

# QUINCY AND COLUMBIA POINT FERRY

## BUSINESS PLAN FOR NEW WATER TRANSPORTATION SERVICE

### EXECUTIVE SUMMARY



#### COORDINATED BY

Boston Harbor Now

#### SPONSORS

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

#### PARTNERS

MassDOT and Massport

#### CONSULTANT TEAM

Steer, Elliott Bay Design Group, KPFF, Moffatt and Nichol, Norris and Norris, Progressions

There is an opportunity to expand existing ferry service between Charlestown and downtown Boston to also serve East Boston and the South Boston Seaport, connecting multiple vibrant neighborhoods around Boston Harbor. The full Inner Harbor Connector Business Plan provides a roadmap for initiating and maintaining a new service in Boston's Inner Harbor. This service will connect Navy Yard Pier 4 in Charlestown, Lewis Mall in East Boston, and Fan Pier in the Seaport with Long Wharf in downtown Boston with eventual continuous connections between all of these neighborhoods.

Recent development has led to an increase in the transportation demands of these communities for residents and workers. Roadway alternatives are congested, and transit alternatives, with the exception of the Blue Line, are limited. Residents, workers, and visitors want to connect between waterfront neighborhoods, and for people who are walking or cycling, this serves as a floating connection between segments of the Harborwalk.

The business plan details how to establish regular, affordable service between these four neighborhoods and lays out the needed dock improvements, recommended route configuration, suggested vessels to lease or build, projected ridership and fares, and four financial pro formas based on different combinations of these proposals. Although the route would likely incorporate or merge with existing MBTA ferry service between Charlestown and Long Wharf, the plans do not specify or require that the new service be operated by a state entity.

Launching a new service requires the support of community members and business partners. This study has been careful to develop economic models and cost estimates that provide a realistic framework for service implementation. In order for ferries to reach their full potential for economic and mobility benefits, the service must have public and private support when initiated and then must attract and sustain ridership over time.

By starting the conversation about new services with a strong data-driven business plan, Boston Harbor Now is providing an economically sustainable model for the development of this ferry service.

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For full copies of the report, other deliverables from the study, and additional information about existing ferry routes visit:

[bostonharbornow.org/ferryplans](http://bostonharbornow.org/ferryplans)

# PUBLIC PROCESS

In addition to regular updates to MassDOT’s Board and Water Transportation Advisory Council (WTAC) as well as the MBTA’s Fiscal Management Control Board, there were three major opportunities for public participation:



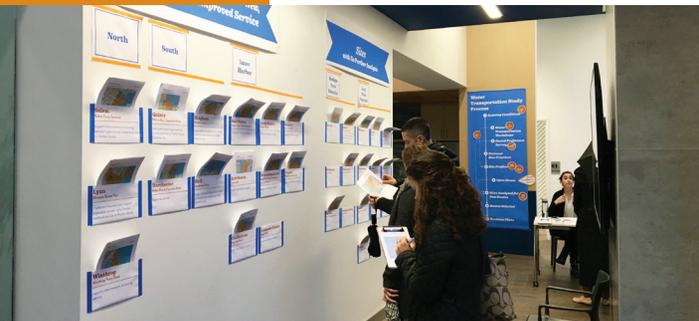
JULY 2017

Three stakeholder workshops in Salem, Quincy, and Boston



AUGUST & SEPTEMBER 2017

Online and in-person stated preference survey with 3,689 participants



DECEMBER 2017

Water Transportation Open House with 150 participants

## Docks

Thirty dock sites from Gloucester to Plymouth to Provincetown were analyzed in this study. The three docks below are proposed as part of this route.

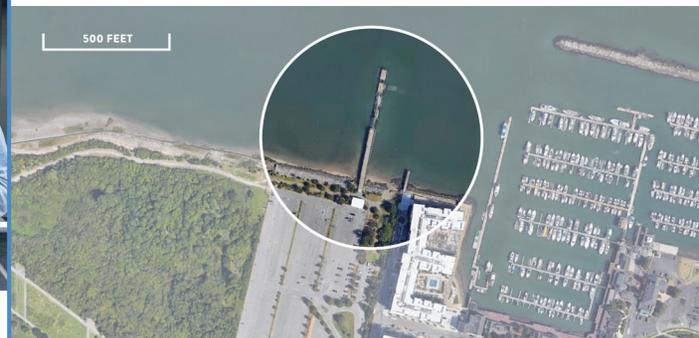
### Long Wharf North and Central

Existing MBTA, Salem, and Harbor Islands service



### Squantum Point/Marina Bay (Quincy)

This dock is currently served by Winthrop’s ferry service.



### Fallon Pier at Columbia Point (Dorchester)

Dock needs improvements and channel requires dredging to accommodate ferries.



Some components are standard across dock sites:

- a fixed and immovable pier attached to the land,
- a float where passengers board and disembark from the ferry that moves up and down with the tides, and
- an ADA accessible gangway from pier to float.

