FOCUS 40

The 2040 Investment Plan for the MBTA

STATE OF THE SYSTEM REPORT: FERRY

December 2015

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ABOUT THE STATE OF THE SYSTEM…

These State of the System reports lay the foundation for the development of *Focus40*, a financially responsible 25-year capital plan for the MBTA, to be released in 2016. Planning for the future requires a clear understanding of the present. These reports describe that present: the condition, use, and performance of the MBTA bus, rapid transit, commuter rail, ferry, and paratransit systems. In addition, these reports describe how asset condition and age influence service performance and customer experience.

The next phase of *Focus40* will consider how a range of factors – including technological innovation, demographic shifts, and climate change – will require the MBTA to operate differently in 2040 than it does today. With the benefit of the information provided in these State of the Systems reports, the *Focus40* team will work with the general public and transportation stakeholders to develop and evaluate various strategies for investing in and improving the MBTA system in order to prepare it for the future.

SUMMARY OF STATE OF THE SYSTEM: FERRY

Less than one percent of all MBTA-system passenger trips and passenger-miles occur on ferries. Most of the ferry riders, including minority and low-income passengers, could use other MBTA services to make the same trips but choose to use ferries, likely because they are the most reliable MBTA mode.

FERRY SERVICE OVERVIEW

Ferry service complements the MBTA's land-based fixed-route transit network in a limited number of corridors.

The MBTA does not operate any ferry service directly; it contracts with a private company to operate a limited number of ferry routes in Boston Harbor.

Ferry service represents the smallest share of operating expenses compared with the other modes; however, it also carries the fewest passengers. Despite the low ridership, its share of fare revenue is greater than its share of MBTA operating expenses.

MBTA ferry service has relatively low identifiable capital costs. Most of the vessels are owned by the contract operator, and the contracts do not specify the portion of the bid prices attributable to capital costs. The MBTA pays directly for some of the capital costs of float docks, gangways, and parking facilities at the ferry stops.

