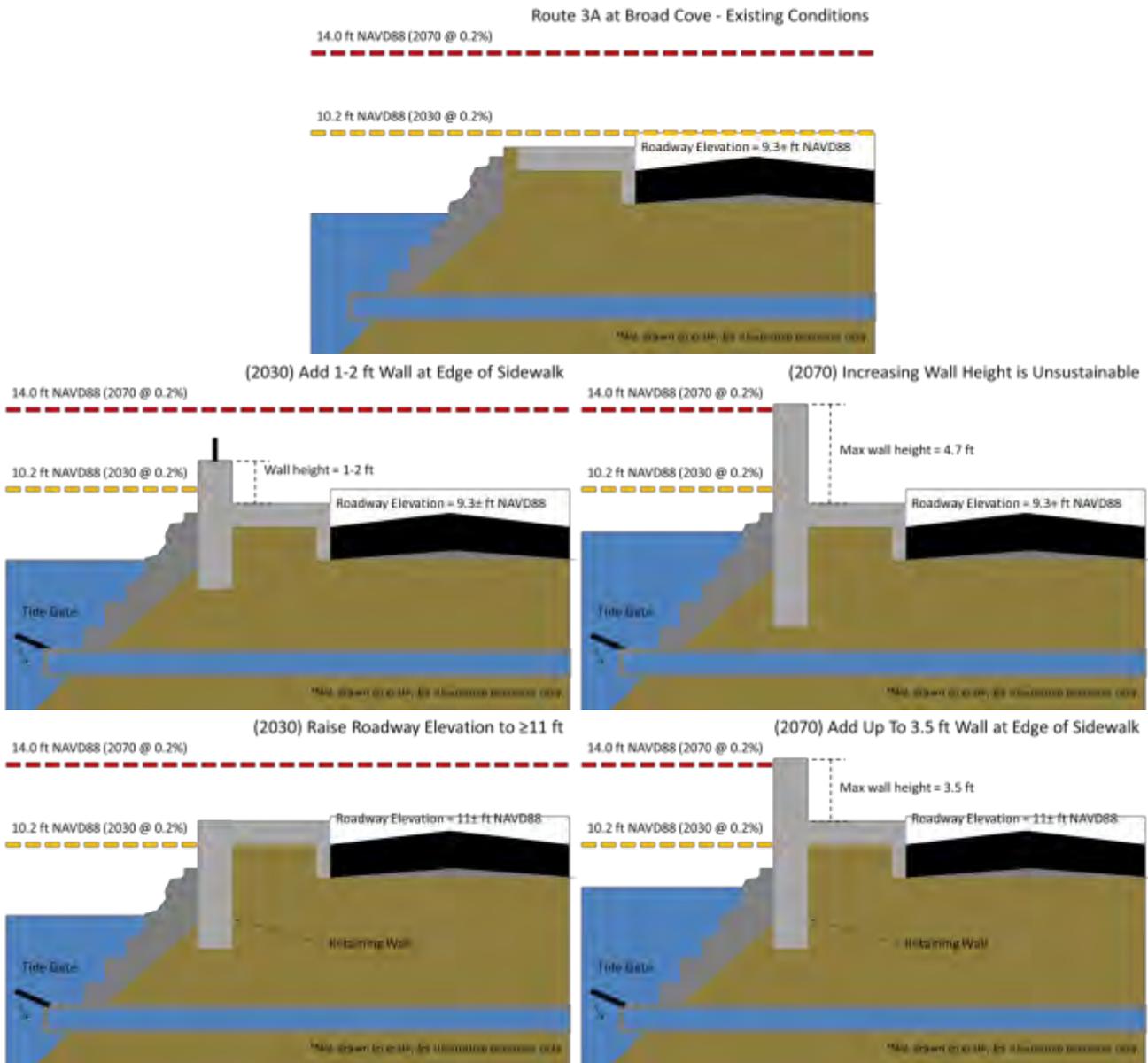


Figure 29 - Route 3A from North Street to Water Street in the 2070 1% Flood (Elevation 12.8 ft NAVD88)

*Recommendations:*

- (Present) Prepare evacuation planning and education for floodplain residents, businesses, and institutions.
- (Present) Purchase electronic warning signs for road closures / evacuation if none already available. (Approximate cost = \$40,000)
- (Present) Identify alternate heliport location for use during flooding events.
- (Present) Carry out planning, engineering design, environmental assessment on options to raise ~1,880 linear feet of Route 3A and/or the right-of-way to minimum elevation of 10.2 ft NAVD88 (Approximate cost in today's dollars = \$475,000)
  - Raising the roadway where feasible, but especially at low points is a robust solution that allows the flexibility to add additional protection later, utilizing the right-of-way.
  - Roadway improvements should incorporate green infrastructure, best management practices for storm water management, aesthetic improvements, and other elements that enhance natural systems without exacerbating flood risks (e.g., self-regulating tide gates at Broad Cove).
  - Right-of-way improvements could include berms or permanent decorative floodwalls along the water-side edge of the sidewalk, and/or temporary flood barrier closures (e.g., drop-in flood panels) at driveways and parking lot access.
- (2030) Prior to 2030, as soon as funding becomes available, implement the preferred alternatives described above for raising Route 3A. (Approximate cost in today's dollars = \$4,750,000)
- (2070) If needed, raise ~4,250 ft of right-of-way incrementally to a minimum of 14 ft NAVD88. This can be achieved by raising the roadway, or by more likely adding permanent and/or temporary flood barriers. Assuming a representative flood barrier cost of \$500 per foot, an approximate cost to construct a flood barrier to bridge the gap between elevation 10.2 and 14

NAVD88, including 10% for engineering, would be \$2,337,000 in today's dollars. Where space permits, such as at the bathing beach area, options exist for either "gray" infrastructure such as vertical concrete or glass barriers, or more "green" infrastructure such as landscaped berms. Unfortunately, in developed areas, such as much of the Route 3A corridor where there is limited Right of Way to work with, opportunities for "green" flood barriers are somewhat limited.



**Figure 30 – Route 3A at Broad Cove Entrance – Incremental Adaptation Options**

George Washington Boulevard

*Recommended Design Flood Elevation for 2030:*

- 10.2 ft NAVD88

*Recommended Design Flood Elevation for 2070:*

- 14 ft NAVD88

George Washington Boulevard is an important economic and emergency connector between the Towns of Hingham and Hull. Low points in the roadway, north and south of the Hingham District Court, could be impacted by sea level rise and storm surge, particularly in later time horizons (Figure 31). The low-lying roadway sections have few if any developments along them, allowing for the possibility that the roadway could be raised with minimal impact on adjacent uses. However, such improvements should be designed to minimize impacts to wetland resources and, where possible, to improve the quality of environmental resources along the roadway.



**Figure 31 - George Washington Boulevard South of Hingham District Court in 2070 1% Flood (Elevation 12.8 ft NAVD88)**

*Recommendation:*

- (Present) Coordinate closely with Hull on road closures / evacuations through Hingham.
- (Present) Establish a debris management and roadway/bridge inspection protocol to re-establish access to Hull via Hingham roads after a flooding event.
- (2030) Design, permit, and implement a roadway improvement project to raise approximately 850 ft. of George Washington Boulevard at low-lying sections to a minimum elevation of 10.2 ft NAVD88

- Raising the roadway where feasible, but especially at low points is a robust solution that allows the flexibility to add additional protection later, utilizing the right-of-way.
- Roadway improvements should incorporate green infrastructure, aesthetic improvements, and other elements that enhance natural systems without exacerbating flood risks (e.g., using vertical retaining walls to minimize expansion into adjacent salt marsh).
- Approximate cost in today's dollars to raise the roadway to elevation 10.2 ft. NAVD88, including engineering costs, is \$2,448,000
- (2070) If needed, raise the roadway and/or right-of-way incrementally over a total distance of approximately 2,000 ft. to a minimum elevation of 14 ft NAVD88. This can be achieved by raising the roadway, or by more likely adding permanent and/or temporary flood barriers. Where space permits, "green" flood barriers such as landscaped berms can be utilized. Assuming a representative flood barrier cost of \$500 per foot, an approximate cost to construct a flood barrier to bridge the gap between elevation 10.2 and 14 NAVD88, including 10% for engineering, would be \$1,100,000 in today's dollars.

### Rockland Street to Hull Street

Along with George Washington Boulevard, and Hull Street, Rockland Street is an economic and emergency connector between the Towns of Hingham and Hull. Rockland Street is the roadway with the highest estimated probability of flooding in Hingham. The roadway has a reasonable potential of flooding in 2030 at the Weir River crossing near Kilby Street and along a segment of roadway from Weir Street Extension to Hull Street at the Straits Pond Dam. The Straits Pond Dam section at Hull and Rockland has a mix of commercial and residential developments. The long section to Hull Street is adjacent to sensitive marsh habitat, separated from the roadway by a small strip of low-lying uplands with residential developments. The Weir River crossing location is significant also because Hull's main electric transmission substation is located near this intersection. The high risk of flooding along the long section of low-lying roadway up to Hull Street is also an indicator of the even higher risk of flooding faced by residents who live between the roadway and the marsh. Raising low-lying sections of Rockland Street would pose financial challenges due to the length of the roadway that would need to be raised (approximately 6,000 ft.), technical challenges of mitigating impacts to adjacent properties and environmental resources, and the political challenges of protecting the roadway and properties on the landward side of the road while letting the other side flood.

#### *Recommendation:*

- (Present) Coordinate closely with Hull on road closures / evacuations through Hingham.
- (Present) Purchase electronic warning signs for road closures / evacuation I not already available (Approximate cost = \$40,000)
- (Present) Establish a debris management and roadway/bridge inspection protocol to re-establish access to Hull via Hingham roads after a flooding event.
- (Present & 2030) Maximize the protective ecosystem functions that the adjacent salt marsh provides, including through restoration and management programs to maintain a healthy marsh that helps to absorb energy from wave action during a storm event which helps to minimize damage.
- (2030) Design, permit and raise the roadway to a minimum elevation of 10.2 NAVD88 over an approximate length of 6,000 ft. (Approximate cost = \$16,686,000)
- (2070) If needed, raise the roadway and/or right-of-way incrementally over a total distance of approximately 6,000 ft. to a minimum elevation of 14 ft NAVD88. This can be achieved by raising the roadway, or by more likely adding permanent and/or temporary flood barriers.

Assuming a representative flood barrier cost of \$500 per foot, an approximate cost to construct a flood barrier to bridge the gap between elevation 10.2 and 14 NAVD88, including 10% for engineering, would be \$3,300,000 in today's dollars.

- (Alternative Recommendation) Allow the roadway to flood until the nature of development along the corridor changes to better accommodate raising the roadway or otherwise protecting the roadway and properties on the landward side of the road.

**Note: Extensive changes to roadway elevations or the introduction of flood control structures, such as flood walls or raised sea walls, could have a significant positive effect on the flood characteristics depicted in future FEMA Flood Insurance Rate Maps (FIRM) for the Town of Hingham which could have the positive benefit of causing a reduction in flood insurance premiums for the Town, home owners and commercial interests.**

## Recommendations for Natural Resources

### Broad Cove

An existing study was performed in 2011 by Woods Hole Group to evaluate the feasibility of habitat restoration in Broad Cove by improving tidal exchange between Hingham Harbor and Broad Cove by making changes to the existing hydraulic constrictions at Route 3A (Otis St). The existing small culvert severely restricts the amount of flow from Hingham Harbor into Broad Cove during daily tidal cycles, reducing the water quality and thus the health of the ecosystem in the Cove. Broad Cove is projected to undergo some of the largest natural resource changes in Town due to predicted sea level rise.

The previous study concluded that the maximum size culvert without tidal controls that could be constructed was 10 ft. wide by 4 ft. high without impacting daily flooding of adjacent roadways.

Increasing the size of the culvert under Route 3A is an important element to increase the overall health of the Broad Cove ecosystem by improving tidal flow from Hingham Harbor. However, the increased culvert size should also include tidal controls and raising Route 3A, as part of a flood barrier system to protect infrastructure and roadways along Broad Cove. (see Route 3A recommendations above). Further engineering and habitat/ecological studies will be required to properly size the larger culvert and the appropriate tidal control structure. Woods Hole Group already has a model of this area in place and could do some simple simulations with sea level rise and storms to assess alternatives in more detail.

### Worlds End Reservation

This is a Trustees of Reservations-owned property and should be left to naturally evolve. There is no significant infrastructure, and some of the potential transitions at this location are ecologically positive.

### Hingham Harbor Shoreline

The section of shoreline at the Hingham Harbor warrants a further site-specific coastal processes and adaptation study to evaluate potential gray and green adaptation options. There is a mix of important natural and infrastructure components along this shoreline, and it also protects some significant upland assets. Some possible adaptations include beach and dune restoration at the bathing beach and enhancement with modular seawalls along Hingham Harbor Marina. A site-specific coastal processes

study, which includes modeling of local tidal currents, sea level rise and storm surge, wave action and sediment characteristics, will provide more detailed information on factors affecting long-term rates of erosion, sediment transport mechanisms, and the types and characteristics of hard and soft coastal protection systems that will provide the most resilient shore front. The cost of a site-specific coastal processes study may range between \$100,000 and \$200,000, depending on the level of detail desired. A construction project for improvements to the area, including the beach, is currently close to implementation. It is unclear how future effects of climate change, including sea level rise, have been incorporated into the design.

### **Home Meadow**

Restoration work in Home Meadow has been implemented by the Town and MBTA as part of the mitigation for impacts caused by the commuter rail improvements. In terms of impacts to natural resources from sea level rise, it appears there is adequate time to react here as the natural resources don't show significant changes until later out years. For the time being, this area could be left to naturally evolve.

### **Foundry Pond and Lyford Lyking Area**

There are some positive ecological enhancements that occur by 2030, and no additional natural resource conservation action would be required to combat sea level rise impacts until at least 2070. A wait and see approach is reasonable here.

### **Beal Cove**

Beal Cove is a good location for some potential green resilience design that would benefit the natural resources and fringing marsh in this area. Some potential adaptations to consider in this location include thin layer deposition projects, marsh expansion projects, and/or living shorelines. For example, marsh elevations in this area could be made more resilient and/or expanded through a thin-layer deposition project for the cove. Since there is limited wave energy expected to influence this area, marsh resiliency could be fostered to provide storm damage protection. Another approach for this region would be implementation of biodegradable type solutions to provide an expanded natural resource area and "living" shoreline seaward of the roads in this area.

