



PROJECT NUMBER: 33867.00

8.1



8.0 WATER ACCESS

Water sports are popular on Back Bay, especially fishing, canoeing and kayaking. The latter sports are also travel modes that could get people across Back Bay to the Refuge without using personal vehicles to drive around Back Bay. The study team identified improved water access as one of the original alternative transportation options. The concept involves enhancing the existing canoe/kayak launch facilities that serve Back Bay, as well as potentially developing a new launch site at the future Visitor Contact Station. Improved water access would not only provide an alternative transportation option for those visiting and exploring the Refuge lands, it would provide a means for visitors to experience the waters and shorelines of Back Bay (see Figure 8.1).

◆ Scoping/Planning

To address water access in a comprehensive way, this study examined existing access and developed conceptual improvements for eight existing sites and a potential new site in the vicinity of the future Visitor Contact Station (see Figure 8.6).

The existing and proposed wayfinding and interpretive signage at the various sites could promote the system as the Back Bay Water Trail, with consistent mapping and symbols regardless of the ownership/management of the particular site. As a related effort, the City and its partners could develop and produce water trail mapping and brochures that include the access sites, routes, travel times, navigational details, and safety tips. Water trail users could be encouraged to learn and utilize existing aids to navigation.

◆ Schematic Design and Preliminary Plans

Barbour Hill

Barbour Hill is the main water access site on Back Bay in FCSP. It includes an existing wooden pier with several boat slips, as well as restroom and wayfinding amenities. To enhance these existing conditions, the focus would be on universal accessibility. Figure 8.2 shows a new pier, gangway, and floating dock with a one-direction universally-accessible slide launch. As a primary water access point to FCSP, Barbour Hill would continue to provide access to camping, trails, and other state park amenities. Three other sites within FCSP (at Dudley Island, Wash Woods, and False Cape Landing) were outside the scope of this study.



Kayak Slide Launch



Barbour Hill

Existing Visitor Contact Station

The existing boat dock and launch site at the existing Visitor Contact Station is the only public boat launch site on Back Bay in BBNWR. It currently includes a sandy canoe/kayak slide in the vicinity of the existing parking lot, as well as a large fixed pier to the south of the existing slide. This location offers an opportunity to develop a primary link in a system of access points while also improving accessibility of a water trail network. Figure 8.3 depicts potential improvements at this site, which include improvements to the existing slide with vegetation clearing and backfill with sand and a universal access slide.

The plan also includes a two-direction universally-accessible slide launch with access from a new wooden dock, gangway, and floating dock. A structure for shade and improved paths would be included in the enhancements to this site. The existing parking lot would continue to serve the launch facilities, which would also retain access to the restroom, wayfinding, and other amenities. This site offers a primary wildlife observation opportunity along what could be the Back Bay Water Trail.



Visitor Contact Station

Little Island Park

Across Sandpiper Road from the parking lot at Little Island Park, there is an informal vehicle pull-off area that leads to existing sand pathways and several informal canoe/kayak slides (at least one of which is shallow and overgrown). There is an existing crosswalk from the parking area to the sand paths. In places, the paths are quite deep with sand, making walking difficult. Figure 8.4 depicts enhancements that would include improving the existing vehicle pull-off by adding asphalt pavement and gravel shoulders, closing the overgrown slide, constructing a low wooden walkway over the deep sand area, formalizing a slide location, and providing wayfinding signage. By linking the water trail to the park's beach and recreational amenities, this site could function as a unique spot within the overall system.



Low Wooden Walkway



Little Island Park

Horn Point

Horn Point is a FWS site that includes an existing parking area, restrooms, an informal dirt and gravel canoe/kayak slide, and an informal sand slide. This site also houses a volunteer site host. Figure 8.5 shows the provision of additional parking, construction of a 5' wide low wooden walkway to the northern canoe/kayak slide (which would be improved with the addition of sand and removal of gravel and other material), and construction of a 5' wide stabilized walk to the southern canoe/kayak slide. The FWS has also begun plans for a living shoreline stabilization project at this site. Implementation of the shoreline project would add to the formal parking and restroom facilities that already make the site attractive to boaters.



