



▶ RHODE ISLAND  
**MOVING  
FORWARD**

**STATEWIDE** BICYCLE  
MOBILITY PLAN

DECEMBER 2020

PREPARED FOR  
Rhode Island  
Statewide  
Planning Program

PREPARED BY



IN ASSOCIATION WITH





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YIELD TO PEDS

PO...ARK BRIDGE



# EXECUTIVE SUMMARY





## ACRONYMS AND TERMS USED IN THIS PLAN

<b>AASHTO</b>	American Association of State Highway Transportation Officials
<b>ADA</b>	Americans with Disabilities Act
<b>Adaptive E-Bikes</b>	Adaptive bicycles that allow persons with disabilities to ride a bicycle for transportation and recreation
<b>Advisory Bicycle Lane</b>	Continuously dashed bicycle lanes that allow motorists to temporarily enter the lane to provide oncoming traffic sufficient space to safely pass on narrow low volume streets with marked centerlines
<b>APBP</b>	Association of Pedestrian & Bicycle Professionals
<b>Bicycle Lane</b>	Bicycle lanes designate an exclusive space for bicycles along a roadway using line striping, pavement markings, and signs
<b>Bike Newport</b>	Bike Newport is an advocacy group on Aquidneck Island promoting improved bike infrastructure and education
<b>BLOS</b>	Bicycle Level of Service
<b>BLTS</b>	Bicycle Level of Traffic Stress
<b>BMP</b>	Rhode Island Statewide Bicycle Mobility Plan
<b>Buffered Bicycle Lanes</b>	Buffered bicycle lanes use a diagonal striping pattern to delineate the bicycle lane from travel lanes and/or parking aisles.
<b>CommercerI</b>	Rhode Island Commerce Corporation
<b>Contraflow Bicycle Lanes</b>	Contraflow bicycle lanes allow bicycles to travel in the opposite direction of motor vehicle traffic on one-way streets, creating two-way traffic flow for bicyclists
<b>DMV</b>	Rhode Island Division of Motor Vehicles
<b>E-Bikes/E-Assist Bikes</b>	Electric or motor assist bicycles
<b>ECGA</b>	East Coast Greenway Alliance is a national trail advocacy organization creating a signed trail from Maine to Florida
<b>FHWA</b>	Federal Highway Administration
<b>HEZ</b>	Health Equity Zone
<b>L RTP</b>	Long Range Transportation Plan
<b>MUTCD</b>	Manual on Uniform Traffic Control Devices
<b>NACTO</b>	National Association of City Transportation Officials
<b>NEMBA</b>	New England Mountain Bike Association
<b>NHTSA</b>	National Highway Traffic Safety Administration
<b>RAB</b>	Recycle-A-Bike

## ACRONYMS AND TERMS (continued)

<b>RI Paths to Progress</b>	A citizen led coalition with the goal of expanding the network of paths throughout the state. ( <a href="http://www.pathstoprogressri.com">http://www.pathstoprogressri.com</a> )
<b>RIBike</b>	Rhode Island Bicycle Coalition
<b>RIDEM</b>	Rhode Island Department of Environmental Management
<b>RIDOA</b>	Rhode Island Department of Administration
<b>RIDOH</b>	Rhode Island Department of Health
<b>RIDOT</b>	Rhode Island Department of Transportation
<b>RIPTA</b>	Rhode Island Public Transit Authority
<b>RITBA</b>	Rhode Island Turnpike and Bridge Authority
<b>Separated Bicycle Lanes (SBL)</b>	Separated bicycle lanes add a physical barrier such as parked cars, planters, raised curbs, or delineator posts to create vertical separation between moving traffic and bikes
<b>Shared-Use Path</b>	Dedicated infrastructure completely separate from motor vehicle traffic that is shared by pedestrians, joggers, cyclists, and other non-vehicular uses (such as rollerbladers and skateboarders)
<b>Shoulder Bicycle Lane</b>	Shoulder bicycle lanes typically include at least a 5' wide paved shoulders and often include bicycle route signage
<b>Sidepaths</b>	Sidepaths are similar to shared-use paths, but run parallel with and immediately adjacent to roadways, frequently within the right of way
<b>Statewide Planning</b>	Rhode Island Department of Administration, Division of Statewide Planning
<b>STIP</b>	State Transportation Improvement Program
<b>TAC</b>	Transportation Advisory Committee
<b>TIP</b>	Transportation Improvement Plan
<b>TZD</b>	Toward Zero Deaths
<b>VRU</b>	Vulnerable road users, to include pedestrians, bicyclists, and those in work zones
<b>WRWC</b>	The Woonasquatucket River Watershed Council whose mission is to encourage, support and promote the restoration and preservation of the Woonasquatucket River Watershed



The Rhode Island Bicycle Mobility Plan (BMP) is the first statewide initiative to expand the bicycle network strategically. The plan also seeks to safely and efficiently connect people and places so that riding a bicycle in Rhode Island is safe and fun for all ages. In order to achieve the expanded network, this plan identifies candidate corridors and the supporting policies and programs to make this initiative a reality.

The vision for this plan was developed through collaboration with a geographically and professionally diverse Bicycle Advisory Committee. In addition, extensive outreach with planners from each city and town was completed and feedback was received at numerous public workshops and local outreach events across Rhode Island. The critical needs identified through public and stakeholder outreach were:

- » Improve connectivity
- » Fill network gaps
- » Overcome gaps along the State's many bridges
- » Addressing equity and differences in access between communities
- » Address policy gaps
- » Fix incomplete streets
- » Enhance bicyclist and driver education
- » Improve safety and maintenance
- » Explore dedicated funding options

The vision for the BMP underpins this desire to create a connected bicycle network.



This plan identifies a wide range of bicycle enhanced corridors, programs, and policies recommended to achieve the vision for cycling in the state. The corridors identified as candidate recommendations are not yet funded and range from inexpensive on-road treatments to more visionary off-road paths. The total estimated cost of the recommendations is close to \$300M. The expectation is that it will take time to accomplish these recommendations in totality, however incremental progress should be made from year to year.

The plan is one of the key outcomes of the Rhode Island "Paths to Progress" citizen-led coalition with the goal of expanding the network of paths throughout the state. (<http://www.pathstoprogressri.com/>)



**VISION – Riding a bicycle will be safe, fun, and practical in the Ocean State.** Rhode Island will be the most bikeable state in New England. Bicycle transportation will be fully integrated into the State's and municipalities' policies, programs, and improvement projects, creating a network of paths and streets that safely connect our cities, towns, villages, and other destinations (i.e. jobs, beaches, parks, etc.). Bicycle projects will be designed to encourage people of all ages and abilities to choose to ride a bike for both transportation and recreation.

To achieve this vision, eight goals were established as an initial step within the BMP:

1. Connect and expand the state's bicycle network
2. Integrate bicycles with transit and other modes of transportation
3. Develop stronger statewide bicycle transportation policies
4. Promote equity in bicycle planning and funding
5. Increase bicycle safety with policies and programs
6. Leverage bicycle transportation to promote economic development
7. Improve public health through bicycling
8. Promote bicycle transportation for state employees

These goals, along with their specific objectives, are described in greater detail in Chapter 1. They served as guidelines for the planning process and informed the BMP's recommendations related to new and enhanced policies, programs, and potential infrastructure projects.

This plan falls under the umbrella of the state's Long Range Transportation Plan (LRTP). The LRTP is an essential element of the statewide transportation planning process. The LRTP, and the supporting plans that fall under the LRTP, such as the Bicycle Mobility Plan, serve as the foundation for the development of the Transportation Improvement Program (STIP) for the state.

## PUBLIC PARTICIPATION

A critical part of the plan development involved receiving feedback from the public and stakeholders through workshops, roundtable meetings, and pop-up events, such as farmer's markets throughout the state. Early on in the project, an online survey was prepared which received over 1,300 responses. The project website, [PlanRI.com](http://PlanRI.com), hosted an online interactive bicycle map where approximately 400 comments were made regarding gaps, connections needed, safety issues, and general thoughts on needed improvements.



[www.planRI.com](http://www.planRI.com)



Home About News Meetings Documents Bike Mobility Map Get Involved

## Rhode Island Moving Forward

TRANSPORTATION FOR THE NEXT 20 YEARS

 **Come Visit Us at Bike to Work Day!**  
Burnside Park, Providence  
May 18, 2018 - 7am-10am



Welcome to the home of the Rhode Island Long-Range Transportation Plan (LRTP) and Bicycle Mobility Plan (BMP). The Project Team will be using this website, and other tools, to engage and communicate with the public. We look forward to providing updates on project happenings and progress. If you have any comments or questions, please [share them with us](#).

 **We want your ideas!**

We want your input to learn what transportation challenges need to be addressed statewide. [Share your](#)



Rhode Island has excellent off-road shared-use paths, but they need to be better connected to each other and to an improved network of on-road bicycle routes. Additionally, the bays, inlets, and rivers along the coastline create a series of geographic barriers that present major challenges for bicycle connectivity across the many bridges in the state. Because some bridges are a barrier for bicyclists, parts of the state—in particular, Conanicut and Aquidneck Island—are nearly inaccessible to bicyclists from other parts of Rhode Island.



East Main Road on Aquidneck Island is not bicycle-friendly, but may someday include a parallel sidepath or bicycle lanes

The state has a robust transit network that accommodates bikes with easy to load and unload racks. RIPTA's Bus Stop Design Guide (<https://www.ripta.com/rhode-island-bus-stop-design-guide-2017>) is an excellent resource that is basically the "bus equivalent" of this bicycle mobility plan. By contrast, on the rail network the MBTA prohibits bikes on peak-hour trains with the exception of folding bikes, which are more expensive.

Much of the state's landscape, including its renowned coastline, is remarkably scenic and provides opportunities for world-class bicycling for recreation and transportation. At the heart of the BMP's candidate bicycle network lies a visionary network of greenway paths which, when linked with on-street bicycle facilities, will become a tremendous resource for the state's residents and visitors. This greenway vision is illustrated on the following page where new connections are shown in orange. The 320-mile greenway network runs through all 39 cities and towns in Rhode Island. With a strategy to brand the greenways, the State

has a great opportunity to promote bicycle tourism, especially in the Blackstone Valley, Aquidneck Island, South County, and Metro Providence.

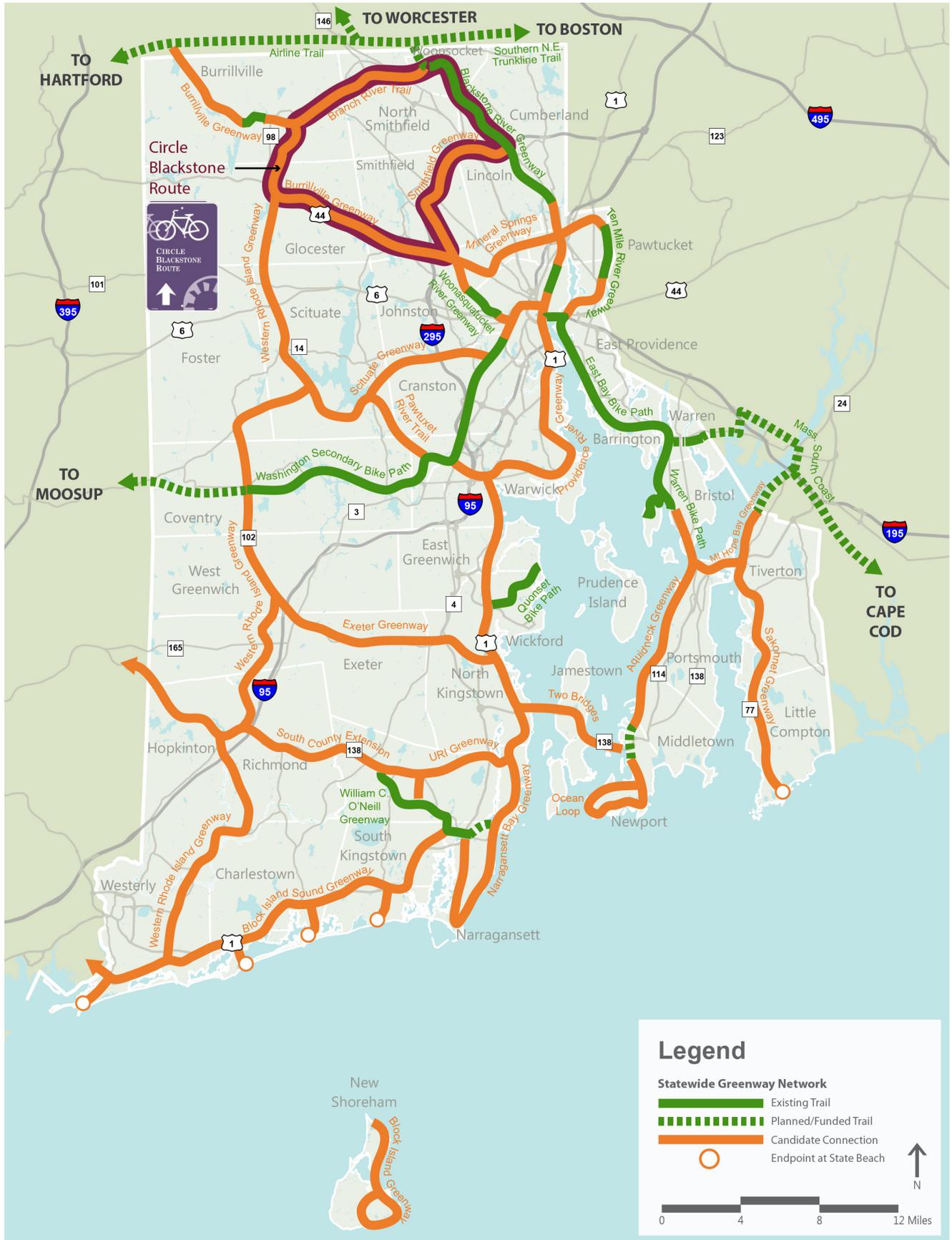
### RHODE ISLAND'S BICYCLE-RELATED STATEWIDE HIGHLIGHTS

- » *Second most densely populated state, with 50% of the population living within 10 miles of Providence*
- » *0.4% of residents commute by bicycle*
- » *Over 75 miles of shared-use paths*
- » *25 roadway miles with on-street bicycle lanes*
- » *Many of the state's highly traveled bridges are inaccessible to bicyclists for safety reasons*
- » *Bike culture and advocacy in Rhode Island is vibrant and provides an important foundation for implementing the BMP*



*The vision maps and candidate bike corridors developed for this plan are conceptual in nature and not meant to be prescriptive at the local/municipal level. A bicycle network needs to reflect local comprehensive plans and respect what makes sense to each municipality. This plan acknowledges that each municipality will eventually decide how their bike infrastructure is advanced and that this plan can serve as a guide to municipal planners.*

# A Long Term Vision for the Statewide Greenway Network





This plan envisions expanding the existing system of shared use paths and limited bicycle lanes, and connecting them to a vastly expanded network of paths and on-street bicycle facilities. The overall goal is to create a seamless off-road and on-street network that provides transportation and recreational links in all corners of the state. The full implementation of the candidate bicycle facilities would yield an expansion of:

- » Shared-use paths from the current 75 miles to 229 miles
- » Separated or buffered bicycle lanes from 3 miles to 64 miles
- » 5-foot wide standard bicycle lanes from 22 miles to approximately 299 miles
- » Signed shoulder bikeways from 117 miles to 245 miles of shoulder bicycle lanes

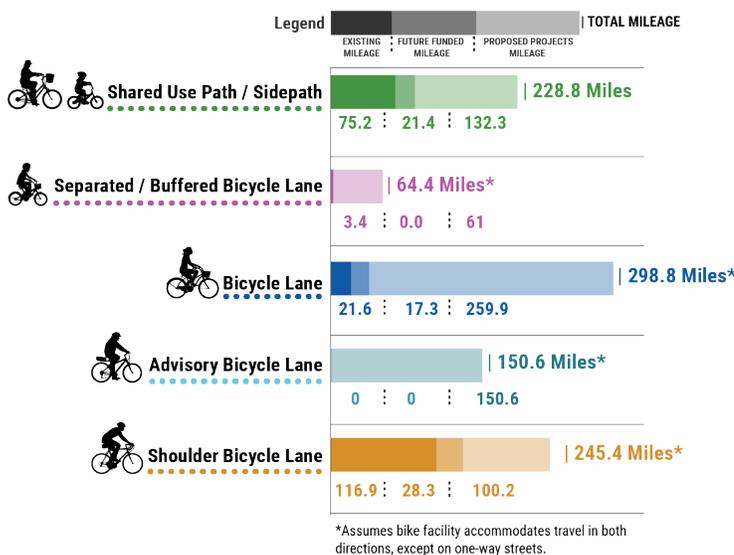
Development of the candidate bicycle network will also introduce advisory bicycle lanes to 151 miles of lower-volume roadways. Additional feasibility studies

and engineering reviews will be needed to help bring the more complex elements of this vision to reality.

The BMP also includes dozens of recommendations to enhance existing policies and programs related to bicycling and to create new policies and programs. These changes involved reviewing RIDOT’s various design manuals, inventorying municipal Complete Streets policies, and recommending revisions of the State’s Driver’s Manual providing more up-to-date safety education related to awareness of bicyclists while driving. The BMP also calls for an ongoing and expanded bicycle count program in order to better understand the growth in bicycling over the years. Recommendations that increase the number of encouragement, education, enforcement, and equity programs are highlighted as well. Finally, as Providence has launched its pedal-assist bike (e-bike) share system in the fall of 2018, additional bike share programs are likely to arise in other cities and regions in the near future and it will be important to ensure system compatibility so that a bicyclist can ride seamlessly from town to town.

### SUMMARY OF EXISTING, FUNDED, AND CANDIDATE BIKEWAYS

(Refer to Chapter 3 for a description of the candidate treatments)



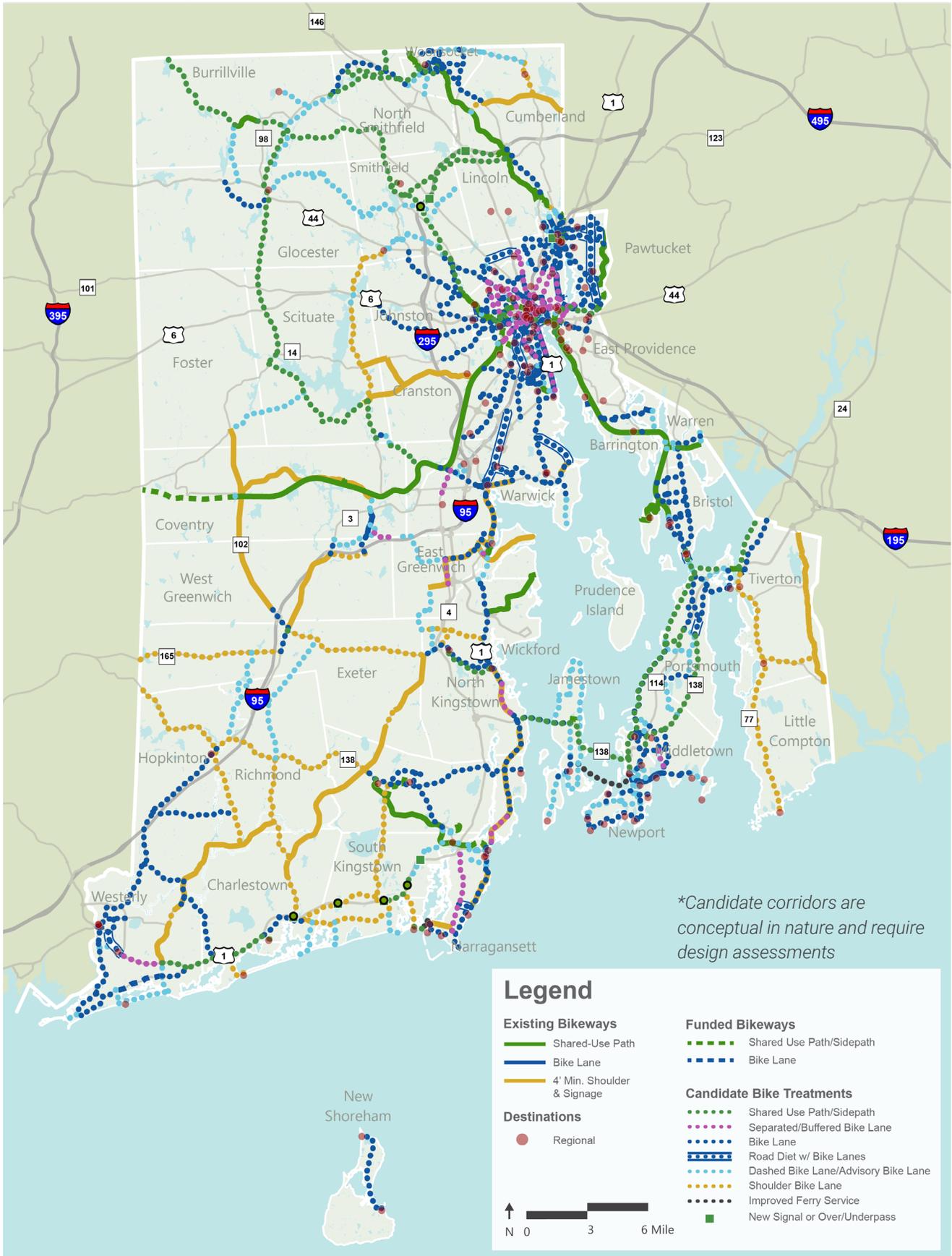
Note: Mileage reported as of July 2019

### THE PLAN IS DIVIDED INTO FIVE CHAPTERS

- » Chapter 1 presents the vision, goals and objectives
- » Chapter 2 describes the existing context for bicycling, including the current facilities, bicycle counts, and the state’s rich bike culture
- » Chapter 3 articulates the need to create a robust network of off-road and on-street bikeways that will connect communities
- » Chapter 4 summarizes current state laws and policies related to riding a bicycle and introduces new ones that will encourage more bicycling in the state
- » Chapter 5 describes to state policymakers, planners, and elected officials how to begin and sustain implementation of the BMP

The RhodeWorks plan to repair roads and bridges was approved by the Rhode Island General Assembly and signed into law by Governor Gina M. Raimondo on February 11, 2016. The legislation (2016-H 7409Aaa, 2016- S2246Aaa) creates a funding source that will allow the RIDOT to repair more than 150 structurally deficient bridges and make repairs to another 500 bridges to prevent them from becoming deficient, bringing 90 percent of the state’s bridges into structural sufficiency by 2025.

# Statewide Candidate Bicycle Network



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## CHAPTER 1

# INTRODUCTION







**VISION.** Riding a bicycle will be safe, fun, and practical in the Ocean State. Rhode Island will be the most bikeable state in New England. Bicycle transportation will be fully integrated into the State's and municipalities' policies, programs, and improvement projects, creating a network of paths and streets that safely connect our cities, towns, villages, and other destinations (i.e. jobs, beaches, parks, etc.). Bicycle projects will be designed to encourage people of all ages and abilities to choose to ride a bike for both transportation and recreation.

**Chapter 1 articulates the vision, goals, and priorities for bicycle transportation in Rhode Island.**



## 1.1 VISION

The Bicycle Mobility Plan (BMP) will guide the development of new bicycle-related policies, programs, and infrastructure projects over the next 10 years and beyond. The candidate projects presented in the BMP offer a range of improvements designed to enhance connectivity, fill network gaps (especially bridges), and improve safety. Other than currently funded projects—primarily through the State Transportation Improvement Program (STIP) and Green Economy Bond—recommendations are aspirational and will require additional study and design.

Most recommendations are not connected to a funding source at this time, but many are in the State's 2018-2027 STIP. Though municipalities are not required to implement the recommendations, this plan can be used as a guide to develop bicycle facilities or to provide a foundation for creating municipal-level bicycle plans.

The BMP **Vision** is a broad inspirational statement defining the desired future state of bicycling.

**Goals** are general statements of what people who live, work, or visit Rhode Island hope to achieve over time. Goals should be considered the framework from which all of the BMP's recommendations arise.

**Objectives** are specific action items that will help achieve the goals.

## 1.2 GOALS AND OBJECTIVES



### GOAL 1

#### CONNECT AND EXPAND THE STATE'S BICYCLING NETWORK

OBJECTIVE	KEY INFLUENCING ENTITIES
1.1 Eliminate gaps in the shared-use path network.	Rhode Island Department of Transportation (RIDOT), Rhode Island Statewide Planning (Statewide Planning), Rhode Island Department of Environmental Management (RIDEM), Local Government
1.2 Enhance regional and local connections along the on-street network, with special focus on bridges.	RIDOT, Statewide Planning, Local Government
1.3 Provide a bicycle accommodations within 1/4 mile of all state residents.	RIDOT, Statewide Planning, Local Government
1.4 Where possible, connect state parks and beaches with an "all ages and abilities" facility, i.e., shared-use path or separated bicycle lane facility.	RIDOT, Statewide Planning, RIDEM, Local Government
1.5 Make Rhode Island the first state in the US to have a continuous off-road East Coast Greenway route.	RIDOT, Statewide Planning, East Coast Greenway Alliance, RIDEM, Local Government
1.6 Plan an interconnected bicycle network across the urban, suburban, and rural areas of Rhode Island.	RIDOT, Statewide Planning, Local Government
1.7 Where possible, design bicycle facilities that go beyond minimum requirements.	RIDOT, Local Government



### GOAL 2

#### INTEGRATE BICYCLING WITH TRANSIT

OBJECTIVE	KEY INFLUENCING ENTITIES
2.1 Maximize opportunities for secure, sheltered, long-term bicycle parking at transit facilities (train stations, ferry terminals, and bus stops).	RIDEM, RIDOT, Rhode Island Public Transit Authority (RIPTA), Amtrak
2.2 Establish policies that require bicycle connectivity and access to existing transit and future improvements (facilities and operations).	RIDOT, Statewide Planning, RIPTA, Local Government
2.3 Ensure that bicycle network improvements are made near transit facilities (train stations, ferry terminals, and bus stops).	RIDEM, RIDOT, Statewide Planning, Local Government
2.4 Install wayfinding signage for bicyclists in and around transit facilities (train stations, ferry terminals, and bus stops).	RIDEM, RIDOT, Statewide Planning, RIPTA, Local Government
2.5 Work with the MBTA, RIPTA, Amtrak, other transit agencies, and private bus operators to improve access for people with bicycles onto their vehicles or into storage areas.	RIDOT, Statewide Planning, RIPTA, MBTA, Amtrak, private transit operators
2.6 Establish public bike share systems with docks at transit facilities.	Statewide Planning, RIDOT, RIPTA, Local Government



### GOAL 3

#### DEVELOP STRONGER STATEWIDE BICYCLING POLICIES

OBJECTIVE	KEY INFLUENCING ENTITIES
3.1 Establish dedicated local and statewide funding streams for bicycle and Complete Streets projects as a complement to the federal Transportation Alternatives Program (TAP).	RIDOT, Statewide Planning, RIDEM, Commerce RI, Legislature
3.2 Establish a separate funding stream with the state's TAP or State Transportation Improvement Program (STIP) for shared-use paths.	RIDOT, Statewide Planning, Commerce RI, Legislature
3.3 Establish dedicated funding streams for pavement and other maintenance and repairs of the statewide trail network and bicycle facilities.	RIDOT, RIDEM, Local Government, Legislature
3.4 Adopt a policy that requires consideration of bicycle accommodations in relevant publicly-funded roadway projects as a default (except limited-access highways).	RIDOT, Local Government, Legislature
3.5 Adopt a bicycle Level of Traffic Stress Analysis methodology as the standard tool for evaluating levels of bicycle accommodation within on-road bicycle networks.	RIDOT, Statewide Planning
3.6 Develop a new statewide bicycling map (using the maps in the Plan as a starting point) and accompanying smart phone application.	RIDOT, Statewide Planning
3.7 Publish a statewide bicycle facility design manual (or equivalent, working closely with RIDOT) that supports taking a flexible approach to bicycle facility design by complementing the AASHTO Guide and MUTCD with provisions from the NACTO Urban Bikeway Design Guide, other current FHWA manuals, and the Rhode Island Bus Stop Design Guide (2017).	RIDOT, Statewide Planning, Local Government
3.8 Support and help sustain RIDOT's recently established Vulnerable Road Users Task Force to engage leadership from various agencies.	RIDOT, Statewide Planning
3.9 Educate State transportation planners on bicycle facility design "best practices" by conducting National Highway Institute training sessions.	RIDOT, Statewide Planning
3.10 Implement a recurring bicycle count program to track progress over time and expand the program to include more locations and additional count dates/times. Through an existing traffic consultant contract, RIDOT Traffic Section has the ability to collect pedestrian and bicycle count data, which are based on requests.	RIDOT, Statewide Planning
3.11 Update the Rhode Island Bicycle Mobility Plan maps regularly (every 5 or at most 10 years).	RIDOT, Statewide Planning
3.12 Prioritize maintenance, preservation, and "state of good repair" on existing bike facilities to improve the riding surface (cracks, roots, obstructions) and address structural deficiencies and inadequate path widths and geometry.	RIDOT, RIDEM, Local Government



## GOAL 4

### PROMOTE EQUITY IN BICYCLE PLANNING AND FUNDING

OBJECTIVE	KEY INFLUENCING ENTITIES
4.1 Invest in bicycle facilities in traditionally under-served communities.*	Statewide Planning, Local Government
4.2 Distribute project funding to all regions of the state, taking into account need, collision hot spots, and future demand.	RIDOT, Statewide Planning
4.3 Prioritize bicycle education and encouragement programs throughout the state, including traditionally under-served communities.	Statewide Planning, Rhode Island Department of Health (RIDOH), Local Government
4.4 Partner with traditionally under-served communities in public engagement efforts.	Statewide Planning, Local Government

\* In the context of the BMP, "under-served communities" include neighborhoods and groups of people with lower incomes who may be more dependent on transit, bicycling, and walking than other Rhode Island residents.



