

Plymouth, MA

FERRY DOCK RESEARCH AND RECOMMENDATIONS



COMPREHENSIVE BOSTON HARBOR
WATER TRANSPORTATION STUDY
MARCH 2019



Table of Contents

PROJECT SCOPE	2
PLYMOUTH WATERFRONT	4
PLYMOUTH MARKET AREA	7
EVALUATION	9

Project Scope

The Comprehensive Boston Harbor Water Transportation Study was launched in July 2017 with the goal of developing business plans for sustainable new routes for ferry service in Boston Harbor and the surrounding area that could be implemented within the next five years. The initial phase of the planning study considered potential sites as far north as Gloucester and as far south as Provincetown. As a result of a series of water transportation stakeholder workshops, thirty sites were identified as candidates for new routes. Each of these was analyzed by the consultant team with research on the physical conditions of the dock site as well as the potential to attract sufficient ridership. The results of this work were presented at a water transportation open house in November 2017, where additional information about the sites was collected from public officials and residents. Data on potential rider preferences had also been collected from a regional stated preference survey conducted in August and September 2017.

A subset of fifteen docks were selected for additional analysis and ridership modelling. Ultimately six of those docks were selected for two new routes. Business plans were developed for those two routes: an Inner Harbor Connector linking Charlestown, downtown Boston, the Seaport, and East Boston as well as a Quincy route that connects Squantum Point with downtown Boston and Columbia Point in Dorchester.

In Plymouth, the State Pier and the Town Wharf were included among the thirty sites initially selected for analysis. Presented here are the findings from the research conducted between August and November of 2017. The site profile contains the following information with sources footnoted:

- Site Analysis
- Ferry Level of Service
- Transportation Access
- Recent and Planned Developments
- Demographics, including Population and Employment Characteristics
- Journey-to-Work
- Time Travel and Cost Comparisons
- Evaluation

For most of the sites, detailed travel time comparisons between a potential ferry service and existing transportation options are included.

By compiling this multi-faceted information for each of the thirty sites, the study evaluated all sites by the same basic criteria, which served to guide the selection of sites for more detailed modeling phases and for the development of new routes. The Plymouth sites were not selected for analysis beyond the initial phase because the commuter market to Boston from Plymouth and the surrounding area is insufficient to overcome the combination of the high operating costs and infrequent service. A market rate seasonal recreation ferry service similar to the two that connect Boston and Provincetown may be possible for the area. A subsidized commuter service would not be cost effective.

This report is designed to serve as an additional resource for considering modifications or additions to Plymouth ferry service in the future.

Listed below are the thirty sites for which dock profiles were completed. Sites with an asterisk (*) had regularly scheduled ferry service within Boston Harbor or to Boston in the summer of 2018 or at present. Sites with a caret (^) have a pier that has been used for ferry docking, though some of these are subject to tides.

Sites Recommended for Study by Workshop Participants

Municipality	Proposed Dock Locations
Gloucester	
Beverly	
Salem	Salem Ferry Terminal*
Lynn	Blossom Street Pier^
Winthrop	Winthrop Ferry Dock*
Chelsea	Mary O'Malley Park
Everett	Encore Boston Harbor
Boston	
- East Boston	Logan Airport Ferry Terminal* Lewis Mall Liberty Plaza
- Charlestown	Sullivan Square/Schrafts Navy Yard (Yard's End) Navy Yard/Pier 4* Navy Yard Pier 1^
- North Station	Lovejoy Wharf (North Station)*
- Downtown	Long Wharf North + South* Central Wharf* Rowes Wharf*
- Fort Point	Atlantic Wharf (South Station) Federal Courthouse/ Moakley^
- Seaport	Fan Pier (ICA)* World Trade Center West* World Trade Center East^ Dry Dock #4
- Dorchester	EDIC/Marine Industrial Park* Columbia Point at Fallon Pier^ UMass Boston at Fox Point^
Quincy	Marina Bay/Squantum Point*
Hingham	Hewitt's Cove*
Hull	Pemberton Point* Steamboat Wharf
Plymouth	State Pier and Town Wharf
Provincetown	MacMillan Pier*

