



AQUIDNECK ISLAND BICYCLE WAYFINDING PROJECT



FINAL DRAFT REPORT
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Acknowledgements

This report was prepared by the Aquidneck Island Planning Commission (AIPC) with funding provided by the Federal Highway Administration (FHWA) through the R.I. Department of Transportation (RIDOT). The report presents the results of AIPC's work with municipal and community partners to identify destinations of interest to bicyclists and develop recommendations for a bicycle wayfinding signage system. The firm of Vanasse, Hangen, Brustlin, Inc. (VHB) provided planning and engineering support in the development and mapping of the proposed wayfinding system.

Cover photo provided by Bike Newport, photo by Lori Bates.

AQUIDNECK ISLAND BICYCLE WAYFINDING PROJECT

I. BACKGROUND

Traffic congestion, especially in the busy summer months, is a consistent challenge to the quality of life and place on Aquidneck Island. One low-cost way to combat this problem is by investing in bicycle facilities and designating routes that make residents and visitors more likely to choose bicycling for transportation and recreation. Encouragement of bicycle travel in place of motor vehicle use also supports air and water quality, greenhouse gas, and public health objectives.

A bicycle wayfinding system consists of comprehensive signing and/or pavement markings to guide bicyclists to their destinations along preferred bicycle routes. Signs are typically placed at decision points along bicycle routes – i.e. at intersections and other key locations leading to and along bicycle routes. Three general types of signs provided are: (1) confirmation – intended to notify bicyclists that they are on the designated route, and may motorists aware of the route; (2) turn – indicating where the route turns from one street or road onto another; and (3) decision – indicate the junction of two or more designated routes, and direct users to destinations¹. Several states and major cities and metropolitan areas in Europe and North America have developed bicycle wayfinding systems, including San Francisco, Oakland and Berkeley, CA, Portland, OR, New York, NY, and Cambridge, MA. In Rhode Island, Cranston, East Greenwich, Providence and Warwick have implemented bicycle wayfinding signage systems.

The need for improved destination and guidance signage for bicyclists on Aquidneck Island was identified in the Aquidneck Island Transportation Study (AITS), completed by AIPC in 2011. The AITS recommended an Island Bicycle Wayfinding project to:

- Install signs to inform bicyclists of route changes and to confirm route direction, distance and destinations
- Increase marketing of bicycle routes

The project was initially estimated to cost approximately \$100,000 in the AITS, and was programmed as a short-term (1-5 years) action. The current estimated project cost is \$150,000 to \$200,000.

The intent of this project is to provide people on bikes with a wayfinding system that provides clear user information and navigational instructions. Bicycle signage will also signal to drivers of motor vehicles that bicycles are present on the roads. It is noted that the AASHTO Guide to Bicycle Facilities considers bicycle signs as a route designation rather than a type of bicycle facility.

¹ Condensed from: National Association of City Transportation Officials. “Bike Route Wayfinding and Marking Systems” in Urban Bike Route Guide, 2nd Ed. 2014.

Dedicated bicycle facilities are in short supply on Aquidneck Island. Despite significant demand for bicycling opportunities by both residents and visitors, the Island has no separated, shared-use paths such as those found in other regions of the state (Blackstone Bikeway, Washington Secondary Bikeway, Woonasquatucket Greenway, South County Bikeway), and only several short segments of designated on-road routes (striped, signed bike lane). Recently, through the efforts of RIDOT, expanded shoulders have been added to several Island road segments via the reduction of travel lanes (“road diet”); while these changes better accommodate bicyclists, the lack of an inter-connected network of bicycle routes continues to frustrate navigation of the Island via bicycle.

Several new bicycle facilities and roadway improvements are planned or proposed to improve bicycling conditions on the Island. Among these are a shared-use path along the Newport Secondary Rail corridor along the Island’s west shoreline, a connector path in the Melville area of Portsmouth, and a shared path and roadway intersection improvements along the East Main Road corridor.



Some bicycle wayfinding signs already exist in Portsmouth to route bicyclists on and off the Sakonnet River Bridge Bikeway. Photo by Liza Burkin, AIPC.

The Bicycle Wayfinding Project involves only the installation of signage along existing public roads. No other roadway improvements or bicycle accommodations are envisioned to be provided through this project. Roadway striping, the installation of barriers, or the construction of separated bicycle lanes or paths are not included in this project.

However, the Bicycle Wayfinding Project will complement the Island’s existing, planned and proposed bicycle facilities by offering designated, signed routes that can be readily and rapidly implemented, to afford Island residents and visiting bicyclists directional guidance and improved cycling environments in the near-term – while larger-scale, longer-term improvements are planned, designed, and constructed. As proposed bicycle facilities and roadway improvements come to future fruition, the routes designated and signed via the wayfinding project will link to and integrate with newly-developed bicycle facilities to create an Island-wide network offering improved bicycle travel options to destinations throughout the Island.

II. PROJECT BENEFITS

Creation of a bicycle wayfinding system on Aquidneck Island will provide important benefits for the Island and its residents – principally support for the tourism sector of the Island economy. Increasingly, tourists are seeking “active, authentic experiences” when they travel, which often means getting out from behind the wheel and into the saddle. Destinations which offer distinctive and well-supported opportunities for bicycle touring are reporting impressive returns: bicycling visitors annually contribute [\\$66.8 million](#) to the Maine economy²; [\\$60 million](#) to North Carolina’s Outer Banks region³; and [\\$400 million](#) in Oregon⁴. Furthermore, research shows that customers who arrive at retail stores by bike spend the same amount per month as comparable people who arrive by car – they tend to make smaller purchases but return more frequently. Studies in Toronto; New Zealand; Wales; Davis, California; and Portland, Oregon, [all found this to be the case](#).