## GOAL 5

### INCREASE BICYCLE SAFETY WITH POLICIES AND PROGRAMS\*\*

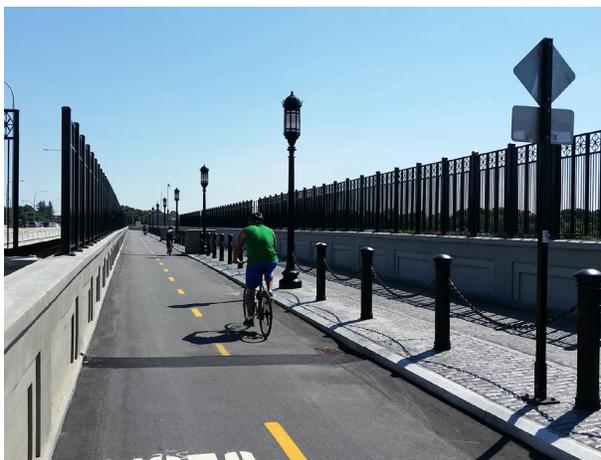
OBJECTIVE	KEY INFLUENCING ENTITIES
5.1 Eliminate speed-related bicycle crashes through increased use of traffic calming facilities and motor vehicle speed enforcement.	RIDOT, State and Local Police, Local Government
5.2 Support third-party bicycle safety and education efforts—especially the Smart Cycling curriculum—with funding and organizational capacity.	RIDOT, Statewide Planning, Local Government
5.3 Develop a statewide driver re-education campaign aimed at improving behavior around bicyclists and understanding of bicyclists' rights on the road. This effort should lead to a revised version of the Rhode Island driver's manual and driver's exam.	RIDOT, Rhode Island Division of Motor Vehicles (DMV)
5.4 Implement additional training for State and local police on safe bicycling practices and current laws related to bicycling.	State and Local Police
5.5 Implement additional training for State and local police to ensure strict enforcement of roadway laws related to bicycling.	State and Local Police

\*\* All new policies and programs would be aligned with recommendations within the 2017 Rhode Island Strategic Highway Safety Plan.



**GOAL 6**  
**LEVERAGE BICYCLING TO PROMOTE ECONOMIC DEVELOPMENT**

OBJECTIVE	KEY INFLUENCING ENTITIES
6.1 <b>Conduct an economic impact study to better understand how bicycling impacts Rhode Island's economy with a focus on the impact of a potential bicycle tourism promotional campaign.</b>	Statewide Planning, RI Tourism (Rhode Island Commerce Corporation)
6.2 <b>Prepare guidelines for municipalities to develop bicycle parking codes for new or rehabilitated buildings.</b>	Statewide Planning, Local Government
6.3 <b>Encourage local delivery service by human-powered vehicles through new bicycle facilities, parking zones, and other incentives as an alternative to deliveries by large trucks, especially in dense urban areas.</b>	Local Government
6.4 <b>Promote more applicants for the League of American Bicyclists (LAB) Bicycle-Friendly America program in order to appeal to businesses looking to locate in bicycle-friendly cities and towns.</b>	Statewide Planning, Local Government
6.5 <b>Recruit additional businesses related to the bicycle industry (e.g., bicycle builders, equipment manufacturers, bicycle-related applications, apparel companies, etc.) that can strengthen bike culture and advocacy efforts.</b>	Statewide Planning, Rhode Island Commerce Corporation
6.6 <b>Encourage municipalities to conduct before and after studies of new bicycle facilities to measure economic input.</b>	Statewide Planning, RIDOT
6.7 <b>Track the progress and impact of Goal #6 through Performance Measures.</b>	
(1) Establish a baseline and track increases in the economic impact of bicycling.	Statewide Planning, RI Tourism, Commerce RI
(2) Track the number and level of designated LAB bicycle-friendly communities, businesses, and universities.	Statewide Planning
(3) Track the number of employees working for businesses related to bicycling.	Rhode Island Commerce Corporation, Rhode Island Department of Labor and Training





**GOAL 7**  
**IMPROVE PUBLIC HEALTH THROUGH BICYCLING**

OBJECTIVE	KEY INFLUENCING ENTITIES
7.1 Encourage residents and visitors to partially meet the Centers for Disease Control and Prevention's (CDC) recommended physical activity guidelines* through casual bicycle use.	RIDOH
7.2 Partner with local organizations and Health Equity Zones to promote bicycling for personal and public health using public education campaigns.	RIDOH, Local Government, Local Organizations
7.3 Partner with public health organizations and officials to identify data needs to measure the impacts of bicycling on community health.	Statewide Planning, RIDOH, Local Government, Public Health Organizations
7.4 Incorporate questions about bicycle activity in statewide surveys, such as the Behavioral Risk Factor Surveillance System (BRFSS) survey. Secure and leverage funding to support the survey modifications.	RIDOH
7.5 Expand the number and scope of programs that educate students about bicycle safety in all schools.	Statewide Planning, Rhode Island Department of Education
7.6 Estimate reductions in greenhouse gas (GHG) emissions and vehicle miles traveled (VMT) as a result of bicycling and provide emissions reduction goals with accompanying mode-shift estimates.	RIDOT, RIDEM, Statewide Planning

\* Guidelines from the CDC can be found at: [https://www.cdc.gov/cancer/dccp/prevention/policies\\_practices/physical\\_activity/guidelines.htm](https://www.cdc.gov/cancer/dccp/prevention/policies_practices/physical_activity/guidelines.htm)



**GOAL 8**  
**PROMOTE BICYCLE TRANSPORTATION FOR STATE OF RHODE ISLAND EMPLOYEES AND VISITORS**

OBJECTIVE	KEY INFLUENCING ENTITIES
8.1 Create bicycle parking at all State-owned buildings, with at least 50% secure and covered.	Statewide Planning
8.2 Offer locker rooms and showers for bicycle commuters in State-owned buildings with over 50 employees.	Statewide Planning
8.3 In communities with bike share programs, include a station or kiosk at State-owned buildings with over 50 employees.	Statewide Planning, Local Government, Private Businesses
8.4 Incorporate transportation demand management (TDM) programs that offer financial incentives for State employees to bicycle to work (e.g., bicycle maintenance rebates, regular bicycle commuter stipends, free/reduced bike share memberships, etc.).	Statewide Planning



### 1.3 KEY CORRIDORS

Over the course of the plan development process, the project team developed dozens of recommended policies and programs and nearly 600 bicycle infrastructure candidate corridors. This was accomplished with significant contributions from the general public at community workshops, through the online survey and input map, and at stakeholder meetings. All policy, program, and corridor recommendations were evaluated based on common criteria derived from the project goals and objectives discussed in Chapter 1.2. The full list of key actions is included in Chapters 3 and 4, which includes several critical policy, program, and corridor recommendations that will have the potential to impact the State's ability to accomplish its vision.

#### KEY POLICIES AND PROGRAMS

State and local policies have a profound impact on conditions for Rhode Islanders who choose to use a bicycle for transportation or recreation. These policies relate to how streets are designed, traffic safety, and more. From the full list of policy recommendations provided in Chapter 4, those considered the most critical include:

- » Revise the RIDOT Highway Design Manual
- » Strengthen the state's Complete Streets Policies
- » Promote municipal Complete Streets ordinances
- » Consider bicycle accommodations as a default element in RIDOT's Project Scoping Process

Many programs conducted by local, state, and federal agencies, as well as by state and local nonprofit organizations, also have a significant impact on bicycling in Rhode Island. These programs provide bicycling skills education and encourage folks to leave their cars at home. The most critical program recommendations in the BMP include:

- » Revise the Rhode Island Driver's Manual to include rules related to bicycles
- » Improve and increase enforcement of laws related to bicycles and safe road sharing
- » Strengthen the Safe Routes to School program
- » Expand STIP funding for bicycle and path projects
- » Implement "Toward Zero Deaths (TZD)" policies statewide and locally



Funding through the Green Economy Bond and the STIP will soon extend the Washington Secondary Path to Olneyville Square and further west to Connecticut (Source: East Coast Greenway)

## KEY CORRIDORS

While the needs of bicyclists to have safe and comfortable facilities exist in nearly every city and town in Rhode Island, a handful of critical corridors stand out. The implementation of these recommendations will help riders of all ages and abilities negotiate the state's paths and roadways for both transportation and recreational uses.

This plan recognizes low cost, easy to implement solutions. For efforts involving substantial construction, the more critical consideration for action is addressing bike path bridges that need substantial work/repair or replacement, including the Barrington and Warren Bike Path bridges. Bike path maintenance and preservation is a priority action.

Appendix A7 includes the detailed selection of the candidate corridors, which are summarized in the following tables. In order to provide a higher level of detail with the candidate bicycle treatments, the state was subdivided by county.

## CANDIDATE CORRIDOR CRITERIA

In order to help the State identify key corridors to address system gaps, the Bicycle Mobility Plan used seven criteria to evaluate and score each project. These criteria were derived from the planning goals established early on the process and presented in Chapter 1.

For each quantitative criterion, the project scoring approach used available geospatial data to identify a range of values that provide a close approximation of how well the area immediately surrounding the recommended project addresses the needs discussed in the plan's goals (i.e. connections to businesses, addresses known safety issues, etc.). "Connectivity" and "Safety" received heavier weightings to reflect feedback from multiple public meetings throughout the engagement process. The scores for each criterion were added together for a maximum possible score of 100 points. Two additional qualitative criteria—Readiness and Community Support—were also considered in the evaluation.

The tables on the following pages summarize the key corridors based on this criteria. The plan is designed remain flexible to changing local conditions, availability of funding opportunities, and ongoing community support. For example, key corridors are subject to change based on the priorities and implementation plan from Providence's Great Streets Initiative and Urban Trail Network Master Plan, as well as other municipal and state plans to include the Transit Master Plan and Long Range Transportation Plan.



# Candidate Corridor Criteria

## IMPROVED SAFETY



**MAX: 25 POINTS**

Number of bus stops, ferry stations, Amtrak stations, and existing/funded bicycle lanes and paths within a 1/2-mile radius of the proposed project.

## UTILITY



**MAX: 15 POINTS**

Number of jobs, K-12 students, college students, grocery stores, and commercial land within a 1/2-mile radius of the proposed project.

## POTENTIAL TO ADDRESS BICYCLING HAZARDS



**MAX: 15 POINTS**

Number of bicycle-involved crashes and public comments about bicycling hazards within a 1/4-mile radius of the proposed project.

## ECONOMIC DEVELOPMENT



**MAX: 5 POINTS**

Number of activity centers within a 1/2-mile radius of the proposed project.



**READINESS  
COMMUNITY  
SUPPORT**

## HEALTH



**MAX: 10 POINTS**

Percent of residents reporting poor health within a 1/2-mile radius of the proposed project.

## DENSITY



**MAX: 20 POINTS**

Number of Rhode Island residents per acre within a 1/2-mile radius of the proposed project.

## EQUITY



**MAX: 10 POINTS**

Equity score within a 1/2-mile radius of the proposed project (see Section 3.1.2 for more information).

## KEY CORRIDOR BY MUNICIPALITY

CORRIDOR ID*	LOCATION	MUNICIPALITY
E1	Franklin St - Metacom Ave - Mt Hope Bridge	Bristol
N3	Victory Hwy - Railroad Right of Way	Burrillville
P3	Butler Ave - Broad St - Blackstone River Bikeway from Old Bridge Path to Heritage Park Cumberland	Central Falls
N9	Smith Ave - W Greenville Rd - Toll Gate Rd	Coventry
N18	W Natick Rd - Mayfield Ave - Pontiac Ave	Cranston
N2	Hamlet Ave - Cumberland Hill Rd - Mendon Rd from Front St to Nate Whipple Hwy	Cumberland
P7	Exchange St - Armistice Blvd from Roosevelt Ave to 10 Mile River Greenway	East Providence
W2	Ten Rod Rd - Victory Hwy - Philips St	Exeter
E14	Jamestown Bridge - Pell Newport Bridge	Jamestown
N13	Johnston/Smithfield Railroad Right of Way	Johnston
E10	Marlborough St - Broadway - E Main Rd	Middletown
W1	Boston Neck Rd - Post Rd - Potowomut Rd	Narragansett
E10	Marlborough St - Broadway - E Main Rd	Newport
W1	Boston Neck Rd - Post Rd - Potowomut Rd	North Kingstown
N3	Victory Hwy - Railroad Right of Way	North Smithfield
P3	Butler Ave - Broad St - Blackstone River Bikeway from Old Bridge Path to Heritage Park Cumberland	Pawtucket
E8	East Main Rd	Portsmouth
P17	Hartford Ave - Westminster St - Washington St from Atwood Ave to Benefit St	Providence
N9	Smith Ave - W Greenville Rd - Toll Gate Rd	Scituate
N13	Johnston/Smithfield Railroad Right of Way	Smithfield
W8	Succotash Rd - Commodore Perry Hwy - Kingstown Rd	South Kingstown
E1	Franklin St - Metacom Ave - Mt Hope Bridge	Warren
N21	Oakland Beach Ave - Warwick Ave - Broad St from W Shore Rd to Montgomery Ave	Warwick
N9	Smith Ave - W Greenville Rd - Toll Gate Rd	West Warwick
W12	Post Rd - Franklin St - Broad St	Westerly
N2	Hamlet Ave - Cumberland Hill Rd - Mendon Rd from Front St to Nate Whipple Hwy	Woonsocket



## CHAPTER 2

# EXISTING CONDITIONS







### EXISTING BICYCLE NETWORK

Rhode Island's existing bicycle network includes shared-use paths and a number of roadways with designated bicycle lanes. The best known bikeways include the East Bay Bike Path, the Blackstone River Bikeway, the Ten Mile River Greenway, the Woonasquatucket River Greenway, the Washington Secondary Bike Path, and the South County Bike Path.

Chapter 2 describes the existing context for bicycling in Rhode Island, including current bikeway types and the "bike culture" that helps promote riding a bicycle as a sport, means of transportation, and recreational activity.

## 2.1 EXISTING BICYCLE FACILITIES

Rhode Island is the second most densely populated state in the US. This density contributes to great demand for transportation and recreational facilities of all types throughout the state. Currently, many of Rhode Island's bicycle facilities are concentrated in Metro Providence. This includes a mix of shared-use paths, striped bicycle lanes—all of which are short or discontinuous—and a small number of on-street, separated bicycle lanes. Because of the state's dense urban fabric of homes, schools, cultural institutions, and businesses, there is potential for a high percentage of trips to be made by bicycle. Rhode Island's suburban and rural areas have fewer places for bicyclists to comfortably ride except for a few shared-use paths and designated, signed bicycle routes for experienced riders. Promoting bicycling as

a means of transportation and recreation will require additional bicycle facilities, improved connections, and sustained focus on designs that encourage bicyclists of all ages and abilities.

RIDOT's Bicycle System Map includes an inventory of existing and planned facilities.

[http://www.dot.ri.gov/travel/bikeri/docs/RI\\_Statewide\\_Bicycle\\_System.pdf](http://www.dot.ri.gov/travel/bikeri/docs/RI_Statewide_Bicycle_System.pdf)

### BICYCLE FACILITY AND ROADWAY MILES

FACILITY	MILES
<b>Completed &amp; Opened Bike Paths and Bike Lanes</b>	103
<b>Bike Paths Under Construction</b>	1
<b>Bike Paths Under Design, Study, Development</b>	16
<b>Statewide Bicycle Route Signing</b>	102

Source: RIDOT as of September 2020

## EXISTING BICYCLE FACILITY TYPOLOGIES

The types of bicycle facilities that currently exist in Rhode Island include:

- » **Shared-Use Paths** – Commonly called “bike paths”, shared-use paths are completely separate from motor vehicle traffic and typically lie on former rail corridors as temporary transportation uses. These facilities are shared by pedestrians, runners, skaters, and bicyclists.
- » **Sidepaths** – Sidepaths are similar to shared-use paths, but run parallel with and immediately adjacent to roadways, frequently within the right of way. They are typically separated from the edge of the roadway by a landscaped buffer, solid barrier, split-rail fence, or some combination of buffering elements.
- » **Bicycle Lanes** – Bicycle lanes designate an exclusive space for bicycles along a roadway using line striping, pavement markings, and signs.
- » **Contraflow Bicycle Lanes** – Contraflow bicycle lanes allow bicycles to travel in the opposite direction of motor vehicle traffic on one-way streets, creating two-way traffic flow for bicyclists. This helps to connect neighborhoods and can become important links in an overall bicycle network.
- » **Buffered/Separated Bicycle Lanes (SBL)** – Buffered bicycle lanes use a diagonal striping pattern to delineate the bicycle lane from travel lanes and/or parking aisles. Separated bicycle lanes (SBL) add a physical barrier such as parked cars, planters, raised curbs, or delineator posts to create vertical separation. SBLs can be designated as one-way or two-way.

RIDOT’s recent bike/pedestrian bridge infrastructure investments will add to this inventory in the near future, including the \$20 million George Redman Linear Park, the \$13 million Sakonnet River Bridge separated bike lane, the \$22 million Providence River Pedestrian Bridge, and the \$53 million reconstruction of the Henderson Bridge to include separated bike/pedestrian lane.



Sidepath along Veterans Memorial Parkway in East Providence



Bicycle Lane along Memorial Boulevard in Newport



Separated Bicycle Lane on Fountain Street in Downtown Providence



Bicycle Lane along America's Cup Avenue in Newport



Separated Bicycle Lane in Roger Williams Park



East Bay Bike Path



George Redman Washington Bridge Linear Park



Providence River Pedestrian Bridge (Source: SITU Studio)

### SIGNED BICYCLE ROUTES

*Besides shared-use paths and on-street bicycle lanes, a number of roadways - primarily in rural areas - have been designated as signed bicycle routes by RIDOT. At least 4'-wide shoulders exist along the majority of these signed routes (although there are notable gaps). Also called "shoulder bikeways," these facilities frequently connect town centers or other attractions and primarily exist where on-street parking is prohibited. While signed bicycle routes can enhance the riding experience for recreational riders, the Bicycle Mobility Plan focuses its recommendations on the development of bicycle facilities such as shared-use paths and bicycle lanes in order to promote riding a bicycle as transportation and as an activity for people of all ages and abilities.*

In 2006 RIDOT commissioned a statewide signing evaluation which was completed by Pare Corporation. The study evaluated the location of

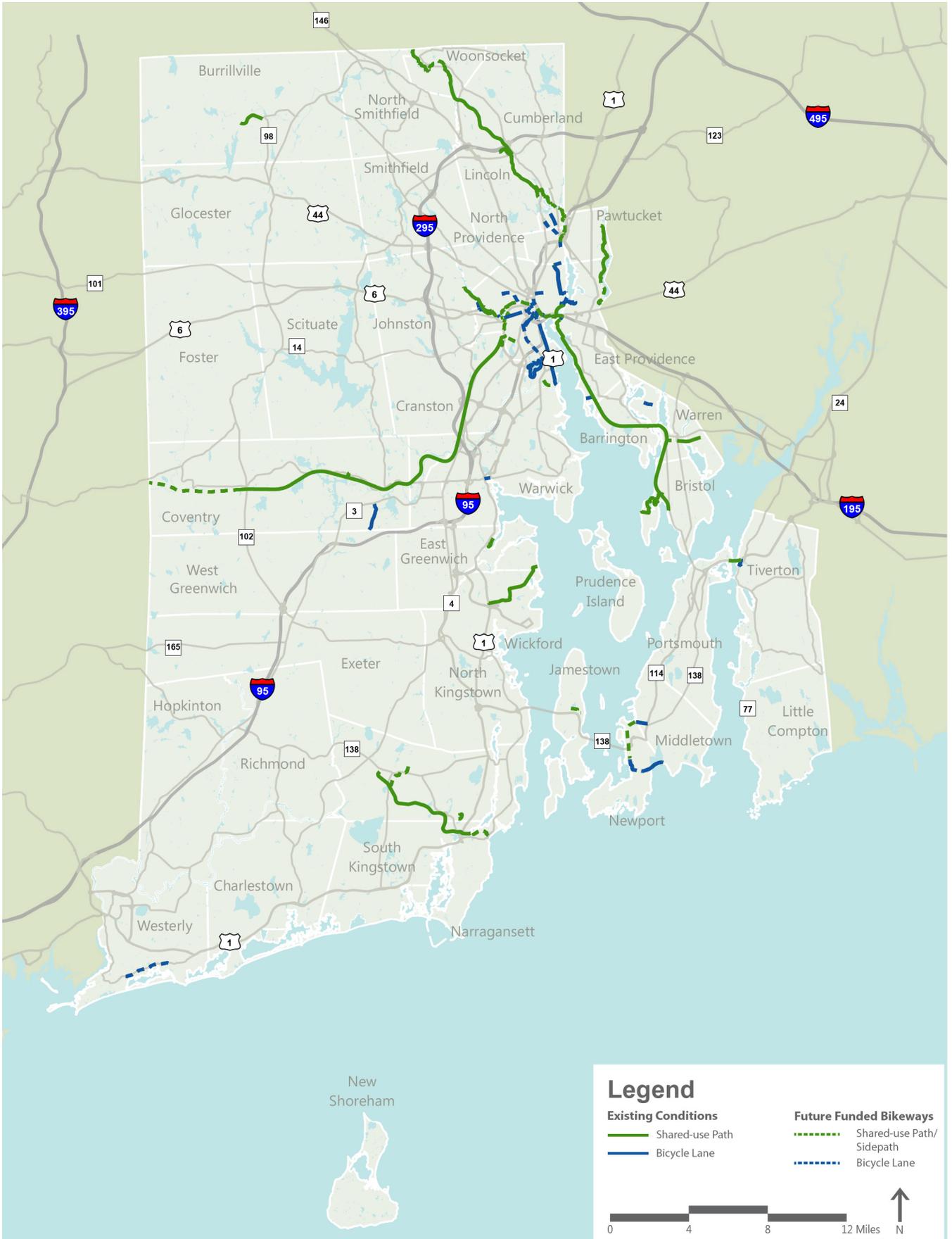
the existing bike routes and bike lanes as well as constraints and opportunities for connecting the network of bike facilities. The review concluded the following:

- » Signs need to be an asset to both the motorist and bicyclist.
- » Better sign control is a relatively inexpensive and simple option for improving a community's appearance and providing a more effective message for vehicle and bicycle users on the road.
- » Restricting the installation of bike signs is an opportunity to accomplish these objectives and reduce confusion caused by sign clutter.

As a result, RIDOT created Design Policy Memorandum (DPM) 920.06 to implement a more effective method of sign control for bicycle usage. The full report is provided in the Appendix.

There are many limited/controlled access roadways where bicycles are prohibited per RIGL § 31-15-15. <http://webserver.rilin.state.ri.us/Statutes/TITLE31/31-15/31-15-15.HTM>

# Statewide Current and Future Funded Bicycle Facilities



RHODE ISLAND MOVING FORWARD

To view a scalable map click here:  
<https://bit.ly/2Hh8wqf>



## FUTURE FUNDED SHARED-USE PATHS

#	PROJECT	GEB	MUNICIPALITY	BEGINS	ENDS	MILES	STIP ID	FUNDING
1	Blackstone River Bikeway, Segment 3B-1	Y	Central Falls	Pierce Park	Heritage Park, Cumberland	1.1	5012	\$1.10M
2	Trestle Trail, West Section	N	Coventry	Log Bridge Rd.	CT State Line	4.7	9002	\$5.5M
3	Ten Mile River Greenway, Segments 1-4	N	East Providence	Turner Reservoir	N/A	1.8	5045	\$2.5M
4	Jamestown Bridge Bike/ Pedestrian Access	N	Jamestown	Both approaches	N/A	0.7	5060	\$0.80M
5a	William C. O'Neill Bike Path Extension, Phase 4A	Y	Narragansett	Mumford Rd.	Community Center	0.32	5089	\$0.75M
5b	William C. O'Neill Bike Path Extension, Phase 4B	N	Narragansett	Community Center	Town Beach	0.88	5089	\$7.68M
6	Newport North End Bicycle Connectivity Project ("First Mile Bikeway")	Y	Newport	Community College Rhode Island	Downtown Newport	1.8	9003	\$7.20M
7	Blackstone River Bikeway, Segment 8B-2	N	North Smithfield	Market St.	Cold Spring Park	1.8	5319	\$2.64M
8	Blackstone River Bikeway, Segment 3A-2	N	Pawtucket	Exchange St.	Branch St.	1.3	9013	\$7.0M
9	Taft St. & Roosevelt Ave. Blackstone River Bikeway Segment 3A-1	Y	Pawtucket	Town Landing	Exchange St.	0.5	9012	\$1.60M
10	San Souci Dr.	Y	Providence	Olneyville Square	Woonasquatucket River	0.1	5131	\$0.55M
11	Woonasquatucket Greenway Enhancements	N	Providence	Francis St.	Eagle Square	1.1	5178	\$5.51M
12	Washington Secondary Bike Path Extension	N	Providence	Depot Ave. (Cranston)	Broadway and Carter St. (Providence)	2.5	5215	\$1.71M
13	Gano St. Gateway	N	Providence	India St.	Trenton St.	0.3	1381	\$2.9M
14	East Bay Bike Path Extension	N	Warren	East Bay Bike Path	Kickemuit River Bridge	0.9	5271	\$2.0M
15	Blackstone River Bikeway Segment 8A	N	Woonsocket	Davison St.	Truman Dr.	1.4	5293	\$4.04M
16	GE Baseworks Path	N	Providence	De Soto St.	Atwells Ave.	0.2	N/A	N/A

As of April 2019 and subject to change. Refer to the RIDOA website for an online map of projects in the STIP (<http://www.planning.ri.gov/planning-areas/transportation/tip.php>)

**Total: \$53.5 Million**

## FUTURE FUNDED BICYCLE LANES

#	STREET	GEB	MUNICIPALITY	BEGINS	ENDS	MILES	STIP ID
1	First St.	N	East Providence	Warren Ave.	Veterans Memorial Parkway	0.2	N/A
2	King Philip St.	N	Johnston	Woonasquatucket River Path at Hedley Ave.	Providence City line	0.4	N/A
3	King Philip St.	N	Providence	Johnson City line	Mancini Dr.	0.1	N/A
4	Button Hole Dr.	N	Providence	King Philip St.	Glenbridge Ave.	0.2	N/A
5	Exchange Ter.	N	Providence	Fountain St.	Exchange St.	0.2	N/A
6	Richmond St.	N	Providence	Weybosset St.	Point St.	0.4	N/A
7	Chestnut St.	N	Providence	Broad St.	Point St.	0.4	N/A
8	Fountain St.	N	Providence	Francis St.	Union St.	0.1	N/A
9	Exchange St.	N	Providence	Finance Way	Exchange Ter.	0.1	N/A
10	Canal St.	N	Providence	Steeple St.	Canal St.	0.3	N/A
11	Empire St.	N	Providence	Fountain St.	Weybosset St.	0.2	N/A
12	Clifford St.	N	Providence	Plain St.	Richmond St.	0.4	N/A
13	Friendship St.	N	Providence	Blackstone St.	Plain St.	0.5	N/A
14	Pine St.	N	Providence	Broad St.	Plain St.	0.5	N/A
15	Plain St.	N	Providence	Pine St.	Clifford St.	0.1	N/A
16	Broad St.	N	Providence	Linden St.	Montgomery Ave.	2.2	N/A
17	Gulf St.	N	Providence	East River St.	Irving Ave.	0.7	N/A
18	Irving Ave.	N	Providence	East River St.	Blackstone Blvd.	0.3	N/A
19	Allens Ave.	N	Providence	Globe St.	OConnell St.	0.5	N/A
20	Pine St.	N	Providence	Rand St.	Crossman St.	0.4	N/A
21	Manton Ave.	N	Providence	Delaine St.	Cyril Ct.	0.1	N/A
22	Oakland Ave./Raymond St./Dean St.	N	Providence	Smith St.	Promenade St.	0.5	N/A

As of April 2019 and subject to change. Refer to the RIDOA website for an online map of projects in the STIP (<http://www.planning.ri.gov/planning-areas/transportation/tip.php>)



## FUTURE FUNDED BICYCLE LANES (continued)

#	STREET	GEB	MUNICIPALITY	BEGINS	ENDS	MILES	STIP ID
23	Eddy St.	N	Providence	Allens Ave.	Richmond St.	0.1	N/A
24	Exchange St.	N	Providence	Fulton St.	Furnace Way	0.2	1461
25	Citywalk Providence Pedestrian and Bicycle Enhancements	N	Providence	Clifford St., Pine St., Friendship St., Broad St.	N/A	3.5	5183
26	Railroad St.	N	South Kingstown	Church Street	Kingstown Rd.	0.2	N/A
27	Macarthur Blvd.	N	South Kingstown	Kingstown Road	Trail terminus	0.2	N/A
28	Post Rd.	N	Warwick	Music Lane	Westshore Rd.	0.3	N/A
29	Shore Rd.	Y	Westerly	Langworthy Road	Winnipaug Rd.	2.5	5123
30	Antony Road (Mount Hope Bay Bicycle Improvements)	N	Portsmouth	Boyds Lane	Route 24 Off-Ramp	1.5	5162

As of April 2019 and subject to change. Refer to the RIDOA website for an online map of projects in the STIP (<http://www.planning.ri.gov/planning-areas/transportation/tip.php>)

## 2.2 Recent Gains and Small Victories

The Green Economy Bond was passed by State referendum in 2016 and provides \$10 million in funding for trail- and bicycle-related projects throughout the state. The GEB projects will go a long way towards extending existing bicycle facilities, and filling in gaps along greenway segments.

