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**November
2023**

Fore River Trail Site Assessment and Feasibility Report

Prepared for:
**Town of Weymouth,
Massachusetts**
Nov. 27, 2023

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1.0 INTRODUCTION AND SUMMARY

This site assessment and feasibility report follows work begun in the 2019 Fore River Trail Feasibility Study by the Town of Weymouth, **Appendix C**. This initial feasibility review provided an outline for the creation of a new public trail within the existing Fore River Marsh in the White's Neck area of Weymouth while connecting the adjacent Idlewell neighborhood to the Fore Riverwalk (Weymouth Canoe Access) in downtown Weymouth Landing.

This site assessment and continued feasibility study for the implementation of the Fore River Trail builds off of the initial land use information from the previous, *2019 Fore River Trail Feasibility Study* in this report. The central goal of this project is for implementation of the Fore River Trail focusing primarily on regulatory permitting, design development and public use access permissions utility rights-of-ways within the project area.

The following existing conditions data was collected during site survey:

- Detailed deed, property lines, Right-of-way dimensions as well as updated transmission and utility easement layout. Public and shared use agreement requirement from utilities.
- Surface topography; 1 FT contours
- Floodway and FEMA
- Wetland inventory and delineation
- Gas, Sewer, water and Stormwater infrastructure

Woodard & Curran has prepared this assessment of the proposed trail route and site conditions based on initial discussions and site walks with the Idlewell Neighborhood Association and the Town of Weymouth in April 2023. Concept design elements and the location of proposed trail sections were provided under the direction of the Town of Weymouth prior to the start of this project. Woodard & Curran have further developed concept design of the Fore River Trail as part of this summary report in **Section 7.0 Trail Concept Design and Implementation**. This section builds off investigation, research and outreach conducted in; **Section 2.0 Survey and Site Assessment, Section 3.0 Regulatory Permitting, Section 4.0 Easement Access Agreements**.

The additional inclusion of **Section 5.0 Trail Design Criteria, Section 6.0 Conceptual Cost Estimates** and **Section 8.0 Project Timeline** as part preliminary trail concept design and the proposed project implementation will be further developed by our project team in the follow design and permitting phase of this project.

2.0 SITE SURVEY AND ASSESSMENT

This section summarizes the existing site conditions along all the proposed Fore River Trail project area. The site survey field investigations and data collection focused on the Fore River Salt Marsh area located along the northern edge of the Fore River in the Town of Weymouth encompassing the NStar-Eversource transmission parcel, including proposed trail access points within the Idlewell Neighborhood looking at utilities, wetland conditions, existing land use and right-of-way information.

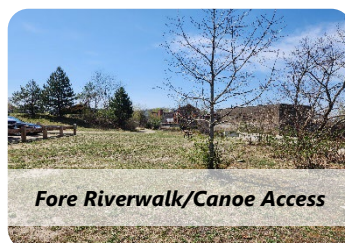
2.1 Site Description

The proposed project area for the Fore River Trail consists of approximately a 1-mile route along public rights-of-ways starting from Weymouth Canoe Access on Commercial St. and ending at the Fore River Marsh / NStar transmission corridor in the Idlewell Neighborhood in Weymouth, MA. See locational map for proposed trail route; **Figure 2: Fore River Trail Location Map**.

The main section of the proposed Fore River Trail site is located along the existing utility right-of-way extending across the 16.3-acre Fore River Salt Marsh and electricity transmission corridor located between Regina Road and Idlewell Blvd. in Weymouth, Ma. This area is currently owned by NStar/Eversource (parcel 151-1); see **Figure 2-1: Parcel Map** and is primarily used as an electricity transmission and utility corridor. The proposed Fore River Trail survey area includes approximately 1 sq. mile of the Fore River Salt Marsh, Idlewell Neighborhood, the MBTA rail line and the Regina Rd. underpass connecting this part of the trail to Town owned ROW areas along Commercial St. ending at Weymouth Canoe Access near downtown Weymouth Landing. Benefits of the proposed trail route through the ROWs included in this assessment include:

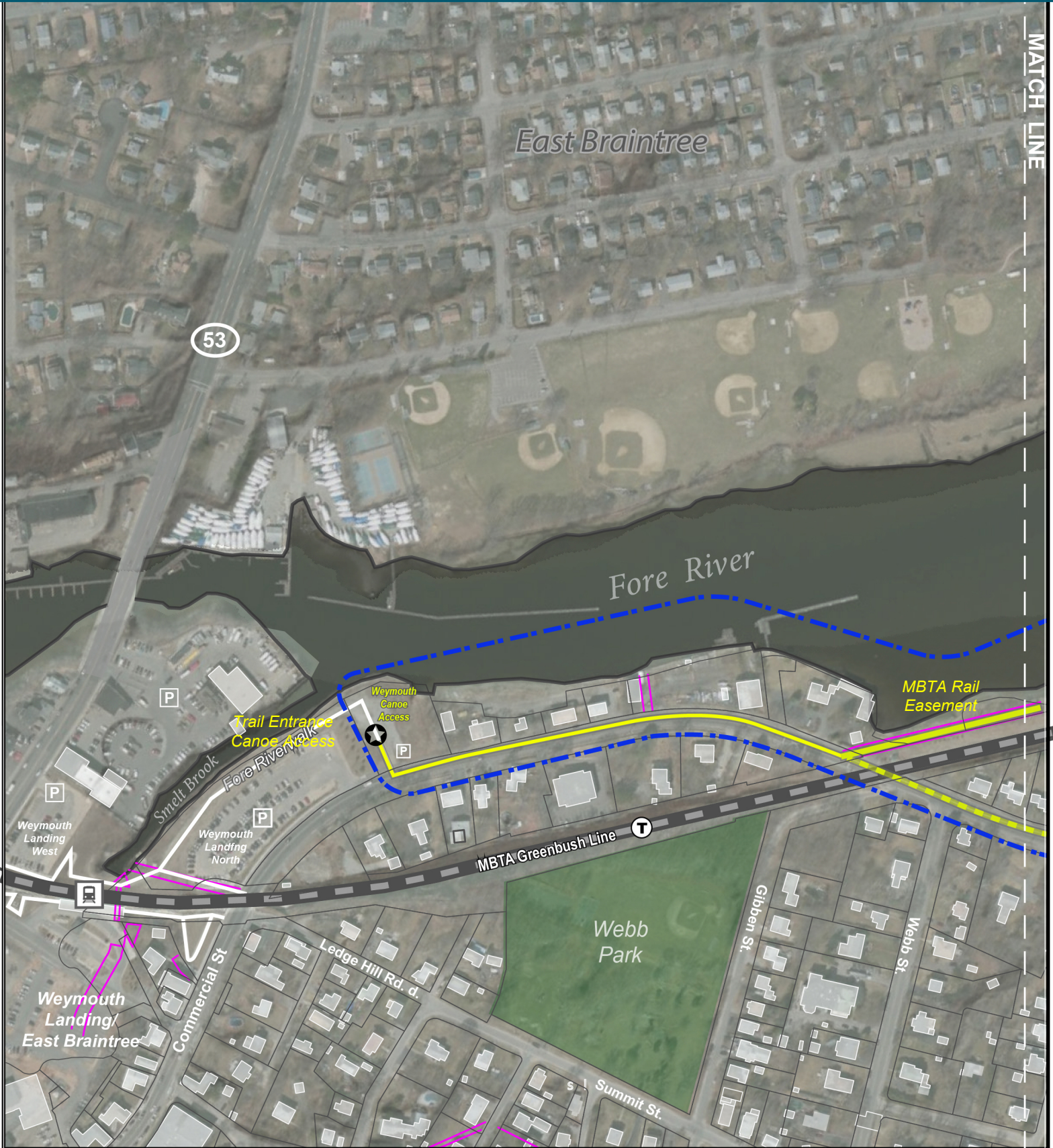
- Connecting by way of an accessible trail the Idlewell Neighborhood to Weymouth Landing downtown and regional commuter rail station.
- Increasing access to public conservation, and open space areas for the community of Weymouth.
- Public benefit project for underutilized public easement through unmaintained transmission corridor.
- Opportunity to restore 163-acre Salt Marsh and wetland Resource areas within coastal flood hazard areas.

Site visits were conducted by Woodard & Curran in April and May 2023 with the Town of Weymouth, Idlewell Improvement Association, and project sub consultants Lucas Environmental, LLC to support research



Fore River Site Areas, May 2023

FIGURE 2: Fore River Location Map

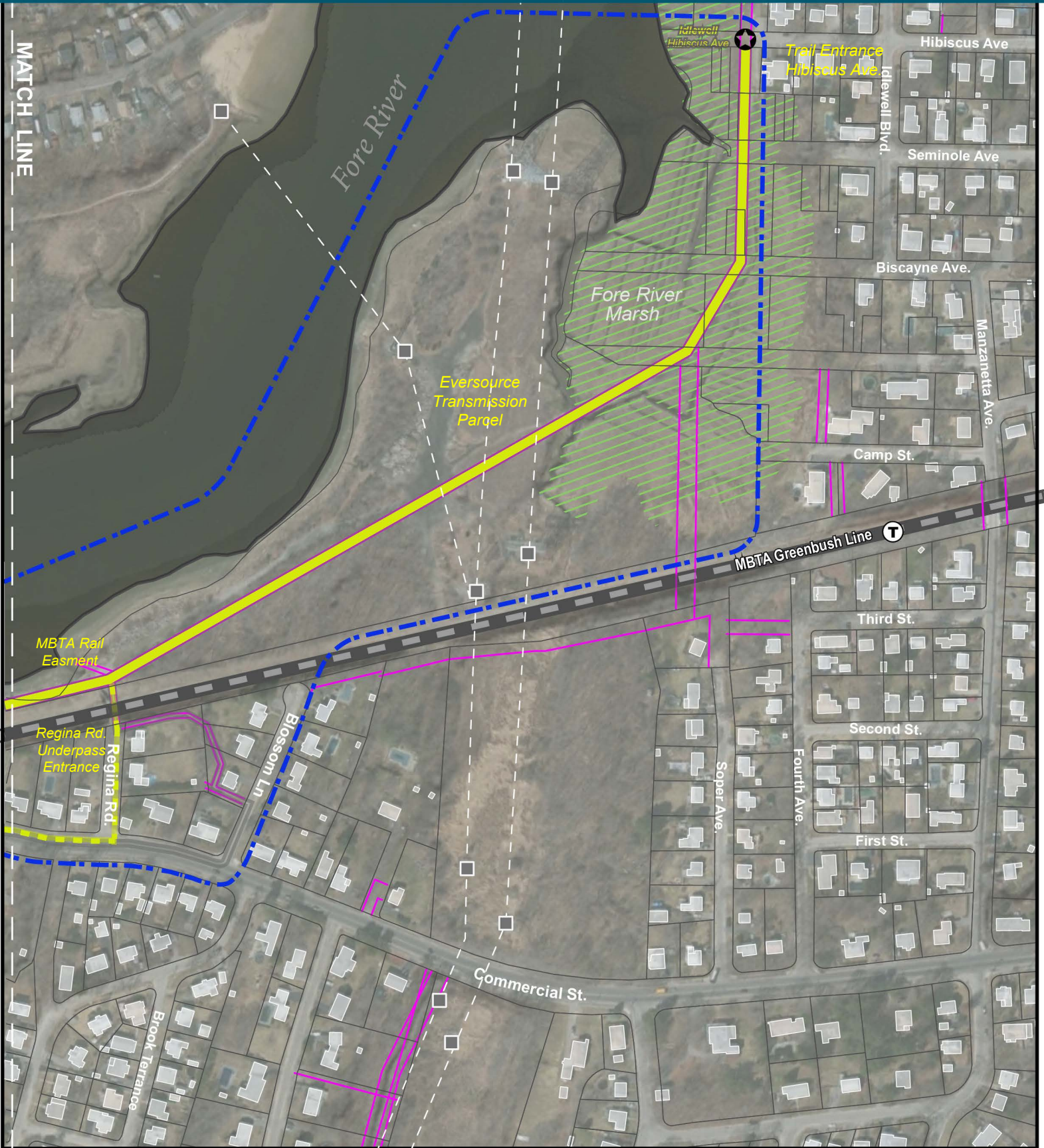


Legend

- Right-of-Way (ROW)
- Proposed Trail Route
- Proposed Trail Route Option
- Project Area Boundary
- Electrical Transmission Line
- Electrical Transmission Tower
- ★ Trailhead Locations



FIGURE 2: Fore River Location Map

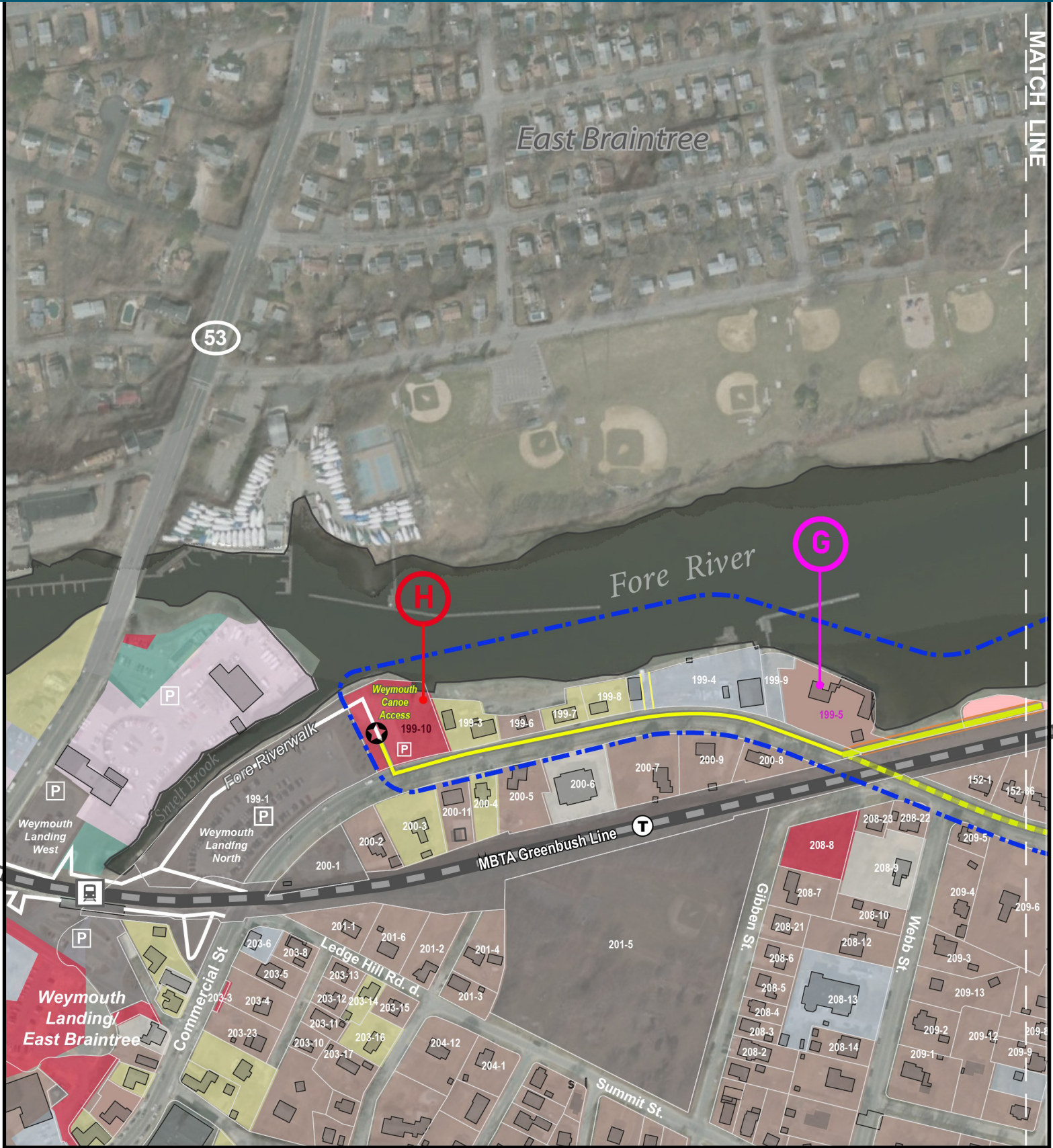


Legend

-  Right-of-Way (ROW)
-  Proposed Trail Route
-  Proposed Trail Route Option
-  Project Area Boundary
-  Electrical Transmission Line
-  Electrical Transmission Tower
-  Trailhead Locations



FIGURE 2-1: Parcel Map



Legend

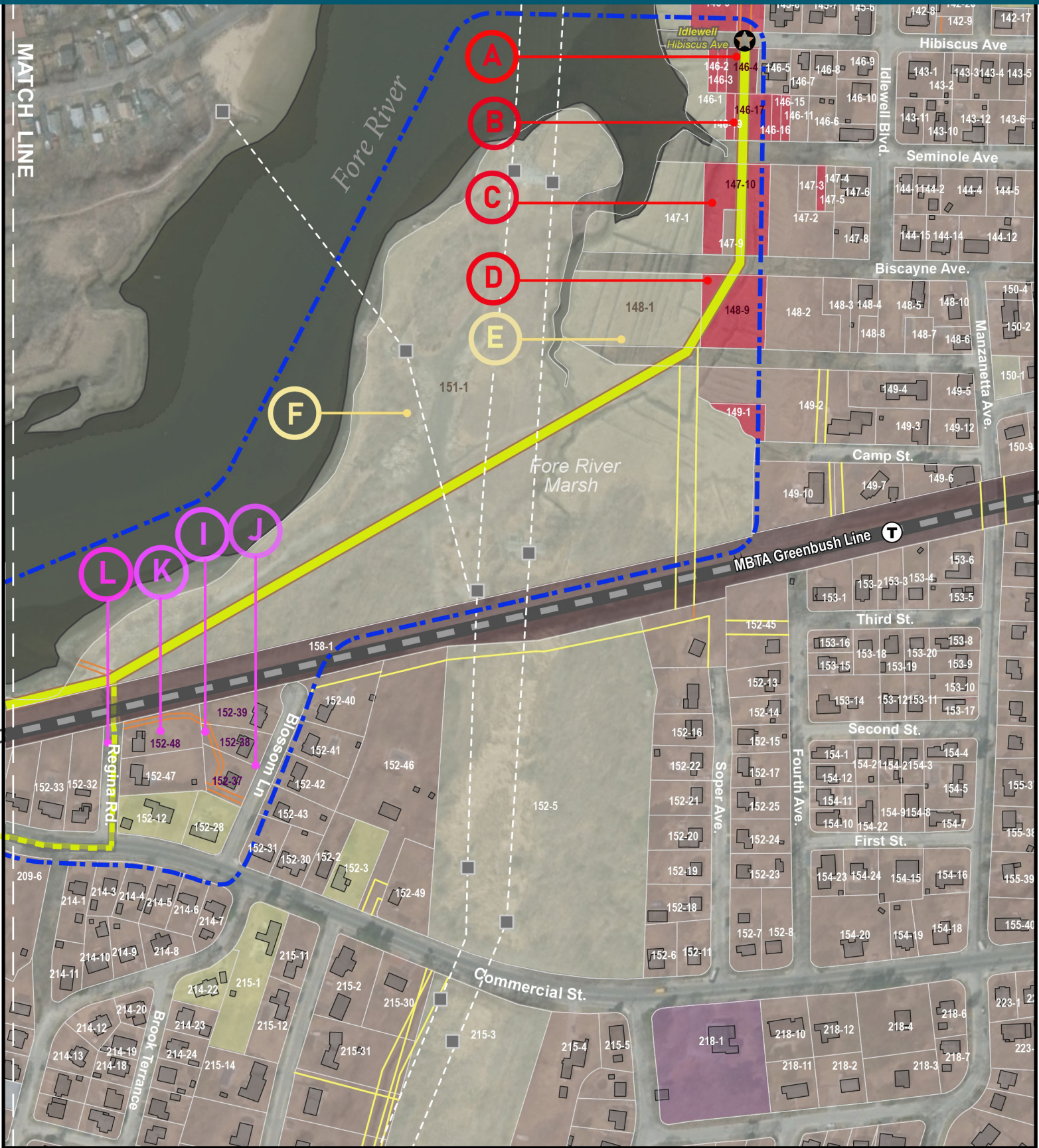
Right-of-Way (ROW)	Land Use	Mixed Use
Proposed Trail Route	Single family residence	Commercial Vacant
Proposed Trail Route Option	Two/Three Family Residential	Commercial
Project Area Boundary	Condominium	Industrial Vacant
Electrical Transmission Line	Apartments 4 or more units	Industrial
Electrical Transmission Tower	Institutional/Exempt	Municipal Vacant
Trailhead Locations	Municipal, Federal, or State	

Parcel Owners

	Town of Weymouth
	NStar/Eversource, utility
	Private, Resident



FIGURE 2-1: Parcel Map



Legend

Right-of-Way (ROW)	Land Use	Mixed Use
Proposed Trail Route	Single family residence	Commercial Vacant
Proposed Trail Route Option	Two/Three Family Residential	Commercial
Project Area Boundary	Condominium	Industrial Vacant
Electrical Transmission Line	Apartments 4 or more units	Industrial
Electrical Transmission Tower	Institutional/Exempt	Municipal Vacant
Trailhead Locations	Municipal, Federal, or State	

Parcel Owners

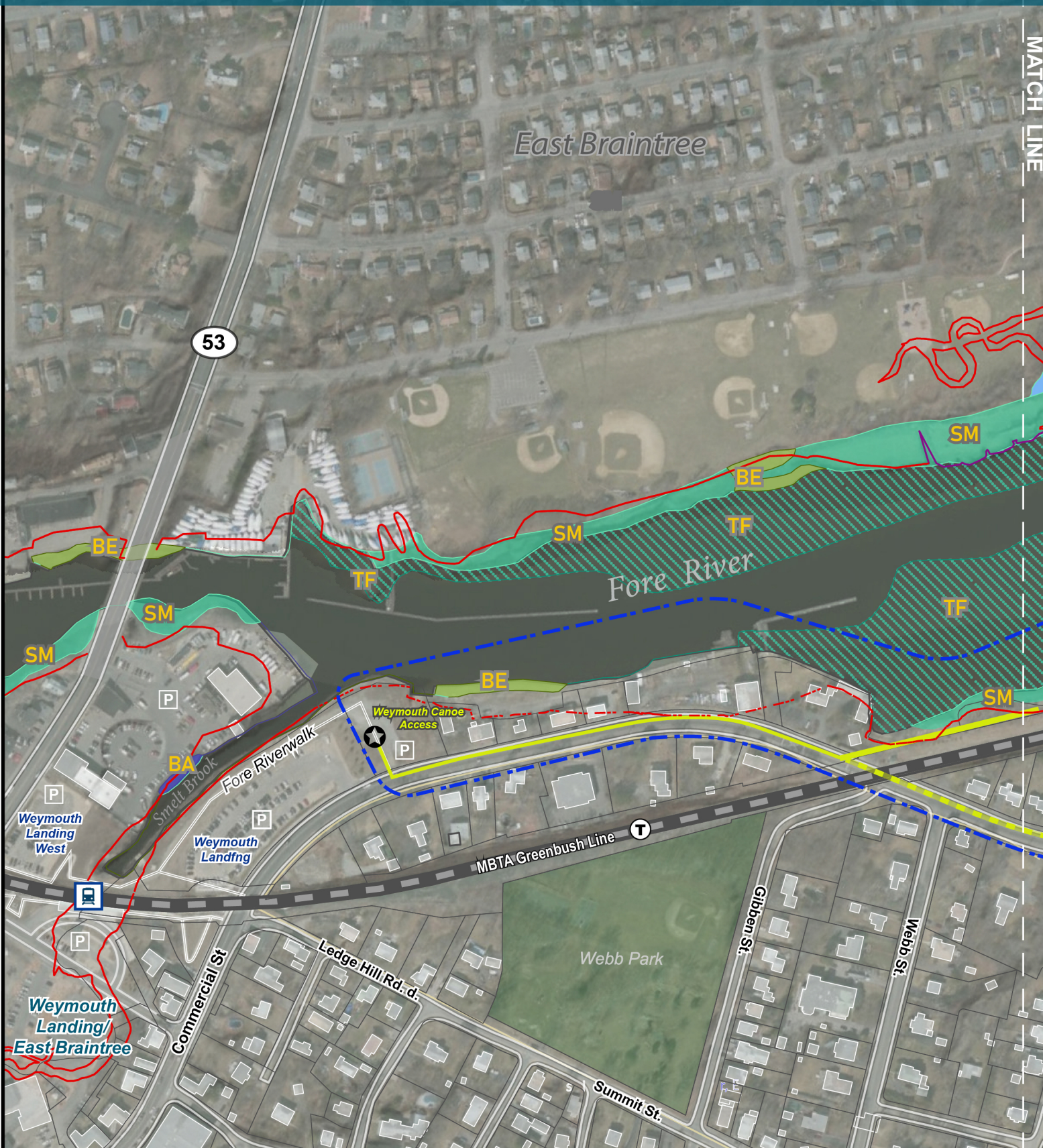
- Town of Weymouth
- NStar/Eversource, utility
- Private, Resident



0 300 Feet



FIGURE 2-2: Environmental Regulatory & Resource Area Map



Legend

- | | | |
|--|--|---|
| <ul style="list-style-type: none"> — Right-of-Way (ROW) — Proposed Trail Route — Proposed Trail Route Option — Project Area Boundary — Electrical Transmission Line ■ Electrical Transmission Tower ★ Trailhead Locations | <p>MassDEP wetlands Classification</p> <ul style="list-style-type: none"> BE: Coastal Beach BA: Coastal Bank, Bluff SM: Salt Marsh M: Shallow Marsh, Meadow TF: Tidal Flat | <p>Chapter 91 Tidelands Jurisdiction</p> <ul style="list-style-type: none"> — Marsh Boundary - landward — Chapter 91 Jurisdiction — Historic High Water — Contemporary High Water — Inferred Contemporary High Water |
|--|--|---|

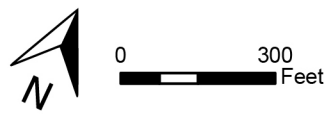
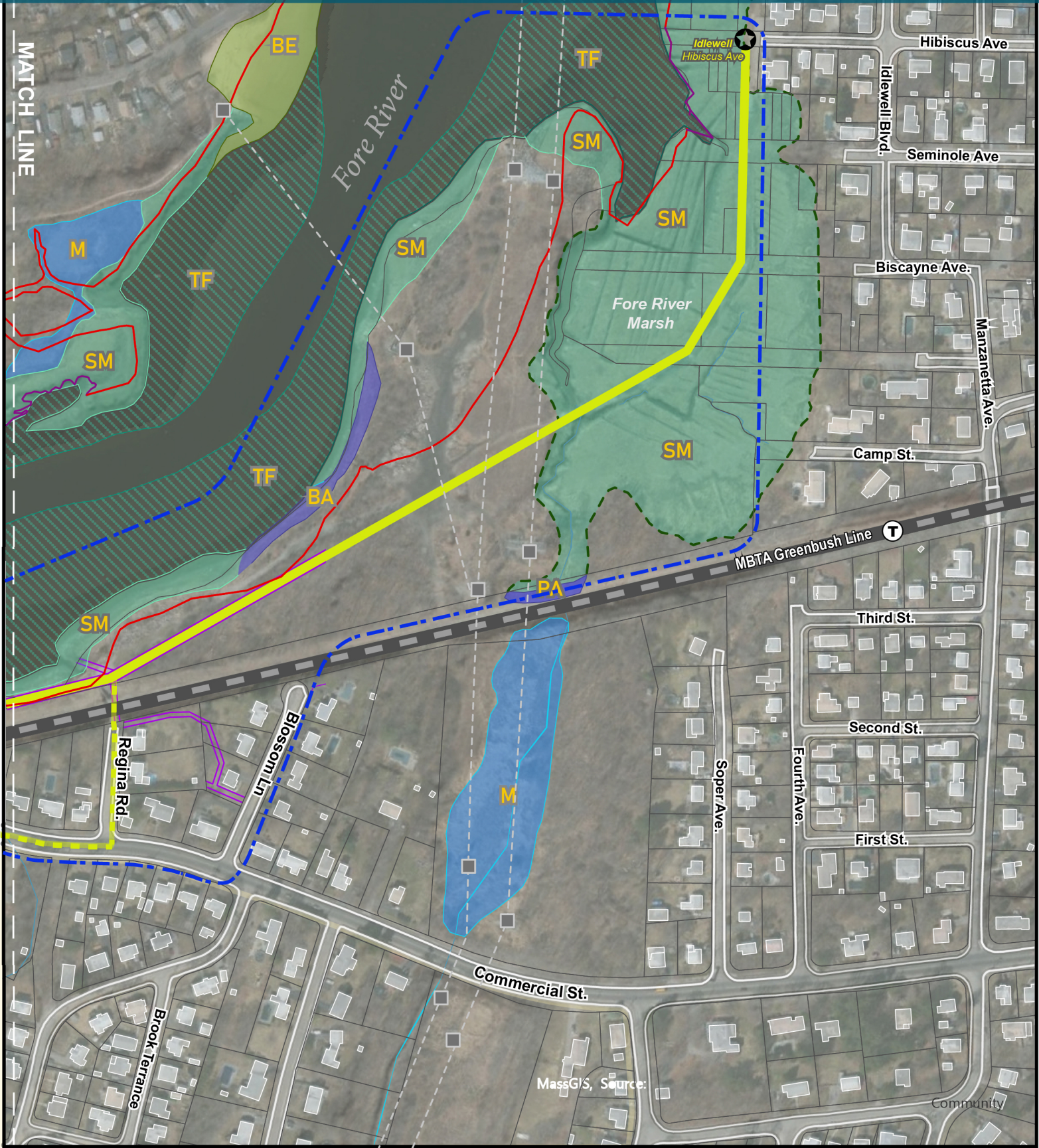


FIGURE 2-2: Environmental Regulatory & Resource Area Map



Legend

- | | | |
|---|---|---|
| <ul style="list-style-type: none"> Right-of-Way (ROW) Proposed Trail Route Proposed Trail Route Option Project Area Boundary Electrical Transmission Line Electrical Transmission Tower Trailhead Locations | <p>MassDEP wetlands Classification</p> <ul style="list-style-type: none"> BE: Coastal BEach BA: Coastal Bank, Bluff SM: Salt Marsh M: Shallow Marsh, Meadow TF: Tidal Flat | <p>Chapter 91 Tidelands Jurisdiction</p> <ul style="list-style-type: none"> Marsh Boundary - landward Chapter 91 Jurisdiction Historic High Water Contemporary High Water Inferred Contemporary High Water |
|---|---|---|



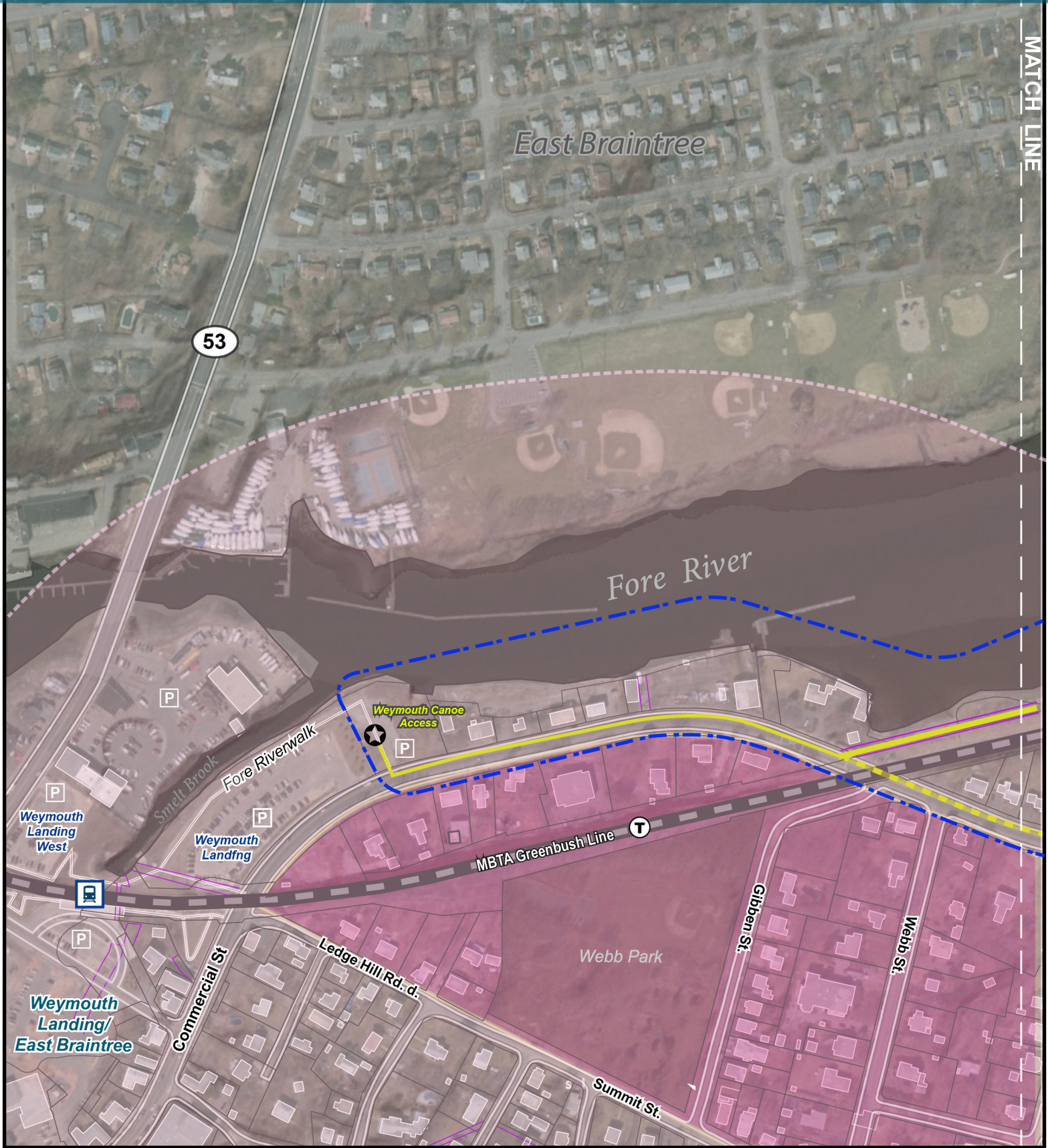
0 300 Feet



MassGIS, Source:

Community

FIGURE 2-2.1: Environmental Justice Areas



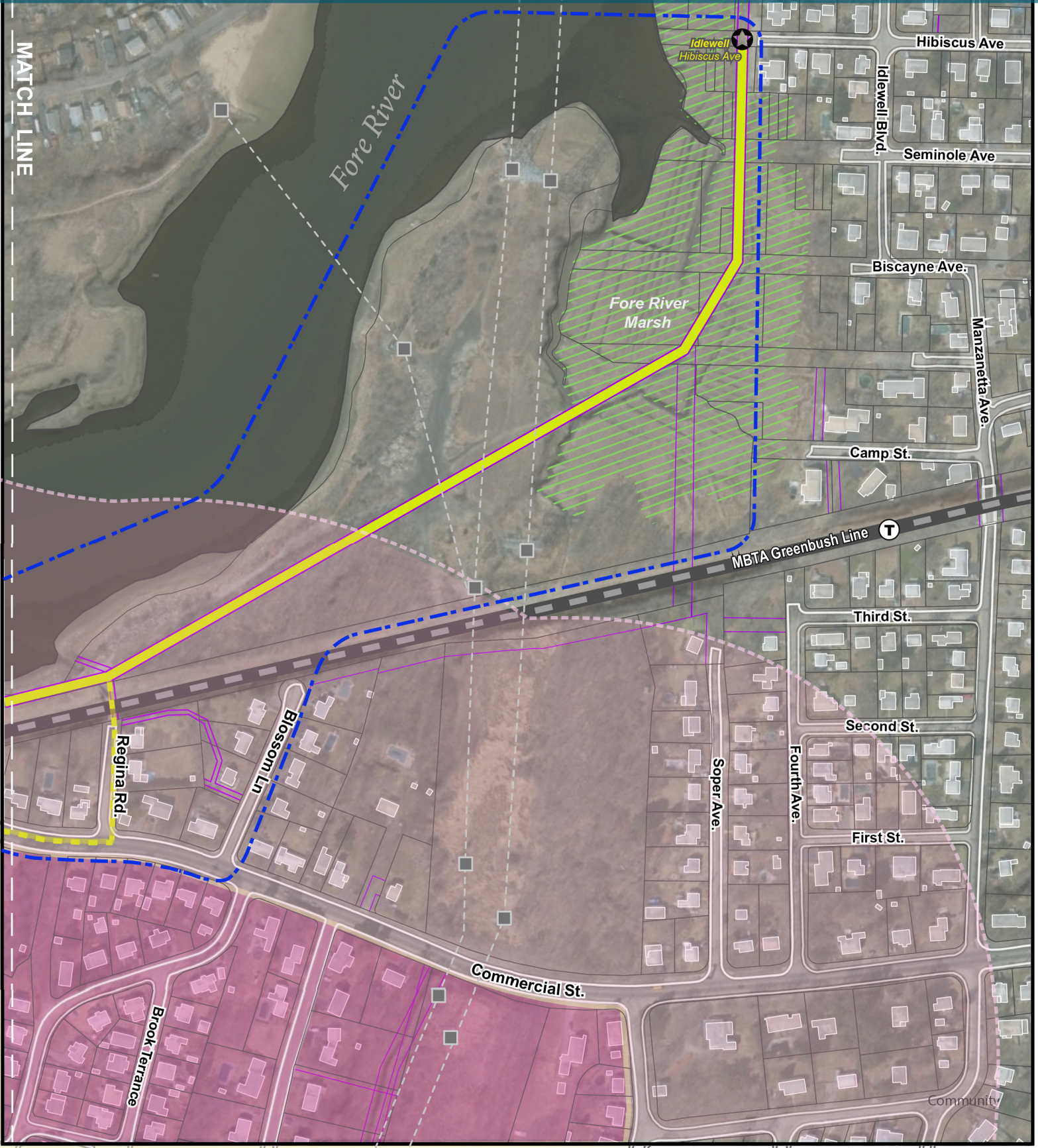
MATCH LINE

Legend

- Right-of-Way (ROW)
 - Proposed Trail Route
 - Proposed Trail Route Option
 - - - Project Area Boundary
 - - - Electrical Transmission Line
 - Electrical Transmission Tower
 - ★ Trailhead Locations
- Environmental Justice Population Areas**
- Environmental Justice (EJ) Community Designation
 - - - 1/2 Mile Environmental Justice Boundary Requirement