Additionally, wayfinding signage that encourages bicycle usage in lieu of motor vehicles to access recreational attractions will reduce vehicle miles travelled and help alleviate congestion and parking concerns during peak periods. Reduced motor vehicle usage will lessen air and water pollution, greenhouse gas emissions, and maintenance costs for roads, further benefiting Island and state residents. Wayfinding signage will also contribute to safety for bicyclists and motorists. Roadside signage along designated routes heightens the awareness of motorists to the presence of bicyclists on the shared right-of-way. Providing clear and easy-to-follow signage guiding cyclists to their destinations allows them to avoid a source of distraction – referring to paper maps or cell phone/GPS devices for destination guidance while cycling.

III. STUDY PROCESS

Work on the Wayfinding Project began in 2014 with the engagement by RIDOT of the firm of VHB to provide planning and engineering support for the study, and assemblage by AIPC

² Maine Department of Transportation, [Bicycle Tourism in Maine: Economic Impacts and Marketing Recommendations. Executive Summary](#). April 2001.

³ Lawrie, J., et. al. [The Economic Impacts of Investments in Bicycle Facilities: A Case Study of the Northern Outer Banks, Study Overview](#). Institute for Transportation Research and Education. North Carolina State University. April 2004.

⁴ Bicycling contributes over \$400 million to Oregon tourism, new study says. [Oregon Live/The Oregonian](#). May 8, 2013.

of a Bicycle Wayfinding Advisory Committee comprised of tourism, recreation, bicycling advocacy groups, and local planning officials. During 2015, a summer employee of AIPC conducted field investigations and discussions with the Advisory Committee to identify and assess potential destinations of interest to bicyclists in island communities. From this information and list of potential destinations, VHB developed a proposed Aquidneck Island Bicycle Route, providing a loop connecting destinations following – wherever possible – roads rated as “Most Suitable” or “Suitable” on maps published by RIDOT and Bike Newport, and low-traffic volume local streets. In three locations, the loop could not avoid routing cyclists along road segments defined as “Difficult connection” for bicyclists for short distances. VHB also developed a draft signage schedule identifying desirable locations for route directional and destination sign locations for a bi-directional route.

An initial draft route map and signage guide was reviewed by AIPC in the fall of 2015. Review focused on both technical review of the route segments, destination, and turn point signage proposed, and the desirability and practicality of the routing overall. These discussions resulted in several changes, including the delineation of three shorter routes, supplementing the original full-island loop. Input from municipal planning departments was sought during the Summer of 2016 and the routes were further revised to reflect this community input. A revised draft report and mapping was shared with municipal planning and public works officials in Spring 2017, with additional comments and revisions resulting.



Provided by Bike Newport, photo by Meg Heriot.

IV. ROUTE RECOMMENDATIONS AND DESCRIPTIONS

AIPC recommends that the Aquidneck Island Bicycle Wayfinding Project be implemented in two phases. Initially, signage of three short loops is recommended for early implementation. These follow only roads categorized as “Most Suitable” or “Suitable” for bicycling on Bike Newport’s Newport County Bicycle Map, and/or low-traffic volume residential streets. At lengths of 7-12 miles, these loops are ideal for casual family rides, group exploration, and daily exercise or transportation.

As future roadway projects improve conditions on several road segments currently deemed as “Difficult connections” for bicyclists to navigate, Phase II signage of additional road segments to connect the Phase I loops into an integrated, full-Aquidneck Island loop network, is recommended.

Proposed routes are shown on Appendix Figure 1, and are described below:

A. Phase I Loops

1. Island Park Loop

The Island Park Loop will link destinations within the Town of Portsmouth over an 8.3-mile-long route. In addition to linking the Sakonnet and Mt. Hope Bridge gateways to the Island, the route will guide bicyclists to the following areas and points of interest: Teddy’s Beach, Founders Brook Park, Fort Butts, Island Park Beach, Bristol Ferry Town Common, Common Fence Point, Island Park, and Town Center.

From the bike path at the west end of the new Sakonnet River Bridge, proceeding clockwise, the route will follow Hummocks Avenue and Hummocks Point Road south to Point Road before turning west on Park Avenue through the Island Park neighborhood. Turning south on Aquidneck Avenue, and following, in turn Tallman Avenue, Atlantic Avenue, and Water Street through neighborhoods along the Sakonnet River, the route will turn west again on Church Lane to the Town Center business and civic area on East Main Road (RI-138). Proceeding south a short distance on East Main Road, the route will turn west on Freeborn Street to Turnpike Avenue. Following Turnpike Avenue north, most of which is considered suitable for bicyclists, the route turns onto Bristol Ferry Road (RI-114), which has been made safer for bicyclists via a “road diet” reducing the number of traffic lanes and widening shoulders. At the intersection with Boyds Lane, cyclists will turn left and continue the Island Park Loop by turning right onto Boyds Lane. Proceeding east of Boyds Lane, the loop route would take cyclists along Anthony Road back to the Sakonnet River Bridge bike path.

2. Beach Loop

The Beach Loop will offer a 7.6 mile circuit linking downtown Newport with First (Easton’s), Second (Sachuest), and Third Beach along the southeastern coast and with

several significant recreational and historical attractions in Middletown's Paradise Valley. This loop will originate in Newport at the intersection of Bellevue Avenue and Memorial Boulevard – where it will connect with the Ocean Loop (see below) - and proceed east along Memorial Boulevard passing First Beach to Purgatory Road. Following Purgatory for a short distance, bicyclists will turn onto Tuckerman Avenue, following it along the coast to the intersection with Paradise Avenue. From the Paradise/Tuckerman intersection, (proceeding counter-clockwise) the route will continue north on Paradise Avenue, then turn eastward on Hanging Rock Road toward Second Beach. The route will continue eastward onto Sachuest Point Road, passing Second Beach, before turning northward on Third Beach Road, and continuing past Third Beach to the intersection of Indian Avenue. Following Indian Avenue northward, the route will turn westward at Peckham Road, and proceed west to its intersection with Wapping Road. Turning southwest along Wapping Road, the route will continue northeastward along Mitchell Lane to Wyatt Road. Proceeding west on Wyatt Road, the Beach Loop will turn south on Berkeley Avenue and continue south on Paradise Avenue until it closes the loop at the intersection of Paradise and Hanging Rock Road (from there, signage will mark a return route to Newport along Tuckerman Avenue and Memorial Boulevard).