## Policy/Regulations

### Potential Amendments to Hingham Wetlands Regulations

- Amend Section 2.0 (Jurisdiction), subsection (6): Consider changing the reference from (1-4) to (1-5) which will then include land within a minimum distance of 100 feet from land subject to flooding or inundation.
- Amend Section 7.4 (Notice of Intent), subsection (b): Consider adding a subsection 7.4.b.9 requiring applicants to submit a discussion on how the effects of sea level rise are being addressed and mitigated for applications affecting Land Subject to Coastal Storm Flowage and Bordering Land Subject to Flooding within the local buffer zone. Also consider that the applicant be required to submit a cost-benefit analysis of mitigation alternatives.
- Update and combine the performance standards in Sections 20.0 (Land Subject to Coastal Storm Flowage) and 24.0 (Additional Protection of Special Flood Hazard Zones). These two performance standards have some conflicting standards and should be reviewed for both consistency and appropriateness of performance standards. Some issues to consider:
  - In section 20.1.d.4, consider specifying a specific sea level rise curve rather than allowing use of “*at a minimum, the historic rate of relative sea level rise in Massachusetts of 1 foot per 100 years....*”. Based on the results of this study, the results are dramatically different over the long term life of project.
  - In section 20.1.d.5.b, prohibition of impermeable paving is not realistic for major roadway work, such as those contemplated for Route 3A or George Washington Boulevard.
  - In sections 20.1.d.5.c and 20.1.d.6.b, the current language only permits expansion of coastal engineering structures that are loose, slope-stone design (revetments). As discussed above, this may not be the best solution to flood prevention, if such revetments would need to extend beyond the existing land limits. This prevents use of innovative green infrastructure, limits raising existing flood protection structures, and construction of permanent or temporary flood protection walls. More definition of what will be permitted should be provided.
  - Consider adding performance standards for the use of temporary flood protection barriers.
  - Section 20.1.d.10 references buffer zone requirements for Land Subject to Coastal Storm Flowage (LSCSF), however LSCSF is included in buffer zone standards. Further the reference to section 23.0 should be 22.0.
  - In both sections 20.0 and 24.0 there are references to expansion of structures in flood zones. There have apparently been a number of recent questions during hearings as to what defines expansion. Consider clarifying the definition of expansion of existing structures in flood zones.
- Consider increasing the width of the buffer zone for LSCSF. The current buffer zone is 100 ft. in accordance with the distance in 310 CMR 10.00. The Conservation Commission could increase

its local jurisdictional area to review projects in the context of potential impacts to wetlands due to predicted sea level rise.

### **Potential Zoning By-Law Changes**

- Consider establishing a Coastal Management Zone (CMZ) district which would amend the Flood Plain and Watershed protection District defined in Section III-C of the Hingham. This section currently references the FEMA FIRM map adopted in 2012 which does not include projections for future sea level rise. The CMZ could extend minimum flood plain regulations to the 0.2% risk (500-year) FIRM floodplain (X Zones) which is beyond the existing 1% risk (100-year) limit in the current Flood Plain District. It will likely not be possible to completely eliminate reference to the FEMA FIRM map because doing so would eliminate eligibility under the National Flood Insurance Program (NFIP) for the Town of Hingham, which is not recommended. Instead, the CMZ could incorporate performance standards based on the 0.2 percent (500 year recurrence) mapping, and attempt to incorporate higher freeboard standards for structures being rebuilt or substantially reconstructed. Specific performance standards would need to be developed for evaluation of projects during Zoning Board of Appeals/Planning Board Special Permit and/or Site Plan review processes. Performance criteria in this zone could be developed using No Adverse Impacts principles.
  - When developing performance standards for commercial structures in the CMZ zone, consideration should be given to permit wet-proofing or dry-proofing of structures in lieu of elevating structures. Elevating structures can have very costly impacts on meeting the accessibility requirements of the Americans with Disabilities Act (ADA) on commercial and public structures. Allowing for wet or dry-proofing of existing buildings will help to improve their resiliency, while minimizing costly ADA modifications.
  - Consider including provisions in the CMZ performance standards for temporary flood barrier protection. One element that needs to be addressed is how means of egress is addressed. During a flood event, while the building is surrounded with a temporary flood protection barrier, egress routes may not be operational. Requiring that the building be unoccupied during a flood while temporary barriers are in place helps to address this building code issue.
- Consider amending the Zoning By-Law to provide incentives to residential and commercial property owners to raise/protect structures to improve resilience and flood protection of private properties.
  - Consider allowing higher maximum height restrictions in section IV-A in the case of existing structures being elevated to improve flood protection.
  - Consider adopting a “freeboard incentive” for residential and commercial building elevation projects or for new construction. As an example, the Town of Hull adopted a “freeboard incentive” that reduces building department application fees by \$500 if an elevation certificate is provided to verify that the building is elevated a minimum of two feet above the highest federal or state requirement for the flood zone. Additional fee reductions could apply for additional freeboard.

### **Potential Changes to the Planning Board Rules and Regulations for Subdivisions**

- Consider modifying the subdivision rules and regulations to allow for cluster development in the CMZ and other wetland protection districts which could provide a density bonus for projects that provide open space to accommodate expanding wetlands.

### **Land/Resource Acquisition**

- Consider acquiring land adjacent to coastal resource areas to accommodate changing conditions of natural resource areas such as salt marsh, especially those areas identified in this study as areas of potential resource change and/or migration.
  - The Town's Open Space Acquisition Committee should use the natural resource information provided in this study to identify priority areas for acquisition through easements, fee interest or purchase of development rights to accommodate project effects of sea level rise. These priorities could be included in the 2015-2016 update to the Towns Open Space and Recreation Plan.
  - Investigate the possibility of implementing a rolling easements program in which the town can purchase an easement from a landowner today in exchange for a promise to surrender the property to the town once it is substantially damaged by a flood event. This program is part of a retreat policy to be implemented in areas subject to severe and repeated flooding. Rolling easements are a way to provide cash to a homeowner today with the understanding that when the home is substantially damaged, it will not be rebuilt and will be turned over to the town. This program is part of a retreat policy to be implemented in areas subject to severe and repeated flooding. Based on information provided in the 2012 Hingham Hazard Mitigation Plan Update, there are seven single or multi-family homes in Hingham that are defined by the Community Rating System (CRS) of the National Flood Insurance Program as repetitive loss properties. These seven properties, having had at least two or more flood claims of \$1,000 or more in any given 10-year period since 1978, might be ideal candidates for such a program as they have already experience flood damage in the past, and the chance that they will experience more claims in the future is very high.

### **Potential Policies for Public Projects**

- Develop policies for public projects that incorporate the anticipated effects of climate change and sea level rise and promote more sustainable practices throughout the community.
  - Require that all Town-funded projects take into account predicted impacts of climate change and sea level rise.
  - Evaluate the costs and benefits of becoming a Green Community.

- Evaluate the Town's Hazard Mitigation Plan in the context of this study and amend as appropriate. Include a documentation requirement/goal to build data on the impacts of coastal storms to inform implementation of future adaptation measures.
- Evaluate opportunities to relocate snow storage areas away from the Town bathing beach parking lot.
- Develop a regular (perhaps bi-annual) inventory/report of actions taken by the community to improve resilience to climate change and sea level rise.

### **Install a Tide Gauge in Hingham Harbor**

- Consider installing an automated tide gauge in Hingham Harbor to help monitor actual sea level rise locally. The nearest tide gauge is in Boston Harbor. Although it is very reliable, it does not provide localized data for Hingham Harbor. Having a local tide gauge will provide important data for the design and implementation of future adaptation projects. (Approximate cost = \$5,000)

### **Develop a Coastal Flood Operations Plan**

- Consider developing a Coastal Flood Operations Plan to prepare for and minimize flood damage due to coastal flooding as a result of extreme weather events. The plan will help to institutionalize flood prevention actions that need to be performed before, during and after a major storm.
  - The plan should utilize actual maximum predicted water elevations for a storm and should clearly define what the sources of the data are and who makes the decision to implement the plan.
  - The plan should clearly define actions to be taken based on the maximum predicted water elevations, parties responsible to perform the actions and timelines required to implement the actions. Actions should include pre-storm mobilization, monitoring during the storm, and post-storm recovery.
  - The plan should identify training, storage, and maintenance needs for any specific equipment such as temporary flood barriers.
  - Each facility being protected should have facility-specific instructions located on-site for easy access during pre-storm mobilization.
  - The plan should be incorporated into the Town's overall emergency response planning documents.

# LIMITATIONS

## General

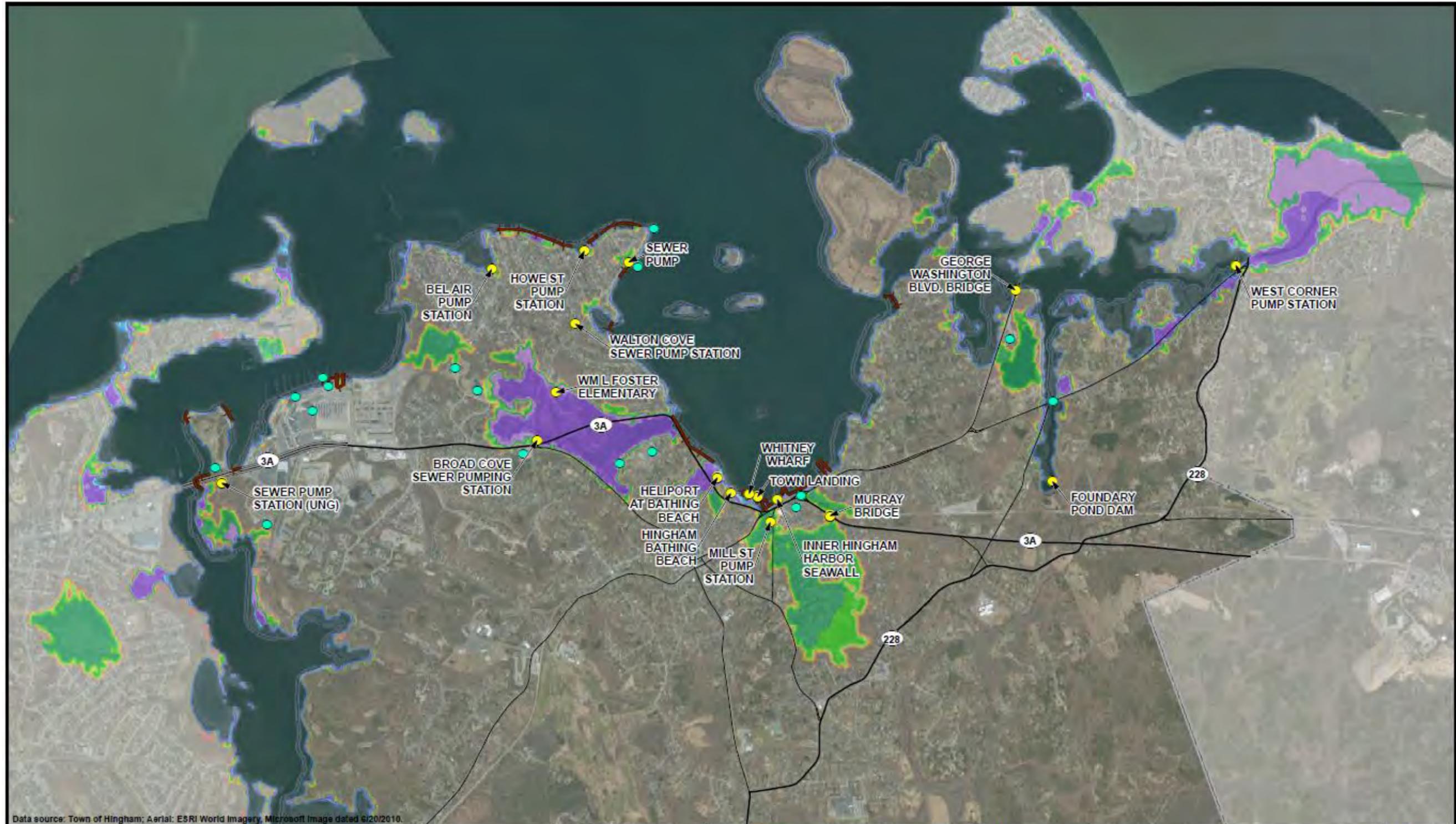
The science of climate change and translating climate risks into design criteria are new and evolving practices, involving many uncertainties. Therefore, the projections made in this report only reflect the professional judgment of the Project Team applying a standard of care consistent with the practice of other professionals undertaking similar work. For these reasons, the recommendations and projections made within this report provide guidelines for investment decisions based on the knowledge to date. The flood level predictions made in this report are based on some of the most recent developments in the science of climate change but are not guaranteed predictions of future events. It is recommended that these results be updated over time as science, data and modeling techniques advance.

The scope of this contract did not include a full review of building and facility drawings, material testing, survey or structural analysis of the building's ability to withstand the projected hydrostatic forces due to flooding. The findings include certain assumptions based on reasonable engineering judgment as to the ability of buildings and facilities to resist the projected hydrostatic forces due to flooding. These assumptions will require additional verification and customization during the design phase of individual projects.