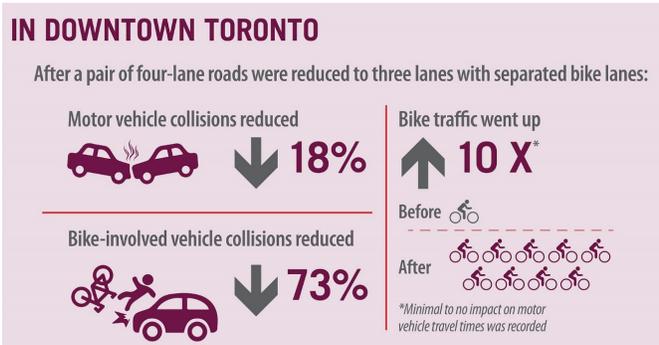
Through the STIP, a handful of bicycle lane projects have already been funded and will expand the State's bicycle network immediately (see funded project tables on the previous pages).

## 2.3 Bicycle Accommodations and Safety/Connectivity – Two Examples

Bike facilities that are separated from vehicular traffic contribute to a lower rate of bike crashes per rider and longer, better connected facilities generate more trips than short bike facilities that are not well connected to destinations. Two case studies, in Toronto and New York City, illustrate this point.

In downtown Toronto, a major road diet project involving the conversion of a pair of 4-lane roads to 3-lanes dramatically reduced collisions and increased bike traffic by a factor of 10.

In New York City, the Columbus Avenue Parking-Protected Bicycle Path Project ([http://www.nyc.gov/html/dot/downloads/pdf/2011\\_columbus\\_assessment.pdf](http://www.nyc.gov/html/dot/downloads/pdf/2011_columbus_assessment.pdf)) resulted in a 34 percent reduction in crashes, a 10 percent reduction in vehicle speeds, a 10 percent reduction in vehicle traffic with a corresponding 56 percent increase in bicycle traffic.



Source: Keenan, Edward, "Bike Lanes Prove That Transportation Solutions Can be Cheap and Effective." The Toronto Star, 1/11/2019

## 2.4 RHODE ISLAND'S BIKE CULTURE – GROUPS, EVENTS, ACTIVITIES

Rhode Island's bikeway development since the 1970s would not have succeeded without contributions of Tom Byrnes and George Sisson of Bristol, George Redman and Leo Sullivan of East Providence, Barry Schiller of North Providence, Peter Readyhough of Barrington, Sue Barker of Jamestown, and Anthony Guariello and Bob Votava of South Kingstown. These individuals are the early pioneers of Rhode Island's bike culture. Each member of the Advisory Committee who helped guide this Plan must also be recognized for their contributions.

"Bike culture" is a term used to describe the community that develops around, and is related to, bicycling in a particular city, region, or state. A vibrant bicycle culture supports improvements in bicycle infrastructure, policies, and programs and can help hold governments accountable. This culture is comprised of all sorts of bicyclists, ranging from year-round commuters to summer "weekend warriors" riding for fun. The groups and events that help build bike culture are listed below.

### GROUPS

- » **Woonasquatucket River Watershed Council (WRWC)** – The mission of the WRWC is to encourage, support and promote the restoration and preservation of the Woonasquatucket River Watershed as an environmental, recreational, cultural, and economic asset of the State of Rhode Island.
- » **Bike Newport** – Bike Newport is an advocacy group on Aquidneck Island promoting improved conditions for bicycling. Programs include



Bike Newport provides wayfinding and parking support at the Newport Folk Festival and numerous other events  
(Source: Bike Newport)

education for safe cycling, road sharing, and basic bicycle maintenance, as well as community Open Garages, and regional infrastructure planning.

- » **Rhode Island Bike Coalition (RIBike)** – RIBike is a member-based, statewide organization that advocates for bike-friendly policies and funding for trails and on-street facilities in local jurisdictions and at the Statehouse. The Coalition also hosts social rides and events including "Light Up The Night" where free bicycle lights are distributed to people who need them. RIBike also hosts bike to work day in Providence.
- » **East Coast Greenway Alliance (ECGA)** – The ECGA is a national trail advocacy organization creating a signed trail from Maine to Florida. Signing of the Greenway route in Rhode Island is complete.
- » **RI Paths to Progress** – This plan is one of the key outcomes of the Rhode Island "Paths to Progress" citizen led coalition with the goal of expanding the network of paths throughout the state. (<http://www.pathstoprogressri.com>)
- » **Narragansett Bay Wheelmen** – A non-profit organization directly descended from the Providence Wheelmen, founded in 1879. The Wheelmen promote bicycling through weekly group rides, including their annual "Flattest Century in the East" ride, a one-day scenic tour through coastal parts of Rhode Island and southeast Massachusetts.
- » **Recycle-A-Bike (RAB)** – A Providence nonprofit community bicycle shop, RAB offers classes for youth and adults in bicycle repair, safe bicycling skills, and hosts open shop hours where individuals can rent workspace and have access to tools and repair equipment.
- » **Women Bike RI** – This advocacy group empowers women to ride by hosting events including the CycloFemme ride on Mother's Day weekend that raises funds for the World Bicycle Relief organization.
- » **Blackstone Heritage Corridor/Blackstone River Bikeway Ambassadors** – Formed in 2010 through the Blackstone Heritage Corridor, the volunteer ambassadors perform a variety of functions including welcoming visitors to the bikeway and sharing information about the history, significance and physical features of the bikeway.



- » **New England Mountain Bike Association (NEMBA)** – NEMBA is a community of mountain bikers committed to creating memorable riding experiences, preserving open space, and guiding the future of mountain biking in New England. NEMBA hosts weekly rides through Lincoln Woods.

## EVENTS

- » **Bike the Night Rides** – Providence Mayor Jorge Elorza and the Rhode Island Bicycle Coalition lead quarterly Bike the Night rides through Providence neighborhoods. Bike the Night began in October 2015 and continues to bring community members together to explore different neighborhoods of Providence by bike, encouraging healthy living and a greater connection to the City of Providence.
- » **Tour de Tentacle** – Inspired by the horror-genre writing of Providence native H.P. Lovecraft, this bicycle-based quest requires solving puzzles.
- » **Bike Multiple Sclerosis (MS) Ride the Rhode** – Ride the Rhode is a two-day 150-mile ride along the State's country roads and the scenic coastal landscapes raising money for MS.
- » **Bike Fest RI** – This annual event celebrates “all things bicycle” and features entertainment, food, bicycle gear, information about advocacy and riding expos at alternating locations in Providence.
- » **PVD Critical Mass** – This recurring bicycle ride and social event draws dozens of bicyclists from the Metro Providence area. The intent is to create a lively atmosphere that promotes bicycling among participants and passersby.
- » **Woonasquatucket River Ride** – This annual ride is a fundraiser for the Woonasquatucket River Watershed Council and includes five ride options of various lengths and a five-mile walk with a lively after party.
- » **4 Bridges Ride** – The Rhode Island Turnpike and Bridge Authority sponsors this 26-mile charity ride that allows participants to cross four major bridges, two of which are normally inaccessible to bicycle traffic: the Jamestown Verrazzano Bridge and the Newport/Pell Bridge.



The Mount Hope Bridge is a link along the '4 Bridges Ride'

- » **Ovah the Bars** – Ovah the Bars is a New England based mountain bike events and promotions company that teaches bike education through summer camp clinics in Rhode Island.
- » **Cyclocross Events** – Sporting events in Rhode Island include annual elite-level cyclocross events (NBX Grand Prix of Cyclocross, Goddard Park in Warwick), a criterium series on dedicated 0.8-mile courses (NBX Criterium, Ninigret Park, Charlestown), a high school bicycling team (1 PVD Cycling organized out of the Met School in Providence), and a permanent cyclocross course in West Warwick, with another planned course in Providence.

## MUNICIPALITIES WITH BICYCLE-FRIENDLY PROGRAMS AND POLICES THAT SUPPORT BIKE CULTURE

PROGRAM OR POLICY	MUNICIPALITY
<b>Bicycle &amp; Pedestrian Advisory Committees or Commissions</b>	Narragansett, Newport, Providence, South Kingstown, Central Falls, Barrington
<b>Complete Streets Ordinance</b> (a formal law to be followed)	Central Falls (Providence under consideration)
<b>Complete Streets Resolution</b> (a policy that is not as formal as an ordinance)	Cranston, Middletown, Newport, North Kingstown, North Smithfield, Pawtucket, Portsmouth, Providence, South Kingstown, Warwick, Woonsocket
• <b>Embracing Complete Streets within Town Comprehensive Plan</b>	Cumberland, Narragansett, Charlestown, Tiverton, Westerly, Newport, Jamestown
• <b>Considering Complete Streets Program or Policy</b>	Barrington, Bristol, Coventry, South Kingstown
• <b>Considering Complete Streets Ordinance</b>	Newport
<b>Bicycle Master Plan</b>	Providence, Narragansett, Charlestown, Pawtucket/Central Falls (pending)
<b>Safe Routes to School projects or programs</b>	Barrington, Central Falls, Cranston, East Greenwich, East Providence, Jamestown, Narragansett, Newport, Providence, Smithfield, Warren, Warwick, Westerly, Woonsocket
<b>Bicycle Parking Required in Zoning Ordinance</b>	Providence requires long term and short term bicycle parking in its Zoning Ordinance for new development and redevelopment projects depending on use



Providence's first parking-protected bicycle lane on Fountain Street



## 2.5 RIDOT's Project Development Process

This section provides a framework for the state's project development and scoping process, detailing step-by-step how an idea under consideration is vetted and becomes a built project.

- 1. Concept Plan/Due Diligence.** Determine if a project involves the following and the degree of impact (if any):
  - » Historic Resources (Section 106, 4(f), 6(f))
  - » Native American Cultural Resources
  - » Right-of-Way – Are permits needed and/or secured?
  - » Americans with Disabilities Act (ADA)
  - » Environmental Assessment – Will the project trigger State or National environmental permitting. Consider aspects such as traffic, air quality, noise, water quality, wetlands, floodplain, coastal resources, threatened/endangered species, national register historic districts/property, and hazardous waste sites/contamination?
  - » Traffic Analysis – Is there any requirement for a traffic management plan or traffic analysis?
  - » Utility Impacts – Will any utility work or coordination be needed and the extent?
  - » Title VI of the Civil Rights Act/Environmental Justice (EJ) – Are there any Title VI concerns as a result of the proposed project? If so what are they? Has an EJ Analysis been performed?
  - » Constructability – Has a constructability review been conducted to ensure there are no fatal flaws and that the project can be built within the available funding parameters?
- 2. Planset Preparation.** Planset preparation begins after the Concept Plan/Due Diligence has been completed and the project is funded for design. All planset submissions and associated permits must meet State and Federal Regulations, including Disadvantaged Business Enterprise (DBE)/Minority Business Enterprise (MBE), etc. Permitting documentation may be needed as scoped above. Funding for a project is typically locked in at the 90 percent design level.

Permits for projects are typically needed at Plan, Specification, and Estimate (PS&E), although projects can be advertised with permits pending but this is at risk.

- 3. Advertising and Construction Phase Services**
  - » Pre-Advertising Review of the Planset, Specifications, and Permits
  - » Pre-Bid Meeting Preparation
  - » Bid Opening and Bid Analysis Review By Designer/Owners Representative
  - » Post Qualification Review Of Bidders (if necessary)
  - » Construction Phase Services (including site visits, shop drawing reviews, and responses to requests for information (RFIs) from the contractor)
- 4. Other Support Roles Needed to Meet State & Federal Regulations, such as:**
  - » Site Investigation and Record
  - » Corridor Land Use Evaluation (CLUE)
  - » Architectural Services, as needed
  - » Environmental Services Oversight and/or Testing
  - » Meeting Presentations
  - » Finalization Assistance





Source: FHWA: Bikeway Selection Guide

## 2.6 Considering Bicycles in Road Resurfacing Projects

This chart, from FHWA’s resource on Incorporating On-Road Bicycle Networks into Resurfacing Projects, highlights points in the roadway resurfacing planning and design process where bikeway selection occurs. With proactive planning, bicycle network improvements, such as on-road bike lanes and intersection treatments, can be incorporated into repaving projects. The accompanying chart details steps in the roadway resurfacing process where bike accommodations could be considered.

*RIDOT’s scoping process should be used to identify opportunities to install bicycle related improvements on candidate roadways identified in this plan and through RIDOT’s bike planning group. There may be opportunities to modify the scoping document so consideration is always taken, no matter the project.*

## 2.7 Bike Path Bridge Asset Management

The table on the following pages summarizes RIDOT’s asset management inventory of bike path bridge conditions as of March 2019. There are many bike path bridges that are in poor condition and in need of preservation, maintenance and repair. A priority of this plan involves addressing these deficient locations.



RIDOT'S ASSET MANAGEMENT INVENTORY OF BIKE PATH BRIDGE CONDITIONS—MARCH 2019

STRUCTURE NAME	FACILITY CARRIED	CITY/TOWN	YEAR BUILT	YEAR RE-CONSTRUCTED	BRIDGE CONDITION	DECK RATING	SUPER-STRUCTURE RATING	SUBSTRUCTURE RATING
Barrington River EBBF	East Bay Bike Path	Barrington	1900	1990	Poor	5	4	4
Palmer River EBBF*	East Bay Bike Path	Barrington	1900	1990	Poor	5	4	4
Washington BP - Pawtuxet River	Washinton Secondary Bike Path	Warwick	1901		Poor	7	4	4
Washington BP - Truss	Washinton Secondary Bike Path	Coventry	1912		Poor	6	4	5
Mill Gut Bike Path	Colt State Park Bike Path	Bristol	1920		Poor	N	4	6
Rocky Brook Bridge	South County Bike Path	South Kingstown	1990		Poor	N	N	N
Watchemoket Cove EBBF	East Bay Bike Path	East Providence	1991		Fair	7	7	5
Bullock Cove EBBF	East Bay Bike Path	East Providence	1986		Fair	7	6	5
Washington BP - Brook	Washington Secondary Bike Path	West Greenwich	2010		Fair	8	5	6
Washington BP - Main St RR	Washington Secondary Bike Path	Coventry	1901	1931	Fair	6	5	6
Saugatucket River	South County Bike Path	South Kingstown	1990		Fair	7	5	6
Tow Path Spillway	Blackstone River Bikeway	Lincoln	1908	1998	Fair	5	7	5
Washington BP - Bradford Soap Works	Washington Secondary Bike Path	West Warwick	1900	1999	Fair	7	5	5
Washington BP - Meshanticut	Washington Secondary Bike Path	Cranston	1938	2000	Fair	6	6	5
Washington BP - Wilbur Ave RR	Washington Secondary Bike Path	Cranston	1950		Fair	6	5	6
Burgess Cove EBBF	East Bay Bike Path	East Providence	1990	2009	Fair	8	8	5
Sneech Brook Bridge	Blackstone River Bikeway	Cumberland	2001		Fair	N	7	5
Silver Creek Clvt EBBF	East Bay Bike Path	Bristol	1992		Fair	6	6	6

**Ratings:** Ratings of 7 and above are "Good"; 5-6 are "Fair", and 4 and below are "Poor"; N is not available

\*Refer to inspection photos following this table.

RIDOT'S ASSET MANAGEMENT INVENTORY OF BIKE PATH BRIDGE CONDITIONS—MARCH 2019 (continued)

STRUCTURE NAME	FACILITY CARRIED	CITY/TOWN	YEAR BUILT	YEAR RE-CONSTRUCTED	BRIDGE CONDITION	DECK RATING	SUPER-STRUCTURE RATING	SUBSTRUCTURE RATING
White Horn Brook	South County Bike Path	South Kingstown	N		Fair	6	7	6
Washington Bridge South Ped Bridge	Pedestrian Bridge	East Providence	1930	2016	Fair	6	6	6
Washington BP- Burnham	Washington Secondary Bike Path	Cranston	1938		Fair	7	6	6
Washington BP -Pawtuxet River South	Washington Secondary Bike Path	Coventry	1912		Fair	7	6	6
Flat River Reservoir Bike Path	Trestle Trail	Coventry	2010		Fair	7	6	6
Coventry Center Pond	Trestle Trail	Coventry	2010		Fair	7	6	6
Washington BP - Riverpoint RR	Washington Secondary Bike Path	West Warwick	1950		Fair	7	6	6
Squantum Cove EBBF	East Bay Bike Path	East Providence	1991		Fair	8	8	6
Pratt Dam Bridge	Blackstone River Bikeway	Cumberland	2002		Fair	7	6	6
Washington BP - Pocasset	Washington Secondary Bike Path	Cranston	1950		Fair	N	6	6
Washington BP - Pocasset Tributary	Washington Secondary Bike Path	Cranston	2010		Fair	N	6	6
Quidnick Reservoir Bridge	Trestle Trail	Coventry	2010		Fair	8	7	6
Ten Mile River Bike Path	Ten Mile River Bike Path	East Providence	2010		Fair	N	N	N
Newman Ave NWBF	Woonasquatucket River Greenway	Johnston	2007		Good	7	7	7
Chipuxet River	South County Bike Path	South Kingstown	1990		Good	7	7	7
Warren Bike Path Bridge	Warren Bike Path	Warren	2010		Good	7	7	7
Sheridan Street Ped OP	Pedestrian Bridge	Providence	1997		Good	7	7	7
Lonsdale Marsh Boardwalk	Blackstone River Bikeway	Cumberland	2006		Good	7	7	7
Blackstone RVR Bicycle Facility	Blackstone River Bikeway	Cumberland	2000		Good	7	7	7

**Ratings:** Ratings of 7 and above are "Good"; 5-6 are "Fair"; and 4 and below are "Poor"; N is not available



RIDOT'S ASSET MANAGEMENT INVENTORY OF BIKE PATH BRIDGE CONDITIONS—MARCH 2019 (continued)

STRUCTURE NAME	FACILITY CARRIED	CITY/TOWN	YEAR BUILT	YEAR RE-CONSTRUCTED	BRIDGE CONDITION	DECK RATING	SUPER-STRUCTURE RATING	SUBSTRUCTURE RATING
Mussey Brook Bridge	Blackstone River Bikeway	Lincoln	2001		Good	7	7	7
Crookfail Brook Bridge	Blackstone River Bikeway	North Smithfield	N	2005	Good	7	7	7
Woonsocket StreamBed	Blackstone River Bikeway	Woonsocket	2005		Good	7	7	7
Martin St Bike Path Ramp	Martin St Bike Path	Lincoln	2007		Good	7	8	7
Woonasquatucket River (Dyerville)	Woonasquatucket River Greenway	Providence	2007		Good	7	7	7
Woonasquatucket River	Nw Bike Path	Providence	2007		Good	7	7	7
Quidnick Brook Bridge	Trestle Trail	Coventry	2010		Good	8	8	7
Willow Way	Blackstone River Bikeway	Lincoln	1998		Good	7	8	7
Ashton Bridge	Blackstone River Bikeway	Cumberland	2002		Good	7	7	7
Woonsocket North Smithfield Bikeway	Blackstone River Bikeway	North Smithfield	N		Good	8	8	7
Blackstone River Casway	Blackstone River Bikeway	Lincoln	2010		Good	7	7	7
Rocky Brook	South County Bike Path	South Kingstown	1990		Good	N	N	N
Curved Culvert-Greenway Bridge	Ten Mile Greenway	Pawtucket	2000		Good	N	N	N

**Ratings:** Ratings of 7 and above are "Good"; 5-6 are "Fair"; and 4 and below are "Poor"; N is not available

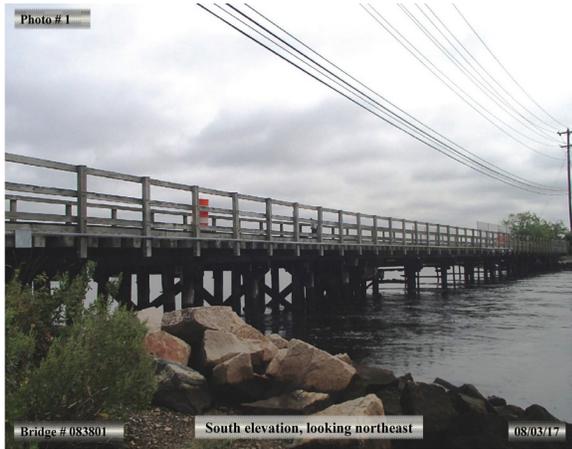


Martin Street Bike Ramp



Blackstone River Bikeway - Pratt Dam Bridge

AUGUST 2017 INSPECTION PHOTOS FOR THE EAST BAY BICYCLE BRIDGE OVER THE PALMER RIVER, BARRINGTON, RI





**CHAPTER 3**

**BICYCLE  
INFRASTRUCTURE**







## BICYCLE INFRASTRUCTURE FOR TRANSPORTATION

Despite the existing and continually-evolving network of shared-use paths and river greenways, the future of bicycling in Rhode Island lies in the state's ability to promote bicycling for everyday transportation. The analysis and recommendations in this chapter focus on the need to plan for well-connected, low-stress bikeways in urban, suburban, and rural areas.

Chapter 3 articulates the need to create a network of on- and off-street bikeways for transportation use that will connect town centers, commercial districts, neighborhoods, schools, parks, and transit stations.

### 3.1 NETWORK NEEDS

In order to understand the network needs for bicyclists in Rhode Island, connectivity, equity, and safety conditions throughout the state were analyzed to inform the recommendations.

» **Connectivity Analysis** – Defined the gaps within the State's current bicycle facility network (paths and bicycle lanes), and RIDOT's shoulder bikeways; gaps between existing bicycle facilities/routes and regional destinations were also highlighted.

» **Equity Analysis** – Identified locations of traditionally under served communities by using census data related to areas with concentrations of children, seniors, people of color, lower-income households, and populations with limited English proficiency or low rates of car ownership.

» **Safety Analysis** – Mapped crash locations to identify where bicycle network improvements are needed.

### 3.1.1 Connectivity

Gaps in the statewide bicycle network typically lie along roadways in which bicycle facilities—sidepaths or bicycle lanes—are not provided and where there is current or future demand for bicycling. Gaps may also exist along utility corridors, rail lines, or rivers.

Gaps were categorized as either a Network Gap or a Destination Gap, and they were identified to help connect existing shared-use paths, bicycle lanes, and rural roadways with at least 4'-wide shoulders (i.e., RIDOT-designated recreational bicycle routes).

#### NETWORK GAPS

Network gaps are the most typical and lie between segments of the state's existing bicycle network. Elimination of these gaps will provide continuous infrastructure using shared-use paths and/or bicycle lanes in different regions of the state, or will help tie together parts of RIDOT's signed network of minimum 4' shoulder bikeways. This will increase opportunities to bike longer distances and make new connections to other bicycle facilities and neighborhoods.

*Due to the discontinuous bicycle lanes, the I-95 overpass on Broadway between Downtown Providence and Federal Hill represents a critical network gap in Providence. (Image credit: Google)*



#### DESTINATION GAPS

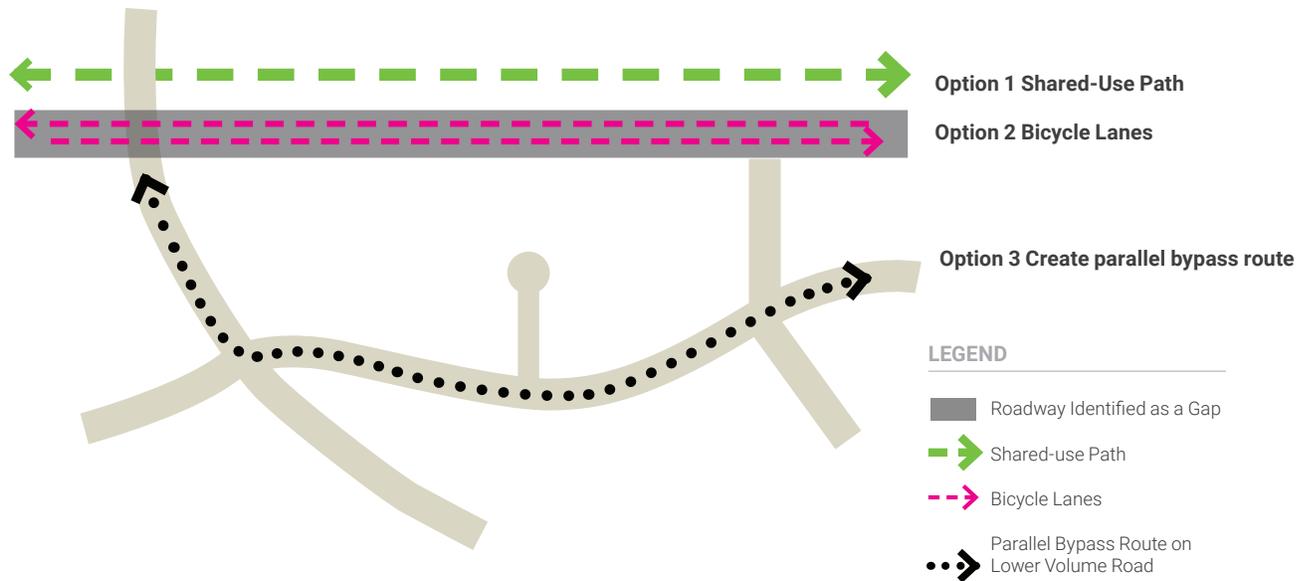
Destination gaps are identified to specifically highlight corridors that have the potential to provide connections to the various destinations of citywide or regional significance. Eliminating these gaps will encourage more people to bike to train stations, state parks and beaches, high schools, large grocery stores, town centers, and shopping districts, many of which are not currently connected to the State's bicycle network.

*Lack of nearby bicycle facilities constitute a destination gap to the Wickford Junction train station. (Image credit: RIDOT)*





## Options To Eliminate Bicycle Facility Gaps



Both network and destination gaps represent specific locations where bicycle facilities are desired, but do not exist. In some cases, current facilities are inadequate, such as roads marked only with signs or sharrows. Both types of gaps typically included several intersections in which bicycling is uncomfortable or hazardous due to heavy traffic, turning movements, complex signals, and/or excessive width dedicated to cars.

