



Water Transportation Strategy for the Boston Harbor Islands and State Park:

Best Practices

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1. Introduction

Boston Harbor Now (BHN) is coordinating the *Water Transportation Strategy for the Boston Harbor Islands National and State Park* (the Park Strategy) on behalf of the Boston Harbor Islands Partnership with financial support from the National Park Service (NPS). The outcome of this project will be to inform the preparation of the next Request for Proposals (RFP) for ferry service to the Boston Harbor Islands beginning in 2019.



The purpose of this report is to provide a review of existing ferry systems that serve State or National Parks and to describe their applicability to the Park Strategy. It includes a discussion of overall lessons learned from these services with a focus on service delivery models and user experience. Additionally, it describes best practices from general passenger-only ferry services that are applicable to the ferry services for the Boston Harbor Islands. A profile of each of the ferry services referenced in this report is outlined at the end of the document.

Overview of Boston Harbor Islands Existing Ferry Service

The Boston Harbor Islands National and State Park (Boston Harbor Islands) is a regional natural asset with cultural significance and a unique combination of challenges for providing public access by ferry. The park is comprised of 34 islands and peninsulas, each approximately 4 to 10 miles from downtown Boston. The islands are centrally located within the Greater Boston metropolitan area, with a population of roughly 4.6 million people, drawing regular commuters from as far away as Providence, Rhode Island, and southern New Hampshire. Visitors to the park enjoy recreational opportunities, such as camping, hiking, and beach-going; historic and cultural resources such as lighthouses and military forts; and special events, including performances, fitness classes, and art exhibitions. The Boston Harbor Islands visitation in 2016 was approximately half a million people.

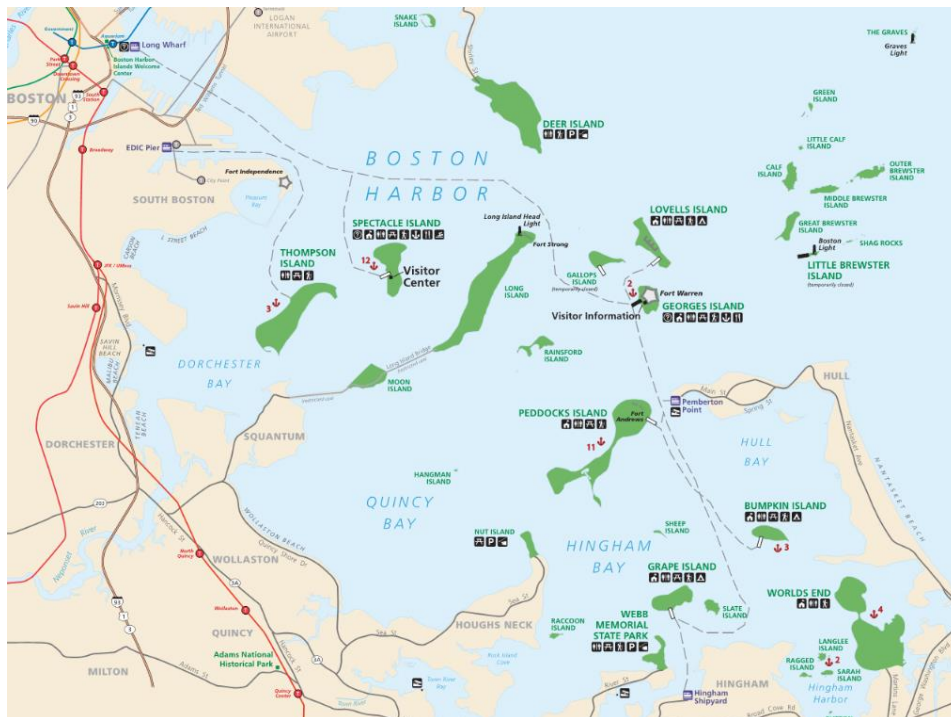
Eight of the islands in the Park are currently accessible by public ferries. Travel times to these islands vary from 20 to 70 minutes depending on departure location and vessel type. Ferry service to the islands is currently provided on a seasonal basis from mid-May to early October. Inclement weather, low ridership, and limited staffing resources restrict service during the remainder of the year. During the peak summer season, some of the islands with limited amenities are closed on certain weekdays due to funding constraints; however, all of the islands are open to the public on summer weekends when visitation volumes peak.

The Boston Harbor Islands Partnership is a federally and state legislated collaboration created to guide and coordinate planning and implementation strategies for the Boston Harbor Islands. The partnership includes NPS, the United States Coast Guard, the Massachusetts Department of Conservation and Recreation, the Massachusetts Water Resources Authority, the City of Boston, the Boston Planning and Development Agency, the Massachusetts Port Authority, Thompson Island Outward Bound Educational Center, the Trustees of Reservations, the Boston Harbor Island Advisory Council, and Boston Harbor Now. The partnership awarded a contract for passenger ferry service operations to Boston Harbor Cruises (BHC), a private operator, in 2014. BHC provides all of the public ferry access to the Boston Harbor Islands and has a separate contract as the food and merchandise provider for the cafes and museum shops on the islands. The ferry service contract is managed by Boston Harbor Now and is due to expire at the end of 2019.

The eight islands and their respective attractions and amenities include:

- Georges Island Fort Warren, visitor center, restrooms, drinking water, picnic areas with grills, cafe, gift shop/bookstore, ranger tours, educational movie, special events venue
- Spectacle Island Visitor center, restrooms, lifeguarded beach, drinking water, picnic areas, cafe, gift shop, ranger tours, educational movie, special events venue
- Peddocks Island Fort Andrew, welcome center, restrooms, drinking water, picnic area with grills, yurt campsites, tent campsites, group campsites, ranger tours, hiking trails, scenic viewpoints, historic fort, boat moorings
- Little Brewster Island Boston Light (active light station since 1716), historic site, guided tours
- Thompson Island Private events center, ropes course, educational programs, hiking trails, scenic views
- Lovells Island Historic forts, beach, salt marsh, ranger-led programs, picnic area with grills, tent campsites, group campsites, composting toilets
- Grape Island Ranger station, hiking/walking trails, picnic area with grills, tent campsites, composting toilets, scenic viewpoints, moorings
- Bumpkin Island Ranger station, hiking trails, picnic area with grills, tent campsites, group campsites, composting toilets, scenic viewpoints, historic buildings

Boston Harbor Islands



National Park Maps, <http://npsmaps.com/wp-content/uploads/boston-harbor-islands-map.jpg>

Research Approach

Passenger ferry systems are unique around the country and the world. Passenger ferry systems that serve National and State parks in the United States are particularly diverse as they serve a niche market within the wider applications of ferries. These services have a specific mission to provide public access to these natural and cultural resources. There is no existing ferry service at another park that provides a direct comparison for the special service requirements of the Boston Harbor Islands due to the distinct geographic needs and unique amenities of the park.