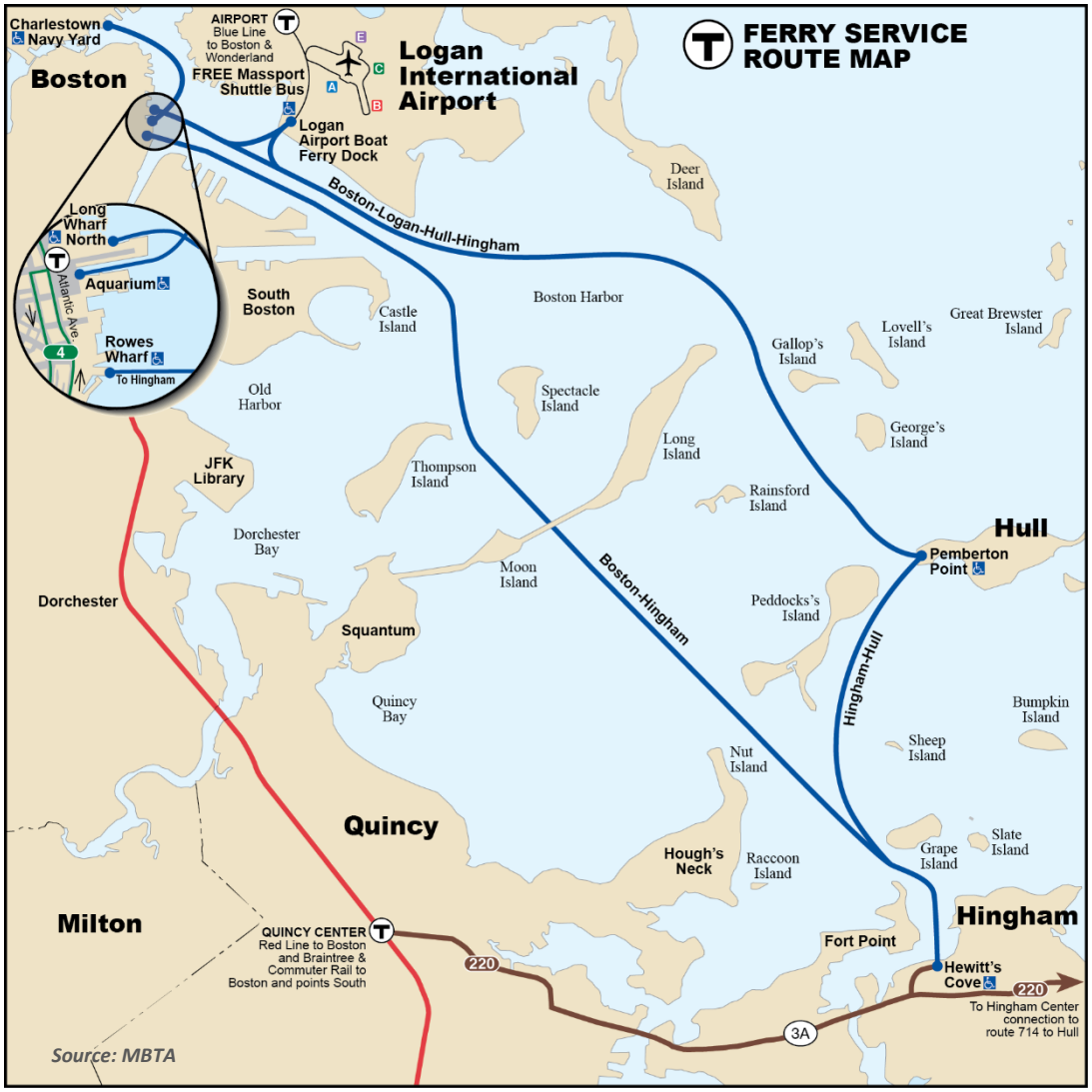
MBTA Annual Metrics by Mode - 2013

	Operating Expenses (%)	Fare Revenues (%)	Passenger Miles (%)	Passenger Trips (%)
Bus	**29.8**	**17.8**	**15.4**	**29.8**
Commuter Rail	26.4	29.9	40.4	8.9
Rapid Transit	35.1	49.9	42.8	60.4
Ferry	0.8	1.1	0.6	0.3
Paratransit	7.9	1.3	0.8	0.5

Source: 2013 NTD Transit Profile

SERVICE MAP

All MBTA ferry service operates within Boston Harbor.



The MBTA contracts with a private operator to run three ferry routes:

- **Charlestown–Long Wharf:** This route connects residential complexes in the former Charlestown Navy Yard with Long Wharf on the downtown Boston waterfront. It also serves visitors to two historic Naval vessels that are on display at the Navy Yard.
- **Hingham–Rowes Wharf:** This route provides nonstop service between South Shore suburbs and downtown Boston. The majority of passengers use park-and-ride or drop-off access.
- **Hingham/Hull–Logan Airport–Long Wharf:** This route provides service between South Shore suburbs, downtown Boston, and Logan Airport. The Hull stop is used mostly by Hull residents.

RIDERSHIP

The MBTA's total ferry ridership accounts for a small share of overall MBTA ridership, but ridership on individual ferry routes falls within the range of ridership on some MBTA bus routes. In fiscal year 2015:

4,740 riders per weekday

810 per Saturday year-round, additional 1,360 June to September

670 per Sunday year-round, additional 930 June to September

	Weekday Ridership	Saturday Ridership	Sunday Ridership
Hingham–Rowes Wharf	2,890	No service	No service
Hingham/Hull–Logan–Long Wharf	1,010	1,360 seasonal	930 seasonal
Charlestown–Long Wharf	840	810 year-round	670 year-round
Total	**4,740**	**1,490**	**1,140**

Source: MBTA; Note: Ridership figures rounded to nearest 10

RIDERSHIP DEMOGRAPHICS

Ferries serve significantly fewer minority riders and fewer low-income riders than other modes.

	Minority	Low-income
FERRY	**5.7%**	**4.5%**
Bus	46.5%	41.5%
Commuter Rail	13.9%	7.2%
Rapid Transit	27.5%	24.1%
Total	33.0%	28.5%

Source: 2008-2009 MBTA Systemwide Passenger Survey (the MBTA is beginning an update of the systemwide survey in Fall 2015)