Corridors defined as gaps have been targeted for bicycle-facility improvements and listed as candidate bikeway treatments later in this chapter. Candidate bikeway treatments include improvements not only to the roadways themselves, but also to parallel roads or alternate routes that may provide a more logical connection for bicyclists. Improvement options intended to eliminate gaps in the bicycle network include:

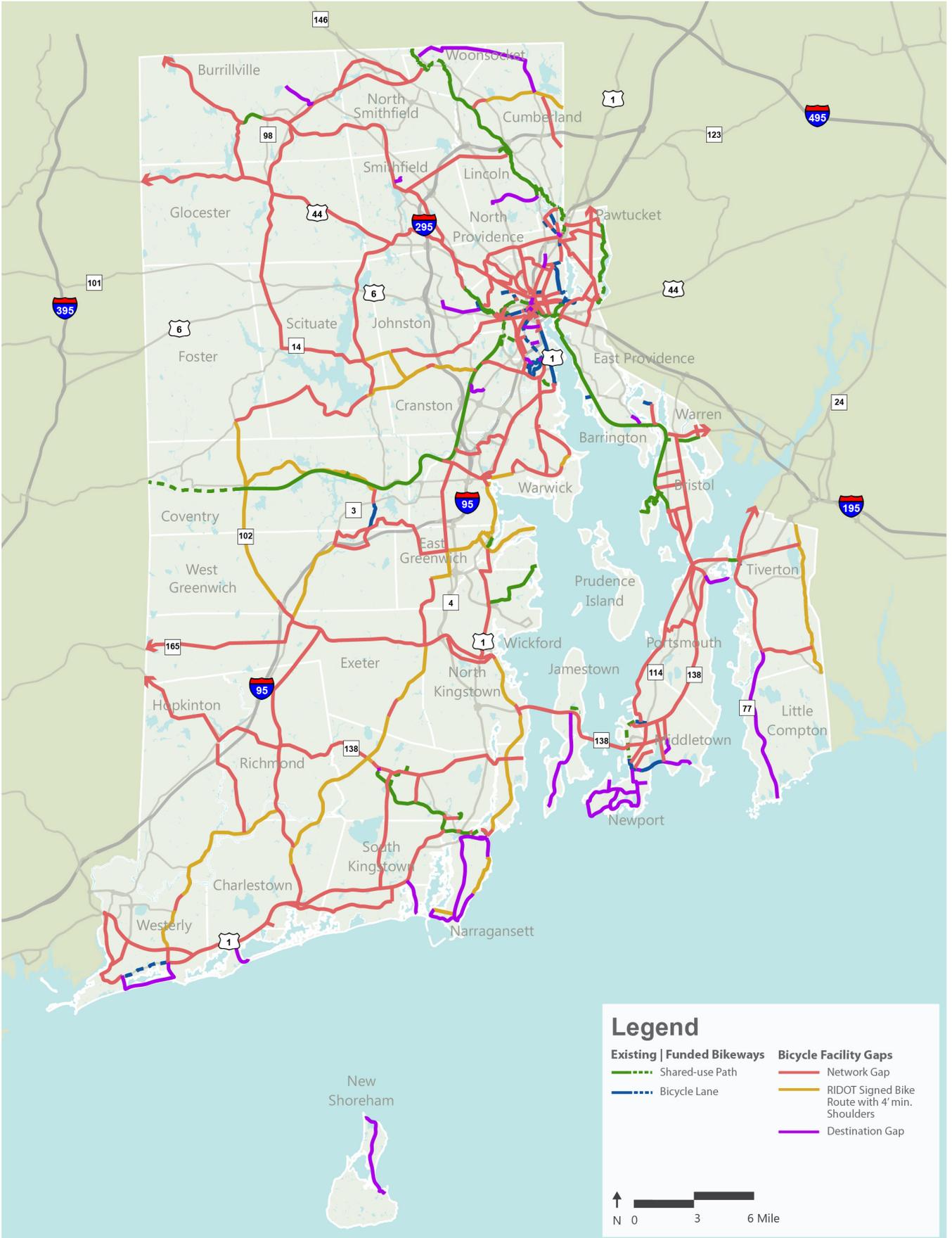
- » Narrowing travel lanes and/or widening roadway shoulders in order to create designated bicycle lanes
- » Building a shared-use path parallel with the roadway (typically in the public right-of-way or within an easement)

- » Road Diet to add bicycle facilities by removing travel lanes and/or parking lanes where appropriate.
- » Using a nearby, lower-volume roadway that runs within a parallel corridor (depending on traffic volume and speed characteristics, the alternate route may incorporate bicycle lanes or traffic calming measures to improve bicycle safety and connectivity)

The adjacent context helps identify which design options are the best fit for each gap. Frequently, nearby roadways are not available to serve as alternate routes, and right-of-way width or private property issues preclude the opportunity for parallel shared-use paths.

The Statewide Bicycle Network Gap Map on the following page illustrates the network and destination gaps in Rhode Island that were the focus for the BMP's bicycle network recommendations.

# Statewide Bicycle Network Gaps





## 3.1.2 Equity

### Why Consider Equity?

An individual's access to transportation options either enhances or hinders their ability to get to work, attend school, buy healthy food, visit a doctor, and socialize within their community. Traditionally, the most vulnerable populations with limited mobility options have been children, older adults, people of color, people with limited English proficiency, people without access to a motor vehicle, people with limited formal education, and low-income households. Equitable distribution of transportation infrastructure and programs can correct inequities, foster new opportunities, and reduce disproportionate economic and health burdens.

### Equity v. Equality?

The terms "equity" and "equality" are sometimes used interchangeably, which can lead to confusion. This analysis defines equity as understanding and correcting imbalances in the distribution of resources so that all populations have access to what they need to live healthy, productive lives. In contrast, equality describes the goal of consistent, unvarying allocation of resources to all populations, regardless of need. A focus on equity, as opposed to equality, may mean that funding for transportation investments is prioritized in areas with greater concentrations of vulnerable populations.

### Methods

To identify the most vulnerable populations within Rhode Island, this plan considered concentrations of seven demographic and economic characteristics. These characteristics became GIS-based map inputs that helped to create an equity analysis discussed in Section 3.3.

**1. Children** – The population under 18 years of age has a higher demand for active transportation infrastructure such as bicycling and walking. Children tend to be less aware of hazards in the environment than adults.



**2. Older Adults** – The population over 65 years of age may have more mobility needs than the general adult population. Older adults increasingly depend on alternative transportation modes, such as using public transit or walking/bicycling when they decrease or stop driving. Prioritizing active transportation needs helps enable older adults to maintain positive well-being despite experiencing potential functional limitations.



**3. People of Color** – Neighborhoods where educational opportunities, job resources, healthy food outlets, and bicycle facilities are limited often correspond with concentrated populations of people of color. The lack of active transportation facilities are partially consequences of social and institutional marginalization, including job and housing discrimination. In turn, these deficits can exacerbate the disproportionate health burdens communities of color experience.



**4. Limited English Proficiency** – Individuals with limited-English proficiency, or who identify as not speaking English well or at all, tend to rely more on walking and bicycling as their primary means of transportation (11%) than the average English speaker (4%).<sup>1</sup>

**5. Limited Motor Vehicle Access** – A heavy reliance on vehicles comes at a great expense to personal budgets. Low-income families can spend up to 30% of their income on transportation. For those without a private motor vehicle, limited access to jobs, education, healthcare, and other opportunities can create a barrier to self-sufficiency.



<sup>1</sup> US Government Accountability Office. *Transportation Services: Better Dissemination and Oversight of DOT's Guidance Could Lead to Improved Access for Limited English-Proficient Populations.* Washington D.C.; 2005.

## 6. Limited Formal Education

– Nationwide those without high school diplomas have the highest rates of walking and the second highest rates of bicycling to and from work.<sup>2</sup> These individuals may depend on walking and bicycling due to lack of adequate and/or convenient transportation options.



## 7. Low-income Households

– Poverty frequently leads to poor housing options and limited access to resources, such as transportation services, quality food, recreation facilities, and healthcare facilities. Increasing low-income residents' access to shared-use paths and bicycle lanes can improve access to economic and educational opportunities, improve health through increased physical activity, and promote safety.



important consideration during the planning of the statewide candidate bicycle network. The crashes are also used as a critical criterion in the evaluation and scoring of the candidate bicycle treatments during the subsequent prioritization process. As expected, the most concentrated clusters of bicycle crashes and injuries have occurred in the most densely populated and urbanized parts of the state, particularly Metro Providence, Woonsocket, and Newport. The crashes also tend to fall into one or more of the following categories:

- » At an intersection or driveway with no traffic control elements such as a stop sign or traffic signal
- » On streets that lead to shared-use paths (i.e., path links without bicycle facilities) and at road crossings along the path corridor
- » At locations near commercial land uses along high-speed arterial roadways with frequent curb cuts for motor vehicle entry and exit



## 3.1.3 Safety

Analysis of RIDOT's crash data from January 2014 to August 2017 provided important insights into crash type, frequency, and location. The locations and clustering of the crashes were an

<sup>2</sup> Mackenzie, B. "Modes Less Traveled -- Bicycling and Walking to Work in the United States: 2008-2012." American Community Survey Reports. 2014. U.S. Department of Commerce. <https://www2.census.gov/library/publications/2014/acs/acs-25.pdf>

### PUBLIC HEALTH BENEFITS OF BICYCLING

*Bicycling (and walking) options are essential for the many Rhode Islanders who do not drive. Bicycle infrastructure helps provide a more equitable transportation option that offers a healthy alternative to address the mobility needs of Rhode Island's non-driving population.*

*Bicycling provides direct health benefits, including reduced obesity. Rhode Island's current adult obesity rate is 26.6%, including 12% of high-school students. Additionally, if present trends continue, 2030 projections show that the state will have a 40% increase in new adult diabetes diagnoses and a 370% increase in heart diseases diagnoses compared to 2010.\* Creating enhanced bicycling (and walking) environments can provide an opportunity for individuals to meet recommended levels of physical activity and combat some of the dire predictions regarding obesity and the chronic diseases associated with it.*

\*<https://stateofobesity.org/states/ri/>

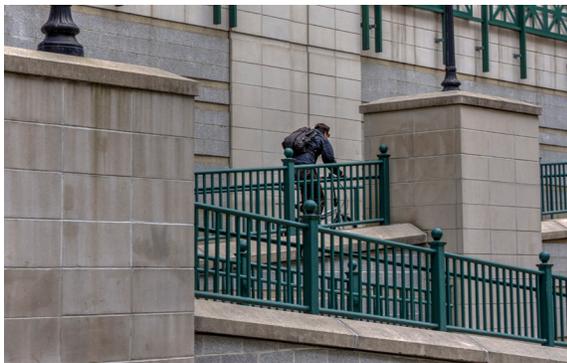


## 3.2 CREATING DEDICATED SPACE

Compared with standard bicycle lanes, separated bicycle lanes offer a more comfortable bicycling experience for users of all ages and abilities. Separated bicycle lanes bring a measure of predictability to urban streets and rural roads and can encourage new riders who may otherwise feel too exposed to motor vehicle traffic on traditional bicycle lanes or roadway shoulders.

Shared-use paths and separated bicycle lanes in urban locations provide the added benefit of retaining employers and workers, as well as recruiting new ones and attracting millennials. The percent of people aged 16-24 with a driver's license peaked in 1983 and is currently at its lowest rate since 1963.<sup>3</sup> Bicycle facilities with a high degree of separation from traffic also benefit service-industry and other workers who may not have access to an automobile or where transit service is limited. Many such residents currently ride even without dedicated bikeways, but improved conditions may encourage more frequent bicycle use or inspire more employees to try bicycling.

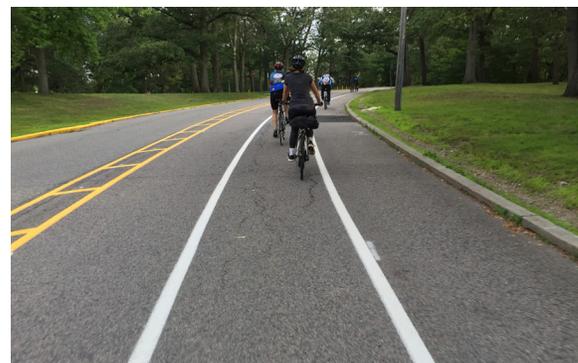
<sup>3</sup> A New Direction, Our Changing Relationship with Driving and the Implications for America's future. <https://uspig.org/sites/pirg/files/reports/A%20New%20Direction%20vUS.pdf>



There is a gap in bike connectivity at the Providence Place Mall along the Riverwalk.

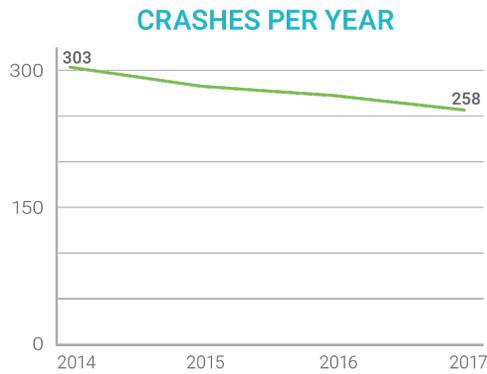
## STRATEGIES FOR CREATING LOW-STRESS BIKEWAYS

- » **Road Diets** – Four-lane roads with fewer than 20,000 vehicles per day may be good candidates for road diets. Additional considerations such as number and spacing of traffic signals and number of side streets need to be taken into consideration and studied before the recommendation to install a road diet is made. Restriping the existing roadway space with bicycle lanes and simple delineator posts provides a major cost savings over roadway and sidewalk relocation/reconstruction. The resulting three-lane roadway provides significant safety benefits for pedestrians as well.
- » **Reallocation of Curbside Lanes** – Restricting parking to one side of the roadway can free up space for separated or buffered bicycle lanes wide enough for bicyclists to ride side-by-side and for snow plowing of the bicycle facility.
- » **Narrowing Travel Lanes and Shoulders** – Reducing the width of travel lanes to 11' (or 10' where appropriate) and narrowing left-side shoulder width can create space to improve a bicycle facility from a standard or traditional bicycle lane to a buffered or separated facility.



In Roger Williams Park, a traffic lane was removed to create bi-directional, buffered bicycle lanes. (Source: Kenneth C. Zirkel)

## OVERALL CRASH TRENDS (RIDOT, 2014-2017, INCLUDES ALL CRASHES)



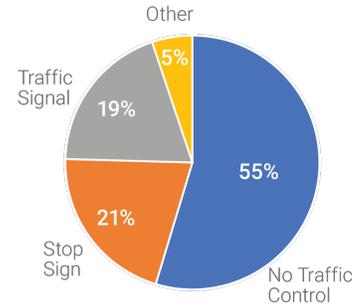
### CRASH SEVERITY

**93.7%** MINOR INJURY or NO INJURY

**6.1%** SERIOUS INJURY

**0.2%** FATAL INJURY

### SIGNAL CONTROL



## SAFETY IMPACTS of Separated Bikeways

**35% & 58%** INITIAL REDUCTION in INJURIES

to all street users after installing separated bike lanes on NYC's 8th Ave. and 9th Ave., respectively

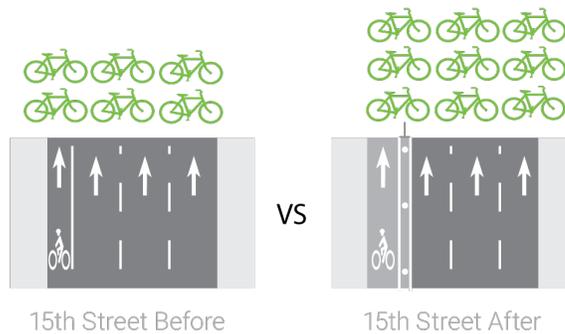
NYC DOT, "Measuring the Street: New Metrics for 21st Century Streets," 2012.

**47%** INITIAL INCREASE in BICYCLISTS

**37%** INITIAL DECREASE in SIDEWALK RIDING

in the corridor since the implementation of Denver's 15th Street Separated Bikeway.

The City and County of Denver Public Works "The effects of implementing a Protected Bikeway on 15th Street", 2014.



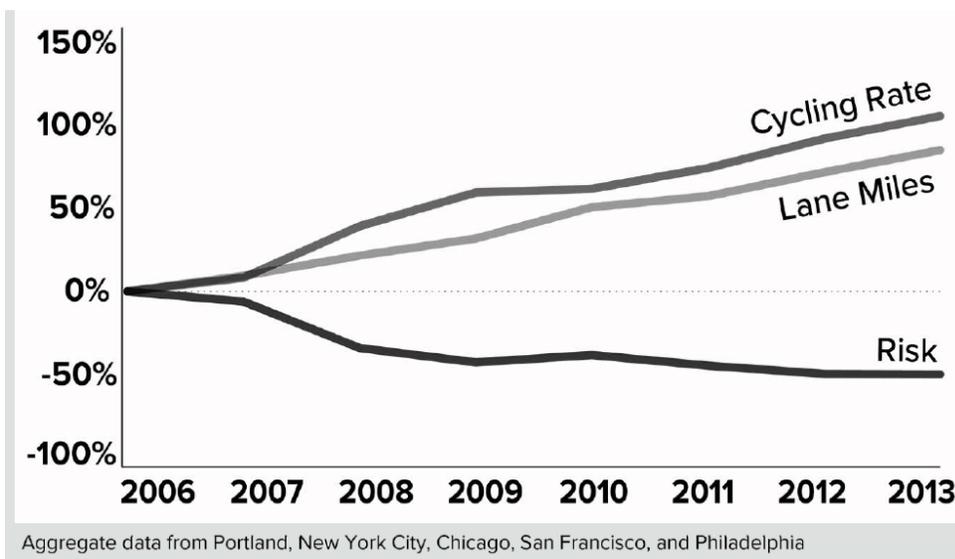


## SAFETY IN NUMBERS

The likelihood that a given person walking or bicycling will be struck by a motorist decreases as the number of people bicycling and walking increases.

*Jacobsen, P L, "Safety in numbers: more walkers and bicyclists, safer walking and bicycling," Journal of Injury Prevention 2003; 9: 205-209.*

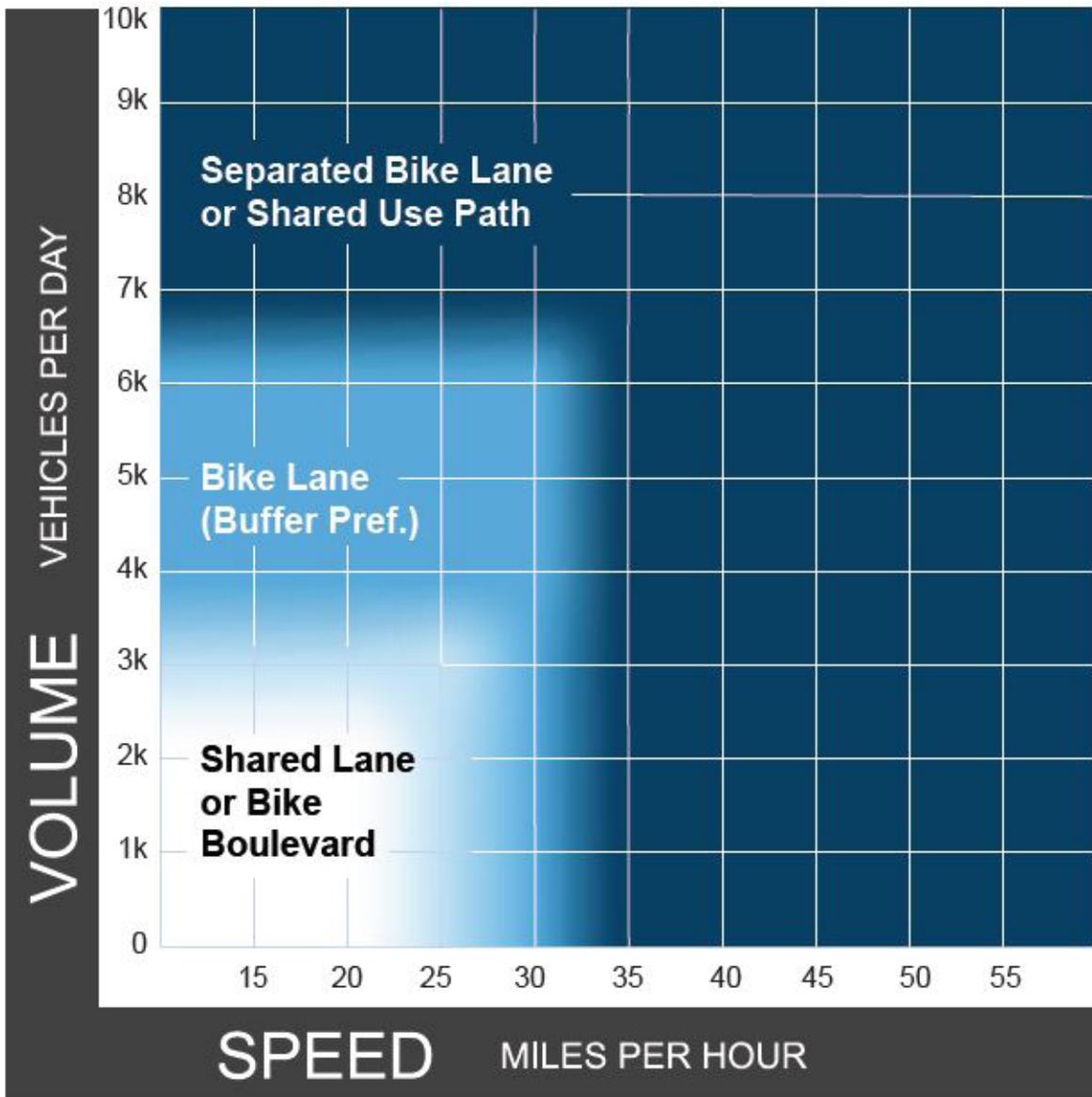
**More infrastructure = more cyclists = lower risk**



Source: National Association of City Transportation Officials (NACTO) Risk Index Assessment

## Preferred Bikeway Type for Urban, Urban Core, Suburban and Rural Areas

(Assumes operating speeds are similar to posted speeds. Advisory bike lanes may be an option where traffic volume is under 3,000 ADT.)

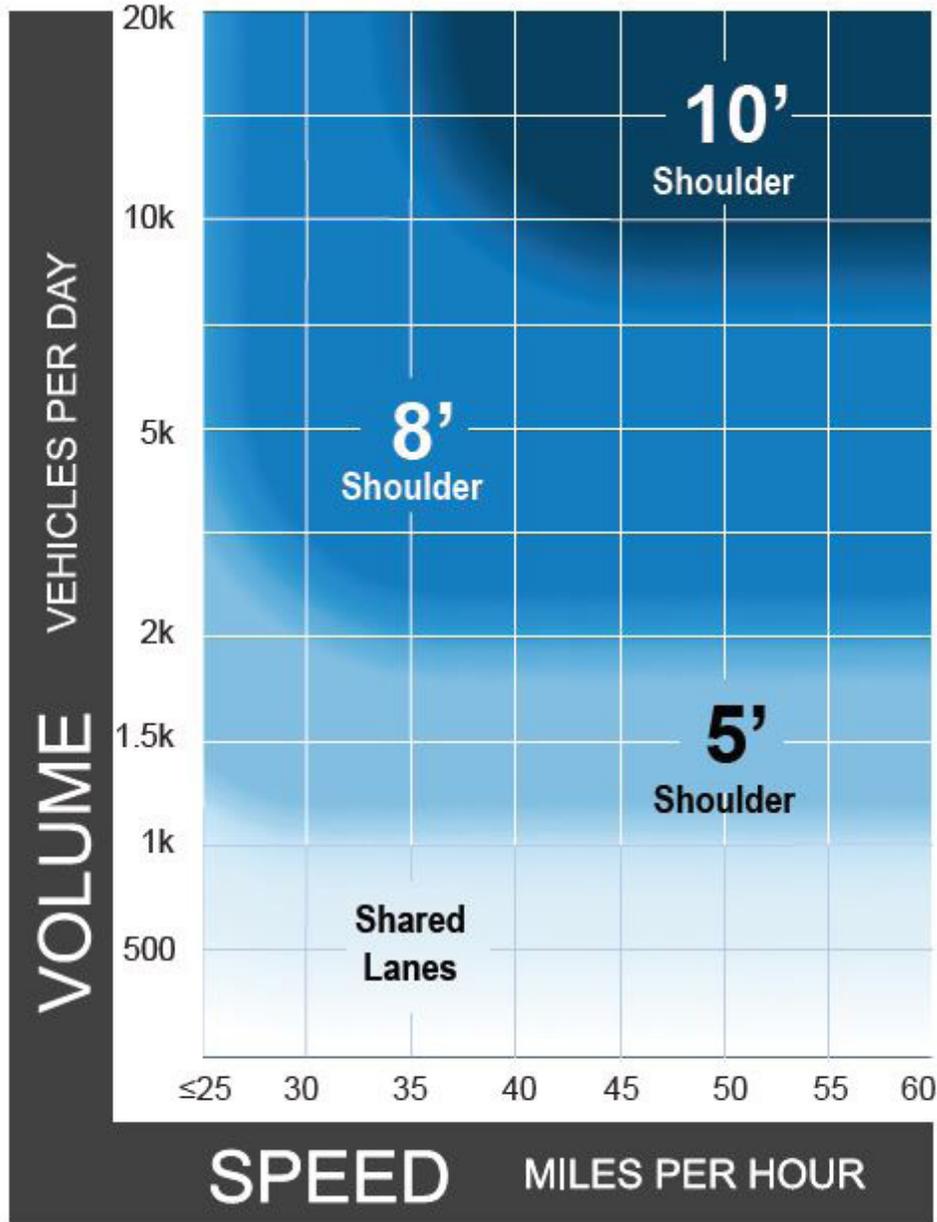


Source: FHWA - Bikeway Selection Guide



### Preferred Shoulder Widths for Rural Roadways

(Assumes operating speeds are similar to posted speeds. If percentage of heavy vehicles is greater than 5 percent, consider providing a wider shoulder or a separated pathway.)



Source: FHWA - Bikeway Selection Guide

### 3.2.1 Candidate Bicycle Treatments

Selecting the best bikeway design for a given roadway can be challenging due to the range of factors that influence the comfort and safety of bicyclists. When motor vehicle traffic volumes are large and speed is high, there is a greater level of discomfort among bicyclists. The bike fatality rate increases significantly as vehicle speeds increase, as shown on the chart illustrating the fatality rate vs speed.

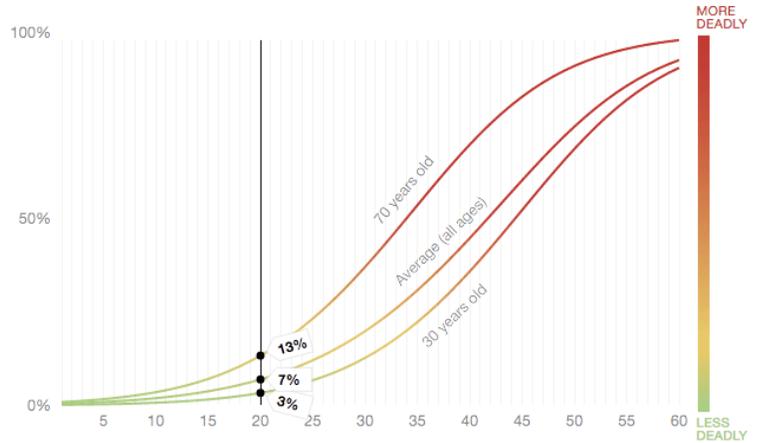
The following matrix can be used as a general guide when considering a bicycle facility that will be comfortable for the majority of bicyclists based on motor vehicle speed and volume. To the extent possible, the facility that offers the most comfort for bicyclists should be considered first. To use the chart, planners should identify the roadway's posted speed limit or its 95th percentile speed and average daily traffic volume, then locate the bikeway option type that best fits those two factors. In the chart, more check marks suggest a higher level of comfort.

Other factors beyond speed and volume that affect facility selection include the presence and volume of heavy trucks, the presence of on-street parking, intersection density, surrounding land use, topography, user needs (e.g., bicyclists commuting on a busy road versus middle school students riding to school on a residential street, etc.), and roadway sight distance. While these factors are not included in the facility selection matrix, they should be considered when selecting the recommended bikeway.