Horn Point

Future Visitor Contact Station

The FWS owns property on the west side of the intersection of Sandbridge Road and New Bridge Road on which the FWS plans to construct a new Visitor Contact Station in the future; however, a funding source has not yet been identified. There is no current schedule or budget available for this project. Figure 8.6 shows a new universally-accessible slide launch which could be constructed prior to the future Visitor Contact Station. The launch would utilize property (also owned by FWS) across New Bridge Road from the future Visitor Contact Station. The improvements would include a 15' wide vehicular pull-off, an elevated wooden dock, gangway, and floating dock with a two-direction universally-accessible slide launch. This site would provide access to the northeast portion of Back Bay, and would offer boaters access to new amenities at the future Visitor Contact Station.

Additionally, development of this new site would allow the City to divert people from launching in Lotus Garden Park, which is located along Sandbridge Road. American lotus (*Nelumbo lutea*) has overgrown the pond into which people launch canoes and kayaks, and the park is not large enough to sustain increased use or development. Further, vehicular access to the park is not up to modern expectations, creating a hazard along this busy, narrow roadway.

Lovitt's Landing

This site includes a rough-graded gravel pull-off and an informal canoe/kayak slide composed of dirt, gravel, and other materials located about 1/2 mile down a wide channel from the open water of Back Bay. As shown in Figure 8.7, Lovitt's Landing would remain a secondary access site that would include a wayfinding sign, a regraded and improved pull-off area, and an enhanced sand slide. Given its convenient roadside location and central access to Back Bay, this site will remain attractive to water trail users as a secondary point of access.

Princess Anne Wildlife Management Area

The Princess Anne Wildlife Management Area (WMA) sits within a habitat that is varying in character from marshy lands to pine woodland located about 3/4 mile down a wide canal from the open water of Back Bay. It is home to many birds and white-tailed deer providing an enjoyable experience for wildlife watchers while providing open water access for boaters. The WMA includes a parking area, a boat ramp, and an informal dirt and gravel canoe/kayak slide. Figure 8.8 shows the construction of a pier, wooden gangway, floating dock, and one-direction universally-accessible slide launch in the vicinity of the existing dirt slide. Wayfinding signing would be included as well. The WMA offers boaters an important wildlife viewing opportunity, formal parking, and state-maintained facilities to help complete the water trail system.

Mill Landing

The DGIF owns Mill Landing. This site includes a large roughly-graded gravel parking lot, and a boat ramp with two fixed wooden piers. Although the concrete ramp is slightly sandy along the edges and provides reasonable canoe/kayak access, the associated fixed piers are too high for effective use with canoes or kayaks. The potential also exists for conflicts with motorized watercraft. Figure 8.9 depicts improvements including re-grading the parking area, construction of a wooden dock, gangway, and floating dock with one-direction universally-accessible slide launch.

The site could include a wayfinding sign, universally-accessible parking, composting restroom facilities, and could be used for the water taxi. The large parking area, open water access, and potential for restrooms makes this a primary site along the water trail.



Lovitt's Landing



Princess Anne Wildlife Management Area



Mill Landing

ALTERNATIVE TRANSPORTATION STUDY
BACK BAY NATIONAL WILDLIFE REFUGE

◆ Cost Estimate

TABLE 8.1: WATER ACCESS COST ESTIMATE

ITEM	FEDERAL PROPERTIES		
	EXISTING VISITOR CONTACT STATION (E2)	FUTURE VISITOR CONTACT STATION	HORN POINT (W1)
Construction	\$114,000	\$339,000	\$60,500
Contingency	\$22,800	\$68,000	\$12,100
Design	\$20,500	\$61,000	\$10,900
Wetlands Mitigation	\$6,800	\$93,000	\$67,500
Permitting	\$7,000	\$8,000	\$7,000
TOTAL	\$171,100	\$569,000	\$158,000
GRAND TOTAL	\$898,100		

ITEM	STATE PROPERTIES		
	BARBOUR HILL (E3)	MILL LANDING (W3)	PRINCESS ANNE WILDLIFE MANAGEMENT AREA (W4)
Construction	\$39,500	\$200,000	\$39,500
Contingency	\$7,900	\$40,000	\$7,900
Design	\$10,000	\$37,000	\$10,000
Wetlands Mitigation	\$0	\$3,000	\$0
Permitting	\$7,000	\$7,000	\$7,000
TOTAL	\$64,400	\$287,000	\$64,400
GRAND TOTAL	\$415,800		