In addition to the major beaches mentioned above, this loop will navigate bicyclists to Sachuest Point National Wildlife Refuge, Whitehall Museum House, Norman Bird Sanctuary, Purgatory Chasm, Paradise Valley Park, Wyatt Road Soccer Complex, Pebble Beach, Howland Park, Demery Park, and the Atlantic Beach commercial district.

3. Ocean Loop

Connecting destinations south of downtown Newport, the Ocean Loop of 11.2 miles will take cyclists from the intersection of Memorial Boulevard and Bellevue Avenue (where it connects with the Beach Loop) south along Bellevue to Narragansett Avenue. Heading east on Narragansett for a block, (clockwise) the route will follow Ochre Point Avenue south through the Salve Regina University campus to Ruggles Avenue. Turning west on Ruggles, the route will turn south on Bellevue, passing many of Newport's renowned historic



mansions, before turning north on Coggeshall Avenue, and then west on Ocean Avenue. The route would follow Ocean Avenue along the scenic coastline, passing Ledge Road, Spouting Rock, Gooseberry, and Kings Beaches, and Brenton Point State Park before turning east a short distance on Castle Hill Avenue, and then northward on Ridge Road. Following Ridge Road northward and then turning eastward, the route would direct cyclists eastward on Harrison Avenue, passing Fort Adams State

Boyd's Wind Grist Mill in Paradise Valley Park. Photo by Liza Burkin, AIPC

Park, before turning northward on Brenton Road and then right on Wellington Avenue towards downtown Newport. At Marchant Street, the route would turn south for three blocks to Narragansett Avenue. Turning east on Narragansett, the route would continue to Bellevue, where it would turn northward, following past the Tennis Hall of Fame to Memorial Boulevard, completing the loop route.

4. Parking

Parking is available along each of the three proposed loop routes to accommodate bicyclists desiring to drive and bring their bicycles with an on-vehicle bike rack.

A public parking area offering free, year-round parking on or proximate to each of the three loop routes proposed for Phase I implementation are indicated on Figure 1:

- Island Park Loop: Founders Brook/Portsmouth Park 'N Ride lot – Boyd's Lane
- Beach Loop – Wyatt Road Soccer Complex – Wyatt Road
- Ocean Loop – Fort Adams State Park – Harrison Avenue

The following public and private sites offer *potential* parking availability on or near the route, but likely would have varying availability and cost conditions during different periods of the year:

- **Island Park Loop** – Aquidneck Land Trust lot - Anthony Road, Portsmouth Library – East Main Road, Portsmouth High School – Turnpike Avenue, Teddy's Beach (on-road) – Park Avenue, Island Park, Park Avenue (on-road).
- **Beach Loop** – Wyatt Road Soccer Complex – Wyatt Road, Howland Park - Waping Road, Sachuset National Wildlife Refuge - Sachuset Point Road, YMCA – Valley Road, Second Beach - Sachuset Point Road (seasonal fee charged) and Third Beach- Third Beach Road (seasonal fee charged).
- **Ocean Loop** – Brenton Point State Park – Ocean Drive, King Park/ Wellington Avenue (on-street), Gateway Center – America's Cup Avenue (seasonal fee charged), Newport Public Library/Aquidneck Park – Spring St., Eastons Beach- Memorial Boulevard (seasonal fee charged).

B. Phase II Connections – Aquidneck Island Loop Network

1. Mid-Island Connections

While many “Most Suitable” and “Suitable” roadways exist in the middle of the Island, three segments of roadway identified as “Difficult connections” on the Bike Newport Bicycle Map need to be addressed to improve bicycling conditions prior to signage of a connected route serving the central portion of the Island. (Bike Newport's map advises cyclists to use caution, or to dismount and walk along the grassed shoulders in “Difficult connection” segments.) The three “Difficult connection” segments include:

- A quarter mile long section of East Main Road between Turnpike Avenue and Hedley Street in the Quaker Hill area
- A short segment of East Main Road between Union Street and Glen Road, and
- A short segment of West Main Road between Stringham Road and Mill Lane.

Improvements to these roadways are scheduled in the State's Transportation Improvement Program: 2017-2025 (TIP).

As these roadway improvement projects are completed, an additional 20+ miles of roadway should be signed for bicycle navigation - creating a loop in the center of Aquidneck Island which would link with the three Phase I routes to form an integrated, Aquidneck Island loop network.

The Phase II signage would create a loop route within the central portion of the Island that would follow - from its northernmost point at the intersection of Burma Road and Stringham Road - (proceeding clockwise) Stringham eastward, passing Melville Campground before reaching West Main Road (RI-114). The route would jog northward on West Main Road for a short distance (0.1 mile) - currently a "Difficult connection" - before turning eastward again on Mill Lane. The route would follow Mill Lane eastward, then turn southward on Middle Road. Following Middle Road southward to its intersection with Union Street, the route then would turn eastward on Union Street to its intersection with East Main Road. Turning northward, the route traverses a short (0.24 mile), currently "Difficult connection", section of East Main Road (RI-138) before a turn to the east on Glen Road. Turning to the south, the route follows Glen Farm Road to Sandy Point Avenue. Turning west on Sandy Point Avenue, the route would direct cyclists southward on Wapping Road for over a mile, crossing into Middletown where it would link to the Beach Loop. Routing would follow the eastern segment of the Beach Loop along Indian Avenue, Third Beach Road, Sachuest Point Road, Hanging Rock Road, Paradise Avenue, Purgatory Road and Aquidneck Avenue before crossing into Newport and proceeding westward on Memorial Boulevard where it would link to the Ocean Loop at Bellevue Avenue. Cyclists would have the option of turning south on Bellevue to follow the Ocean Loop, or continuing westward on Memorial towards downtown. Following Memorial westward, the route would turn north on America's Cup Avenue through downtown Newport and the wharf district. At Long Wharf, the route would turn west again, following Long Wharf to Washington Street. Heading northward on Washington Street, the route would turn east along Van Zandt Avenue to Malbone Road, where it turns northward, continuing along Malbone, Cummings Roads and Bedlow and Hillside Avenues through the North Side neighborhood. At Maple Avenue, the route crosses back into Middletown and turns east for a short distance, before turning northward again along Sherman Lane to Coddington Highway, which has shoulders striped for bicycle usage. A short distance eastward along Coddington Highway the route would turn north again on Lexington Street to Read Street and continue onto Chases Lane to the Chases Lane /Access Road intersection. Turning west, bicyclists would follow Access Road to the shoreline adjacent to Naval Station Newport, where Access Road turns northward and becomes Burma Road. Continuing north on Burma Road, the route provides a scenic ride of over 4 miles along the Island's west shoreline, crossing back into Portsmouth, before closing the loop at the intersection of Burma Road and Stringham Road.