After an initial review of park ferry service examples and an assessment of their applicability, six parks were selected for additional research and analysis. General characteristics such as location, park visitation, schedule, contracting method, and available financial data were gathered as part of the analysis. Specifically, the following characteristics were studied: distance from mainland, number of islands served, proximity to an urban center, schedule (seasonal or year-round service), type of visitor (local or tourists), purpose of the park visit (sight-seeing at a large attraction or camping/hiking in a remote location), and service delivery method.

Profiles for each of the six parks were developed, and telephone interviews were conducted with two of the most comparable services to understand ferry system delivery. The analysis included contracting approach and general characteristics as well as the challenges and opportunities offered by each approach. This data collection has generated an understanding of the park ferry business, how it varies across the country, and some best practices applicable to the Boston Harbor Islands. This data will be relevant for the development of a request for proposals and a new contract in 2019.

Existing Parks Ferry Systems Reviewed

The six parks that were studied vary in their location, geography, climate, and attractions. Their transportation mechanisms also vary significantly. There are only a handful of parks where ferry services operate and an even smaller number that have comparable characteristics to the Boston Harbor Islands. The systems reviewed were chosen for the similarity of their characteristics including the park's distance from the mainland and proximity to an urban center, annual park visitation and type of visitation, annual schedule, and service delivery types. These key characteristics are outlined below and a summary profile and analysis of each park's ferry service is included at the end of this document.

System Profiles Reviewed

Ferry System	State	Comparable Characteristics	Major Differences
Golden Gate National Recreation Area (Alcatraz Island)	CA	<ul style="list-style-type: none"> Located near an urban center 	<ul style="list-style-type: none"> Internationally recognized tourist attraction with significantly higher visitation Year-round service
Angel Island State Park	CA	<ul style="list-style-type: none"> Located near an urban center 	<ul style="list-style-type: none"> Park is located on only one island
Governors Island National Monument	NY	<ul style="list-style-type: none"> Located near an urban center Similar annual visitation 	<ul style="list-style-type: none"> Very short ferry crossing
Statue of Liberty and Ellis Island National Monuments	NY	<ul style="list-style-type: none"> Located near an urban center 	<ul style="list-style-type: none"> Internationally recognized tourist attraction with significantly higher visitation Year-round service
Fort Delaware State Park	DE	<ul style="list-style-type: none"> Ferry service is operated by an agency that represents transportation and economic development interests 	<ul style="list-style-type: none"> Very short ferry crossing Lower visitation
Cape Lookout National Seashore	NC	<ul style="list-style-type: none"> Multiple routes Similar annual visitation 	<ul style="list-style-type: none"> Not located near an urban center

The closest park comparisons based on the geographic and demographic characteristics of the Boston Harbor Islands are in the San Francisco Bay Area in California (Angel Island State Park and Golden Gate National Recreation Area) and New York City (Statue of Liberty and Ellis Island National Monuments and Governors Island National Monument). However, both the San Francisco and New York metropolitan areas have larger populations and the parks themselves are located much closer to the mainland than the Boston Harbor Islands. Additionally, two of the Parks attractions, Alcatraz Island in San Francisco Bay and Statue of Liberty in New York Harbor, draw millions of visitors a year, which requires a different level of service than the Boston Harbor Islands where ferries transport only about 125,000 visitors to the islands annually.

Two other parks systems and a National Park Service (NPS) ferry provided additional context. Cape Lookout National Seashore is comparable in that it has a network of island park resources under its management and control, but the population within the surrounding areas is significantly less than in Greater Boston. Fort Delaware State Park is served by a ferry service operated by the Delaware River and Bay Authority, a transportation and economic development agency, rather than by a State or National Park. Although dissimilar to Boston Harbor Islands with a shorter route distance and lower visitation, this park was selected for study due to its unique governance and funding structure. Isle Royale National Park, in Michigan is home to the only NPS-owned and -operated vessel. It is included in the report specifically because of its unique capital asset management since the park itself and ferry are not otherwise comparable to the Boston Harbor Islands.

2. Best Practices

Best practices for passenger-only ferry service aid in the successful implementation and long-term operation of service. Whether ferries serve commuting or recreational trips, they need an effective service delivery model, sustainable funding, system integration with other forms of transit, and measurable performance standards. Some features of commuter ferry service, like time competitiveness, are not considerations for tourists. When ferries are the only option for accessing a park, the boat ride is part of park visitation experience, and there is less pressure for the trip to be completed at top speed.

When assessing the operation of other park ferry systems, service delivery and user experience were recurring themes. An analysis of service delivery models and methods considered contracting methods, levels of service, baseline experience expectations, the financial relationship between the parks and their contractors, and other expectations including environmental and safety requirements. The analysis of the user experience touches every aspect of the trip to and from the park by ferry and encompasses the schedule and transportation options available, ticket purchasing, travel to the ferry departure site, queuing and boarding the vessel, and the boat ride itself. The design of every one of these steps within a trip has the opportunity to enhance the visitors' experience. Each of these topics is discussed in more detail below.

Other factors in planning and implementing recreational ferry service include the following:

- route configuration,
- system integration,
- efficient operations,
- measurable performance standards,
- response and resiliency function, and
- environmental considerations.

Service Delivery

Service delivery decisions determine how the ferry service will be organized and managed to provide services to customers. Different models for service delivery include varying levels of involvement by a public agency, typically a transit agency, or by some sort of quasi-public authority, such as an economic development council or transit district. There are three basic models for service delivery – direct agency delivery of all ferry services, private contractor provision of all ferry services, and public/private partnerships.