## Flood Maps

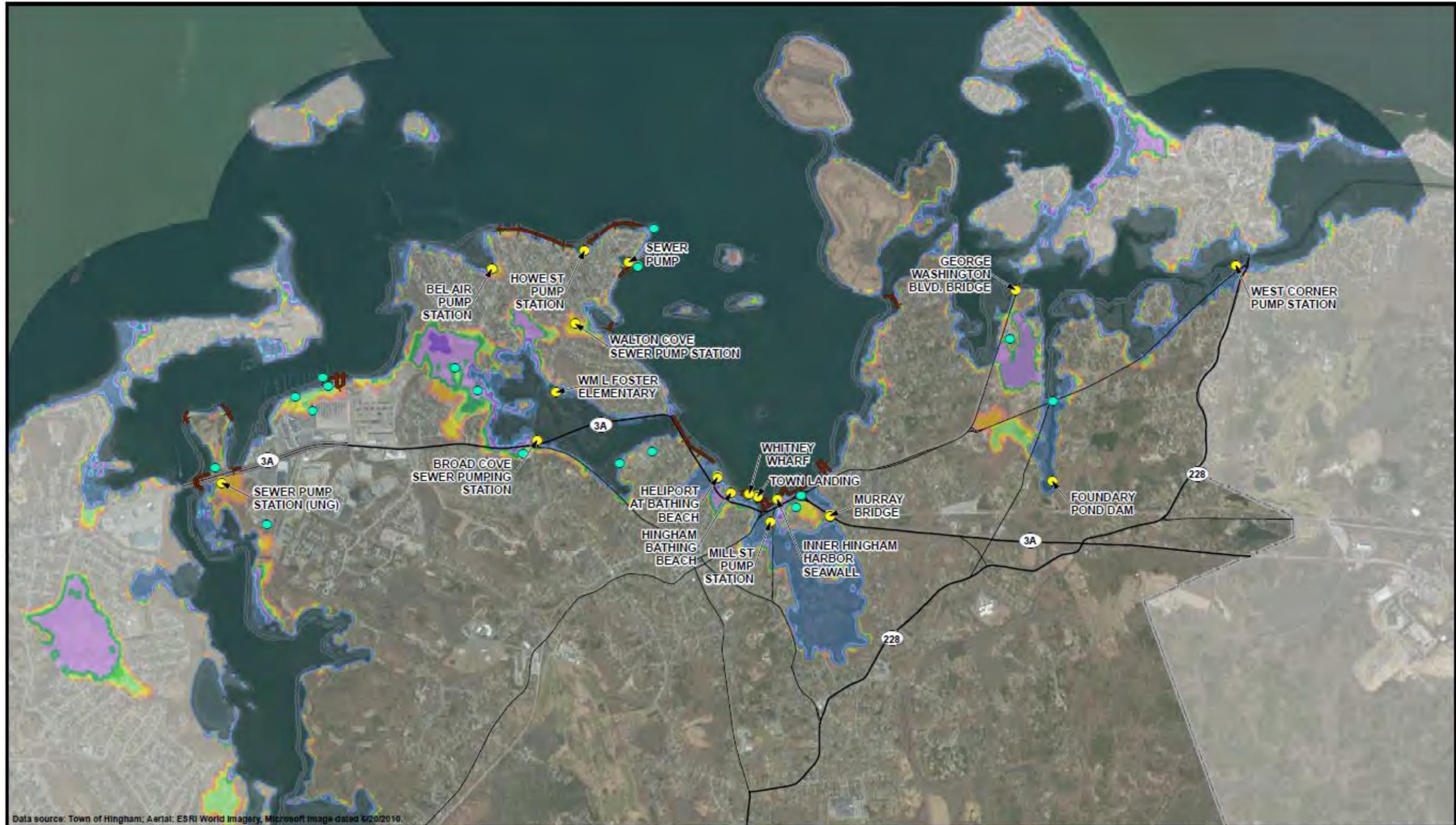
The flood maps included in this report illustrate predicted flooding resulting from coastal flooding caused by storms (such as hurricanes and nor'easters) combined with sea level rise estimates developed by NOAA for the years stated. These flood maps expressly do not include flooding attributed to wave run-up, overtopping of seawalls, backups within municipal drainage infrastructure or precipitation-driven overland flooding. Therefore, the extent and magnitude of flooding depicted on these flood maps strictly represent coastal flooding from sea level rise and storm surge. These flood maps shall not be used to represent the extent of flooding for which flood insurance is required. Projections depicted on these flood maps are the best judgment of Kleinfelder and the Project Team, but in no way shall the flood levels depicted in these maps be interpreted as any guaranteed predictions of future events, and they shall only be used for general planning purposes.

# APPENDIX A – INUNDATION MAPS



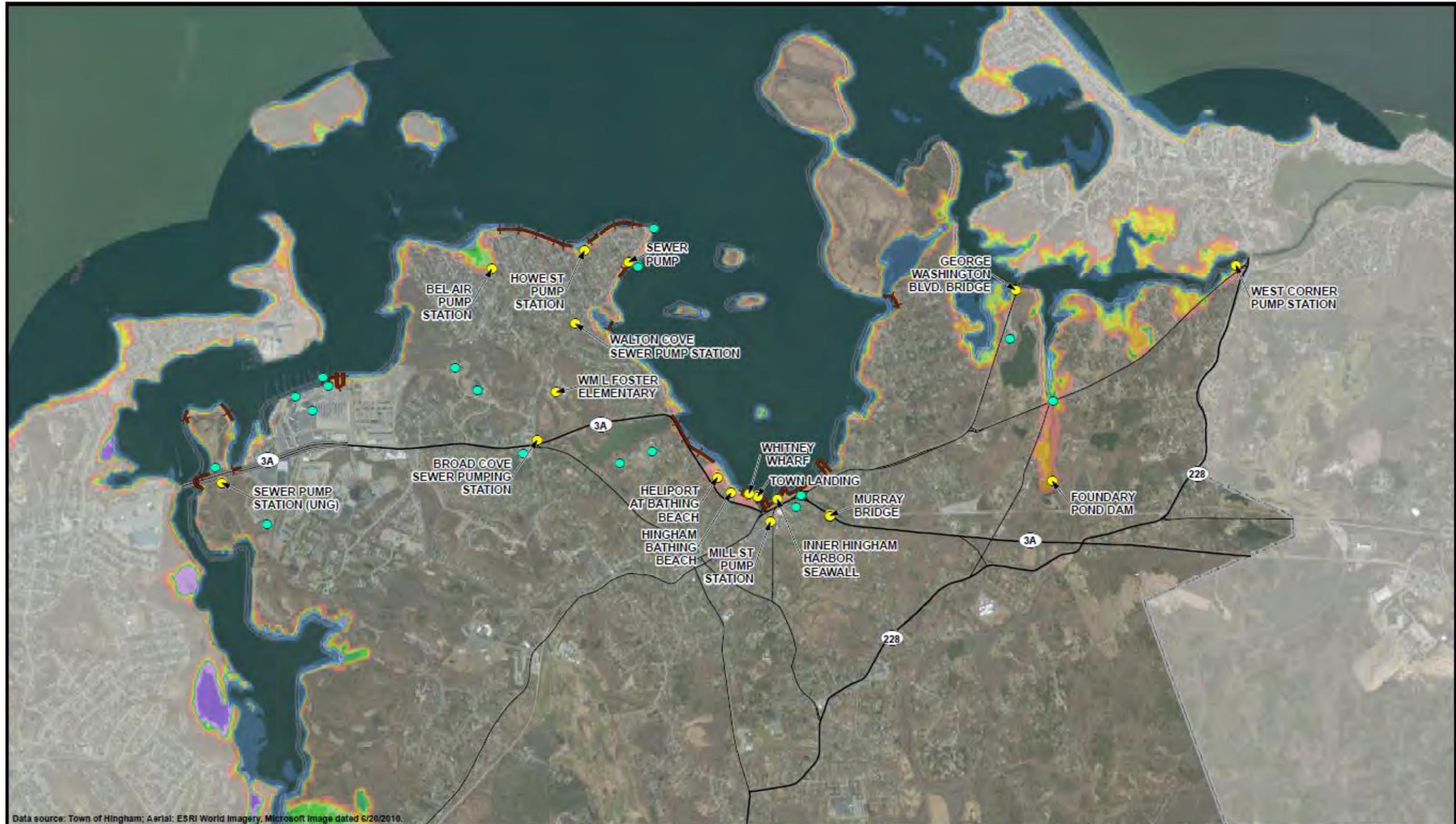
Data source: Town of Hingham; Aerial: ESRI World Imagery, Microsoft Image dated 6/20/2010.

<b>LEGEND</b> Exposed Critical Infrastructure ● Municipally owned ● Non-Municipal — Public Coastal Barriers		Percent risk of flooding Dry 0.5% 5% 25% 100% 0.1% 1% 10% 30% 0.2% 2% 20% 50%				0 1,000 2,000 Feet Locations are approximate <small>The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfielder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.</small>	 Bright People. Right Solutions. www.kleinfielder.com	PROJECT NO.: 20152625 DRAWN: APR 2015 DRAWN BY: KFH CHECKED BY: NB FILE NAME: Percent_risk_2030.mxd	2030 - PERCENT RISK OF FLOODING  CZM Resiliency Grant Hingham, Massachusetts	FIGURE  <b>A-1</b>
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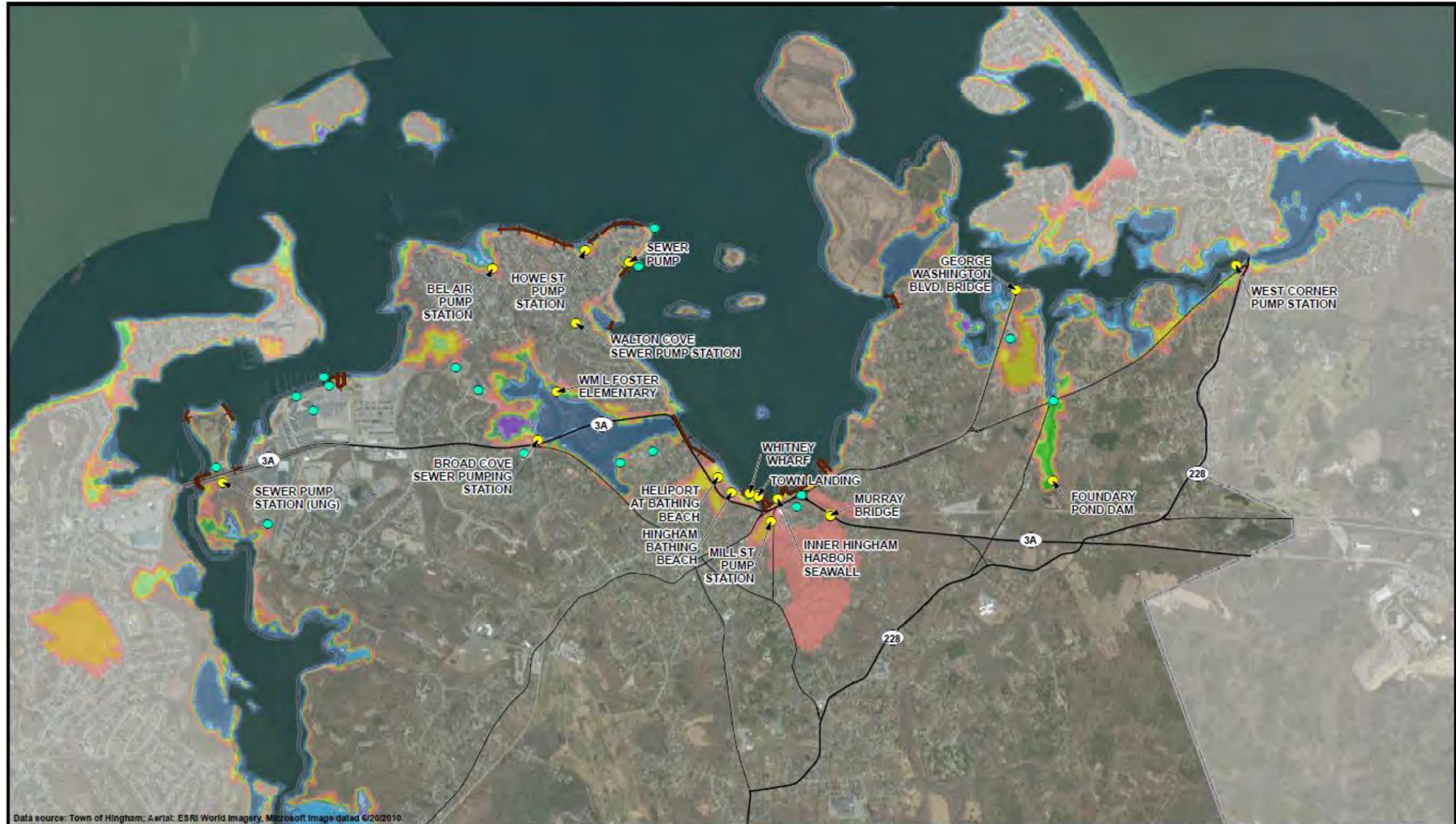
Data source: Town of Hingham; Aerial: ESRI World Imagery, Microsoft Image dated 6/20/2010.

<b>LEGEND</b> Exposed Critical Infrastructure ● Municipally owned ● Non-Municipal — Public Coastal Barriers		Percent risk of flooding Dry 0.5% 5% 25% 100% 0.1% 1% 10% 30% 0.2% 2% 20% 50%				0 1,000 2,000 Feet Locations are approximate <small>The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a field survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.</small>	 Bright People. Right Solutions. www.kleinfelder.com	PROJECT NO.: 20152625 DRAWN: APR 2015 DRAWN BY: KFH CHECKED BY: NB FILE NAME: Percent_risk_2070.mxd	2070 - PERCENT RISK OF FLOODING  CZM Resiliency Grant Hingham, Massachusetts	FIGURE  <b>A-2</b>
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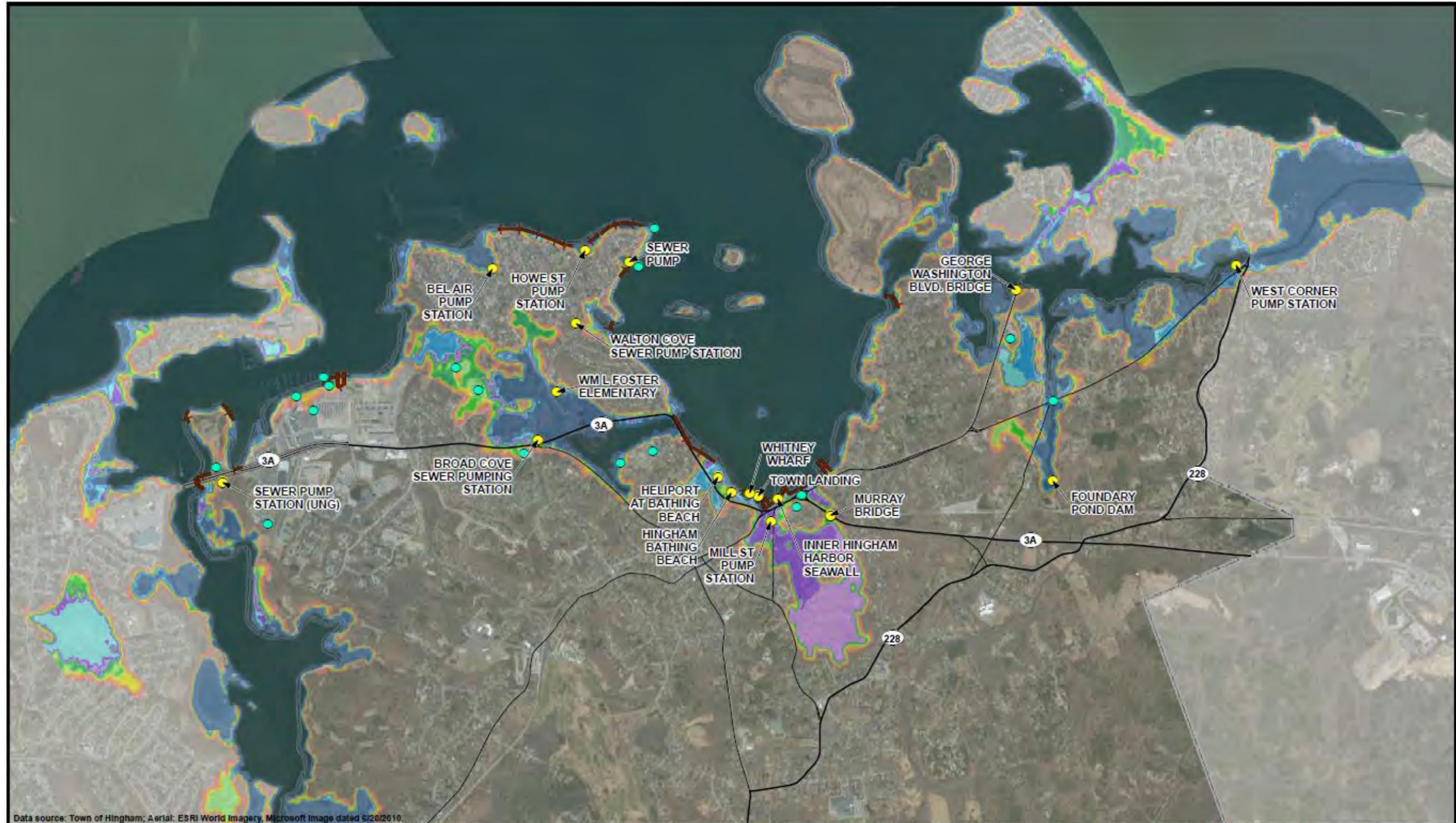
Data source: Town of Hingham; Aerial: ESRI World Imagery, Microsoft Image dated 6/20/2010.