ITEM	CITY PROPERTIES	
	LITTLE ISLAND PARK (E1)	LOVITT'S LANDING (W2)
Construction	\$23,700	\$15,400
Contingency	\$4,700	\$3,000
Design	\$10,000	\$10,000
Wetlands Mitigation	\$0	\$0
Permitting	\$7,000	\$7,000
TOTAL	\$45,400	\$35,400
GRAND TOTAL	\$80,800	

◆ Wayfinding

Wayfinding on Back Bay presents multiple challenges, such as getting to the sites from both the landside and the waterside, and navigating between sites. Users could benefit from a comprehensive wayfinding and interpretive sign system. The Refuge, DCR, and the City could develop a "Back Bay Water Trail" by cooperating on signage and perhaps some management issues.



Water Access Sign Example

- Roadway recreational guide signs would lead users to the water access sites from the landside and would serve as a passive advertisement to others that the water access sites exist.
- Kiosks with water trail maps at each water access site would help users plan their routes around the Bay. The kiosks could also provide information about boating safety and about related sites nearby.
- Navigational signs at the water's edge would help boaters find their way to the water access sites. Several of the water access sites are away from the open water of the Bay, so that they are not visually apparent to someone in a boat. Placing a marker near the channel that reaches the site would help boaters get to the site. Such signs would have to comply with navigational regulations.



Wayfinding Sign Examples

◆ Benefit Analysis

As depicted in the following table, the water access completely meets eight of the MOEs, and does not meet two of the MOEs. The scores represent averaged values from the TAC pre-screening and final screening described in Chapters 3 and 4.

Visitor Mobility

• Reduce Traffic Congestion

While the access points and water trail would provide an attractive transportation option for visitors to the BBNWR and FCSP, they would likely have a negligible impact to vehicular travel or congestion within the study area. The existing use of these facilities is not known, as no use counts have been performed, so it is not possible to estimate an increase in use as a result of improvements. Parking improvements at certain sites could increase and could help spread parking demand for users. However, the overall impact to parking demand would likely be negligible.

• Enhanced Visitor Mobility, Accessibility and Safety

The improvements to the launch sites include better parking and loading areas, which enhance access and safety for users. Five of the launches include new universal access slides to increase accessibility for all users.

An enhanced and thematically connected system into a Back Bay Water Trail would significantly improve the visitor experience. The system would expand opportunities for wildlife viewing, appreciation of the Back Bay ecosystem, and active recreation. It would also provide a viable alternative for those wishing to access BBNWR and FCSP by water.

• Improve Visitor Education, Recreation and Health Benefits

As an active transportation alternative, with the potential to incorporate interpretive signs and kiosks, the water access sites have strong potential to improve visitor education, expand recreational opportunities, and convey benefits to healthy lifestyles.

TABLE 8.2: MEASURES OF EFFECTIVENESS - WATER ACCESS

MEASURES OF EFFECTIVENESS - WATER ACCESS	SCORE
VISITOR MOBILITY	
Reduce Traffic Congestion	0
Enhanced Visitor Mobility, Accessibility and Safety	3
Improve Visitor Education, Recreation and Health Benefits	3
ENVIRONMENTAL BENEFITS	
Protection of Sensitive Natural, Cultural and Historical Resources	3
Reduced Pollution	0
OPERATIONAL EFFICIENCY AND FINANCIAL SUSTAINABILITY OF ALTERNATIVES	
Effectiveness in meeting BBNWR Goals	3
Financial Plan - Development and Operational Costs	3
Potential Funding Sources	3
CONSTRUCTION/OPERABILITY	
Project Phasing and Sequence Limitations Project Phasing and Sequence Limitations	3
Limitations on Transportation Operation	3
SCORING SYSTEM: 0=DOES NOT MEET CRITERIA, 1=SLIGHTLY MEETS CRITERIA, 2=MOSTLY MEETS CRITERIA, 3=COMPLETELY MEETS CRITERIA	

Environmental Benefits

• **Protection of Sensitive Natural, Cultural and Historical Resources**

The overall environmental benefits of the improved water access would be positive. Grading or built structures for boat piers and universally accessible launches would disturb approximately a quarter of an acre of wetlands. In design and permitting, wetlands mitigation would insure a no net-loss of functional value. No impacts to cultural resources would be expected.