Direct agency delivery offers the most control over operations and the least risk of coordination challenges, but it also represents the greatest amount of work and the most risk of public criticism and political outfall. This option also requires the greatest amount of infrastructure development and commitment of time and resources by an agency. There are very few examples of direct agency delivery for ferry service to National or State parks.

Isle Royale National Park in Michigan provides the only example of direct agency delivery of ferry service to a National Park. NPS owns and maintains the MV Ranger III vessel, which has provided passenger and freight service to Isle Royale National Park since 1958. The MV Ranger III is the largest piece of moving equipment owned by NPS. Two concessionaires also provide passenger ferry service to

the park with three other privately-owned vessels. One of the challenges faced by Isle Royale National Park in operating the MV Ranger III is the exponentially increasing cost of maintenance of the aging vessel and the significant cost of replacement.¹ It should also be noted that this vessel was gifted to the Park Service from the Coast Guard and was not purchased by NPS.

An example of direct agency delivery of ferry service to a State Park is found at Fort Delaware State Park in Delaware. The Forts Ferry Crossing is served by a passenger ferry operated by the Delaware River and Bay Authority (DRBA), a government agency serving Delaware and New Jersey. The DRBA also operates the Cape May-Lewes car ferry, a bridge, a business center, and five airports.

Privately owned and operated service delivery requires access be provided exclusively by a private entity. This delivery method is not viable for most park ferry services because National and State parks typically have controlled access, hence ferry service is necessarily managed by a government agency or in partnership with one.

The **public/private partnership** model allows a public agency or a quasi-public authority to remain engaged in ferry service provision while purchasing the specialized services they need. This option takes advantage of existing skills and experience within the agency and supplements it with external contracts with ferry operators that have improved operational efficiencies. This service delivery model is by far the most common among public transportation ferry services as well as park ferries. The public/private partnership option requires additional coordination and has an added risk of conflicts arising between the park and the ferry operator. Performance standards can be used to monitor and improve the service.

Managing ferry services through a contract can ensure continuity of service, control the quality of service through contract requirements and oversight, and support park services with a set revenue. National and State parks generally provide passenger ferry service through two different types of contracting mechanisms, concession agreements and commercial use authorization (CUA). Concession agreements allow the park to outline the service provided by the operator while also setting guaranteed revenue by way of a set revenue or percentage of revenue for the park for the duration of the contract. CUAs permit the operator to provide ferry service to the park in exchange for yearly fee.

Concession agreements are commonly used by NPS and are used for many types of concessionaire vendors including hotels, ferries and other transportation services, and recreation excursions at the parks. These types of agreements generate income for the agency that owns the park and provide services to park visitors. This is different than typical commuter ferry services which often operate with some certain level of subsidy from a transit agency.

Concessions tend to be preferred over CUAs. When Cape Lookout National Seashore completed a passenger ferry feasibility study in 2010, the study recommended that the park pursue consolidated management of their ferry services from CUAs for point-to-point service to and from the park into one concession agreement with a single operator.² This would allow the park greater control over the level of service offered and overall experience offered to visitors. Cape Lookout still maintains some CUAs for excursion ferry service in addition to its concession contract with Island Express Ferry Service. These CUAs have minimal requirements and require a flat fee of approximately \$555/year.

¹ *Isle Royale National Park: Replace the Ranger III*, National Park Service, March 2016

² *Passenger Ferry Feasibility Study for Cape Lookout National Seashore*, Otak, September 2010

After reviewing existing concessionaire contracts and RFPs and having discussion with park staff, some contracting opportunities should be highlighted.

Length of contract. Parks should carefully decide the optimal length of a service contract. Angel Island State Park in California has previously experienced challenges from having short contracts that cause the contract manager and concessionaire to exist in a constant state of applying, reapplying, and adjusting to new contract terms. Contract terms should be of sufficient length to give the contract manager, concessionaire, and visitors enough time to adjust to the service provider while limiting unneeded administrative time. Ten years was a standard contract length among the services studied.

Financial agreements. Contracts can determine whether operators collect fees paid or percentages of revenue. Revenue could include ticket sales only or ticket sales plus concessions and merchandise.

Fare levels and rate increases. Contracts can identify rate structures or parameters for establishing them as well as a process for requesting rate increases. Most contracts require rate increases to be approved and have some baseline to which proposed fare levels can be compared. Cape Lookout looks to regional ferry systems as a benchmark and compares rates proposed by their concessionaire with the rates used on the public ferry service. Before issuing their most recent RFP for ferry service from Tiburon to Angel Island, California State Parks performed multiple feasibility studies and compared concession fees to other local concession contracts. Ultimately, the fees paid to the park and fare levels are dictated by the market through what operators propose.

Vessel requirements. Vessel requirements can vary depending on the climate of the region and ridership levels. At Cape Lookout, the water can be quite choppy and low-draft vessels are required due to the nature of the shoreline and local bathymetry. The most recent concessionaire contract identified the size and sea state requirements of a vessel for the direct purpose of providing an enhanced experience for visitors to hopefully keep them dry and comfortable.

Service level requirements. Service level requirements identify the level of service to and from the park. This can be measured by number of sailings and the timeframe of allowable operations as well as a higher level of control in sailing schedule management.

Defined user experience. Contracts can require the operator to provide marketing materials, interpretive information, or onboard programming. This allows the park to ensure that ferry passengers receive a gateway experience while traveling to the park.

Performance measures and reporting requirements. Performance measures can be stipulated that help to ensure the quality of ferry service and provide the park with set parameters for oversight and measurement. Required reporting can include financial data, ridership statistics, environmental compliance information, and on-time performance.

The following examples of existing contracts are summarized in the table below and contrasted with the existing contract for service to the Boston Harbor Islands:

- April 17, 2008 RFP for Ferryboat Service from Tiburon to Angel Island State Park, California Department of Parks and Recreation. (Note: This RFP did not garner interest from any bidders other than the incumbent service provider.)
- April 1, 2008 concession contract between NPS and Statue Cruises for service to the Statue of Liberty and Ellis Island.