Conceptual site designs were developed for each ferry terminal that include both recommended and comprehensive configurations of terminal features. In the short term, streamlined improvements to existing infrastructure at some sites could support the initial years of service. For permanent service, the recommended ferry terminals would have a set of barges, gangways, and ramps that accommodate ADA compliant access with Boston Harbor’s average daily tidal change of 10 feet and year-round weather conditions. Terminals would also include a protected waiting shelter, bow-loading fenders to accommodate vessels with more than side-loading capability, and custom site elements to improve access on land.

Additional features included in the comprehensive design proposals would be used to develop a consistent brand for the system. These features include Intelligent Transportation Systems with digital arrival times and schedules, terminal identity signage including gate numbers both landside and dockside, safety equipment like emergency call buttons and life ring ladders, ticket vending machines (if needed), and covered bicycle storage.

Dock	Recommended Improvements	Comprehensive Improvements	TOTAL
Long Wharf North	\$200,000	\$160,000	<b>\$360,000</b>
Long Wharf Central	\$290,000	\$100,000	<b>\$390,000</b>
Squantum Point/Marina Bay	\$4,710,000	\$730,000	<b>\$5,440,000</b>
Fallon Pier at Columbia Point	\$4,920,000	\$140,000	<b>\$5,060,000</b>

# QUINCY AND COLUMBIA POINT ROUTE

The consultant team built a ridership model for the Quincy/Columbia Point ferry service—linking ferry terminals at Squantum Point/Marina Bay, Fallon Pier, and Long Wharf—based on the proposed schedule and fares shown below.

## Proposed Schedule

### Weekday Service

6:30 AM – 9:00 AM	Every 40 minutes
9:00 AM – 3:30 PM	Every 60 minutes
3:30 PM – 6:30 PM	Every 40 minutes
6:30 PM – 10:00 PM	Every 60 minutes

### Weekend Service

6:30 AM – 10:00 PM	Every 60 minutes
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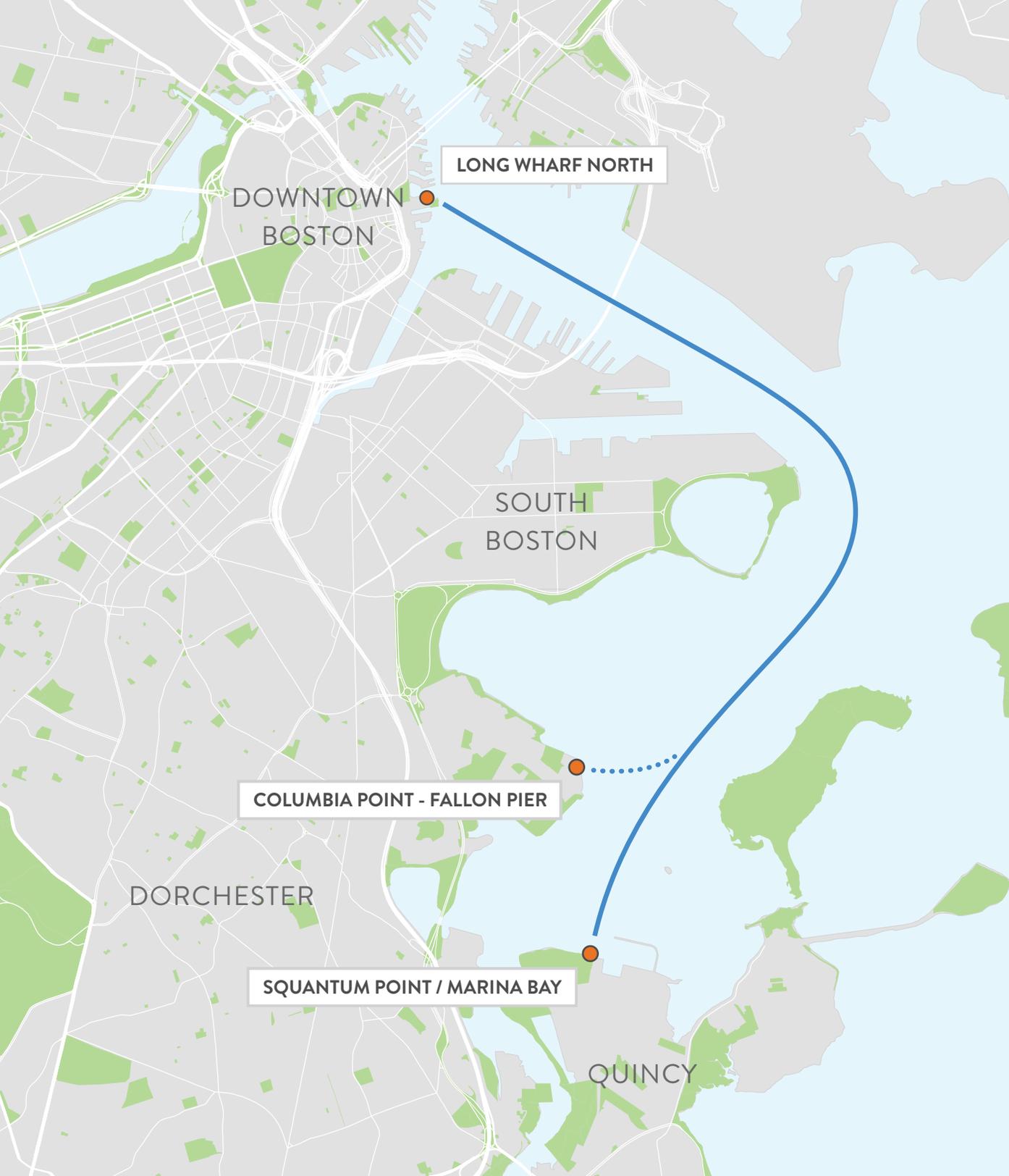
## Fares