FARES

INNER HARBOR FERRY ZONE 1A PASS	**$3.25**/ride **$75**/month Zone 1A pass also good for unlimited travel on Local Bus, Subway, and Commuter Rail Zone 1A.
HINGHAM, HULL–BOSTON	**$8.50**/ride **$275**/month Plus additional **$8.50** payment to go to Logan Airport. Commuter Boat Pass also good for unlimited travel on Local Bus, Subway, Express Bus, Inner Harbor Ferry, and Zones 1-5 on Commuter Rail.
DAY/WEEK LINKPASS	**$12.00** for 1 day **$19.00** for 7 days Day Pass valid only on Inner Harbor Ferry and only if purchased on a CharlieTicket.
SENIORS AND PERSONS WITH DISABILITIES (BLIND PERSONS RIDE FOR FREE)	**50 percent** off one-ride fares No Monthly Boat Pass discounts apply. These rates require a Senior/TAP or Mass. Commission for the Blind ID.
STUDENTS (JUNIOR HIGH AND HIGH SCHOOL)	**50 percent** off one-ride fares Requires a Student CharlieCard. No Monthly Boat Pass discounts.
CHILDREN (11 YEARS OLD AND UNDER)	**Free** Children under the age of 12 ride free when accompanied by an adult, with a limit of two for each adult.

- **Hingham and Hull ferry route passengers are required to purchase tickets before boarding—at a dock, through an MBTA ticket and pass sales office, or via a Smartphone mobile ticketing app.**
- **Tickets can be purchased on weekdays at both the Hingham ferry terminal and at Rowes Wharf.**
- **Charlestown route ferry passengers may purchase tickets on board.**
- **Tickets are not available at the Charlestown, Long Wharf, Hull, or Logan stops.**
- **MBTA ferries are not equipped with electronic fare validation devices, limiting the fare media options available to passengers.**

FERRY ASSETS

Most of the assets used in providing MBTA service are owned by entities other than the MBTA.

FLEET

The MBTA owns two high-speed catamarans.

- Usually assigned to the Hingham/Hull–Logan–Long Wharf route
- Built in 1996 for an independently operated commuter ferry route between Quincy, Logan Airport, and Long Wharf
- Acquired by the MBTA in 2002, when their former owner-operator was no longer able to run unsubsidized service

All other vessels used in MBTA commuter boat service are provided by the current contract operator, Boston Harbor Cruises.

- The Hingham–Rowes Wharf route is usually operated with two high-speed catamarans and two monohull vessels, including one operated under subcontract by Massachusetts Bay Lines.
- The Charlestown ferry route is run with two monohull vessels on weekdays and one on Saturdays and Sundays.

INFRASTRUCTURE

Most of the infrastructure required for MBTA ferry service is owned by other entities, from which the MBTA leases space.

The ferry service operates from six terminals:

- Hingham, where the MBTA owns a 1,841-space park-and-ride lot in addition to float docks and gangways.
- Hull, owned by the Town of Hull, but some federal funds for improvements there have been obtained with the MBTA as the nominal grantee.
- Logan Airport, owned by Massport.
- Rowes Wharf, privately owned. The MBTA provides only the float docks and gangways.
- Long Wharf and Charlestown, both owned by the Boston Redevelopment Authority. The MBTA provides only the float docks and gangways used by ferries.

MAINTENANCE FACILITIES

The MBTA does not own or control any ferry maintenance facilities.

The contract operator, Boston Harbor Cruises, is responsible for maintaining all of the vessels used in MBTA ferry service, including the vessels owned by the MBTA.

- Boston Harbor Cruises does routine vessel servicing and maintenance either at the ferry terminals between trips or at Massport Mystic Pier 1 in Charlestown.
- Vessels are sent to independent shipyards for major overhauls.

Gladding-Hearn Shipyard

FERRY SERVICE PERFORMANCE

The MBTA's service standards for ferries are usually met.