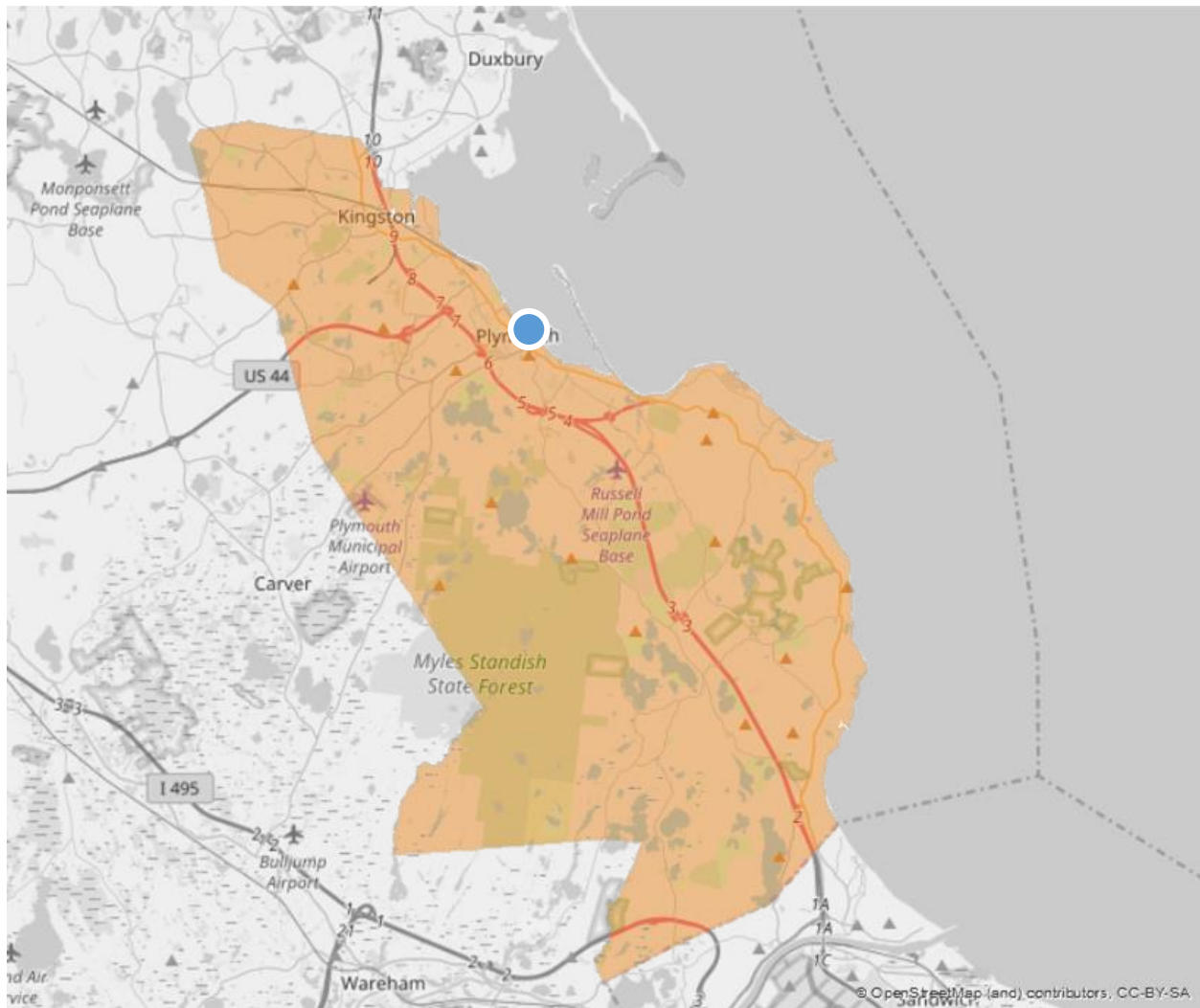
Plymouth Waterfront

Two sites were included in the analysis for Plymouth ferry service. The State Pier is the current location for the seasonal Provincetown Ferry and is next to the Plymouth Rock site. If expanded or year-round service is considered, the Town Wharf may be an alternative landing site with a better protected location for navigation.

The site analysis looks at each site in a side-by-side comparison. The remaining analysis considers the potential for ferry service from this South Shore community and the surrounding area.