\$6.50 - the revenue-maximizing fare for the route  
 \$10.00 - in line with MBTA F3 and F4 ferry tickets

## Ridership

Ridership depends on the fare. The ridership projections below assume that the route is served by two leased vessels with the frequency above and travels only to Quincy during peak times (6:30 AM – 9:00 AM and 3:30 PM – 6:30 PM) with stops in both directions at Columbia Point during off-peak time.

Scenario	Projected Annual Ridership	Projected Daily Ridership
\$6.50 fare	412,200	1,585
\$10.00 fare	189,890	730



## Vessels

For this route, leasing two vessels is recommended. Finding available vessels (“vessels of opportunity”) requires less capital than constructing vessels. Hybrid and electric vessels are not recommended for the route given the availability of technology and the parameters of the service. Design specifications for potential vessels specially built for this route are listed below.

### Estimated Vessel Costs (2019 dollars)

Two vessels of opportunity	\$474,000 annual lease
Two new vessels	\$8,500,000 purchase cost

### Recommended Vessel Design Specifications

Configuration	Monohull, single deck, semi-planing
Construction	Aluminum or Fiberglass
Certification	46 Code of Federal Regulations Subchapter T
Passenger Capacity	120 people
Crew	3 maximum
Design Speed	16 knots
Length Overall	104 feet
Length, Waterline	104 feet
Breadth	14 feet
Draft	3.0 feet
Deadweight	25,000 pounds
Displacement, Full Load	125,000 pounds, 1,953 ft <sup>3</sup> sea water
Power Required	554 horsepower (413.2 kW)
Power Plant	Geared diesel 2 x 350 horsepower diesel engine 2 x 25 kW diesel generator 50 horsepower bow thruster
Seating	Fabric on aluminum frame, one per passenger
Toilet Facilities	2 unisex
ADA compliance	Yes

## Pro Forma

This financial pro forma incorporates projected operating revenues and expenses in addition to the required capital investments for year-round service five or seven days a week. The 2019 pro forma laid out below provides a one-year snapshot that allows for a simplified comparison of the operational costs and revenues of the scenarios. In each full pro forma, the first year of service from Squantum Point/Marina Bay is assumed to be 2020 with the addition of Columbia Point’s Fallon Pier stop in 2022. The capital investment needs in the last row are identified only for the first few years of service. A complete 20-year pro forma for each scenario can be found in the appendix of the business plan.

Operations	\$6.50 fare Weekdays Only	\$6.50 fare With Weekends	\$10.00 fare Weekdays Only	\$10.00 fare With Weekends
Operating Revenue				
Fare	2,092,000	2,251,000	1,713,000	1,843,000
Other Operating	167,000	180,000	137,000	147,000
Total Operating Revenue	2,259,000	2,431,000	1,850,000	1,990,000
Operating Expenses				
Vessel				
Crew Labor	744,000	1,060,000	744,000	1,060,000
Fuel	907,000	1,236,000	907,000	1,236,000
Maintenance	291,000	354,000	291,000	354,000
Insurance	230,000	230,000	230,000	230,000
Lease	474,000	556,000	474,000	556,000
Other	37,000	50,000	37,000	50,000
<i>Subtotal</i>	<i>2,683,000</i>	<i>3,486,000</i>	<i>2,683,000</i>	<i>3,486,000</i>
Shoreside				
Insurance	3,000	3,000	3,000	3,000
Miscellaneous Facility	110,000	110,000	110,000	110,000
<i>Subtotal</i>	<i>113,000</i>	<i>113,000</i>	<i>113,000</i>	<i>113,000</i>
Management and Support	354,000	452,000	354,000	452,000
Total Operating Expense	3,150,000	4,051,000	3,150,000	4,051,000
<b>Net Operating Expense</b>	<b>(-891,000)</b>	<b>(-1,620,000)</b>	<b>(-1,300,000)</b>	<b>(-2,061,000)</b>
Farebox Recovery	71.7%	60.2%	58.7%	49.1%
<b>Total Capital Investment Required</b>	<b>9,945,000</b>	<b>9,945,000</b>	<b>9,945,000</b>	<b>9,945,000</b>