Another valuable environmental benefit would be public awareness of the importance of natural resources. By visually extending the Refuge experience the canoe/kayak launch sites would rely on viewshed preservation, and would provide an active tool to support such preservation.

• **Reduced Pollution**

Over the long term, the canoe/kayak launch sites on the western shore would offer minimal environmentally sustainable benefits by removing small numbers of vehicles from the road and reducing impacts of vehicle emissions and noise.

◆ **Operational Efficiency and Financial Sustainability of Alternatives**

• **Effectiveness in Meeting BBNWR Goals**

BBNWR goals are identified in the September 2010 Comprehensive Conservation Plan. By providing a sustainable alternative means of access to the refuge, the water access would support BBNWR goals for habitat preservation, and would especially support goals for enhanced opportunities for wildlife viewing and appreciation of natural resources and conservation.

• **Financial Plan - Development and Operational Costs**

Construction of the canoe/kayak launch sites would require modest capital investment, but the sites would rely primarily on use of existing facilities. The costs could be incurred incrementally and prioritized based on expected use. The operability of the sites would require maintenance in the form of clearing vegetation and obstructions, regrading, and pier and dock maintenance, as well as police patrol and enforcement activities.

• **Potential Funding Sources**

Section 11.1 of this report identifies a range of potential sources that could help fund the water access site improvements. In particular, the DGIF and the private grant sources offer high potential for funding this type of improvement.

◆ **Constructability/Operability**

• **Project Phasing and Sequence Limitations**

The proposed improvements (with the exception of the future Visitor Contact Station site), rely on existing access locations, and involve minimal constructability issues. Although the goal is to form a system of sites, the City could phase improvements over time such that individual sites are developed in sequence or as funding/partners become available.

• **Limitations on Transportation Operation**

Several of the sites are remote and may pose moderate challenges for construction vehicle access and/or construction barge access by water. Construction would include measures to avoid and minimize impacts to site access as well as vehicular access to adjacent properties.

◆ **Conclusion**

The improved canoe/kayak launch sites provide an opportunity for an enhanced visitor experience at Back Bay. The Refuge is a natural asset and improved access to the water via non-motorized means supports the goals of this study, the Refuge, and the City. The sites become scenic waypoints along the water trail for visitors and residents alike.