Ferry Service Contract Examples

	Boston Harbor Islands	Angel Island State Park	Statue of Liberty and Ellis Island
Contract Length	<ul style="list-style-type: none"> • 10-year contract term 	<ul style="list-style-type: none"> • 10-year contract term 	<ul style="list-style-type: none"> • 10-year contract term
Fees to Park	<ul style="list-style-type: none"> • Ticket surcharge of \$2 paid to partnership • Central/Southern routes fees: \$.25 each (first 50,000 passengers), \$.10 each (up to 100,000 pass.) • Other routes fees: \$.25 each (first 5,000 passengers), \$.10 each (up to 8,000 pass.) 	<ul style="list-style-type: none"> • Rent to the State of California Department of Parks and Recreation of \$32,000 annually or 8% of monthly gross receipts up to \$400,000 and 30% of monthly gross receipts over \$400,000, whichever is greater 	<ul style="list-style-type: none"> • Franchise fee of 21% of annual gross receipts • Sales of concessions and merchandise
Fares	<ul style="list-style-type: none"> • Fares are set in the contract, operator may request increase once per year. 	<ul style="list-style-type: none"> • The State has the ability to review the fare pricing policies of the operator 	<ul style="list-style-type: none"> • Fares are set by the operator but must be approved by the park director
Vessel Requirements	<ul style="list-style-type: none"> • Two boats with minimum capacity of 200 passengers and two boats with minimum capacity of 149 passengers 	<ul style="list-style-type: none"> • Two ferryboats with minimum capacity of 350 and 100 passengers 	
Service Requirements	<ul style="list-style-type: none"> • Operator to provide free inter-island shuttle service between selected islands • Marketing plan including printed material and signage 	<ul style="list-style-type: none"> • Service will be daily, year-round, with a minimum of three round trips • Marketing plan to optimize visitor experience and attendance • Dock facility with passenger waiting area at no cost to the State • Maintenance of dock and boat facilities at the expense of the operator 	<ul style="list-style-type: none"> • Service requirements including year-round scheduled service • Reservations and sales of ferry tickets and audio tours, including distribution of free monuments passes • Interpretive program onboard vessels
Performance Measures/ Reporting	<ul style="list-style-type: none"> • Monthly reporting of ridership and revenue 	<ul style="list-style-type: none"> • Reporting of financial data 	<ul style="list-style-type: none"> • Environmental performance measurement and data reporting

Each element identified in the table above should be included as part of a concessionaire contract. The terms and parameters of each element depend on the goals and priorities, management structure, and reporting requirements of the specific managing park agency.

In rare cases, public/private partnership contracts involve park-owned vessels. At Gulf Island National Seashore, a concessionaire contract RFP was released on November 1, 2017 for service that will begin in early 2018. NPS will provide the vessels to be used for service while the embarkation facilities are owned by the City of Pensacola. In this partnership, the concessionaire will be responsible for operations as well as vessel repairs and maintenance. The NPS vessels were fully funded as part of the settlement from the 2010 BP oil spill.⁴

Funding Opportunities

The majority of ferry services to parks are unsubsidized. Parks contract ferry service to an operator, and the park receives either a set fee or percentage of revenue. In exchange for providing fees to the agency controlling the park, contracted ferry operators can be given support through exclusive operator rights or the ability to use park docking facilities. Additionally, in order to offset capital and operation costs, there are a variety of local, state, and federal transportation funding sources as well as economic development funding and partnership programs that can be tapped by ferry operators. These primarily support capital investments, which may or may not be needed, depending on the service delivery method.

- Parks ferries are eligible for FHWA Ferry Boat Program funding as long as the ferry operator is under the control of a National or State park or another public entity through a contract, permit, or agreement. Additionally, fares collected by the private operator must be under the control of the National or State park or other public entity, and must be regularly reviewed and approved.⁵ In 2014, several private ferry operators serving National Parks under concession contracts received Ferry Boat Program funding. Recipients included Cape Lookout Cabins and Camps Ferry Service serving Cape Lookout National Seashore (\$66,000) and Statue Cruises serving the Statue of Liberty (\$1,162,000).
- The Congestion Mitigation and Air Quality Improvement (CMAQ) Program, administered by the Federal Highway Administration (FHWA), provides funding for transportation projects, programs, and operational strategies that reduce emissions or contribute to the attainment of national air quality standards in areas that have failed to meet those standards.

Route Configuration

Route configuration is an important consideration in the design of successful service. It will impact a service's competitiveness with other modes and the potential enjoyment of the ride itself. For park ferry service, route configuration is important to ensure the best experience for the visitor and to provide frequency of access to the park that meets visitation demand.

⁴ The RFP text was accessible at concessions.nps.gov/GUIS003-18.html.

⁵ *National Park Service Primer on the Construction of Ferry Boats and Ferry Terminal Facilities Program (FBP)*, Volpe, December 2014.

Point-to-point. Many ferry routes are point-to-point. Focusing service on a single destination allows for increased efficiency and a higher level of service. In Boston Harbor, there is point-to-point service from Long Wharf to Georges Island and Spectacle Island.

Connector routes with multiple park stops. This configuration offers service to many islands that each have relatively low visitation. The interisland circulator route in Boston Harbor connects Hingham and Hull to Georges, Grape, Lovells, Peddocks, and Bumpkin Islands. Another route serves to connect Boston with Peddocks, Spectacle, and Georges Islands.

Integrated with commute. Some commuter services may provide recreational access to park amenities off peak. A limited number of scheduled stops at Georges Island have been incorporated into the MBTA's Hingham-Hull-Logan-Long Wharf route operated by Boston Harbor Cruises. This adds four daily weekday stops and nine daily weekend stops on the island between Memorial Day and Columbus Day.

Angel Island State Park learned that direct service with a point-to-point route provided a better experience for visitors. With service catered specifically to park visitors, the ferry operators can provide better and more specific information and messaging for the park.⁶ Although commuter routes have the opportunity to bring more people to a park, the experience is often of lower quality for parks visitors, because it is not geared towards them.