<b>LEGEND</b> Exposed Critical Infrastructure ● Municipally owned ● Non-Municipal — Public Coastal Barriers		Depth of flooding above ground for 1% risk (in feet) Dry 1.5 ft 3 ft 4.5 ft > 10 ft 0.5 ft 2 ft 3.5 ft 5 ft 1 ft 2.5 ft 4 ft 5-10 ft				0 1,000 2,000 Feet Locations are approximate <small>The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfielder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.</small>	 Bright People. Right Solutions. www.kleinfielder.com	PROJECT NO.: 20152625 DRAWN: APR 2015 DRAWN BY: KFH CHECKED BY: NB FILE NAME: 100yr_present.mxd	PRESENT - DEPTH OF FLOODING AT 1% ANNUAL PROBABILITY (~100 YR RECURRENCE)  CZM Resiliency Grant Hingham, Massachusetts	FIGURE  <b>A-3</b>
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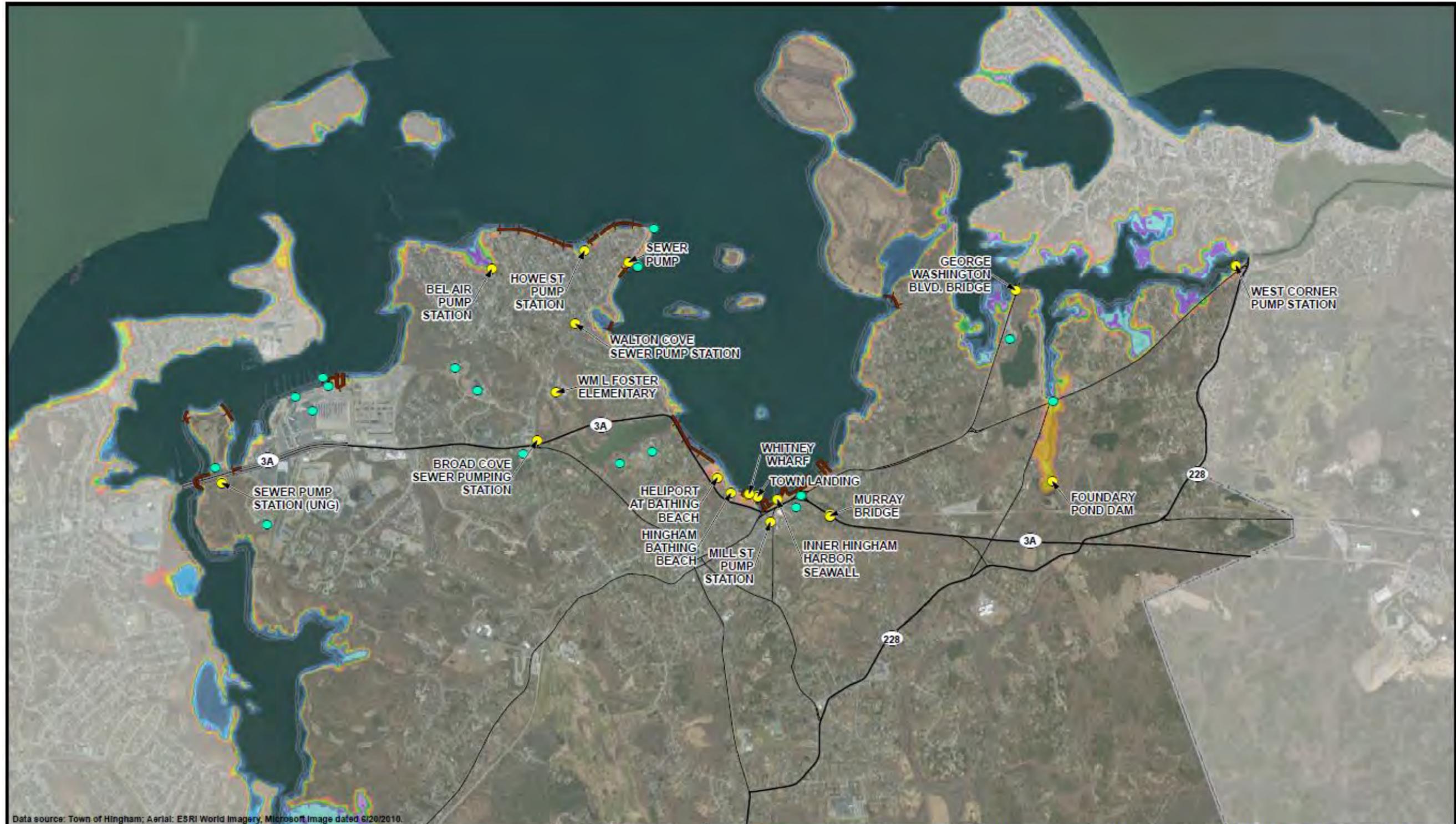
Data source: Town of Hingham; Aerial: ESRI World Imagery, Microsoft Image dated 6/20/2010.

<p><b>LEGEND</b></p> <p>Exposed Critical Infrastructure</p> <ul style="list-style-type: none"> <li>Municipally owned</li> <li>Non-Municipal</li> <li>Public Coastal Barriers</li> </ul>		<p>Depth of flooding above ground for 1% risk (in ft)</p> <ul style="list-style-type: none"> <li>Dry</li> <li>0.5 ft</li> <li>1 ft</li> <li>1.5 ft</li> <li>2 ft</li> <li>2.5 ft</li> <li>3 ft</li> <li>3.5 ft</li> <li>4 ft</li> <li>4.5 ft</li> <li>5 ft</li> <li>5-10 ft</li> <li>&gt; 10 ft</li> </ul>				<p>0 1,000 2,000 Feet</p> <p>Locations are approximate</p> <p><b>KLEINFELDER</b> Bright People. Right Solutions. www.kleinfelder.com</p>		<p>PROJECT NO.: 20152625</p> <p>DRAWN: APR 2015</p> <p>DRAWN BY: KFH</p> <p>CHECKED BY: NB</p> <p>FILE NAME: 100yr_2030.mxd</p>		<p><b>2030 - DEPTH OF FLOODING AT %1 ANNUAL PROBABILITY (~100 YR RECURRENCE)</b></p> <p>CZM Resiliency Grant Hingham, Massachusetts</p>		<p>FIGURE</p> <p><b>A-4</b></p>
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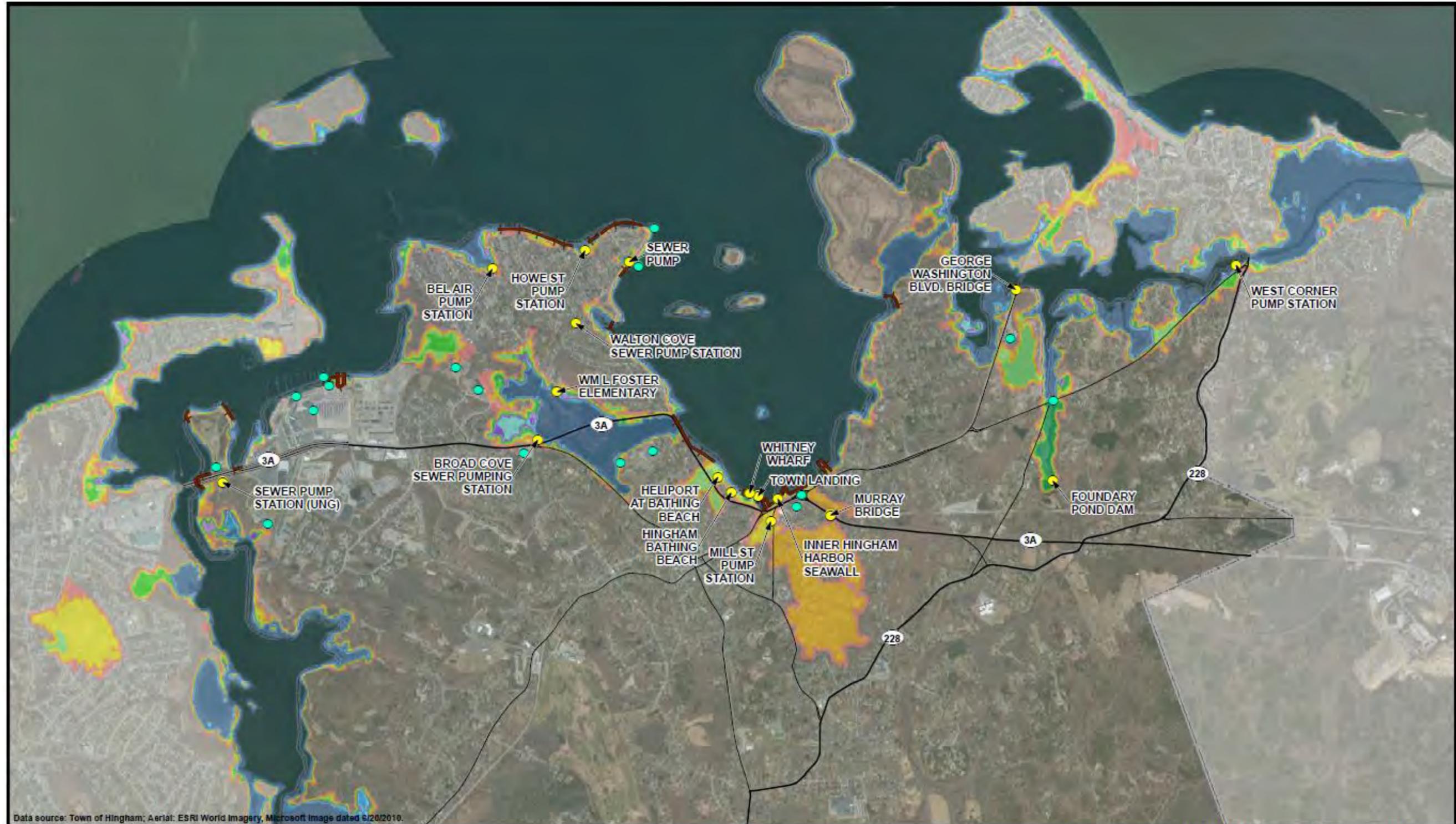
Data source: Town of Hingham; Aerial: ESRI World Imagery, Microsoft Image dated 6/20/2010.

<b>LEGEND</b> Exposed Critical Infrastructure ● Municipally owned ● Non-Municipal — Public Coastal Barriers		Depth of flooding above ground for 1% risk (in feet) Dry   1.5 ft   3 ft   4.5 ft   > 10 ft 0.5 ft   2 ft   3.5 ft   5 ft 1 ft   2.5 ft   4 ft   5-10 ft				0 1,000 2,000 Feet Locations are approximate. <small>The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfielder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a field survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.</small>		 Bright People. Right Solutions. www.kleinfielder.com		PROJECT NO.: 20152625 DRAWN: APR 2015 DRAWN BY: KFH CHECKED BY: NB FILE NAME: 100yr_2070.mxd		2070 - DEPTH OF FLOODING AT 1% ANNUAL PROBABILITY (~100 YR RECURRENCE)		FIGURE <b>A-5</b>	
										CZM Resiliency Grant Hingham, Massachusetts					



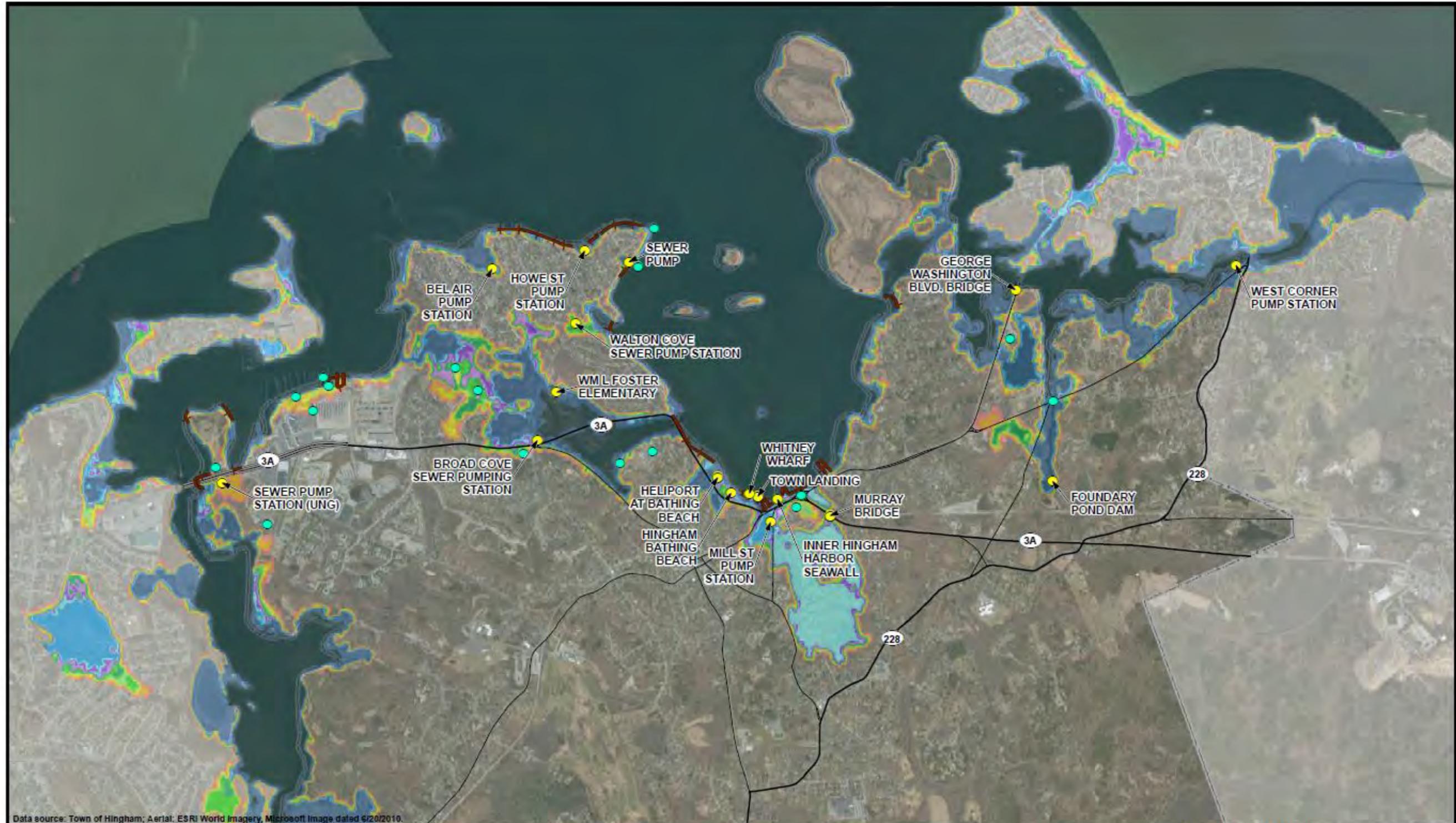
Data source: Town of Hingham; Aerial: ESRI World Imagery, Microsoft Image dated 6/20/2010.