Linkage of the Mid-Island Loop to the Island Park Loop via designation and signage of the section of Middle Road north of Mill Lane and of a short (0.6 mile) segment of East Main Road from the intersection of Mill Lane to its intersection with Immokolee Drive can be

accomplished once programmed roadway projects address the currently “Difficult connection” conditions of the East Main Road segment. From Immokolee Drive, signage of segments of Peggy Lane and Emmanuel Drive would connect the Mid-Island Loop to the Island Park Loop at Church Lane.

Among the civic, historic and recreational destinations cyclists will be able to reach via the signage of this Mid-Island Loop are: Glen Park, Sandy Point Beach, Sakonnet Greenway Trail, Seveney Fields Sports Complex, The Glen, Pebble Beach, Third Beach, Sachuest Point Wildlife Refuge, Howland Park, Whitehall Museum, Wyatt Road Soccer Complex, Howland Park, Demery Memorial Park, Norman Bird Sanctuary, Second Beach, Purgatory Chasm, Atlantic Beach business district, Easton’s Beach, Cliff Walk, Memorial Boulevard, Freebody Park, Tennis Hall of Fame, Washington Square, Downtown Newport/Thames Street/Wharfs and Piers, Touro Park, Cardines Field, Newport City Hall, Goat Island, Gateway Center, Perrotti Park and Ferry terminals, Storer Park, Battery Park, Naval War College, CCRI, Miantonomi Park, and Melville Campground.

2. Aquidneck Island Loop

Coincident with programmed roadway improvements, the signage of additional roadway segments to link and integrate the three “early action” loops into a full Aquidneck Island Loop is recommended. This network of designated routes would offer ardent cyclists a ~45 mile route to experience the entire Island via bicycle and visit attractions ranging from the Newport Mansions and Brenton Point State Park in the south to Teddy’s Beach and Common Fence Point in the north. Equally important, realization of an integrated network



Riding along Sachuest Beach. Provided by Bike Newport, photo by Melissa Barker.

of designated suitable routes would offer Island bicyclists opportunities for bicycle travel to many destinations off the Island including the East Bay Bike Path to Providence and beyond, as well as the Rhode Island towns of Tiverton and Little Compton, and southeastern Massachusetts.

The future expansion of the bicycle wayfinding system to create a unified Aquidneck Island Loop network serving the entire island should be programmed in concert with the corresponding highway improvement projects as they address the above-described sections of roadways currently posing “Difficult connections” for bicyclists.

V. ROUTE MAPS AND SIGNAGE SCHEDULES

The proposed Island routes are shown on Figure 1 in the report’s Appendix. The Appendix also contains signage schedules listing proposed signage locations, and content for routing and destination directions for each loop. For ease of review, signage schedules included in this draft report indicate signage only for clockwise travel along the loop routes. While not listed in the schedules herein, signs are proposed to be installed on both sides of loop roadways, providing directional guidance for both clockwise and counter-clockwise travel along the loops.

The Appendix also provides several examples of potential bicycle route signage. Examples include the standard green and white lettered signs which comply with the specifications of the Manual on Uniform Traffic Control Devices (MUTCD), as is required for signs on State-controlled roadways. In addition, a prototype for signage incorporating a unique graphic representation specific to the region is included. This form of signage is currently under review by the National Committee on Traffic Control Devices for potential usage on non-numbered bicycle routes on the Federal-Aid Highway System. Also included is a photo of logo-style signage that has previously been utilized in Rhode Island for bicycle wayfinding on locally-controlled roadways. This could offer a model for creation of a distinctive Aquidneck Island-specific signage for local roads in the Island system. An example of unobtrusive wayfinding signage used for cycling routes in the Netherlands is also included in the Appendix. While such signage may not comport with MUTCD requirements for State roads within the proposed network, their utility for usage on local roads should be considered as their acceptance to residents and communities may be higher than standard “W-channel” post-mounted metal signs. A paramount consideration must be a signage design that provides relevant information such as loop designation, directional guidance, and distances to key destinations while being visually complimentary to the Island’s land, seascapes and historic built environs.

Once installed by RIDOT, future signage maintenance would become a responsibility of each municipality. Checks with other Rhode Island municipalities where similar bicycle wayfinding signage systems have been in place for nearly 20 years indicates that sign replacement has not been a significant issue or expense. To ease potential concerns of burdening municipalities, it is recommended that the initial procurement of standard route

designation signs and arrows by RIDOT include provision for an inventory of replacement signs and arrows to be maintained for future replacement needs.

VI. NEXT STEPS

To advance the Island Bicycle Wayfinding Project towards implementation, AIPC will coordinate review of the draft study and maps to determine if support exists for moving forward on the three loops recommended for Phase I implementation. In addition to review by municipal planning and public works officials which was conducted early in 2017, public review and input on the wayfinding signage report will include public workshops in each of the communities followed by presentation of the project report to the Town and City Councils in each community for endorsement of the concept. The project will only be implemented in each community with the support and approval of the City/Town Council.

Public meetings will be scheduled late in 2017 or early 2018, and presentations to local Councils scheduled thereafter. If locally approved, design and signage installation could begin as early as the Summer of 2018.