System Integration

System integration is a key component of successful service for both commute-based and recreational ferry services, but it is a less important consideration for park ferry service. Access to parks is rarely integrated into the fare structure, fare collection, wayfinding, and branding of local public transit. Nonetheless, the contracted ferry service should be integrated into the overall framework of the park itself. Schedule information should be included on the park website. Additional signage on the island should aid visitors upon arrival.

Boston Harbor Islands is a model of system integration from an information standpoint with ferry schedules integrated into the park's website. In many of the examples reviewed, information about ferry services on other park websites led to external links making it challenging for the visitor to plan a trip inclusive of all park amenities. Boston's island ferry services are not integrated with the schedules of or information about other public transit.

Fare Collection

There are two opportunities for fare integration with a transit system: fare structure, how fares are set by destination or route, and, fare collection, how passengers pay for their ride. For a park ferry system, it is important to offer fare payment options geared towards tourists, including options to pay in cash at the dock or ahead of time online. Fare structures should be simple and also have opportunities for reduced fares for children and seniors. This is typically the case for natural and cultural attractions and is true of the current fares for ferries to the Boston Harbor Islands. Fares can also be integrated with the park entrance fees. For example, when traveling to Alcatraz Island, passengers purchase their ferry fare and

⁶ Ferry schedules and fares for Angel Island are clearly laid out at angelisland.com, which also includes information about park amenities and events.

entrance to the park as a single ticket from Alcatraz Cruises, and special programming or tours can be purchased at a higher cost.

Relationship to Landside Transit Connections

Multi-modal integration with local transit provides visitors with more options and access. Locating ferry terminals within walking distance of transit stations and stops provides ease of access for both residents and tourists. The Pier 33 Alcatraz Landing used by Alcatraz Cruises is located near connections to bus, streetcar, cable car, and train, in addition to being within walking distance of other tourist attractions. The park gateway at Long Wharf in Boston is easily accessible by subway and other ferries. The Hingham and Hull terminals each have parking lots and bus service, though it is not frequent.

Once visitors are in the park, landside connections such as shuttles can be offered to provide accessibility to attractions. Shuttles are not recommended for the Boston Harbor Islands because the on-island infrastructure is extremely limited and part of what makes them so beautiful. The islands are the park and the only way for most visitors to get from island to island is by ferry.

System Information, Branding, and Wayfinding

Centralized and integrated system information can greatly aid visitors. Departure notifications, digital applications, and system trip planning tools all facilitate the use of the system, especially tourists unfamiliar with the area. Clear, integrated wayfinding signage further benefits both commuter and recreational riders. While this seems fairly obvious and easy in theory, it can often be more difficult in practice to implement due to specific branding protocols of the partner agency or agencies. Yet no matter what signage looks like and whether it has integrated park branding, it must do the job of communicating where the ferry terminal is located and how to get there.

For park ferry services, system information and branding can be integrated with the park to also promote park attractions and provide general visitor information or a “gateway experience.” The Boston Harbor Islands gateway information kiosk on the Rose Kennedy Greenway in Boston near Long Wharf is staffed by NPS. The knowledgeable personnel answer questions about park attractions and how to get there. The building has interpretive information about the park islands and their historic and natural assets as well as maps of the islands that highlight key areas of interest. Additionally, Boston Harbor Cruises staffs a kiosk on Long Warf pier which also has informational brochures, but the different branding by BHC makes the experience a bit confusing. While not all visitors will see the gateway building on the Greenway, all tickets are purchased at the Boston Harbor Cruises kiosk. Improved integration of branding efforts provides clarity for visitors.

Boston Harbor Islands Park Gateway Kiosk



Boston Harbor Cruises Ferry Information Kiosk



Efficient Operations

For commuter ferry service, decreasing customers' travel time will increase time competitiveness with other transit modes and make ferry transportation more attractive for potential passengers. This can be achieved through adjustments to facility location, crew activity, time used for fare collection, efficient passenger queuing, and increased passenger throughput. For park ferry services, time competitiveness is rarely a primary issue since the service does not typically compete with other travel modes. Still, park ferry services can focus on optimizing operations to improve transit time and reduce fuel consumption. Avoiding trips at top speed can improve fuel efficiency and can still allow ferries to adhere to the published schedule depending on the particular vessel being used and its fuel consumption curve. Effective passenger throughput and crew activity can make the boarding and unloading experience efficient and enjoyable.

Measurable Performance Standards

Performance measures provide a clear way to monitor performance over time and provide information on how operations are working and if operational modifications should be considered. Examples of common performance metrics for commuter service include:

On-time performance. Documenting when a vessel departs in relation to the published sailing schedule is a simple measure of on-time performance. The amount of delay measured and recorded as on-time varies by operator and contract. The Staten Island Ferry is required to report any sailing that departs five minutes after the published sailing time to the Mayor of New York City.

Trip reliability. Monitoring missed or canceled trips tracks the reliability of ferry service. A set number of allowable cancellations or specified, anticipated reasons for cancellation may be agreed upon in the contract.

Fuel consumption. Tracking fuel usage can indicate if adjustments should be made to transit speeds or other aspects of vessel operations to stabilize or reduce fuel consumption.

Vessel availability. The availability of vessels that could be brought into service when other vessels require planned or unplanned maintenance should be assessed regularly.

Operating cost per passenger. This common financial metric is used to determine the cost effectiveness of a service compared with historic trends, other modes, or other transit agencies.

Through a concessionaire contract several performance standards may be measured by the agency and required of the contractor. Fuel consumption and other business operations decisions are typically at the discretion of the concessionaire as long as they meet the contractually mandated standards. The 2005 contract with Harbor Islands LLC, the operator contracted by Boston Harbor Islands Partnership to provide ferry services prior to their current agreement with Boston Harbor Cruises, identified the following performance measures:

- The Standards of Performance, including professional standards, training and guidance of personnel, and compliance with the laws and standards of all applicable public agencies, were listed as a requirement, but it did not include any of the standards mentioned above.
- Monthly reports, including daily passenger totals, monthly passenger trips, fare categories, destinations, and revenue per passenger and per gateway), were required as part of the contract, but no performance measures other than ridership and financial data were included.