TABLE 8.3: WATER ACCESS PROJECT SCHEDULE

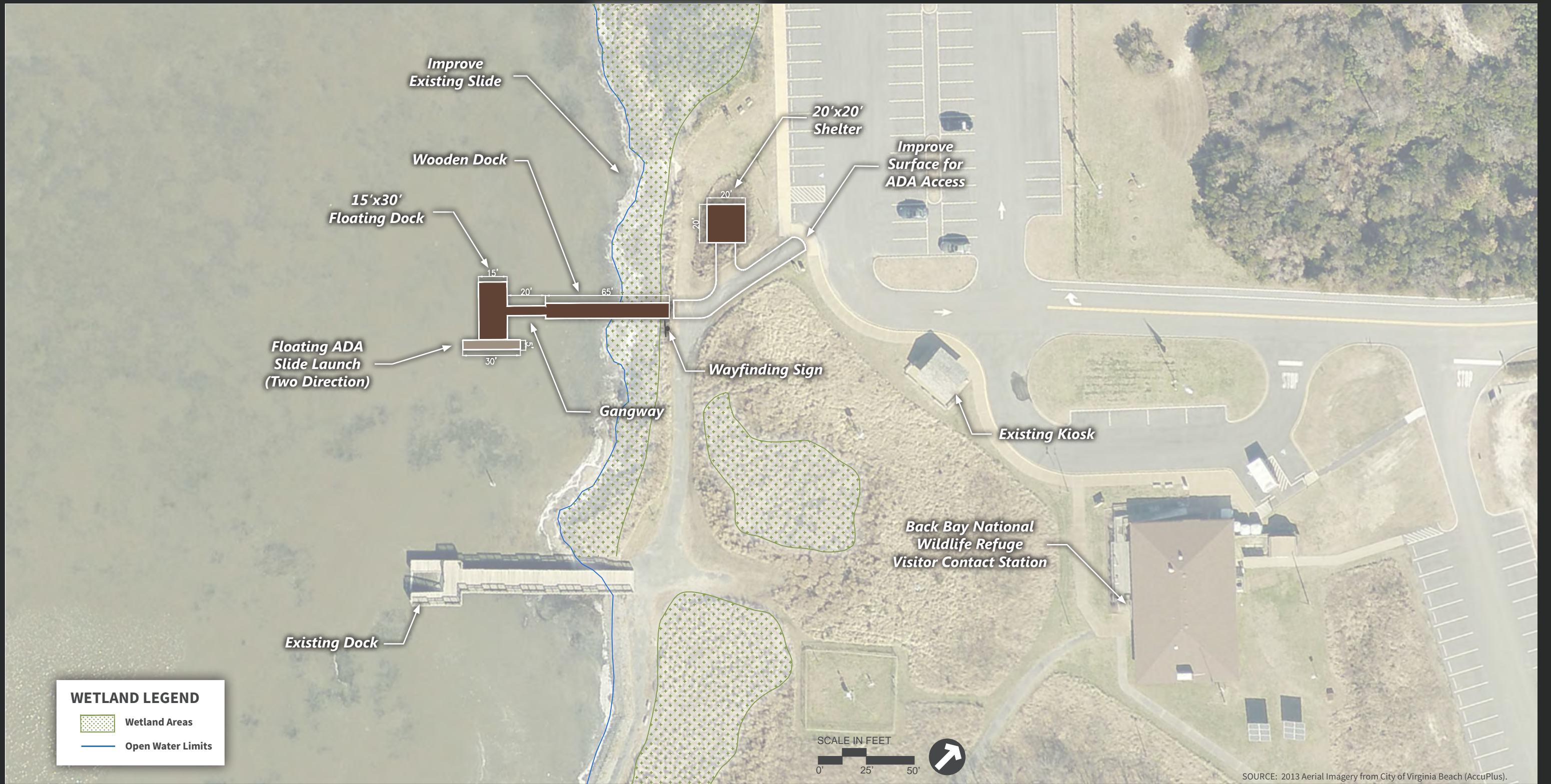
PROJECT MILESTONES	PROJECT SCHEDULE WATER ACCESS															
	YEAR 1				YEAR 2				YEAR 3				YEAR 4			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Procure Funding																
Design Services																
Permitting																
Construction																

Project Schedule Notes:
1. No ROW acquisition required.
2. No utility relocation required.

TABLE 8.4: WATER ACCESS SUMMARY

	BARBOUR HILL	EXISTING VISITOR CONTACT STATION	LITTLE ISLAND PARK	FUTURE VISITOR CONTACT STATION	HORN POINT	LOVITT'S LANDING	MILL LANDING	PRINCESS ANNE WILDLIFE MANAGEMENT AREA
Canoe/Kayak	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Accessible	Yes	Yes	No	Yes	No	No	Yes	Yes
Boat Ramp	No	No	No	No	No	No	Yes	Yes
Water Taxi	Yes	Yes	No	No	No	No	Yes	No
Restrooms	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Parking Spaces	No	99	1,000	15	20	Informal	Informal	Informal
Vehicle Access	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Open hours	Dawn to dusk	Dawn to dusk	April 15th - October 31st: 5:30 am - 9:00 pm November 1st - April 14th: 7:00 am - Posted Closing Time	Dawn to dusk	Dawn to dusk from April 1st to October 31st Closed from November 1st through March 31st	Dawn to dusk	Dawn to dusk	Dawn to dusk
Owner	VA DCR	USFWS	City	USFWS	USFWS	City	VA DGIF	VA DGIF
Planning Level	Preliminary plans	Preliminary plans	Concept	Preliminary plans	Concept	Concept	Preliminary plans	Concept
Cost	\$64,400	\$171,100	\$45,400	\$569,000	\$158,000	\$35,400	\$287,000	\$64,400