The following pages present a toolkit of candidate bicycle treatments for Rhode Island. A variety of bicycle facilities are included along with recommendations for year-round use and bicycle parking strategies. Most of the design treatments are then presented as candidate bikeways within the series of statewide and regional maps and other recommendations in Section 3.3.

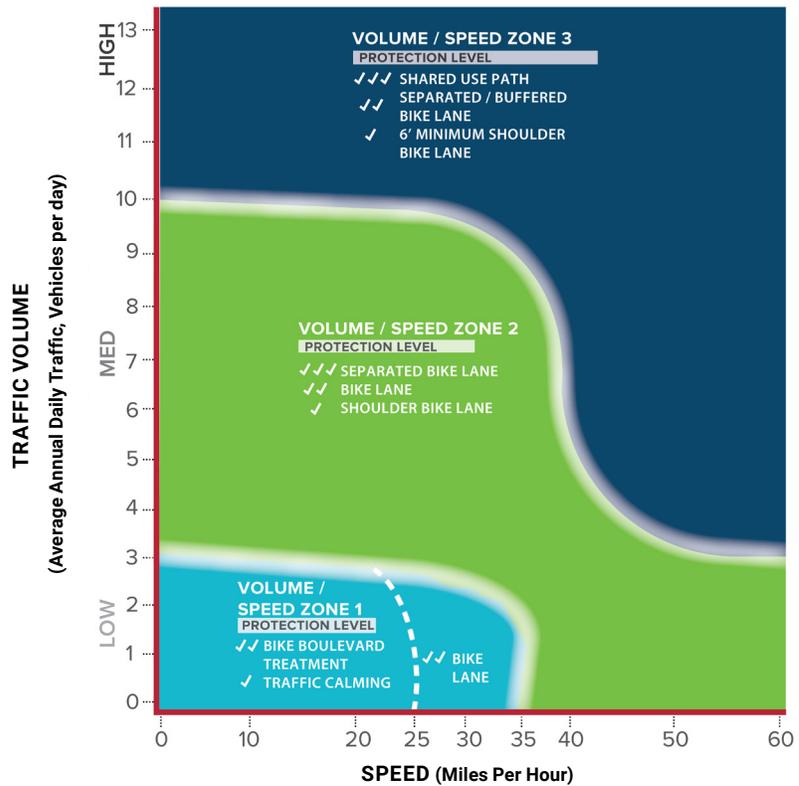
### The Chance of Being Killed by a Car Going 20 mph

Bicycle facilities are even more important for older riders who are more vulnerable.



Source: ProPublica

### Criteria for "All Ages and All Abilities" Bicycle Facilities Section



Source: NACTO Urban Bikeway Design Guide



Contextual Guidance for Selecting All Ages & Abilities Bikeways

Roadway Context				All Ages & Abilities Bicycle Facility
Target Motor Vehicle Speed*	Target Motor Vehicle Volume (ADT)	Motor Vehicle Lanes	Key Operational Consideration	
Any		Any	Any of the following: high curbside activity, frequent buses, motor vehicle congestion, or turning conflicts	Protected Bicycle Lanes
< 10 mph	Less relevant	No centerline, or single lane one-way	Pedestrians share the roadway	Shared Street
≤ 20 mph	≤ 1,000 – 2,000		< 50 motor vehicles per hour in the peak direction at peak hour	Bicycle Boulevard
	≤ 500 – 1,500			
≤ 25 mph	≤ 1,500 – 3,000	Single lane each direction, or single lane one-way	Low curbside activity, or low congestion pressure	Conventional or Buffered Bicycle Lane, or Protected Bicycle Lane
	≤ 3,000 – 6,000			Buffered or Protected Bicycle Lane
	Greater than 6,000			Protected Bicycle Lane
	Any	Multiple lanes per direction		
Greater than 26 mph	≤ 6,000	Single lane each direction	Low curbside activity, or low congestion pressure	Protected Bicycle Lane, or Reduce Speed
		Multiple lanes per direction		Protected Bicycle Lane, or Reduce to Single Lane & Reduce Speed
	Greater than 6,000	Any	Any	Protected Bicycle Lane
High-speed limited access roadways, natural corridors, or geographic edge conditions with limited conflicts		Any	High pedestrian volume	Bike Path with Separate Walkway or Protected Bicycle Lane
			Low pedestrian volume	Shared-Use Path or Protected Bicycle Lane

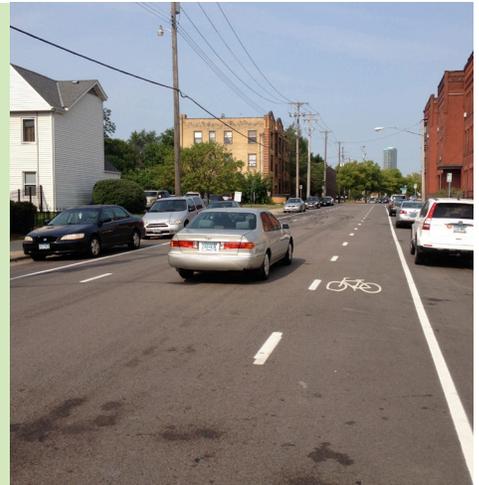
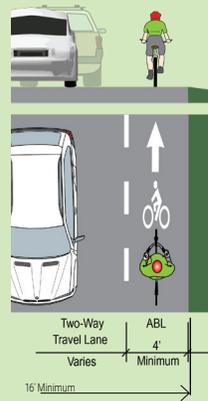
Source: NACTO, <https://nacto.org/publication/urban-bikeway-design-guide/designing-ages-abilities-new/choosing-ages-abilities-bicycle-facility/>

## Toolkit of Candidate Bicycle Treatments

### ADVISORY BICYCLE LANE

(Least comfortable)

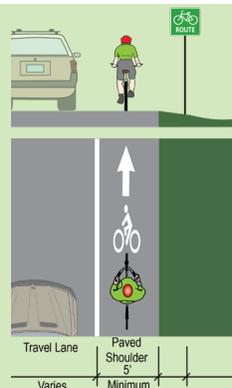
Advisory bicycle lanes are continuously dashed bicycle lanes that allow motorists to temporarily enter the lane to provide oncoming traffic sufficient space to safely pass on narrow low volume streets with marked centerlines. Advisory bicycle lanes are delineated by dashed white lines, separated from a central two-way travel area. They are a good option on roads without space for striped bicycle lanes and where traffic volumes are <6,000 vpd. Motorists may enter the bicycle lane only after yielding to any bicycles present and shall overtake bicyclists with caution due to potential oncoming traffic. Advisory bicycle lanes are currently considered an experimental treatment and require FHWA approval before deployment.



### SHOULDER BICYCLE LANE

(Can be comfortable if wide)

Shoulder bicycle lanes typically include at least a 5'-wide paved shoulders and often include bicycle route signage. Five feet is the preferred minimum width needed for bicyclists to ride with a modest level of comfort, depending on traffic speeds and volume. Signs alerting motorists to the presence of bicyclists may be used. Shoulder bicycle lanes would be typically used in rural areas and connect with RIDOT's Signed Bike Routes.



### STANDARD BICYCLE LANE

(Comfortable)

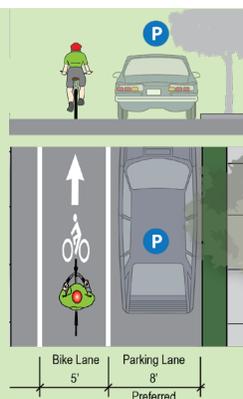
Bicycle lanes designate a lane for the exclusive use of bicycles via roadway pavement markings and signage. On many of the State's roadways, reducing travel lane width to 10'-11' provides space for standard 5'-wide bicycle lanes. They may be added to roads with extra wide travel lanes or in replacement of a parking or a travel lane. The latter is typically part of a "road diet" project that is a viable option on four-lane roads with <20,000 daily vehicle trips.



### BICYCLE LANE ADJACENT TO PARKING

(Comfortable)

To preserve curb-side parking in commercial districts and urban neighborhoods, bicycle lanes frequently are striped next to parking. This creates conflict points as drivers enter the bicycle lane to parallel park. If space is available, a wide parking aisle or 2' buffer between the bicycle lane and the parking aisle decreases the likelihood that bicyclists will be struck by opened car doors of parked vehicles.





### Toolkit of Candidate Bicycle Treatments (continued)

#### **BUFFERED BICYCLE LANE**

(More comfortable)

Buffered bicycle lanes are conventional bicycle lanes paired with a striped buffer space separating the bicycle lane from the adjacent travel lane and/or adjacent parking lane. The buffers provide an enhanced visual separation from passing traffic and/or protection from the opening of car doors in the adjacent motor vehicle parking aisle. Buffers are especially critical on roadways with a high volume of truck traffic or in business districts with high parking turnover.



#### **STREET-LEVEL SEPARATED BICYCLE LANE**

(More comfortable)

These bikeways are at street-level and use a variety of methods for physical separation from passing traffic. A striped buffer plus a motor vehicle parking aisle, flexible delineator posts, or other vertical elements provide the physical separation from motor vehicle traffic. A separated bicycle lane treatment is one of the best ways to create an "all ages and abilities" bicycling environment on busy streets.



#### **STREET-LEVEL BI-DIRECTIONAL SEPARATED BICYCLE LANE/CYCLE TRACK**

(More comfortable)

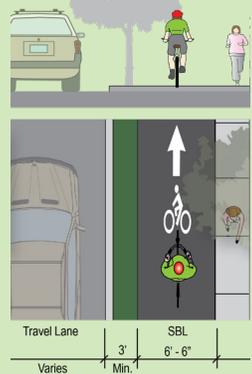
These bicycle facilities are physically separated and allow two-way travel for bicyclists on one side of the street. Additional design considerations at driveway and side-street crossings are required to reduce conflicts. Bi-directional separated bicycle lanes work best on one-way roads and/or roads with long blocks and few curb cuts and also on roads with destinations mostly on one side of the street.



#### **SIDEWALK-LEVEL SEPARATED BICYCLE LANE**

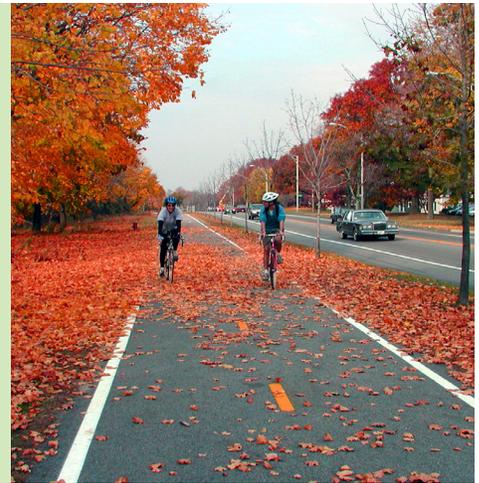
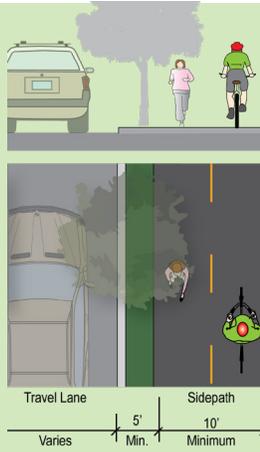
(Very comfortable)

Raised separated bicycle lanes are vertically separated from street-level travel lanes by a curb with an adjacent grass strip, landscaped buffer, or furniture zone. At intersections, the raised bicycle lane can either be dropped down to the street level or paired with a raised crosswalk.



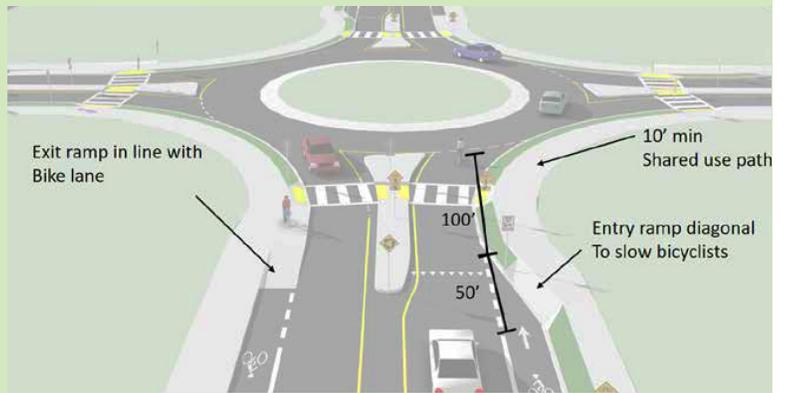
**SHARED-USE PATH/SIDEPATH**  
(Most comfortable)

Whereas shared-use paths run within former rail corridors, along rivers, and through parks, sidepaths are located adjacent to and parallel with a roadway. Sidepaths can offer a high-quality experience for users of all ages and abilities compared to on-road facilities in heavy traffic environments. While more expensive than on-street bikeways, shared-use paths and sidepaths can help promote bicycle tourism and economic development. Additional design considerations at driveways and side street crossings are also needed for sidepaths to address conflicts.



**BICYCLES IN ROUNDABOUTS**

At single lane roundabouts it is important to indicate to motorists, bicyclists, and pedestrians the right-of-way rules and the correct way for them to circulate, using appropriately-designed signage, pavement markings, and geometric design elements. For single lane roundabouts with low vehicle speeds, bicyclists can be accommodated with either shared lane markings or a transition to an off-street path. An off-street path can be a sidewalk that has been widened to handle bicycle and pedestrian traffic.



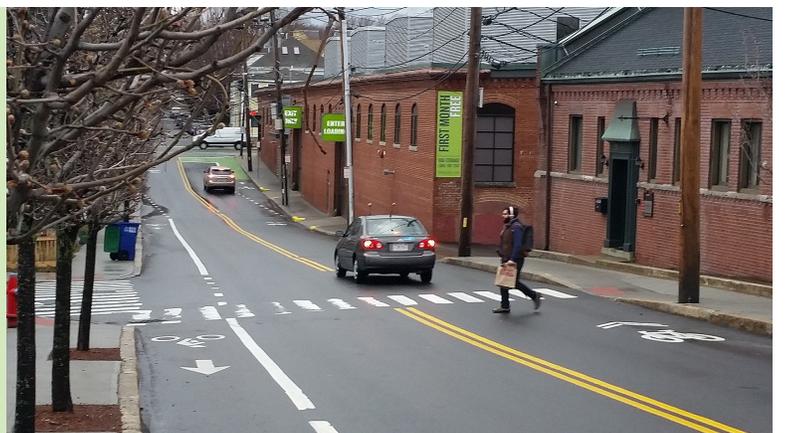
**CONTRA-FLOW BICYCLE LANE**

Contra-flow bicycle lanes allow for two-way bicycle movements along one-way streets. In order to distinguish the different directions of travel, a double yellow line or yellow hatched area must be included between the minimum 5'-wide bike lane and the travel lane. Also, depending on the roadway width, volume and speed, the contra-flow lane can be paired with either a bike lane, shared lane or advisory bike lane in the opposite direction.



**BICYCLE CLIMBING LANE**

In order to accommodate bicycles on sloped streets without space for bike lanes on both sides, a climbing lane should be striped in the uphill direction. The climbing lane provides space for slow-moving riders going uphill to have dedicated space and allow vehicles to pass. Typically, the climbing lane is paired with a shared downhill lane (incorporating "Bikes May Use Full Lane" signs), where many bicyclists are able to keep up with the speed of traffic.





### Toolkit of Candidate Bicycle Treatments (continued)

#### SHARED BUS-BIKE LANE

Along bus corridors with significant demand for bicycle travel, a shared bus-bike lane should be considered if a lack of roadway space precludes a bike lane. The bus-bike lane is typically 12' wide and can include colored asphalt treatment to emphasize exclusive use for buses and bicycles only. Ideally, the bus-bike lane would run along a curb to avoid encroachment from motorists seeking curbside parking. Bus drivers should also receive training from the local transit agency in order to improve interactions between the two user groups.



#### BI-DIRECTIONAL BIKE ACCESS ON ONE-WAY STREET

Along one-way residential streets with low traffic volumes, bi-directional bicycle access should be considered to enhance network connectivity. "Except Bicycles" plaques should be added to "Do Not Enter" signs at intersecting streets and, if space allows, short stretches of bicycle contraflow lanes could be added to reinforce the opportunity for two-way bicycle travel. Elsewhere, shared lane markings should be included to remind motorists that bicycles may be traveling in both directions.



#### BIKE BOULEVARD

Cities and towns throughout the state could designate a group of neighborhood streets as a Bicycle Boulevard. The ultimate desired goal is to create a low-stress bicycle route by reducing traffic volume and/or speed. Traffic calming elements that slow and divert through traffic provide a more comfortable and safer environment for a wider variety of bicyclists. A Bicycle Boulevard utilizes a range of context-sensitive bicycle improvements for streets that are typically residential with low traffic volumes/speeds and run parallel to a busier roadway.



MUTCD R4-11, Bikes May Use Full Lane signs can help encourage motorists to defer to bicyclists on low volume streets

#### HORIZONTAL + VERTICAL DEFLECTION

Horizontal traffic calming devices cause drivers to slow down by constricting the roadway space or by requiring careful maneuvering. Speed humps can also be used to slow traffic, especially when paired with a crosswalk.

##### Curb Extensions



Curb extensions reduce turn radii and reduce turning speed.

##### Chokers



Chokers create pinch-points that reduce speeds mid-block.

##### Raised Crossing



Raised crosswalks improve safety for all road users.

## Toolkit of Candidate Bicycle Treatments (continued)

### VOLUME REDUCTION STRATEGIES

Maintaining motor vehicle volumes below 3,000 per day (1,000-1,500 is ideal) greatly improves bicyclists' comfort. To manage volume, physical or operational measures can be implemented on routes that have been identified as a bicycle boulevard.

#### Traffic Restriction Signage



The most straight forward traffic volume reduction strategies are changing flow from two-way to one-way, implementing time-of-day turning restrictions, or considering truck/commercial vehicle restrictions.

#### Median Traffic Diverters



Median traffic diverters restrict through motor vehicle movement while providing a refuge for bicyclists to cross the busier roadway in two stages.

### INTERSECTION IMPROVEMENTS\*

Striping bicycle facilities at or through intersections can provide a more comfortable bicycling environment by providing bicyclists with guidance on where to wait for a signal to change or a well-marked route through the intersection to a continuation of the bikeway. By establishing a clear boundary, intersection lane markings effectively mark the paths of travel for through bicyclists and turning bicyclists, as well as through and turning motor vehicles. The use of green colored pavement raises awareness for all road users to potential conflict areas.

#### Bike Box



A bike box places riders in a designated area ahead of queuing traffic during the red signal phase, also helping to reduce right-hook conflicts.

#### Two-Stage Turn Box



For bicyclists uncomfortable sharing lanes with turning traffic, a two-stage turn boxes offers a more comfortable left-turn option.

#### Bicycle Signal



Bicycle signals facilitate bicyclist crossings of roadways by clarifying when to enter and by restricting other movements during the bicycle phase.

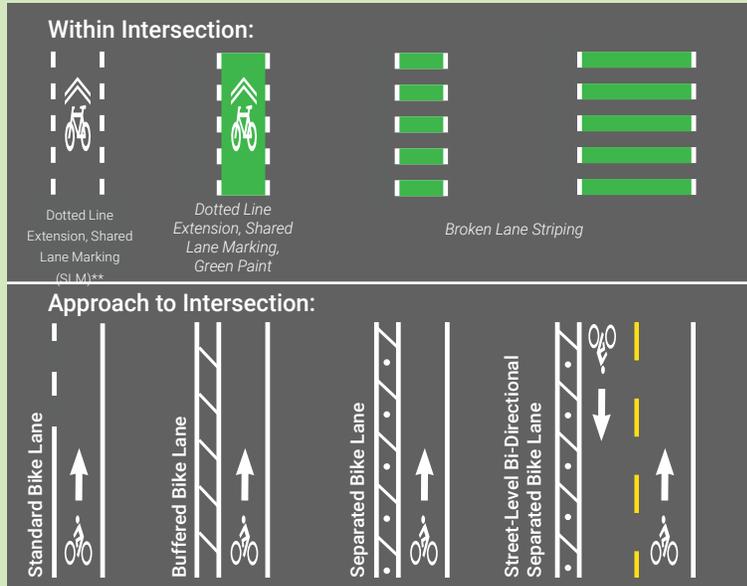
\*Potential treatments shown here have received Interim Approval from FHWA



## Toolkit of Candidate Bicycle Treatments (continued)

**INTERSECTION CROSSING MARKINGS**

Intersection crossing markings are extended striped bicycle facilities through intersections, clarifying to motorists where to expect bicyclists. This can be especially important at wide and complex intersections.

**DESIGN FEATURES**

- » Striping adjacent to motor vehicle travel lanes shall be 6 inches wide
- » Dashed lane lines should be 2 feet long
- » Bicycle stencils may be used to increase visibility and awareness of an approaching conflict area, and can be used across the entire intersection
- » Crossing lane width should match adjoining bicycle facility width

\*\*Use of SLM is considered an option in the NACTO Urban Bikeway Design Guide. However, the MUTCD currently does not allow SLMs in bike lanes and bike lane extensions based on FHWA guidance.

**3.2.2 Year-round Use**

For bicycling to become a serious mode of transportation in Rhode Island, it must be accommodated 12 months of the year. It is recognized that many shared-use paths in the state are used by cross-country skiers in the winter and snow removal is not desirable. While many recreational bicyclists and bicycle commuters ride during fair-weather months only, there are others who consider themselves year-round bicyclists and those who have no choice. Accommodation of bicyclists during the winter months depends on thoughtful roadway design, maintenance/clearing of bicycle facilities, appropriate snow-removal equipment, and a route prioritization schedule. The following guidelines should be considered by State and local officials:

- » Plan bicycle facilities with sufficient room to accommodate snow-removal vehicles and storage space for snow, such as separated bicycle lanes.
- » Parking restrictions on key routes offer additional space for maintenance of bicycle facilities

between the parking aisles and travel lanes during snow storms.

- » When snow clearing of key bikeways is not desirable or possible, alternative/parallel facilities are necessary and should be clearly marked and facilitate at least the same level of access and connectivity.
- » Implement recurring maintenance schedules targeting sweeping and removal of debris from bike infrastructure.
- » Municipalities should invest in smaller, more specialized snow removal vehicles to plow paths and narrower bicycle facilities; pick-up truck-mounted snow plows or "Bobcat" specialty equipment are typical examples.
- » Recessed thermoplastic pavement markings, protected flexible bollards, and vertical delineators are among some of the additional measures employed to further protect on-street bikeways from wear or damage. If bollards are removed for winter snow removal, there should be a policy and a priority to put them back in the spring as quickly as possible.

- » Cities and towns with a de-icing program should employ a proactive or anti-icing strategy on well-used paths and on-street bikeways.
- » A prioritization schedule for snow removal of on-street bike facilities is necessary and should focus on primary routes and destinations that impact the highest volume of bicyclists immediately following snow events (i.e. routes to and from schools and key connections such as bridges). Some cities and towns clear their priority list of bicycle facilities in conjunction with or before their roadways.



Well-plowed paths encourage walking and bicycling even after big storms



Poor snow removal techniques can create hazardous situations for bicyclists



With the correct equipment, separated bicycle lanes can be accessible and feel safe throughout the winter

To promote bicycling as everyday transportation for a large segment of the population, winter maintenance of on-street bikeways must be taken as seriously as snow removal on State and local roadways.



### 3.2.3 Bicycle Parking

All types of bicyclists, from novice to experienced, are more likely to bicycle to and from a wider variety of destinations in Rhode Island if secure, accessible, and convenient bicycle parking is provided. Improved short-term bicycle parking, including covered parking, and long-term secure parking are integral to support the growth of bicycling throughout Rhode Island. Providing ample and convenient parking can reduce instances of bicycles being locked to objects in the public right of way such as trees, signs, and benches. This is especially important at transit facilities, state parks and beaches, public schools, business districts and town/village centers, enabling riders to bicycle to more destinations.

*RIDOT's 2000-2010 USDOT/FHWA Congestion Mitigation and Air Quality (CMAQ) project involved installation of over 150 bike hitches throughout downtown Providence, at Brown University academic buildings, RISD buildings, and Rhode Island College.*

### RECOMMENDATIONS

Based upon best practices that have been established in cities across the United States, improved bicycle parking in Rhode Island hinges upon:

- » Developing a statewide Bicycle Facilities Manual using the Association of Pedestrian & Bicycle Professionals (APBP) guidelines (<https://www.apbp.org/>)
- » Encouraging standards to be incorporated into state and local approvals process (such as zoning ordinances) for new or rehabilitated developments for type and quantity of bicycle parking per



municipality (including short, medium, and long-term parking standards)

- » All bike racks should have two points of contact

### BICYCLE FACILITIES MANUAL PARKING GUIDELINES

As recommended in Chapter 4 of this report, the State should develop a Bicycle Facilities Manual that includes detailed design guidance for providing bicycle parking. The document should specify acceptable rack placement practices and rack types. Placement practices should conform to those described in the Association of Pedestrian and Bicycle Professionals (APBP) Essentials of Bike Parking (2015). To be consistent with best practices, the document should include a tiered bicycle parking design standard, ensuring reliable and convenient short- and long-term bicycle parking is provided in different settings. The document should include an online tool that focuses on identifying gaps in bicycle parking availability and prioritization.

Standardizing rack types and quantity for installation on public property will enable streamlining of bicycle rack installation by municipal Public Works Departments and other agencies such as RIPTA. In both rural communities and cities alike, high-quality standardized bicycle parking will serve commercial buildings, schools, multi-family residential developments, transit stops, and recreational areas.

### THREE-TIERED APPROACH TO BICYCLE PARKING

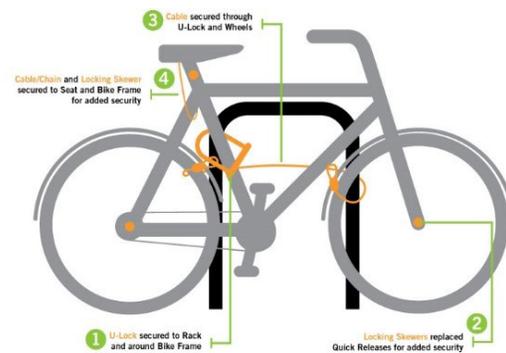
TIER	EXPLANATION	LOCATIONS
I	<b>Short-term Bicycle Parking</b>	Primarily at State Parks, Beaches, Town Centers, Business Districts, and Bus Stops
II	<b>Covered Medium-term Bicycle Parking</b>	Schools, Business Districts, Train Stations, and Bus Hubs
III	<b>Covered Long-term /Secure Indoor Bicycle Parking</b>	State and Local Office Buildings, Apartment and Condominium Buildings, and Train Stations

### ALL BIKE RACKS SHOULD MEET THE FOLLOWING CRITERIA

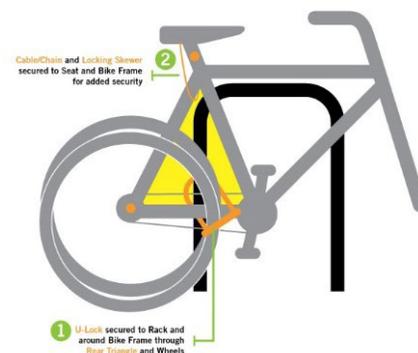
- » Store the bicycle upright on a level plane by its frame in two places
- » Prevent the wheel of the bicycle from tipping over
- » Enable the frame and one or both wheels to be secured (see images below from [sfbike.org](http://sfbike.org) on proper bike locking techniques)

### PROPER BIKE LOCKING

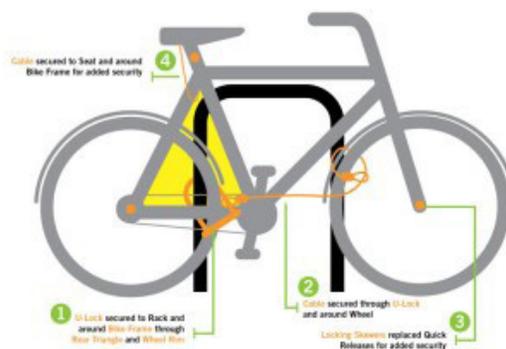
#### Using Multiple Locks



#### Removing the Front Wheel



#### Using the Rear Triangle



Source: SFBike.org



Additional funding for bicycle parking can benefit local fabricators, such as the Steel Yard in Providence (Image credit: The Steel Yard)



Traditional "Inverted-U" style bicycle racks should be the Tier I standard adopted in the future Bicycle Facilities Manual



A mix of Tier I and II bicycle parking currently exists at the Providence Train Station



Equipping buses with bike racks creates an important synergy between bus and bike modes of transportation

### 3.3 CANDIDATE ROUTES

The nearly 600 candidate bicycle segments for the State of Rhode Island incorporate the candidate bicycle treatments described in Section 3.2. In total, the candidate routes feature bicycle access across bridges, new shared-use paths along abandoned rail beds and parallel with state highways, and a variety of on-street bicycle facilities such as separated, buffered, standard, advisory bicycle lanes, and shoulder bikeways. The candidate bicycle routes were derived from the BMP goals established early in the planning process.