FIGURE 2-2.1: Environmental Justice Areas



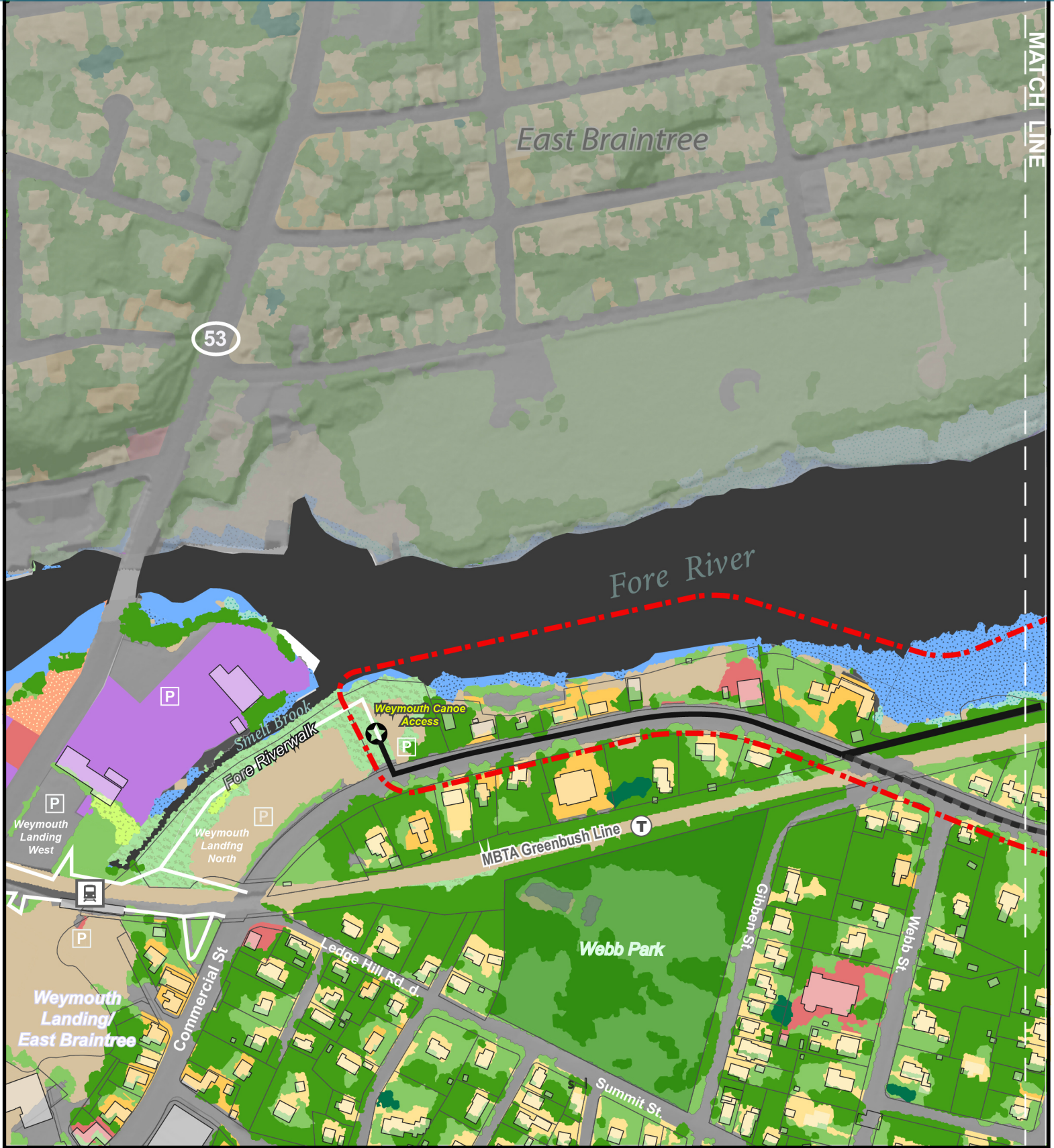
Legend

- Right-of-Way (ROW)
- Proposed Trail Route
- Proposed Trail Route Option
- Project Area Boundary
- Electrical Transmission Line
- Electrical Transmission Tower
- Trailhead Locations

- Environmental Justice Population Areas**
- Environmental Justice (EJ) Community Designation
 - 1/2 Mile Environmental Justice Boundary Requirement



FIGURE 2-3: Land Use



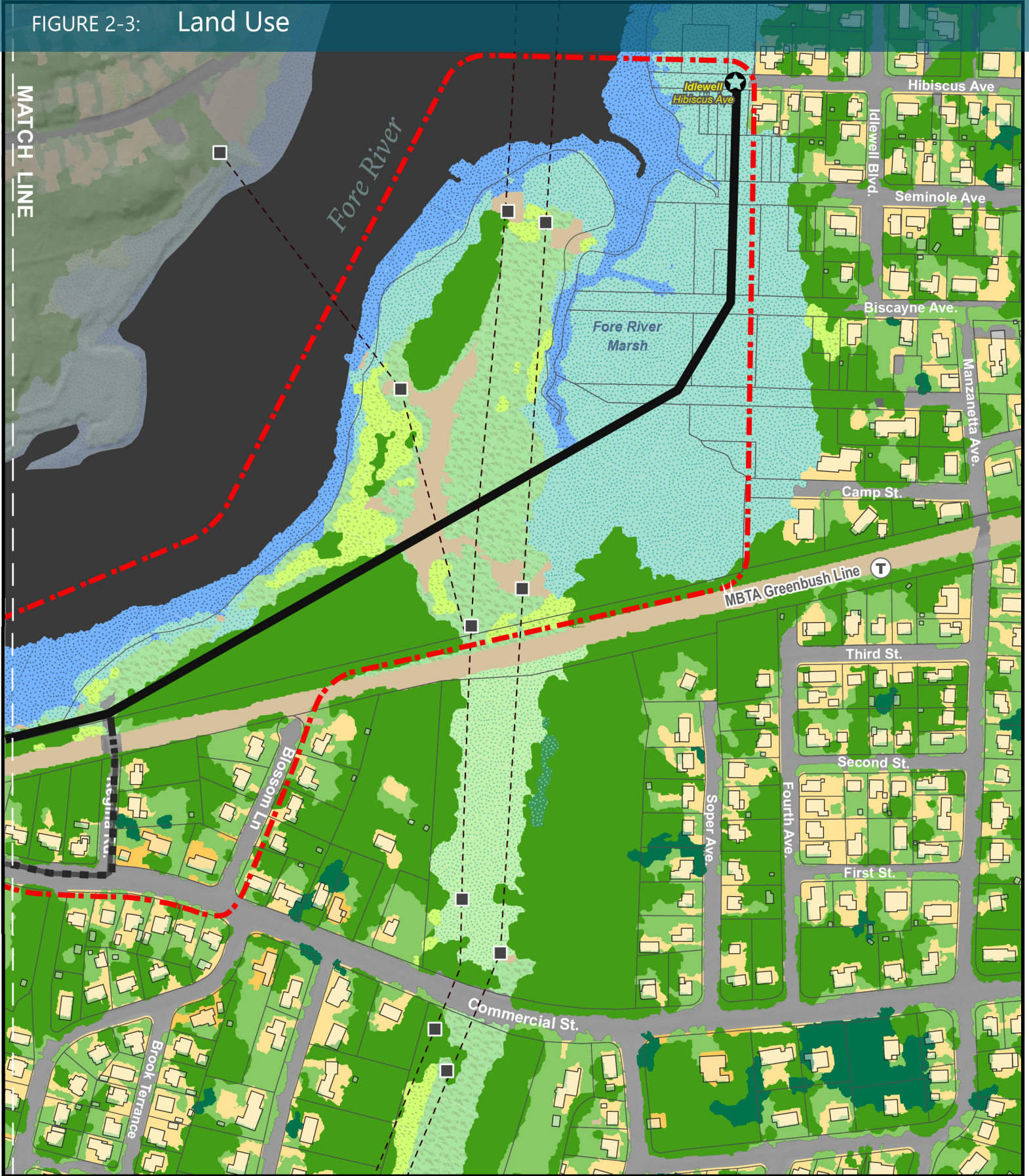
Legend

- | | | |
|------------------------------------|------------------------------|------------------------|
| — Right-of-Way (ROW) | Residential Land Uses | Land Cover |
| — Proposed Trail Route | Single Family | Impervious Cover |
| - - - Proposed Trail Route Option | Multi-Family | Developed Open Space |
| — Project Area Boundary | Other Residential | Undeveloped Open Space |
| - - - Electrical Transmission Line | Other Land Uses | Bare Land |
| ⊕ Electrical Transmission Tower | Commercial | Wetland |
| ★ Trailhead Locations | Industrial | Unconsolidated Shore |
| | Mixed Use | |



MATCH LINE

FIGURE 2-3: Land Use



Legend

- | | | |
|--|--|---|
| <ul style="list-style-type: none"> — Right-of-Way (ROW) — Proposed Trail Route - - - Proposed Trail Route Option — Project Area Boundary - - - Electrical Transmission Line ⊙ Electrical Transmission Tower ⊙ Trailhead Locations | <p>Residential Land Uses</p> <ul style="list-style-type: none"> Single Family Multi-Family Other Residential <p>Other Land Uses</p> <ul style="list-style-type: none"> Commercial Industrial Mixed Use | <p>Land Cover</p> <ul style="list-style-type: none"> Impervious Cover Developed Open Space Undeveloped Open Space Bare Land Wetland Unconsolidated Shore |
|--|--|---|



FIGURE 2-4: Utility



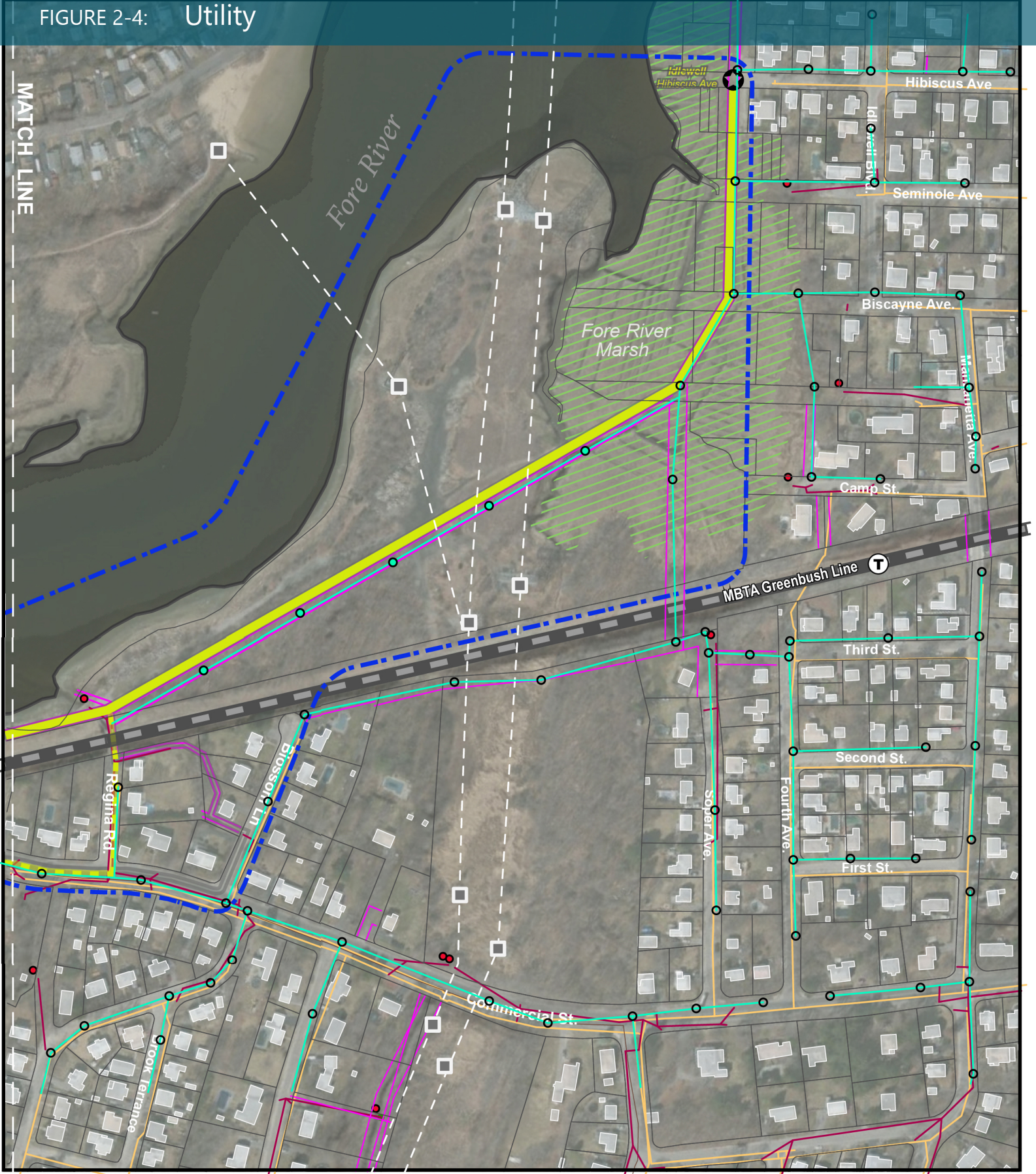
MATCH LINE

Legend

- | | | | |
|--|-------------------------------|--|--------------------------------------|
| | Right-of-Way (ROW) | | Public Utility Infrastructure |
| | Proposed Trail Route | | Water Line |
| | Proposed Trail Route Option | | Storm Drain Line |
| | Project Area Boundary | | Sewer |
| | Electrical Transmission Line | | Sewer Manhole |
| | Electrical Transmission Tower | | Stormwater Inlet |
| | Trailhead Locations | | |



FIGURE 2-4: Utility



Legend

- Right-of-Way (ROW)
- Proposed Trail Route
- Proposed Trail Route Option
- Project Area Boundary
- Electrical Transmission Line
- Electrical Transmission Tower
- ⊙ Trailhead Locations

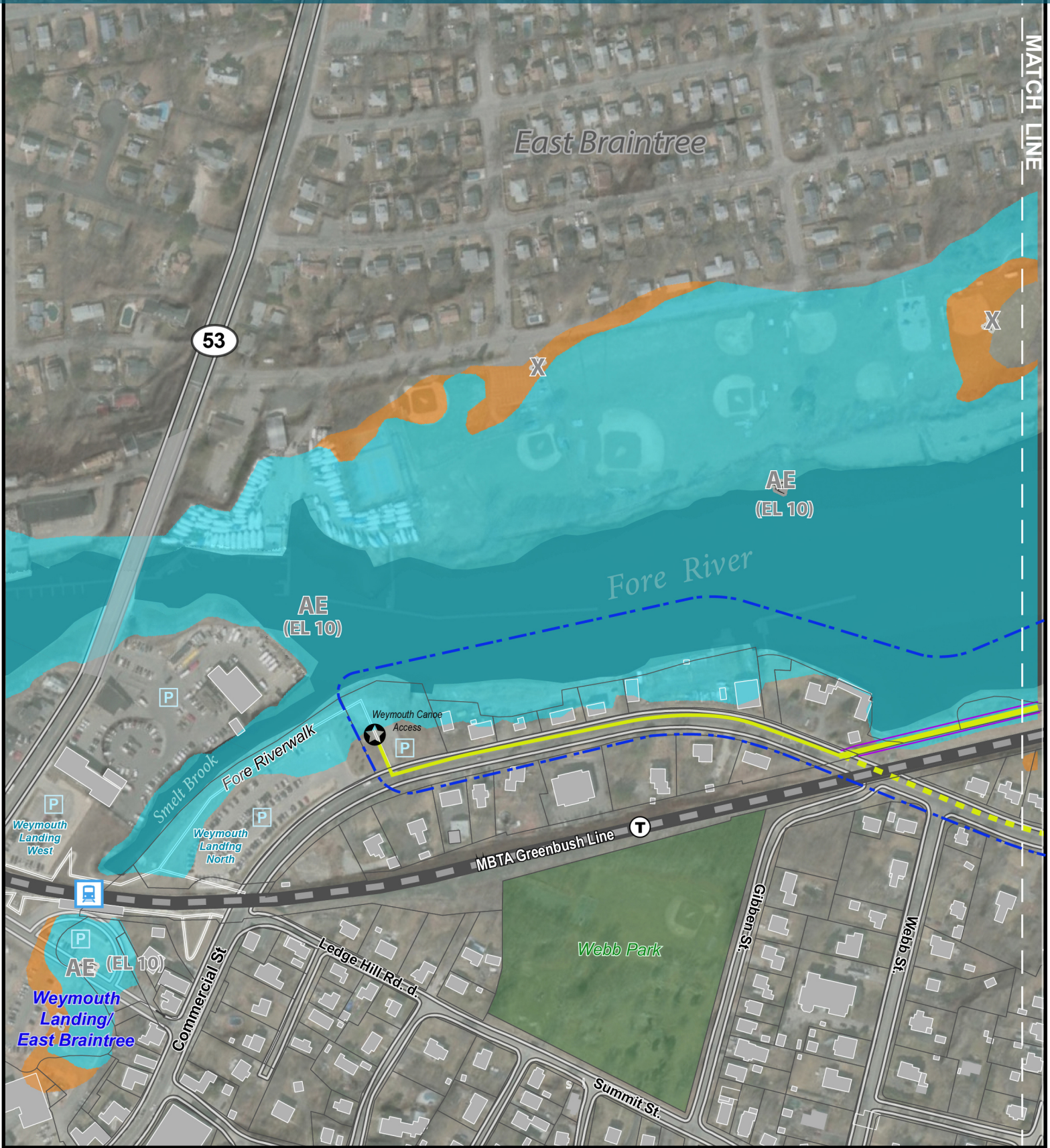
Public Utility Infrastructure

- Water Line
- Storm Drain Line
- Sewer
- Sewer Manhole
- Stormwater Inlet



FIGURE 2-5:

Flood Zone Map

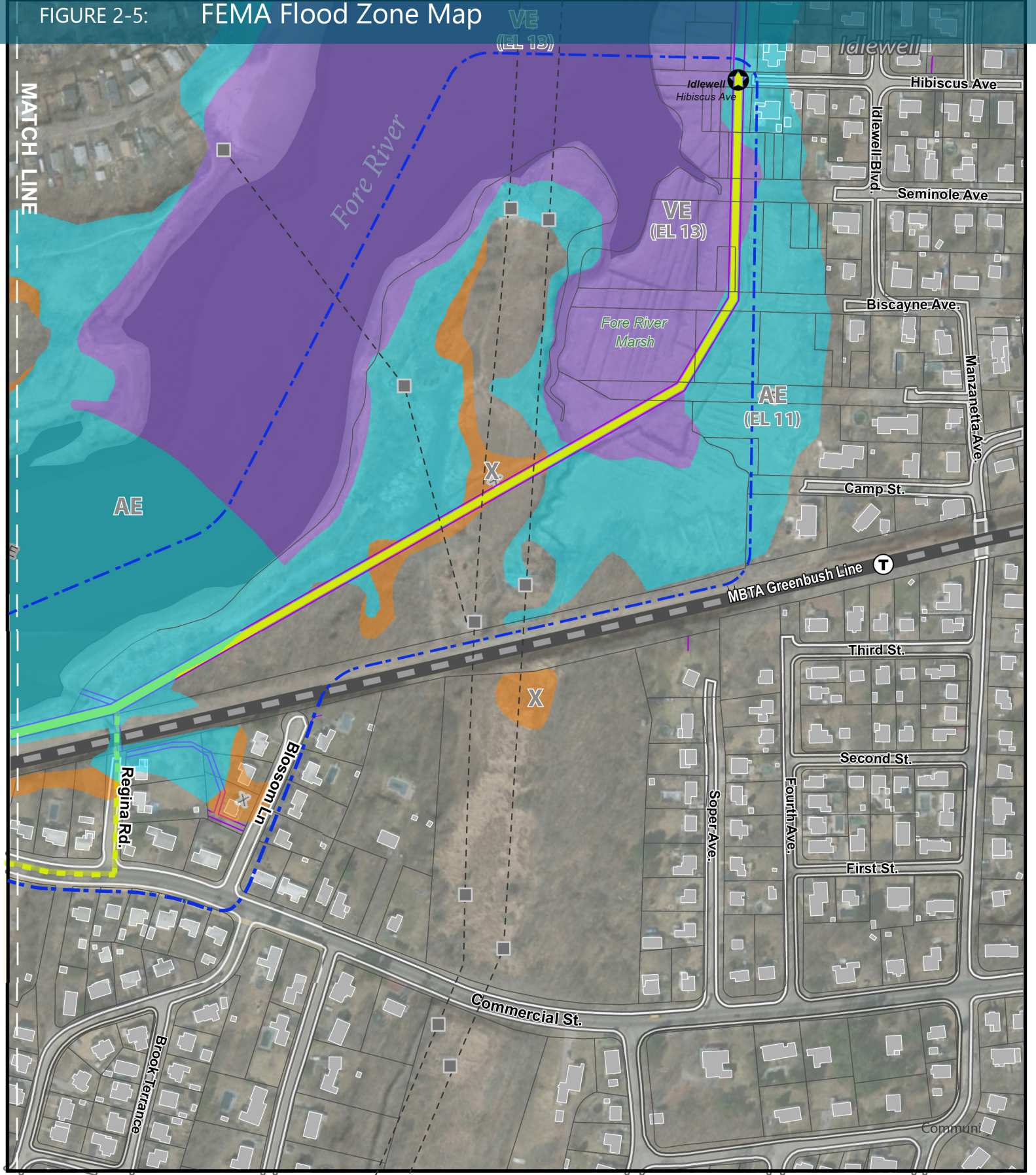


Legend

- | | |
|---|--|
| <ul style="list-style-type: none"> Right-of-Way (ROW) Proposed Trail Route Proposed Trail Route Option Project Area Boundary Electrical Transmission Line Electrical Transmission Tower Trailhead Locations | <p>Flood Zone Designations</p> <ul style="list-style-type: none"> A: 1% Annual Chance of Flooding, AE: 1% Annual Chance of Flooding; BFE X: 0.2% Annual Chance of Flooding VE: High Risk Coastal Area, 10yr Flood Elevation |
|---|--|



FIGURE 2-5: FEMA Flood Zone Map



Legend

- | | |
|---|--|
| <ul style="list-style-type: none"> Right-of-Way (ROW) Proposed Trail Route Proposed Trail Route Option Project Area Boundary Electrical Transmission Line Electrical Transmission Tower Trailhead Locations | <p>Flood Zone Designations</p> <ul style="list-style-type: none"> A: 1% Annual Chance of Flooding, AE: 1% Annual Chance of Flooding; BFE X: 0.2% Annual Chance of Flooding VE: High Risk Coastal Area; 10yr Flood Elevation |
|---|--|



for this assessment characterizing the existing site conditions and constraints as well as resource area boundaries for wetland survey.

2.2 Site Conditions

This section evaluates existing site conditions along areas listed in **Figure 2-1: Fore River Trail Parcel Map** to identify potential constraints in converting the existing utility corridor into accessible public trail. The evaluation of site conditions was completed utilizing existing reports/studies and mapping, aerial orthophotography, state geographic information system (GIS) data, and field investigation.

2.2.1 Land Use

The Fore River Trail land use study focuses on the NStar/Eversource parcel and connected parcels along the Idlewell neighborhood and trail access areas. For a layout of all areas of this study and land uses see **Figure 2-1: Parcel Map**. The Fore River Marsh/NStar parcel site is approximately 16.3 acres within the coastal resource areas and buffer zones as defined by 310 CMR 10.55-10.58 in the Massachusetts Wetlands Protection Act. The site consists mainly of coastal salt marsh land, locationally bound by the Fore River in the west and an elevated MBTA commuter rail line to the east. Land use within the Fore River drainage area is predominantly single family residential with moderate open space within the developed areas to buffer run-off from entering the surrounding Fore River and Salt Marsh coastal areas.

The northern edge of the site abuts the single-family residential neighborhood of Idlewell, and the south is bordered by Weymouth Landing commercial district. Proposed trailheads will be in the north residential area and in the south at the Monatiquot-Fore River walkway via Weymouth Canoe Launch parking lot. The length of the trail will total approximately 1 mile. Land use and property types are listed in **Figure 2-3: Land Use Map**.

The Fore River Salt Marsh area is currently owned by NStar/Eversource with a 25-FT public right-of-way used by MWRA and Town sewer line. Land use is restricted to utility and predominantly taken up by structural transmission towers. A 600 ft. section of trail will run through the 25-FT wide at-grade MBTA ROW between Regina Rd. and Commercial St. Utility corridors **Figure 2-4: Utility Locations**.

There are several state protected conservation and public recreational areas within a ½ mile of the trail corridor that include:

- William E. Newell Playground
- Cadman Conservation Area
- Web Park
- Abigail Adams State Park

Table 2-1: Fore River Trail ROW Parcel Ownership

Map Key	Parcel ID	Address	Owner Status	Easement Status	Project Use
A	146-4	0 Hibiscus Ave.	Town of Weymouth	Public	Trailhead/ Boardwalk Trail
B	146-17	0 Seminole Ave.	Town of Weymouth	Public	Boardwalk Trail
C	147-10	0 Seminole Ave.	Town of Weymouth	Public	Boardwalk Trail
D	148-9	0 Biscayne Ave.	Town of Weymouth	Public	Boardwalk Trail
E	148-1	0 Biscayne Ave.	NStar/Eversource	Private	Boardwalk Trail/ paved trail
F	151-1	0 Cabot St.	NStar/Eversource	Private	Paved Trail
G	199-5	256 Commercial St.	Residential	Private	Paved Trail
H	199-10	Weymouth Canoe Launch	Town of Weymouth	Public	Trailhead

Table 2-2: Optional Trail Access ROW: *Parcels MBTA underpass & Regina Rd.*

Map Key	Parcel ID	Address	Owner Status	Easement Status	Project Use
I	152-45	15 Regina Rd.	Residential	Private	Trail
J	152-38	20 Blossom Ln.	Residential	Private	Trail
K	152-37	13 Blossom Ln.	Residential	Private	Trail
L	NA	Regina Rd.	NStar/Eversource	Private Access Road	Underpass Access Road

2.2.2 Topography

The profile of the main corridor is relatively gradually sloped from the elevated MBTA rail line. The majority of the corridor is part of Massachusetts's coastal lowlands region and is relatively level across the width of the ROW. The profile of the Fore River Trail project area has relatively accessible terrain within 2%-5% slope. The southern edge of the project site, following Commercial St. only gains elevation along MBTA rail embankment. The raised rail transitions to grade after as it meets the proposed trail area along Commercial St.

2.2.3 Vegetation

The Fore River Marsh/Eversource site consists mainly of coastal Salt Marsh, bound by the Weymouth Fore River to the north and west, Commercial Street and an elevated MBTA commuter rail line to the south, and residences associated with the Idlewell Neighborhood to the east. Land use within the Fore River drainage area is predominantly single family residential with moderate open space within the developed areas to buffer run-off from entering the surrounding Fore River and Salt Marsh coastal areas.

Right-of-Way

Vegetation within the ROW consists of Japanese knotweed (*Fallopia japonica*), little bluestem (*Schizachyrium scoparium*), slender leaf goldenrod (*Euthamia graminifolia*), tall goldenrod (*Solidago gigantea*), eastern cottonwood shrubs (*Populus deltoides*), glossy buckthorn (*Frangula alnus*), Virginia creeper (*Parthenocissus quinquefolia*), eastern red cedar (*Juniperus virginiana*), common reed (*Phragmites australis*), staghorn sumac (*Rhus typhina*), Japanese barberry (*Berberis thunbergii*), Russian olive (*Elaeagnus angustifolia*), poison ivy (*Toxicodendron radicans*), fox grape (*Vitis labrusca*), gray birch (*Betula populifolia*), Oriental bittersweet (*Celastrus orbiculatus*), American pokeweed (*Phytolacca americana*), bull thistle (*Cirsium vulgare*), common milkweed (*Asclepias syriaca*), hedge bindweed (*Calystegia sepium*), meadowsweet (*Spirea tomentosa*), and smartweeds (*Polygonum* sp.) [Lucas Environmental, LLC; 2023 Fore River Marsh Wetland Survey].

Uplands

Vegetation within the wooded areas consists of red cedar, big-tooth aspen (*Populus grandidentata*), eastern cottonwood, glossy buckthorn, common buckthorn (*Rhamnus cathartica*), Russian olive, gray birch, black locust (*Robinia pseudoacacia*), tree-of-heaven (*Ailanthus altissima*), crab apple (*Malus* sp.), black cherry (*Prunus serotina*), black oak (*Quercus velutina*), white oak (*Quercus alba*), Norway maple (*Acer platanoides*), garlic mustard (*Alliaria petiolata*), multiflora rose (*Rosa multiflora*), blackberry (*Rubus* sp.), Japanese barberry, Japanese honeysuckle (*Lonicera japonica*), Virginia creeper, and poison ivy. European privet (*Ligustrum vulgare*) and burning bush (*Euonymus alatus*) were also observed in the Study Area.

A review of the current MassGIS data layer for the Massachusetts Natural Heritage Atlas (effective August 1, 2021) under the Natural Heritage and Endangered Species Program (NHESP) indicates that the Study Area is not located within Estimated Habitat of Rare Wildlife or within Priority Habitat of Rare Species. No Certified Vernal Pools under the jurisdiction of the Wetlands Protection Act Regulations

(310 CMR 10.00 et seq.) or the Massachusetts Endangered Species Act (321 CMR 10.00 et seq.) occur within the Study Area, nor are there any NHESP mapped Potential Vernal Pools present within the Study Area. The upland MBTA ROW trail section contained varying levels of coastal shrubland vegetation and forested pockets, including thick grasses which have been established along the easement [Lucas Environmental, LLC; 2023 Fore River Marsh Wetland Survey]. Information for the site vegetation section of this report is taken from: **Appendix A: Wetland Survey**.

2.2.4 Tidal Conditions

Tidal levels fluctuate within an average 5-FT from Mean Tidal Level (MTL) to Mean High Water (MHW) to 10-FT at Mean Higher-High Water (MHHW) **Figure 2-1 Current Daily Tidal Levels**.

Marsh and upland bank areas along the NStar/Eversource parcel area become submerged at datums at and above MHW with a base elevation of 9.89 ft. NAVD 88. Existing foot paths along sewer easement sections crossing through this marshland is inaccessible until river levels meet (MLW) low tide, 0.33 ft. NAVD 88. Daily tidal levels currently reach asphalt surfaces of residential streets boarding the east inland edge of the NStar/Eversource Parcel located at the 10-ft base flood elevation. Residents in this area of Weymouth’s Idlewell Neighborhood have reported observing MHHW tidal waters reach properties at daily MHHW (10.38-ft, NAVD 88) occurrences. The entire project site, including the lower residential areas within its boundary are at or within the 2014 FEMA Flood Insurance Map coastal flood areas indicated “AE” 1% annual chance flood, elevation 10-11 feet NAVD 88 and hazard flood zone “VE”, at elevation 13 feet, NAVD 88. For specific flood risk designations and their locations approx. to proposed trail areas, refer to **2.5 Coastal Flooding** within this section.

Table 2-1: Fore River Tidal Benchmarks

TIDAL BENCHMARKS	EXISTING (FT. NAVD 88)
MLW	0.33
MTL	5.11
MHW	9.89
MHHW	10.34

2.2.5 Utility Infrastructure

Table 2-4: Utility Locations Fore River Trail ROW

Utility	Owner	Site Infrastructure / Condition
Sewer	MWRA, Town of Weymouth	Network lines & ICs above MW level. Exposed surface IC structures and connected manholes, network lines within right-of-way. Concrete pipes and ICs need repair due to age and effects erosion
Electricity	NStar/Eversource	Transmission corridor and towers are predominant on site. Towers are not structurally secured and are easily accessed. Eversource is aware of this issue

Utility Locations

Locations of sewer and electricity infrastructure within the proposed project area and trail right-of-way refer to; **Figure 2-4: Utility Locations.**

2.2.7 Site Access

The network of right-a-ways for the proposed trail can be currently accessed from Town sidewalks along Commercial St. an MBTA rail underpass along Regina Rd. and Hibiscus Rd. in the Idlewell neighborhood. There are multiple existing pedestrian access points from Idlewell neighborhood to unofficial trail on the easement that runs along Fore River Marsh. There is additionally one public parking lot accessed on this route located via Weymouth Canoes Launch.

Current site access is unrestricted and has caused damage to the resource areas in the Salt Marsh and presented safety concerns around the transmission towers. Pedestrian and vehicular access points are requested to be restricted to the easement trail, a requirement by Eversource as a safety measure along the transmission area. The main source of damage to salt marsh vegetation is vehicle and ATV use accessing marsh trails from adjacent roadways.

Restoration of degraded Salt Marsh and wetland areas will be successful by limiting trail entry to the two proposed trailheads. Located at Weymouth Landing Canoe (south) Launch and Hibiscus Ave. (north)

Existing Salt Marsh Utility Access Road

Current public and vehicular access through the salt marsh takes place along an unpaved 20-ft wide access road that extends along utility easements. NStar/Eversource had constructed the road that includes a 10-ft concrete box culvert for access to transmission towers. The road can only be access during low tide (MLW) and has presented a hazard to vehicles as many become stuck in the clay marsh soil and damaged by the tide.

Unrestricted vehicular access through the marsh was observed during field assessment to be the main source soil and bank erosion throughout the site. Vehicle access through the site should be reconsidered or rerouted to upper bank areas outside of the marsh that connect to transmission utilities.

MA wetland protection act outlines limited conditions for Access Roadways: Interpretation 310 CMR 10.53(3)(e) and requires roads be location along uplands when possible.

Access Road Concrete Box Culvert

Field observations of a damaged concrete box culvert located at small stream crossing on the south end of the access road indicate no restriction to site hydrology. Replacement of the structure from the salt marsh would not improve road access due to the extent adjacent soil erosion. Removal of the structure would further damage salt marsh areas during excavation.

2.3 Right-Of-Way Assessment

This section evaluates existing site conditions along the ROW to identify potential constraints in the proposed construction of the passive recreation shared-use trail and elevated boardwalk. The evaluation of site conditions was completed utilizing existing reports/studies and mapping, aerial orthophotography, state geographic information system (GIS) data, and field investigation.

ROW Width

The width of the right-of-way starting from lower Hibiscus Ave. going south-west through the Fore River Marsh/NStar parcel is 25-FT wide with another a 40-Ft lateral section running north from the rail line. The additional at-grade MBTA ROW included in this project is between Regina Rd. along Commercial St. The easement narrows to 20-FT and has an existing gravel surface path that terminates to an accessible residential sidewalk. **Figure 8-0 and 8-1 Fore River Trail Concept Design**

All easements within the Eversource parcel contain either surface or subsurface sewer lines. Woodard & Curran are in communication with MWRA and MBTA to obtain approval for public access of these areas during the design process. MWRA will approve elevated trails above water/wastewater infrastructure with submission of an 8m permit by the Town. For requirements refer to section:

Section 3.0 Regulatory Requirements

Utility Locations

Transmission Corridor

The transmission corridor extends throughout the ROW with towers along the shoreline and does not pose conflict with public trail proposed onsite. Required approved application for passive recreation use. Refer to:

4.1 Permitted Use Application

Sanitary Sewer Easement

The MWRA sanitary sewer line runs along the right-of-way (ROW) sections within Fore River Marsh/NStar parcel.