Following endorsement of the project concept by local communities, design work would be undertaken by VHB, providing specifications for signage design and installation. An identifying logo for the overall signage system would also be developed.

A. Design Considerations

If the Bicycle Wayfinding Signage project is endorsed by the Island's municipalities, the next step would be for RIDOT to advance the project towards design and construction (sign installation). For the project to proceed expeditiously, AIPC and/or the participating towns may be asked to underwrite the design cost for the project.

Considerations typically addressed during design would be ensuring conformance with RIDOT policies and procedures applicable to signage installation, obtaining required permits and approvals, development of agreements with participating municipalities, and preparation of written specifications for the siting and installation of the signage to be provided. It will be important for AIPC, the municipalities, and the bicycling community to remain engaged with the design phase to ensure that the final wayfinding system that is recommended for implementation meets community and cyclists needs.

The implementation of a bicycle wayfinding signage project for Aquidneck Island is expected to result in favorable environmental and economic impacts. Creation of signed routes and destination guidance for bicycle travel to popular destinations will create an environment more conducive to travel by bicycle, encourage greater reliance on the bicycle mode of travel, and lessen reliance on motor vehicles. Reduction of motor vehicle usage will alleviate congestion, reduce air and water quality impacts attributable to motor vehicles, and reduce carbon dioxide emissions contributing to greenhouse warming. While the quantity of bicycle demand, the amount of substitution of bicycle for auto travel, and

the consequent reductions in congestion and emissions are not known, any reductions will have positive effects.

Segments of the roadways recommended to be signed as part of the Island Bicycle Wayfinding Project pass through or adjoin sensitive environmental resources. These include coastal features such as barrier beaches, coastal bluffs, and coastal pond watersheds, public drinking water supply reservoirs and watersheds, and freshwater and coastal wetland systems. Other roadway segments of the recommended routes traverse or adjoin significant historic and cultural resources including historic districts, National Register of Historic Places registered structures and sites, cultural landscapes, and designated Scenic Roadway corridors. Although the physical alteration of the environment to be involved in implementation of the Wayfinding Project (installation of posts and signs within existing, publicly-maintained roadway rights-of-way) does not appear significant in terms of potential impacts, coordination with the respective environmental and cultural resource managing agencies will be important to ensure that the signage installation does not create adverse impacts upon the environmental or cultural resources of the island. This might involve specifications for signage installation that minimize land disturbance and include appropriate best management practices for erosion and sedimentation control. Similarly, the design, siting, and installation of signage within or near cultural resources should ensure that visual impacts are avoided or minimized.

B. Signage Installation

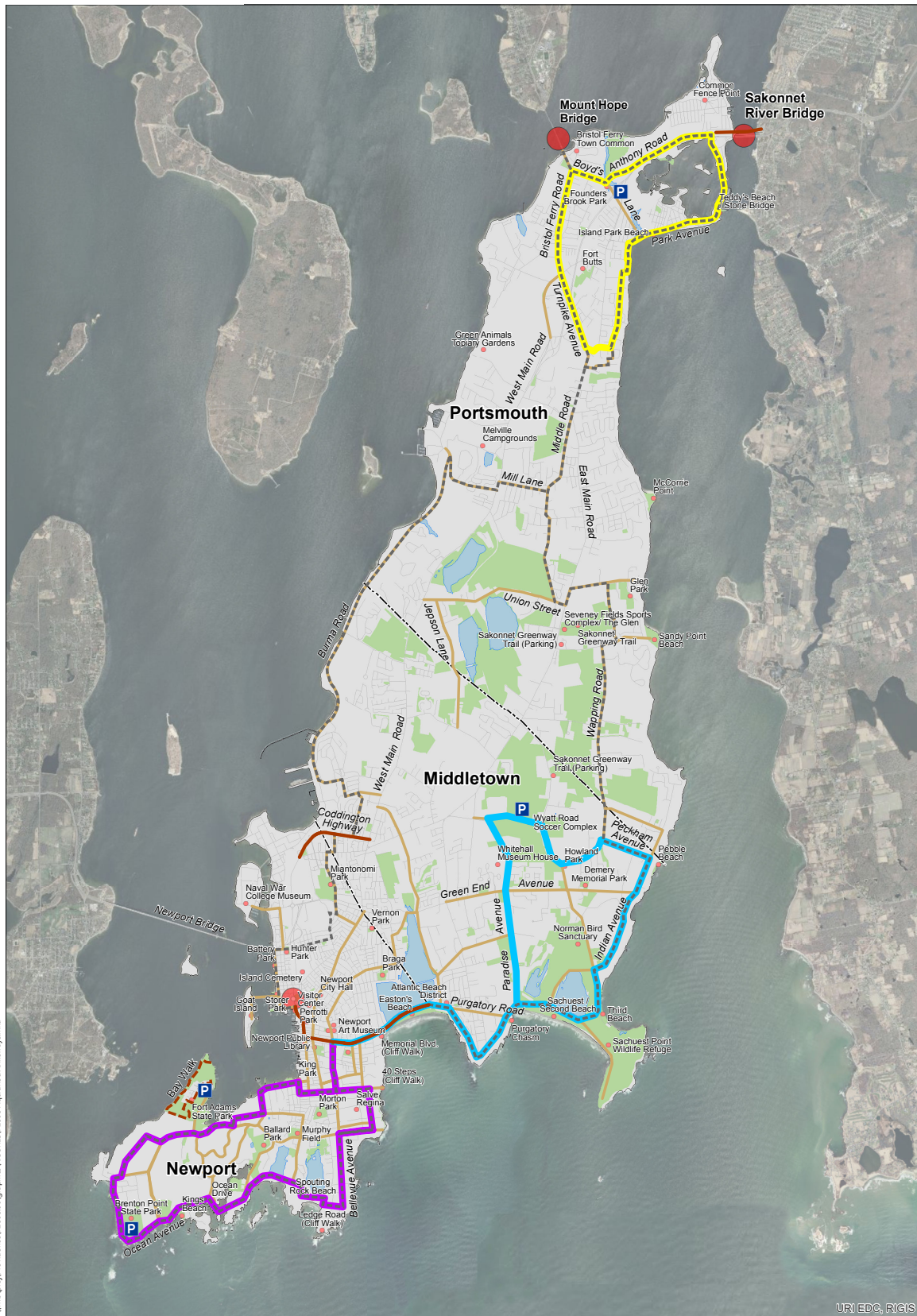
Installation of signage would likely be done by a private contractor under the State's Office on Highway Safety. RIDOT has indicated that resources are available for the construction phase - the actual installation of wayfinding and guidance signs. - currently estimated to cost \$150,000 to \$200,000. For the project to proceed expeditiously, however, AIPC and/or the participating towns are requested to underwrite the design work for the project, estimated at \$8,000 - \$10,000, and to provide for appropriate notification of adjoining landowners according to local requirements prior to commencement of project implementation. As indicated above, municipalities would also be asked to assume future maintenance of the installed signage over the life of the project.