<p><b>LEGEND</b></p> <p>Exposed Critical Infrastructure</p> <ul style="list-style-type: none"> <li>Municipally owned (Yellow circle)</li> <li>Non-Municipal (Cyan circle)</li> <li>Public Coastal Barriers (Brown line)</li> </ul>		<p>Depth of flooding above ground for 0.2% risk (in feet)</p> <table border="1"> <tr> <td>Dry</td> <td>1.5 ft</td> <td>3 ft</td> <td>4.5 ft</td> <td>&gt; 10 ft</td> </tr> <tr> <td>0.5 ft</td> <td>2 ft</td> <td>3.5 ft</td> <td>5 ft</td> <td></td> </tr> <tr> <td>1 ft</td> <td>2.5 ft</td> <td>4 ft</td> <td>5-10 ft</td> <td></td> </tr> </table>				Dry	1.5 ft	3 ft	4.5 ft	> 10 ft	0.5 ft	2 ft	3.5 ft	5 ft		1 ft	2.5 ft	4 ft	5-10 ft		<p>0 1,000 2,000 Feet</p> <p>Locations are approximate</p> <p><small>The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfielder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.</small></p>		<p><b>KLEINFELDER</b> Bright People. Right Solutions. www.kleinfielder.com</p>		<p>PROJECT NO.: 20152625 DRAWN: APR 2015 DRAWN BY: KFH CHECKED BY: NB FILE NAME: 500yr_present.mxd</p>		<p><b>PRESENT - DEPTH OF FLOODING AT 0.2% ANNUAL PROBABILITY (~500 YR RECURRENCE)</b></p> <p>CZM Resiliency Grant Hingham, Massachusetts</p>		<p>FIGURE <b>A-6</b></p>	
Dry	1.5 ft	3 ft	4.5 ft	> 10 ft																										
0.5 ft	2 ft	3.5 ft	5 ft																											
1 ft	2.5 ft	4 ft	5-10 ft																											



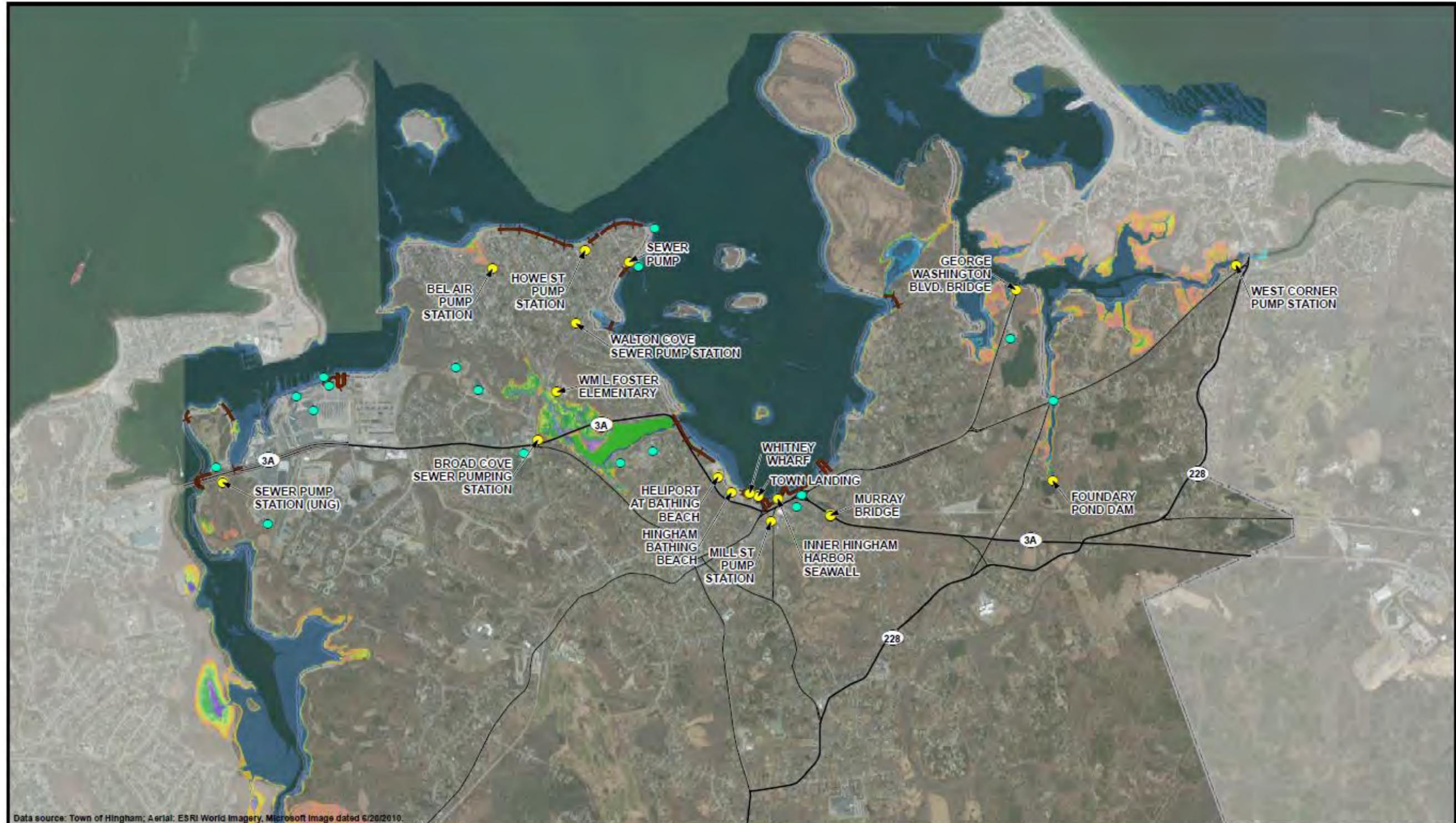
Data source: Town of Hingham; Aerial: ESRI World Imagery, Microsoft Image dated 6/20/2010.

<p><b>LEGEND</b></p> <p>Exposed Critical Infrastructure</p> <ul style="list-style-type: none"> <li>● Municipally owned</li> <li>● Non-Municipal</li> <li>— Public Coastal Barriers</li> </ul>		<p>Depth of flooding above ground for 0.2% risk (in feet)</p> <table border="1"> <tr> <td>Dry</td> <td>1.5 ft</td> <td>3 ft</td> <td>4.5 ft</td> <td>&gt; 10 ft</td> </tr> <tr> <td>0.5 ft</td> <td>2 ft</td> <td>3.5 ft</td> <td>5 ft</td> <td></td> </tr> <tr> <td>1 ft</td> <td>2.5 ft</td> <td>4 ft</td> <td>5-10 ft</td> <td></td> </tr> </table>						Dry	1.5 ft	3 ft	4.5 ft	> 10 ft	0.5 ft	2 ft	3.5 ft	5 ft		1 ft	2.5 ft	4 ft	5-10 ft		<p>0 1,000 2,000 Feet</p> <p>Locations are approximate</p> <p><small>The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations, warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.</small></p>		<p><b>KLEINFELDER</b> Bright People. Right Solutions. www.kleinfelder.com</p>		<p>PROJECT NO.: 20152625 DRAWN: APR 2015 DRAWN BY: KFH CHECKED BY: NB FILE NAME: 500yr_2030.mxd</p>		<p><b>2030 - DEPTH OF FLOODING AT 0.2% ANNUAL PROBABILITY (~500 YR RECURRENCE)</b></p>		<p>FIGURE <b>A-7</b></p>	
Dry	1.5 ft	3 ft	4.5 ft	> 10 ft																												
0.5 ft	2 ft	3.5 ft	5 ft																													
1 ft	2.5 ft	4 ft	5-10 ft																													
<p>CZM Resiliency Grant Hingham, Massachusetts</p>																																



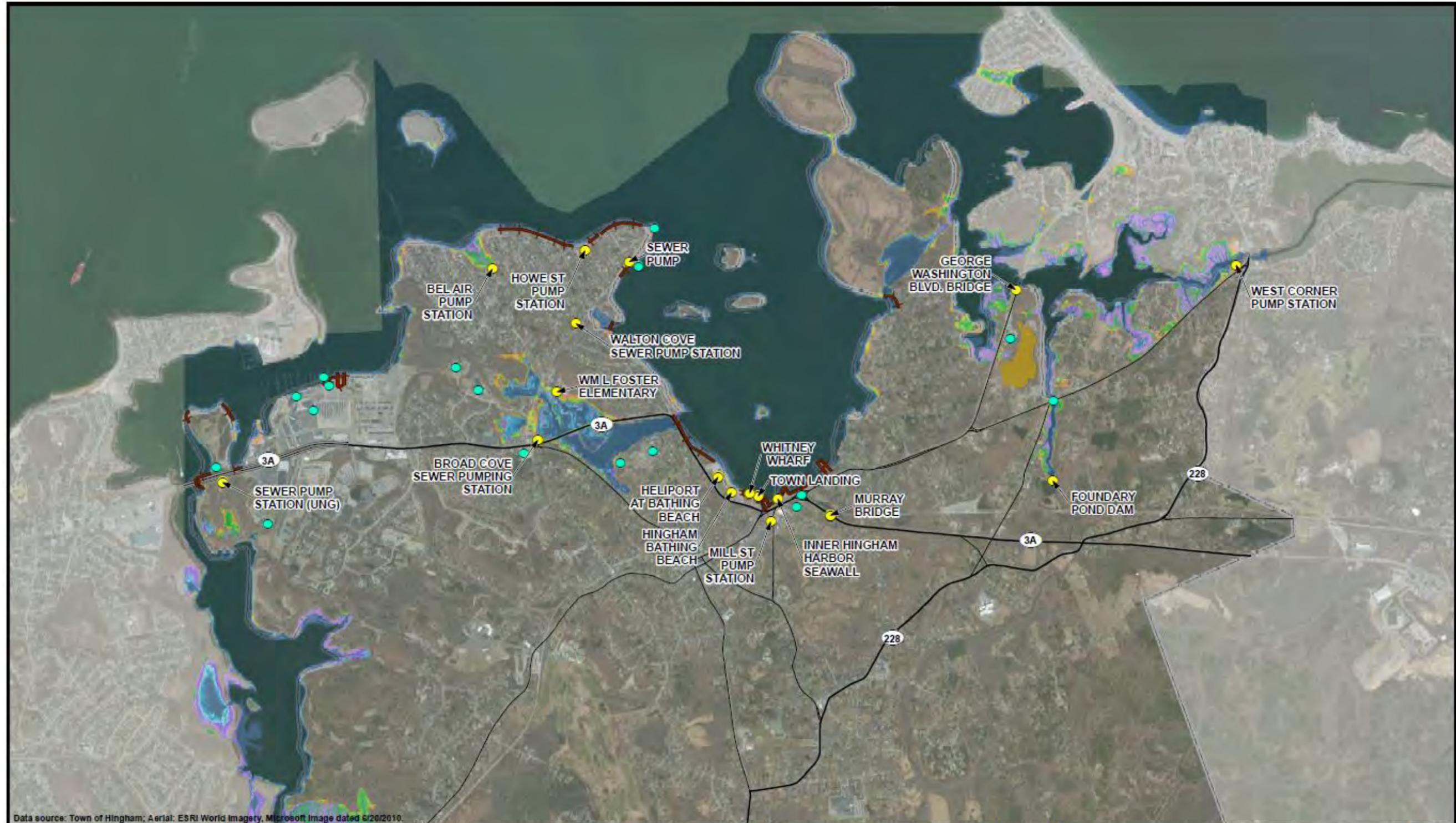
Data source: Town of Hingham; Aerial: ESRI World Imagery, Microsoft Image dated 6/20/2010.