#### METHODOLOGY

The methodology used to establish the candidate bicycle routes was informed by:

- » Safety evaluation
- » Review of bicycle counts and patterns to determine desire lines
- » Gap/barrier assessment
- » Understanding existing and planned projects (Green Economy Bond and STIP)
- » Individual communities' planning studies and comprehensive plans
- » Input from Statewide Planning staff, the Bicycle Mobility Plan Advisory Committee, and various stakeholders
- » Comments from the general public at community meetings and through the online input map

Results of the existing conditions analysis in Chapter 2 also informed the statewide candidate bicycle network. The analysis included the identification of barriers to bicycling, bicycle crash hot spots, areas with equity concerns, and gaps among the State's current bicycle facilities. In addition, particular attention was paid to providing bicycle connections to destinations, especially those that currently, or have the potential to, draw bicyclists throughout a given city or region. This takes into account train stations, bus hubs, business districts, town centers, large grocery stores, large parks, State beaches, college campuses, and high schools.

With the future implementation of the candidate routes, Rhode Island's network of designated



bicycle facilities are expected to provide a number of benefits, such as:

- » Helping to mitigate increases in traffic congestion and air pollution
- » Reducing the state's carbon footprint
- » Improving the quality of life for Rhode Island's residents
- » Helping businesses draw customers who arrive by bicycle, not just motor vehicles
- » Enhancing the state's identity as a recreational destination

### THE GOALS FOR THE CANDIDATE BICYCLE TREATMENTS

- » Provide connectivity to existing and proposed bicycle facilities
- » Fill in gaps in the current bicycle network
- » Include space for bicyclists on bridges
- » Link to regional and local destinations
- » Address State roads with narrow shoulders

All candidate treatments are conceptual in nature and may require feasibility studies, additional engineering work, and public outreach.



The less intensive treatments (bike lanes, shoulder bike lanes, advisory bike lanes, and buffered bike lanes) will not require as much evaluation as the more intensive treatments, such as separated paths. The most comfortable treatment option should be prioritized over quick solutions where possible.



Source: Bike Newport







### 3.3.1 Statewide Greenway Network

At the core of Rhode Island's set of candidate bicycle treatments lies a visionary network of greenway paths. Combined with the State's existing bikeways, paths, and trails, this future network of greenways aspires to become the most dense collection of off-road paths in the Northeast.

Comprising approximately 320 miles, the statewide greenway candidate network runs through each of the state's 39 cities and towns. This helps bring a greenway within a short bicycling distance for hundreds of thousands of residents. The resulting paths will provide tremendous opportunities for recreational, commute, and utility bicycling.

If well promoted, the greenway network will stimulate bicycle tourism throughout Rhode Island, especially to the Blackstone Valley, Aquidneck Island, the South County coast, and Metro Providence.

Key to encouraging visitors to explore the state by bicycle is to create a powerful brand. Like successful examples in other North American cities and regions (see below), Rhode Island's greenways will need a brand, an attractive logo, and broad publication by local and State agencies.

A statewide competition to develop a name and logo for Rhode Island's greenway network is recommended to create media attention and excitement about the vision for bicycling in the state.



With the branding in place, the Rhode Island Department of Transportation, the Rhode Island Department of Environmental Management, business groups, foundations, and advocates will need to work together to fund the future greenway vision. In the short term, the BMP includes recommendations for on-street bikeway improvements that will attract more recreational riders and bicycle tourism. The wider shoulders, bicycle lanes, and branded wayfinding signage in the Blackstone Valley will draw riders to the greenway network and build the constituency that can push for a more permanent solution of off-road paths and trails that will complete the greenway network.

#### LA ROUTE VERTE, QUEBEC

When complete, the Route Verte will span nearly 3,300 miles and connect the various regions of Quebec Province. Begun in 1995, the bikeway utilizes a mix of rail corridors, towpaths, paved roadway shoulders, and low-volume rural roads as "designated bicycling routes." Signs along the route are standardized by the Quebec Ministry of Transportation.

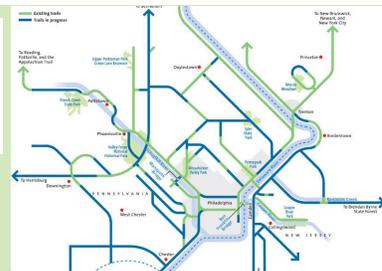
<http://www.routeverte.com/e/>



#### THE CIRCUIT TRAILS, PHILADELPHIA

The Circuit Trails is Greater Philadelphia's shared-use path network connecting people to jobs, parks, and waterways. Over 300 miles of the envisioned 750-mile regional network has been completed. More miles are being added to the network each year. Trail users can utilize the hashtag #onthecircuit to post photos and learn about events.

<http://circuittrails.org/>



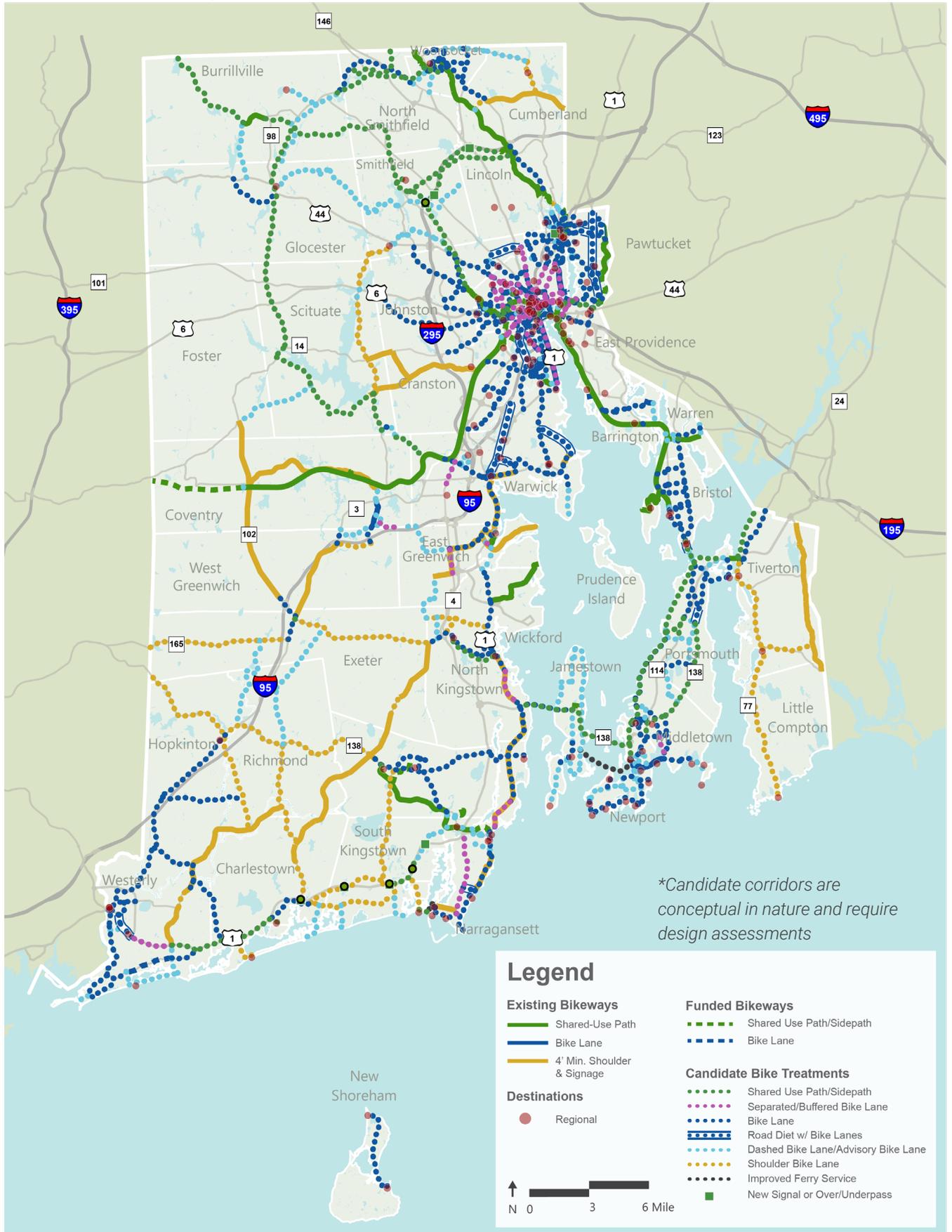
#### LANDLINE, GREATER BOSTON

LandLine is the Metropolitan Area Planning Council's (MAPC) vision to connect existing and planned greenways and trails into a seamless network. The planning and advancement effort has been led by the LandLine Coalition, a group of 40 volunteers representing a number of local agencies and advocacy groups.

<https://www.mapc.org/>

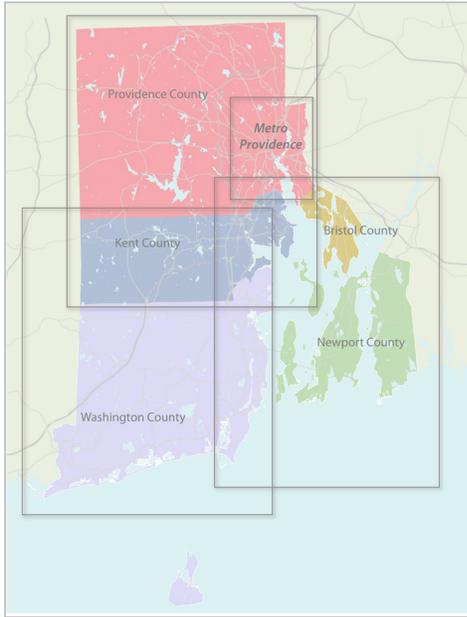


# Statewide Candidate Bikeway Network



To view a scalable map click here:

<https://bit.ly/2Hh8wqf>



In order to provide a higher level of detail with the candidate bicycle treatments, the state was sub-divided by counties. The series of inset maps and table of candidate treatments can be found later on in Chapter 3.

### 3.3.2 Statewide Candidate Bikeways

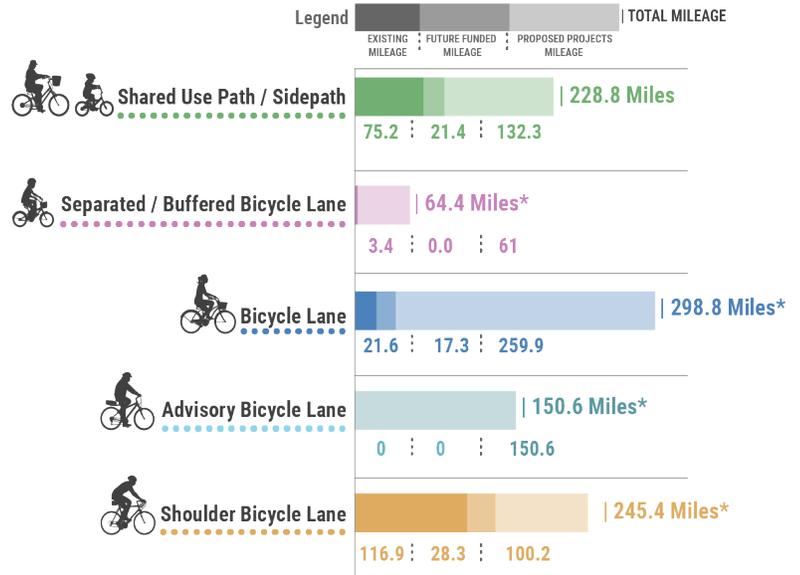
Candidate bikeways throughout the state are comprised of five bicycle facility types:

- » 132 miles of new shared-use paths
- » 61 miles of separated/buffered bicycle lanes
- » 271 miles of standard bicycle lanes
- » 150 miles of advisory bicycle lanes on low-volume roads
- » 100 miles of new shoulder bicycle lanes

Combined, these 714 miles of recommendations help connect the state's many towns and cities to each other and to the many local and regional destinations that were identified in this planning process. These candidate bicycle treatments provide opportunities for both transportation and recreational riding and, to do so, lean towards facilities that are either visually or physically separated from adjacent travel lanes. A statewide bicycle network that emphasizes physical separation will have the greatest chance to encourage new riders.

## SUMMARY OF EXISTING, FUNDED, AND CANDIDATE BIKEWAYS

(Refer to Section 3.2.1 for explanation of candidate treatments)



\*Assumes bike facility accommodates travel in both directions, except on one-way streets.

Note: Mileage reported as of July 2019.

Urban planners and policymakers have been discussing the so-called “interested but concerned” demographic. These are people who would like to bike more but who are held back for some reason or another. A national survey of people who are “interested but concerned” about biking was conducted in 2015 by PeopleForBikes. Approximately 53 percent of American adults answered that they want to bike more. One third of people who want to bike more are dissatisfied with existing bike infrastructure. In other words, addressing bike infrastructure is arguably the most effective way to encourage people who are interested in biking to do so.

## STATEWIDE KEY PROJECTS: THE THREE BRIDGES

One of the most important elements of a successful bicycle network is connectivity among communities and comfortable bicycle connectivity to East Bay and South County communities. A major barrier to safe and comfortable bicycle connectivity between East Bay and South County communities are the three bridges that together span nearly four miles across Narragansett Bay:

- » The Jamestown Verrazzano Bridge connecting North Kingstown to Jamestown is only for motor vehicles and would require legislative action to change this restriction
- » The Newport/Pell Bridge connecting Jamestown to Newport is exclusively for motor vehicles and would require legislative action to change this restriction
- » The Mount Hope Bridge that connects Bristol to Portsmouth is primarily for motor vehicles; however, cyclists can use this bridge, but they rarely do because of safety concerns (traffic speed, volume, and existing expansion joints can be dangerous to cyclists)

The critical work needed here is influenced by existing conditions on each of the bridges, including lane width, presence of sidewalk or shoulder, and age of the

structure. Recommendations include both short-term, lower-cost improvements and long-term enhancements.



Source: Bing Maps

### JAMESTOWN VERRAZZANO BRIDGE

*Closed to bicyclists and pedestrians, this 150'-tall bridge spans 7,350' over the west passage of Narragansett Bay, carries four lanes of traffic, and has 4'-5' shoulders and sidewalks protected by a low crash barrier. Recommended short-term treatments include buffered striped bicycle lanes with intermittent flexible bollards and improved joint work to accommodate bicycles more safely. This would be possible by narrowing each travel lane from 12' to 11', and striping a 2' to 2'-6" painted buffer between the shoulder and the outside travel lane. Long-term improvements include structural modifications to provide a separated sidepath for pedestrians and bicyclists. In both cases, improvements to the Rt. 138 shoulder approaches will be needed.*

### NEWPORT/PELL BRIDGE

*Closed to bicyclists and pedestrians, this 400'-tall bridge spans 11,248', carries four lanes of traffic, and has 1'-wide shoulders. Recommended short-term treatment includes dedicated bicycle and pedestrian ferry service across Narragansett Bay. Long-term improvement options include structural modifications to the bridge to provide a separated sidepath or a complete rebuild with a generous barrier-separated bicycle and pedestrian path.*

### MOUNT HOPE BRIDGE

*Legally open to bicyclists, this 285'-high bridge spans 6,130' over Mount Hope Bay. The two-lane bridge has narrow shoulders and extremely narrow sidewalks that are strictly off-limits to pedestrians. Recommended short-term treatment includes bicyclist-actuated "BIKES ON BRIDGE" flashing beacons (ideally overhead) and signage at the approaches. Long-term improvement options include structural modifications to the bridge to provide a separated sidepath for pedestrians and bicyclists.*





## Bicycle Facilities on Bridges Precedents

## SHORT-TERM/LOW-COST IMPROVEMENTS

## Flashing Beacons And Signage

The graphic at right was developed by the Maryland Transportation Authority in a press release/policy change allowing bicyclists to cross the 7,624 foot Hatem Bridge (US 40) during designated times. The change took place on June 1, 2016 and allows bicyclists to cross the bridge outside of weekday rush hour and from dawn to dusk Saturday, Sunday, and State holidays. Bicyclists must push a button to activate flashing warning lights that alert drivers when a bicyclist is crossing the bridge. The lights flash for 10-15 minutes, allowing ample time for crossing.

Image credit: <http://mdta.maryland.gov/blog-category/mbta-news-releases/reminder-bicycle-access-on-hatem-bridge>



## Seasonal Ferries

Because bicycle access is currently prohibited across the Newport/Pell Bridge, small-scale ferry service similar to the Jamestown-Newport ferry with the provision that bikes are allowed should be considered. The service should be instituted for spring, summer, and fall and should provide a safer option for pedestrians and bicyclists to cross from Aquidneck Island to Jamestown. In Burlington, VT, similar three-season service closes a waterway gap in the 14-mile Island Line Trail.

Image credit: [www.activerain.com](http://www.activerain.com) (accessed May 27, 2013)



## LONG-TERM/HIGHER-COST PERMANENT IMPROVEMENTS

## New Construction

When bridges are rebuilt or go through structural rehabilitation, a 12'-16'-wide sidewalk/path should be included in the design. Similar to the path along the new Sakonnet River Bridge, a path fully separated from motor vehicle traffic with a crash barrier would provide a low-stress bicycling environment for a wide range of riders. Critical to the success of such a facility is to ensure it is well-connected to a sidepath, separated bicycle lanes, or standard bicycle lanes on the bridge approaches from each direction.

Image credit: Newport Daily News (April 28, 2018), <https://bit.ly/2Hjbppe>

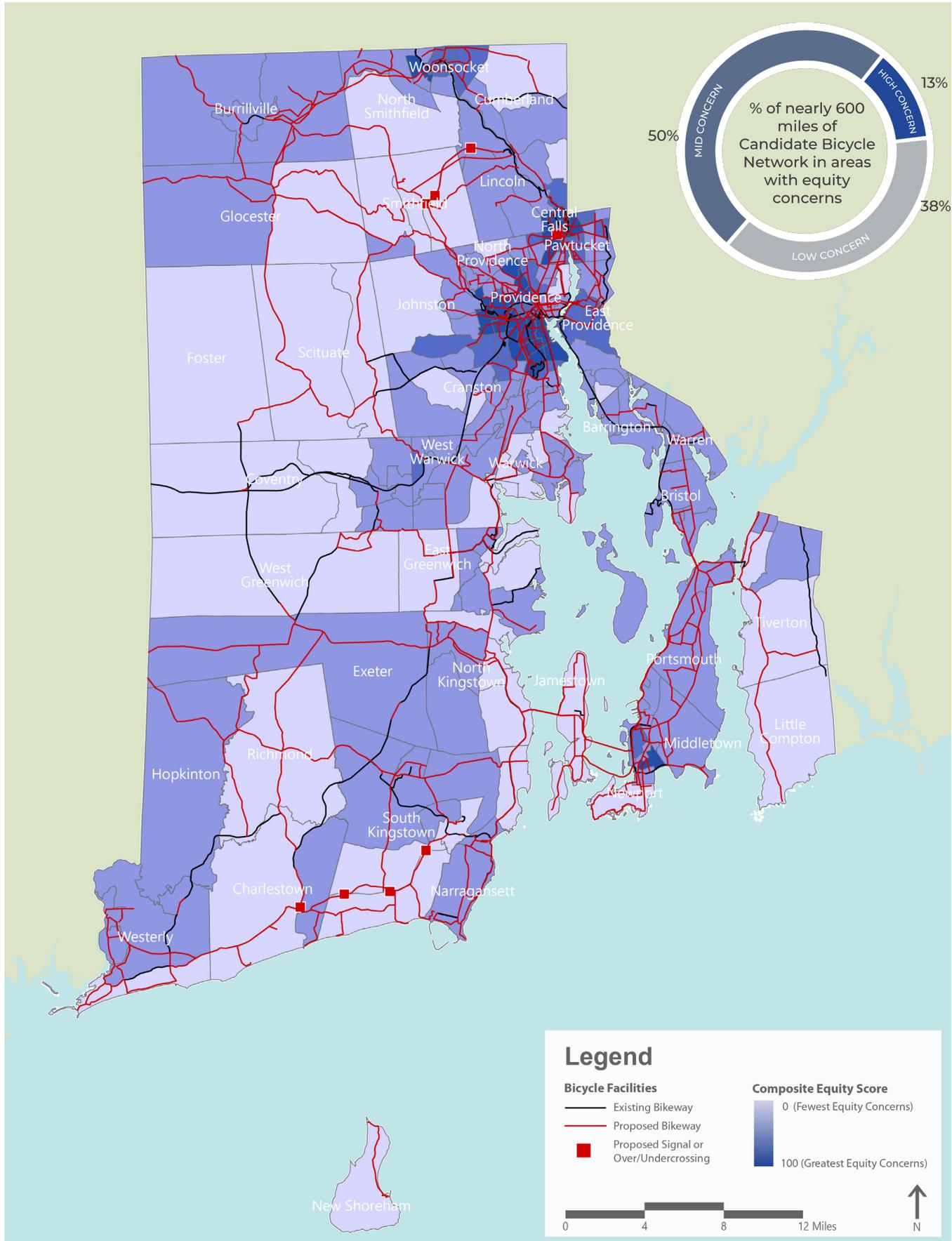


## Structural Modifications

Though rare, pedestrian/bicycle paths are sometimes included as part of a bridge retrofit project. A good example is the I-279/Fort Duquesne Bridge that spans the Allegheny River in Pittsburgh, PA. The bridge opened in 1969, however the shared-use path pictured at right was added later, opening in 1994. Switchback ramps and stairs were completed in 2003. The Pennsylvania Department of Transportation, which owns the bridge, provided \$1.5 million for the ramps and staircase, using federal highway funds.



# STATEWIDE EQUITY ANALYSIS MAP





## EQUITY ANALYSIS

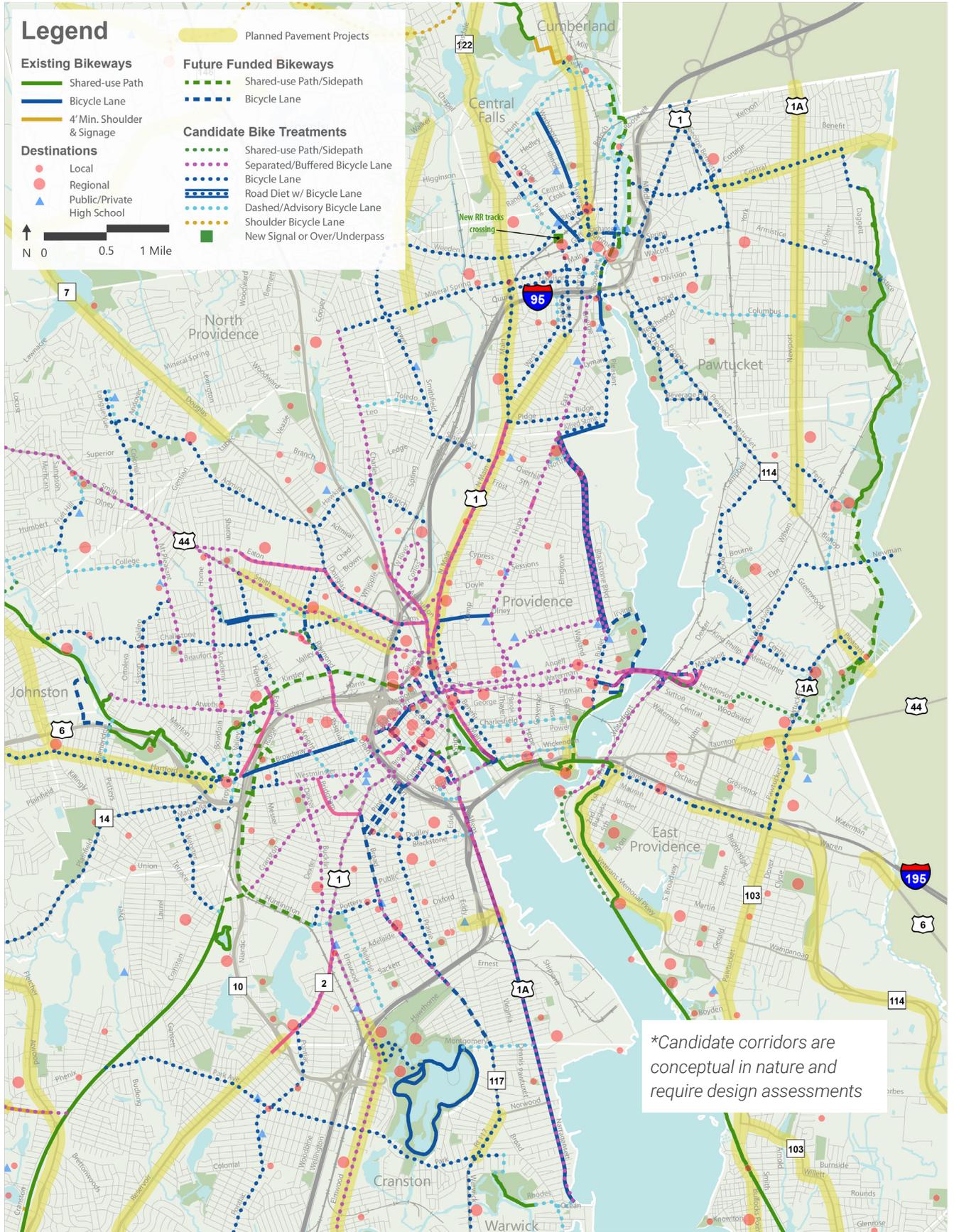
As described in Section 3.1.2, seven factors were used to create an "Equity Score" to rate how well each of the candidate treatments addressed equity concerns.

The greatest concentration of these seven demographic and economic characteristics in Rhode Island occur in Providence, Pawtucket, Central Falls, Woonsocket, and Middletown.

As shown in the Equity Analysis map on the previous page, a number of candidate bicycle treatments provide improved connections to communities with the greatest needs.