Requires permit application for public access. Refer to section: **4.1 Permitted Use Application**

Access Easements

Further development and discussion of construction access easements and conservation easement restriction agreements between the Town of Weymouth, utility, and private landholders will take place during the design process for the Fore River Trail. If portions of the trail are found to fall onto private land not found during the site assessment process.

Access, inspection, and enforcement rights will be described in these documents and will be reviewed by all parties participating in the project. In order to reach agreement with the landowners, they should be fully informed about the impact to their property as well as their rights of use while the construction project is underway and after the land is encumbered by a conservation easement. The acquisition of conservation restrictions will be beneficial for the long-term protection of the ecological restoration areas.

- *Property Agreements*

The Conceptual Fore River Trail concept designs included in this report only include sections of the ROW within Municipal and NStar/Eversource owned property. Additional public or private property agreements, leases, or acquisitions should not be required unless indicated during refined trail design or construction.

Permanent Easement Options

Given the cost of shared-use trail construction, most municipalities seek to obtain a permanent easement or deed transfer of property. These forms of property agreements run with the land and are recorded with the Registry of Deeds. The written agreement language needs to be accompanied by a plan prepared by a Professional Land Surveyor (PLS). Temporary easements may also be needed for access during construction. Temporary easements are limited to a specific period and automatically extinguish at the end of the period. Unless a property owner donates the land to the Town, there will be a cost associated with the land transfer. The Town will need to have an appraisal performed to determine a fair value on which to base negotiations.

2.4 Resource Areas

Environmental Resource Areas within the proposed project site include the Fore River and the Fore River Marsh and wetland resources areas subject to protection under the Massachusetts Wetlands Protection Act (310 CMR 10.00), the Town of Weymouth Wetlands Protection Ordinance, and the federal Clean Water Act.

The Fore River is tidal river formed by the confluence of Smelt Brook and Monatiquit River in Weymouth Landing. The Fore River Marsh area consists of 10 acres of salt marsh and Bordering Vegetated Wetlands (BVW); for wetland delineation zones see; **Figure 2-2: Environmental Regulatory and Resource Area Map**. The land within the project area as well as bordering areas within the AE FEMA 100-year floodplain of the Fore River and is considered 0.2% High Flood Hazard Area, known as Land Subject to Coastal Storm Flowage under the Massachusetts Wetlands Protection Act. Additional Coastal Wetland Resource

Areas are located along and beneath the river including Coastal Bank and Tidal Flats. See flood elevations and affected site/trail areas; **Figure 2-5: FEMA Flood Map.**

The site is under the jurisdiction of the Office of Coastal Zone Management. Fore River has been designated in the Massachusetts 2018 Integrated List of Waters report as a Category 5 Impaired Waterway. Category 5 designation identifies waters requiring the preparation of a TMDL study.

The following environmental resource designations are not present in the study area:

- Areas of Critical Environmental Concern (ACEC),
- Outstanding Resource Waters, and
- Priority / Estimated Habitats of Rare Species.

2.5 Coastal Flooding

FEMA Flood Hazard Areas

Flooding levels and impact zones for areas within the project area are outlined in the FEMA Flood Insurance Map. Current FEMA mapping shows that the Fore River Marsh/ NStar Parcel and Idlewell neighborhood located in the “AE” and “VE” flood hazard zones with a base flood elevation of +10 to +11 NAVD. Portions of the Fore River Marsh / NStar Parcel within the 1% Annual Chance Flood Areas with an elevation of +13 NAVD. See FEMA Flood elevations along the proposed trail route; **Figure 2-5 FEMA Flood Map**

Flood Mitigation and Resiliency for Environmental Justice populations:

To meet project permitting requirements for Environmental Justice populations with 1-mile of the proposed trail route flood resiliency should be incorporated in the design during the during continued development. See **Section 3.0 Regulatory Requirements.**

It is recommended that base elevation of boardwalk trail sections meet the +12 or +13 elevation height, which would be 3ft above current salt marsh area elevation of +10 NAVD. This would increase the life of any trail/boardwalk structure proposed for this area and would meet public access for project sea level rise resiliency requirements in of open space areas within Environmental Justice Boundaries. For locations of Environmental Justice (EJ) communities within the 1-mile boundary see; **Figure 2-2: Environmental Regulatory and Resource Area Map.**

Coastal Sea-Level Rise

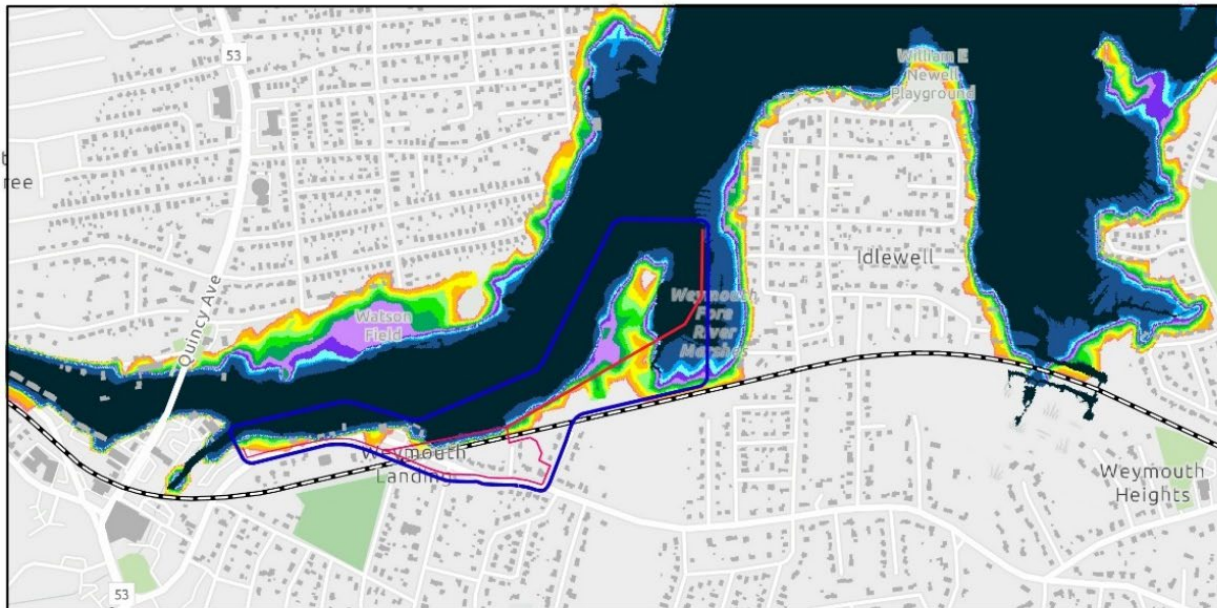
Sea level rise and continued climate impacts to the proposed trail project area and Idlewell neighborhood are expected to increase with overtime. The following **Figure 2-6: SLR Elevations** and **Table 2-5 SLR Tidal Levels** show these the increase in projected SLR flooding and impacts to the site areas:

Table 2-5 SLR Tidal Levels

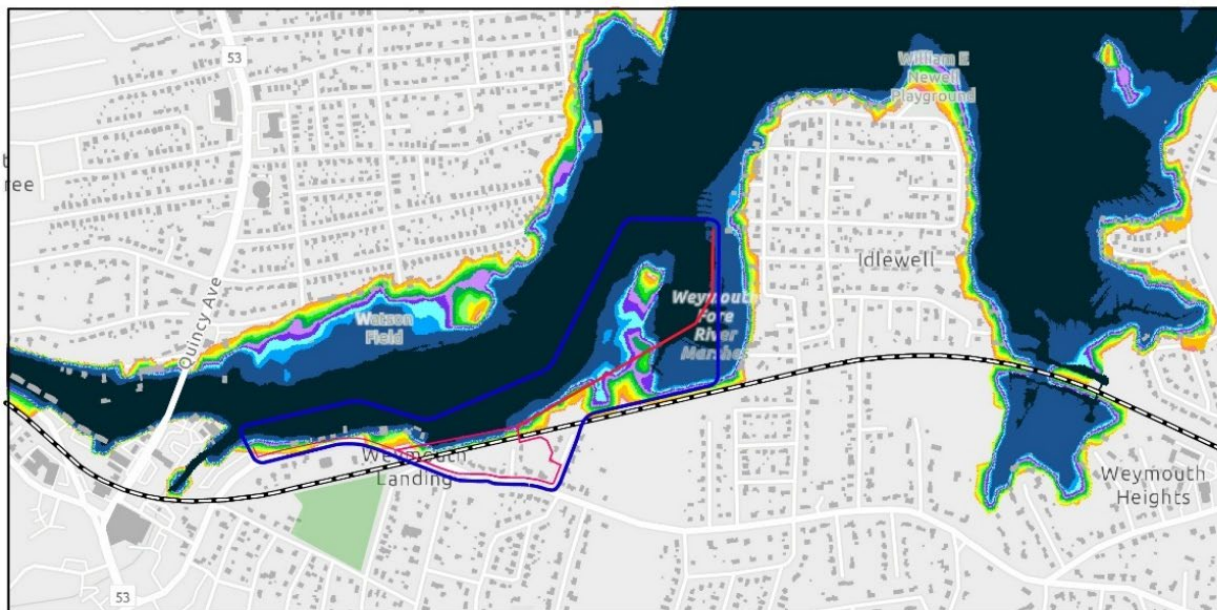
TIDAL BENCHMARKS	EXISTING (FT, NAVD 88)	2030 (FT, NAVD 88)	2050 (FT, NAVD 88)	2070 (FT, NAVD 88)
MLW	0.33	1.5	2.83	4.63
MTL	5.11	6.13	8.63	9.41
MHW	9.89	11	13.5	14.2
MHHW	10.34	11.54	14.04	14.64
*10-YEAR	11.54	12.74	15.24	15.83
*50-YEAR	12.7	14	16.5	17
*100-YEAR	14.64	15.84	18.34	19.94

- *Storm return periods MHHW levels. Storm surge flood events would be limited in areas with planned and ongoing seawall construction projects. Channel deepening along Smelt Brook would also decrease flood impacts. **Source:** NOAA*

Figure 2-6 MA-FRM Flood Depths for 1% Annual Flood (100-Year Event)



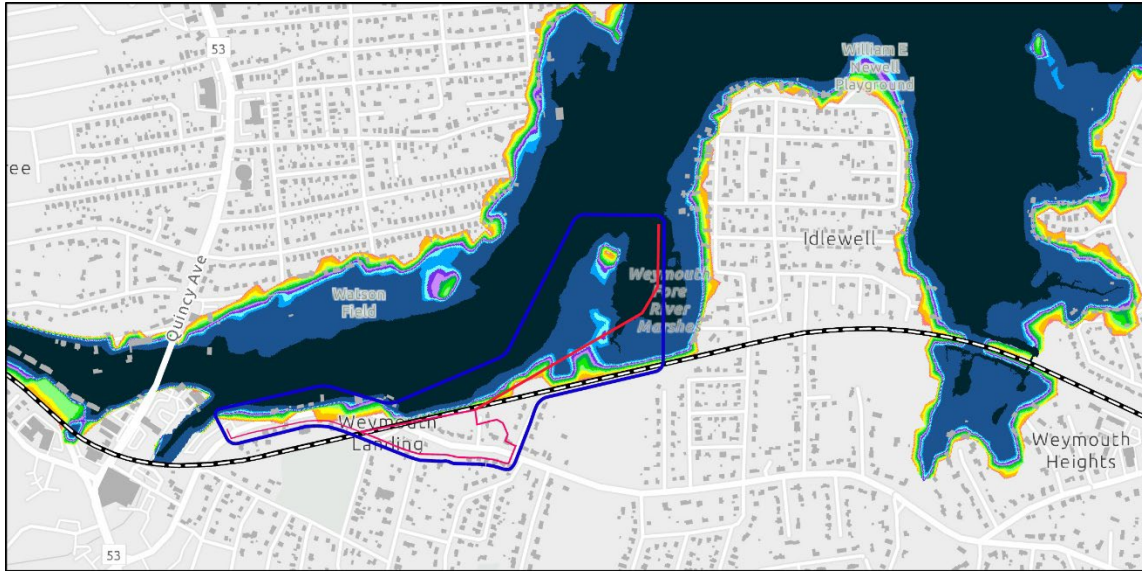
2030



2050

Source: MA Executive Office of Energy and Environmental Affairs (MassEEOEA), 2022, *Massachusetts Coast Flood Risk Model (MC-FRM) for the 1% annual exceedance probability in 2030, 2050 and 2070*

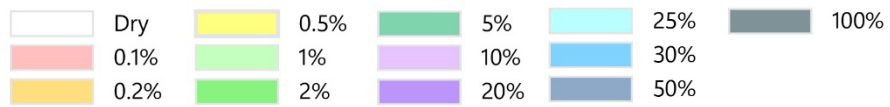
Note: These raster datasets are derived from output of the Massachusetts Coast Flood Risk Model (MC-FRM) for 2030, 2050 and 2070 sea level rise and coastal storm simulations. This public information is furnished by MassEEOEA and Woodshole Group should be accepted and collected for future flooding analyses purposes only.



2070

Legend

Probability of Inundation



3.0 REGULATORY REQUIREMENTS

3.1 Required State Permits

3.1.1 Environmental

The following state environmental permits or approvals are required prior to construction of the Fore River Trail for the protection of coastal wetland resource areas:

Massachusetts Environmental Policy Act – MEPA ENF

In compliance with MEPA's anti-segmentation regulations, all segments of the River Walk must be reviewed as a single project. As a state-funded project and requiring state permits, the project is within MEPA jurisdiction. The project would exceed the MEPA wetlands threshold for the preparation of an ENF (301 CMR 11.01(3)(b)) as it would require a Chapter 91 License for a new unlicensed non-water dependent use of waterways or tidelands. ENF preparation and MEPA Certificate issuance period is approximately 3-6 months. A Special Review Procedure for MEPA review may be an option and could offer a way to start the process earlier and enable the design team to change/add aspects of the project as it progresses.

- **Environmental Justice (EJ) Area Designations**

MEPA regulations requirements include any project within (i) one-mile designated geographic area of EJ populations. Protocols include outreach requirements and include project elements that may provide a positive benefit for populations within the one-mile area. Benefits include increased resiliency to climate change impacts, additional open space, or other ecological and public benefit elements to be considered and implemented during project design and permitting. For EJ boundary locations within 1-mile of the proposed trail see; **Figure 2-2: Environmental Regulatory and Resource Area Map.**

- **EIR/ENF Environmental Justice (EJ) Protocols**

Under 301 CMR 11.05(4), relative to new projects proposed within a "designated geographic area" of environmental justice (EJ) populations. The "designated geographic area" (or DGA) refers to the area around the project site over which MEPA EJ protocols, including enhanced outreach and analysis of impacts, will apply. Advance notification of new project filings is required for most projects within a DGA of EJ populations, either 45 to 90 days (if first notice) or 30 to 90 days (if second notice) prior to filing the project with MEPA.

Massachusetts Chapter 91 License

All River Walk segments would require a Chapter 91 License from the MA Department of Environmental Protection (MassDEP) because they are within Chapter 91 jurisdictional areas. Based on early coordination with MassDEP, review of existing licenses must occur prior to permitting and segments can be combined for licensing. The license application and issuance period is approximately 9-12 months.

Massachusetts Wetlands Protection Act (310 CMR 10.00) Notice of Intent

All segments will require the filing of a Notice of Intent (NOI). The NOI will be required because segments are within the 200-foot Riverfront Area of the Fore River and/or within the 100-foot Buffer Zone to Wetland Resource Areas. The Riverfront Area boundary extends 200 feet from the Mean High-Water line associated with River NOI preparation and permit issuance period is approximately 4-5 months.

3.1.2 Utility

MWRA – 8(m) Permit

This application, when completed and submitted, requests the MWRA to issue an 8(m) Permit. Section 8(m) of chapter 372 of the Acts of 1984 enables the Authority to issue permits to other entities to build, construct, excavate, or cross within an easement or other property interest held by the Authority.

3.2 Required Federal Permits

3.2.1 Environmental

The following federal permits or approvals are required prior to construction of the Fore River Trail for the protection of coastal wetland resource areas:

U.S. Army Corps of Engineers (USACE)– Section 404 permit

Required for direct impact to wetland resources under federal jurisdiction or any work below ordinary high water (OHW). The planning-level goal would be to avoid direct impact to wetland resources. The Boardwalk trail segment would require construction period work within federal wetland areas. All trail segments should be advanced together as a single project to qualify for a USACE General Permit #17 per May 2023 New General Permit – Residential, Commercial, and Institutional Developments, and Recreational Facilities. The permit type required would be Pre-Construction Notification (PCN). The preparation and permit issuance period for a PCN is 6-9 months.

Coastal Zone Management Federal Consistency Review

The River Walk is located within the jurisdictional area of the Massachusetts Coastal Zone Management (MCZM) Program. Assuming that there is a 'federal action (i.e., federal funding or permit), the project will require a 'federal consistency review' to ensure the project's reasonably foreseeable effects on any land or water use or natural resources of the Massachusetts coastal zone is consistent with the MCZM program. MCZM Federal Consistency Review is generally completed as part of the MEPA review process. >1 acre of earth disturbance will require an NPDES Permit.

Note of NOI above: Per Section 310 CMR 10.58(6)(i) of the WPA, activities on the site would be exempt from the Rivers Act provided a license, permit or authorization under 310 CMR 9.00 (Waterways) is obtained for the proposed work.

4.0 EASEMENT ACCESS AGREEMENTS

4.1 Permitted Use Application

The following utility companies with public ROW access programs require a general application submission and approval process.

4.1.1 Eversource Transmission and Distribution Rights-of-Way

Allow passive recreation site use only. Detailed Requirements for Eversource’s licensed right-of-way process will be determined during preliminary trail design review by the utility company. General requirements for public access design applications are to include the following for approval:

Application Requirements

- Require license application and design review of proposed recreational use.
- Ensure safety of site users, residents, and utility personnel
- Restrict site access within the public easement only.
- Require Lessor provide an annual maintenance and trail oversight plan.

Passive Recreation Activities

- Biking
- Walking/Hiking
- Running/Jogging
- Wildlife Viewing
- Cross Country Skiing.
- Horseback riding

4.1.2 MBTA Right-of-Way Lease Agreement

- Lease agreement between municipality and the MBTA requiring the City/Town agree to regular maintenance responsibilities, for open public access to the ROW.
- That agreement, approved by the MBTA transfers temporary ownership of the ROW to the municipality to be "a publicly owned, improved and maintained corridor for bicycle, pedestrian and other non-motorized public transportation, recreation and associated purposes.

Public Easement Access Lease Approval Requirements, Nstar/Eversource / MBTA

- Implementation and design plans be submitted at time of application for review
- restriction measures to limit public access to active utility areas, keep to trail
- site monitoring plan
- annual maintenance schedule for trail

5.0 TRAIL DESIGN CRITERIA

Preliminary design concepts for the Fore River Trail were developed following the completion of site assessment and existing conditions review. Many elements from site research and discussions with the Town, Idlewell Neighborhood Association and NStar-Eversource were taken into consideration during the trail elements, layout and user safety during preliminary design recommendations within the following sections benefits. The draft recommendation aiming to provide increased pedestrian access for the Idlewell and surround communities to downtown Weymouth Landing, connections to existing public shared-use Fore Riverwalk for, open space benefits with access to Fore River Marah. The realization of this project will take into account the balance of the following factors:

Public Safety

Ensure proper boundaries are provided between trail users and incompatible easement uses along active railway sections and electrical transmission areas. Guardrails, fencing and other structural boundaries will be incorporated to ensure passive recreation is restricted to trail areas only to provide a safe experience for all trail users.

Universal Accessibility

- Crosswalks at intersections along Commercial St.
- Widening sidewalks along Commercial Street
- Complete Streets Guidelines
- All trail connections will comply with the Americans' with Disabilities Act (ADA).

Wooden Guardrail

Add during design to meet easement lease requirement that public activities be restricted to trail areas only and away from transmission towers. The guardrail will also restrict vehicles from entering and damaging salt marsh. **Figure 7-4.1 Trail Perimeter Guardrail.**

Resilient and Low Impact Design Trails

The design will include a min. 42" high railing installed along elevated boardwalk, for user safety and as required by Transmission Utility Passive Recreation guidelines.

Salt Marsh Restoration

Post construction restoration of salt marsh areas damaged during trail installation work should be considered as part of the project design. Marsh restoration plans will be required as part of the project's environmental permitting. It is suggested that marsh restoration planning support additional project grant opportunities for trail and public open space development.

Trail +Utility Shared Easement

Both surface and boardwalk trail segments will share easement space with active sewer/ water utilities. The location of the trail will not restrict access to utility lines as easement areas are 25-35-FT wide, trail 6-10-FT wide and typ. sewer lines 18-24”.

Maintenance access to both surface and subsurface utility lines in areas with boardwalk trail should be incorporated into trail design. Boardwalk sections could include our recommended deck height of 3-FT with removal deck sections to ensure utilities can be accessed easily .

Precise locations of the trail within the easement can only be done during construction to confirm utility position . General locations for the trail will be determined using site survey for design development.

Trail Maintenance

The trail and other recreation features will be intentionally designed to require minimal and uncomplicated maintenance. Eversource requires regular maintenance of all development in the right-a-way. They will review and approve proposed an annual maintenance plan to be performed by the Town or representatives of the Town during the design approval process.

→ Encourage community, neighborhood, or local open space organizations to take over this work.

5.1 Project Funding

Community Preservation Act

CPA gives communities an opportunity to create a Community Preservation Fund for open space protection, historic preservation, affordable housing, and outdoor recreation. CPA is adopted by a community ballot vote, resulting in locally raised funds through a surcharge of not more than 3% of the tax imposed against real property. In addition, the Department of Revenue annually provides each community with distributions from the statewide Community Preservation Trust Fund, which serves as an incentive for communities. Upon adoption of the Act, each community creates a Community Preservation Committee (CPC) which is responsible for the recommendations of CPA projects. Dozens of communities have used CPA funds to develop recreational facilities by purchasing rights of way, funding design and construction and adding amenities to enhance the space for the community.

Recreational Trails Program (RTP)

The Recreational Trails Program (RTP) provides federal funding support for a variety of trail development and maintenance projects and is administered on a reimbursement basis by the Massachusetts Department of Conservation and Recreation (DCR). The RTP funds up to 80% of each trail project, with at least 20% of the total project cost funded by other sources. The match can consist of money from other sources such as non-Federal grants, donations, or municipal funds. A “soft match” in the form of materials, labor, and in-kind services is permitted. “Soft match” contributions include paid labor, volunteer/donated labor, purchased materials and services, and donated labor and materials. Grant amounts, not including the match, may range from \$2,000 to \$50,000. Requests greater than \$50,000 may be considered for regional or statewide projects.

MassTrails Grant Program

MassTrails provides grants to support recreational trail and shared use pathway projects across the Commonwealth. The award maximum depends on the project type and needs and is generally \$60,000 for "local" projects and up to \$500,000 for projects demonstrating critical network connections of regional or statewide significance.

Eligible grant activities include project development, design, engineering, permitting, construction, and maintenance of recreational trails, shared use pathways, and the amenities that support trails. MassTrails grants are matching and reimburse grants requiring that proponents provide a minimum of 20% of the total project cost. Grantees must pay for project expenditures first then reimbursed with grant funding.

Eligible projects require documented land owner permission submitted with the application and are subject to all applicable local, state, and federal laws and regulations

Parkland Acquisitions and Renovations for Communities (PARC)

The PARC Program was established to assist cities and towns in acquiring and developing land for park and outdoor recreation purposes. These grants can be used by municipalities to acquire parkland, build a new park, or to renovate an existing park. The PARC program maximum grant award is up to \$500,000.

Any town with a population of 35,000 or more year-round residents, or any city regardless of size, that has an authorized park /recreation commission is eligible to participate in the program. Communities that do not meet the population criteria listed above may still qualify under the "small town," "regional," or "statewide" project provisions of the program. Applications are open to all municipalities that have submitted an up-to-date Open Space and Recreation Plan.

6.0 CONCEPTUAL COST ESTIMATES

The conceptual cost estimates for the Fore River Trail were developed for the purpose of comparing the order-of-magnitude costs of various segments under consideration. These conceptual cost estimates were developed based on MassDOT's weighted average bid price application on the MassDOT website; prices for January 2023 were used.

Elevated Marsh Boardwalk Trail Construction Assumptions

Costs of the Fore River Boardwalk Trail segments were developed for the 2019 *Weymouth Fore River Trail Feasibility Study* prepared by KZLA Landscape Architects for The Town of Weymouth **Appendix C**. The costs of these gateway features provided in that study were inflated 4% annually to the 2023 base year.

Trail Construction Assumptions

The base cost is for the construction of the trail assumes trail segments range the width of the existing right-of-way widths as indicated in the cost items. Hard surface trails located at grade that include asphalt or concrete will consist only of improvements to existing sidewalks and trails along the proposed trail route. Improvements will aim to improve ADA and universal accessibility along the new trail. Future financial planning would require a more detailed cost estimate based on a higher level of design. For at-grade sidewalk locations along trail sections see; **Figure 8-0: Fore River Trail Design**

Construction Cost Estimate

In providing estimates of probable cost, it is recognized that neither the Town of Weymouth nor Woodard & Curran have control over the costs of labor, equipment or materials, or over the Contractor's methods of determining process or bidding. The opinion of probable costs is based on Woodard & Curran's professional experience with projects of a similar scope or implied, that the Contractor's bids or the negotiated price of the Work will not vary from the Client's budget or from any opinion of probable cost prepared by Woodard & Curran. For a general list of construction material costs see, **Table 6-1 Unit Costs Project Materials**

20% Contingency

The 20% contingency added to these conceptual costs is to account for unknown, but not unexpected costs. These could include, but are not limited to: environmental mitigation, utility relocation, and traffic management. See exclusions for a list of items expressly unaccounted for in these conceptual costs.

Exclusions: These conceptual cost estimates does not include disposal costs of contaminated material, shoreline stabilization, structures such as docks, piers or overlook or costs associated with land transfer.

Table 6-1: Unit Costs Project Construction Materials, 2023

Item Description	Unit Cost
Sediment Control Barriers	\$5.50/linear foot
4" Hot Mix Asphalt (HMA)	\$6.50/linear foot
2" compact stone dust over 4" dense graded crushed stone for trail surface	\$2.50/square foot
4" seeding	\$2.00/square
Wetland planting (plugs)	\$14/linear foot
4" loam borrow	\$60.00/cubic yard
At-grade trail / roadway crossing treatments	\$12,500/crossing
Wood Rail Fence	\$50.00/linear foot
Wood Rail Fence / Guardrail	\$75.00/linear foot
Kiosk	\$2,000/each
Boardwalk Trail (10-FT width; includes footing, railings)	\$600/linear foot
Vehicle Gate	\$5,000/each

7.0 TRAIL CONCEPT DESIGN & IMPLEMENTATION

It is anticipated that design, permitting, construction and funding for the Fore River Trail will be planned as trail design, costs and timeline are developed in more detail. This section provides trail standards and general design guidelines to be further adapted during the design and construction phases of this project to adhere to all regulatory and physical site requirements.

Trail width to accommodate shared use

Trail width selection is based on the intended use of the path and works perfectly with the existing widths of. Multi-use trails must be wide enough to accommodate fast-moving bicyclists and skaters along with slower moving pedestrians and joggers. Unless rigorous enforcement is anticipated, trails and paths must accommodate two-way traffic. The minimum recommended width for two-way multi-use paths is ten feet, with twelve feet recommended for heavy use areas. Sight distance also affects the choice of pavement width for multi-use paths. Adequate pavement width should be provided to allow passing of slower moving users.

Recreational Trail Design Guidelines

The design criteria for the options listed below are based on standard engineering practice and the successful application of regulatory standards and guidelines. The primary references for the project criteria include:

- The Americans with Disabilities Act Accessibility Guidelines (ADAAG)
- MassDOT Project Development & Design Guide
- AASHTO Guide for the Planning, Design and Operation of Pedestrian Facilities
- AASHTO Guide for the Development of Bicycle Facilities
- Complete Streets Guidelines

Trail Types

The proposed project will consist of the following trail types of shared-use path and on-road facilities within the outlined right-of-way areas:

- Elevated Boardwalk Trail
- Wetland trail
- Shared Roadway
- General Open Space Paths: natural surface or asphalt
- Rail with Trail
- Trailhead

Trail Design Elements

Different features for accessible trails and walkways in appropriate for different areas based on suitability, cost effectiveness, easily maintainable, durability and material sustainability.

7.1 Trail Access Locations

Trailhead Locations

Trailhead locations are accessible in west near Weymouth Landing at the Weymouth Canoe Access property where Fore Riverwalk currently terminates. Public parking is included in this location and existing surfacing meets ADA accessibility requirements, proposed improvements would include trail signage and pavement markings. The trailhead in the north is located in the Idlewell neighborhood at Hibiscus Ave. & Idlewell Blvd. See locational details; **Figure 8-0 Fore River Trail Concept Design**.

Trailhead 1: Weymouth Canoe Access at Fore Riverwalk Trail



Trailhead 2: Hibiscus Ave. at Idlewell Blvd



Trail Access Areas

Proposed Trail access areas as shown in; **Figure 8-0 Fore River Trail Concept Design**. Trail connections through Regina Rd. via the Eversource underpass would allow trail users to easily access the Commercial St. sidewalks from the Fore River Marsh boardwalk trail section starting from Idlewell Blvd. This would be a pedestrian only access point as vehicles are currently restricted from entering as the underpass is owned by NStar/Eversource but, is currently not used by the utility company due to incompatibility with utility vehicle heights. NStar/Eversource must approve access of underpass during the ROW access approval process.

Optional Trail Access: Regina Road at Commercial St,



Main Trail Intersection / Crosswalk Areas

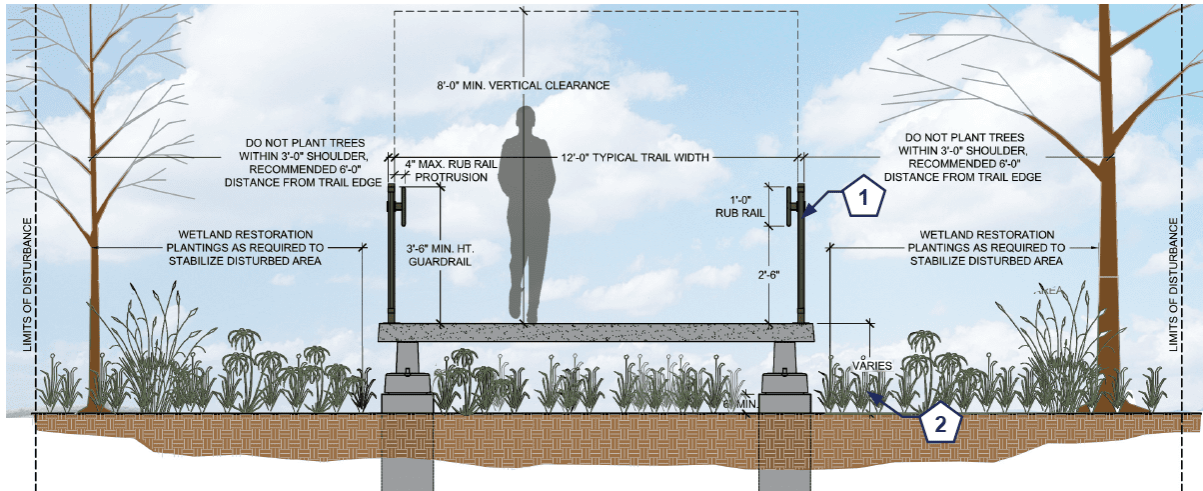
Trail / Roadway pedestrian crosswalks should be added along major trail intersections following all Complete Streets and MassDOT crosswalk, trail and signage guidelines as described in; **Figure 7-6 Trail Signage** and **Figure 7-8: At-grade Trail Crossings**.

At-Grade Trail Intersections: Commercial St. at Gibbens St.



7.2 Elevated Boardwalk Trail

Figure 6-1: Conceptual Raised Boardwalk Trail



source: Great Rivers Greenway Standards

Design Criteria

- The elevated boardwalk section will span approximately 1,000FT in length over Fore River March to or areas subject to regular flood/tidal inundation to the 1% annual chance. flood elevation.
- These crossings should be level with the trail surface and at least as wide as the approaching trail. Allow extra width on shared-use crossings (2 feet on each side) for passing or maneuvering.
- Deck to sit at base flood elevation of 0.2% to 1% annual chance levels. Elevating walkway surfaces to appropriate flood levels ensures access to the trail is reliable and life of the structure lasts longer over time. Trail deck height
- Provide side barrier at trail level to prevent wheels and runners from dropping off the boardwalk.
- Visibility needs to be adequate for the approach and signs should be utilized to alert the user. See **Figure 7-6: Trail Signage**

Trail Type

- Raised Boardwalk Trail, 3-FT above mean sea level (MSL).

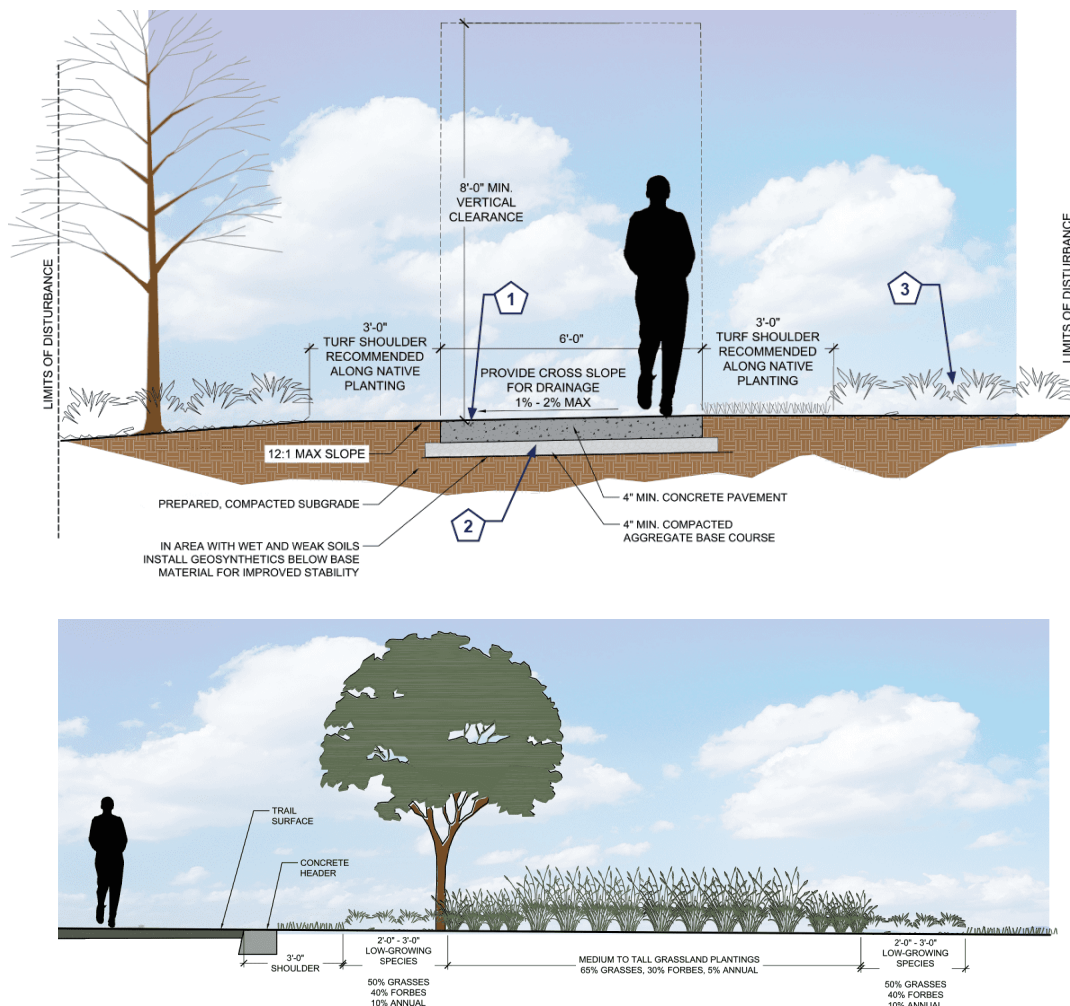
Key Design Criteria:

- Boardwalk segments should have rest area and seating options
- The gaps between deck boards should be minimum 1/2- IN to allow sunlight to enter marsh below.