<p><b>Exposed Critical Infrastructure</b></p> <ul style="list-style-type: none"> <li><span style="color: yellow;">●</span> Municipally owned</li> <li><span style="color: cyan;">●</span> Non-Municipal</li> <li><span style="border-bottom: 2px solid brown; width: 20px; display: inline-block;"></span> Public Coastal Barriers</li> </ul>	<p><b>LEGEND</b></p> <p>Depth of flooding above ground for 1% risk (in feet)</p> <table border="0"> <tr> <td><span style="background-color: white; border: 1px solid black; width: 15px; height: 10px; display: inline-block;"></span> Dry</td> <td><span style="background-color: yellow; width: 15px; height: 10px; display: inline-block;"></span> 1.5 ft</td> <td><span style="background-color: lightgreen; width: 15px; height: 10px; display: inline-block;"></span> 3 ft</td> <td><span style="background-color: cyan; width: 15px; height: 10px; display: inline-block;"></span> 4.5 ft</td> <td><span style="background-color: grey; width: 15px; height: 10px; display: inline-block;"></span> &gt; 10 ft</td> </tr> <tr> <td><span style="background-color: pink; width: 15px; height: 10px; display: inline-block;"></span> 0.5 ft</td> <td><span style="background-color: lightgreen; width: 15px; height: 10px; display: inline-block;"></span> 2 ft</td> <td><span style="background-color: purple; width: 15px; height: 10px; display: inline-block;"></span> 3.5 ft</td> <td><span style="background-color: blue; width: 15px; height: 10px; display: inline-block;"></span> 5 ft</td> <td></td> </tr> <tr> <td><span style="background-color: orange; width: 15px; height: 10px; display: inline-block;"></span> 1 ft</td> <td><span style="background-color: green; width: 15px; height: 10px; display: inline-block;"></span> 2.5 ft</td> <td><span style="background-color: purple; width: 15px; height: 10px; display: inline-block;"></span> 4 ft</td> <td><span style="background-color: blue; width: 15px; height: 10px; display: inline-block;"></span> 5-10 ft</td> <td></td> </tr> </table>		<span style="background-color: white; border: 1px solid black; width: 15px; height: 10px; display: inline-block;"></span> Dry	<span style="background-color: yellow; width: 15px; height: 10px; display: inline-block;"></span> 1.5 ft	<span style="background-color: lightgreen; width: 15px; height: 10px; display: inline-block;"></span> 3 ft	<span style="background-color: cyan; width: 15px; height: 10px; display: inline-block;"></span> 4.5 ft	<span style="background-color: grey; width: 15px; height: 10px; display: inline-block;"></span> > 10 ft	<span style="background-color: pink; width: 15px; height: 10px; display: inline-block;"></span> 0.5 ft	<span style="background-color: lightgreen; width: 15px; height: 10px; display: inline-block;"></span> 2 ft	<span style="background-color: purple; width: 15px; height: 10px; display: inline-block;"></span> 3.5 ft	<span style="background-color: blue; width: 15px; height: 10px; display: inline-block;"></span> 5 ft		<span style="background-color: orange; width: 15px; height: 10px; display: inline-block;"></span> 1 ft	<span style="background-color: green; width: 15px; height: 10px; display: inline-block;"></span> 2.5 ft	<span style="background-color: purple; width: 15px; height: 10px; display: inline-block;"></span> 4 ft	<span style="background-color: blue; width: 15px; height: 10px; display: inline-block;"></span> 5-10 ft		<p>0 1,000 2,000 Feet</p> <p>Locations are approximate</p> <p><small>The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a legal or survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained in this graphic representation is at the sole risk of the party using or misusing the information.</small></p>	<p><b>KLEINFELDER</b> Bright People. Right Solutions. www.kleinfelder.com</p>	<p>PROJECT NO.: 20152625</p> <p>DRAWN: APR 2015</p> <p>DRAWN BY: KFH</p> <p>CHECKED BY: NB</p> <p>FILE NAME: 500yr_2070.mxd</p>	<p><b>2070 - DEPTH OF FLOODING AT 0.2% ANNUAL PROBABILITY (~500 YR RECURRENCE)</b></p>	<p>FIGURE <b>A-8</b></p>
	<span style="background-color: white; border: 1px solid black; width: 15px; height: 10px; display: inline-block;"></span> Dry	<span style="background-color: yellow; width: 15px; height: 10px; display: inline-block;"></span> 1.5 ft	<span style="background-color: lightgreen; width: 15px; height: 10px; display: inline-block;"></span> 3 ft	<span style="background-color: cyan; width: 15px; height: 10px; display: inline-block;"></span> 4.5 ft	<span style="background-color: grey; width: 15px; height: 10px; display: inline-block;"></span> > 10 ft																	
<span style="background-color: pink; width: 15px; height: 10px; display: inline-block;"></span> 0.5 ft	<span style="background-color: lightgreen; width: 15px; height: 10px; display: inline-block;"></span> 2 ft	<span style="background-color: purple; width: 15px; height: 10px; display: inline-block;"></span> 3.5 ft	<span style="background-color: blue; width: 15px; height: 10px; display: inline-block;"></span> 5 ft																			
<span style="background-color: orange; width: 15px; height: 10px; display: inline-block;"></span> 1 ft	<span style="background-color: green; width: 15px; height: 10px; display: inline-block;"></span> 2.5 ft	<span style="background-color: purple; width: 15px; height: 10px; display: inline-block;"></span> 4 ft	<span style="background-color: blue; width: 15px; height: 10px; display: inline-block;"></span> 5-10 ft																			
		<p>CZM Resiliency Grant Hingham, Massachusetts</p>																				



Data source: Town of Hingham; Aerial: ESRI World Imagery, Microsoft Image dated 6/26/2010.

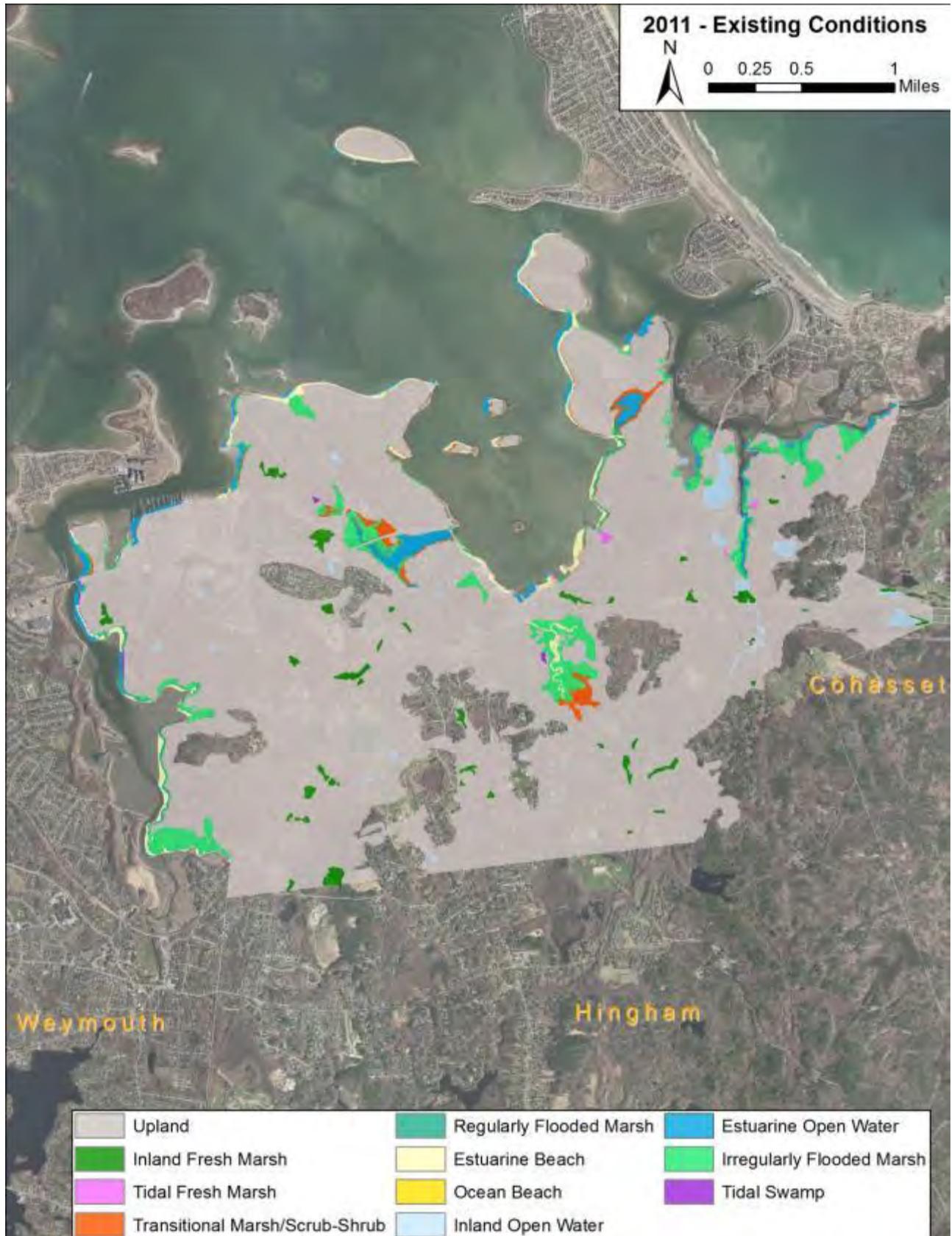
<p><b>LEGEND</b></p> <p>Exposed Critical Infrastructure</p> <ul style="list-style-type: none"> <li>● Municipally owned</li> <li>● Non-Municipal</li> <li>— Public Coastal Barriers</li> </ul>		<p>Depth of flooding above ground (in ft)</p> <table border="1"> <tr> <td>Dry</td> <td>1.5 ft</td> <td>3 ft</td> <td>4.5 ft</td> <td>&gt; 10 ft</td> </tr> <tr> <td>0.5 ft</td> <td>2 ft</td> <td>3.5 ft</td> <td>5 ft</td> <td></td> </tr> <tr> <td>1 ft</td> <td>2.5 ft</td> <td>4 ft</td> <td>5-10 ft</td> <td></td> </tr> </table>		Dry	1.5 ft	3 ft	4.5 ft	> 10 ft	0.5 ft	2 ft	3.5 ft	5 ft		1 ft	2.5 ft	4 ft	5-10 ft		<p>0 1,000 2,000 Feet</p> <p>Locations are approximate.</p> <p><small>The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfielder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a field survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.</small></p>	<p><b>KLEINFELDER</b> Bright People. Right Solutions. www.kleinfielder.com</p>	<p>PROJECT NO.: 20152625 DRAWN: APR 2015 DRAWN BY: KFH CHECKED BY: NB FILE NAME: SLR_only_2030.mxd</p>	<p><b>2030 - DEPTH OF FLOODING SEA LEVEL RISE ONLY</b></p> <p>CZM Resiliency Grant Hingham, Massachusetts</p>	<p>FIGURE <b>A-9</b></p>
Dry	1.5 ft	3 ft	4.5 ft	> 10 ft																			
0.5 ft	2 ft	3.5 ft	5 ft																				
1 ft	2.5 ft	4 ft	5-10 ft																				