Site Analysis

Map of Landing Site and Market Area¹

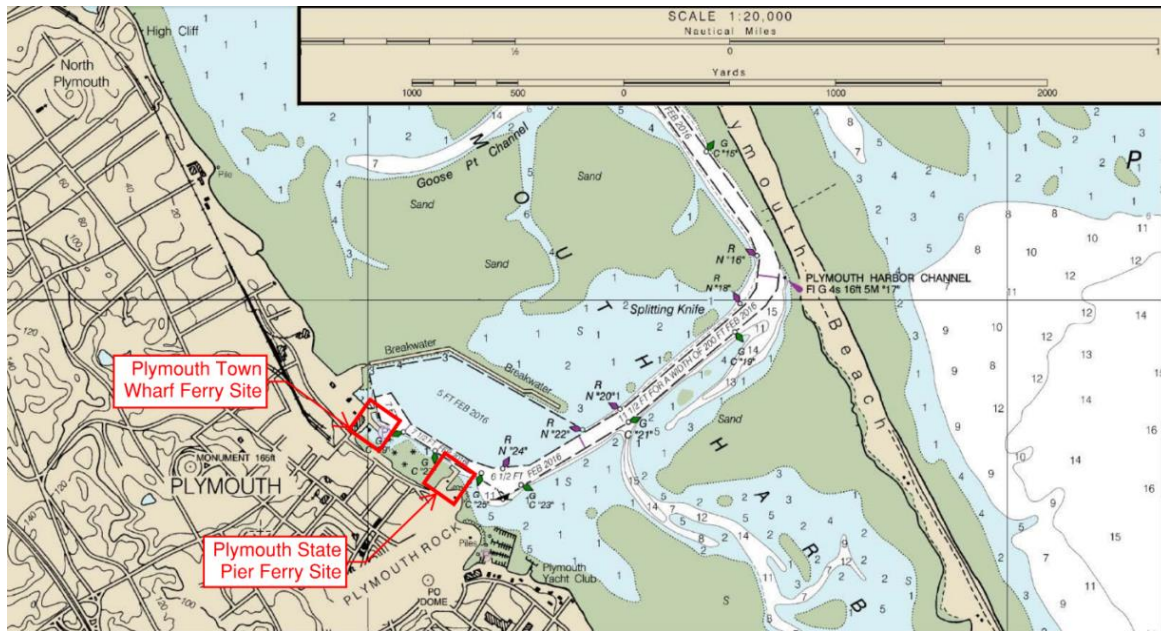


¹ Sources: OpenStreetMaps, Steer

Site Characteristics

	State Pier	Town Wharf
Longitude/Latitude:	41.959839,-70.6628112	41.961864,-70.6669502
Market Area:	Plymouth and nearby South Shore communities	Plymouth and nearby South Shore communities
Landing Ownership:	Commonwealth of Massachusetts	Town of Plymouth
Closest Street Address:	77 Water Street	9 Town Wharf
Notes:	Currently seasonal ferry service to Provincetown (MacMillan Pier)	

Aerial Chart and Photo of Landing Site²



Landings and Existing Service

	State Pier	Town Wharf
Landing Site:	Yes; at pier face	Yes, at pier face
Existing Landing:	Yes	Yes
Channel Access / Turning Basin:	No	No
Dredging Required:	Multiple ramps	Needs floats and ramps.
Berthing Capacity:	No	No
Wave Exposure:	Yes	Yes
Existing Pier/Bulkhead:	No	No
Existing Float:	Yes	Yes

² Source: US Department of Commerce, National Oceanic and Atmospheric Administration, Google Earth

Site Infrastructure

	State Pier	Town Wharf
Docking Conditions:	Moderate exposure to harbor fetch, limited speed in inner harbor channel connection	Better protected; good channel connection
ADA Access:	No	No
Rider Amenities:	Yes	Limited

Sensitive Shoreline Land Uses and Environmental Concerns

Channel approaches to Plymouth Inner Harbor are long and pass by extensive beach and tidal flats. The large breakwater-protected harbor is protected during the summer, but it is more exposed during the winter months with long fetches.

Suitability for Emergency Use

The ferry sites are suitable for evacuation of low lying neighboring areas in case of flooding as long as piers are accessible.

Ferry Level of Service

The 2019 ferry service at State Pier is outlined below. There are no existing or proposed ferry services from Town Wharf.