# Metro Providence Candidate Bikeway Network



To view a scalable map click here:

<https://bit.ly/2Hh8wqf>



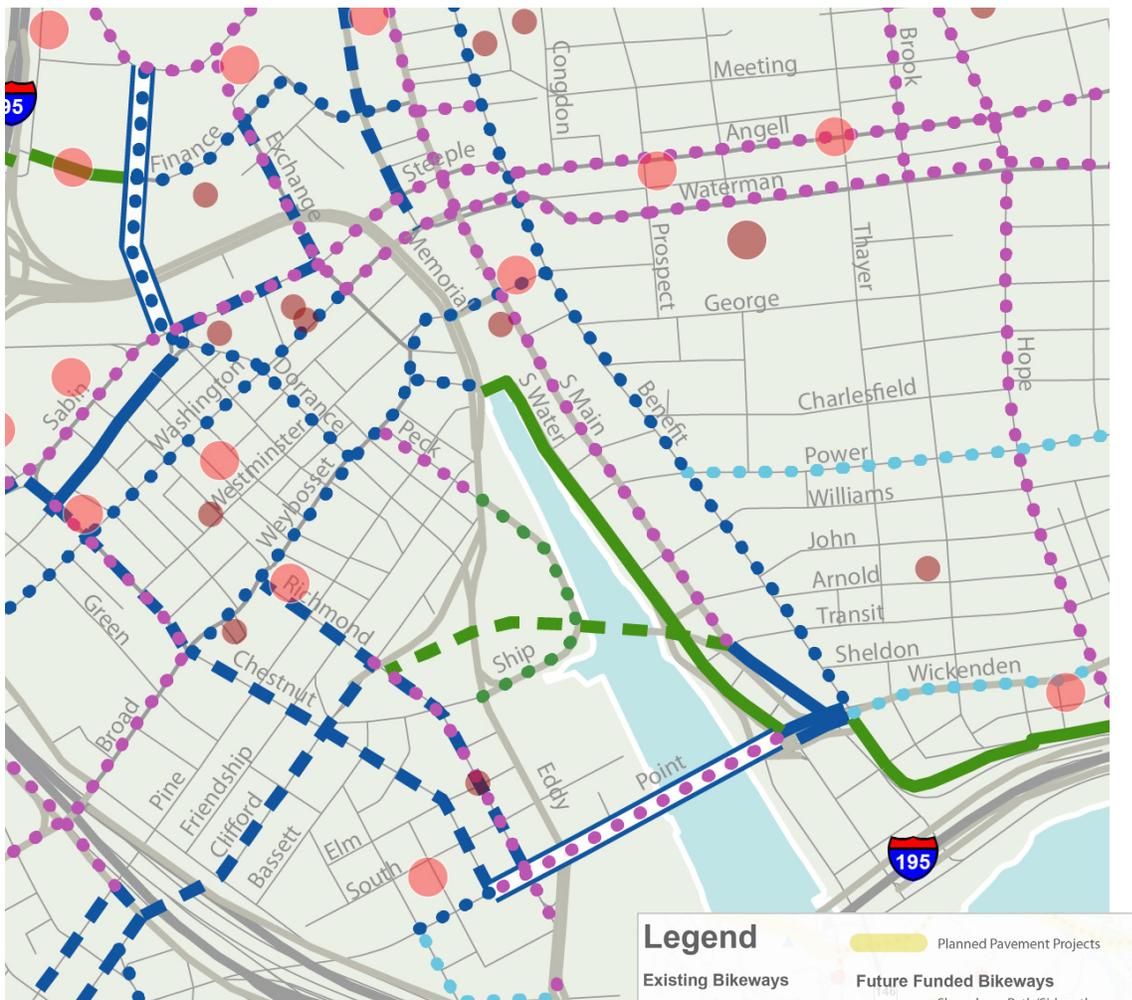
### 3.3.3 Metro Providence Candidate Bikeways

The candidate bikeway network creates a future system of bikeways that link together many of Providence’s diverse neighborhoods with adjacent communities. The candidate bicycle treatments spring from the existing paths and bicycle lanes and incorporate funded bikeway projects that are currently in the design stage. Some recommendations rely on the reallocation of travel lanes along four-lane roadways to provide space for bicycle lanes. The City of Providence is currently in the midst of a master plan process and through that, are taking a closer look at what the connections

through the city should be. This is an evolving process and it is acknowledged that in some cases alternate alignments or configurations are going to be included in the master plan that may not align perfectly with the BMP. Other local initiatives include:

- » Protected bike lanes are funded and underway on Eaton between Douglas and River, Mt. Pleasant between Smith and Beaufort, Broad between Public and Hawthorne, Clifford between Richmond and West Franklin, Empire between Fountain and Broad, and Chestnut between Broad and Clifford.
- » The City is planning for protected bike lanes on Eagle and Richmond between Clifford and Eddy.

#### Downtown Providence Candidate Bike Network



**Legend**

- Existing Bikeways**
  - Shared-use Path
  - Bicycle Lane
  - 4' Min. Shoulder & Signage
- Destinations**
  - Local
  - Regional
  - Public/Private
  - High School
- Future Funded Bikeways**
  - Shared-use Path/Sidepath
  - Bicycle Lane
- Candidate Bike Treatments**
  - Shared-use Path/Sidepath
  - Separated/Buffered Bicycle Lane
  - Bicycle Lane
  - Road Diet w/ Bicycle Lane
  - Dashed/Advisory Bicycle Lane
  - Shoulder Bicycle Lane
  - New Signal or Over/Underpass
- Planned Pavement Projects**

Scale: 0 to 1 Mile. North arrow pointing up.

- » A major priority involves upgrades to the Riverwalk from Francis Street, through the Waterplace Park basin, down to Crawford to make the Riverwalk ADA and bike accessible.
- » Dean Street needs to have protected bike lanes between Valley and Promenade.

The successful implementation of a robust bicycle network in Metro Providence includes:

- » Eliminating the gaps between the four regional bike paths that converge on downtown Providence.

- » Creating a low-stress link between downtown and the Henderson Bridge, with potential extension to the Ten Mile River Greenway.
- » Building an east/west separated bicycle lane connection between College Hill, downtown, Federal Hill, and Olneyville.
- » Improving north/south bikeways to tie together Central Falls, Pawtucket, Providence, Cranston, and Warwick.

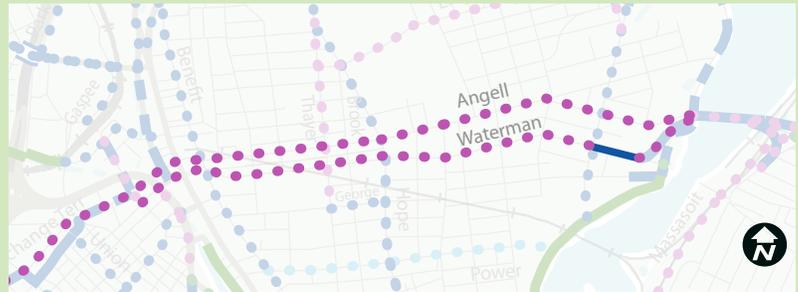
*Candidate bikeways are subject to further refinement through the City of Providence's Great Streets Initiative and Urban Trail Master Plan.*

### **METRO PROVIDENCE KEY RECOMMENDATION: Separated Bicycle Lane Route Across the East Side and through Downtown**

The candidate separated bikeways along Angell Street and Waterman Street can create an important east-west link that connects the Blackstone River Bikeway to downtown Providence and continuing on Elmwood Avenue. Bicycle access to the Angell Street/Waterman Street couplet can be created through bicycle lanes on Butler Avenue or separated bikeways on Lloyd Avenue, Hope Street, or Brook Street. The candidate separated bikeways can also provide cyclists a more comfortable link to and from the Henderson Bridge and provide a stronger connection between downtown Providence and East Providence. In downtown Providence, separated bikeways are also proposed on Exchange Street, Sabin Street, and parts of Washington Street to enhance connections to Federal Hill and the West End.



Along the two-lane segments of Angell Street or Waterman Street, narrowing the travel lanes will provide the opportunity to install 5' bicycle lanes with striped buffer and delineator posts



The candidate bicycle treatment map shows the roughly 1.7-mile extents of the parallel separated bicycle lanes



Existing conditions on Waterman Street near Cooke Street, looking west

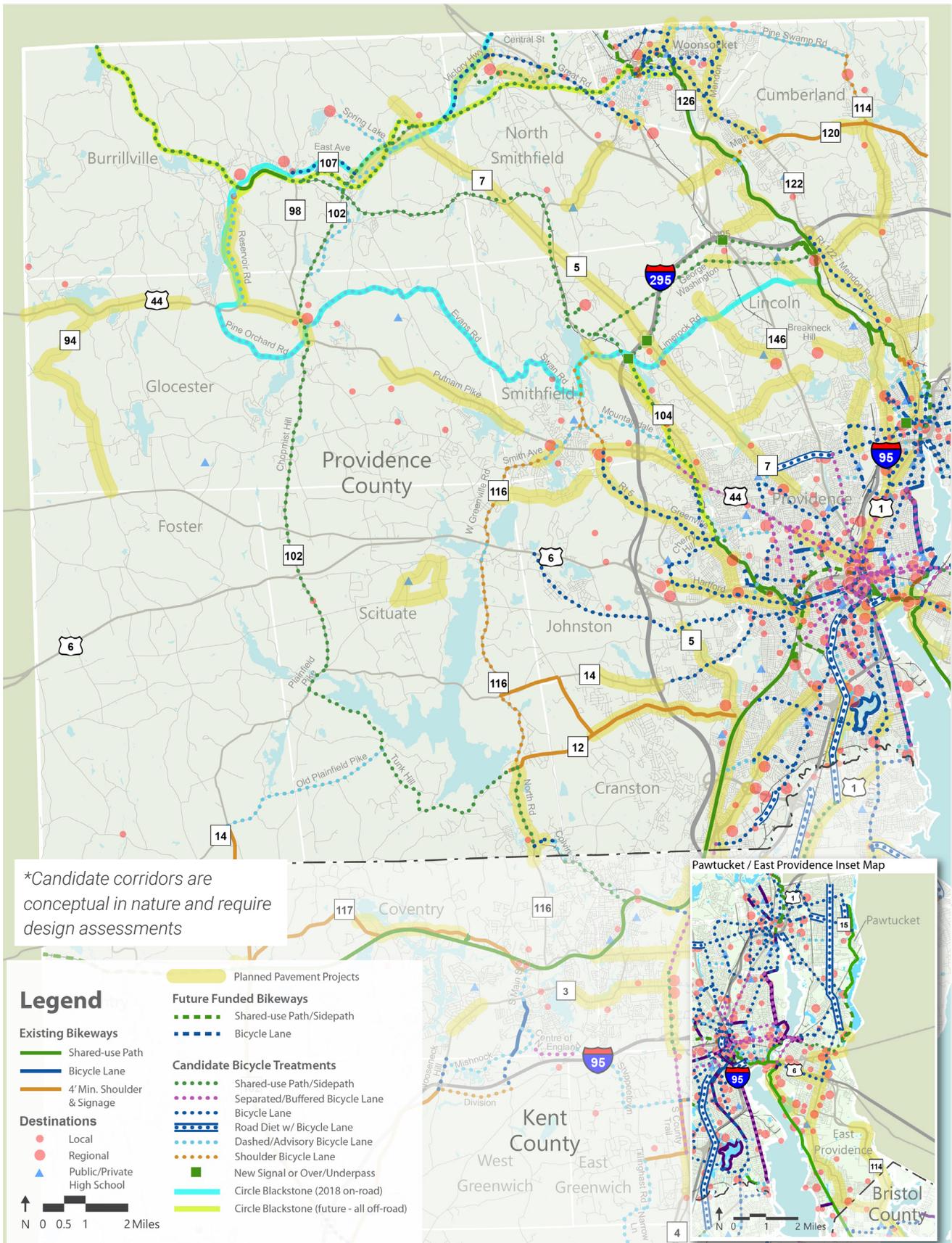


#### **Street-Level Separated Bicycle Lane**

This photo simulation of Waterman Street in the image to the right shows a candidate street-level separated bicycle lane utilizing a striped buffer and delineator posts for visual separation from passing traffic. Placing the separated bicycle lane between parked cars and the curb provides a greater level of physical separation. Many cyclists prefer the "open" style of posts and paint rather than parking separated, as it allows for cyclists to see drivers and visa versa. An engineering assessment would determine the optimal arrangement of road space parking/buffer/bike lane as a way to separate bikes from cars.



### Providence County Candidate Bikeway Network



To view a scalable map click here:

<https://bit.ly/2Hh8wqf>

### 3.3.4 Providence County Candidate Bikeways

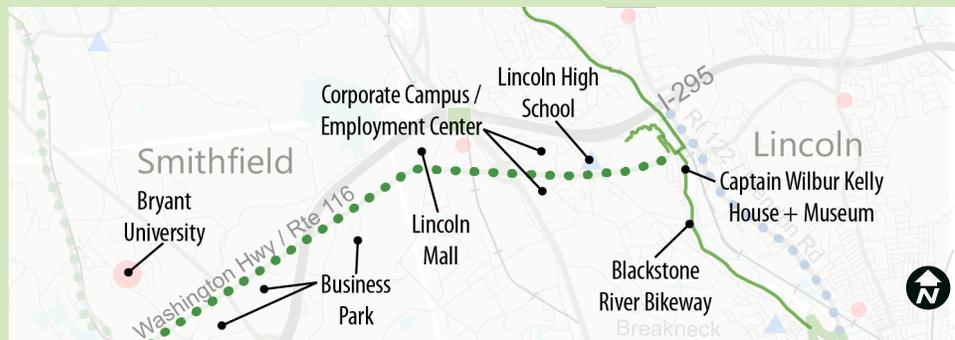
The candidate bikeway network for North Rhode Island focuses on roadway improvements that provide links in the short term, along with the development of longer-term path projects. When complete, these routes will build off of the Blackstone River Bikeway's (BRB) success and strengthen the Blackstone Valley region as a bicycle tourism destination. The network will allow bicyclists to choose from a series of loops of varying lengths, making it possible for someone to ride from Providence up the Woonasquatucket River Greenway to an east-west path along I-295 or Rt. 116 to the BRB and back to Providence, a 25-mile loop. The successful implementation of a robust bicycle network in North Rhode Island includes:

- » Development of an on-road "Circle Blackstone" route comprising primarily low-volume, rural routes with the goal of eventually developing off-road loops in the long term
- » Leveraging the Washington Secondary Bike Path as a connective spine with improved perpendicular bikeways to provide links to the many communities along its alignment
- » Planning for long-term sidepaths and wider, more bikeable shoulders on rural roadways or old rail corridors that can provide low-stress bikeways for residents and visitors

#### PROVIDENCE COUNTY KEY RECOMMENDATION: Route 116 Bikeway, Smithfield

*Bicycle-related improvements along State Route 116 in Smithfield would provide a great link between the Blackstone River Bikeway and the Stillwater Scenic Trail at Route 104 (ultimately to become the future extension of the Woonasquatucket River Greenway). Between the two paths lie an ever-increasing number of jobs, many retail stores and restaurants, and Lincoln High School. Because of the busy commercial traffic and high speeds on Rt. 116, a 6-mile-long shared-use path/sidepath is recommended from end to end. The crossings of the various side roads and driveways will be critical design details for the path. Crossing the on/off ramps at Rt. 146 is another challenge that requires additional analysis and engineering.*

*Route 116 connects important civic, retail, and commercial destinations but remains inaccessible for walking and bicycling. The recommended shared-use path project will transform the way residents and visitors move throughout the corridor.*



Current conditions at Route 116 at Old River Road near Lincoln High School



Precedent Project Example: Grand Junction shared-use path in Cambridge, MA



### Kent County and Washington County Candidate Bikeway Network



To view a scalable map click here: <https://bit.ly/2Hh8wqf>

### 3.3.5 Kent County and Washington County Candidate Bikeways

The candidate bikeway network for West Rhode Island emphasizes a continuous bicycle corridor for transportation and recreation along the coastline. Key to this improvement is the restriping and designation of existing (generally) wide shoulders along Route 1A as dedicated bicycle lanes (see description below). Combined with a recommended sidepath along portions of US Route 1 and along parallel roadways, the improvements will allow relatively seamless bicycling from Wickford Village to Narragansett Pier, to the Block Island Ferry, to Charlestown, and to Watch Hill. Complementing

the coastal route is a network of shoulder bicycle lanes throughout the interior of South County to both the South County Bikeway and the coastal route.

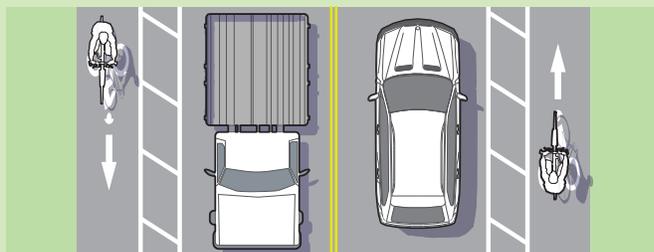
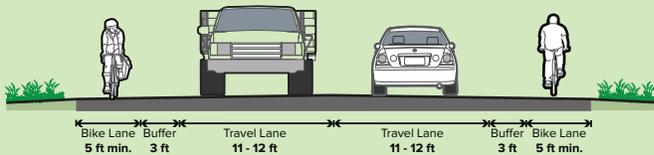
Successful implementation of a robust bicycle network in West Rhode Island includes:

- » Leveraging the Green Economy Bond expansion of the South County Bikeway and extension to URI to further link parts of South County to the coastline
- » Creating a seamless bicycle lane link between the two University of Rhode Island campuses
- » Improving the perpendicular routes from the US Route 1 corridor to the many beaches along Block Island Sound

#### KENT COUNTY AND WASHINGTON COUNTY KEY RECOMMENDATION: Route 1A Coastal Bikeway

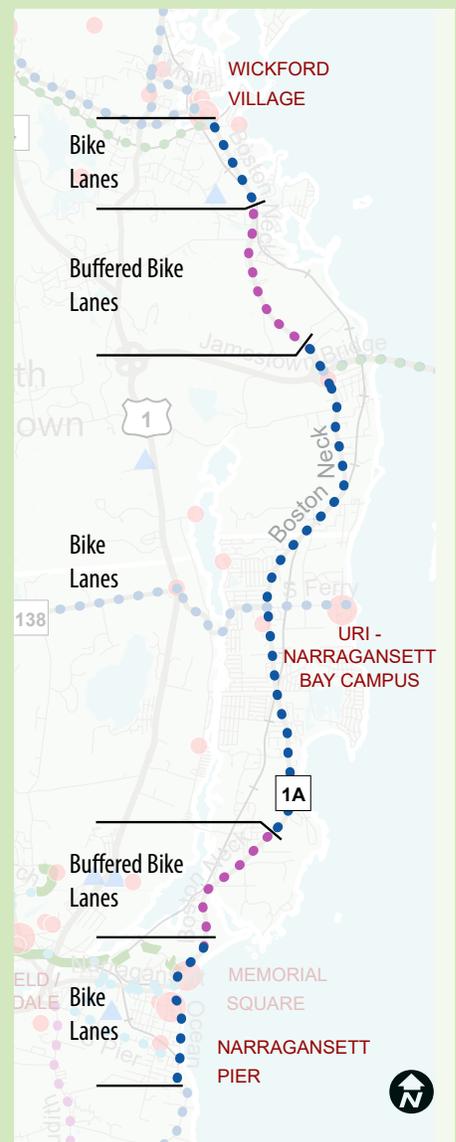
In South County, one of the critical needs for bicyclists is an improved route that roughly follows the coastline. Recommendations for US Rt. 1 between Westerly and Narragansett are critical but will likely be longer term since improvements involve sidepath construction and potential new signalized or grade-separated crossings. In the shorter term, formally creating bicycle lanes on a nearly 11-mile stretch of Rt. 1A would provide a strong transportation and recreational link between Wickford Village and Narragansett Pier. It would also help provide links to perpendicular bikeways that provide connections to URI and URI Narragansett, along with the future bicycle facility on Rt. 138 across the Jamestown Bridge.

Existing conditions on Boston Neck Road/Rt. 1A include segments of roadway where the pavement width is less than 38'. Photo location near Lindley Avenue, looking north (Image credit: Google Street View)



#### Bikeway Design On Wider Segments

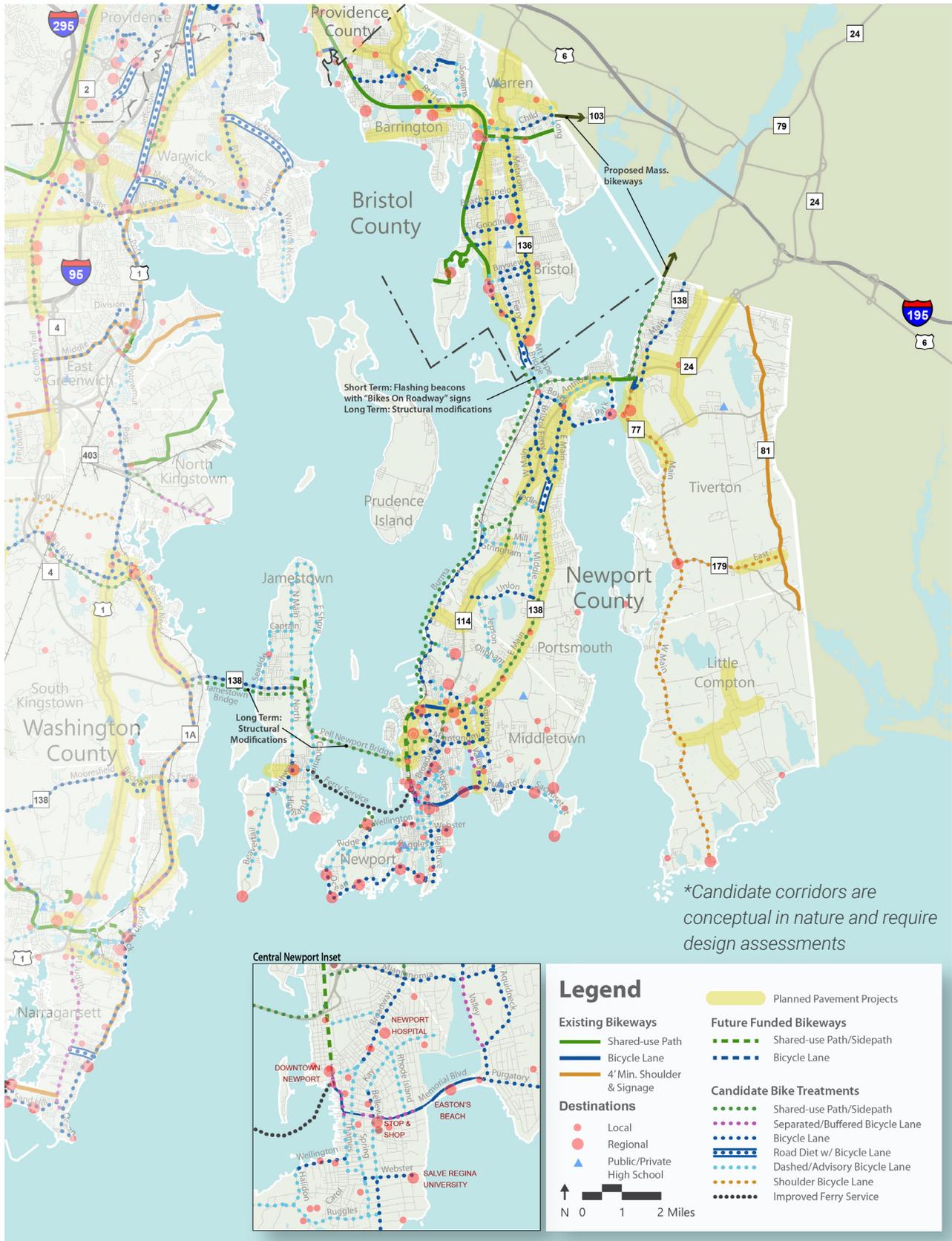
Along large segments of Boston Neck Road/Rt. 1A where pavement width exceeds 38', the addition of striped buffered bicycle lanes is recommended to provide additional visual separation from motor vehicles.



Candidate bicycle treatment based on available road width and subject to further study.



### Bristol County and Newport County Candidate Bikeway Network



To view a scalable map click here:  
<https://bit.ly/2Hh8wqf>

### 3.3.6 Bristol County and Newport County Candidate Bikeways

The candidate bikeway network for East Rhode Island focuses on the development of enhanced bikeways along Aquidneck Island and the East Bay with improved connections to the north, east, and west. The goal is to create a network that provides for short utility trips, along with more recreationally-focused trips to Brenton Point, Jamestown, and Sakonnet Point. Critical to the success of bicycling in the East Bay is to address the bridge barriers that make for an extremely challenging bicycling environment and to better connect housing to jobs/commercial areas. For example, most housing is on the western edge along the bay, while all recent commercial development is along Metacom Avenue in the East Bay. Similar gaps between residential and commercial areas exist on Aquidneck Island that make cycling a difficult endeavor.

The successful implementation of an expansive bicycle network in East Rhode Island includes:

- » Addressing the bicycling gaps to the mainland formed by limited bicycle access to the three bridges; this includes a mix of short-term and long-term improvements
- » Providing ferry service between downtown Newport and Jamestown until a long-term solution to the Newport/Pell Bridge is found
- » Improving north-south connectivity along the Island with bicycle lanes and/or sidepath on East Main Road (see graphic below) and a long-term rail trail along Narragansett Bay
- » Enhancing connections from the Mount Hope Bridge through Bristol to the end of the East Bay Bikepath

#### BRISTOL COUNTY AND NEWPORT COUNTY KEY RECOMMENDATION: East Main Road Bikeway

The State's Transportation Improvement Plan (STIP) #9005 describes a planned sidepath for East Main Road from Aquidneck Avenue in Middletown to Hedley Street in Portsmouth. This important project is scheduled for construction beginning in 2021. Because East Main Road carries <20,000 daily motor vehicle trips, it is a strong candidate for a "road diet". Per the graphic below, a road diet would reconfigure the four-lane roadway with two travel lanes, a median left-turn lane, and bicycle lanes. Although not the ideal solution, the short-term improvement can provide a more comfortable environment for bicyclists that have some level of confidence riding next to motor vehicle traffic.



Existing conditions on East Main Road/Rt. 138 at Island Drive, looking north



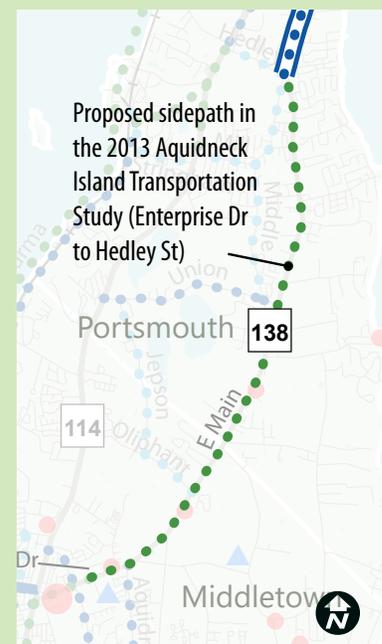
A sidepath design along East Main Road is the preferred bikeway design long term



#### Short-Term Bikeway Improvement On East Main

Until the sidepath is built (STIP #9005) along East Main Road, a low-cost restriping project can improve bicycle and pedestrian safety. Changing the four-lane road to three motor vehicle lanes with bicycle lanes provides many opportunities to improve existing and potentially new crosswalks with refuge islands in the center median area.

The candidate bicycle treatment map below shows the extents of the roughly 5.6-mile planned sidepath and road diet with bicycle lanes





### 3.4 CORRIDOR SELECTION CRITERIA

In order to help the State identify corridors that filled critical system gaps, the BMP used seven criteria to identify key corridors. These criteria were derived from the planning goals established early in the process and presented in Chapter 1.

Of the seven criteria, "Connectivity" and "Safety" were given heavier weighting due to the extreme importance of connecting to existing bicycle facilities and addressing safety issues along the busy roadway corridors.

The prioritization included two qualitative criteria. First, a high-level assessment of each corridor's readiness was conducted. The assessment included estimated capital costs, expected timeframe to complete the project, and whether or not

engineering, permitting, or funding challenges might hinder the project's implementation. Each corridor ranged between "low" readiness to "high" readiness. The second qualitative criterion reflected the relative level of community support at recent public meetings, and from online comments, for each of the corridors.

The tables on the following pages summarize the key corridors based on the criteria, sorted by municipality and presented in descending order and should remain flexible to changing local conditions, availability of funding opportunities, and ongoing community support. For example, key corridors are subject to change based on the finalization of Providence's Great Streets Master Plan, as well as other similar municipal and state plans, including the Transit Master Plan and the Long Range Transportation Plan.

### Candidate Corridor Criteria

#### IMPROVED SAFETY



MAX: 25 POINTS

Number of bus stops, ferry stations, Amtrak stations, and existing/funded bicycle lanes and paths within a 1/2-mile radius of the proposed project.

#### UTILITY



MAX: 15 POINTS

Number of jobs, K-12 students, college students, grocery stores, and commercial land within a 1/2-mile radius of the proposed project.

#### POTENTIAL TO ADDRESS BICYCLING HAZARDS



MAX: 15 POINTS

Number of bicycle-involved crashes and public comments about bicycling hazards within a 1/4-mile radius of the proposed project.

*The more critical consideration for action is addressing bike path bridges that need substantial work/repair or replacement, including the Barrington and Warren Bike Path bridges.*

*Maintenance and "state of good repair" activities for all bike infrastructure should also be prioritized.*

#### HEALTH



MAX: 10 POINTS

Percent of residents reporting poor health within a 1/2-mile radius of the proposed project.

#### ECONOMIC DEVELOPMENT



MAX: 5 POINTS

Number of activity centers within a 1/2-mile radius of the proposed project.

#### DENSITY



MAX: 20 POINTS

Number of Rhode Island residents per acre within a 1/2-mile radius of the proposed project.

#### EQUITY



MAX: 10 POINTS

Equity score within a 1/2-mile radius of the proposed project (see Section 3.1.2 for more information).