- The standard boardwalk trail suggested for this project is either 6-FT (one-way) or 10-FT (shared use) wide.
- Railing Height 36" measured from the walking surface to be used if surface of boardwalk is 30" above finish grade.
- Boardwalk materials could consist of: concrete, treated timber or grated aluminum.
- Environmentally sensitive areas deck height 36" (minimum) above
- For asphalt paved sections see: **Figure 8-0** and **8-1: Fore River Trail Concept Designs**.
- *Slope, etc.:* MAAB and ADA guidelines are to be followed for boardwalk slope, railing, and decking options. General criteria are as follows:
 - No vertical change greater than ¼ inch
 - Width - minimum 48 inches
 - Slopes 1:20 or less can be unlimited length.
 - Slopes steeper than 1:20 are ramps and are limited to 30-inch rise between landings and require grab rails.
 - Minimum landing length is 60 inches.
 - Edge protection is required on all ramps.

7.3 Hardscape Surface Trail

Figure 7-3: Conceptual Asphalt Surface Trail Section



source: Great Rivers Greenway Standards

Design Criteria

The asphalt trails provide adequate strength, durability and cost effective to maintain. The overall objective for the design of asphalt paths is to provide a smooth and accessible walking or biking path that is easy for the town to maintain and repair over time.

Trail Type

- Salt Marsh Trail
- General Open Space Path

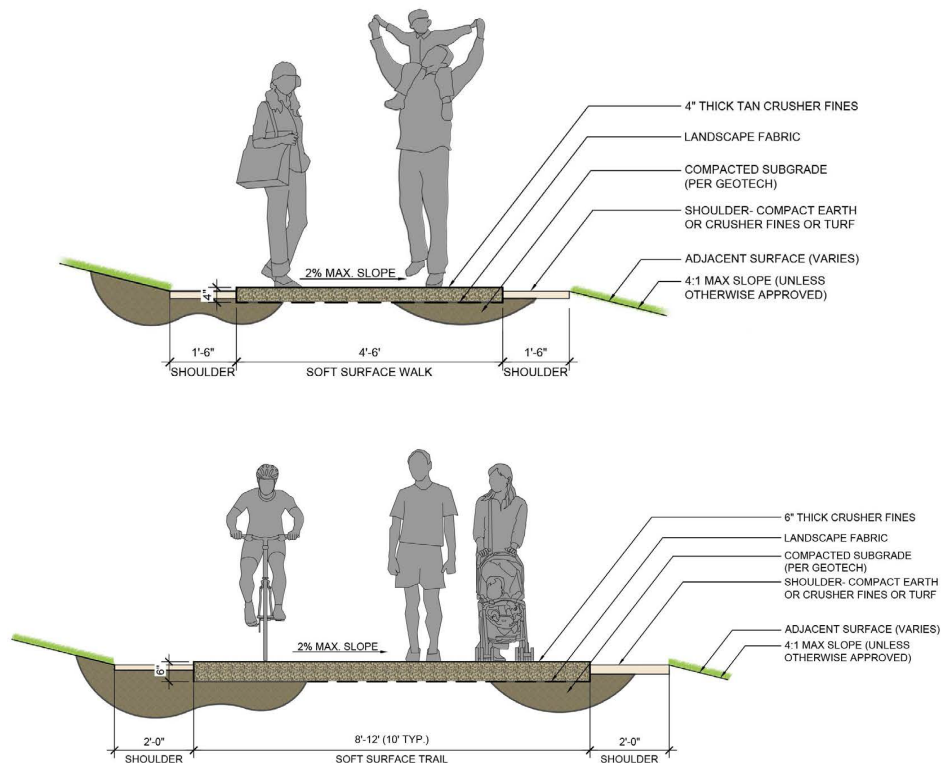
Key Design Criteria: Trail segments should have rest area and seating options,

- 10-FT to 8-FT surface width (typical)
- 2-foot shoulders (each side) for drainage.
- The shoulder is typically graded to a 1' vertical to 12' horizontal (1:12) slope to enhance proper drainage to prevent erosion and provide a horizontal clearance zone for trail.

For asphalt paved sections see: **Figure 8-0** and **8-1: Fore River Trail Concept Designs.**

7.4 Existing or Natural Surface Trail

Figure 7-4 Concept Existing or Non-Paved Surface Trail Sections



5 **NON-PAVED MULTI-USE TRAIL (8'-12')**
NTS

source: Great Rivers Greenway Standards

Design Criteria

The trail surfacing is preferred to be compacted natural surface material or existing surfacing, which will be determined during detailed design dependent on ADA surfacing requirements. The elevation in this ROW section is out of the 10-year Flood elevation and will not need complete reconstruction out of the

designed flood level. Only minor improvements to the existing trail surface is assumed to be required. Non-paved section locations see: **Figure 8-0: Fore River Trail Concept Design, Option 1 & Option 2**

Trail Type

- All Trail Areas

Key Design Criteria: Boardwalk segments should have rest area and seating options,

- 10-FT to 8-FT surface width (typical)
- 2-foot shoulders (each side) for drainage

Figure 7-4.1: Trail Perimeter Guardrail



source: Woodard & Curran

Design Criteria

Timber guardrails are suggested along public trail sections, roadways and near transmission towers to meet easement assess application requirements. Materials could include: typical wood or metal railings as determined by Town of Weymouth. Recommendations for a low 3-ft timber guard rail are included to prevent vehicle access of the marsh and discourage wandering outside trails.

Easement Access Requirement – NStar/Eversource. The utility requires public access to be restricted to easement areas only, submitted easement plans should provide trail railings or other elements to limit open site access by trails users.

Trail Type

- All Trail Areas

7.5 Conceptual MBTA Rail and Trail

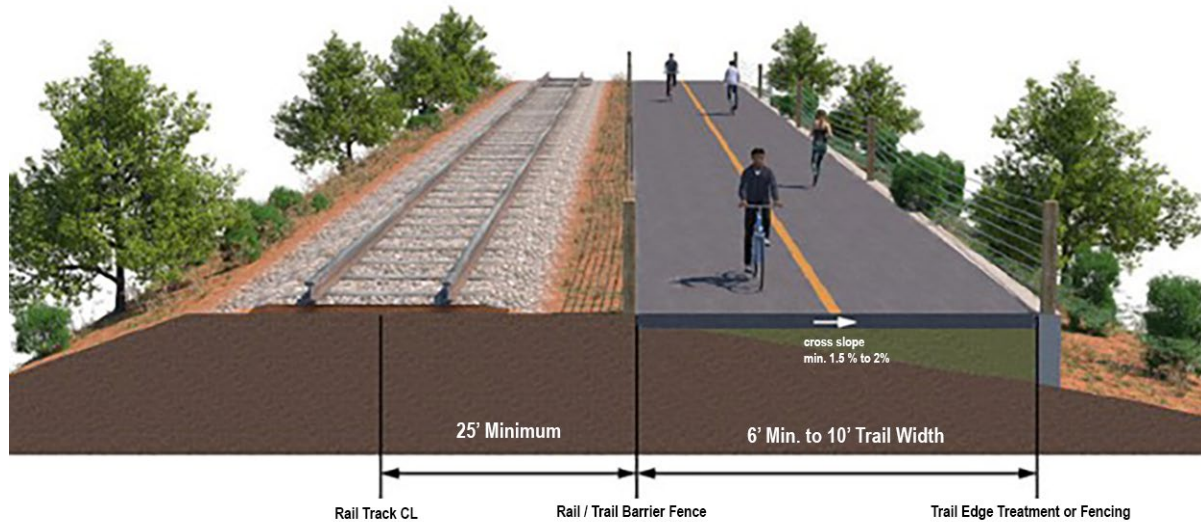


Figure 7-5 Concept Trail Rail ROW

Source: City of Santa Cruz, Coastal Rail Trail <https://dpw.co.santa-cruz.ca.us/Home/TransportationRoads/CoastalRailTrail.aspx>

Design Criteria

The trail section connecting the wetland trail to sidewalk trail areas along Commercial St. will be designed within the at-grade MBTA rail ROW extending 500ft. The location of the trail within the rail ROW is part of **Phase 2** in the conceptual trail design plan in option #2 provided in; **Figure 8-1: Fore River Trail Concept Design, Option #2.**

Easement Access Requirement – MBTA rail and trail easement access requirements. The utility requires public access design plans include a barrier fence installed to enhance safety for trail users.

Trail Type

- Rail with Trail

Key Design Criteria:

- Separation fencing: a range of fencing types can be used from 3-FT wood guard rail to 5-FT high metal picket or chain link fencing to provide a boundary between the rail and trail area.
- 25' width clearance offset from centerline of tracks to fence separating fence. (in exceptional situations, MBTA has allowed a narrower offset)
- 10-FT to 8-FT surface width (typical)

- Optional: 2-foot shoulders (each side) for drainage. The shoulder is typically graded to a 1' vertical to 12' horizontal (1:12) slope to enhance proper drainage to prevent erosion and provide rest area for trail users (benches etc.). Shoulder areas should be compacted, stabilized, and designed to discourage their use as informal tread ways.

7.6 Conceptual Trail Design Features

Figure 7-6: Trail Signage



Source: Ullery Smith Wayfinding Signage Grate Lake Trails Standards

Source: Town of Petawawa; <https://www.pembroketoday.ca/2021/07/26/petawawa-looking-to-update-trail-signs-around-town/>



Design Criteria

Designed to increase the safety and comfort of trail users adequate signing and marking are essential on any trail or trail system and should be incorporated into all Fore River Trail path network.

Trail signage should be placed at both trailhead locations, access areas and where trail meets roadways as well as rail areas. Signage should be all requirements of the Town of Weymouth and Federal Forest Service Trail Signage Guidelines.

Trail Type

- Shared Roadways
- Rail with Trail
- Crosswalks
- Trailhead at Hibiscus Ave.
- Trailhead at Weymouth Canoe Launch

Figure 7-7: Boardwalk Trail Railing



Service Trail Design Standards.

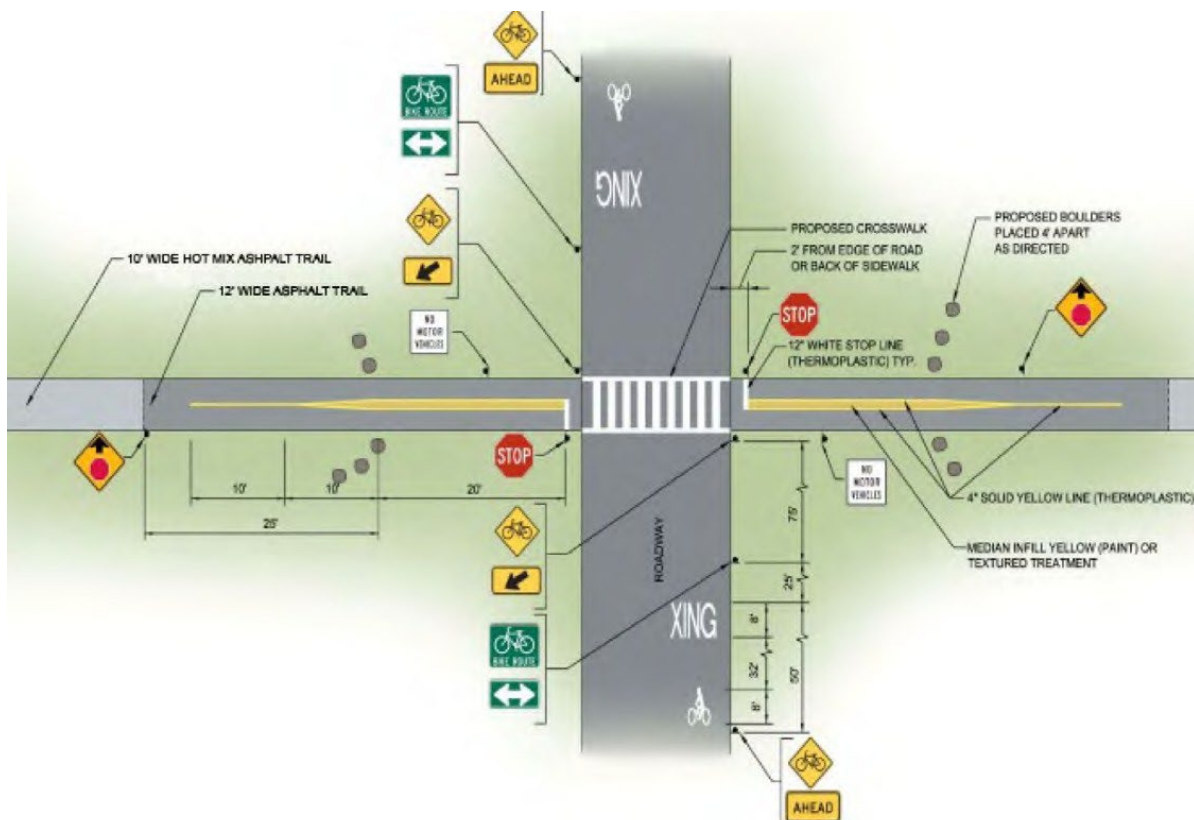
Trail Type

- Trailheads
- Boardwalk

Key Design Criteria:

- Railing height; minimum 36" to max. 48"
- Materials: wood, steel, or aluminum

Figure 7-8: At-Grade Trail Crossing



Source: Arlington, WA 67th Ave Rail Trail Crossing

Design Criteria

Wherever the proposed trail location at the MBTA rail ROW and Commercial St. sidewalk crosses local roadways at-grade. At each trail approach, the following safety improvements are recommended:

- Install signs along the trail to warn trail users of the approaching intersection.
- Install signs and pavement markings along the roadway to warn motorists of the approaching trail crossing.

- Install “ladder” crosswalk consisting of two parallel horizontal white lines with spaced white vertical bars to improve crosswalk visibility for motorists.
- Mount street name signs above stop signs at each crossing for user orientation.

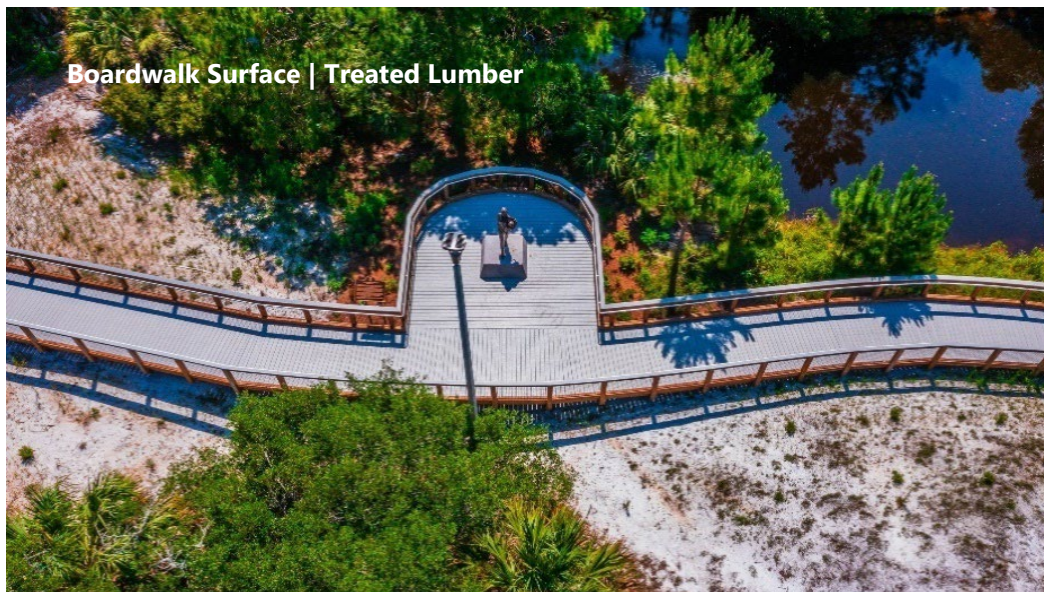
Trail Type

- Rail with Trail
- General Trail – Roadway Crossings

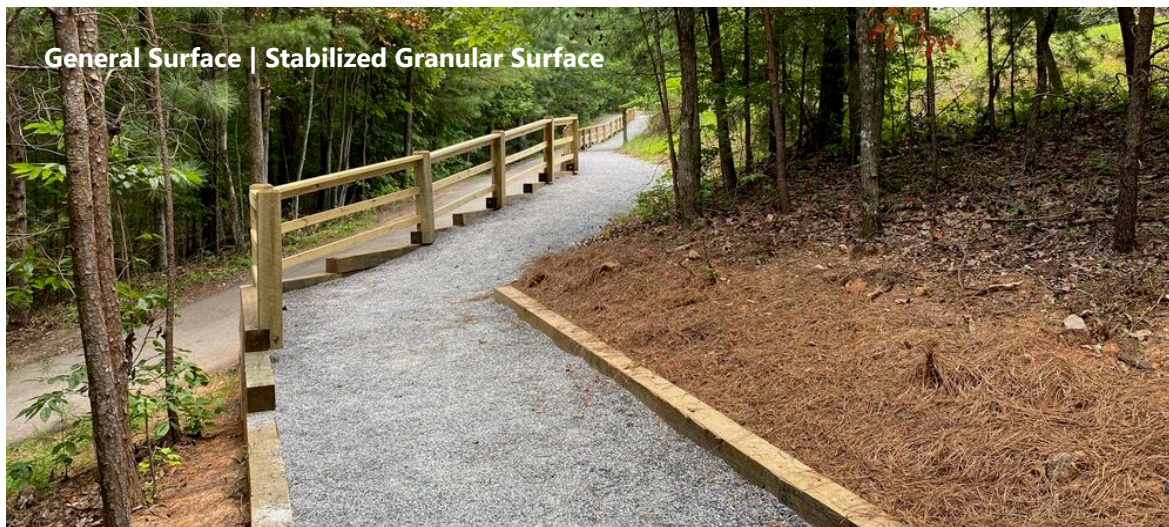
Key Design Criteria:

- To accommodate all trail users in accordance with ADA design guidelines, the installation of detectable warning surfaces (tactile warning strips) at each crossing is advised.
- Detectable warning surfaces consist of small, truncated domes that are integrated into a walking surface and are detectable underfoot. This surface panel extends at least 2 feet in the direction of pedestrian travel and the full width of the shared-use path.

Figure 7-9: Trail Surfaces



Source: Perma Trak Boardwalk Systems



source: *Big Canoe Trails, POA*

Design Criteria

All trail surface applications should follow ADA Accessibility requirements for non-slip trail surfaces. According to the Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way; Shared-use Paths issued by the Architectural and Transportation Barriers Compliance Board (Access Board), a trail surface must be firm, stable, and slip resistant to meet current ADA guidelines.

Access Board definitions “a stable surface remains unchanged by applied force so that when the force is removed, the surface returns to its original condition. A firm surface resists deformation by indentations.” Based on this definition, a soft surface trail will not fully meet current ADA guidelines under all conditions. A soft surface trail is flexible when dry. When it becomes wet, the entire surface softens and is susceptible to deformation (i.e. rutting). The trail would need to be constructed with a

stabilized granular surface or hot mix asphalt (pavement) to meet current ADA guidelines under all weather conditions. The following surface materials are commonly used in trail construction:

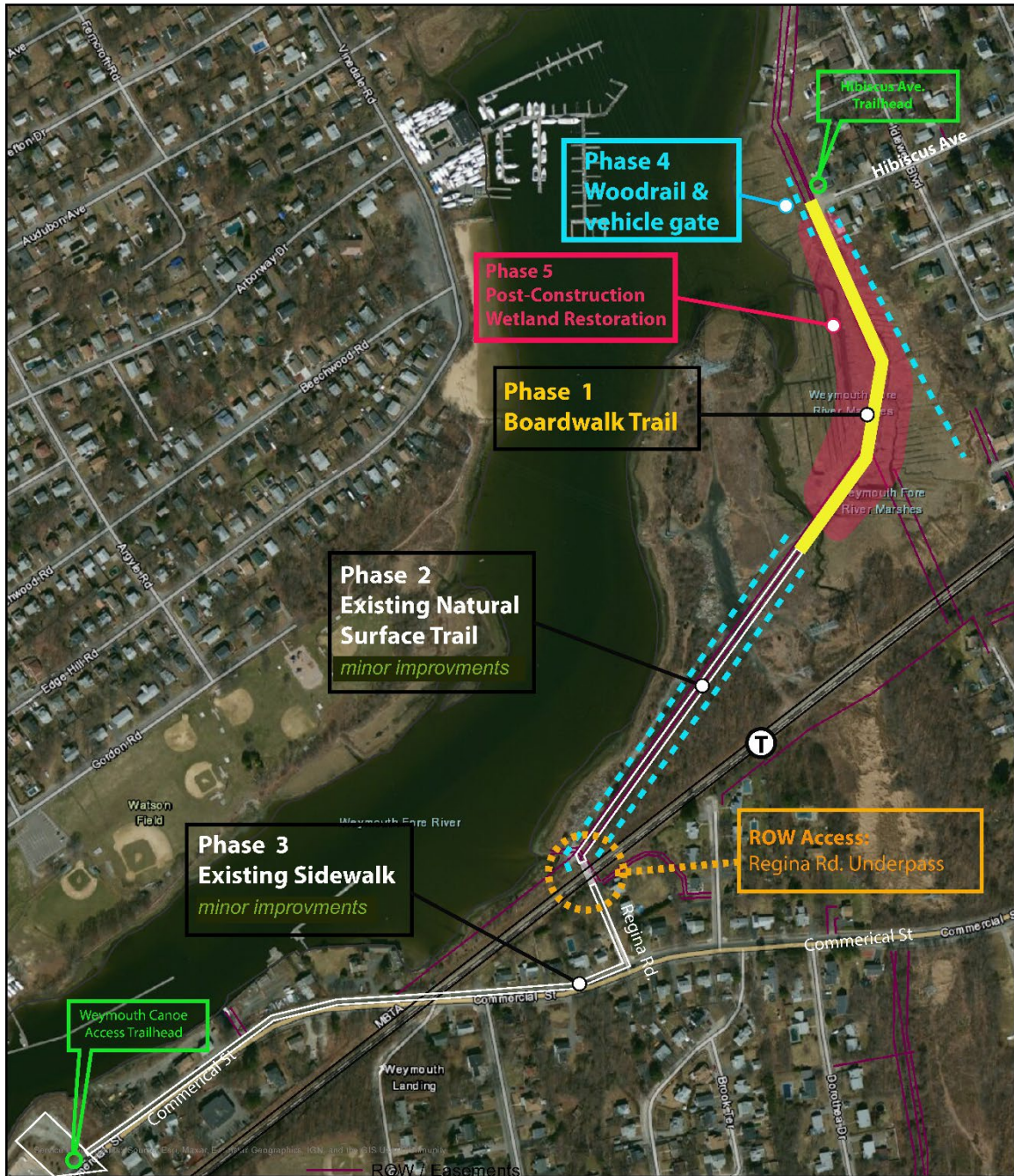
Trail Type

- All Trails

Key Design Criteria:

- In very sensitive environmental areas or other small areas, stabilized granular surface may be utilized. A stabilized granular surface consists of a natural stone dust surface combined with a stabilizing agent. Stabilizing agents can be in the form of a spray application or a material admixture. This agent, when added or applied to native soils, granite or crushed aggregate screenings, binds the aggregate to provide a firm natural surface that meets ADA guidelines. Stabilized granular surfaces can provide increased durability and erosion resistance over conventional granular surfaces. Stabilized granular surfaces require costly annual maintenance.
- Pavement or hot mix asphalt is a durable material which, when properly constructed, requires minimal maintenance, and has a long service life. Maintenance resurfacing can be done every 15-20 years of use. Surface and crack sealing can further extend service life. By its nature, asphalt meets ADA requirements for firmness, stability, and skid resistance. Asphalt accommodates the widest variety of users and is suitable for all levels and abilities. The photo below shows an example of a paved trail surface. Paved surfaces are preferred wherever possible and are considered best practice in shared-use trail design.

Figure 8-0 Fore River Trail Concept Design Option 1



- Legend**
-  Existing ROW
 -  Commuter Rail Line
 -  Raised Boardwalk Trail
 -  Resource Area Perimeter Guardrail
 -  Wetland Restoration Area
 -  Trailhead Locations

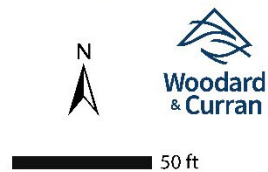


Table 8-0 Cost Estimate, Option 1A

10-FT Trail

PHASE	TYPE	LENGTH	DESCRIPTION	TOTAL COST
Phase 1	Raised Boardwalk <i>*Timber</i>	1070 FT	5' height- Raised timber or concrete boardwalk; (10' width; shared-use trail) ◇ <i>Including 42" railing, piles, and structural foundations</i>	\$2,300,000
Phase 2	On-Road Trail	2,200 FT	Two (2) At-Grade Roadway Crossing Treatments, Pavement markings, Sidewalk improvements <i>Includes directional signage</i>	\$30,000
	Perimeter Barrier/Gates	2,000 FT	Site perimeter guardrail	\$200,000
Phase 3	Wayfinding Signage	4 EA	Trailhead informational signage	\$5,000
Phase 4	Salt Marsh/ Site Restoration	2 Acres	Salt Marsh and post-construction landscape restoration ◇ <i>Includes plants/seed materials, loam, soil cover</i>	\$100,000
Permitting			ENF, Chapter 91 License, WPA Order of Conditions, Chapter 254 Historic Review, USACE Section 404 Permit, Coastal Zone Management - Federal Consistency EIR, MEPA ◇ <i>Includes permit preparation, filing, ConCom meetings and public outreach.</i>	\$90,000
Development Costs			Final Design, Bidding Documents, Bid Support, Construction Administration ◇ <i>Includes Geotechnical borings and construction level documentation.</i> ◇ <i>Includes easement lease costs</i>	\$200,000
Right-of-Way Public Use Leases			NStar/Eversource	TBD
Estimate Total				\$2,925,000

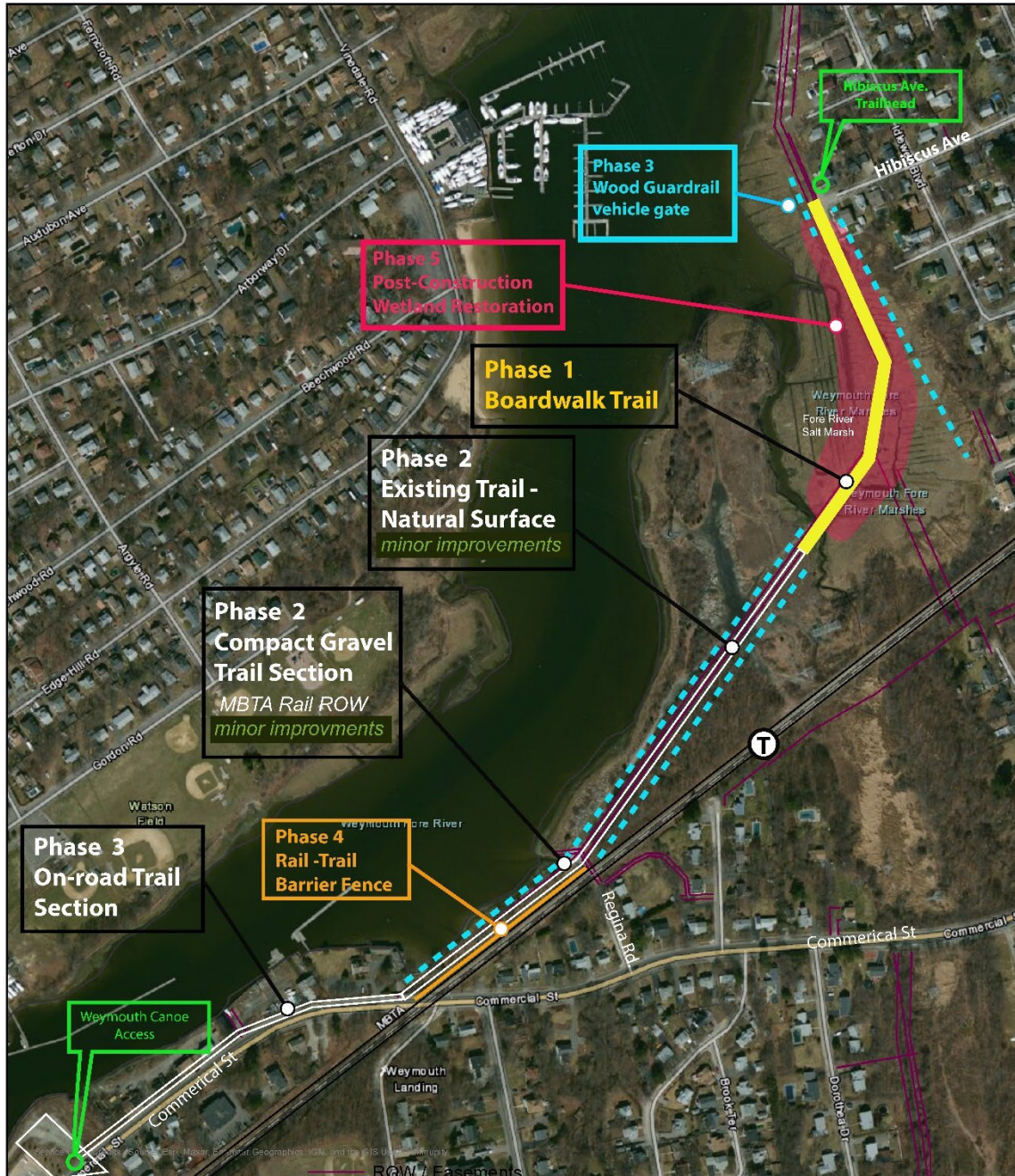
Note: on estimate in Table 8-0 all costs include 20% construction contingency + 5% escalation to account for details and other general cost yet to be determined. This includes landscaping, site amenities, and abutter mitigation.








Table 8-1 Preliminary Cost Estimate, Option 1B
6-FT Trail

PHASE	TYPE	LENGTH	DESCRIPTION	TOTAL COST
Phase 1	Raised Boardwalk *Timber	1070 FT	5' height- Raised timber or concrete boardwalk; (6' width) ◇ Including 42" railing, piles, and structural foundations	\$1,250,000
Phase 2	On-Road Trail	2,200 FT	Two (2) At-Grade Roadway Crossing Treatments, Pavement markings, Sidewalk improvements Includes directional signage	\$30,000
	Perimeter Barrier/Gates	3,300 FT	Site perimeter guardrail	\$200,000
Phase 3	Wayfinding Signage	4 EA	Trailhead informational signage	\$5,000
Phase 4	Salt Marsh/ Site Restoration	2 Acres	Salt Marsh and post-construction landscape restoration ◇ Includes plants/seed materials, loam, soil cover	\$100,000
Permitting			ENF, Chapter 91 License, WPA Order of Conditions, Chapter 254 Historic Review, USACE Section 404 Permit, Coastal Zone Management - Federal Consistency EIR, MEPA ◇ Includes permit preparation, filing, ConCom meetings and public outreach.	\$90,000
Development Costs			Final Design, Bidding Documents, Bid Support, Construction Administration ◇ Includes Geotechnical borings and construction level documentation. ◇ Includes easement lease costs	\$200,000
Right-of-Way Public Use Leases			MBTA, NStar/Eversource	TBD
Estimate Total				\$1,875,000

Note: on estimate in Table 8-0 all costs include 20% construction contingency + 5% escalation to account for details and other general cost yet to be determined. This includes landscaping, site amenities, and abutter mitigation.

Figure 8-1 Fore River Trail Concept Design Option 2



- Legend**
-  Existing ROW
 -  Commuter Rail Line
 -  Raised Boardwalk Trail
 -  Rail & Trail Required Barrier
 -  Resource Area Perimeter Guardrail
 -  Wetland Restoration Area
 -  Trailhead Locations

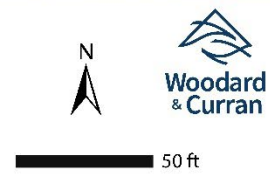


Table 8-1 Cost Estimate, Option 2A

10-FT Trail

PHASE	TYPE	LENGTH	DESCRIPTION	TOTAL COST
Phase 1	Raised Boardwalk <i>*Timber</i>	1070 FT	5' height- Raised timber or concrete boardwalk; (10' width; shared-use type) ◇ <i>Including 42" railing, piles, and structural foundations</i>	\$2,300,000
Phase 2	On-Road Trail	2,200 FT	Two (2) At-Grade Roadway Crossing Treatments, Pavement markings, <i>Includes directional signage</i>	\$30,000
	MBTA Rail w/ Trail	450 FT	6' wide Accessible Natural Surface Trail, ◇ <i>Trail Markings, grading, and surfacing. .</i>	\$50,000
	Perimeter Barrier/Gates	4,000 FT	Site perimeter wooden guardrail ◇ <i>NStar/Eversource and MBTA ROW access lease- safety requirement</i>	\$450,000
Phase 3	Wayfinding Signage	4 EA	Trailhead informational signage	\$5,000
Phase 4	Salt Marsh/ Site Restoration	2 Acres	Salt Marsh and post-construction landscape restoration ◇ <i>Includes plants/seed materials, loam, soil cover</i>	\$100,000
Permitting			ENF, Chapter 91 License, WPA Order of Conditions, Chapter 254 Historic Review, USACE Section 404 Permit, Coastal Zone Management - Federal Consistency EIR, MEPA ◇ <i>Includes permit preparation, filing, ConCom meetings and public outreach fees.</i>	\$90,000
Development Costs			Final Design, Bidding Documents, Bid Support, Construction Administration ◇ <i>Includes Geotechnical borings and construction level documentation.</i>	\$200,000
Right-of-Way Public Use Leases			NStar/Eversource, MBTA	TBD
Estimate Total				\$3,225,000

Note: on estimate in Table 8-0 all costs include 20% construction contingency + 5% escalation to account for details and other general cost yet to be determined . This includes landscaping, site amenities, and abutter mitigation.

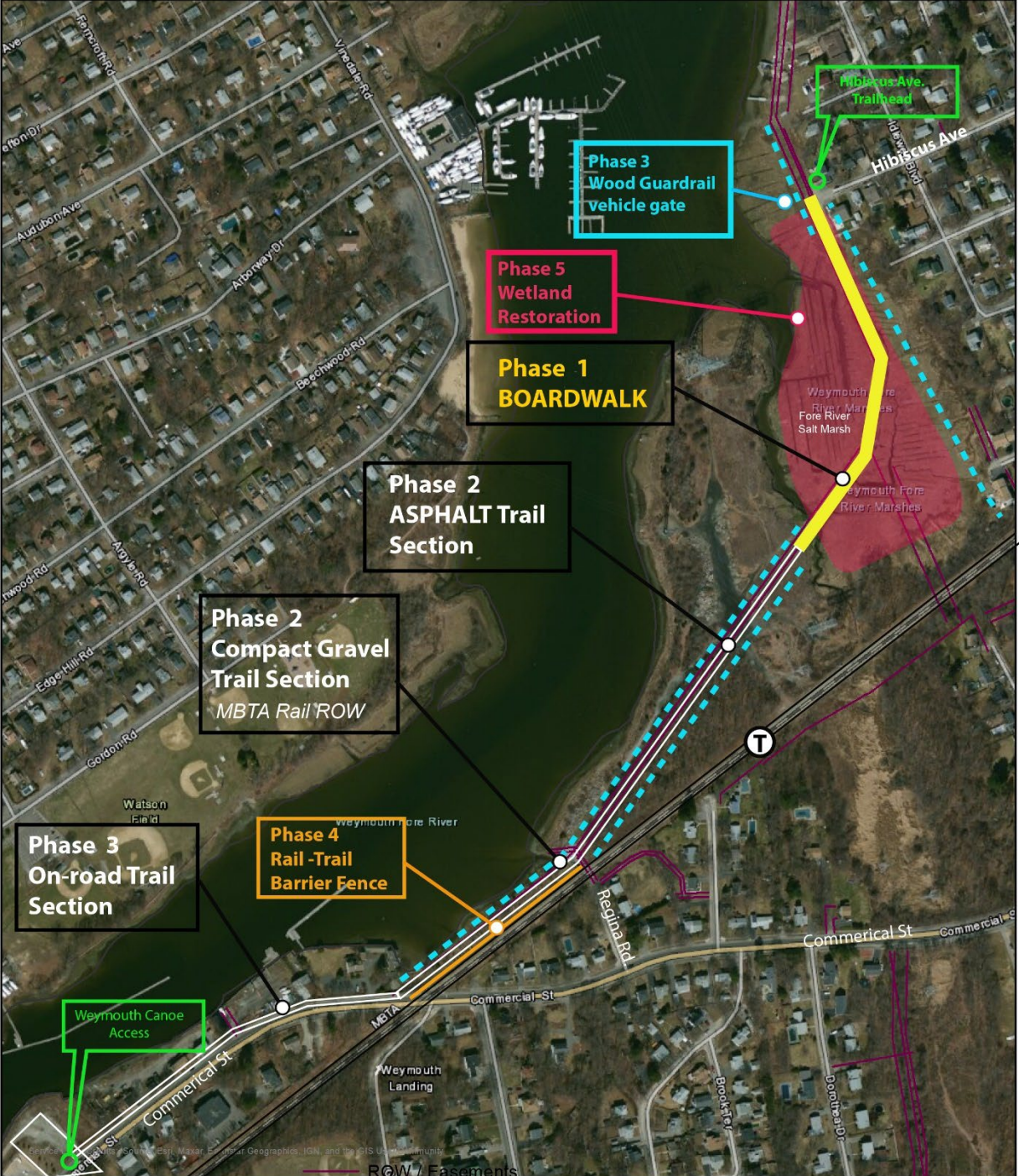
Table 8-1 Cost Estimate, Option 2B

6-FT Trail

PHASE	TYPE	LENGTH	DESCRIPTION	TOTAL COST
Phase 1	Raised Boardwalk *Timber	1070 FT	5' height- Raised timber or concrete boardwalk; (6' width) ◇ Including 42" railing, piles, and structural foundations	\$1,250,000
Phase 2	On-Road Trail	2,200 FT	Two (2) At-Grade Roadway Crossing Treatments, Pavement markings, Includes directional signage	\$30,000
	MBTA Rail w/ Trail	450 FT	6' wide Accessible Natural Surface Trail, ◇ Trail Markings, grading, and surfacing. .	\$50,000
	Perimeter Barrier/Gates	4,000 FT	Site perimeter wooden guardrail ◇ NStar/Eversource and MBTA ROW access lease- safety requirement	\$450,000
Phase 3	Wayfinding Signage	4 EA	Trailhead informational signage	\$5,000
Phase 4	Salt Marsh/ Site Restoration	2 Acres	Salt Marsh and post-construction landscape restoration ◇ Includes plants/seed materials, loam, soil cover	\$100,000
Permitting			ENF, Chapter 91 License, WPA Order of Conditions, Chapter 254 Historic Review, USACE Section 404 Permit, Coastal Zone Management - Federal Consistency EIR, MEPA ◇ Includes permit preparation, filing, ConCom meetings and public outreach fees.	\$90,000
Development Costs			Final Design, Bidding Documents, Bid Support, Construction Administration ◇ Includes Geotechnical borings and construction level documentation.	\$200,000
Right-of-Way Public Use Leases			NStar/Eversource, MBTA	TBD
Estimate Total				\$2,175,000

Note: on estimate in Table 8-0 all costs include 20% construction contingency + 5% escalation to account for details and other general cost yet to be determined . This includes landscaping, site amenities, and abutter mitigation.