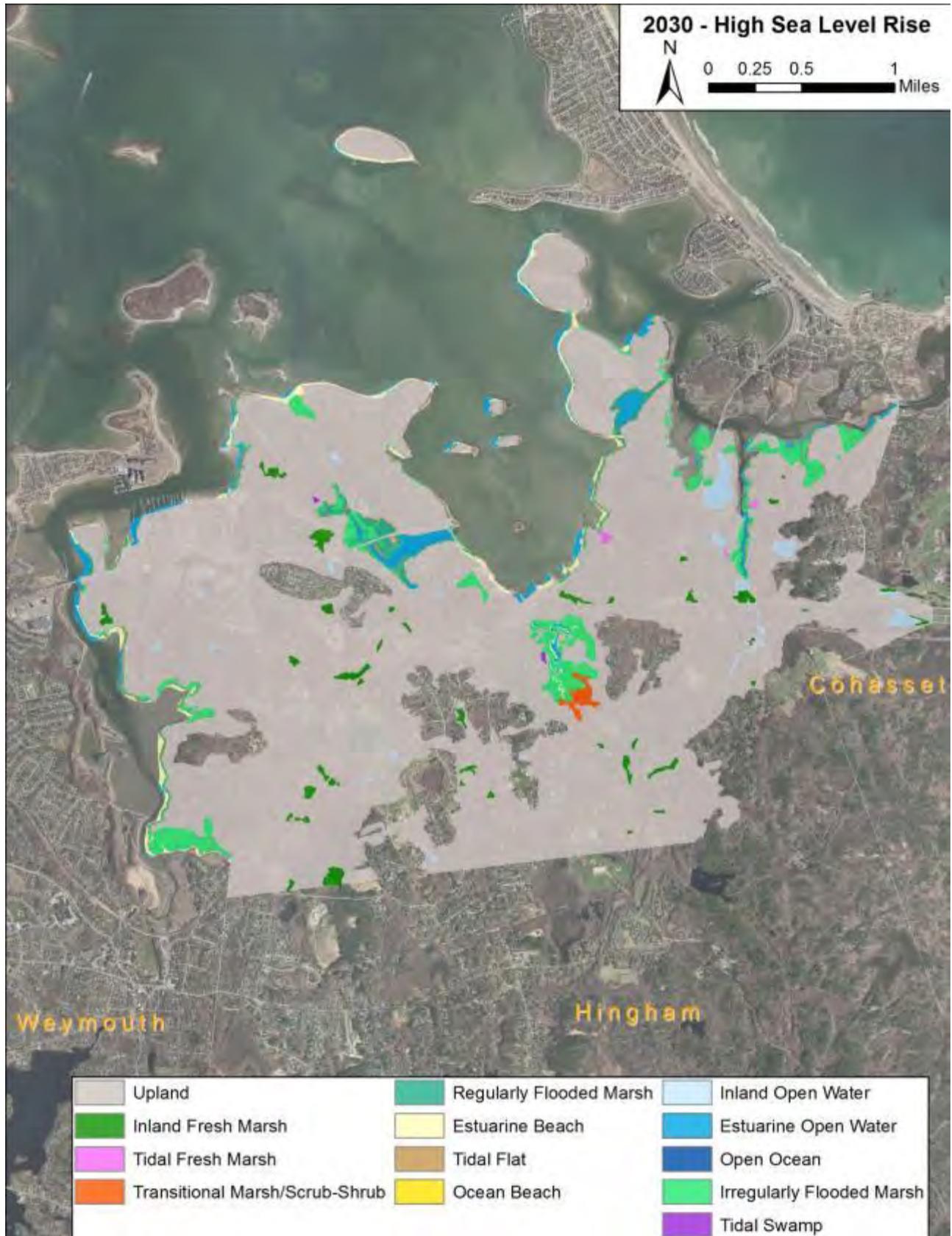


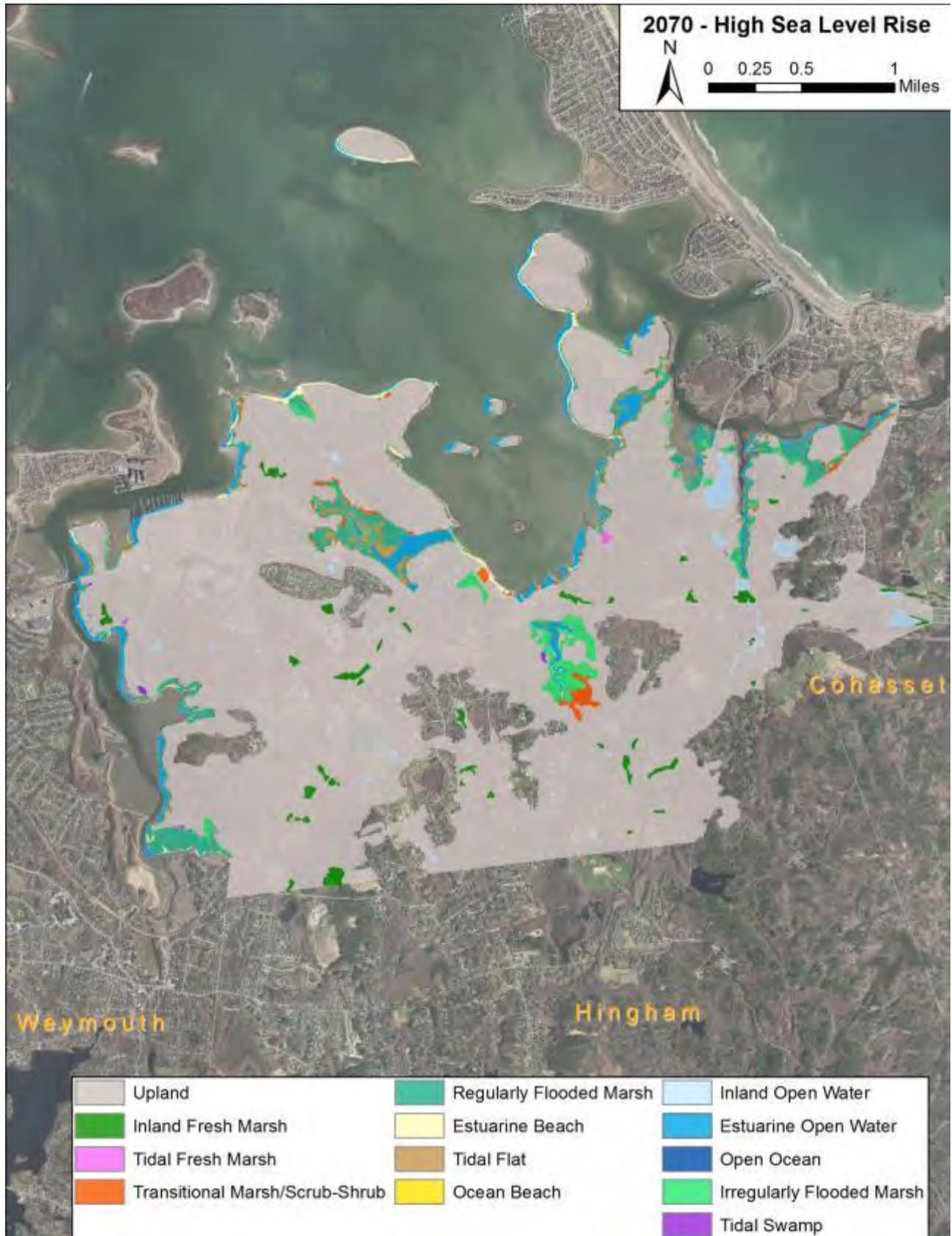
Data source: Town of Hingham; Aerial: ESRI World Imagery, Microsoft Image dated 6/20/2010.

<b>LEGEND</b> Exposed Critical Infrastructure ● Municipally owned ● Non-Municipal — Public Coastal Barriers		Depth of flooding above ground (in feet) Dry 0.5 ft 1 ft 1.5 ft 2 ft 2.5 ft 3 ft 3.5 ft 4 ft 4.5 ft 5 ft 5-10 ft > 10 ft		0 1,000 2,000 Feet Locations are approximate. <small>The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfielder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a field survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.</small>	 Bright People. Right Solutions. www.kleinfielder.com	PROJECT NO.: 20152625 DRAWN: APR 2015 DRAWN BY: KFH CHECKED BY: NB FILE NAME: SLR_only_2070.mxd	2070 - DEPTH OF FLOODING SEA LEVEL RISE ONLY  CZM Resiliency Grant Hingham, Massachusetts	FIGURE  <b>A-10</b>
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# APPENDIX B – WETLAND CLASSIFICATION MAPS AND DATA







**Table B-1 NWI Category to SLAMM code conversion table**

SLAMM Code	SLAMM Name	NWI Code Characters						Notes
		System	Subsystem	Class	Subclass	Water Regime		
1	Developed Dryland	U					Upland	
2	Undeveloped Dryland	U					Upland	
3	Nontidal Swamp	P	NA	FO, SS	1, 3 to 7, None	A,B,C,E,F,G,H,J,K, None or U	Palustrine Forested and Scrub-Shrub	
4	Cypress Swamp	P	NA	FO, SS	2	A,B,C,E,F,G,H,J,K, None or U	Needle-leaved Deciduous Forest and Scrub-Shrub	
5	Inland Fresh Marsh	P	NA	EM, f**	All, None	A,B,C,E,F,G,H,J,K, None or U	Palustrine Emergents; Lacustrine and Riverine Nonpersistent Emergents	
		L	2	EM	2, None	E,F,G,H,K, None or U		
		R	2, 3	EM	2, None	E,F,G,H,K, None or U		
6	Tidal Fresh Marsh	R	1	EM	2, None	Fresh Tidal N, T	Riverine and Palustrine Freshwater Tidal Emergen	
		P	NA	EM	All, None	Fresh Tidal S, R, T		
7	Transitional Marsh / Scrub Shrub	E	2	FO, SS	1, 2, 4 to 7, None	Tidal M, N, P, None or U	Estuarine Intertidal, Scrub-shrub and Forested (ALL except 3 subclass)	
8	Regularly Flooded Marsh	E	2	EM	1, None	Tidal N, None or U	Only regularly flooded tidal marsh; No intermittently flooded "P" water regime	
9	Mangrove	E	2	FO, SS	3	Tidal M, N, P, None or U	Estuarine Intertidal Forested and Scrub-shrub, Broad-leaved Evergreen	
10	Estuarine Beach	E	2	US	1,2	Tidal N,P	Estuarine Intertidal Unconsolidated Shores	
		E	2	US	None	Tidal N,P	Only when shores	
11	Tidal Flat	E	2	US	3,4, None	Tidal M, N, None or U	Estuarine Intertidal Unconsolidated Shore (mud or organic) and Aquatic Bed; Marine Intertidal Aquatic Bed	
		E	2	AB	All, Except 1	Tidal M, N, None or U	Specifically for wind-driven tides on the south coast of TX	
		E	2	AB	1	P		
		M	2	AB	1, 3, None	Tidal M, N, None or U		
12	Ocean Beach	M	2	US	1, 2	Tidal N, P	Marine Intertidal Unconsolidated Shore, cobble-gravel, sand	
		M	2	US	None	Tidal P		
13	Ocean Flat	M	2	US	3, 4, None	Tidal M, N, None or U	Marine Intertidal Unconsolidated Shore, mud or organic, (low energy coastline)	
14	Rocky Intertidal	M	2	RS	All, None	Tidal M, N, P, None or U	Marine and Estuarine Intertidal Rocky Shore and Reef	
		E	2	RS	All, None	Tidal M, N, P, None or U		
		E	2	RF	2, 3, None	Tidal M, N, P, None or U		
		E	2	AB	1	Tidal M, N, None or U		
15	Inland Open Water	R	2	UB, AB	All, None	All, None	Riverine, Lacustrine, and Palustrine Unconsolidated Bottom, and Aquatic Beds	
		R	3	UB, AB, RB	All, None	All, None		
		L	1, 2	UB, AB, RB	All, None	All, None		
		P	NA	UB, AB, RB	All, None	All, None		
		R	5	UB	All	Only U		
16	Riverine Tidal Open Water	R	1	All, Except EM	Except 2	Fresh Tidal S, R, T, V	Riverine Tidal Open Water	
17	Estuarine Open Water	E	1	All	All, None	Tidal L, M, N, P	Estuarine subtidal	
18	Tidal Creek	E	2	SB	All, None	Tidal M, N, P; Fresh Tidal R, S	Estuarine intertidal streambed	
19	Open Ocean	M	1	All	All	Tidal L, M, N, P	Marine Subtidal and Marine Intertidal Aquatic Bed and Reef	
		M	2	RF	1, 3, None	Tidal M, N, P, None or U		
20	Irregularly Flooded Marsh	E	2	EM	1, 5, None	P	Irregularly Flooded Estuarine Intertidal Emergent marsh	
		E	2	US	2, 3, 4, None	P	Only when these salt pans are associated with E2EMN or P	
21	NotUsed							
22	Inland Shore	L	2	US, RS	All	All Nontidal	Shoreline not pre-processed using tidal range elevations	
		P	NA	US	All, None	All Nontidal, None or U		
		R	2, 3	US, RS	All, None	All Nontidal, None or U		
		R	4	SB	All, None	All Nontidal, None or U		
23	Tidal Swamp	P	NA	FO, SS	All, None	Fresh Tidal R, S, T	Tidally influenced swamp	

## **APPENDIX C – RISK ASSESSMENT DATA**

**Table C-1 Risk Assessment Summary Table for All Asset**

Type	Name/Number	Address/Location	Critical Elevation	Consequence Score	Present Probability (%)	Present Risk Score	2030 Probability (%)	2030 Risk Score	2070 Probability (%)	2070 Risk Score	Composite Risk Score
Bulkhead/Seawall	034-027-000-059-100	Walton Cove	0.4	37	100	3667	100	3667	100	3667	3667
Bulkhead/Seawall	034-051-000-003-100	Iron Horse Park Area	7.0	60	25	1500	50	3000	100	6000	2850
Bulkhead/Seawall	034-051-000-005B-200	Iron Horse Park Area	6.6	57	30	1700	50	2833	100	5667	2833
Revetment	034-045-000-002-100	Bridge Street	6.6	50	30	1500	50	2500	100	5000	2500
Bulkhead/Seawall	034-051-000-059-100	Iron Horse Park Area	4.8	33	50	1667	50	1667	100	3333	2000
Bulkhead/Seawall	034-051-000-001-200	Iron Horse Park Area	7.8	60	5	300	30	1800	100	6000	1890
Bulkhead/Seawall	034-045-000-002-200	Bridge Street	7.6	50	10	500	30	1500	100	5000	1700
Revetment	034-045-000-002-300	Bridge Street	7.7	50	10	500	30	1500	100	5000	1700
Facility	William L Foster Elementary School	55 Downer Ave	6.1	6	0	0	10	633	100	6333	1457
Bulkhead/Seawall	034-051-000-004-100	Iron Horse Park Area	8.4	60	2	120	10	600	100	6000	1440
Bulkhead/Seawall	034-050-000-050-200	Iron Horse Park Area	7.3	40	10	400	30	1200	100	4000	1360
Roadway	Rockland St and Kilby St		7.6	30	10	300	50	1500	100	3000	1200
Roadway	Otis St (Rt 3A) at Hingham Bathing Beach		8.7	50	1	50	10	500	100	5000	1175
Revetment	034-030-000-011-100	Martin's Well	5.3	23	30	700	50	1167	100	2333	1167
Groin/Jetty	034-045-000-002-400	Bridge Street	6.8	23	30	700	50	1167	100	2333	1167
Bulkhead/Seawall	034-051-000-005-100	Iron Horse Park Area	8.5	50	1	25	10	500	100	5000	1163
Revetment	034-039-000-009-100	Broad Cove Entrance	8.5	47	2	93	10	467	100	4667	1120
Facility	West Corner Pump Station	338 Rockland St	8.2	8	1	25	5	250	100	5000	1088
Roadway	Broad Cove Rd (Rt 3A)		6.3	47	0	0	10	467	100	4667	1073
Roadway	Beach Rd and Beach Ln		7.8	33	5	167	25	833	100	3333	1000
Facility	Hingham Bathing Beach Parking Lot	100 Otis St	9.1	9	1	22	5	217	100	4333	943
Bulkhead/Seawall	034-030-000-011-200	Martin's Well	8.2	33	2	67	20	667	100	3333	900
Bulkhead/Seawall	034-016-000-183-100	Hingham	8.4	33	1	33	20	667	100	3333	883

**Climate Change Vulnerability, Risk Assessment and Adaptation Study  
Hingham, MA**

Seawall		Yacht Club Peninsula										
Bulkhead/ Seawall	034-017-000-113-100	Hingham Yacht Club Peninsula	9.0	37	0.1	4	2	73	100	3667	757	
Facility	Mill St. Pump Station	70 Water St	8.7	9	0	0	5	317	50	3167	728	
Revetment	034-016-000-183-200	Hingham Yacht Club Peninsula	8.8	33	1	17	5	167	100	3333	725	
Roadway	Howe St and Parker Dr		8.8	33	0	0	5	167	100	3333	717	
Roadway	Summer St (Rt 3A) Rotary		9.1	57	0	0	5	283	50	2833	652	
Revetment	034-036-000-106-200	Hingham Shipyard	9.1	30	0	6	5	150	100	3000	648	
Facility	Heliport at Bathing Beach	95 Otis St	8.1	8	1	27	10	267	100	2667	627	
Roadway	North St		9.6	50	0	0	5	250	50	2500	575	
Revetment	034-050-000-050-100	Iron Horse Park Area	8.3	23	2	47	10	233	100	2333	560	
Roadway	Eldridge Ct		9.3	47	0	0	5	233	50	2333	537	
Roadway	Downer Ave and Conditto Rd		6.9	23	0	0	10	233	100	2333	537	
Roadway	Downer Ave and Planters Field Ln		5.3	23	0	0	10	233	100	2333	537	
Facility	Broad Cove Sewer Pump Station	1 Downer Ave	10.1	10	0	0	0	5	50	2667	535	
Roadway	Water St		9.3	9	0	0	0	0	50	2667	533	
Roadway	Hull St and Rockland St		9.1	43	0	0	2	87	50	2167	459	
Roadway	Rockland St and Meadow Rd		8.7	43	0	0	2	87	50	2167	459	
Roadway	Lincoln St and Broad Cove Rd		9.2	43	0	0	1	22	50	2167	440	
Bulkhead/ Seawall	034-051-000-001-300	Iron Horse Park Area	10.6	60	0	0	0	6	30	1800	362	
Bulkhead/ Seawall	034-051-000-001-100	Iron Horse Park Area	10.4	60	0	0	0	6	30	1800	362	
Bulkhead/ Seawall	034-051-000-005B-100	Iron Horse Park Area	9.7	33	0	0	2	67	50	1667	353	
Roadway	Main St and Winter St		9.8	30	0	0	5	150	50	1500	345	
Bulkhead/ Seawall	034-017-000-099-100	Hingham Yacht Club Peninsula	10.0	33	0	0	0	3	50	1667	334	
Roadway	Andrews Isle		10.2	10	0	0	0	0	50	1667	333	
Revetment	034-011-000-005-100	Hingham Yacht Club Peninsula	9.5	30	0	0	2	60	50	1500	318	
Roadway	Fresh River Ave		9.1	30	0	0	0	0	50	1500	300	
Bulkhead/ Seawall	034-051-000-001-400	Iron Horse	10.9	60	0	0	0.1	6	20	1200	242	