The California State Parks concession contract for ferry service from Tiburon to Angel Island similarly requires reporting of financial information as a performance measure. This financial information is reported regularly by the concessioner to the district. The same financial reporting is also required of Cape Lookout National Seashore in addition to the following performance measures: visitor/ridership statistics, safety policy implementation, property inventory, environmental policy implementation (removal of trash and fueling requirements), and on-time departures.

Response and Resiliency Function

In urban regions with large bodies of water, the vessel fleet of a public water transportation system can be a critical component of emergency response, resiliency, and recovery in the event of a natural or manmade disaster. If bridges, tunnels, or roadways become inaccessible, ferries can transport emergency responders to locations in need of assistance and can transport people to safety. WETA in the San Francisco Bay Area was created to provide transportation services during emergencies that affect the regional transportation system. They maintain an Emergency Water Transportation System Management Plan in preparation for emergency response. WETA owns the majority of its vessels and infrastructure, and they contract operations and maintenance to Blue and Gold Fleet. However, it is unclear what type of emergency response could be expected through a typical concessionaire contract with most park systems, but the fleets could be deployed if the contract specified this as a potential, anticipated need.

Environmental Practices

Implementing sustainable environmental practices for landside and vessel operations is a best practice for ferry services. While operators must comply with a variety of standard environmental regulations, there are opportunities to leverage alternative fuels, fuel management, vessel design, and general business practices that can further improve environmental sustainability. Because sound environmental practices are in alignment with the missions of State and National Parks, these practices, including reductions in fuel usage and emissions, could be implemented through the requirement of environmental performance measures as part of the contract.

Environmental Management Program. Many of the Parks concessionaire contracts reviewed required an environmental management plan which outlines goals, responsibilities, and performance measures related to all aspects of environmental concerns associated with ferry operation. For example, the April 2008 concession contract between the National Park Service and Statue Cruises for service to the Statue of Liberty and Ellis Island required the development of an Environmental Management Program by the concessionaire to be submitted to the park director for approval and updated annually. Some of the elements of this plan included establishing measurable goals and targets, designating of an Environmental Program Manager, routine and emergency reporting of environmental information to the park director, and an annual self-assessment of the concessioner's performance measured against the established goals and targets.

Alternative Fuels and Fuel Management. The use of alternative fuels and the deployment of hybrid diesel-electric systems are being explored by ferry operators around the world. Some operators have been designing and installing liquefied natural gas (LNG) propulsion systems retrofitted into large passenger and vehicle ferries. Although LNG ferries have significantly lower emissions, the size of the fuel tanks and complexity of the associated fuel management system make its use on small, high-speed passenger-only ferries challenging. Biodiesel has also been tested by ferry operators with mixed results. While the test ferries were able to operate successfully, the lubricity characteristics of biodiesel required other fuel additives be used to reduce maintenance cost. Biodiesel can be more expensive than traditional fuels though it can also be blended with traditional fuel. Ultra-low sulfur diesel can reduce the sulfur content and other pollutants in the emissions from the ferries but ultra-low sulfur fuel does not have the same lubrication properties as low-sulfur fuel, which can cause maintenance issues. Generally, these issues

have been overcome and the use of ultra-low sulfur diesel is expected to expand. Examples of alternative fuels used in existing ferry services include:

- King County Marine Division, a passenger-only commuter-focused ferry system in Washington, chose to phase in a 10 percent biodiesel blend in 2015.
- San Francisco Bay Ferry has added two new ultra-low sulfur diesel vessels to their fleet.
- Upon receiving their NPS contract in 2006, Alcatraz Cruises began the process of retrofitting their fleet with hybrid technology, and expects to reduce fuel consumption by 75% and to reduce emissions by 75%.⁷

Due to the sensitive locations and associated eco-systems around Cape Lookout National Seashore, their ferry operator has specific fuel management requirements. Due to the Seashore's distance from a commercial vessel fueling operation, the park had to ensure safe refueling procedures by concessionaires, and in doing so, provided a refueling station to its concessionaires.

Vessel Design. To reduce adverse environmental impacts, vessels can be modified or constructed to minimize energy use, emissions, discharges into the water, use of hazardous materials and environmental contaminants, waste, and scrap. During construction, vessel manufacturers can also maximize the use of recycled and recyclable, rapidly renewable, and regional materials. By being aware of the energy effect during construction, materials can be selected that balance cost with environmental benefit, durability, and maintainability. Examples include the use of recycled steel and aluminum, high solid/low volatile organic compound paints, and flooring materials and interior finishes made of recycled materials. Before making environmentally-friendly modifications to existing vessels or new vessels, the operator should assess the power required to support ferry operations and optimize vessel performance to minimize environmental impacts while meeting the required power needs.

Another aspect of vessel design is the draft of the vessel and seaworthiness. In areas with shallow water, parks contracts should specify the required draft of vessels capable of maneuvering in and out of the docking facilities. Vessels should be designed to keep the experience enjoyable for visitors based on the usual wind, wave, and other conditions experienced at the park.

Landside Policies. While vessel design and fuels are the main focus in moving toward environmental sustainability, landside policies can also improve environmental practices for ferry operators. The Passenger Vessel Association (PVA) Waters program encourages green business practices and provides tools for operators, which include improving recycling opportunities, going paperless as an organization, and purchasing more energy efficient appliances. Cape Lookout National Seashore has a "trash-free" parks policy and requires their concessionaire to collect all rubbish from their riders.

Conclusions

As mentioned in the introduction of this report, every island park or park system is unique and has its own set of transportation challenges. No two parks or their ferry service and contracting are the same. Considering the best practices outlined below will aid in the future development of a parks concessionaire contract for ferry service the Boston Harbor Islands.

⁷ *Sustainability Report*, Alcatraz Cruises, 2012

- In every scenario reviewed, ferry service is a revenue generator for the park system; however, that revenue can vary significantly based on the location and ridership/visitation of the park resource.
- The concessionaire agreement is the most common form of contracting relationship and can bring varying levels of oversight by the Park depending on the performance measures.
- Revenue is typically based on a percentage of operator revenue which may include only tickets or a combination of both tickets and concessions.
- Wayfinding and communication about transportation options to and from the park is very important. The communication about schedules is something the Boston Harbor Islands does very well. Wayfinding could be improved and may be something to be considered within the contract language of a future contract.
- Environmental requirements can be managed through an environmental management plan and can have varying degrees of specificity and performance measures.