Figure 8-1 Fore River Trail Concept Design, Option 2

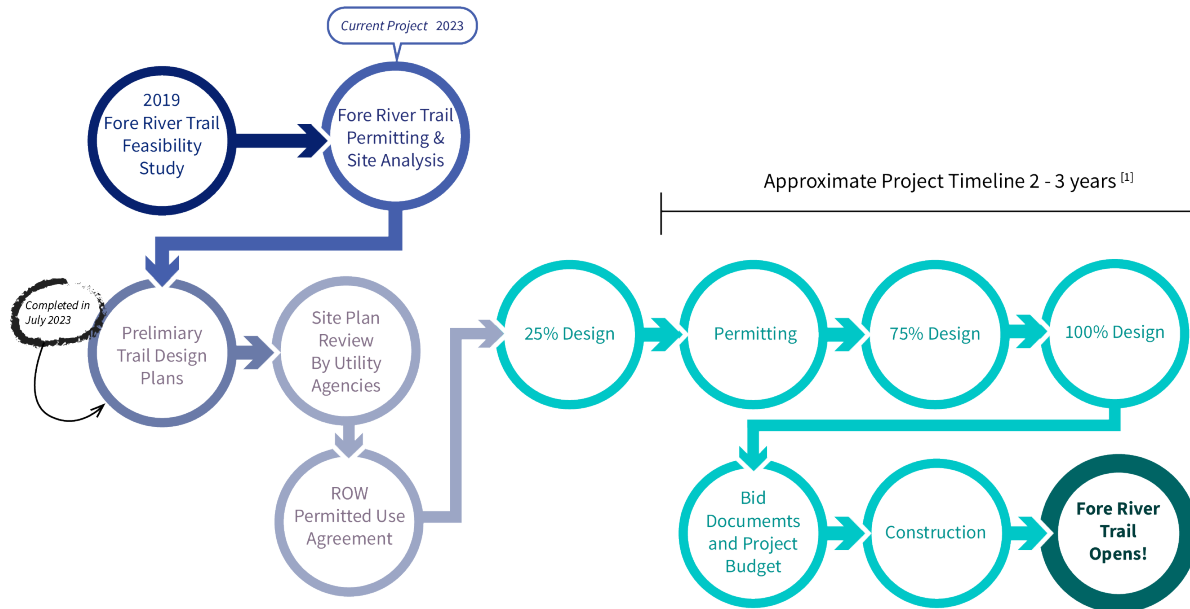


Legend

-  Existing ROW
-  Commuter Rail Line
-  Raised Boardwalk Trail
-  Resource Area Perimeter Guardrail
-  Wetland Restoration Area
-  Trailhead Locations



9.0 PROJECT TIMELINE



[1] Project timeline in coordination with permitting requirements

APPENDIX A: WETLAND SURVEY



August 14, 2023

Woodard & Curran, Inc.
Attn: Melissa Flatley
250 Royall Street
Canton, MA 02021

Re: Wetland Summary Letter
Fore River Trail
Weymouth, MA 02188

Dear Ms. Flatley,

Professional Wetland Scientists (PWS) from Lucas Environmental, LLC (LE) conducted site investigations on August 4th, and 9th, 2023 to determine if wetland resources were present at or near the project site associated with the Fore River Trail Site Assessment and Feasibility Report in Weymouth, Massachusetts (the “Study Area”). Please note that this effort is specific to wetland resources; it does not evaluate constraints related to local planning or zoning requirements, historical or cultural significance, nor does it evaluate the potential for soil, air, or water contamination. Note that the site was reviewed under appropriate field conditions, i.e., no snow cover or frozen ground.

The wetland investigation was performed in accordance with the Massachusetts Wetlands Protection Act (M.G.L. Ch. 131, § 40) and regulations (310 CMR 10.00 *et seq.*); Section 404 of the Clean Water Act (33 U.S.C. 1344); Massachusetts Department of Environmental Protection (MassDEP) publication “Massachusetts Handbook for Delineation of Bordering Vegetated Wetlands (2022); and the U.S. Army Corp of Engineers (USACE) Wetland Delineation Manual (1987); the Northcentral and Northeast Regional Supplement (2012); and the Town of Weymouth Wetlands Protection Ordinance (Chapter 7, Section 301) and Wetlands Protection Regulations. The site investigation was limited to wetland areas within 100 feet and perennial streams within 200 feet of the Study Area. The following data sources were examined prior to the site investigation:

- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps;
- United States Geological Survey Topographic Quadrangle;
- MassGIS MassDEP Wetland and Hydrography Datalayers;
- MassGIS Natural Heritage Atlas Datalayers;
- United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS) Soil Survey;
- Weymouth Fore River Trail Feasibility Study, prepared by Kzla Landscape Architects, dated through July 29, 2020;
- Fore River Trail Site Assessment and Feasibility Report, prepared by Woodard & Curran (W&C), dated July 2023;
- Fore River Trail Map – Topography graphic provided by Woodard & Curran;
- Fore River Trail Map – Proposed Trail graphic provided by Woodard & Curran; and
- Existing Conditions Plans (Draft), prepared by Woodard & Curran; dated April 28, 2023.

1.0 EXISTING CONDITIONS

The Study Area for the Fore River Trail consists of an approximate one-mile route along public rights-of-ways (ROWs) starting from Weymouth Canoe Access on Commercial Street to the west, and ending at the Fore River Marsh/NStar transmission corridor in the Idlewell Neighborhood to the east, located in Weymouth, Massachusetts (See W&C Figure 2: Fore River Location Map and Figure 2-1: Parcel Map). The main section of the proposed Fore River Trail site is located along the existing utility ROW extending across the 16.3-acre Fore River Salt Marsh and electricity transmission corridor located between Regina Road and Idlewell Boulevard in Weymouth.

The Study Area includes the Fore River Salt Marsh, Idlewell Neighborhood, the Massachusetts Bay Transportation Authority (MBTA) rail line and the Regina Road underpass. The Fore River Salt Marsh area is currently owned by NStar/Eversource with a 25-foot public ROW used by the Massachusetts Water Resources Authority (MWRA) and Town sewer line. Land use is restricted to utilities and predominantly occupied by structural transmission towers.

The site consists mainly of coastal Salt Marsh, bound by the Weymouth Fore River to the north and west, Commercial Street and an elevated MBTA commuter rail line to the south, and residences associated with the Idlewell Neighborhood to the east. Land use within the Fore River drainage area is predominantly single family residential with moderate open space within the developed areas to buffer run-off from entering the surrounding Fore River and Salt Marsh coastal areas.

The Study Area is generally historically disturbed with the existing ROW. LE understands that the site was historically used for dumping of fly ash. As such, soil augering and other soil exploration was not conducted throughout the site. The site consists of forested areas and open scrub/shrub areas, and several access roads and trails.

Vegetation within the ROW consists of Japanese knotweed (*Fallopia japonica*), little bluestem (*Schizachyrium scoparium*), slender leaf goldenrod (*Euthamia graminifolia*), tall goldenrod (*Solidago gigantea*), eastern cottonwood shrubs (*Populus deltoides*), glossy buckthorn (*Frangula alnus*), Virginia creeper (*Parthenocissus quinquefolia*), eastern red cedar (*Juniperus virginiana*), common reed (*Phragmites australis*), staghorn sumac (*Rhus typhina*), Japanese barberry (*Berberis thunbergii*), Russian olive (*Elaeagnus angustifolia*), poison ivy (*Toxicodendron radicans*), fox grape (*Vitis labrusca*), gray birch (*Betula populifolia*), Oriental bittersweet (*Celastrus orbiculatus*), American pokeweed (*Phytolacca americana*), bull thistle (*Cirsium vulgare*), common milkweed (*Asclepias syriaca*), hedge bindweed (*Calystegia sepium*), meadowsweet (*Spiraea tomentosa*), and smartweeds (*Polygonum* sp.).

Vegetation within the wooded areas consists of red cedar, big-tooth aspen (*Populus grandidentata*), eastern cottonwood, glossy buckthorn, common buckthorn (*Rhamnus cathartica*), Russian olive, gray birch, black locust (*Robinia pseudoacacia*), tree-of-heaven (*Ailanthus altissima*), crab apple (*Malus* sp.), black cherry (*Prunus serotina*), black oak (*Quercus velutina*), white oak (*Quercus alba*), Norway maple (*Acer platanoides*), garlic mustard (*Alliaria petiolata*), multiflora rose (*Rosa multiflora*), blackberry (*Rubus* sp.), Japanese barberry, Japanese honeysuckle (*Lonicera japonica*), Virginia creeper, and poison ivy.

European privet (*Ligustrum vulgare*) and burning bush (*Euonymus alatus*) were also observed in the Study Area. The Salt Marsh is further described in Section 2.5.

A review of the current MassGIS data layer for the Massachusetts Natural Heritage Atlas (effective August 1, 2021) under the Natural Heritage and Endangered Species Program (NHESP) indicates that the Study Area is not located within Estimated Habitat of Rare Wildlife or within Priority Habitat of Rare Species. No Certified Vernal Pools under the jurisdiction of the Wetlands Protection Act Regulations (310 CMR 10.00 et seq.) or the Massachusetts Endangered Species Act (321 CMR 10.00 et seq.) occur within the Study Area, nor are there any NHESP mapped Potential Vernal Pools present within the Study Area.

The Study Area is not located within an Area of Critical Environmental Concern (ACEC), Outstanding Resource Water (ORW), MassDEP Wellhead Protection Zone, or Watershed Protection Area.

The Weymouth Fore River Parkers River (Segment ID MA74-14) is identified as a Category 5 water requiring a Total Maximum Daily Load (TMDL) per the Final MassDEP 2018/2020 Integrated List of Waters (305(b)/303(d)). Waters are listed in Category 5 if they were identified as impaired (i.e., not supporting one or more intended uses), the impairment was related to the presence of one or more “pollutants”, and the source of those pollutants was not considered to be natural. The causes of impairment in this segment of the Weymouth Fore River have been identified as contaminants in fish and/or shellfish, Enterococcus, fecal coliform, and PCBs in fish tissue.

2.0 ENVIRONMENTAL RESOURCE AREAS

Several coastal wetland resource areas associated with the Weymouth Fore River were identified within and adjacent to the Study Area. Land Subject to Coastal Storm Flowage (LSCSF); Land Under the Ocean (LUO); Coastal Beach, Coastal Bank, Salt Marsh, Land Containing Shellfish (LCS), Bordering Vegetated Wetland (BVW), and Riverfront Area are present on or near the site. The Weymouth Fore River is also located within the Banks of or Land under the Ocean, Ponds, Streams, Rivers, Lakes or Creeks that Underlie Anadromous/Catadromous (Fish Run). See W&C Figure 2-2: Environmental Regulatory & Resource Area Map.

A description of each of these features as regulated under the WPA (310 CMR 10.00) and the Town of Weymouth Wetlands Protection Ordinance and Regulations (WWPR) follows including where the Regulations differ from the WPA. **The resource areas are identified on the Existing Conditions Plans.**

2.1 LSCSF – 310 CMR 10.04 WPA & Part 1.04 WWPR

Section 310 CMR 10.04 of the WPA defines LSCSF as *land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge of record or storm of record, whichever is greater*. The Yarmouth Regulations define LSCSF per Section 310 CMR 10.04 of the WPA with the addition of the following: “*Land Subject to Coastal Storm Flowage*” are areas that extend up-gradient or landward from the ocean and the ocean’s estuaries to a point where the maximum lateral extent of floodwater will theoretically terminate based upon the 100 year frequency storm. Said boundary shall be the relevant 100 year storm elevation referenced within the latest available Flood Insurance Rate Maps provided by the Federal Emergency Management Agency. LSCSF is defined similarly under the Weymouth Regulations.

According to the June 9, 2014, FEMA Flood Insurance Rate Map for Norfolk County, Map Number 25021C0227F, the entire Study Area is mapped as Zone AE, classified as the 1% annual chance flood (100-year flood) where base flood elevations have been determined – Elevation 10-11 feet NAVD 88; and Zone VE, a coastal flood zone with velocity hazard with base flood elevations established as a limit of moderate wave action – Elevation 13 feet NAVD 88. As the flood source is coastal, LSCSF is present within the Study Area. A 100-Foot Buffer Zone extends from the limit of Coastal Bank under the WWPR only. See W&C Figure 2-5: FEMA Flood Zone Map.

2.2 Land Under the Ocean – 310 CMR 10.25 WPA & Part 2.02 WWPR

Section 310 CMR 10.25 of the WPA defines LUO as the *land extending from the mean low water line seaward to the boundary of the municipality's jurisdiction and includes land under estuaries*. The Mean Low Water (MLW) line has been identified at elevation 0.33 NAVD 88. LUO is defined similarly under the Weymouth Regulations.

2.3 Coastal Beach – 310 CMR 10.27 WPA & Part 2.03 WWPR

Section 310 CMR 10.27 of the WPA defines Coastal Beach as *unconsolidated sediment subject to wave, tidal and coastal storm action which forms the gently sloping shore of a body of salt water and includes tidal flats. Coastal beaches extend from the mean low water line landward to the dune line, coastal bankline or the seaward edge of existing human-made structures, when these structures replace one of the above lines, whichever is closest to the ocean*.

Tidal Flat is also defined under Section 310 CMR 10.25 as *any nearly level part of a coastal beach which usually extends from the mean low water line landward to the more steeply sloping face of the coastal beach or which may be separated from the beach by land under the ocean*. Coastal Beach is defined similarly under the Weymouth Regulations.

Coastal Beach, in the form of Tidal Flats extends the length of the project site from the MLW line to the existing seawalls/retaining walls and Coastal Bank where present, otherwise, Tidal Flats occur within the portions of the area that are exposed during low tide, which includes the areas seaward of the MLW line. A 100-Foot Buffer Zone extends from the limit of Coastal Beach under the WPA and WWPR.

2.4 Coastal Bank – 310 CMR 10.30 WPA & Part 2.05 WWPR

Section 310 CMR 10.30 of the WPA defines Coastal Bank as *the seaward face or side of any elevated landform, other than a coastal dune, which lies at the landward edge of a coastal beach, land subject to tidal action, or other wetland*. Coastal Bank is defined similarly under the Weymouth Regulations. Coastal Bank has been evaluated and identified on the Existing Conditions Plan per the MassDEP Wetlands Program Policy 92-1: Coastal Banks. The Banks lie behind various engineered structures to the west. A 100-Foot Buffer Zone extends from the limit of Coastal Bank under the WPA and WWPR.

2.5 Salt Marsh – 310 CMR 10.32 WPA & Part 2.06 WWPR

Section 310 CMR 10.32 of the WPA defines Salt Marsh as *a coastal wetland that extends landward up to the highest high tide line, that is, the highest spring tide of the year, and is characterized by plants that are well adapted to or prefer living in, saline soils. Dominant plants within salt marshes typically include salt meadow cord grass (*Spartina patens*) and/or salt marsh cord grass (*Spartina alterniflora*), but may also include, without limitation, spike grass (*Distichlis spicata*), high-tide bush (*Iva frutescens*), black grass (*Juncus gerardii*), and common reedgrass (*Phragmites*). A salt marsh may contain tidal creeks, ditches and pools. Spring Tide means the tide of the greatest amplitude during the approximately 14-day tidal cycle. It occurs at or near the time when the gravitational forces of the sun and the moon are in phase (new and full moons).* Salt Marsh is defined similarly under the Weymouth Regulations. The Mean Higher High Water (MHHW) elevation is 10.34 feet NAVD 88, and is equivalent to the Spring Tide.

Salt Marsh is located throughout the entire area east of the overhead power lines, and along the entire peninsula owned by NStar/Eversource. The landward limit was delineated with pink survey tape numbered sequentially from WFA-1 to 178. The interior portions of the salt marsh are vegetated primarily with smooth cordgrass saltmarsh cordgrass (*Spartina alterniflora*) and saltgrass (*Distichlis spicata*) with saltmeadow cordgrass (*S. patens*), hightide bush (*Iva frutescens*), blackgrass (*Juncus gerardii*), sea lavender (*Limonium carolinianum*), sea plantain (*Plantago maritima*), seaside goldenrod (*Solidago sempervirens*), and spear-scale orache (*Atriplex patula*) commonly observed. Common reed (*Phragmites australis*) was observed heavily throughout the eastern portion of the Salt Marsh near the residential neighborhood, and along the upper fringes of the Salt Marsh along the NStar/Eversource peninsula.

The vegetation along the marsh edge consists of the species noted above in the upland areas, in addition to the following fringe species along the eastern marsh edge: common reed, silver maple (*Acer saccharinum*), common elderberry (*Sambucus nigra*), American elm (*Ulmus americana*), tree-of-heaven, crab apple, black locust, hedge bindweed, Japanese knotweed, bittersweet night shade (*Solanum dulcamara*), curly dock (*Rumex crispus*), silky dogwood (*Cornus amomum*), multiflora rose, garlic mustard, privet, Virginia creeper, fox grape, poison ivy, Japanese barberry, and blackberry. A 100-Foot Buffer Zone extends from the limit of Salt Marsh under the WPA and WWPR.

2.6 Land Containing Shellfish – 310 CMR 10.34 WPA & Part 2.07 WWPR

Section 310 CMR 10.34 of the WPA defines LCS as *the land under the ocean, tidal flats, rocky intertidal shores, salt marshes and land under salt ponds when any such land contains shellfish.* Section 310 CMR 10.34 of the WPA defines shellfish as the following species: *Bay scallop (*Argopecten irradians*); Blue mussel (*Mytilus edulis*); Ocean quahog (*Arctica islandica*); Oyster (*Crassostrea virginica*); Quahog (*Mercenaria merceneria*); Razor clam (*Ensis directus*); Sea clam (*Spisula solidissima*); Sea scallop (*Placopecten magellanicus*); Soft shell clam (*Mya arenaria*).*

LCS and Shellfish are defined similarly under the Weymouth Regulations with the addition of the following: *Lobster (*Homarus americanus*); Grass shrimp (*Hippolyte spp.*) Sand shrimp (*Crangon septemspinosa*); Blue crab (*Callinectes sapidus*); Green crab (*Carcinides maenas*); Fiddler crab (*Uca spp.*); Rock crab (*Cancer irroratus*); and Freshwater mussel (*Andonata implicata*) and *Elliptio companata*.*

A review of the MassGIS Shellfish Suitability Area datalayer indicates the Weymouth Fore River near the Study Area has been mapped by the Massachusetts Division of Marine Fisheries (MA DMF) as shellfish habitat (MassGIS, 2011) for soft-shelled clam for spawning and settlement. Harvest of shellfish in this area is prohibited. Although a shellfish survey was not conducted, the area likely contains shellfish and likely meets the definition of LCS under the WPA. Fiddler crabs and blue mussels were observed along the perennial stream and ditches in the Salt Marsh. As such, the limit of LCS would extend throughout LUO and Salt Marsh.

2.7 Fish Run – 310 CMR 10.35 WPA & Part 2.08 WWPR

Section 310 CMR 10.35 of the WPA defines Banks of or Land under the Ocean, Ponds, Streams, Rivers, Lakes or Creeks that Underlie Anadromous/Catadromous (Fish Run) as *that area within estuaries, ponds, streams, creeks, rivers, lakes or coastal waters, which is a spawning or feeding ground or passageway for anadromous or catadromous fish and which is identified by DMF or has been mapped on the Coastal Atlas of the Coastal Zone Management Program.* The Weymouth Fore River is identified as a Diadromous Fish Run for migratory habitat for alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), rainbow smelt (*Osmerus mordax*), American eel (*Anguilla rostrata*), white perch (*Morone americana*), Atlantic tomcod (*Microgadus tomcod*), and sea lamprey (*Petromyzon marinus*). There are spring time of year restrictions between February 15th and June 30th, and a fall time of year restriction between September 1st and November 15th. Fish Run is defined similarly under the Weymouth Regulations with the addition of *those areas which have historically served as fish runs and are either being restore or are planned to be restored at the time the Application for Permit is filed.*

2.8 BVW/Vegetated Wetlands – 310 CMR 10.55 & Part 3.03 WWPR

Section 310 CMR 10.55 of the WPA defines BVW as *freshwater wetlands which border on creeks, rivers, streams, ponds and lakes. The types of freshwater wetlands are wet meadows, marshes, swamps and bogs. Bordering Vegetated Wetlands are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants. The boundary of Bordering Vegetated Wetlands is the line within which 50% or more of the vegetational community consists of wetland indicator plants and saturated or inundated conditions exist. Wetland indicator plants are also those classified in the indicator categories of Facultative, Facultative+, Facultative Wetland-, Facultative Wetland, Facultative Wetland+, or Obligate Wetland in the National List of Plant Species That Occur in Wetlands: Massachusetts (Fish & Wildlife Service, U.S. Department of the Interior, 1988) or plants exhibiting physiological or morphological adaptations to life in saturated or inundated conditions.* The WWPR defines Vegetated Wetlands similarly to BVW and includes isolated wetlands.

There were several small fringe pockets of BVW located immediately upgradient of the Salt Marsh, predominantly along the eastern portion of the site behind the existing residences. The limit of the delineated WFA Series includes this small BVW fringes. Based upon the nature of the proposed trail and distance to these areas, they were not delineated separately at this time. A 100-Foot Buffer Zone extends from the limit of BVW/Vegetated Wetlands under the WPA and WWPR.

2.9 Riverfront Area – 310 CMR 10.58 WPA

Section 310 CMR 10.58 of the WPA defines Riverfront Area as *the area of land between a river's mean annual high-water line measured horizontally outward from the river and a parallel line located 200 feet away*. Riverfront Area is not defined under the Weymouth Regulations; however, it is defined under the Weymouth Ordinance in a similar manner. Mean High Water (MHW) has been determined by Woodard & Curran to be elevation 9.89 feet NAVD 88 within the Study Area, per the Fore River Tidal Bench Marks noted in the Woodard & Curran Fore River Trail Site Assessment and Feasibility Report.

In tidal rivers, the mean annual high-water line is coincident with the mean high water line determined under 310 CMR 10.23....[defined as] the line where the arithmetic mean of the high water heights observed over a specific 19-year metonic cycle (the National Tidal Datum Epoch) meets the shore and shall be determined using hydrographic survey data of the National Ocean Survey of the U.S. Department of Commerce. There is no definition for tidal rivers under the Weymouth Regulations or Ordinance.

MassDEP has published Mouth of Coastal River Maps, which identify the Mouth Of The River (MOR) for coastal rivers in order to provide a clear, consistent, and predictable means of locating all river mouths in the state. The MOR lines represent the limit of Riverfront Area jurisdiction under the WPA in which the area upstream of the MOR lines includes Riverfront Area and any land seaward of the MOR line is not subject to jurisdiction as a Riverfront Area.

The 200-Foot Riverfront Area associated with Weymouth River extends from the MHW line, landward 200 feet within the Study Area. MHW is at Elevation 9.89 NAVD 88 per the Fore River Tidal Bench Marks noted in the Woodard & Curran Fore River Trail Site Assessment and Feasibility Report. An unnamed perennial stream flows into the Salt Marsh under the MBTA railroad via a culvert, and is tidally influenced through the Study Area.

Per Section 310 CMR 10.58(2)(a)1.g. of the WPA, *human-made canals (e.g., the Cape Cod Canal and canals diverted from rivers in Lowell and Holyoke) and mosquito ditches associated with coastal rivers do not have riverfront areas*. There are numerous mosquito ditches throughout the Salt Marsh that would not have an associated 200-Foot Riverfront Area.

2.10 Town of Weymouth Wetlands Protection Ordinance and Regulations

The Town of Weymouth Wetlands Protection Ordinance and Regulations provide additional protection to wetland/coastal resources and Buffer Zones beyond the WPA, which should be evaluated prior to permitting efforts. The WWPR establishes a 25-Foot No Disturb Area for residential structures and associated appurtenances, and a 50-Foot No Disturb Zone for commercial and industrial structures.

2.11 MassDEP Chapter 91 – Waterways Licensing Program

The Commonwealth of Massachusetts' primary tool for protection and promotion of public use of its tidelands and other waterways is Massachusetts General Law Chapter 91, the Waterways Licensing Program. Although LE has not reviewed the Chapter 91 history and jurisdiction for the site, review of available MassGIS data indicates portions of the Study Area are located within filled and flowed tidelands and are subject to Chapter 91 jurisdiction.



500A Washington Street, Quincy, MA 02169

Per Section 310 CMR 10.58(6)(i) of the WPA, activities on the site would be exempt from the Rivers Act provided a license, permit, or authorization under 310 CMR 9.00 (Waterways) is obtained for the proposed work.

If you have any questions, please do not hesitate to contact me at 617.405.4140 or cml@lucasenviro.com. Thank you for your consideration in this matter.

Sincerely,
LUCAS ENVIRONMENTAL, LLC

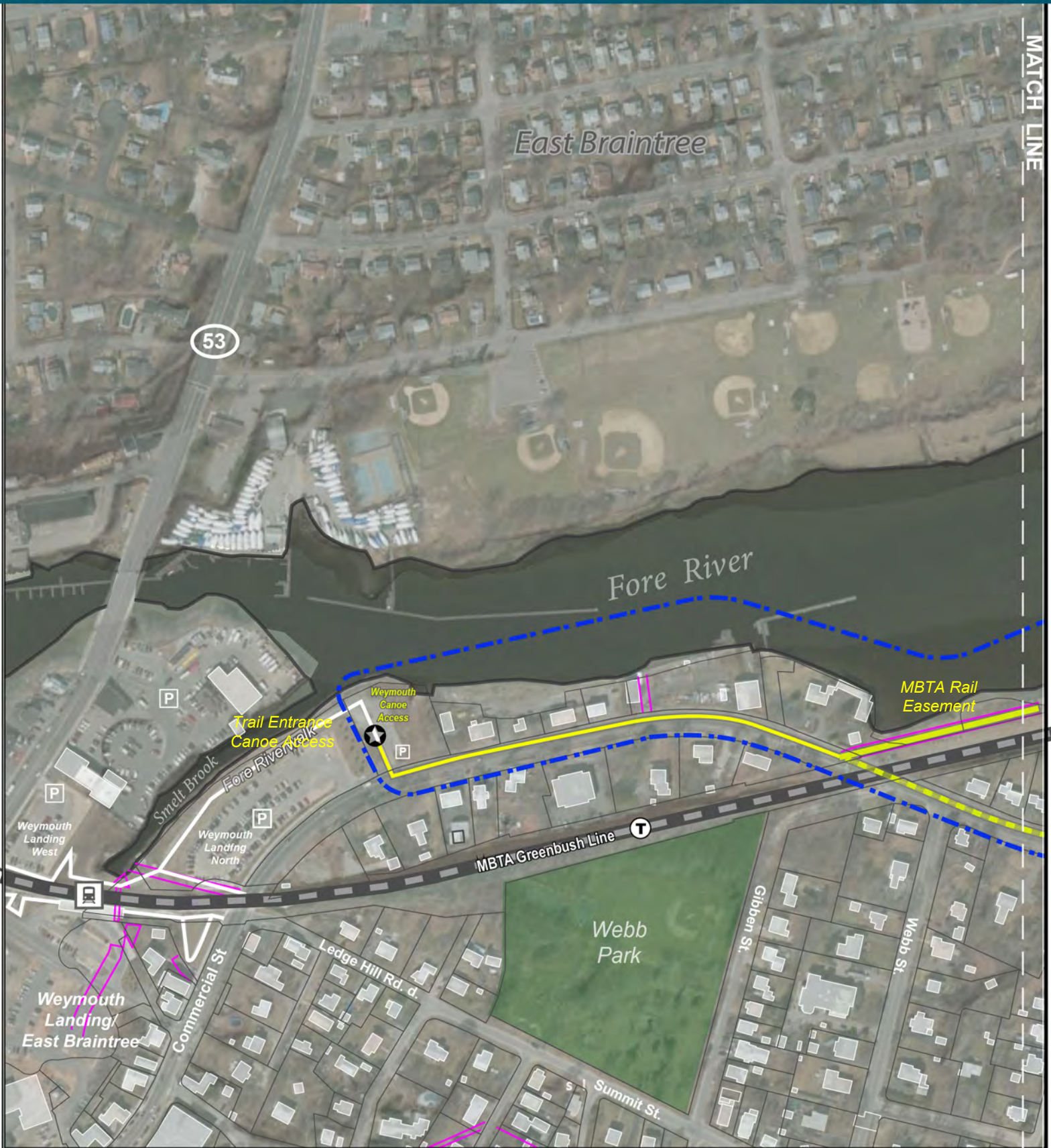
A handwritten signature in blue ink that reads 'Christopher M. Lucas'.

Christopher M. Lucas, Manager, PWS/CWS/RPSS
Environmental Consultant/Wetland & Soil Scientist

Enclosures: Figures

DRAFT

FIGURE 2: Fore River Location Map



Legend

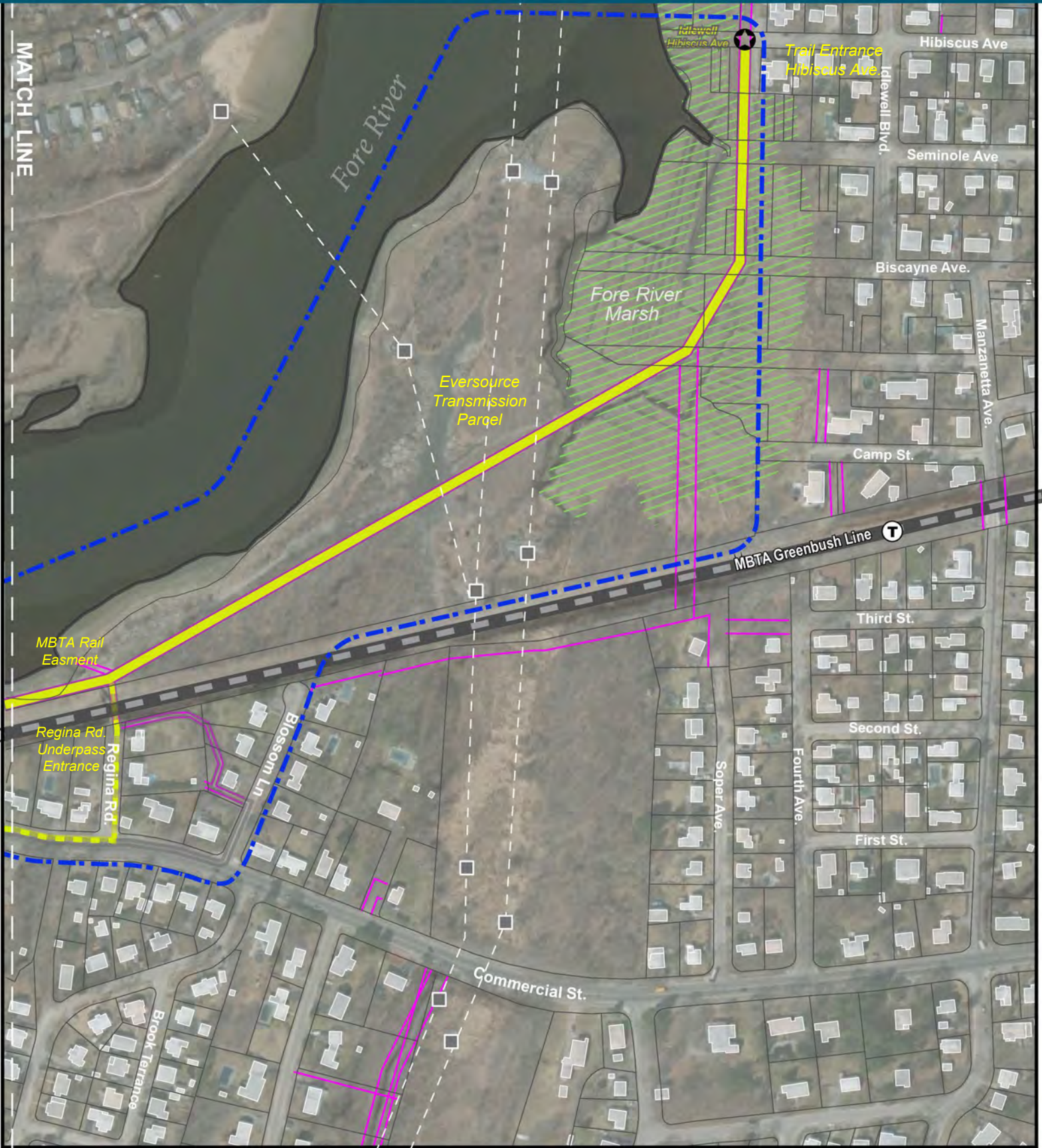
- Right-of-Way (ROW)
- Proposed Trail Route
- Proposed Trail Route Option
- Project Area Boundary
- Electrical Transmission Line
- Electrical Transmission Tower
- ★ Trailhead Locations