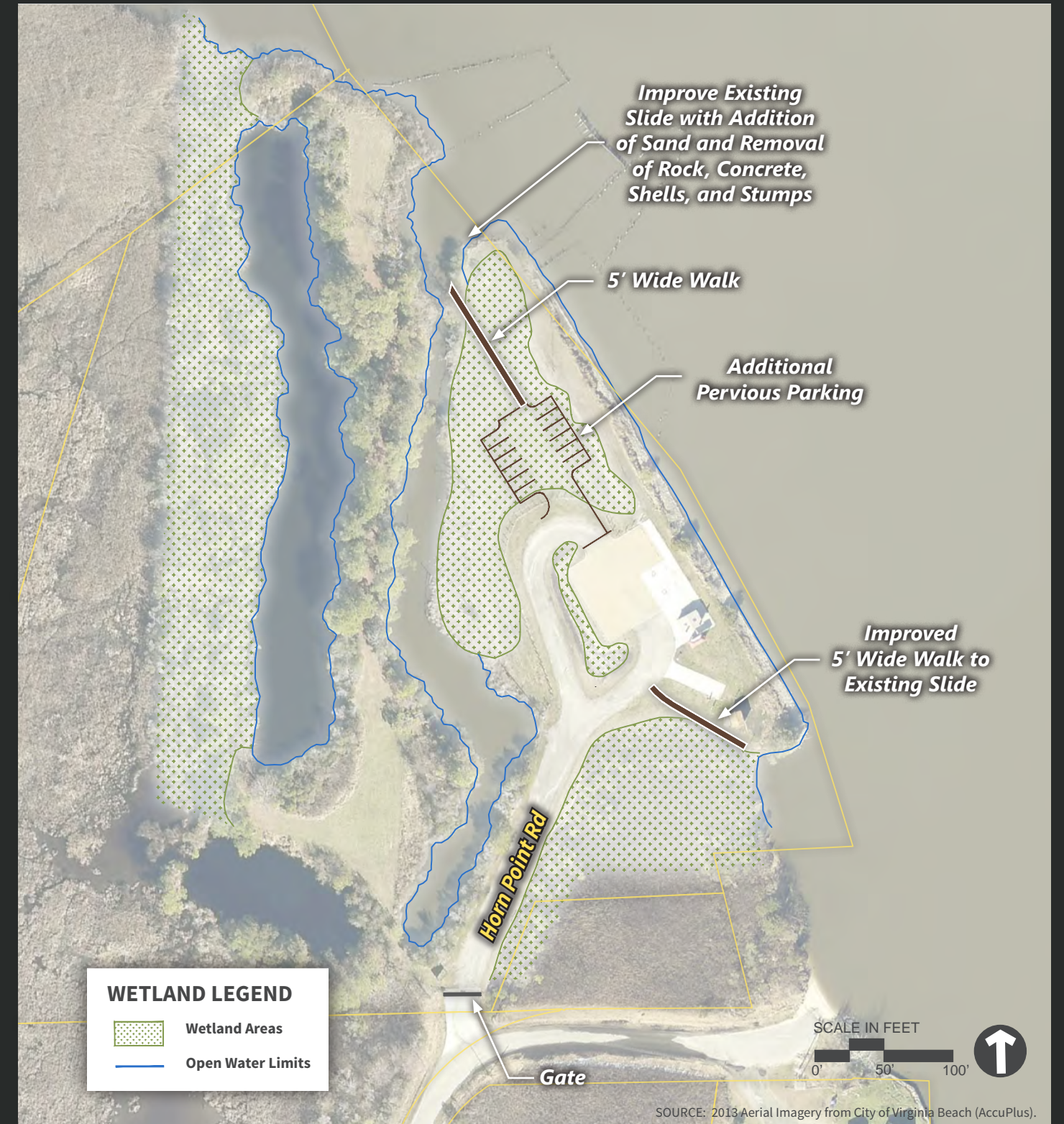