MBTA SERVICE GUIDELINES

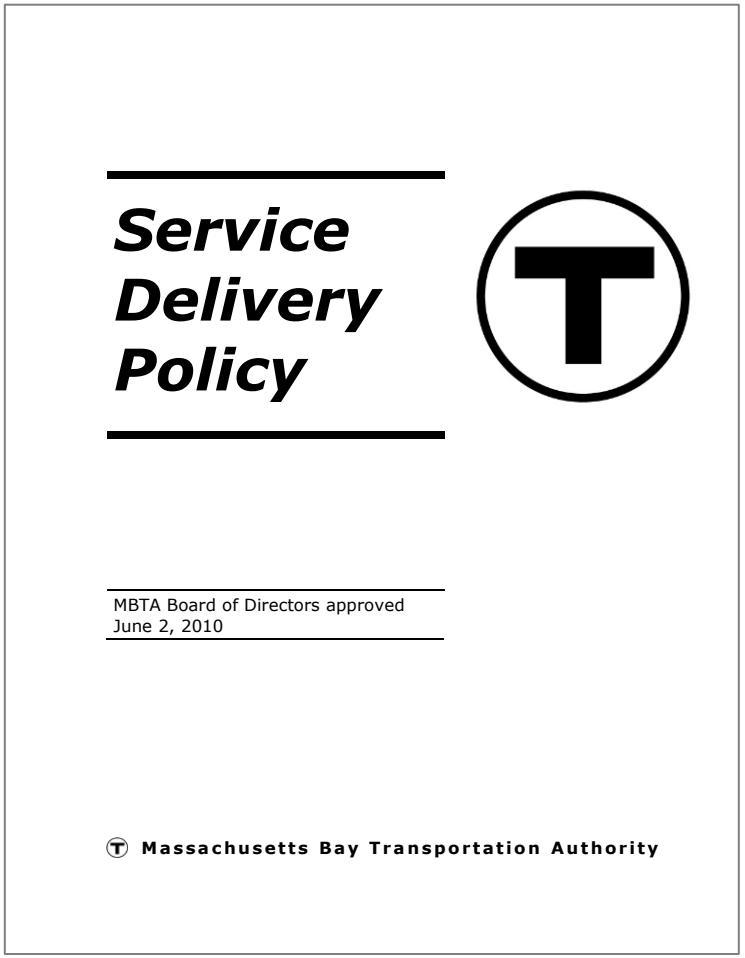
The MBTA's Service Delivery Policy articulates the type of service it should provide in terms of:

- Service coverage
- Minimum spans of service
- Cost-effectiveness
- Minimum service frequencies
- On-time performance
- Maximum crowding levels

The MBTA is updating its service standards.

Meeting existing service coverage, minimum span of service, and cost-effectiveness standards is generally not an issue.

Standards for service frequencies, on-time performance and crowding are usually met for ferry service, leaving most customers satisfied with this service.



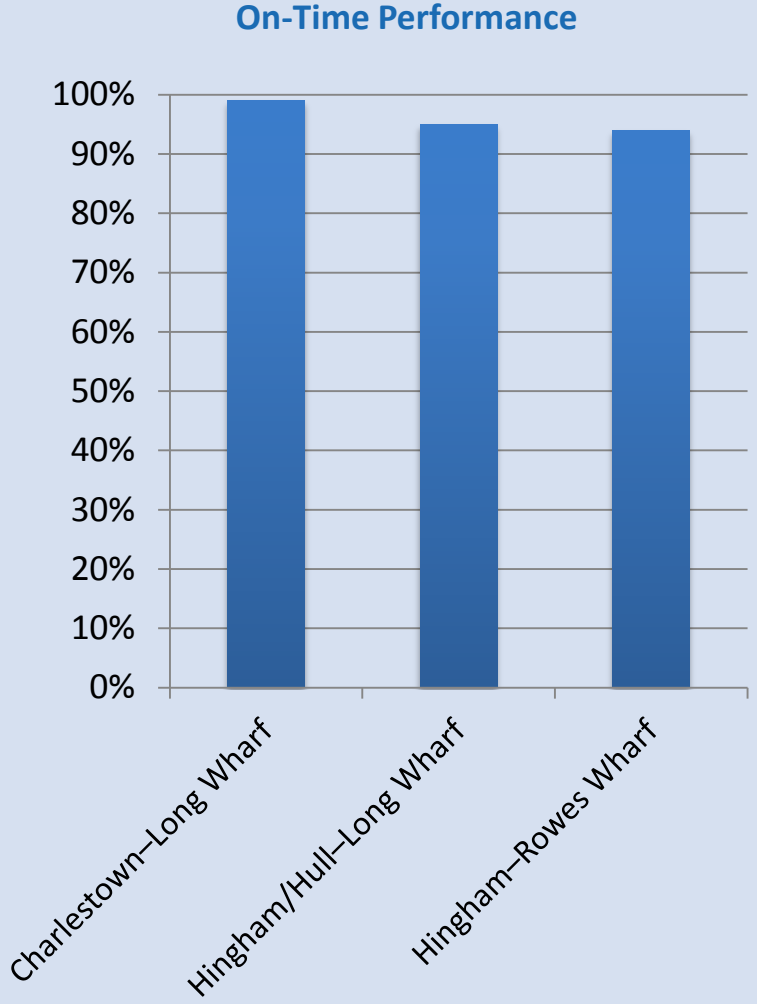
ON-TIME PERFORMANCE…

…is very good, except during extreme weather conditions.