0 300 Feet



FIGURE 2: Fore River Location Map



Legend

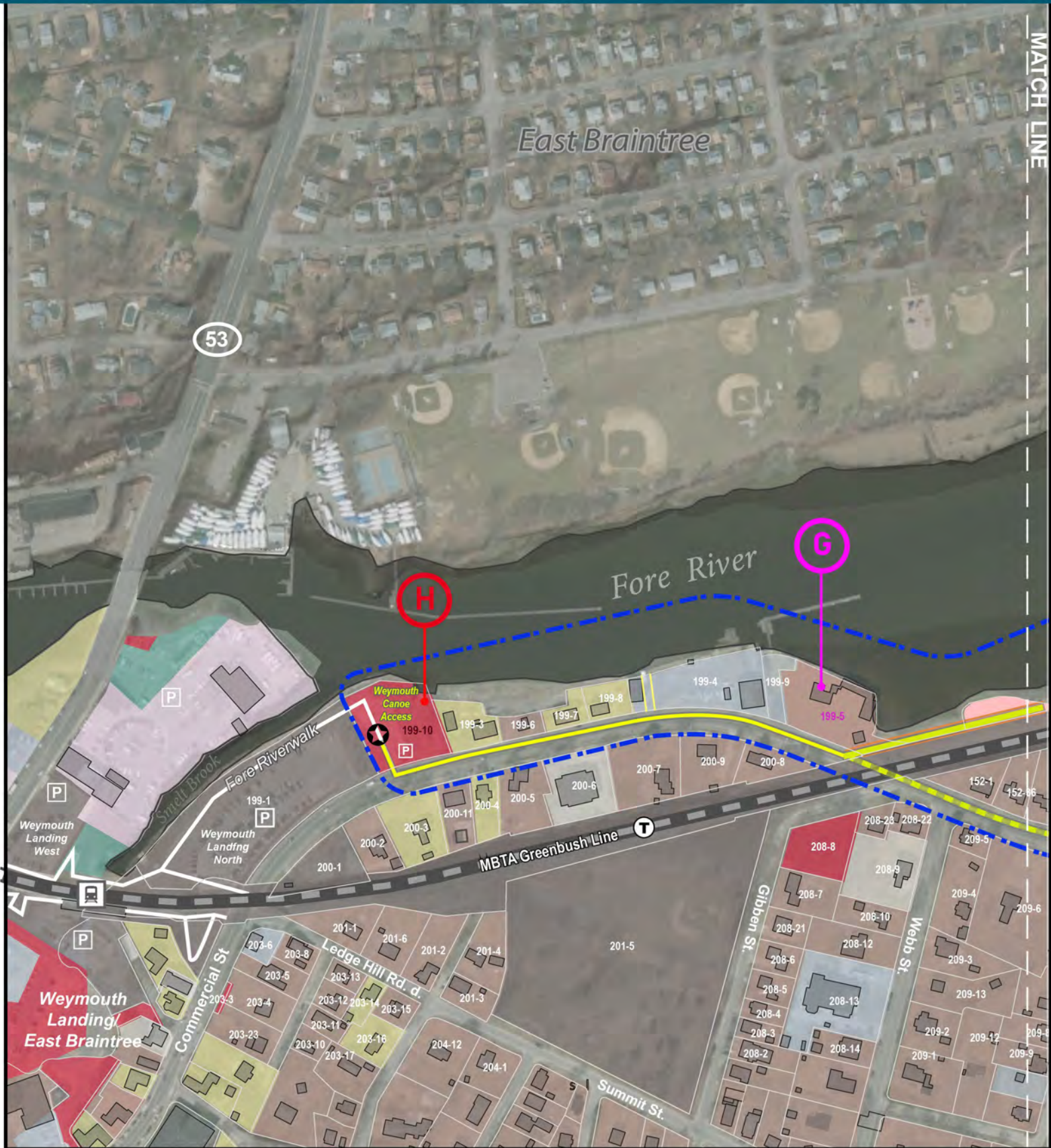
-  Right-of-Way (ROW)
-  Proposed Trail Route
-  Proposed Trail Route Option
-  Project Area Boundary
-  Electrical Transmission Line
-  Electrical Transmission Tower
-  Trailhead Locations



0 300 Feet



FIGURE 2-1: Parcel Map



Legend

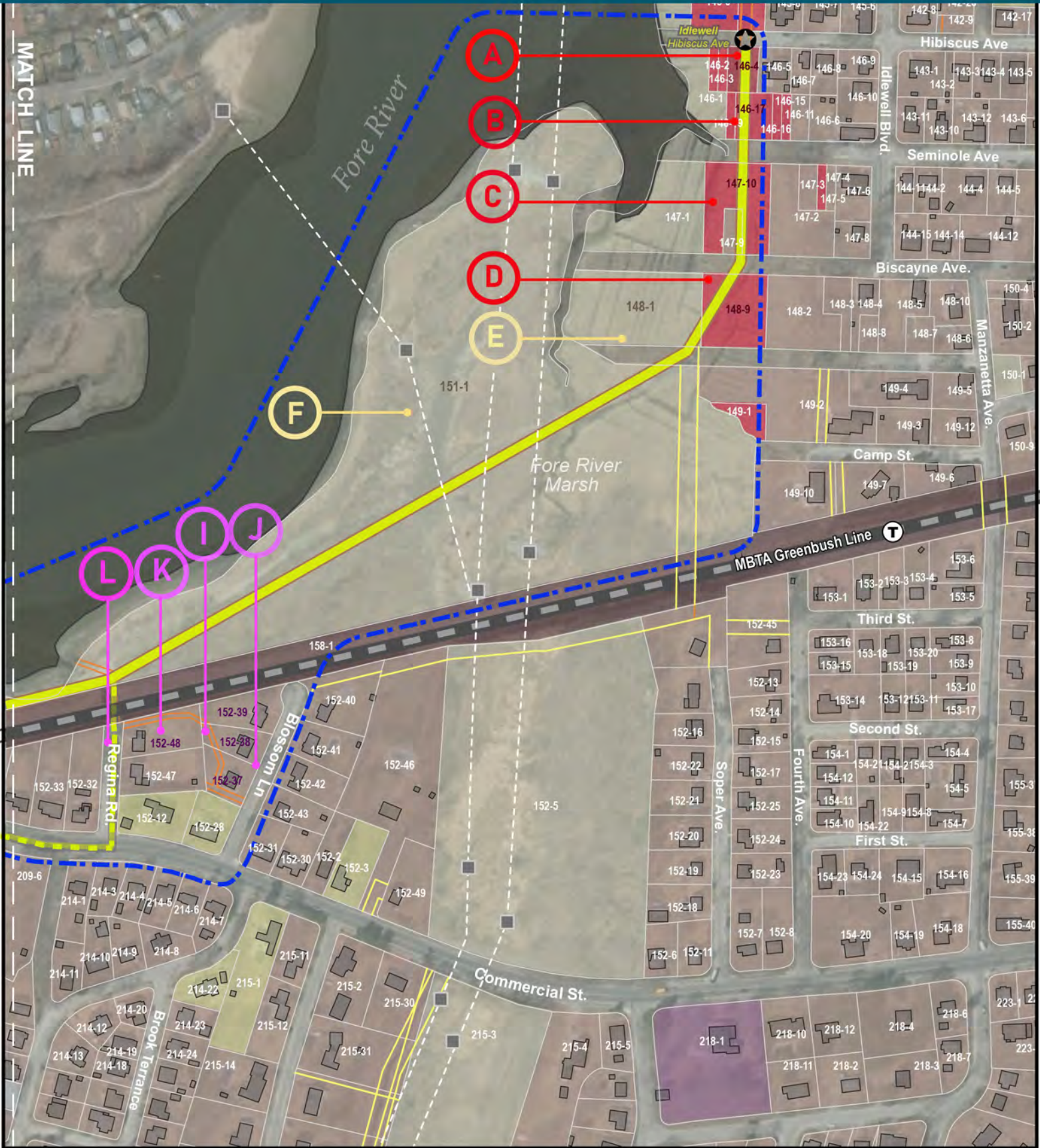
Right-of-Way (ROW)	Single family residence	Mixed Use
Proposed Trail Route	Two/Three Family Residential	Commercial Vacant
Proposed Trail Route Option	Condominium	Commercial
Project Area Boundary	Apartments 4 or more units	Industrial Vacant
Electrical Transmission Line	Institutional/Exempt	Industrial
Electrical Transmission Tower	Municipal, Federal, or State	Municipal Vacant
Trailhead Locations		

Parcel Owners

	Town of Weymouth
	NStar/Eversource, utility
	Private, Resident



FIGURE 2-1: Parcel Map



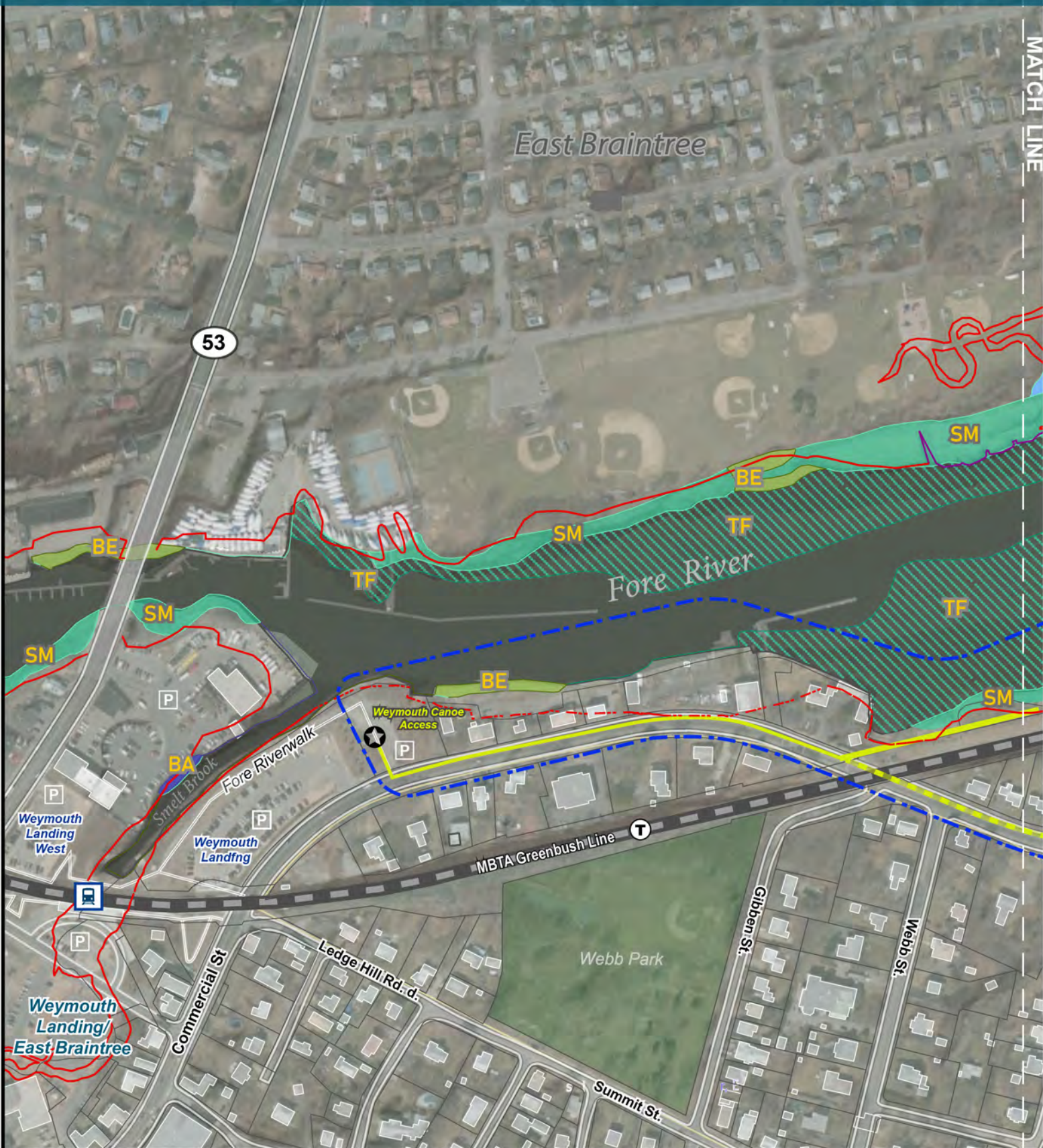
Legend

Right-of-Way (ROW)	Land Use	Mixed Use
Proposed Trail Route	Single family residence	Commercial Vacant
Proposed Trail Route Option	Two/Three Family Residential	Commercial
Project Area Boundary	Condominium	Industrial Vacant
Electrical Transmission Line	Apartments 4 or more units	Industrial
Electrical Transmission Tower	Institutional/Exempt	Municipal Vacant
Trailhead Locations	Municipal, Federal, or State	

Parcel Owners	
Town of Weymouth	
NStar/Eversource, utility	0 300 Feet
Private, Resident	



FIGURE 2-2: Environmental Regulatory & Resource Area Map



Legend

- | | | |
|--|--|---|
| <ul style="list-style-type: none"> — Right-of-Way (ROW) — Proposed Trail Route — Proposed Trail Route Option — Project Area Boundary — Electrical Transmission Line ■ Electrical Transmission Tower ★ Trailhead Locations | <p>MassDEP wetlands Classification</p> <ul style="list-style-type: none"> BE: Coastal BEach BA: Coastal Bank, Bluff SM: Salt Marsh M: Shallow Marsh, Meadow TF: Tidal Flat | <p>Chapter 91 Tidelands Jurisdiction</p> <ul style="list-style-type: none"> — Marsh Boundary - landward — Chapter 91 Jurisdiction — Historic High Water — Contemporary High Water — Inferred Contemporary High Water |
|--|--|---|

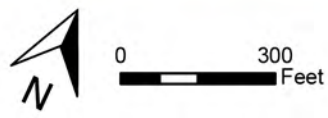
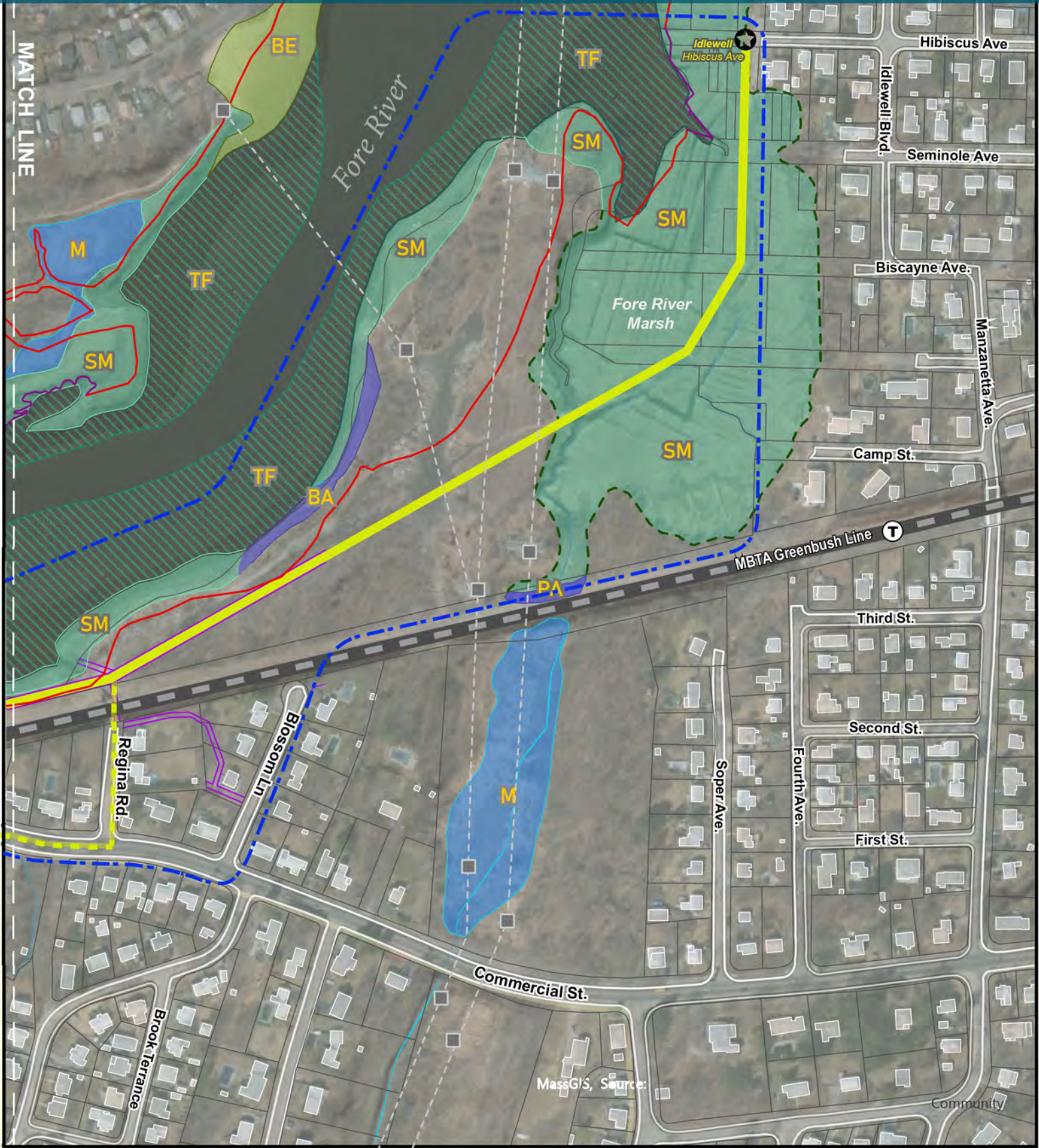


FIGURE 2-2: Environmental Regulatory & Resource Area Map



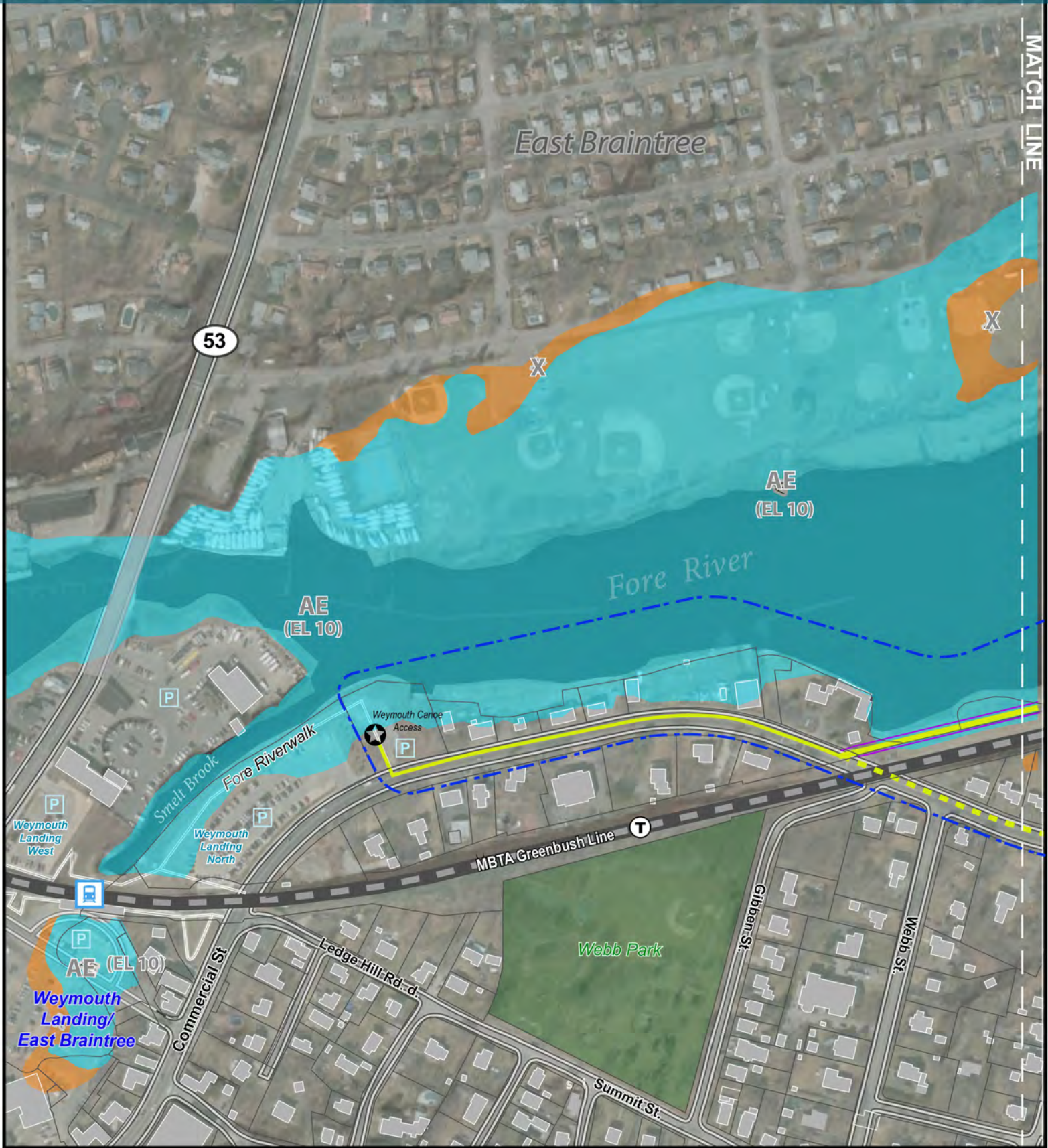
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| <ul style="list-style-type: none"> — Right-of-Way (ROW) — Proposed Trail Route — Proposed Trail Route Option - - - Project Area Boundary - - - Electrical Transmission Line ■ Electrical Transmission Tower ★ Trailhead Locations | <p>MassDEP wetlands Classification</p> <ul style="list-style-type: none"> ■ BE: Coastal BEach ■ BA: Coastal Bank, Bluff ■ SM: Salt Marsh ■ M: Shallow Marsh, Meadow ■ TF: Tidal Flat | <p>Chapter 91 Tidelands Jurisdiction</p> <ul style="list-style-type: none"> - - - Marsh Boundary - landward — Chapter 91 Jurisdiction — Historic High Water — Contemporary High Water - - - Inferred Contemporary High Water |
|---|---|--|



FIGURE 2-5:

Flood Zone Map

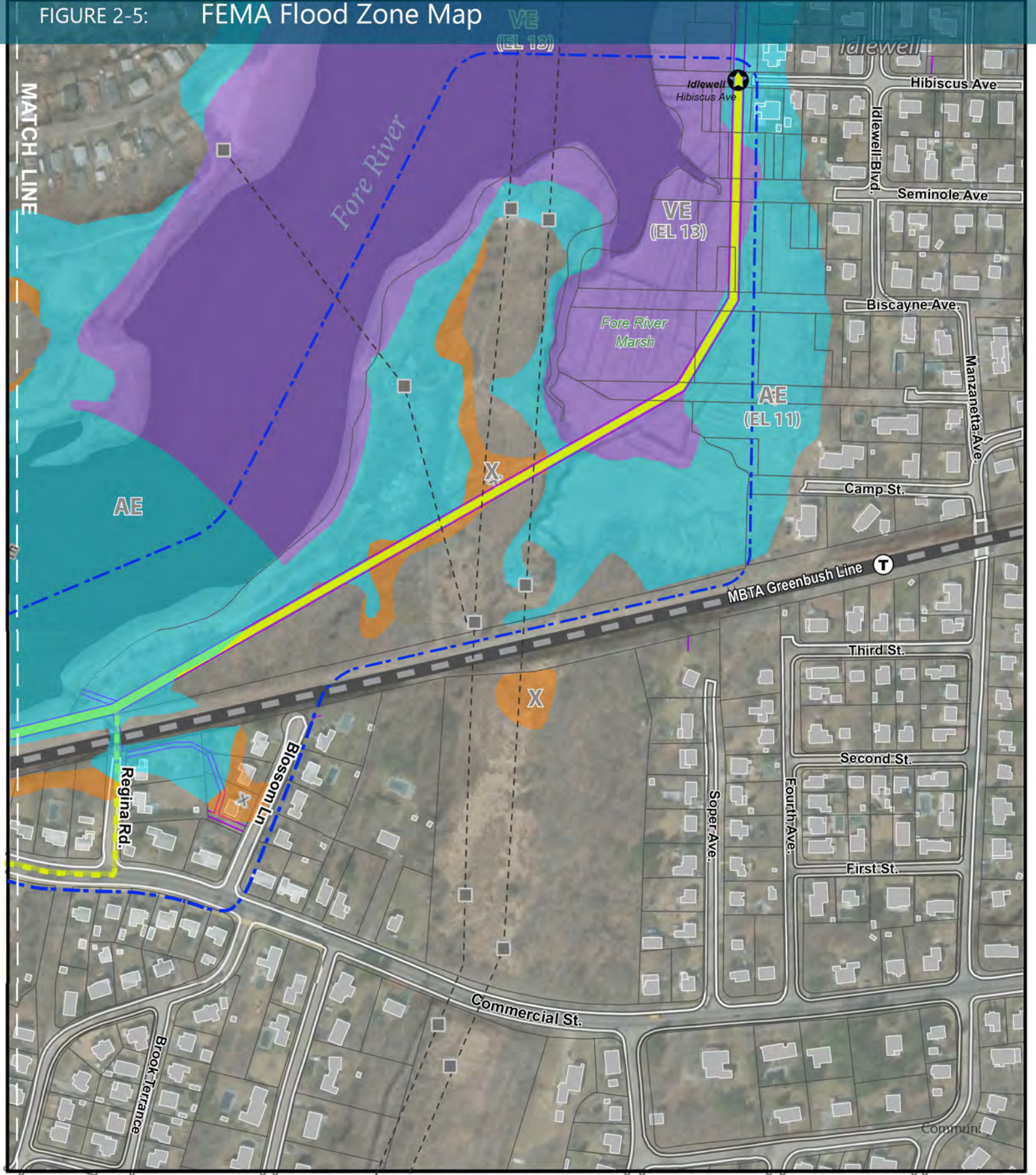


Legend

- | | | | |
|--|-------------------------------|--|--|
| | Right-of-Way (ROW) | | Flood Zone Designations |
| | Proposed Trail Route | | A: 1% Annual Chance of Flooding, |
| | Proposed Trail Route Option | | AE: 1% Annual Chance of Flooding; BFE |
| | Project Area Boundary | | X: 0.2% Annual Chance of Flooding |
| | Electrical Transmission Line | | VE: High Risk Coastal Area, 10yr Flood Elevation |
| | Electrical Transmission Tower | | |
| | Trailhead Locations | | |



FIGURE 2-5: FEMA Flood Zone Map



Legend

- | | |
|---|--|
| <ul style="list-style-type: none"> — Right-of-Way (ROW) — Proposed Trail Route — Proposed Trail Route Option - - - Project Area Boundary - - - Electrical Transmission Line ■ Electrical Transmission Tower ★ Trailhead Locations | <p>Flood Zone Designations</p> <ul style="list-style-type: none"> ■ A: 1% Annual Chance of Flooding, ■ AE: 1% Annual Chance of Flooding; BFE ■ X: 0.2% Annual Chance of Flooding ■ VE: High Risk Coastal Area; 10yr Flood Elevation |
|---|--|



APPENDIX B: FORE RIVER SITE SURVEY

APPENDIX C: 2019 FORE RIVER TRAIL FEASIBILITY STUDY

Weymouth Fore River Trail Feasibility Study

Prepared by:

Kzla Landscape Architects
36 Bromfield Street, Suite 2020
Boston, MA 02108

Danielle Desilets, RLA
Senior Associate

Phase 1	December 20, 2019
Phase 2	January 22, 2020
Phase 3	July 29, 2020
Summary	July 29, 2020

Town of Weymouth
Mayor Robert Hedlund

Weymouth Department of Planning & Community Development
Robert Luongo, Director

Idlewell Improvement Association
Mathew Tallon, President

Weymouth Fore River Study

Weymouth Landing to Cadman Conservation Area

20 December 2019

Memo

KZLA was hired by the Town of Weymouth to review the feasibility of creating a new pedestrian trail which would connect the Town's Fore River Canoe Launch (adjacent to the MBTA's Weymouth Landing parking area) to the existing conservation land at the Cadman Conservation Area.

The Vision

Residents of the Idlewell neighborhood, led by Matt Tallon, have asked the Town to consider a trail along the Fore River similar to what has been planned (and partially installed from the Kibby property along Great Esker Park to Osprey Overlook Park) along the Back River on Weymouth's northeast border. The vision would eventually create a trail that extends from the Weymouth Landing Fore River Canoe Launch to King's Cove Park north of Route 3A/Bridge Street.

Matt Tallon's proposal to connect the Fore River Canoe Launch to Cadman Conservation Area uses the following routes:

- Connect to the Monatiquot-Fore River walkway at the Fore River Canoe Launch
- Egress the canoe launch property and follow the Commercial Street sidewalk until Regina Road (a private way with no sidewalk, but limited traffic).
- Gain access to the NStar Electric Co. (now Eversource) parcel under the MBTA railroad tracks at the end of Regina Road (currently gated to both pedestrian and vehicular access)
- Utilize the existing access drive which follows the bank of the Fore River towards the center of the NStar parcel
- Follow the existing access drive eastward, on upland, to the salt marsh
- Connect over the salt marsh creek using existing the concrete bridge which has subsided
- Follow the existing access drive to the north where it ends at the west end of Hibiscus Avenue
- Use sidewalks through the Idlewell neighborhood (Pleasant view Avenue, Biscayne Avenue, Piedmont Street, and Narragansett Avenue) to connect to Newell Playground to the north and the salt marshes surrounding Tide Mill Brook to the east
- Connect to Edison Street from Narragansett Avenue
- From the end of Edison Street gain access to the privately held parcels in Block 156 which are currently intended (though not permitted) for a high-density development
- Create a pathway along the bank of the Tide Mill Brook. A substantial portion of the bank through the wider portion of parcel 13-156-5 is gradual enough



- Create a boardwalk along Tide Mill Brook out to Commercial Street near Essex Street on the privately held parcels (13-156-38 and 13-156-5)

This proposal does make some assumptions that need to be addressed; these include:

1. Requires permission for the public to access the NStar parcel and use it for passive recreation
2. Requires the use of privately-owned land which is currently intended for development. The understanding is that the developer has suggested that a portion of these parcels could have an easement or conservation restriction applied to allow public use in the areas that are steep and within wetland areas and buffer zones.
3. Requires a boardwalk along Tide Mill Brook to connect the trail to the Commercial Street sidewalk. (Approximate boardwalk length is 325 linear feet.) There is also a grade change to be made from the marsh level to the street level.

Based on the kick-off meeting with various Town representatives (December 3rd) on a site walk conducted with Idlewell resident Matt Tallon Thursday, December 12th, permitting review, and study of the Town's Atlas of streets and properties, the following alternatives are outlined:

- A. Short-term alternative using land currently owned by the Town, sidewalks, and the NStar Electric/Eversource parcel, if permissible.
- B. Alternative with boardwalk connections (requires permitting) and land acquisitions and/or easements/conservation restrictions.

Discussion

- A. Short-term alternative using land currently owned by the Town, sidewalks, and the NStar Electric/Eversource parcel, if permissible

The route essentially follows the same as that proposed by the Idlewell resident, however it deviates by using only the lands currently held by the Town of Weymouth, plus the NStar parcel just to the southwest of the Idlewell neighborhood. Because it relies only on Town-owned parcels, the reliance on sidewalks is substantial. This alternative also does not propose any boardwalks, as they require environmental permitting and significant construction costs. This also means that this Alternative is a shorter trail which terminates in the Idlewell neighborhood. This alternative is a short-term solution which would require less funding than alternative B and no permitting.

Several key points need to be addressed for this alternative to be feasible. All of which are focused on the same parcel: the 16.3-acre NStar Electric parcel (16-151-1). The NStar Electric/Eversource parcel is the key connector to the parcels at the Landing and those of the Idlewell neighborhood. Without permission to use this land for passive recreation, the trail system will rely nearly entirely on sidewalks. Critical points to be considered include:

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- On this site are several steel stanchions supporting high-voltage transmission lines. While there is certainly precedent for municipal trail networks on land owned by private utilities and under high-transmission lines, the appetite for NStar Electric/Eversource is unknown. (It is understood that there has been a history of trespassing on the property and the steel stanchions have been adapted to an attempt to prevent the public from climbing on the structures.)
- Included in this parcel is a substantial amount of marshland. On the day of the site walk, December 12, 2019, we visited the site during a high tide around the full moon. A substantial portion of the site was impassable given the tide, and even flooded up to 18 inches. This means that several times each month the trail would be unpassable if existing conditions are not improved.
- While it is understood that the old concrete bridge that crosses the tidal channel is normally passable, during the full moon high tide, it was not. The condition of the bridge is reported to be very poor and appears as though it would not meet ADA Accessibility Guidelines for trails in its current condition.
- This alternative requires reliance on sidewalks to make connections, including existing sidewalks on Commercial Street. Unfortunately, very few of the streets within the Idlewell neighborhood have sidewalks (save for the east side of Pleasantview Avenue; the east side of Piedmont/Narragansett Avenues; and sporadic portions of the west side of Idlewell Avenue. All the sidewalks proposed to be incorporated into the trail should be improved. Many are narrow, in very poor condition, and often are randomly terminated parcel-to-parcel.

Designating the connection between the Landing and the Cadman Conservation Area using land currently owned by the Town and the 16.3-acre NStar Electric parcel is only feasible if the Town can negotiate an understanding with NStar to allow the public on their land. There is a concern that without adding new structures (i.e. boardwalks) or elevating grades of the existing access drives to accommodate hightides, pedestrians may be choose to walk along the MBTA rail line when the tides are too high to cross the marsh rather than walking back out to commercial street.

The use of sidewalks and private roads is feasible, especially in short-term planning. Wayfinding signage will be essential in all options, but especially when using sidewalks and the intended direction of the trail network is not obvious.

For this alternative to be feasible, the following issues will have to be addressed:

1. Permission for the public to access the NStar parcel and use for passive recreation for pedestrian access. This is critical to the development of the trail network.
2. Removal of the gate at the end of Regina Road.
3. Pedestrian access on Regina Road – currently a private way – with sidewalks for pedestrian safety and wayfinding signage.

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4. Improved sidewalk along Idlewell Avenue from Commercial Street to Chandler Street
5. Pedestrian access (i.e. sidewalk and signage) on Chandler Street and on Pleasantview Avenue from Chandler Street to Biscayne Avenue.
6. Improved sidewalk along Pleasantview Avenue from Biscayne Avenue to Idlewell Avenue.
7. Pedestrian access (i.e. sidewalk and signage) on Idlewell Avenue from Pleasantview Avenue to Newell Park.

Without additional land acquisitions or easements, the trail would likely be terminated in the Idlewell neighborhood.

B. Alternative with boardwalk connections (requires permitting) and land acquisitions and/or easements/conservation restrictions

This alternative would follow the same route as Alternative A above, with some notable exceptions, which include land acquisition and/or easements/conservation restrictions and the inclusion of boardwalk segments. The boardwalk segments would provide the trail to continue further to the northeast, as well as allow the trail system to follow the river, rather than sidewalks.

Chapter 91 has jurisdiction over flowed tidelands: "Any project located in, on, over or under tidal waters seaward of the present mean high water (MHW) shoreline. Jurisdiction in this case extends seaward three miles, to the state limit of territorial jurisdiction." Structures – in the case a boardwalk – would fall under the MassDEP Waterways License. Pedestrian and waterfront walkways are considered a public benefit under Chapter 91 and would likely be seen as a favorable public amenity. However, the MassDEP Waterways License is a lengthy process which can take from 4 to 9 months. In addition to state permitting, a Notice of Intent for likely work in a Coastal Resource Area (salt marsh), Land Subject to Coastal Storm Flowage, and possibly a Bordering Vegetated Wetland, would need to be filed with the Town's Conservation Commission.

In order to bypass the Commercial Street sidewalk, a boardwalk could be installed from the Fore River Canoe Launch to the NStar parcel near the intersection of Commercial Street and the MBTA rail line. The segment from the Fore River Canoe Launch to the NStar/Eversource parcel is located in a fairly wide portion of the Fore River but it is an area that is currently used as a marina on both the Weymouth and the Braintree sides of the river. There are two potential challenges to this: (1) the conflict with the floats/docks at Thayer's Landing Marina, and (2) Massachusetts Public Waterfront Act, Chapter 91 permitting for navigable waterways and tidelands.

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The Cadman Conservation Area – where a boardwalk could cross the salt marsh to provide access to Laudervale Road and Norton Street – is also a flowed tideland subject to Chapter 91 permitting.

This alternative is not dependent upon both boardwalks being implemented in order to be viable. The priority would be for the boardwalk that connects the Cadman Conservation Area as this would open more of the landscape to public access. For this alternative to be feasible, the following issues will have to be addressed:

1. Permission for the public to access the NStar/Eversource parcel and use for passive recreation.
2. Creation of a boardwalk from the Fore River Canoe Launch to the NStar parcel on the river's edge. Approximate boardwalk length is 1,300 linear feet.

OR, Continued use of the sidewalk along Commercial Street, plus pedestrian access (i.e. sidewalk and signage) on Regina Road and removal of the gate at the end of Regina Road.
3. Improved sidewalks and signage through the Idlewell neighborhood, as described above
4. Pedestrian access (i.e. sidewalk and signage) on Biscayne Avenue from Piedmont Street to Trefton Avenue. This portion of Biscayne Avenue is a private way.
5. Pedestrian access (i.e. sidewalk and signage) on Trefton Avue and Montcalm Street – both are private ways. The center portion of Tefton is still a paper road and has not been developed as a road to connect the two ends.
6. Land acquisition or easement/conservation restriction for public use of some combination of the following parcels 13-131-4, 13-131-3, 13-131-2, 13-131-1, (privately held, but undeveloped parcel) and/or 13-131-17-0 (undeveloped parcel held by National Grid as Mass. Electric Co.). Access to some combination of these parcels would provide access from Tefton Avenue. The more ideal situation would be an easement across, or acquisition of, the National Grid parcel which could provide access to the salt marsh from the end of Montcalm Street.
7. Creation of a boardwalk across the salt marsh near the end of Montcalm Street. A boardwalk could follow the existing sewer easement which connects across the marsh to another National Grid/Mass Electric Co. parcel (10-130-10) and a privately held, but undeveloped parcel (10-130-19) which would provide direct access to Laudervale Road and then Norton Street. Approximate boardwalk length is 1,150 linear feet.
8. Laudervale Road is a very narrow private way which should also be improved with pedestrian access (i.e. sidewalk and signage) should it be incorporated into a trail network. This would provide access to Norton Street and its sidewalk.