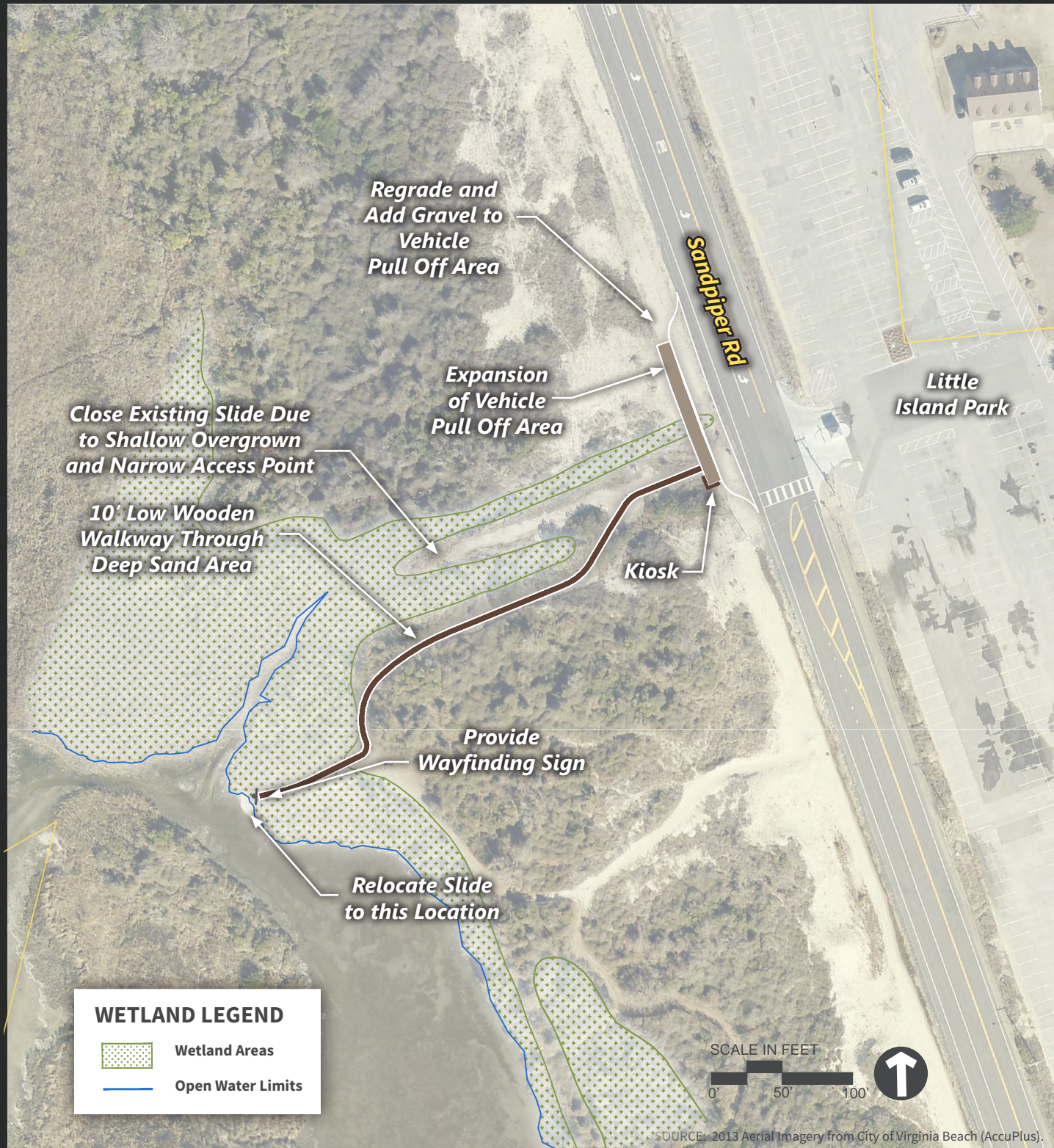