3. Reference System Summary

The basic data and a system overview for Boston Harbor Island and the other six park ferry systems referenced in this document are summarized below.

Boston Harbor Islands⁸

Distance from mainland	1 to 10 miles
Proximate to an urban center	Yes
Number of islands served	8
Seasonal or year-round	Seasonal
Typical purpose of visit	Attractions and outdoor activities
Approximate annual ridership	110,000
Service delivery method	Contract



Eight of the 34 Boston Harbor Islands are currently served by public ferries that are operated seasonally from May to October. Boston Harbor Island Partnership coordinates management of the islands, and the nonprofit partner Boston Harbor Now contracts ferry service to Boston Harbor Cruises on behalf of the partnership.

Golden Gate National Recreation Area⁹

Distance from mainland	1.8 miles
Proximate to an urban center	Yes
Number of islands served	1
Seasonal or year-round	Year-round
Typical purpose of visit	Attraction with tour (prison)
Approximate annual ridership	1,500,000
Service delivery method	Concession contract



Alcatraz Cruises (owned by Hornblower) was awarded the National Park Service concession contract in 2006 for exclusive operation of ferry service and ticketing to Alcatraz Island. The route operates year-round from Pier 33 in San Francisco. Service includes the first hybrid-power ferry in the United States, which was designed and built by Alcatraz Cruises. A seasonal route offers a combined tour of Alcatraz and Angel islands.¹⁰

⁸ Photo credit: [www.bostonharborcruises.com/harbor islands](http://www.bostonharborcruises.com/harbor-islands)

⁹ Photo credit: www.alcatrazcruises.com

¹⁰ www.alcatrazcruises.com

Angel Island State Park¹¹

Distance from mainland	1.2 miles (Tiburon) 5.5 miles (San Francisco)
Proximate to an urban center	Yes
Number of islands served	1
Seasonal or year-round	Year-round
Typical purpose of visit	Attraction with tours
Approximate annual ridership	165,000
Service delivery method	Concession contracts



Angel Island is part of the California State Park system. The island is served by the Blue and Gold Fleet on trips from San Francisco and by Angel Island Ferry on trips from Tiburon. Attractions include historical sites, tours, a café, hiking, and camping.

Angel Island Tiburon Ferry is family owned and operated and provides year-round ferry service to Angel Island, which is limited to weekend-only service in the winter. They also offer cruises in San Francisco Bay and charters.¹² The Blue and Gold Fleet is a subcontractor of WETA and provides year round service to Angel Island. WETA has an operating agreement with California Department of Parks and Recreation (DPR). The Blue and Gold Fleet includes Angel Island State Park as a stop on other ferry routes.

Governor’s Island National Park¹³

Distance from mainland	0.25 miles
Proximate to an urban center	Yes
Number of islands served	1
Seasonal or year-round	Seasonal
Typical purpose of visit	Attractions, tours
Approximate annual ridership	(new service)
Service delivery method	Contract



Governor’s Island National Park is located in New York Harbor, less than 1,000 yards away from landings in both Manhattan and Brooklyn. Park attractions include historic buildings, tours, and educational programs. The Trust for Governors Island is a non-profit corporation that oversees operations of the island and provides ferry service to Governor’s Island in the summer. This service is part of an agreement with New York Waterway and is operated by Port Imperial Ferry Corp.

In 2017, the New York City Economic Development Corporation (NYCEDC) launched the NYC Ferry with service to Governor’s Island as a stop along two commuter ferry routes operated by Hornblower.

¹¹ Photo credit: angelislandferry.com

¹² angelislandferry.com

¹³ Photo credit: www.nps.gov/gois

Statue of Liberty and Ellis Island National Monuments¹⁴

Distance from mainland	1.6 to 2 miles
Proximate to an urban center	Yes
Number of islands served	2
Seasonal or year-round	Year-round
Typical purpose of visit	Attraction with tour (monument)
Approximate annual ridership	4,500,000
Service delivery method	Concession Contract



Both Statue of Liberty and Ellis Island national monuments are accessible from the mainland in New York and New Jersey by boats departing every 15-minutes. Statue Cruises (owned by Hornblower) was awarded a 10-year concession contract in 2008 for ferry services, reservation, and ticketing for Statue of Liberty National Monument and Ellis Island Immigration Museum. Two routes are offered, one from Manhattan and one from Jersey City.¹⁵

Fort Delaware State Park (Forts Ferry Crossing)¹⁸

Distance from mainland	0.5 miles
Proximate to an urban center	Yes
Number of islands served	1
Seasonal or year-round	Seasonal
Typical purpose of visit	Attraction, tours
Approximate annual ridership	17,000
Service delivery method	Provided by regional agency



Fort Delaware State Park is located a half-mile ferry ride from Delaware City, Delaware. The main attraction is Fort Delaware, and activities include interpretive tours and programs, hiking, and birding.

The Forts Ferry Crossing is owned and operated by the Delaware River and Bay Authority (DRBA) that was created in 1962 to manage travel between Delaware and New Jersey. This allows the Forts Ferry Crossing to be subsidized with public funds. This service also offers charter service for private parties.

¹⁴ Photo credit: www.statuecruises.com

¹⁵ *Statue Cruises – Fact Sheet*, Statue Cruises, January 2009

¹⁸ Photo credit: www.destateparks.com/park/fort-delaware

Cape Lookout National Seashore¹⁹

Distance from mainland	7 to 20 miles
Proximate to an urban center	No
Number of islands served	5 sites
Seasonal or year-round	Seasonal
Typical purpose of visit	Outdoor activities
Approximate annual ridership	70,000
Service delivery method	Concession contract, CUAs

Cape Lookout National Seashore is located approximately 3 miles from the mainland. The park is located roughly a 1.5-hour drive from Jacksonville, North Carolina and 2.5 hours from Wilmington, North Carolina. Park activities include birding, camping, and fishing.