**Climate Change Vulnerability, Risk Assessment and Adaptation Study  
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Seawall		Park Area										
Bulkhead/ Seawall	034-036-000-106-300	Hingham Shipyards	10.2	33	0	0	0.2	7	30	1000	202	
Roadway	Otis St at Walton Cove		10.1	20	0	0	0	0	50	1000	200	
Revetment	034-034-000-000-100	Stodders Neck	10.3	27	0	0	0.2	5	30	800	162	
Revetment	034-035-000-001-100	Stodders Neck	10.4	27	0	0	0.2	5	30	800	162	
Facility	Whitney Wharf	Otis St	10.4	10	0	0	0.1	3	30	800	161	
Facility	Bel Air Pump Station	55 Bel Air Rd	11.4	11	0	0	0.1	5	10	500	102	
Facility	Downer Ave Sewer Pump	176 DOWNER AVE	10.5	10	0	0	0	0	10	500	100	
Roadway	Wompatuck Rd and Wokomis Rd		11.3	11	0	0	0	0	10	333	67	
Roadway	Blackberry Ln and Park Circle		10.5	11	0	0	0	0	10	333	67	
Roadway	Conditto Rd and Langlee Rd		11.9	12	0	0	0	0	10	333	67	
Facility	Howe St Pump Station	62 Howe St	11.7	12	0	0	0	0	5	233	47	
Revetment	034-050-000-051-100	Broad Cove Entrance	12.0	33	0	0	0	0	5	167	33	
Revetment	034-039-000-008-100	Broad Cove Entrance	12.0	23	0	0	0	0	5	117	23	
Bulkhead/ Seawall	034-036-000-106-100	Hingham Shipyards	12.1	27	0	0	0	0	2	53	11	
Roadway	Hingham Shipyards Rd		12.6	13	0	0	0	0	1	33	7	
Roadway	Green St		12.4	12	0	0	0	0	1	27	5	
Revetment	034-046-000-001-100	Stodders Neck	13.4	50	0	0	0	0	1	25	5	
Roadway	George Washington Blvd Bridge (Approach)		12.8	43	0	0	0	0	1	22	4	
Roadway	Tupelo Rd and Langlee Rd		13.0	13	0	0	0	0	1	17	3	
Facility	Beal St Sewer Pump Station (UNG)	Beal Street	13.0	13	0	0	0	0	0.2	10	2	
Facility	Walton Cove Sewer Pump Station	211 Downer Ave	11.1	11	0	0	0	0	0.2	10	2	

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# Hingham Comprehensive Trails Plan Appendix H

## Parcels of Conservation Value



# Parcels of Conservation Value

<b>Proximate Open Space</b>	<b>Book</b>	<b>Page</b>	<b>Site Address</b>	
Bouve Conservation Area	14690	224	54	Wompatuck Road
Bouve Conservation Area	13023	296	64	Wompatuck Road
Bouve Conservation Area	15757	119	74	Wompatuck Road
Bouve Conservation Area	35900	131	88	Wompatuck Road
Burns Memorial	2141	33	0	Central Street
Burns Memorial	2028	285	205	Central Street
Burns Memorial	10090	65	0	Hersey Street
Burns Memorial	26545	198	241	Central Street
Cove/ Weir River ACEC	17940	244	50	George Washington Blvd
Cranberry Pond/More Brewer Complex	5544	42	49	French Street
Cranberry Pond/More Brewer Complex	5544	42	51	French Street
Cranberry Pond/More Brewer Complex	5544	42	214	Hobart Street
Cranberry Pond/More Brewer Complex	5544	42	212	Hobart Street
Fresh River/More Brewer Complex	405	16	1	Quail Run
Fresh River/More Brewer Complex	404	141	2	Quail Run
Fresh River/More Brewer Complex	517	189	4	Quail Run
Fresh River/More Brewer Complex	416	28	58	French Street
Fresh River/More Brewer Complex			6	Quail Run
Fresh River/More Brewer Complex	1841	92	0	French Street
Fresh River/More Brewer Complex	401	118	1	Brookfield Way
Fresh River/More Brewer Complex	568	167	2	Brookfield Way
Fulling Mill Brook	35080	345	0	Lazell Street
Fulling Mill Brook	4769	439	99	Lazell Street
Fulling Mill Brook	9867	228	115	Lazell Street
Fulling Mill Brook	22782	324	127	Lazell Street
Fulling Mill Brook	30510	295	131	Lazell Street
Fulling Mill Brook	26072	322	165	Lazell Street
Fulling Mill Brook	34784	31	185	Lazell Street
Fulling Mill Brook	16999	339	193	Lazell Street
Fulling Mill Brook	8440	15	195	Lazell Street
Fulling Mill Brook	34483	295	205	Lazell Street
Fulling Mill Brook	4116	790	229	Lazell Street
Fulling Mill Brook	35204	3	235	Lazell Street
Fulling Mill Brook	4228	701	56	South Pleasant Street
Fulling Mill Brook	35231	316	72	South Pleasant Street
Fulling Mill Brook	27023	58	82	South Pleasant Street
Fulling Mill Brook	30987	221	86	South Pleasant Street
Fulling Mill Brook	30987	221	100	South Pleasant Street

# Parcels of Conservation Value

<b>Proximate Open Space</b>	<b>Book</b>	<b>Page</b>	<b>Site Address</b>	
Fulling Mill Brook	5662	430	104	South Pleasant Street
McKenna Marsh	25612	314	1082	Main Street
McKenna Marsh	4386	387	1100	Main Street
McKenna Marsh	19304	128	1120	Main Street
McKenna Marsh	29839	147	1142	Main Street
McKenna Marsh	35998	176	1144	Main Street
McKenna Marsh	22106	161	1150	Main Street
McKenna Marsh	2384	379	1164	Main Street
Mildred Cushing/Plymouth River Complex	3306	247	145	Cushing Street
Mildred Cushing/Plymouth River Complex	556	77	85	Cushing Street
Mildred Cushing/Plymouth River Complex	17401	191	155	Cushing Street
Mildred Cushing/Plymouth River Complex	198	101	100	Whitcomb Avenue
Mildred Cushing/Plymouth River Complex	30069	121	230	Ward Street
Mildred Cushing/Plymouth River Complex	513	148	111	Cushing Street
Mildred Cushing/Plymouth River Complex	6176	187	20	Camelot Drive
Mill Pond	16155	205	41	Water Street
Mill Pond	30077	220	182	Main Street
Mill Pond	19368	75	44	Winter Street
Mill Pond	3253	394	20	East Street
Mill Pond	4775	158	0	Rockwood Road
Mill Pond	5538	163	10	Rockwood Road
Mill Pond	4399	127	4	Andrews Isle
Mill Pond	3870	107	6	Andrews Isle
Mill Pond	3870	701	8	Andrews Isle
Mill Pond	5820	276	39	Eldrige Court
Mill Pond	4243	541	33	Eldrige Court
Mill Pond	5520	284	37	Eldrige Court
Old Swamp River	34988	190	74	Abington Street
Old Swamp River	1976	520	0	Abington Street
Plymouth River/More Brewer Complex	5035	402	11	High Street
Plymouth River/More Brewer Complex	13268	155	1	Pinecrest Road
Plymouth River/More Brewer Complex	27324	330	101	High Street
Plymouth River/More Brewer Complex	27324	332	91	High Street
Plymouth River/More Brewer Complex	2198	369	0	High Street
South Jr. High	34224	322	155	Whiting Street
South Jr. High	12916	230	180	Gardner Street
South Jr. High	5156	117	173	Whiting Street
South Jr. High	19019	220	151	Whiting Street
South Jr. High	14259	218	153	Whiting Street

# Parcels of Conservation Value

Proximate Open Space	Book	Page	Site Address	
Town Forest	35044	86	94	Prospect Street
Town Forest	3944	501	192	South Pleasant Street
Town Forest	3826	399	222	South Pleasant Street
Town Forest	37552	96	234	South Pleasant Street
Town Forest/Fulling Mill Brook	9657	178	0	South Pleasant Street
Triphammer Pond	37370	84	0	Popes Lane
Weir River	12132	336	0	Arnold Road
Weir River	27155	21	11	Crooked Meadow Lane
Weir River	12095	130	16	Crooked Meadow Lane
Weir River	35872	237	18	Crooked Meadow Lane
Weir River	30653	299	37	Downing Street
Weir River	5059	89	39	Downing Street
Weir River	31144	111	50	Downing Street
Weir River	14208	93	18	Floret Circle
Weir River	15447	349	28	Floret Circle
Weir River	34017	283	30	Floret Circle
Weir River	12912	211	32	Floret Circle
Weir River	29026	36	40	Floret Circle
Weir River	15712	129	46	Floret Circle
Weir River	29697	3	48	Floret Circle
Weir River	12195	71	50	Floret Circle
Weir River	4130	382	54	Floret Circle
Weir River	22670	236	56	Floret Circle
Weir River	30976	205	58	Floret Circle
Weir River	22782	34	10	Floret Circle
Weir River	21303	24	12	Floret Circle
Weir River	35024	289	14	Floret Circle
Weir River	27929	156	16	Floret Circle
Weir River	14208	93	18	Floret Circle
Weir River	19379	112	20	Floret Circle
Weir River	16767	277	22	Floret Circle
Weir River	34498	160	24	Floret Circle
Weir River	14118	27	26	Floret Circle
Weir River	15447	349	28	Floret Circle
Weir River	34017	283	30	Floret Circle
Weir River	12912	211	32	Floret Circle
Weir River	12597	266	34	Floret Circle
Weir River	15328	342	36	Floret Circle
Weir River	29026	36	40	Floret Circle

# Parcels of Conservation Value

<b>Proximate Open Space</b>	<b>Book</b>	<b>Page</b>	<b>Site Address</b>	
Weir River	36366	151	44	Floret Circle
Weir River	15712	129	46	Floret Circle
Weir River	29697	3	48	Floret Circle
Weir River	22670	236	50	Floret Circle
Weir River	33798	101	52	Floret Circle
Weir River	35083	78	54	Floret Circle
Weir River	12195	71	56	Floret Circle
Weir River	30976	205	58	Floret Circle
Weir River	11315	342	117	Free Street
Weir River	21270	314	87	Free Street
Weir River	16911	192	90	Free Street
Weir River	9867	228	115	Lazell Street
Weir River	21705	193	83	Lazell Street
Weir River	21705	194	91	Lazell Street
Weir River	4769	439	99	Lazell Street
Weir River	3416	648	600	Lindley Street
Weir River	6877	142	36	Linscott Road
Weir River	35083	78	540	Main Street
Weir River	17501	230	556	Main Street
Weir River	4130	382	540	Main Street
Weir River	17501	230	556	Main Street
Weir River	3416	648	0	South Bradford
Weir River	28549	156	11	South Bradford
Weir River	8625	168	15	South Bradford
Weir River	14021	245	21	South Bradford
Weir River	14481	105	25	South Bradford
Weir River	11270	243	11	South Bradford
Weir River	14481	105	25	South Bradford
Weir River	28799	193	60	Thistle Patch Way
Weir River	12128	73	62	Thistle Patch Way
Weir River	30351	131	66	Thistle Patch Way
Weir River	6101	192	72	Thistle Patch Way
Weir River	28549	156	82	Thistle Patch Way
Weir River	30818	188	88	Thistle Patch Way
Weir River	38077	55	92	Thistle Patch Way
Weir River	27825	160	94	Thistle Patch Way
Weir River	5747	175	98	Thistle Patch Way
Weir River	33632	289	104	Thistle Patch Way
Weir River	8842	133	106	Thistle Patch Way

# Parcels of Conservation Value

<b>Proximate Open Space</b>	<b>Book</b>	<b>Page</b>	<b>Site Address</b>	
Weir River	16499	307	112	Thistle Patch Way
Weir River	25492	84	114	Thistle Patch Way
Weir River	29828	349	100	Thistle Patch Way
Weir River	14274	39	102	Thistle Patch Way
Weir River	33632	289	104	Thistle Patch Way
Weir River	16499	307	106	Thistle Patch Way
Weir River	5825	74	108	Thistle Patch Way
Weir River	34708	217	110	Thistle Patch Way
Weir River	6101	192	112	Thistle Patch Way
Weir River	25492	84	114	Thistle Patch Way
Weir River	35373	259	116	Thistle Patch Way
Weir River	30001	37	118	Thistle Patch Way
Weir River	28799	193	60	Thistle Patch Way
Weir River	12128	73	62	Thistle Patch Way
Weir River	15453	3	64	Thistle Patch Way
Weir River	30351	131	66	Thistle Patch Way
Weir River	33553	91	68	Thistle Patch Way
Weir River	18195	293	70	Thistle Patch Way
Weir River	8842	133	72	Thistle Patch Way
Weir River	15577	272	74	Thistle Patch Way
Weir River	36323	137	76	Thistle Patch Way
Weir River	15145	283	78	Thistle Patch Way
Weir River	35124	156	80	Thistle Patch Way
Weir River	11270	243	82	Thistle Patch Way
Weir River	9386	120	84	Thistle Patch Way
Weir River	29923	123	86	Thistle Patch Way
Weir River	30818	188	88	Thistle Patch Way
Weir River	31652	266	90	Thistle Patch Way
Weir River	38077	55	92	Thistle Patch Way
Weir River	27825	160	94	Thistle Patch Way
Weir River	31290	252	96	Thistle Patch Way
Weir River	5747	175	98	Thistle Patch Way
Weir River	35124	56	27	Westmoreland Road
Weir River	24114	274	9	Leavitt Street
Weir River	37503	112	10	Jones Street
Weir River	29567	2	38	Jones Street
Weir River	22413	2	23	Chamberlain Run
Weir River	31087	222	10	Great Rock Road
Weir River	33126	194	105	East Street

# Parcels of Conservation Value

<b>Proximate Open Space</b>	<b>Book</b>	<b>Page</b>	<b>Site Address</b>	
Weir River	14652	37	56	Turkey Hill Lane
Weir River	5262	229	60	Turkey Hill Lane
Weir River	18519	345	149	Rockland Street
Weir River	5602	203	67	Rockland Street
Weir River	17940	244	134	Rockland Street
Weir River	17940	244	116	Rockland Street
Weir River	17940	244	51	George Washington Blvd
Weir River	17940	244	59	George Washington Blvd
Weir River	17940	244	57	George Washington Blvd
Weir River	17940	244	55	George Washington Blvd