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Little Island Park



8.5

Horn Point

ALTERNATIVE TRANSPORTATION STUDY
 BACK BAY NATIONAL WILDLIFE REFUGE • VIRGINIA BEACH, VIRGINIA



INSET SOURCE:
Back Bay National Wildlife Refuge,
Comprehensive Conservation Plan,
September 2010.

*Note: Area can be expanded
to support demand for parking.*



Access to Visitor
Contact Station
Parking Lot

Composting
Restrooms

WETLAND LEGEND

- Wetland Areas
- Open Water Limits

New Bridge Rd

15' Wide Gravel
Vehicle Pulloff
to Accommodate
Vehicle with Trailer

Provide
Wayfinding Sign

10' Wooden
Dock Canoe/
Kayak Vehicle
Transfer Area

Kiosk

Elevated Wooden
Walkway

Gangway

15'x30'
Floating Dock

Floating ADA Slide
Launch
(Two Direction)

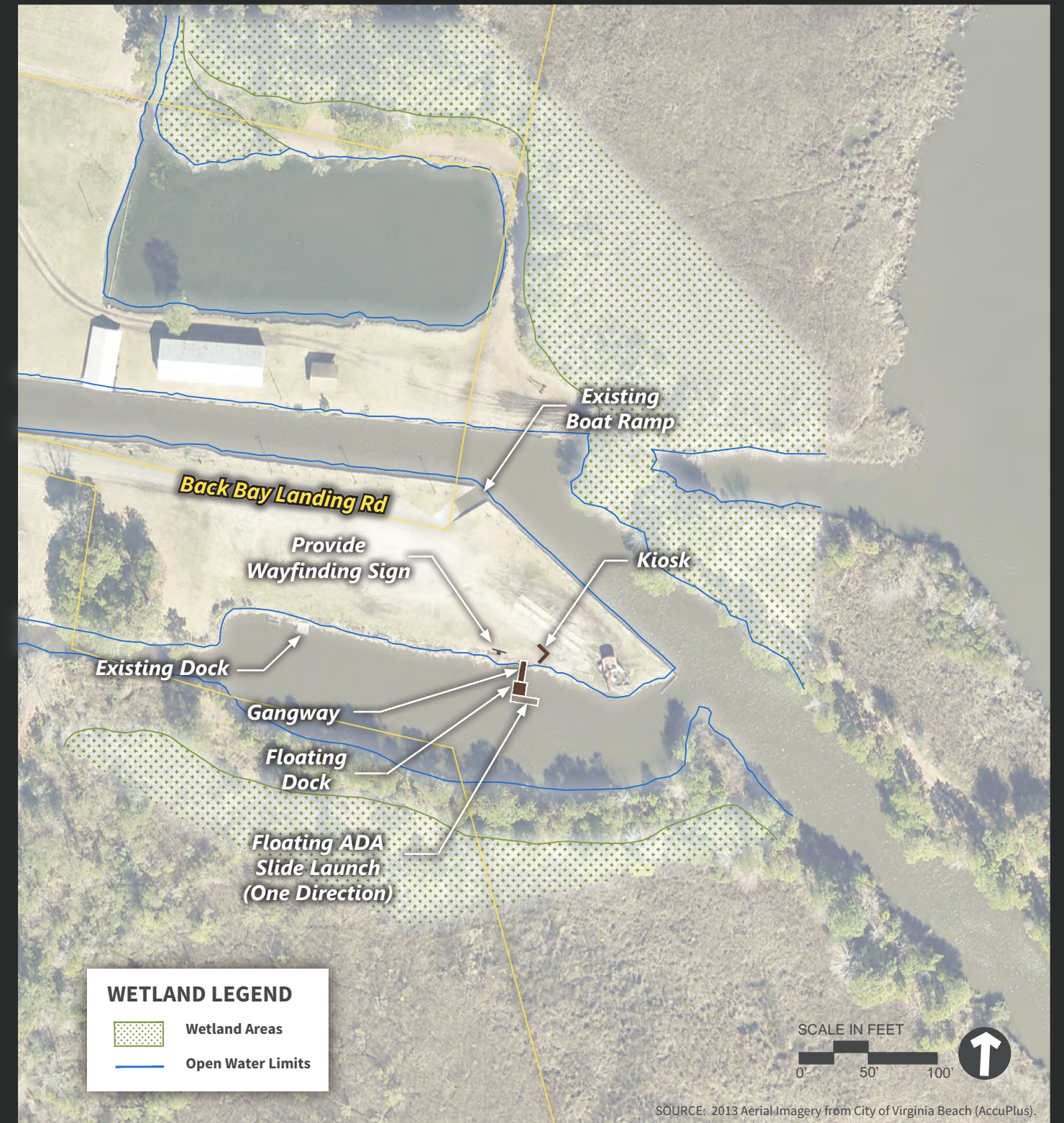
Railing

4' Shoulder
Stripes



SOURCE: 2013 Aerial Imagery from City of Virginia Beach (AccuPlus).





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8.7

8.8



Lovitt's Landing



SOURCE: 2013 Aerial Imagery from City of Virginia Beach (AccuPlus).

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8.9



ALTERNATIVE TRANSPORTATION STUDY
Mill Landing Enhanced Improvements
 BACK BAY NATIONAL WILDLIFE REFUGE • VIRGINIA BEACH, VIRGINIA