

INNER HARBOR CONNECTOR

EXECUTIVE SUMMARY

BUSINESS PLAN FOR NEW WATER TRANSPORTATION SERVICE

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.



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

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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

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:



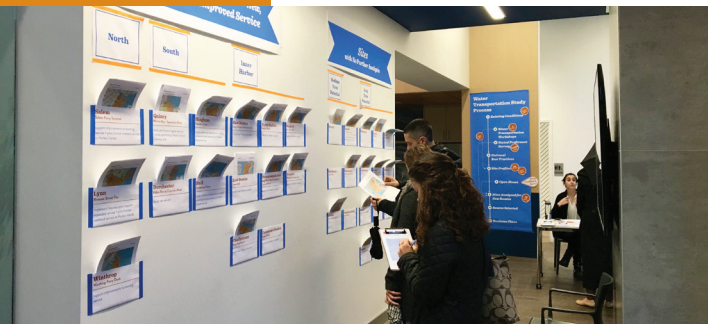
JULY 2017

Three stakeholder workshops in Salem, Quincy, and Boston



AUGUST & SEPTEMBER 2017

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



DECEMBER 2017

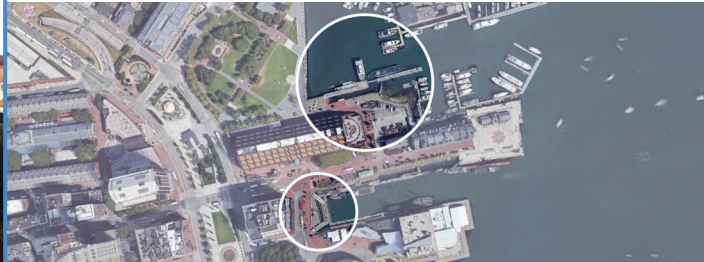
Water Transportation Open House with 150 participants

Docks

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

Long Wharf North and Central

Existing MBTA, Salem, and Harbor Islands service



Lewis Mall (East Boston)

Dock needs improvements to accommodate ferries



Navy Yard Pier 4 (Charlestown)

Existing MBTA ferry service to Long Wharf



Fan Pier (Seaport)

Existing Winthrop/Quincy and Lovejoy/Seaport service



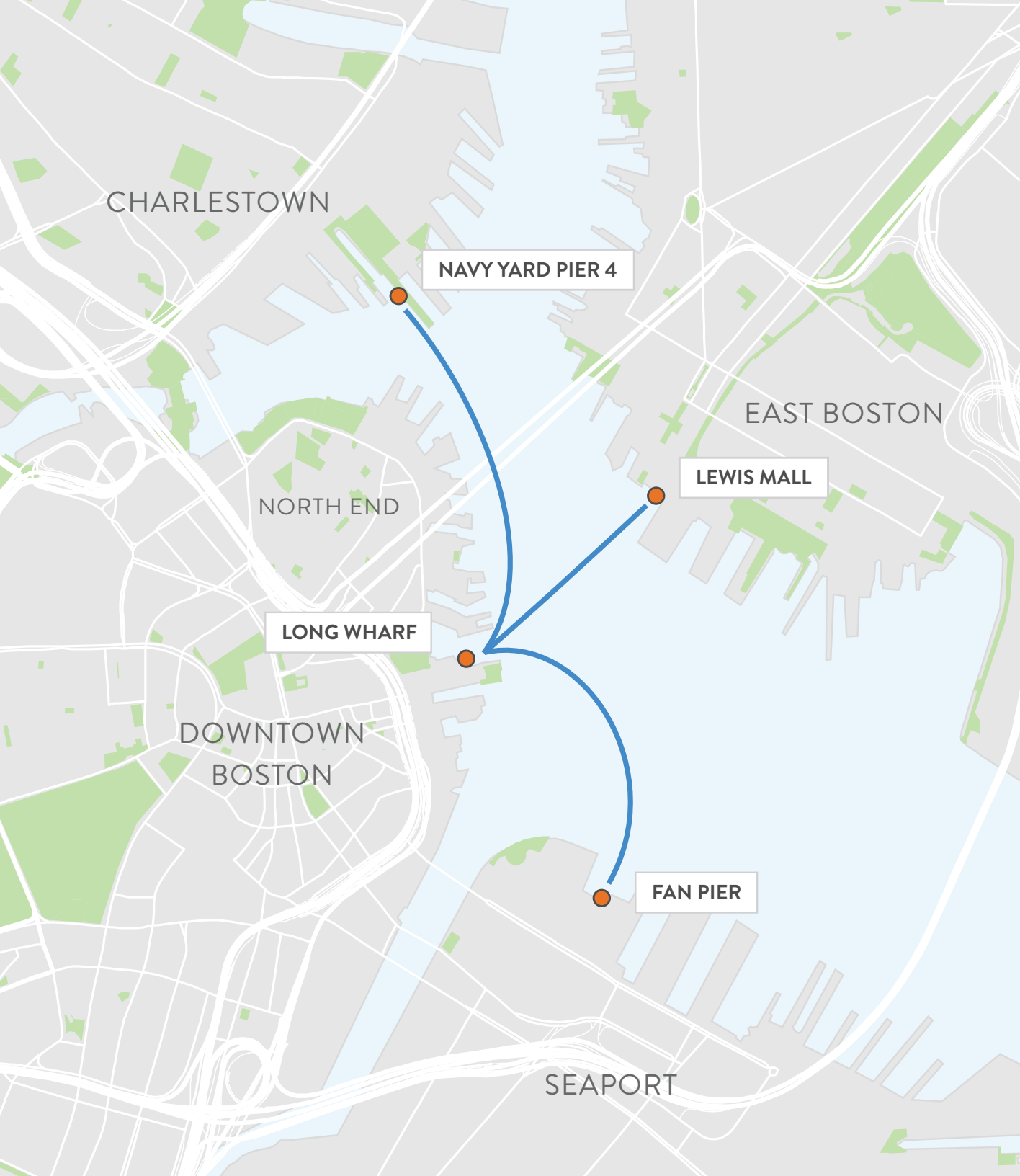
Some components are standard across dock sites:

- 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	\$360,000
Long Wharf Central	\$290,000	\$100,000	\$390,000
Lewis Mall	\$3,250,000	\$180,000	\$3,430,000
Navy Yard Pier 4	\$870,000	\$290,000	\$1,160,000
Fan Pier	\$110,000	\$170,000	\$280,000



INNER HARBOR CONNECTOR ROUTE

The consultant team built a ridership model for the Inner Harbor Connector—linking ferry terminals at Navy Yard Pier 4, Lewis Mall, Fan Pier, and Long Wharf—based on the proposed schedule and fares shown below.

Proposed Schedule

Weekday Service

6:30 AM - 9:00 AM	Every 15 minutes
9:00 AM - 3:30 PM	Every 20 minutes
3:30 PM - 6:30 PM	Every 15 minutes
6:30 PM - 10:00 PM	Every 20 minutes

Weekend Service

6:30 AM - 10:00 PM	Every 20 minutes
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Fares

- \$6.50 - revenue-maximizing fare for the route
- \$3.50 - in line with existing MBTA F1 ferry tickets

Ridership

Ridership varies somewhat depending on whether six different vessels are leased for the service or if six interoperable custom-built vessels are purchased.

Scenario	Projected Annual Ridership	Projected Daily Ridership
\$6.50 + Existing Vessels	923,760	3,553
\$3.50 + Existing Vessels	1,553,930	5,977
\$6.50 + New Vessels	940,910	3,619
\$3.50 + New Vessels	1,593,900	6,130

Vessels

This route could be launched with “vessels of opportunity,” which assumes that six diesel vessels are leased by the operators to get the service up and running. In the long term, new hybrid/electric vessels specially built for this route’s short trips, speed restrictions, and projected ridership are recommended. New vessels would require capital investment up-front, but there would be long-term operating cost savings with substantially lower fuel costs and improved flexibility from having a fleet of identical ferries.

Estimated Vessel Costs (2019 dollars)

Six vessels of opportunity	\$1,063,000 annual lease
Six new hybrid/electric vessels	\$11,600,000 purchase cost

Recommended Vessel Design Specifications

Configuration	Monohull, single deck
Construction	Glass Reinforced Plastic (Fiberglass)
Certification	46 Code of Federal Regulations Subchapter T
Passenger Capacity	84 people
Crew	2 maximum
Design Speed	10 knots
Length Overall	85 feet
Length, Waterline	81 feet
Breadth	12 feet
Draft	3.5 feet
Deadweight	16,800 pounds
Displacement, Full Load	84,000 pounds, 1,313 ft ³ sea water
Power Required	53 horsepower (39.6 kW)
Power Plant	Hybrid diesel-electric 2 x 40 horsepower electric motors 1 x 40 kW diesel generator - running steadily at 31 kW 1 x 40 kW-hr battery
Seating	Aluminum-framed fabric, one per passenger
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 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 is assumed to be 2020 for the existing vessels and 2023 for the new vessels. 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 + Existing Vessels	\$3.50 fare + Existing Vessels	\$6.50 fare + New Vessels	\$3.50 fare + New Vessels
Operating Revenue				
Fare	4,898,000	4,436,000	4,990,000	4,551,000
Other Operating	49,000	44,000	50,000	46,000
Total Operating Revenue	4,947,000	4,480,000	5,040,000	4,597,000
Operating Expenses				
Vessel				
Crew Labor	1,058,000	1,058,000	1,058,000	1,058,000
Fuel	2,565,000	2,565,000	333,000	333,000
Maintenance	460,000	460,000	490,000	490,000
Insurance	394,000	394,000	394,000	394,000
Lease	1,114,000	1,114,000	n/a	n/a
Other	76,000	76,000	37,000	37,000
<i>Subtotal</i>	<i>5,667,000</i>	<i>5,667,000</i>	<i>2,312,000</i>	<i>2,312,000</i>
Shoreside				
Insurance	3,000	3,000	3,000	3,000
Miscellaneous Facility	177,000	177,000	177,000	177,000
<i>Subtotal</i>	<i>180,000</i>	<i>180,000</i>	<i>180,000</i>	<i>180,000</i>
Management and Support	542,000	542,000	542,000	542,000
Total Operating Expense	6,389,000	6,389,000	3,032,000	3,032,000
Net Operating Expense	(-1,442,000)	(-1,909,000)	2,008,000	1,565,000
Farebox Recovery	77.4%	70.1%	166.2%	151.6%
Total Capital Investment Required	4,868,000	4,868,000	16,684,000	16,684,000