APPENDIX

- Figure 1- Bicycle Wayfinding Study, Aquidneck Island
- Phase I Signage Schedule - Island Park Loop
- Phase I Signage Schedule - Beach Loop
- Phase I Signage Schedule - Ocean Loop
- Phase II - Mid-Island Connections / Loop Signage Schedule
- Illustration of Typical Loop Route Signage meeting MUTCD Specifications
- Illustration of prototype graphic Bicycle Route Signage under review by NCTCD
- Illustration of Logo-style Route Signage previously approved for a Rhode Island Bicycle Wayfinding project
- Photos of wayfinding signposts in the Netherlands

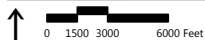


Relaxing at Brenton Point State Park. Photo by Liza Burkin, AIPC.



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Legend

- Beach Loop
- Island Park Loop
- Ocean Loop
- Future Aquidneck Loop
- Existing Bike Lane
- Existing Shared Use Path
- AI Bicycle Map "Suitable Road"

- Point of Interest
- Park
- Island Gateway
- P Public Parking
- City/Town Line

**Island Bike Loops
Aquidneck Island
Bicycle Wayfinding Study**

Aquidneck Island Bicycle Wayfinding Signing Schedule

ISLAND PARK LOOP

AI LOOP ID #	Island Park Loop Direction CW/CCW	Sign Location	Wayfinding Sign Designations (D1-1b, D1-2b, D1-3b)				Town	Notes
			Sign Type	Destination/Arrow Direction (Top)	Destination/Arrow Direction (Bottom)	Destination/Arrow Direction (Bottom)		
	START Facing West	Sakonnet River Bridge SB	D1-3b	Portsmouth/S	Bristol/S	Island Park Loop/L	Ports.	Coming off the bridge/outside of Island Park Loop
	CW	Rt. 24 Access@Sak Riv. Bridge Bike Path	D1-2b	Tiverton/L	Island Park Loop/S		Ports.	north of SRB bike path heading south
3	CW	Rt. 24 Access@Hummocks Avenue	D1-1b	Island Park Loop/L			Ports.	
5	CW	Point Road@Park Avenue	D1-2b	Teddy's Beach/L	Island Park Loop/S		Ports.	
7	CW	Park Avenue @ Boyds Lane	D1-3b	Island Park Loop/S	Bristol/R	Founders Brook Park/R	Ports.	
9	CW	Park Avenue @ Aquidneck Avenue	D1-1b	Island Park Loop/L			Ports.	
11	CW	Aquidneck Avenue@Tallman Avenue	D1-1b	Island Park Loop/L			Ports.	
13	CW	Water Street@Child Street	D1-2b	Island Park Loop/S	Fort Butts/R		Ports.	
15	CW	Water Street @ Church Lane	D1-2b	Island Park Loop/R			Ports.	
	CW	Church Lane @ East Main Road	D1-2b	Island Park Loop/L			Ports.	
	CW	East Main Road @ Freeborn Street	D1-1b	Island Park Loop/R			Ports.	
	CW	Freeborn Street @ Turnpike Avenue	D1-1b	Island Park Loop/R			Ports.	
	CW	Turnpike Avenue @ Memorial Drive	D1-1b	Island Park Loop/S	Portsmouth HS/R		Ports.	
	CW	Turnpike Avenue @ Sprague Street	D1-2b	Portsmouth Loop/S	Fort Butts/R		Ports.	
	GatewayAccess	Mount Hope Bridge SB	D1-3b	Tiverton/L	Portsmouth/L	Newport/R	Ports.	outside of Island Park Loop
27	CW	Bristol Ferry Road@Boys Lane	D1-3b	Bristol/L	Bristol Ferry Town Common/S	Island Park Loop/R	Ports.	Portsmouth Loop/Founders Brook Park?
29	CW	Boys Lane@Anthony Road	D1-3b	Common Fence Point/L	Island Park Beach/S	Tiverton/L	Ports.	Loops?
31	CW	Anthony Road@850'West of Sak River Br. Access	D1-2b	Common Fence Point/L	Island Park Loop/S		Ports.	