Route	To MacMillan Pier (Provincetown)
Berth	Side-load
Existing / Proposed	Existing
Year Round or Seasonal	Seasonal
Commuter / Recreational	Recreational
Fare (One Way)	Round trip: Adult - \$55 Senior - \$45 Child (4-12) - \$32 Child (under 3) - Free Bike - Free
Schedule / Frequency	One roundtrip per day
Public / Private Management	Private; operated by Captain John Boats

Transportation Access³

There are local and intercity buses that stop within walking distance of both landing sites, including the Freedom Link and Liberty Link buses operated by the Greater Attleboro Taunton Regional Transit Authority. There is also commuter rail access to the Kingston/Plymouth Line of the MBTA Commuter Rail with the Kingston station 4.8 miles away and the less frequently served Plymouth station 2.5 miles away from the dock sites.

There is access for people walking and biking from the Plymouth sites via Water Street and Route 3A. There is regional and local road access to the Plymouth sites via Route 44 and Route 3 from Plymouth neighborhoods and nearby towns. Parking is available in town lots at Brewster and Water Streets.

³ Source: Google Maps

Plymouth Market Area

Recent and Planned Developments⁴

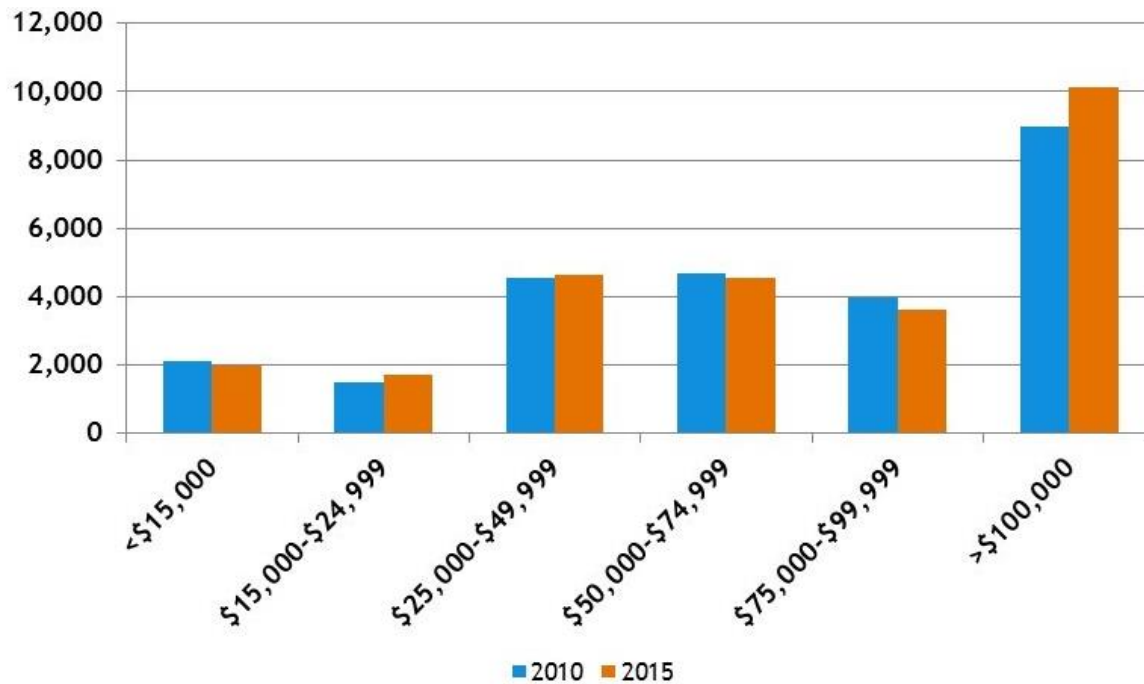
There are no new developments at either site. Recent modifications to Town Pier include parking and streetscape. Quatercentennial events are planned for 2020 in Plymouth with possible links to Provincetown.

Demographics⁵

Demographic Data for Plymouth Market Area

	Market Area	Boston, MA	Avg. Boston Harbor Ferry Site
Population	58,252	667,137	45,814
Labor Force	39,118	393,455	31,091
Employed	36,107	366,164	28,763
Median Household Income	\$80,597	\$60,732	\$72,115