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Additional notes:

1. Providing a sidewalk on Ledge Hill road/Summit Street and/or Gibbens Street would allow the connection of Webb Park and the neighborhood that surrounds it access to the Fore river trail from Commercial Street as well. Crosswalks would have to be introduced on Commercial Street to make the connection complete and safe.
2. Trail connections along Commercial Street can also be made to Cranberry Pond Park to the west, the William A. Connell, Sr. Recreation Center and the adjacent Central Park to the east, if permission is granted for the public to use the high-voltage transmission lines which continue south through Weymouth.
3. There is a small privately held parcel (12-147-9) in the midst of the Town of Weymouth parcels which sit between the Idlewell neighborhood and the NStar/Eversource parcel. This parcel is not critical for the trail to connect, but it would provide more flexibility for the trail alignment and grading, if necessary.
4. Most of the area is included in the FEMA National Flood Hazard Zone. The revised FEMA Flood Insurance Rate Map, dated September 26, 2016, shows that that entire feasibility study is included in special Flood Hazard Areas, save for some uplands in the NStar/Eversource parcel and the interior of the Idlewell neighborhood. (Some of this upland area is classified as a 0.2% Chance Flood Hazard.) Most of the area in question is zoned "VE" while some salt marsh areas are "AE". These categories are defined as having "at least a 1 in 4 chance of flooding" during a 30-year period and are defined as high risk. "VE" is further defined as "coastal areas with a 1% or greater chance of flooding and an additional hazard associate with storm waves. The "VE" area have been given a flood elevation of 12 or 13 and the "AE" has a flood elevation of 10 or 11. (See attached map.)

Additional mapping on the Massachusetts Sea Level Rise & Coastal Flooding Viewer from the State's Office of Coastal Zone Management includes most of the coastal areas of the study site in the Mean Higher High Water (MHHW, the average height of daily highest tide) modeling from NOAA. Many areas, including the salt marsh of the Cadman Conservation Area and between the NStar/Eversource parcel and the Idlewell neighborhood, are included with portions of Newell Playground, Cadman Conservation Area, and the NStar/Eversource parcel are included in the mapping for the MHHW plus increasing levels of sea level rise, up to 6 feet. Any structures or trail segments designed for the proposed trail network, should take these factors into consideration.

End of memo



Weymouth Fore River Walking Path Study

Cadman Conservation Area to King's Cove (Phase 2)

9 March 2020

Memo

KZLA was hired by the Town of Weymouth to review the feasibility of creating a new pedestrian trail which would connect the existing conservation land at the Cadman Conservation Area to King's Cove north of Route 3A. This is an extension of the study completed in December 2019 which covered the landscape from the Fore River Canoe Launch to Cadman Conservation Area.

The Vision

Residents of the Idlewell neighborhood, led by Matt Tallon, have asked the Town to consider a trail along the Fore River similar to what has been planned (and partially installed from the Kibby property along Great Esker Park to Osprey Overlook Park) along the Back River on Weymouth's northeast border. The vision would eventually create a trail that extends from the Weymouth Landing Fore River Canoe Launch to King's Cove Park north of Route 3A/Bridge Street, and could also connect through the North Weymouth neighborhood north of Route 3A to the Back River Trail at the Kibby Property.

I spoke with Matt Tallon on Friday, February 28th to discuss how he envisioned the continuation of the Fore River Trail beyond Cadman Conservation Area to the north of Route 3A. Matt's proposal to continue the Fore River Trail focuses more on connecting the Town's open space parcels between King's Cove and Webb Memorial State Park (including Leo Madden Field, Wessagusett Woods, Great Hill Park, James O'Sullivan field) and southeast to the Kibby Property, than following the shoreline of the Fore River. For this study area (Cadman Conservation Area to King's Cove), from Matt has proposed the following route:

- Using sidewalks along Norton Street from the Abigail Adams Birthplace/Old North Cemetery to connect from Cadman Conservation Area and head to the north (with traffic calming and additional parking along Norton Street).
- Norton Street turns into Pearl Street. Just to the north is a stream (Philip's Creek) which drains to the march to the west, and to the east parallels Pearl Street towards North Street. The stream follows along the property line between the Town-owned lot for the Johnson Early Childhood Center (#7-100-15) and a National Grid parcel at 120 Pearl Street (#10-123-1).
 - Potential spur to Pratts Meadow across North Street
- North of Philip's Creek, cross Pearl Street to continue west on Evans Street.

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- From Evans Street, turn south onto Brewster Road to reach the Fore River.
- There are three small, Town-owned, undeveloped parcels between Gilmore Street and Stratford Road (#10-8-16, #10-80-9, and #10-79-3) that could serve as a canoe/kayak launch and a walking/biking trail. The paved roads disintegrate and connect along shore with a gravel road.
- Head north on Woronoco Road; cross Evans Street to Delorey Avenue.
- Delorey Avenue connects to Leo Madden Fields behind the Bicknell School residences.
- The proposal includes a perimeter walking path around the fields, to connect from the park extension between 16 and 22 Delorey Avenue, as well as the parking area that extends from the Bicknell School residences drive near 43 Lochmere Avenue.
- Egress at Sea Street to cross Route 3A at Bicknell Square or return towards the south.
 - Potential to continue trail to north of Route 3A and connect to other Town-owned properties.

This proposal relies on the following:

1. Creating a trail along Philip's Creek would require an easement from the owner of a 4-acre parcel at 311 North Street (#10-102-10), and potentially others on North Street (315 and 321 North Street). Much of this area is wetland. Access from Pearl Street to Philip's Creek and its marshes would have to be from either the Johnson Early Childhood Center property north of the private residence at 88 Pearl Street (#7-100-18) or the National Grid parcel at 120 Pearl Street (#10-123-1) as there is a long stretch of guardrail along the Pearl Street sidewalk with a drop in elevation due to the creek. The access onto the Johnson ECC would likely occur across from Evans Street, and connect to the east behind the residence and to the creek.
2. The Bicknell School residences at 90-136 Sea Street have parking, utility, drainage, and access easements. The access easements extend to Lochmere Avenue to the south (to the west of the parking easement) and following the driveway from the entrance at Sea Street around towards the parking. There is a potential to utilize this easement for the walking/biking trail.

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Discussion

Similar to the Phase 1 study, the land that the Town currently owns, including sidewalks and roadways that are currently without sidewalks, provides an opportunity for a walking/biking route which can include signage to direct users to intended destinations. Wayfinding signage will be essential, especially when using sidewalks and the intended direction of the trail network is not obvious.

This phase of the trail study contains fewer Town-owned parcels than the initial phase, and fewer parcels of potential partners, like Eversource or National Grid. The shoreline from Cadman Conservation Area to Route 3A is well populated with riprap banks, seawalls, private piers, docks, and floats. These structures make access along the shoreline nearly impossible as it currently exists.

A proposed route for Phase 2 would be similar to what is proposed above, with some key infrastructure improvements for public safety:

- Cadman Conservation Area (east of the Tide mill Brook) to Laudervale Road – This portion of the Cadman Conservation Area has upland areas that are already used as trails and even in most high tides, pedestrians can reach the damaged Tide Mill Creek bridge near the MBTA railroad tracks. Laudervale Road is a private road with no sidewalk.
- Norton Street/Pearl Street north to Evans Street – There is the potential for this street cross-section to be wide enough to accept a bike lane. Sidewalks already exist on both sides of the street.
- Access to the Johnson Early Childhood Center fields and playground – From the east side of Pearl Street access to the Johnson ECC is easy. From the west side, if coming from the south, you must cross Evans Street and Pearl Street as there is no crossing south of the Evans Street intersection. For students/families walking to school and, especially if the trail is realized and a connection to the Old North Cemetery and the Abigail Adams Birthplace are to be included on the trail, an additional crossing should be created south of the intersection.
- Philip's Creek – If the creek corridor is to be included as a trail spur, an easement would be required for the parcels at 311 North Street (#10-102-10), and potentially others on 315 and 321 North Street (#10-102-12 and #10-1-2-13).
- Heading west on Evans Street – Evans Street has sidewalks on both sides of the street, but based on the route below, a crossing south of the intersection would be advisable.
- South on Brewster Road to the Fore River – Brewster Road is a Town road but has no sidewalks. It ends are Brewster Place which runs along Mill Cove and connects to Gilmore Street.
- Along Brewster Place to the Town-owned uplands at the end of Gilmore street and across to Woronoco Road – Improvements should be considered here, either in the

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paving of the existing gravel drive that is used by the neighborhood to drive from Woronoco Road to Stratford Road, or the installation of a permanent trail segment or boardwalk segment to connect Woronoco Road to Stratford Road. Either option would require permitting, but a trail segment is likely the cheapest to design/install and be the easiest to permit. It is possible that this area is used more for parking than a vehicular connection between the two roads.

The parcels at the end of Gilmore Street, Woronoco, and Strafford Roads (#10-8-16, #10-80-9, and #10-79-3) provide an opportunity for improvement and another access point onto the Fore River for a small craft boat launch.

- North on Woronoco Road with two options:
 - Cross Evans Street and continue north on Delorey Avenue to the Leo Madden Fields – The parking area at the Bickenell School/residences that extends towards 43 Lochmere Road does not egress on Lochmere. It has a chain link fence and has a wooded buffer. At a minimum, it should be considered to have a pedestrian gate in the fence at this point. The assessor maps show both an access easement and a parking easement on the Bicknell School residences at this location.

This would require a new crossing on Evans Street at Delorey Avenue.
 - Head west on Evans Street to reach Route 3A
- Using Evans Street to connect to Route 3A also presents two options:
 - Continuing all the way north on Evans Street to Route 3A at the lighted intersection with an existing crosswalk. This would allow access to King's Cove Park and beach.
 - Turning north on Johnson Road at the intersection of Evans Street and Wachusett Road – This would require a new crossing on Evans Street at Johnson Road.

Pedestrians could then reach Route 3A at the lighted intersection with an existing crosswalk at Birchbrow Avenue.
- Connect west/north on Evans Street to Route 3A with sidewalk on both sides
- Crossing at the lighted intersection with access to Kings Cove Park (a conservation restriction on Calpine Fore River Energy parcel #6-63-3.
- East/north along King's Cove beach and Kings Cove Beach Road (a private way with no sidewalk; gravel roadbed)
- South on Birchbrow Avenue (no sidewalk) to connect back to Route 3A and points south.

End of memo

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Weymouth Fore River Walking Path Study

Route 3A/King's Cove to the Kibby Property (Phase 3)

29 July 2020

Memo

KZLA was hired by the Town of Weymouth to review the feasibility of creating a new pedestrian trail which would connect the existing Town-owned parcels from King's Cove north of Route 3A to the Kibby Property at the eastern end of Route 3A. This is an extension of the studies previously conducted for Phase 1 (Weymouth Landing Fore River Canoe Launch to Cadman Conservation Area) and Phase 2 (Cadman Conservation Land to Lovell's Grove/King's Cove Park).

The Vision

The town requested that KZLA continue the study to connect existing Town-owned properties through the North Weymouth neighborhood north of Route 3A to the Kibby Property. From here the trail would effectively connect to the Back River Trail through Great Esker Park.

North of Route 3A, the Town owns and provides access to a collection of properties managed by the Conservation Department, the School Department, and the Recreation Department. There are also two significant State Park properties north of Route 3A (Abigail Adams State Park and Webb Memorial State Park). Connecting these properties together by means of trails and or sidewalks gives them greater access to the residents of Weymouth without relying on cars to access them. These connections would allow residents to walk, bike, or use a combination of MBTA bus routes and walking/biking. It makes these Town-owned spaces more available and accessible to everyone.

This proposal connects the following Town-owned properties and State Park facilities which provide natural, scenic, and historic resources, as well as opportunities for recreation:

- King's Cove Park
- Lovell's Grove
- The beach at Fore River Avenue
- Wessagussett Wetlands & Woodlands
- Wessagussett Elementary School
- Great Hill Park
- O'Sullivan Playground
- Wessagussett Beach
- George E. Lane Beach
- Kibby Property
- Webb Memorial State Park
- Abigail Adams State Park

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and steep approach. The steep gradient of Baylee and the overgrowth make it difficult and uncomfortable to walk up.

Consider creating a pedestrian trail which can access the top of Great Hill Park so that visitors can enjoy the spectacular views of the Boston skyline, the Harbor Islands Quincy Bay, Hingham Bay, and Boston Harbor. The two existing roads follow what appear to be the more gradual slopes up to the top of the hill, but the west side provides ample room for a switchback path despite the steeper grades on this side of the hill. An alternative trail possibility would be to connect off the parking lot on the shelf of Wessagussett Road up the hill, but a trail from this location would have to be studied to ensure that pedestrians egressing the trail do not distract from the viewshed once atop Great Hill.

3. When sidewalks do not exist, but destinations cannot be reached other than walking in the road, sidewalks should be installed for pedestrian safety. If sidewalks with curbs are undesirable, a striped walking lane, similar to what was installed at Osprey Overlook Park, could be considered, with the understanding that if this striped walking lane is adjacent to residences, these lanes could often be blocked by parked vehicles if there is no vertical curb to prevent it. Streets, or segments thereof, that meet these categories include:
 - Babcock Avenue from Bayview Street to King's Cove
 - Fore River Avenue
 - Pilgrim Road
 - Wessagussett Road from Pilgrim Road to Regatta Road
4. A public access point into the Kibby Property from Neck Street would better connect Kibby and Abigail Adams State Park to the rest of the properties in the study area. The Town owns parcel #5-13-46 which is just to the north of the Saltwater Creek residences, however, the Saltwater Creek property is clearly labeled no trespassing despite being one of only two pedestrian access points to the Kibby Property.

To gain access from this parcel to Kibby would require a bridge over the creek outlet, a boardwalk, and an access easement from the Saltwater Creek residences property.

An alternative to using parcel #5-13-46 would be to gain an access easement/conservation restriction from the U-Haul property (parcel #5-13-7) at the rear of the facility which is currently undeveloped (more than 2 acres of undeveloped land.) The property lines and development of the Saltwater Creek residences and the U-Haul facility are quite tight to the wetland at the northwest corner of this parcel but further study can show the ability to create a trailhead at this location, if the owners of the parcel are amenable.

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5. King's Cove Road could be considered as a trail given that it is a private road, not paved, and occasionally impassable at storm tides.
6. Crosswalks are recommended at all road crossings included along the identified pedestrian route.

End of memo

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Weymouth Fore River Trail Feasibility Study
29 July 2020 (REV 13 August 2020)

Study Summary Memo, Phases 1 - 3

This study is, in part, based on the vision of Weymouth resident Matt Tallon and other Idlewell neighborhood residents who approached the Town to develop a Fore River Trail that balances the Back River Trail on the eastern border of Weymouth. The vision was originally to create a trail connecting the Town-owned Weymouth Landing Boat Launch near the MBTA commuter rail station along the Fore River to the Cadman Conservation Area. However, as the study progressed, it was easy to see how a larger network could be created using existing Town-owned resources (park lands, conservation lands, and sidewalks).

Interconnecting these properties essentially turns the destinations into one large resource which provides diverse recreational, natural, and cultural opportunities to the residents of Weymouth while reducing reliance on personal vehicles to access these sites. On a smaller scale, this network reflects the community connectivity that Frederick Law Olmsted designed for the City of Boston with the Emerald Necklace. The Town of Weymouth has several fantastic resources, but many of them are unknown to residents who live in different parts of Town. This network, with well published mapping, can make these resources more available, better appreciated, and more accessible to all the residents of Weymouth.

This summary memo combines the proposals of the three phases of study and creates a short-term strategy and a long-term strategy. The short-term strategy assumes that the Town will utilize only the existing public lands and public roadways in combination with private roadways only when other options are not available. The short-term strategy does also propose infrastructure improvements such as updated sidewalks and new crosswalks, as well as points for water access or trail improvements. The long-term strategy looks at parcels which the Town might consider acquiring or obtaining conservation restrictions or access easements. Of particular interest to the long-term planning are those parcels currently owned by utility companies. Many of these small parcels have no existing infrastructure or development and may be readily available for acquisition, and and/or National Grid or Eversource may have an interest in allowing or formalizing public access onto their properties. Many communities in Massachusetts have combined conservation land with utility infrastructure.

Study Area

The study includes both the northwestern edge of the Town along the Fore River, and the natural, recreational, and cultural properties of North Weymouth and the Landing. The eastern border along the Back River already has Great Esker Park and the Back River Trail which is nearly completed from the Kibby Property to Osprey Overlook Park. Therefore, connections between the lands along these two rivers and those in between them would greatly benefit the residents of Weymouth.

(Given that this summary is being produced after the publication of the 2020 Open Space & Recreation Plan (dated, April 7, 2020; and, hereafter “the Open Space plan”) prepared for the Town by Horsley

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Witten Group, this document relies on the Open Space plan for understanding of management of Town-owned properties.)

Town-owned parks, conservation land, school grounds, and other parcels connected by proposed trail, including State Parks managed by the Department of Conservation & Recreation:

<u>Property</u>	<u>Management</u>
• Abigail Adams State Park	Commonwealth of MA, DCR
• Abigail Adams Birthplace	Privately owned
• Abigail Adams Village Green	Recreation Department
• Beals Park	Recreation Department
• Cadman Conservation Area	Conservation Commission
• Fore River Canoe Launch	Recreation Department
• George E. Lane Beach	Recreation Department
• Great Esker Park	Recreation Department
• Great Hill Park	Recreation Department
• James T. O'Sullivan Playground	Recreation Department
• Johnson Early Childhood Center	School Department
• Julia Road Playground/Park	Recreation Department
• Kibby Property	Conservation Commission
• King's Cove Park	Privately owned, permanent CR*
• Leo Madden Field	Recreation Department
• Lovell's Grove	Privately owned, permanent CR*
• Newell Playground	Recreation Department
• Old North Burial Ground/North Weymouth Cemetery	Privately owned
• Webb Memorial State Park	Commonwealth of MA
• Webb Park	Recreation Department
• Wessagussett Beach	Recreation Department
• Wessagussett Primary School	School Department
• Wessagussett Woodlands	Conservation Commission

*CR = Conservation restriction

Other Town-owned land in the study area:

<u>Location</u>	<u>Parcel</u>	<u>Use potential</u>	<u>Connectivity potential</u>
• Brewster Rd	10-82-9, -13, -17	Fishing/birding	n/a
• Bridge Street/King's Cove	6-62-8	Views/parking	Access to King's Cove
• Commercial/Gibbens Street	16-208-8	Birding/wildlife	Abuts Webb Park
• Gilmore St/Woronoco Rd	10-80-16, -9	Boat launch	Access to Fore River
• Hibiscus Road	12-145-2, -9	Views/birding	Access to Cadman CA
• Hibiscus Road	146-2, -3, -4	Views/birding	Access to Cadman CA
• Neck Street	5-13-46	Conservation	Access to Kibby
• Paomet Rd	4-36-16, -17	Conservation/wildlife	n/a
• Pratt's Meadow*	7-103-4, 8-103-50	Conservation/wildlife	JECC to Great Esker
• Woronoco Rd/Stratford Rd	10-79-3	Boat launch	Access to Fore River

*Pratt's Meadow is signed on Donnellan Circle as Howard Evirs Conservation & Wildlife Sanctuary

Short-term Planning

Goals

1. A goal for the short-term should be to provide residents access to existing parks, playgrounds, natural resources, etc. without relying on vehicles to get there, but – where feasible and not at a detriment to the resource – provide limited parking, especially for those with mobility impairments.
2. Prioritize the use of existing sidewalks for safety and only Town-owned land in the short-term, to develop the trail network with limited funding.
3. Focus trail routes on roads with existing sidewalks but consider other streets where sidewalks do not exist when no other potential access is available. (Such roads included on the trail route are relatively low-volume side roads.) Despite the fact that several of the roads proposed for access do not have existing sidewalks, this recommendation has made the assumption that the Town does not want to take on liability of encouraging pedestrians to walk in the street without designated lanes. Therefore, it is recommended that sidewalks, or designated walking lanes (similar to the connection between the two parking areas at Osprey Overlook Park) be installed for pedestrian safety.
4. Provide new facilities for fishing/boating and/or for access to water's edge at coastal locations. In the study area there is currently only one town-owned boat access point: the Fore River Canoe Launch in the Landing. Water access should be a priority in the study area.
5. Any recommended road crossings that do not currently have crosswalks, should be updated for safe pedestrian crossing.
6. When possible, create new off-road connections that do not use sidewalks to allow residents to access Town-owned lands.
7. No land acquisitions or easements
8. Support trail connections with online mapping and simple, but clear wayfinding signage.

Streets/sidewalks proposed for trail connections

As the Town sidewalks will make-up a substantial portion of the trail network in the short-term, they should be improved as necessary to be safe and universally accessible. Bearing in mind the Town's design standards and the available right-of-way of the roads listed below, sidewalks should meet the following guidelines: (a) be clear of obstacles and intrusions (fire hydrants, utility poles, street signs, etc.) to meet ADA Standards/ MAAB Guidelines for accessible routes; (b) have ADA/MAAB-compliant curb ramps and crosswalks; (c) consider vertical curbs to discourage residents from parking on and blocking sidewalks forcing pedestrians to walk in the roadway; (d) surfaces should be consistent and graded to meet ADA Standards/MAAB Guidelines for materials and maximum allowable slopes; and, (e) some sidewalks will need to have some vegetation management to keep the walkway clear.

Keep in mind, not all of these streets/sidewalks need to be included in the trail network, but they more that are, the most inclusive the network becomes. Each street and sidewalk should be individually

assessed for sidewalk condition, for cost to upgrade, and should be ranked for their potential to enhance the bigger network.

ROAD STREETS SIDEWALKS INCLUDED FOR PROPOSED TRAIL CONNECTIONS

<u>Street</u>	<u>Public/Private</u>	<u>Sidewalk quality</u>
• Babcock Street*	Public	Good to n/a
• Bayview Street	Public	Fair to poor
• Biscayne Avenue	Public	Fair
• Bradley Road*	Public	Fair to n/a
• Brewster Road*	Public	n/a
• Bridge Street/Route 3A	Public	Good
• Chandler Street*	Public	n/a
• Commercial Street	Public	Good
• Church Street	Public	Good
• Delorey Avenue	Public	Poor
• Evans Street	Public	Fair
• Fore River Avenue*	Public	n/a
• Idlewell Boulevard*	Public	n/a
• Idlewell Street	Public	Fair
• Johnson Road	Public	Fair
• Leonard Road	Public	Fair
• Litchfield Road	Public	Fair
• Lovell Road	Public	Good
• Narragansett Avenue	Public	Good
• Neck Street	Public	Good
• North Street	Public	Good to fair
• Norton Street	Public	Fair
• Pearl Street	Public	Good to fair
• Piedmont Street	Public	Good to fair
• Pilgrim Road*	Public	n/a
• Pleasantview Avenue	Public	Fair
• Regatta Road**	Public	Fair
• River Street	Public	Good
• Sea Street	Public	Fair
• Wadaga Road	Public	Fair
• Wessagussett Road**	Public	Good to n/a
• Woronoco Road*	Public	n/a

*Priority sidewalk need based on lack of another safe pedestrian access to access specific property

** Wessagussett Road from North Street to Regatta Road will be less essential once the Wessagussett Walkway has been constructed and provides an accessible pedestrian connection between Wessagussett Beach and George E. Lane Beach.

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connectivity potential for the trail will be maintained to two-lane road for public access to the following streets:

<u>Street</u>	<u>Connectivity potential</u>
• Baylee Road	Access to Great Hill Park
• Kings Cove Beach Road	Access to beach & views
• Laudervale Road	Access to Cadman Conservation

Recommended improvements in short-term:

- Boat launch and minimal parking at Woronoco Road/Gilmore Street. Requires permitting. Order of magnitude cost: \$20,000-30,000 depending on size. (It has been noted that since the Fore River is tidal and the fluctuations of grades, this will need to be carefully studied to determine if it is feasible.)
- Trail connection between Woronoco Road and Gilmore Street at the Fore River. Requires permitting. Order of magnitude cost: \$2,500-\$7,500 depending on trail material and alignment. It has been noted that since the Fore River is tidal and the fluctuations of grades, this will need to be carefully studied to determine if it is feasible.)
- Trail connection from North Street and/or Wessagussett Road to Great Hill Park. No permitting required. Order of magnitude cost: dependent on route followed. Consider volunteer efforts and/or grants for funding.
- Crosswalks should include striping of the street and ADA curb ramps at either end. No permitting required. Order of magnitude cost (assumes public bid contractor but could be undertaken overtime by Weymouth DPW): \$3,000 per crossing.
- Wayfinding signage and mapping will be especially important for sidewalk connections when the intended trail connection is not obvious. Wayfinding signage can incorporate online mapping and need only include small trail network maps at key locations combined with regular blazing of trail routes. Markers can be simple: a 3" diameter trail marker with a clear logo can be posted on utility poles and/or street signs, or even simple spray-painted logo made with a simple pattern on the sidewalks themselves. No permitting required. Order of magnitude cost: dependent on materials, medium, spacing, etc.

Long-term planning

Goals

- Expand the off-road opportunities for recreation and connectivity between those parcels identified on page 2 of this memo.
- Work with utility companies to secure access through easements or conservation restrictions or acquire land parcels without infrastructure to provide additional off-road opportunities and to expand the trail system.
- Provide enhanced infrastructure (i.e. boardwalks) to improve connectivity and pedestrian experience through the network.

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Appendix F of the 2020 Open Space plan is a “Draft Land Acquisition Criteria”. This recommends a ranking system for the consideration of the Town acquiring parcels. Most of the parcels listed below for consideration meet several of the criteria, including (1) providing access to coastline, river, or waterfront; (2) containing floodplains; (3) abutting other permanently protected or Town-owned land; (4) wildlife corridor; (5) contains significant scenic landscapes or vistas; (6) contains existing trails or other recreational features; (7) provides means of public access; (8) contains historical, cultural, and archaeological significance; (9) connects areas of recreational interest; and, possibly other criteria.

Consider land acquisitions on the following properties:

<u>Property</u>	<u>Parcel</u>	<u>Use potential</u>	<u>Connectivity potential</u>
• Privately-owned (Red Pier)	12-140-5	Boat launch	n/a
• MECo/National Grid parcels	12-133-4, 8	Trails	Idlewell to Cadman
• MECo/National Grid parcels	13-132-3, 7, 10	Trails	Idlewell to Cadman
• Privately-owned	13-132-21	Trails	Idlewell to Cadman
• MECo/National Grid parcel	13-130-17	Conservation/trails	Idlewell to Cadman
• Privately-owned	13-131-1,2,3,4	Conservation	n/a
• Privately-owned	12-147-9	Trails	Hibiscus to NStar plot
• NStar parcels	12-145-1, 146-1	Conservation	n/a
• Privately-owned	10-130-19	Conservation	n/a
• MECo/National Grid parcel	10-130-10	Conservation/views	Norton to Cadman

Consider easements, restrictions or assessments on the following properties:

<u>Property</u>	<u>Parcel</u>	<u>Use potential</u>	<u>Connectivity potential</u>
• NStar parcel	16-151-1	Trails	Access to Fore River
• NStar parcel (transmission lines)	16-215-3	Trails	Access to Cranberry Pond Park
• Privately-owned*	13-156-5, 28, 38	Trails	Access to Cadman
• Privately-owned*	13-155-28	Trails	Access to Cadman
• Privately-owned (Bicknell School)**	7-84-2	Trails	Access to Route 3A
• Privately-owned (UHaul)	5-13-7	Trails	Access to Kibby property

*Existing sewer easement on these properties which are slated for development

**Existing parking, utility, drainage, and access easements on this property

Consider sidewalks included for proposed trail connections (in addition to those listed for short term):

<u>Street</u>	<u>Public/Private</u>	<u>Sidewalk quality</u>
• Hibiscus Avenue	Public	n/a
• Idlewell Boulevard	Public	n/a

Consider converting from private way to Town-owned street and add a sidewalk for public access:

<u>Street</u>	<u>Connectivity potential</u>
• Regina Road*	Access to NStar parcel from Commercial Street

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- Edison Road Access between Idlewell & Commercial Street
- Biscayne Avenue Access to Cadman Conservation from Idlewell
- Montcalm Street Access to Cadman Conservation from Idlewell
- Trefton Avenue** Access to Cadman Conservation from Idlewell
- Laudervale Road Access from Cadman Conservation to Norton Street

*Regina Road currently has a gate where the road dead ends at the NStar parcel under the railroad tracks which restricts both pedestrian and vehicular access. If access is permitted for recreation on the NStar parcel, pedestrian access at this point is critical so that visitors do not have to cross the railroad tracks.

**Trefton Avenue has not been developed completely and is still a paper road towards the center. It does not currently connect through.

Recommended improvements in long-term:

- a. Repair/remove dilapidated concrete bridge structure. Possibility that NStar would have interest in repairing bridge structure as this is part of their access. Requires permitting. Order of magnitude cost: highly dependent on structural assessment, condition of existing structure, and proposed method of repair/replacement.

The replacement of the bridge, if no longer required for vehicular access, the bridge could be replaced with a boardwalk/trail system where floods in hightide. Approximate boardwalk length is 325 linear feet with grade change for accessibility. Requires coordination with property owner. Required permitting. Order of magnitude cost: dependent on permitting and design variables, assume \$125,000-\$175,000 + design costs (assume 10%).

Trail improvements should include upgrade to access drives similar to what was completed at Osprey Overlook Park. Approximate length of trail improvement is 2,000 linear feet of. The parcel is included in FEMA National Flood Hazard Zone. Permitting required. Order of magnitude cost: dependent on permitting and design variables, \$15,000- \$20,000 + design costs (assume 10%).

- a. Creation of a boardwalk across the salt marsh near the end of Montcalm Street. A boardwalk could follow the existing sewer easement which connects across the marsh to another National Grid/Mass Electric Co. parcel (10-130-10) and a privately held, but undeveloped parcel (10-130-19) which would provide direct access to Laudervale Road and then Norton Street. Approximate boardwalk length is 1,150 linear feet. Permitting required. Order of magnitude cost: highly dependent on permitting and design variables, assume \$500,000-\$625,000 + design costs (assume 10%).
- b. Parking/access at Bicknell School residences. Requires opening gate on Lochmere and clearing of existing vegetation. Parking area is already paved. Requires coordination with property owner. No permitting required. Order of magnitude cost: \$5,000.
- c. Trail along National Grid parcels connecting Chandler Street/Pleasantview Avenue to Trafton Avenue/Mountcalm Street. Approximate length of trail is 925 linear feet. Requires coordination with property owner. No permitting required. Order of magnitude cost: \$7,500.
- d. Formalize trail from Hibiscus to NStar property. Much of this alignment is passable during non-storm tides, but it should be formalized and made accessible for all. Approximately length of trail is 985

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linear feet. Consider acquiring parcel #12-147-9 for flexibility with design and layout. Permitting required. Order of magnitude cost: \$10,000, not including land acquisition.

- e. Trail from Neck Street to Kibby Property. A trail from Neck Street to the Kibby property line is approximately 550 linear feet. And alternative is to create a boardwalk over the wetland area. The boardwalk would be approximately 215 linear feet, reducing the trail to only 275 linear feet. The boardwalk would have greater cost and permitting implications but may also provide greater recreational and scenic opportunities. Requires coordination with property owner. Permitting required for either option. Order of magnitude cost: highly dependent on design variables, assume \$10,000-\$100,000 + design costs (assume 10%).
- f. Crosswalks should include striping of the street and ADA curb ramps at either end. No permitting required. Order of magnitude cost (assumes public bid contractor but could be undertaken overtime by Weymouth DPW): \$3,000 per crossing.
- g. Wayfinding signage and mapping will be especially important for sidewalk connections when the intended trail connection is not obvious. Wayfinding signage can incorporate online mapping and need only include small trail network maps at key locations combined with regular blazing of trail routes. Markers can be simple: a 3" diameter trail marker with a clear logo can be posted on utility poles and/or street signs, or even simple spray-painted logo made with a simple pattern on the sidewalks themselves. No permitting required. Order of magnitude cost: dependent on materials, medium, spacing, etc.

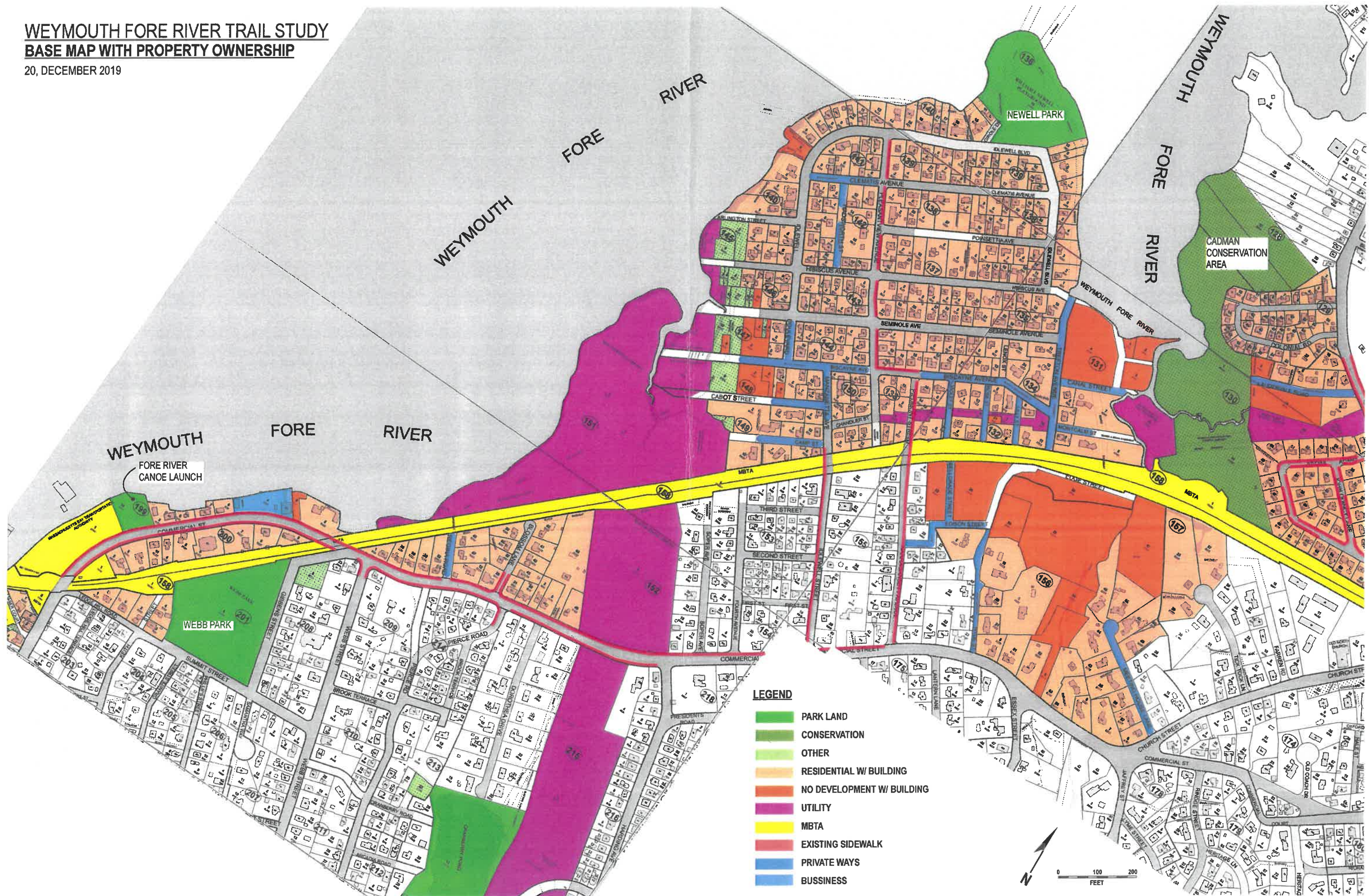
RECOMMENDATIONS

1. If pedestrian access could be granted from National Grid on the transmission lines, there could be access to Cranberry Pond Park.
2. There is a potential to create a trail spur along Philip's Creek which would connect to Pratt's Meadow. However, as this would require an easement or conservation restriction on privately-owned residential property (parcel #10-102-10, and potentially parcels #10-102-12 and/or 10-102-13, as well) this seems to be less desirable spur that may be difficult to obtain.
3. Certain of the streets included in the study area are wide enough to potentially accommodate bike lanes, for example Norton Street/Pearl Street. The arterial roads should be further studied to see if bike lanes would be desirable to enhance the trail system. They may also be eligible for grant funding.
4. The study area was intended to stay contained north of Commercial Street and the MBTA tracks and in North Weymouth. But once the mapping of the various Town-owned properties and highlighting existing sidewalks, it is difficult to stop making the connections. It would be easy to connect Commercial Street to King Hill Oak Park to Legion Field to Town Hall and the Abigail Adams School and East Street to Wharf Street to Osprey Overlook Park. The walkability of much of Weymouth would make so many of these parcels available to many of the residents.