Aquidneck Island Bicycle Wayfinding Signing Schedule

BEACH LOOP*

AI Loop ID #	BeachLoop Direction CW/CCW		Wayfinding Sign Designations (D1-1b, D1-2b, D1-3b)				Town
			Sign Type	Destination/Arrow Direction (Top)	Destination/Arrow Direction (Bottom)	Destination/Arrow Direction (Bottom)	
		start Memorial Boulevard@Bellevue Avenue					
	CW	Memorial Blvd.@Annandale Avenue	D1-1b	Beach Loop/S			Newport
	CW	Memorial Blvd.@Valley Road	D1-2b	Atlantic Beach District/L	Beach Loop/R		Newport
	CW	Purgatory Road@Tuckerman Ave.	D1-1b	Beach Loop/R			Middletown
	CW	Purgatory Road@Tuckerman Ave./Paradise Avenue	D1-1b	Beach Loop/R			Middletown
	CW	Sachuest Point Road@Paradise Avenue	D1-2b	Beach Loop/L	Beach Loop/R		Middletown
	CW	Paradise Avenue@Green End Avenue	D1-2b	Beach Loop/S	Demery Memorial Park/R		Middletown
	CW	Berkeley Avenue@Wyatt Road	D1-2b	Wyatt Road Soccer Complex/R	Beach Loop/R		Middletown
	CW	Wyatt Road@Mitchell's Lane	D1-1b	Beach Loop/R			Middletown
	CW	Mitchell's Lane@Third Beach Road	D1-2b	Beach Loop/L	Howland Park/R		Middletown
	CW	Wapping Road @Peckham Lane	D1-1b	Beach Loop/R			Middletown
	CW	Peckham Lane@Indian Avenue	D1-2b	Pebble Beach/S	Beach Loop/R		Middletown
	CW	Indian Avenue@Green End Avenue	D1-2b	Beach Loop/S	Demery Memorial Park/R		Middletown
	CW	Indian Avenue@Third Beach Road	D1-2b	Beach Loop/L	Norman Bird Sanctuary/R		Middletown
	CW	Third Beach Road@Sachest Point Road	D1-2b	Sachuest Point/L	Beach Loop/R		Middletown
	CW	Sachest Point Road@Hanging Rocks Road	D1-1b	Beach Loop/S			Middletown
	CW	Sachest Point Road@Paradise Avenue	D1-2b	Newport/L	Atlantic Beach District/R		Middletown

Aquidneck Island Bicycle Wayfinding Signing Schedule

OCEAN LOOP

AI Loop ID #	Ocean Loop Direction CW/CCW	Sign Location	Wayfinding Sign Designations (D1-1b, D1-2b, D1-3b)			Town	Notes
			Sign Type	Destination/Arrow Direction (Top)	Destination/Arrow Direction (Bottom)		
		start Bellevue Avenue @Mmorial facing South					
	CW	Memorial Blvd @Bellevue Avenue	D1-3b	Beach Loop/R	Ocean Loop/S	Gateway Center/R	
	CW	Bellevue Avenue@Narragansett Avenue	D1-2b	Cliff Walk/L	Ocean Loop/L		Nwpt. confirmation sign
	CW	Narragansett Avenue@Ochre Point	D1-2b	Cliff Walk/S	Ocean Loop/R		Nwpt. confirmation sign
	CW	Ochre Point@ Ruggles Avenue	D1-2b	Cliff Walk/L	Ocean Loop/R		Nwpt.
	CW	Ruggles Avenue @ Bellevue Avenue	D1-2b	Ocean Loop/R	Ballard Park/S		Nwpt. confirmation sign
	CW	Bellevue Avenue @ Ledge Road	D1-2b	Cliff Walk/L	Ocean Loop/S		Nwpt.
	CW	Bellevue Avenue @ Coggeshall Avenue	D1-1b	Ocean Loop/L			Nwpt.
	CW	Ocean Avenue @ Hazard Road	D1-2b	Ocean Loop/L	Ballard Park/R		Nwpt.
	CW	Ocean Avenue @ Brenton Road	D1-1b	Ocean Loop/S			Nwpt. confirmation sign
	CW	Ocean Ave @ Castle Hill Ave.	D1-1b	Ocean Loop/R			Nwpt.
	CW	Castle Hill Ave. @ Ridge Rd.	D1-1b	Ocean Loop/L			Nwpt.
	CW	Ridge Rd. @ Harrison Ave.	D1-1b	Ocean Loop/L			Nwpt.
	CW	Harrison Ave. @ Ft. Adams Dr.	D1-1b	Ocean Loop/S			Nwpt.
	CW	Harrison Avenue @ Beacon Hill Rd.	D1-1b	Ocean Loop/L			Nwpt.
	CW	Harrison Avenue@Wellington Avenue	D1-1b	Ocean Loop/L			Nwpt.
	CW	Wellington Avenue@Marchant Street	D1-1b	Ocean Loop/R			Nwpt.
	CW	Marchant Street@Narragansett Avenue	D1-1b	Ocean Loop/L			Nwpt.
	CW	Narragansett Avenue@Spring Street	D1-2b	Redwood Library/L	Mortan Park/R		Nwpt. confirmation sign
	CW	Narragansett Avenue@Bellevue Avenue	D1-3b	Ocean Loop/L	Ocean Loop/S	Mansions/R	Nwpt.
	CW	Bellevue Avenue@Memorial Boulevard	D1-2b	Gateway Center/L	Beach Loop/R		Nwpt.