There are three authorized ferry operators with routes to Cape Lookout National Seashore. Island Express Ferry operates seasonal passenger-only ferry service on four routes, departing from Beaufort and Harkers Island. Davis Shore Ferry Service and Cape Lookout Cabins & Camps Ferry Service each operate one seasonal passenger/vehicle ferry route. Two additional authorized operators offer tours and ferry services by request.²⁰



¹⁹ Photo credit: www.nps.gov/caloc

²⁰ www.nps.gov/caloc/planyourvisit/ferry.htm

	State	Facility Type	2016 Park Visitation	Distance to Mainland (miles)	Routes	Service Delivery Operator(s)	Annual Ridership	2015 Revenue	Fare (*includes park entrance)	Seasonal/Year-round	Daily round trips
Boston Harbor Islands	MA	National & State Park	500,000	1-10	7	Boston Harbor Cruises	115,495 (2014)	\$1,409,222 (2014)	\$17/adult RT	Seasonal	30
Golden Gate National Recreation Area (Alcatraz Island)	CA	National Park	15,638,777	1.8	1	Alcatraz Cruises	1.5 million (est.)	\$35,133,661	\$37-71/adult*	Year-round	21
Angel Island State Park	CA	State Park	200,000	1.2 (Tiberon), 5.5 (Pier 41)	2	Blue and Gold Fleet	163,895 (2011)		\$19.50/adult RT*	Year-round	3
				1.2		Angel Island Ferry			\$15/adult RT*		
Governors Island National Monument	NY	National Monument	522,859	0.25	4	<i>now by NYC Ferry</i>			\$2.00 (NY Waterway) \$2.75 (NYC Ferry)	Seasonal	
Statue of Liberty and Ellis Island National Monuments	NY	National Park	4,501,547	1.65 (from Battery Park), 1.95 (from Liberty Park)	2	Statue Cruises	4 million (est.)	\$72,225,609	\$21.50/adult RT*	Year-round	43
Fort Delaware State Park	DE	State Park	15,619	0.5	1	Delaware River and Bay Authority (DRBA)	17,239 (2015)		\$12/adult	Seasonal	8
Cape Lookout National Seashore	NC	National Park	458,000	7 to 20	6	Island Express Ferry Service	70,000 (est.)	\$1,224,074	\$14-35/adult RT, \$75-120 vehicle	Seasonal	35
						Davis Shore Ferry Service			\$16/adult RT, \$85-360/vehicle	Seasonal	5
						Cape Lookout Cabins and Camps Ferry Service			\$16/adult RT, \$80-150/vehicle	Seasonal	5

Appendix A: Interview Notes from Angel Island State Park

Phone call with Jared Zucker, Concessions Program Manager at California State Parks
September 9, 2017

Recommended best practices and lessons learned for ferry service contracting and operations:

- Develop a strategy for long-term agreements. The first contract with the Tiburon-Angel Island operator was just one year, and the park has not been able to enact a long-term agreement since then. It's become politicized.
- RFPs and contracts may be required to comply with laws regarding public contracts. In this case, California State Parks is restricted by CA Public Resources Code 5080.03-5080.29, which dictates how services are contracted, the bidding process, and selection criteria for contract award.
- Direct service (point-to-point route) provides a better experience for visitors because the service is catered to visitors. These ferries can provide better/more specific information and messaging for the park. Commuter routes can bring more people, but the experience is of lower quality for park visitors.
- Performance measures fall to the district for reporting/enforcement. Only financial information is collected. There is no reporting of fuel consumption or trip reliability. There have been challenges in collecting the required information on a regular/timely basis.
- Angel Island-Tiburon Ferry collects gate receipts for the park, but they do not get a cut of this revenue.
- A major challenge is that land-based concessionaires in the park are dependent on the ferry, and there are difficulties coordinating the two.
- Angel Island Ferry does not receive any form of subsidy. WETA and Blue and Gold Ferry do receive public funding, so there are issues of public perception with them having an unfair advantage in the RFP process over a local operator which does not receive subsidies. A provision to promote small businesses is in the RFP for this reason.
- Fares are proposed by the operator in the RFP process. Any changes in fares are reviewed by the park.
- The park has performed multiple feasibility studies before issuing this RFP and compares concession fees to other concession contracts, but ultimately the market dictates what operators set as revenue/fees to the park and the fare levels in the proposal.

Appendix B: Interview Notes from Cape Lookout National Seashore

Phone call with Katherine Cushinberry, Contracts Administrator
November 6, 2017.

Recommended best practices and lessons learned for ferry service contracting and operations:

- They have learned many lessons about permits vs. concession contract since the change to a consolidated service contract in 2013. Their service contracts are structured as follows:
 - Commercial Use Authorizations (CUAs) for local services
 - Create a tour instead of point-to-point transportation service
 - Criteria in order to get CUA
 - Contract with Island Express Ferry Service. Criteria that was important:
 - Type of vessels (6-21)
 - User experience (choppy weather)
- Performance measures (annual):
 - Visitor services – report stats
 - Safety policy, weather plan, vests
 - Property inventory
 - Employee handbook
 - Fuel (how and where), environmental policies, waste
 - “Trash-free Park” – taking off trash
 - On-time departures
- Times allowed to operate
- Fare structure:
 - Rate study
 - Each year operator can request rate increase
 - There is not another service to compare rates to (used local car ferries)
 - Ask that they wait 1 to 2 years to raise rates
- Lessons Learned:
 - Other agreements not the two together:
 1. Contract
 2. Agreement with local tour where gateway was located
 - Good relationship with concessionaire
 - Specified number of trips to islands
 - Fueling Side (EPA regulations – provide a place for operators to fuel, but cannot sell them fuel)
- CUA permits:
 - \$75 application fee, \$475 permit fee annually
 - \$500,000 to use docking facility outside of park
- Ferry – point to point – concessionaire:
 - Franchise fee on tickets and concession sales (not capped). Minimum required in RFP was 6%

Credits

Project Coordination

- Boston Harbor Now



Study Sponsors

- MassDOT
- Massport
- National Park Service
- Seaport Economic 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 Davies Gleave
- KPFF
- Moffatt and Nichol
- Elliott Bay Design Group
- Progressions
- Norris and Norris