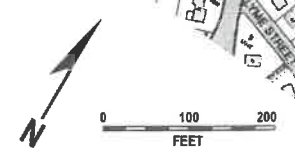
End of memo

**WEYMOUTH FORE RIVER TRAIL STUDY
BASE MAP WITH PROPERTY OWNERSHIP**

20, DECEMBER 2019



- LEGEND**
- PARK LAND
 - CONSERVATION
 - OTHER
 - RESIDENTIAL W/ BUILDING
 - NO DEVELOPMENT W/ BUILDING
 - UTILITY
 - MBTA
 - EXISTING SIDEWALK
 - PRIVATE WAYS
 - BUSSINESS

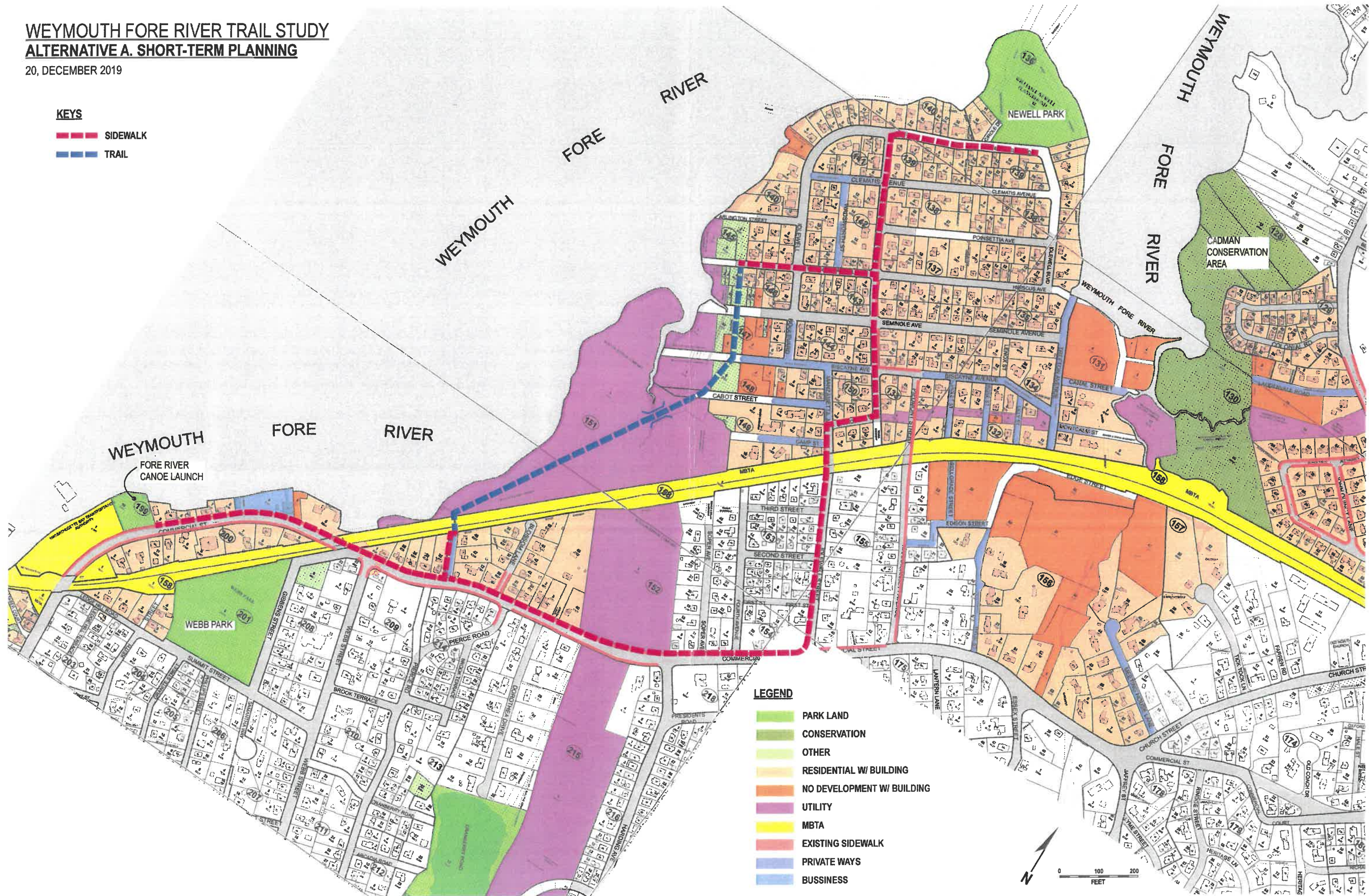


WEYMOUTH FORE RIVER TRAIL STUDY ALTERNATIVE A. SHORT-TERM PLANNING

20, DECEMBER 2019

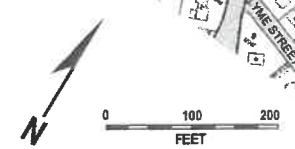
KEYS

- SIDEWALK
- TRAIL



LEGEND

- PARK LAND
- CONSERVATION
- OTHER
- RESIDENTIAL W/ BUILDING
- NO DEVELOPMENT W/ BUILDING
- UTILITY
- MBTA
- EXISTING SIDEWALK
- PRIVATE WAYS
- BUSSINESS

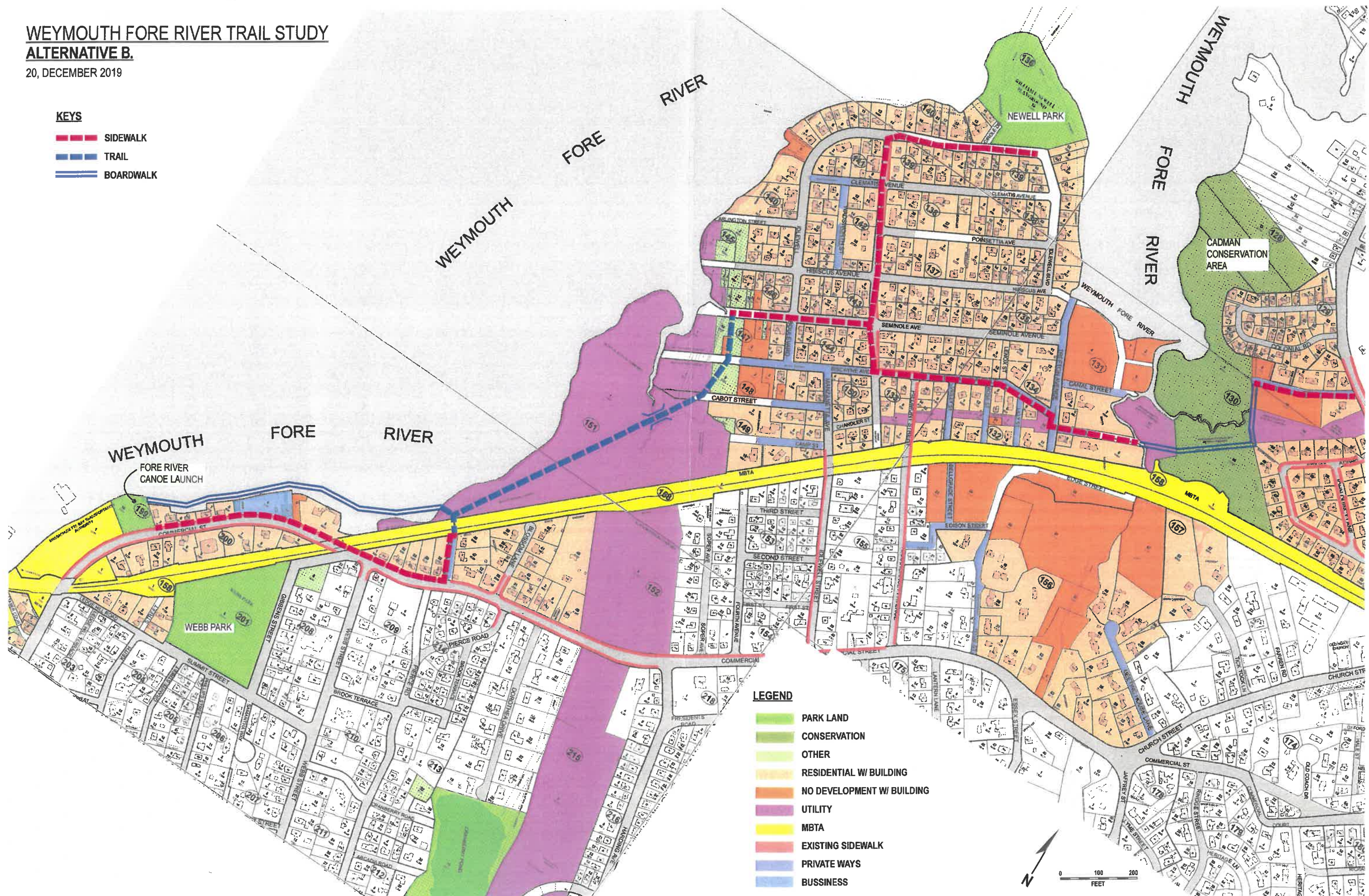


WEYMOUTH FORE RIVER TRAIL STUDY ALTERNATIVE B.

20, DECEMBER 2019

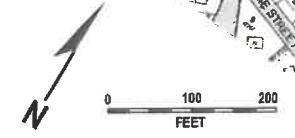
KEYS

-  SIDEWALK
-  TRAIL
-  BOARDWALK



LEGEND

-  PARK LAND
-  CONSERVATION
-  OTHER
-  RESIDENTIAL W/ BUILDING
-  NO DEVELOPMENT W/ BUILDING
-  UTILITY
-  MBTA
-  EXISTING SIDEWALK
-  PRIVATE WAYS
-  BUSSINESS

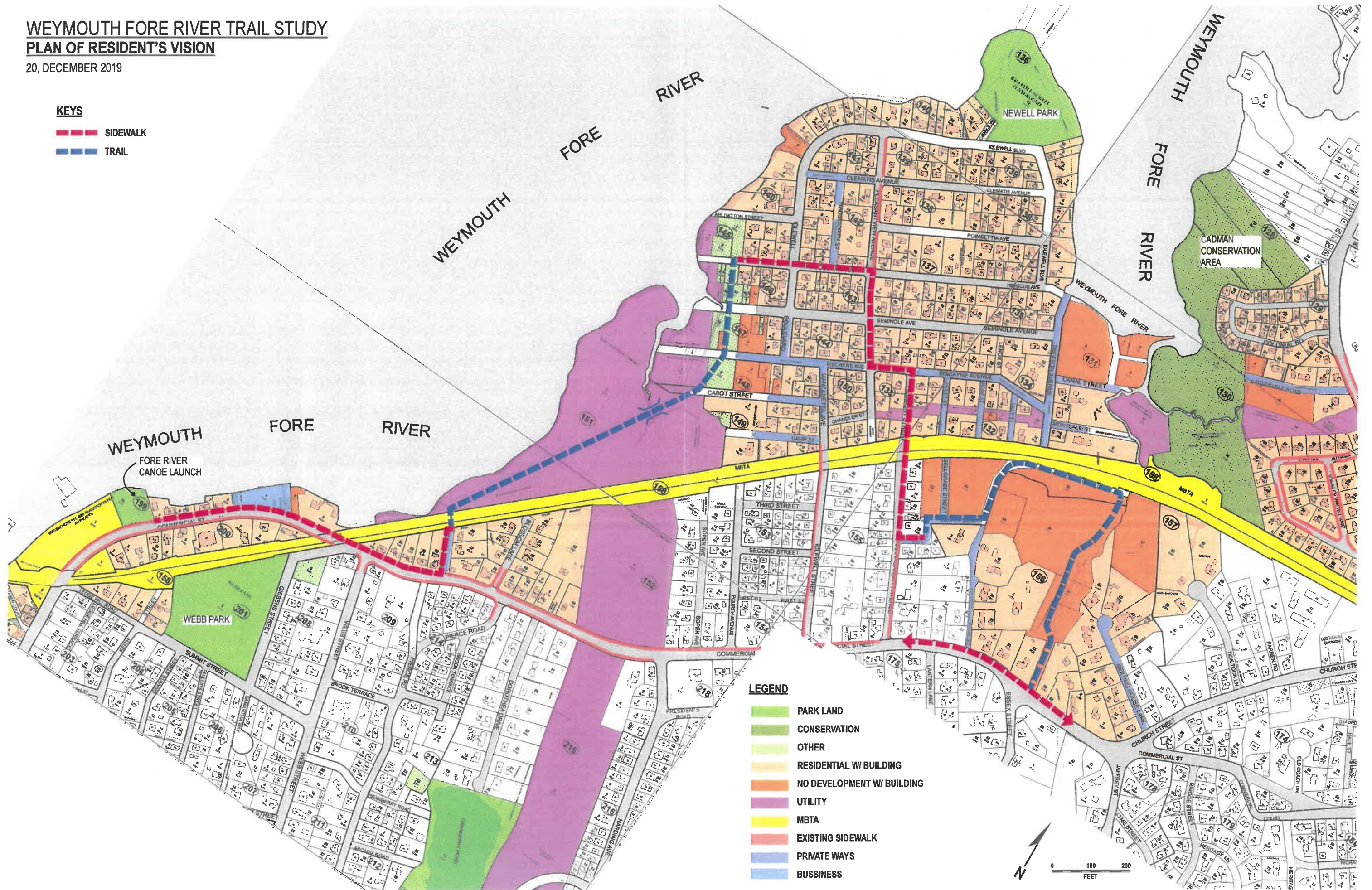


WEYMOUTH FORE RIVER TRAIL STUDY PLAN OF RESIDENT'S VISION

20, DECEMBER 2019

KEYS

- — — SIDEWALK
- — — TRAIL

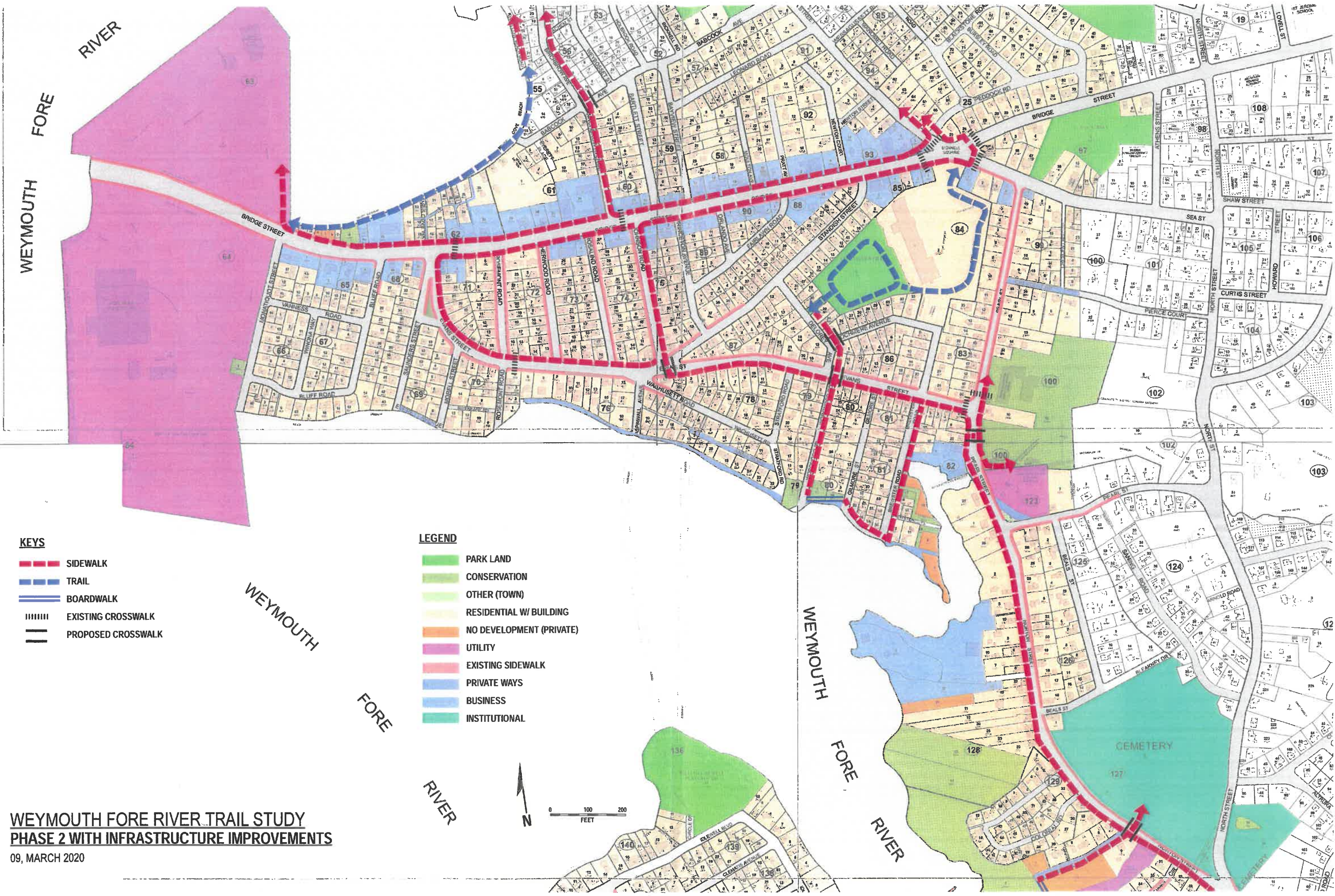


LEGEND

- PARK LAND
- CONSERVATION
- OTHER
- RESIDENTIAL W/ BUILDING
- NO DEVELOPMENT W/ BUILDING
- UTILITY
- MBTA
- — — EXISTING SIDEWALK
- — — PRIVATE WAYS
- — — BUSSINESS

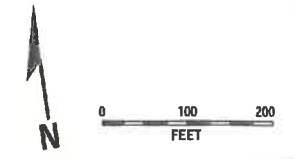


0 100 200
FEET



- KEYS**
- - - SIDEWALK
 - - - TRAIL
 - = = = BOARDWALK
 - EXISTING CROSSWALK
 - PROPOSED CROSSWALK

- LEGEND**
- PARK LAND
 - CONSERVATION
 - OTHER (TOWN)
 - RESIDENTIAL W/ BUILDING
 - NO DEVELOPMENT (PRIVATE)
 - UTILITY
 - EXISTING SIDEWALK
 - PRIVATE WAYS
 - BUSINESS
 - INSTITUTIONAL



WEYMOUTH FORE RIVER TRAIL STUDY
PHASE 2 WITH INFRASTRUCTURE IMPROVEMENTS
 09, MARCH 2020

**WEYMOUTH FORE RIVER TRAIL STUDY
BASE MAP WITH PROPERTY OWNERSHIP**

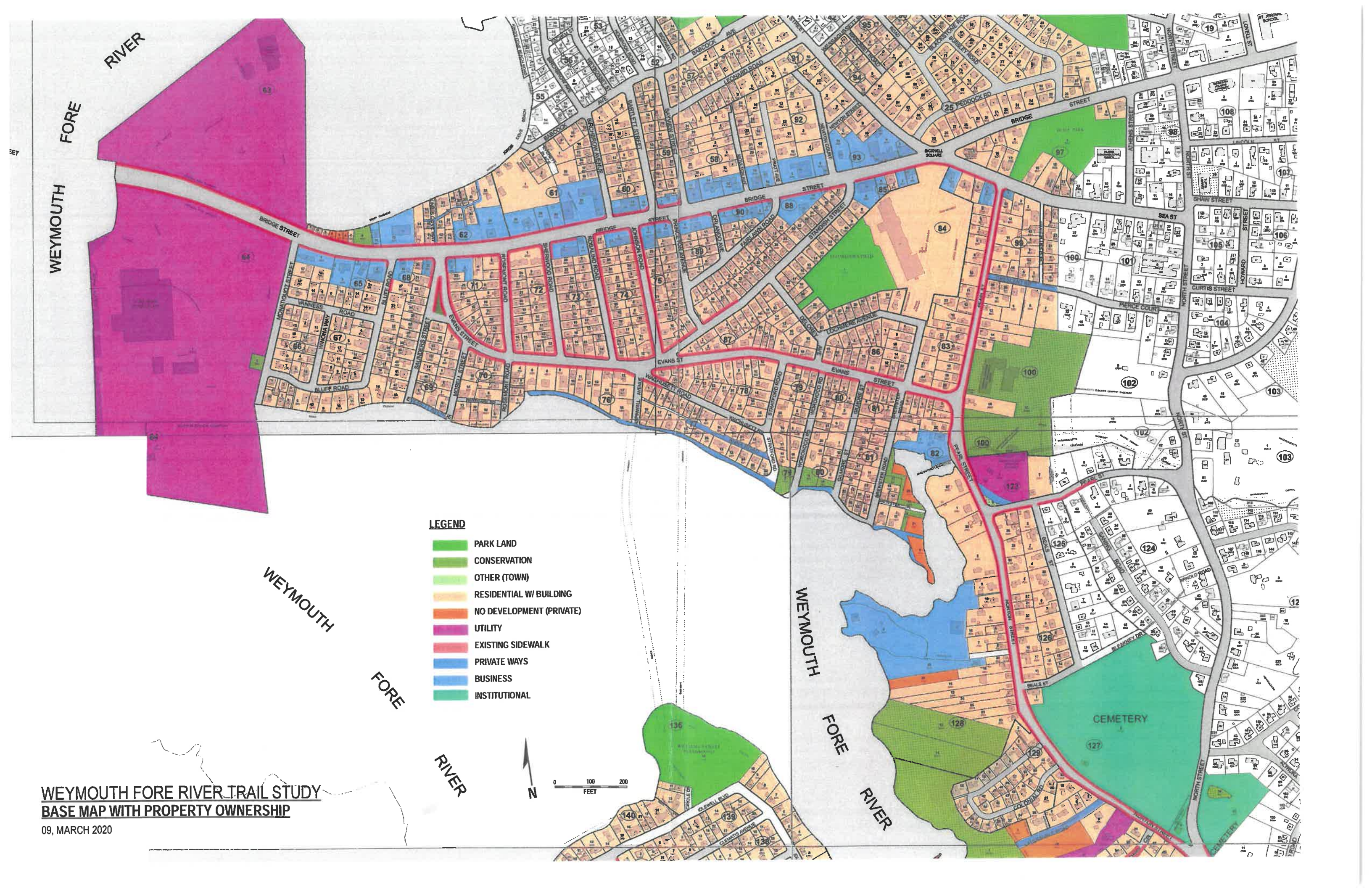
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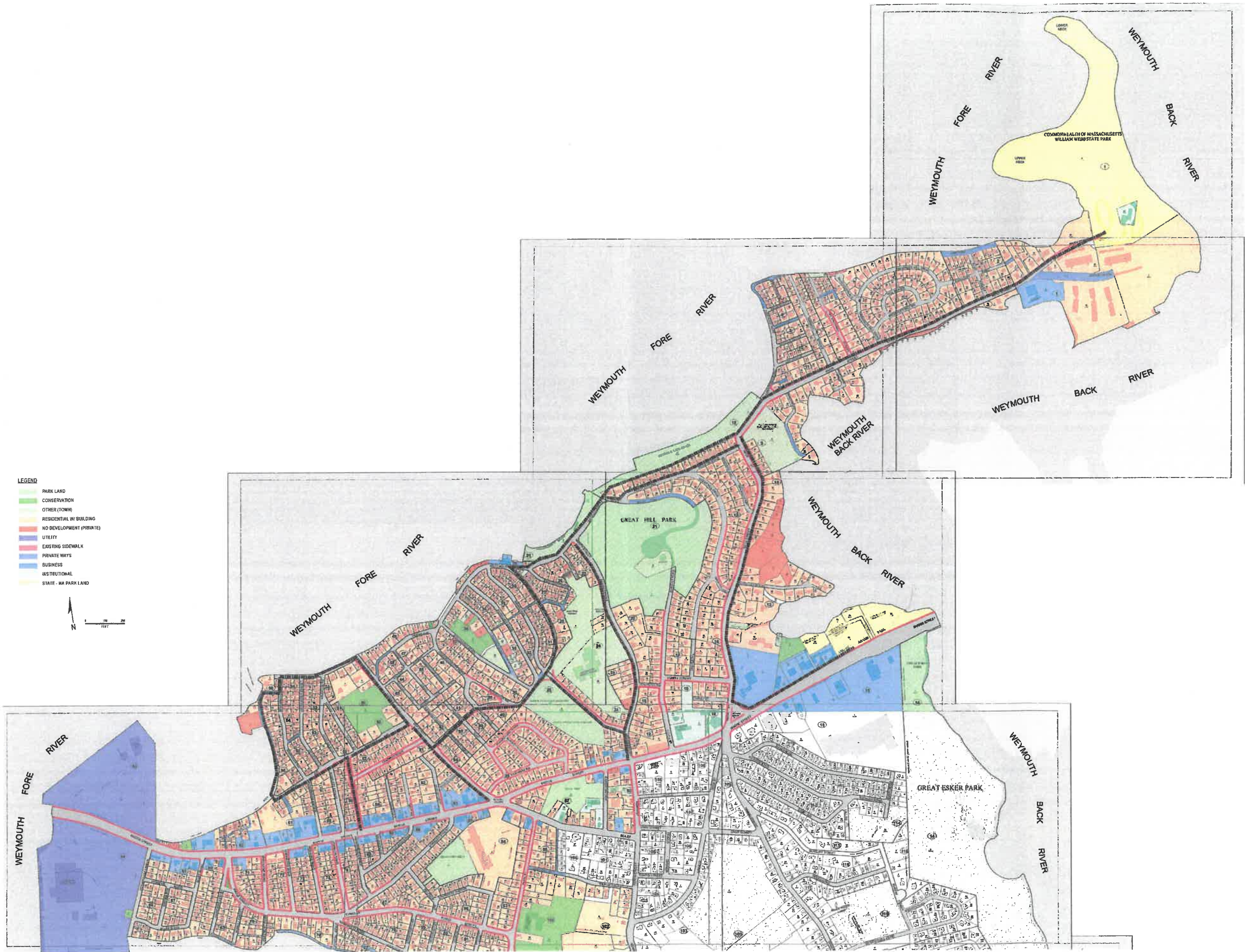
LEGEND

-  PARK LAND
-  CONSERVATION
-  OTHER (TOWN)
-  RESIDENTIAL W/ BUILDING
-  NO DEVELOPMENT (PRIVATE)
-  UTILITY
-  EXISTING SIDEWALK
-  PRIVATE WAYS
-  BUSINESS
-  INSTITUTIONAL

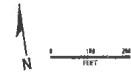


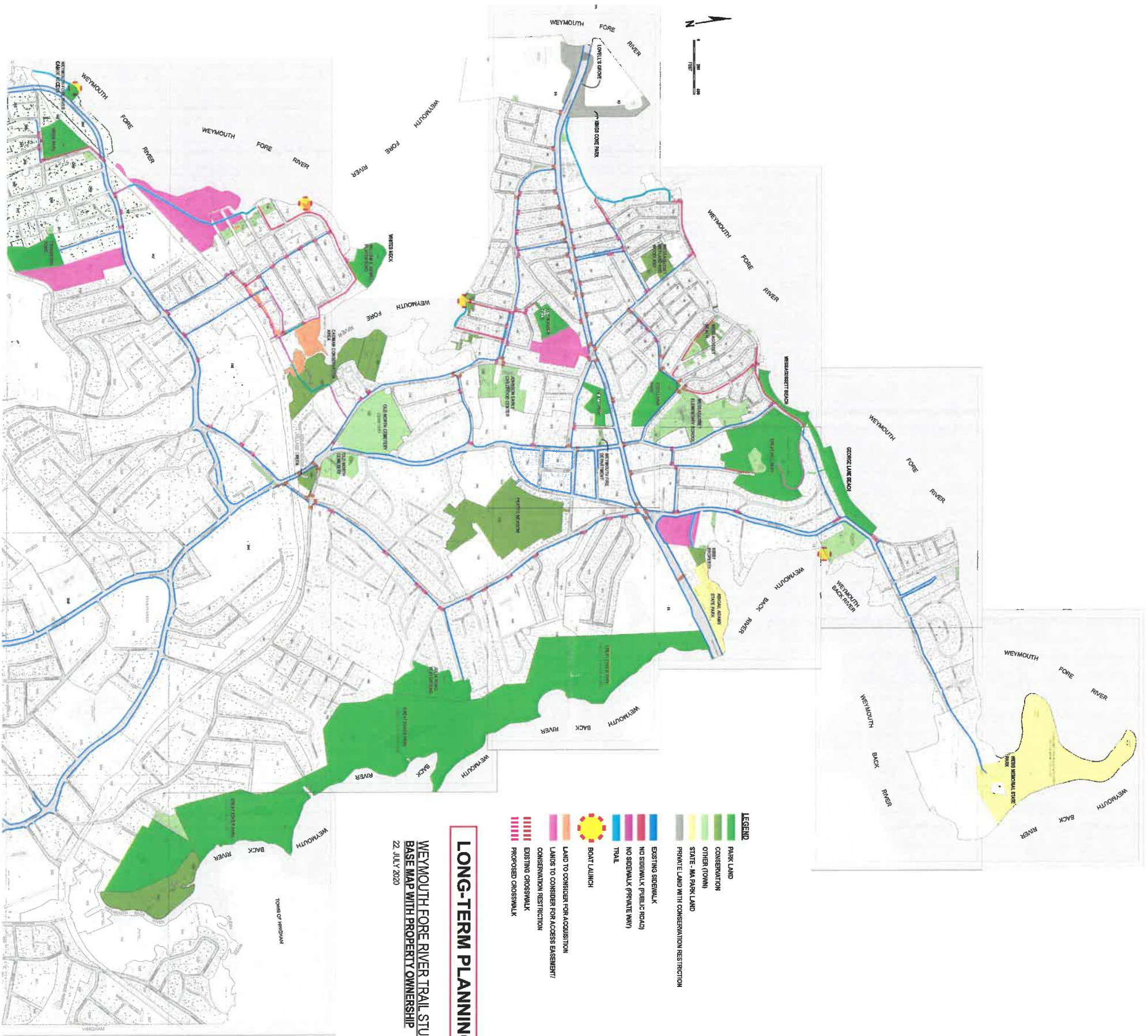
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FEET





- LEGEND**
- PARK LAND
 - CONSERVATION
 - OTHER (TOWN)
 - RESIDENTIAL W/ BUILDING
 - NO DEVELOPMENT (PRIVATE)
 - UTILITY
 - EXISTING SIDEWALK
 - PRIVATE WAYS
 - BUSINESS
 - INSTITUTIONAL
 - STATE - MA PARK LAND

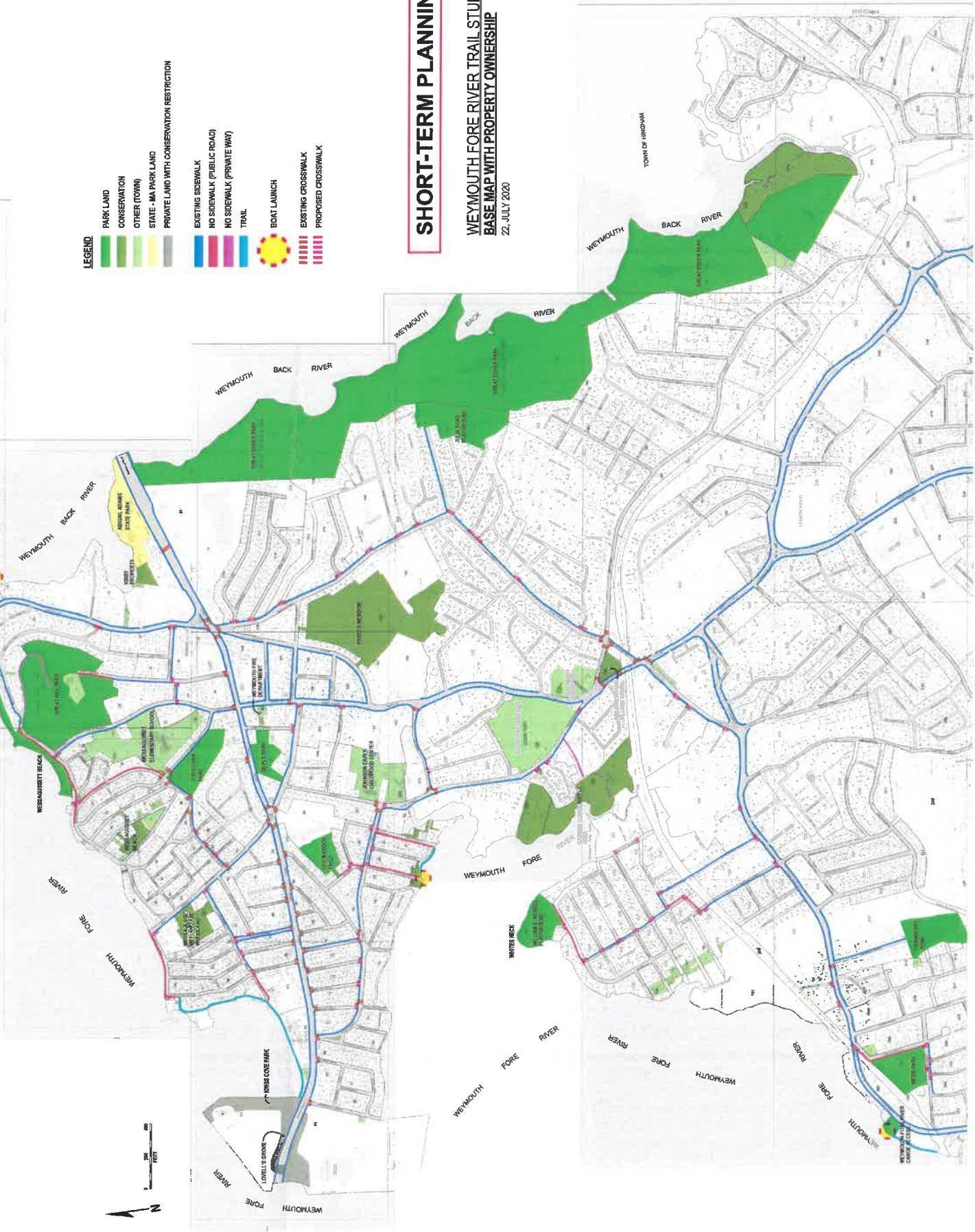
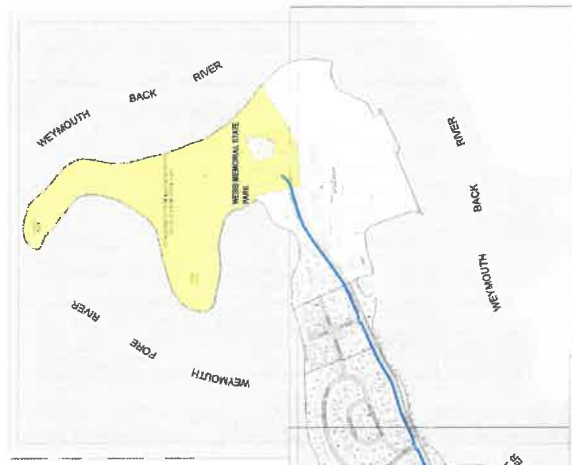




- LEGEND**
- PARK LAND
 - CONSERVATION
 - OTHER (OWN)
 - STATE - MA PARK LAND
 - PRIVATE LAND WITH CONSERVATION RESTRICTION
 - EXISTING SIDEWALK
 - NO SIDEWALK (PUBLIC ROAD)
 - NO SIDEWALK (PRIVATE WAY)
 - TRAIL
 - BOAT LAUNCH
 - LAND TO CONSIDER FOR ACQUISITION
 - LANDS TO CONSIDER FOR ACCESS EASEMENT/ CONSERVATION RESTRICTION
 - EXISTING CROSSWALK
 - PROPOSED CROSSWALK

LONG-TERM PLANNING

WEYMOUTH FORE RIVER TRAIL STUDY
 BASE MAP WITH PROPERTY OWNERSHIP
 22 JULY 2020



- LEGEND**
- PARK LAND
 - CONSERVATION
 - OTHER (TOWN)
 - STATE - MA PARK LAND
 - PRIVATE LAND WITH CONSERVATION RESTRICTION
 - EXISTING SIDEWALK
 - NO SIDEWALK (PUBLIC ROAD)
 - NO SIDEWALK (PRIVATE WAY)
 - TRAIL
 - BOAT LAUNCH
 - EXISTING CROSSWALK
 - PROPOSED CROSSWALK



SHORT-TERM PLANNING

WEYMOUTH FORE RIVER TRAIL STUDY
 BASE MAP WITH PROPERTY OWNERSHIP
 22, JULY 2020



**Woodard
& Curran**

woodardcurran.com