Aquidneck Island Bicycle Wayfinding Signing Schedule

MID ISLAND LOOP

Location ID#		Sign Location	Wayfinding Sign Designations (D1-1b, D1-2b, D1-3b)			Town	Notes	
AI Loop ID #	Mid Island Loop Direction CW/CCW		Sign Type	Destination/Arrow Direction (Top)	Destination/Arrow Direction (Bottom)			Destination/Arrow Direction (Bottom)
23	CW	East Main Road@Middle Road	D1-1b	Mid Island Loop/R		Ports.	Start HERE	
25	CW	Middle Road@Mill Lane	D1-2b	Mid Island Loop/S	Melville Ponds/R	Ports.		
27	CW	Middle Road@Schoolhouse Lane	D1-2b	Mid Island Loop/S	McCorrie Point/L	Ports.		
29	CW	Middle Road@Union Street	D1-1b	Mid Island Loop/L		Ports.		
31	CW	Union Street@East Main Road	D1-1b	Mid Island Loop/L		Ports.	Signalized	
33	CW	East Main Road@Glen Road	D1-1b	Mid Island Loop/R		Ports.		
35	CW	Glen Road@Glen Farm Road	D1-2b	Glen Park/S	Mid Island Loop/R	Ports.		
37	CW	Glen Farm Road@Linden Lane	D1-3b	Mid Island Loop/S	Seveney Fields Sports Cmplx./R	Sakonnet Greenway Trail/R	Ports.	
39	CW	Glen Farm Road@Sandy Point Avenue	D1-2b	Sandy Point/L	Mid Island Loop/R	Ports.		
41	CW	Sandy Point Avenue@Wapping Road	D1-1b	Mid Island Loop/L		Ports.		
43	CW	Wapping Road@Bramans Lane	D1-1b	Mid Island Loop/S		Ports.		
47	CW	Wapping Road@Peckham Avenue	D1-3b	Howland Park/S	Wyatt Road Soccer Complex/S	Mid Island Loop/L	Middle.	
49	CW	Peckham Avenue@Indian Avenue	D1-2b	Pebble Beach/S	Mid Island Loop/R	Middle.	(see sample sign)	
51	CW	Indian Avenue@Green End Avenue	D1-2b	Mid Island Loop/S	Demery Park/R	Middle.		
53	CW	Indian Avenue@Third Beach Road	D1-2b	Mid Island Loop/L	Norman Bird Sanctuary/R	Middle.		
55	CW	Third Beach Road@Sachest Point Road	D1-2b	Sachuest Point/L	Mid Island Loop/R	Middle.		
57	CW	Sachuest Point Road@Paradise Avenue	D1-2b	Mid Island Loop/L	Whitehall Museum/R	Middle.		
58	CW	Purgatory Road@Tuckerman Avenue	D1-2b	Mid Island Loop/R	Atlantic Beach District/R	Middle.		
59	CW	Purgatory Road@Aquidneck Avenue/Memorial Blvd.	D1-2b	Mid Island Loop/L	Atlantic Beach District/R	Middle.		
		Memorial Boulevard @ Annandale Road	D1-3b	South Island Loop/L	Mid Island Loop/S	Nwpt.	Spring Street is 1-way NB	
97	CW	Memorial Boulevard @ Spring Street	D1-3b	Mid Island Loop/S	Newport City Hall/R	Queen Anne Square/R	Nwpt.	Spring Street is 1-way NB
99	CW	Memorial Boulevard @ Thames Street	D1-2b	Mid Island Loop/S	Ann Street Pier/L	Nwpt.		
101	CW	Americas Cup @ Long Wharf	D1-2b	Mid Island Loop/L	Perrotti Park/L	Nwpt.		
103	CW	Washington Street@ Gladys Carr Bolhouse Road	D1-3b	Mid Island Loop/S	Goat Island/L	Gateway Center/R	Nwpt.	
105	CW	Van Zandt Avenue@3rd Street	D1-2b	Mid Island Loop/S	Naval War College/L	Nwpt.		
107	CW	Van Zandt Avenue@JT Connell Hwy.	D1-1b	Mid Island Loop/S		Nwpt.		
109	CW	Van Zandt Avenue@Malbone Road	D1-1b	Mid Island Loop/L		Nwpt.		
111	CW	Malbone Road@Cummings Road	D1-1b	Mid Island Loop/R		Nwpt.		
113	CW	Cummings Road@Bedlow Avenue	D1-1b	Mid Island Loop/R		Nwpt.		
115	CW	Bedlow Avenue@Hillside Avenue	D1-1b	Mid Island Loop/L		Nwpt.		
117	CW	Hillside Avenue@Admiral Kalbfus Road	D1-1b	Mid Island Loop/S		Nwpt.		
119	CW	Hillside Avenue@Maple Avenue	D1-1b	Mid Island Loop/R		Nwpt.		
121	CW	Maple Avenue@Sherman Lane	D1-1b	Mid Island Loop/L		Middle.		
123	CW	Sherman Lane@Coddington Hwy.	D1-1b	Mid Island Loop/R		Middle.		

Aquidneck Island Bicycle Wayfinding Signing Schedule

MID ISLAND LOOP

Location ID#		Sign Location	Wayfinding Sign Designations (D1-1b, D1-2b, D1-3b)			Town	Notes
AI Loop ID #	Mid Island Loop Direction CW/CCW		Sign Type	Destination/Arrow Direction (Top)	Destination/Arrow Direction (Bottom)		
125	CW	Coddington Hwy.@Lexington Street	D1-1b	Mid Island Loop/L			Middle.
127	CW	Lexington Street @ Read Street	D1-1b	Mid Island Loop/R			Middle.
129	CW	Read Street @ Chases Lane	D1-1b	Mid Island Loop/L			Middle.
131	CW	Chases Lane @ Access Road	D1-1b	Mid Island Loop/L			Middle.
133	CW	Access Road@ Burma Road	D1-1b	Mid Island Loop/R			Middle.
135	CW	Burma Road@ location TBD	D1-1b	Mid Island Loop/S			Middle.
137	CW	Burma Road@ location TBD	D1-1b	Mid Island Loop/S			Middle.
139	CW	Burma Road@ Stringham Road	D1-1b	Mid Island Loop/R			Ports.
141	CW	Stringham Road@West Main Road	D1-1b	Mid Island Loop/L			Ports.
143	CW	West Main Road@Mill Lane	D1-1b	Mid Island Loop/R			Ports.
145	CW	Mill Lane@Middle Road	D1-3b	Tiverton/L	Bristol/L	Newport/R	Ports. (see sample sign)

Text & graphic centered

Graphic size:
12" x 8"
min.
16" x 16"
max.



Text:
2.5" pref.
2" min.

1.5 R

M1-xb (graphic + words)
24" x 18" size (Roadway)

EXAMPLE OF GRAPHIC STYLE SIGNAGE UNDER REVIEW BY NATIONAL COMMITTEE ON
TRAFFIC CONTROL DEVICES FOR USAGE ON NON-NUMBERED BICYCLE ROUTES



EXAMPLE OF GRAPHIC-STYLE SIGNAGE PREVIOUSLY UTILIZED IN RHODE ISLAND FOR BICYCLE WAYFINDING SIGNAGE ON LOCALLY-CONTROLLED ROADS

Bicycle wayfinding
signpost examples
from the Netherlands



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