Distribution of Median Household Incomes for Plymouth Market Area, 2010 and 2015

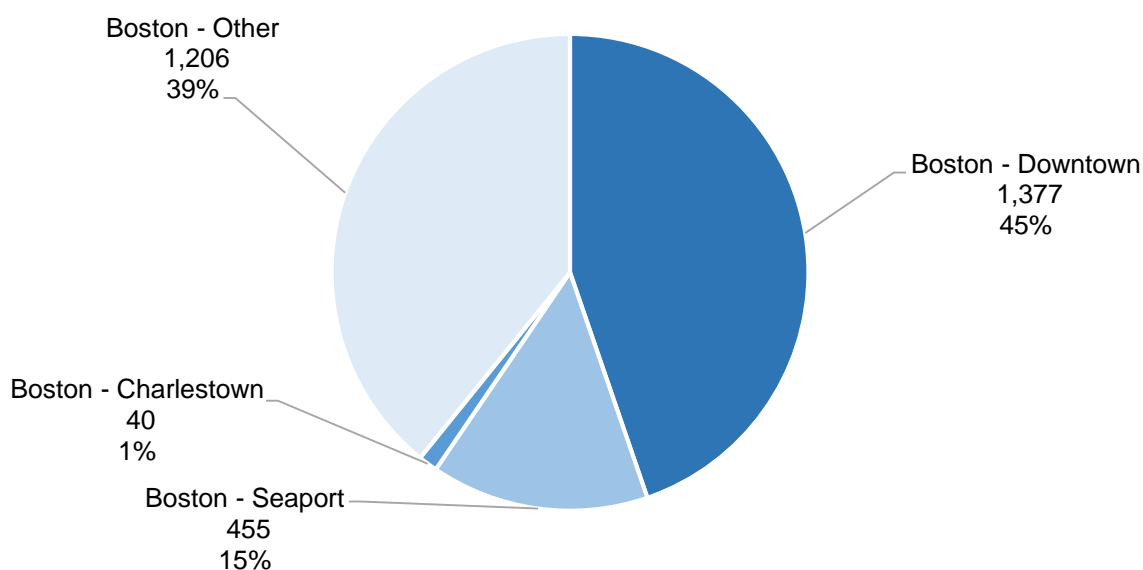


⁴ Source: Steer, September 2017

⁵ Sources: U.S. Census Bureau (2010, 2015), American Community Survey

Journey-to-Work⁶

Journey-to-Work Destinations from Plymouth Market Area



Journey-to-Work Destinations from Plymouth Market Area to Boston Central Business Districts

Commuters to Boston (Charlestown)	40
Commuters to Boston (Downtown)	1,377
Commuters to Boston (Seaport)	455
Commuters to Boston (Other)	1,206
Total Commuters to Boston	3,078

Travel Time and Cost Comparisons⁷

Travel Times and Cost Comparisons by Different Modes of Transport

Mode	Total Time	Walking (Access/Egress)	Transfer	Riding	Trip Frequency
To: Government Center (Downtown)					
Auto - Low Est.	1:05			1:05	
Auto - High Est.	2:00			2:00	
Commuter Rail	2:03	0:16	0:29	1:18	N/A
Ferry via Long Wharf North	1:50	0:13		1:37	
To: Boston Convention & Exhibition Center (Seaport)					
Auto - Low Est.	1:00			1:00	
Auto - High Est.	2:00			2:00	
Commuter Rail	2:07	0:20	0:31	1:16	N/A
Ferry via World Trade Center	1:47	0:14		1:33	

⁶ Sources: U.S. Census Bureau (2010), American Community Survey

⁷ Sources: Google Maps, KPFF

Evaluation

Pros: Existing recreational service to Plymouth has been established. There is a commuter market to Plymouth sized similarly to Chelsea or Beverly.

Cons: The ferry travel times would be slower than travel times on commuter rail by 15 to 20 minutes. Though travel to and from the transit service varies by user, the train may remain more time and cost competitive. With one ferry, there could be only one trip during peak commuting hours. The travel times mean that any service serving Plymouth would have relatively high operating costs.

Next Steps: The combination of high operating costs, lack of competitiveness with existing commuter rail service, and infrequency of service would be difficult to overcome, which makes subsidized commuter service financially unsustainable at this time. Given the existence of a market-rate seasonal recreational service to Provincetown, a direct service to Boston with similar parameters may present a viable possibility.

Credits

Project Coordination

- Boston Harbor Now



Study Sponsors

- MassDOT
- Massport
- National Park Service
- Seaport Council of the Executive Office of Housing and Economic Affairs
- Massachusetts Convention Center Authority
- The Barr Foundation
- Cabot Family Charitable Trust
- Envoy Hotel
- Clippership Wharf



Consultant Team

- Steer (formerly Steer Davies Gleave)
- KPFF
- Moffatt and Nichol
- Elliott Bay Design Group
- Progressions
- Norris and Norris