FY 2015 overall on-time performance:

- **99% for the Charlestown–Long Wharf route**
- **95% for the Hingham/Hull–Long Wharf route**
- **94% for the Hingham–Rowes Wharf route**

Excluding poor performance during February 2015, all three routes had on-time performance greater than 97.5 percent.



Source: MBTA Performance Indicators, 2012

Note: The on-time performance standard is 95% of all trips depart and arrive within five minutes of scheduled times

CROWDING

All routes pass the MBTA standards for crowding:

- MBTA service standards call for maximum ferry loads not to exceed seating capacity at any time of day.
- Because of US Coast Guard regulations, loads can never exceed the MBTA service standard.

FERRY ASSET PERFORMANCE

The MBTA does not own most of the ferry service assets.

ASSET PERFORMANCE

State of Good Repair (SGR):

The MBTA maintains a current inventory of capital assets in its State of Good Repair (SGR) Database.

The Database generates scores for each asset, based on **age, condition and performance.** 1 = low, 5 = high, >2.5 = SGR.

When referencing SGR scores, it is important to note:

- **Summary scores at the asset/modal level represent the average of all assets in the category**, and are a less precise tool for understanding condition of the individual assets within the category.
- Since SGR scores are blended evaluations of age and condition/performance, **relatively new assets that perform poorly may have better SGR scores than their condition alone would suggest.**
- **Assets that are within their useful life and performing as intended will have good SGR scores, even if the assets are inadequate to meet current or future needs of the system.**
- **The SGR backlog will continue to change** – as assets age and are replaced, the backlog decreases; conversely as assets age and do not get replaced, the backlog increases.

The MBTA has conducted extensive work to define the condition of its major capital assets through the SGR database, and will continue to update the SGR database each year. The next organizational step is to begin collecting data for the Maintenance Management System (MMS), a more granular asset management tool that will help the MBTA to implement lifecycle management processes and track asset condition down to the smallest replaceable component. The MBTA also needs to regularly update its existing asset management plan – a policy/strategy document for implementing asset management across the MBTA – for all asset classes. A continuous, predictable capital funding program, including funding for these tasks, is essential to maintaining an effective asset management program.

STATE OF GOOD REPAIR (SGR) BACKLOG

Ferry capital backlog is $21.3 million.

Revenue vessels only include the two owned by the MBTA: *Flying Cloud* and *Lightning*.

Docks includes the facilities at the Hingham Terminal.

Asset Category	SGR Rating (0 to 5 Scale	Backlog ($millions)
Revenue vessels	2.83	$13.37
Docks	2.62	$8.06
Total		$21.43

Source: Draft SGR report 8/10/15; Green = Excellent to Good; Yellow = Fair to Marginal; Red = Substandard to Poor

VESSELS

Flying Cloud **and** ***Lightning*** **will both reach the end of their FTA defined minimum useful life in the year 2021.**

Per the vessel survey completed in 2012, and based on their current condition, the hulls could conceivably last for a total of approximately 30 years. However:

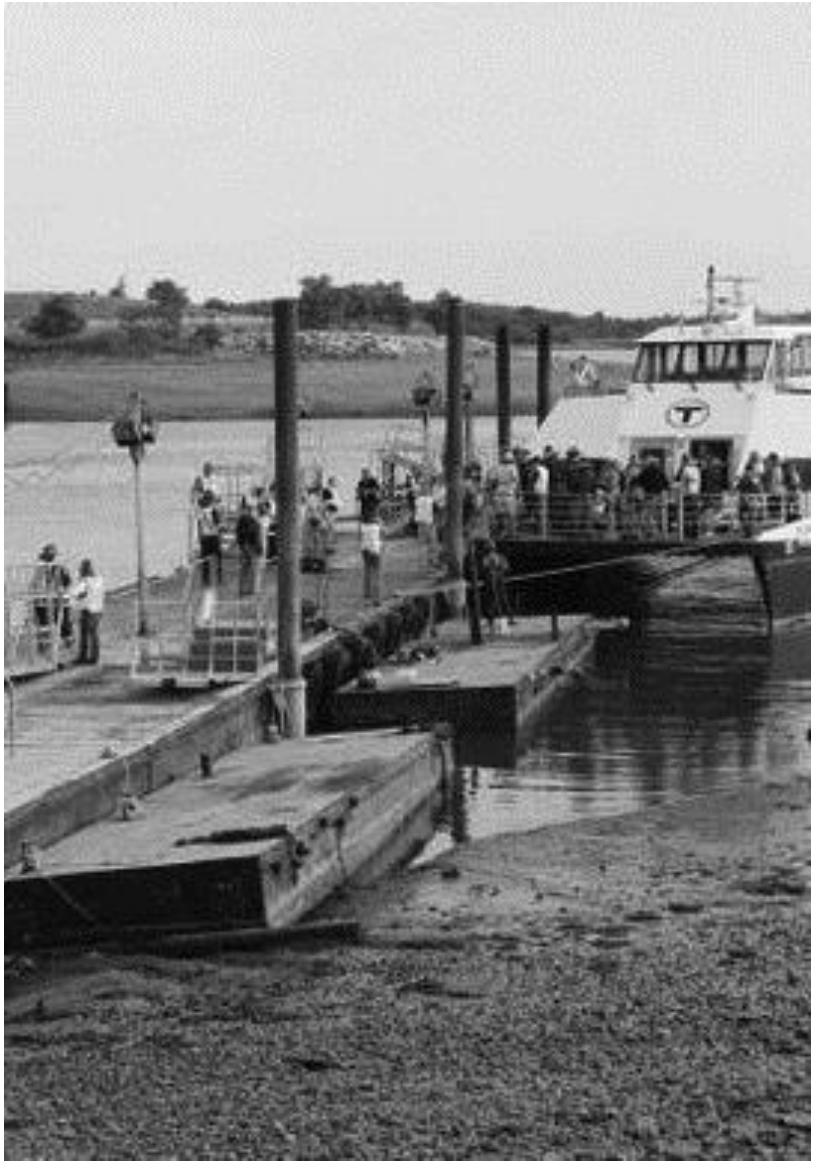
- All other parts of the vessel would require complete overhaul or replacement within the next few years.
- It is possible that replacement engines may not be able to fit into the existing hull, requiring either substantial reconstruction or the purchase of a new vessel prior to the end of the FTA designated minimum useful life.

TERMINALS

MBTA ferry terminals have limited amenities for passengers:

- The Transportation Cooperative Research Program suggests that shelters should be provided at bus stops with more than 50 to 100 boardings per day.
- For comparison, each MBTA ferry terminal has more than 50 to 100 boardings per day; Hingham, Rowes Wharf, and Logan Airport have fully enclosed waiting areas. The other terminals have no dedicated shelters.
- None of the ferry terminals has real-time information on boat departures.

The MBTA does not own or control the ferry terminals, except at Hingham. This limits the MBTA's ability to make improvements.



ACCESSIBILITY

All ferry terminals are ADA-accessible.

However, some accessibility issues arise at boarding:

- At each terminal, ferries load from floating docks that rise and fall with the tide to match the rise and fall of the boats.
- These docks are connected to land by gangways that may have steep slopes at low tide.

SUMMARY

SUMMARY: SERVICE

The MBTA offers a limited number of ferry services. The ferries carry approximately 4,700 passengers per weekday, constituting less than one percent of MBTA ridership.

- US Coast Guard regulations ensure that ferries are never overcrowded, even during peak times.
- More than 95 percent of ferry trips operate on time.
- There are limited landside amenities for customers, even at locations with the highest ridership.

SUMMARY: FERRY FLEET

The MBTA owns only two of the vessels used on its ferry routes; the rest are provided by the contract operator of the service.

The 2012 Ferry Plan outlined several strategies for vessel replacement and equipment overhauls. Depending on the compatibility of new equipment with the existing vessel, costly resolutions may be required.