## KEY CORRIDORS BY MUNICIPALITY

CORRIDOR ID*	LOCATION	MUNICIPALITY
E1	Franklin St - Metacom Ave - Mt Hope Bridge <ul style="list-style-type: none"> <li>Metacom Ave from Jameson Dr to Ferry Rd</li> <li>Metacom Ave from Child St to Jameson Dr</li> <li>Franklin St from East Bay Bike Path to Metacom Ave</li> <li>Ferry Rd from Metacom Ave to Mt Hope Bridge</li> <li>Mt Hope Bridge from Ferry Rd to Bristol Ferry Rd</li> </ul>	Bristol Warren
N3	Victory Hwy - Railroad Right of Way <ul style="list-style-type: none"> <li>Victory Hwy from Railroad Right of Way (300' north of Marcoux Way) to Inman Rd/ Broncos Hwy</li> <li>Railroad Right of Way from Great Rd to Water St</li> </ul>	Burrillville North Smithfield
P3	Butler Ave - Broad St - Blackstone River Bikeway from Old Bridge Path to Heritage Park Cumberland <ul style="list-style-type: none"> <li>Roosevelt Ave from Leather Ave to Broadway</li> <li>Pleasant St from Alfred Stone Rd to Bowles Street</li> <li>Pleasant St from Tower St to Alfred Stone Rd</li> <li>Roosevelt Ave from East St to Leather Ave</li> <li>Blackstone Blvd from Hope St to Butler Ave</li> <li>Blackstone River Bikeway from Heritage Park Cumberland to Pierce Park Central Falls</li> <li>Alfred Stone Rd from Pleasant St to Blackstone Blvd</li> <li>Broad St/High St/Charles St from Mill St to Roosevelt Ave</li> <li>Butler Ave from Blackstone Blvd to Old Bridge Path</li> </ul>	Central Falls Pawtucket
N9	Smith Ave - W Greenville Rd - Toll Gate Rd <ul style="list-style-type: none"> <li>Toll Gate Rd from Providence St to Centerville Rd</li> <li>E Rd/Ruta de Rhode Island from Plainfield Pike to Scituate Ave</li> <li>W Greenville Rd/Ruta de Rhode Island from Danielson Pike to Plainfield Pike</li> <li>W Greenville Rd/Ruta de Rhode Island from Hartford Pike to Danielson Pike</li> <li>W Greenville Rd/Ruta de Rhode Island from Snake Hill Rd to Hartfield Pike</li> <li>Smith Ave/Ruta de Rhode Island from W Greenville Rd to Terrace Dr</li> <li>Smith Ave/Ruta de Rhode Island from Terrace Dr to Putnam Pike</li> <li>North Rd from Scituate Ave to Main St/Hope Ave</li> <li>Main St/Hope Ave from N Rd to Jackson Flat Rd</li> <li>Jackson Flat Rd from Main St/Hope St to Colvin St</li> <li>Colvin St from Jackson Flat Rd to Hill St</li> <li>Hill St from Colvin St to Arkwright-Harris River Walk</li> <li>Pawtuxet River Path from Hill St to Washington Secondary Trail</li> </ul>	Coventry Scituate West Warwick
N18	W Natick Rd - Mayfield Ave - Pontiac Ave <ul style="list-style-type: none"> <li>Pontiac Ave from Garden City Dr to Park Ave</li> <li>Pontiac Ave from Sockanosset Cross Rd to Garden City Dr</li> <li>Pontiac Ave from Howard Ave to Sockanosset Cross Rd</li> <li>Mayfield Ave/East Ave/Pontiac Ave from Oaklawn Ave to Howard Ave</li> <li>Bald Hill Rd/Cotirell St from W Natick Rd to Oaklawn Ave</li> <li>W Natick Rd from Washington Secondary Trail to Bald Hill Rd</li> </ul>	Cranston

\*REFER TO APPENDIX MAPS



KEY CORRIDORS BY MUNICIPALITY (continued)

CORRIDOR ID*	LOCATION	MUNICIPALITY
N2	Hamlet Ave - Cumberland Hill Rd - Mendon Rd from Front St to Nate Whipple Hwy <ul style="list-style-type: none"> <li>• Hamlet Ave from Front St to Cumberland St</li> <li>• Mendon Rd from Cumberland Hill Rd to Nate Whipple Hwy</li> <li>• Cumberland Hill Rd from Hamlet Ave to Mendon Rd</li> </ul>	Cumberland Woonsocket
P7	Exchange St - Armistice Blvd from Roosevelt Ave to 10 Mile River Greenway <ul style="list-style-type: none"> <li>• Armistice Blvd from Perrin Ave to 10 Mile River Greenway</li> <li>• Armistice Blvd from N Bend St to George Bennett Hwy</li> <li>• Armistice Blvd from George Bennett Hwy to Perrin Ave</li> <li>• Armistice Blvd/Grove St from Spring St to South Bend St</li> <li>• Goff Ave / Exchange St from Roosevelt Ave to Denver St</li> </ul>	East Providence
W2	Ten Rod Rd - Victory Hwy - Philips St <ul style="list-style-type: none"> <li>• Victory Hwy/Ten Rod Rd from Nooseneck Hill Rd to S County Trail</li> <li>• Ten Rod Rd from S County Trail to Roberts Way</li> <li>• Ten Rod Rd/Victory Hwy from Roberts Way to Tower Hill Rd</li> <li>• Phillips St from Tower Hill Rd to Boone</li> <li>• Phillips St from Boone St to Brown St</li> <li>• Ten Rod Road from State Border to Nooseneck Hill Rd</li> <li>• Nooseneck Hill Rd from Victory Hwy to Ten Rod Rd</li> </ul>	Exeter
E14	Jamestown Bridge - Pell Newport Bridge <ul style="list-style-type: none"> <li>• Rt 138/Claiborne Pell Newport Bridge from North Rd to Rt 238</li> <li>• Jamestown Bridge from Boston Neck Rd to North Rd</li> </ul>	Jamestown
N13	Johnston/Smithfield Railroad Right of Way <ul style="list-style-type: none"> <li>• Railroad Right of Way from Warren St to Lyman Ave</li> <li>• Railroad Right of Way from Appian Way to Warren St</li> </ul>	Johnston Smithfield
E10	Marlborough St - Broadway - E Main Rd <ul style="list-style-type: none"> <li>• E Main Rd from W Main Rd to Aquidneck Ave</li> <li>• Marlborough St from Americas Cup Ave to Broadway</li> <li>• Broadway from Marlborough St to Oak</li> <li>• Broadway from Miantonomi Ave to Oak</li> <li>• W Main Rd from E Main Rd to Miantonomi Ave</li> </ul>	Middletown Newport

\*REFER TO APPENDIX MAPS

## KEY CORRIDORS BY MUNICIPALITY (continued)

CORRIDOR ID*	LOCATION	MUNICIPALITY
W1	<p>Boston Neck Rd - Post Rd - Potowomut Rd</p> <ul style="list-style-type: none"> <li>• Post Rd/Tower Hill Rd from Newcomb Rd to Victory Hwy/Phillips St</li> <li>• Boston Neck Rd from Unnamed Rd (180' south of Crowfield) to Barbers Heights Ave</li> <li>• Boston Neck Rd from Beach St to Narragansett Ave</li> <li>• Boston Neck Rd from Old Boston Neck Rd to Beach St</li> <li>• Boston Neck Rd from Bridgetown Rd/S Ferry Rd to Old Boston Neck Rd (south)</li> <li>• Boston Neck Rd from Earle Dr to Unnamed Rd (180' south of Crowfield)</li> <li>• Boston Neck Rd from Beach St to Earle Dr</li> <li>• Boston Neck Rd from Brown St to Updike Ave</li> <li>• W Main St from Tower Hill Rd to Brown St</li> <li>• Brown St from Main St to Phillips St/Boston Neck Rd</li> <li>• Post Rd from Devils Foot Rd/Newcomb Rd to Essex Rd</li> <li>• Post Rd from Essex Rd to Austin Rd</li> <li>• Austin Rd from Potowomut Rd to Post Rd</li> <li>• Potowomut Rd from Old Forge Rd to Austin Rd</li> <li>• Boston Neck Rd from Barbers Heights Ave to Narragansett Town Line</li> <li>• Boston Neck Rd from North Kingstown Town Line to S Ferry Rd</li> </ul>	<p>Narragansett North Kingstown</p>
E8	<p>East Main Rd</p> <ul style="list-style-type: none"> <li>• East Main Rd from Turnpike Ave to Hedly St</li> <li>• East Main Rd from Boyd Ln to Turnpike Ave</li> <li>• East Main Rd from Middletown Town Line to Hedly St</li> <li>• East Main Rd from Aquidneck Ave to Portsmouth line</li> </ul>	<p>Portsmouth</p>
P17	<p>Hartford Ave - Westminster St - Washington St from Atwood Ave to Benefit St</p> <ul style="list-style-type: none"> <li>• Westminster St from Broadway to Manton Ave</li> <li>• Westminster St from Tobey St to Service Rd</li> <li>• Westminster St from Rt 10 Ramp to Troy St</li> <li>• Westminster St from Troy St to Tobey St</li> <li>• Hartford Ave from Atwood Ave to Killingly St</li> <li>• Hartford Ave from Killingly St to Olneyville Sq</li> <li>• Washington St from Empire St to Dean St</li> <li>• Washington St from Dean St to Winter St</li> <li>• Washington St from Exchange St to Waterman St</li> <li>• Washington St from Empire St to Exchange St</li> </ul>	<p>Providence</p>
W8	<p>Succotash Rd - Commodore Perry Hwy - Kingstown Rd</p> <ul style="list-style-type: none"> <li>• Succotash Rd from Commodore Perry Hwy to Succotash Marsh State Management Area</li> <li>• Railroad St from Kingstown Rd to Church St</li> <li>• Post Rd from Commodore Perry Hwy (near Browns Brook) to Commodore Perry Hwy (near White Pond Rd)</li> <li>• Main St from S Rd to ONeill Bike Path (100' east of Robinson St)</li> <li>• Post Rd from Main St to Commodore Perry Hwy</li> <li>• Kingstown Rd from Mooresfield Rd to South County Bike Path</li> <li>• Commodore Perry Hwy from Succotash Rd to Post Rd</li> </ul>	<p>South Kingstown</p>

\*REFER TO APPENDIX MAPS



## TOP RANKED CORRIDORS BY MUNICIPALITY (continued)

CORRIDOR ID*	LOCATION	MUNICIPALITY
N21	Oakland Beach Ave - Warwick Ave - Broad St from W Shore Rd to Montgomery Ave <ul style="list-style-type: none"><li>• Oakland Beach Ave from Warwick Ave to W Shore Rd</li><li>• Rt 117 from Broad St to Montgomery Ave</li><li>• Rt 117 from Airport Rd to Warwick Ave</li></ul>	Warwick
W12	Post Rd - Franklin St - Broad St <ul style="list-style-type: none"><li>• Post Rd from Airport Rd/Veterans Way to Dunns Corner Rd/Langworthy Rd</li><li>• Broad St from High St to Grove Ave</li><li>• Granite St from Grove Ave to Tower St</li><li>• Granite St from Tower St to East Ave</li><li>• Franklin St from East Ave to Wells St</li><li>• Post Rd from Langworthy Rd to Shore Rd</li><li>• Franklin St from Wells St to Airport Rd/Veterans Way</li></ul>	Westerly

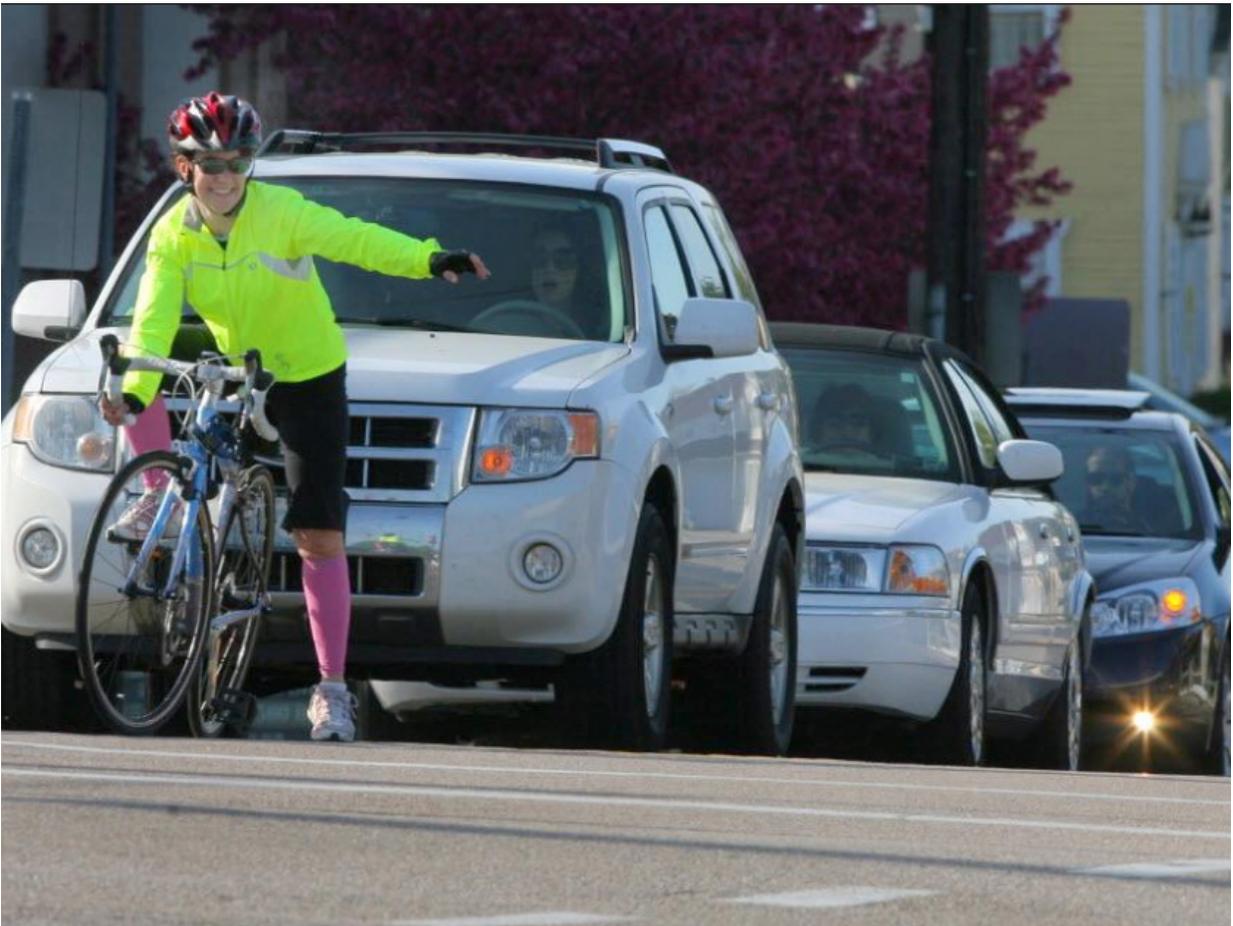
\*REFER TO APPENDIX MAPS



Source: Bike Newport



Source: Bike Newport



Source: Bike Newport



## CHAPTER 4

# POLICY RECOMMENDATIONS







## POLICIES AND PROGRAMS

An important component of the Rhode Island BMP is the advancement of policies and programs that support safety, education, and project development. The recommended policies and programs in this Chapter would need to be considered by state agencies (e.g. RIDOT, RIPTA, and RITBA), municipalities, and advocacy groups (e.g. GrowSmart RI) in order to advance the goal of expanding the bicycling infrastructure and the bike culture in Rhode Island.

Chapter 4 describes current state and municipal laws and policies related to bicycling and introduces new policies and programs designed to encourage and enable more bicycling in Rhode Island.

## 4.1 STRENGTHEN/ENFORCE COMPLETE STREETS

Rhode Island's Complete Streets law has been in place since June 2012. It is more accurately described as a resolution, as it encourages, but does not require a Complete Streets approach. The City of Central Falls has recently developed their own ordinance that requires accommodations for pedestrians, bicyclists, and transit users in all city projects. Although roughly a dozen other cities and towns have non-binding resolutions that support the concept of Complete Streets, Central Falls' ordinance is the only one of its kind in the state. The BMP recommends that the Rhode Island Division of Statewide Planning develop guidance for communities and encourage adoption of appropriate Complete Streets ordinances in municipalities. Along with other advocacy organizations, they could also help to promote additional funding resources that can become an enticement

*Massachusetts provides a good model for Complete Streets policies and funding (along with Central Falls' Green and Complete Street Ordinance). MassDOT's Complete Streets Program is a three-tier system that encourages municipalities to adopt a Complete Streets ordinance (Tier 1) to make them eligible for a maximum \$50,000 planning grant (Tier 2). If the town or city's Complete Streets Prioritization Plan is approved by MassDOT, they become eligible for up to \$400,000 in Tier 3 funding per year for a maximum five-year period. To date, approximately 44% of communities in Massachusetts have approved Complete Streets ordinances and have sought and/or received State funding for planning and implementation.*



MassDOT-funded Complete Street project in Belmont, MA

for towns and cities to enact Complete Streets ordinances locally.

RIGL § 24-16-2 (Complete Street Design) and RIDOT directives require that the scoping process for ALL RIDOT bridge and roadway improvement projects consider including a task for *current and projected traffic volumes including non-motorized traffic*.

The BMP complements other state multimodal guides, such as the 2017 Rhode Island Bus Stop Design Guide (<https://www.ripta.com/rhode-island-bus-stop-design-guide-2017>). The Bus Stop Design Guide is a key resource that establishes clear guidance on how to consider and integrate transit into the roadway network throughout the State, and provides design guidance for bus stops.

## 4.2 STATEWIDE MANUALS AND MEMORANDUMS

As part of the BMP effort, current design guidance typically used by RIDOT and local public works departments for road construction projects were reviewed. The primary documents in use are the RIDOT Traffic Design Manual, published in 2004 and the RIDOT Highway Design Manual, published in 2008. There are many other bicycle (and pedestrian) related policies and documents developed or adopted by the state, such as the 2015 Complete Streets Action Plan by RIDOT ([http://www.dot.ri.gov/documents/community/safety/complete\\_streets.pdf](http://www.dot.ri.gov/documents/community/safety/complete_streets.pdf)), the 2012 Safe Access to Public Roads, and formal support for the Designing Walkable Urban Thoroughfares: A Context Sensitive Approach. Significant revisions to these are not included in the BMP, but they are summarized in the appendix. Recommended changes to these and other State manuals and memorandums are in the following sections.

### 4.2.1 RIDOT Traffic Design Manual

The RIDOT Traffic Design Manual is based on the 2003 Manual on Uniform Traffic Control Devices (MUTCD) and is more than a decade old. Updates are currently being made to RIDOT's Traffic Design Manual. The RIDOT standard item codes will be updated to include standard items for "Bike Lane" (helmeted bicyclist and arrow) pavement marking symbol sets, which will in effect standardize RIDOT's preference for bike markings. A new edition should be written to integrate bicycle-specific updates, including special attention to:

- » Traffic signal detectors should always be oriented to detect bicyclists on all roads except limited-access highways for either above-ground or in-ground installation
- » Language should be added that emphasizes the safety needs of vulnerable roadway users (VRUs) such as pedestrians, bicyclists, and those in work zones
- » Inclusion of Bicycle Level of Traffic Stress (BLTS) or Bicycle Level of Service (BLOS) in project evaluations, with BLTS considered current best practice
- » Incorporation of blanket statewide approval of current FHWA Interim Approvals for bicycle-related signals, markings, and signs

### 4.2.2 RIDOT Highway Design Manual

Several edits should be made to the RIDOT Highway Design Manual to encourage roadway design that is more amenable to bicycle transportation. Gaps in the current manual related to bicycling include:

- » In the 'Definitions of Terms', entries should be added for shared-use path, separated bicycle lane, and protected intersection to reflect guidance in the current edition of AASHTO's Guide for the Development of Bicycle Facilities
- » Regarding lane width, language should be added to allow narrower lanes in certain conditions (e.g., on low-speed and rural roads, within residential areas, etc.)
- » Regarding rumble strips, state policy should be updated to discourage their use on roads identified by RIDOT as suitable or most suitable for bicycling and to always leave at least 5' between the curb and the rumble strip or 4' between the pavement edge (where there is no curb) and the rumble strip
- » Engineers should be given more latitude regarding bridge lane width in order to accommodate bicyclists

### 4.2.3 RIDOT Design Policy Memorandum

In order to facilitate more bicycle-friendly communities, an update of RIDOT's 1997 Design Policy Memo (DPM) 10-37, Accommodations for Bicyclists and Pedestrians would be desirable. The current language allows shoulder widths on busy roads and bridges that do not provide a comfortable facility for most current and potential bicyclists. DPM 10-37



should be updated to reflect contemporary best practices and revised guidelines, such as AASHTO or the NACTO Urban Bikeway Design Guide.

RIDOT could review and consider revisions/updates to DPM 10-37, and amending existing RIGL 31-18-21 may be required. RIDOT may consider reissuing a TO ALL CONSULTANTS (TAC) directive, specific to DPM 10-37.

#### 4.2.4 Rhode Island Department of Motor Vehicles (DMV) Driver's Manual

The Rhode Island DMV Driver's Manual provides an important opportunity to teach new drivers how to operate safely alongside bicyclists and other vulnerable roadway users. In general, the pertinent sections in the manual lack important pieces of information, show incorrect information in places, and should have more graphics. The manual should be updated with clearer and more up-to-date safety education regarding the sharing of roadways with bicyclists. There are other gaps in providing education related to bicycling issues, including:

- » The descriptions of bicycle infrastructure and pavement markings should be completely rewritten for accuracy and clarity, with diagrams added
- » The section on bicyclists in roundabouts should be rewritten, with diagrams added
- » The section on proper bicyclist lane positioning should be rewritten, with diagrams added
- » The section on dooring should be rewritten, with a description and a diagram added to demonstrate the "Dutch Reach" to improve safety

#### 4.2.5 Future Bicycle Facilities Manual

The State of Rhode Island aims to increase bicycling by residents, workers, and visitors of all ages and abilities. To that end, RIDOT should develop a Bicycle Facilities Manual for use by State and local jurisdictions to encourage modern street, intersection, and path design, as well as bicycle parking. A state-specific resource prepared with Rhode Island's resources, heritage, and needs in mind will help bring the State's transportation system closer to the goals laid out in the BMP.

#### 4.2.6 Rhode Island Bus Stop Design Guide

The Rhode Island Bus Stop Design Guide (<https://www.ripta.com/rhode-island-bus-stop-design-guide-2017>) was completed in 2017 and is a key resource that establishes guidance on how to consider and integrate transit into the roadway network throughout the State, and provides design guidance for bus stops. This BMP is essentially the bicycle infrastructure equivalent of the Bus Stop Design Guide.

*Several "Interim Approvals" for bicycle-related signals, signs, and markings have been issued by the Federal Highway Administration (FHWA) are not yet in the Manual of Uniform Traffic Control Devices (MUTCD). Jurisdictions must request permission to use devices or applications covered by an Interim Approval. However, agencies may apply to FHWA for permission to use the Interim Approvals across their jurisdictions. It is recommended that RIDOT seek that permission, and once received, add language to the revised Traffic Design Manual indicating blanket statewide approval for all current FHWA Interim Approvals for bicycle-related signals, markings, and signs.*

#### THE SIX BICYCLE PROGRAM E'S

##### Evaluation



Monitoring efforts to increase active transportation and planning for the future

##### Education



Equipping people with the knowledge and confidence to bicycle in Rhode Island

##### Enforcement



Building safe and responsible behaviors on the road and building respect among all of Rhode Island's Users

##### Encouragement



Fostering a culture that supports and encourages active transportation to school, work, and recreational destinations

##### Engineering



Creating safe, connected, and comfortable places for bicycling

##### Equity



Bringing bicycle facilities and programs to a diverse mix of communities

### 4.3 RECOMMENDED LOCAL AND STATEWIDE POLICIES AND PROGRAMS

To encourage more bicycling in Rhode Island, the State needs to critically assess its bicycle-related laws, policies, design guidance, and programs. Besides changes to the RIDOT design manuals and the DMV Driver’s Manual, there are additional recommendations for policy changes and new programs to be implemented by State agencies.

**The tables below provide these recommendations, followed by an evaluation matrix to help the State prioritize the policy and program recommendations.**

#### EDUCATION

POLICY OR PROGRAM	NEED FOR REVISION	RECOMMENDATION	KEY INFLUENCING ENTITIES
RI Driver Training	There is currently no communication between safety professionals and RI’s driver training schools	Require driving teachers to be familiar with all laws regarding how to operate around bicyclists and bicycle facilities	RIDOT
Public Safety Campaign	Current public safety program focuses on seat belt use, distracted driving, drunk driving, speeding, and motorcycle safety	Expand to include Vulnerable Road User safety campaign	RIDOT
Newport Waves/ RI Waves	NHTSA, RIDOH, and RIDOT funded the Newport program in 2015 and the statewide RI Waves program beginning in 2018; there is no sustained funding	Funding should increase and local partners should be identified to bring this program to other municipalities	RIDOH and Local Partnerships

#### EDUCATION & ENCOURAGEMENT

POLICY OR PROGRAM	NEED FOR REVISION	RECOMMENDATION	KEY INFLUENCING ENTITIES
Section 405 Grant Program	Expansion of bicycle-related parts of this program will lead to a better-educated populace and, in turn, fewer bicycle-related injuries	Allocate funding for bicycle education, particularly for youth programs to be delivered in schools and recreation centers	RIDOT
Commuter Resource RI Program	More information needed on bicycle-to-bus or bicycle-to-train commutes	Allocate more funds to the program that are specifically dedicated to install more bicycle parking and secure bicycle parking at Park-and-Ride locations and train stations; add video to website demonstrating how to load a bicycle onto the rack at the front of a bus; add information regarding MBTA and Amtrak bicycle policies	RIPTA
Health Equity Zone (HEZ) Program	HEZ are not funded on a sustained basis	Sustain the program	RIDOH
Rhode Island Tourism Website	Bicycle-related information is not immediately obvious; much of the information is outdated	Redesign this section and write new content to highlight Rhode Island’s bicycle tourism potential	RI Tourism



ENCOURAGEMENT

POLICY OR PROGRAM	NEED FOR REVISION	RECOMMENDATION	KEY INFLUENCING ENTITIES
Bike Valet	Bicycle parking at events is unpredictable	Seek funding that would allow for the expansion of bicycle valet parking at events	Advocacy Organizations (RIBike, Bike Newport)
US Bicycle Route System	Rhode Island is not currently participating	Apply for the current East Coast Greenway route to be RI's section of US Bike Route 1, and coordinate with ConnDOT regarding alignment of a proposed USBR 1A along the coast from New Haven to Providence	RIDOT
Bicycle Network Branding	Lack of consistent signage and branding along many of the State's bikeways and shared-use paths	<p>Create a cohesive signage and branding strategy for the State's key bicycle routes</p> <p>Collaborate with the Woonasquatucket River Watershed Council to adapt the branding package they have developed to other parts of the bike network</p>	RIDOT, RI Tourism
Messaging from the Governor's Office	The current Governor is a strong supporter of bicycle programs and infrastructure and could help provide added visibility to bicycling	<p>Develop an annual announcement from the Office of the Governor during May (Bike Month) documenting progress in making RI a more bicycle-friendly state</p> <p>RIDEM and RIDOT articulate their strong support for bicycling programs and infrastructure at these annual announcements giving updates on their progress</p>	Office of the Governor
Bike Parking (Valet and/or Assisted Parking)	More bicycle parking is needed around the state	<p>An expansion of bicycle wayfinding, bicycle parking assistance, and funding to encourage more people to ride bicycles to events</p> <p>New funding could help local bike rack fabricators expand their operation</p> <p>A statewide Bicycle Facility Manual is needed to provide guidance on bike parking standards. For example, all bike racks should have two points of contact</p>	Statewide Planning
Statewide Bike Map	Current road rating system ("Most Suitable" or "Suitable") is based on criteria not clearly defined	Use more neutral designations that will be better understood by the public, such as "bicycle lane," "wide shoulder," etc.	RIDOT
Bicycle Tourism	The state currently has no program	Create a marketing campaign encouraging bicyclists to visit from out of state, perhaps in tandem with a significant bicycling event	RI Tourism
Bicycle Delivery	No incentives at present	Create incentives for delivery services operated by bicycle in urban cores, as UPS is currently piloting in Pittsburgh, PA	Local Jurisdictions

## ENCOURAGEMENT (continued)

POLICY OR PROGRAM	NEED FOR REVISION	RECOMMENDATION	KEY INFLUENCING ENTITIES
Bicycle Commuting by State Employees	<p>Per 2013 State Employee Commuting Plan, 87% of State workers drive alone, and 5% bicycle, walk, or work at home</p> <p>The current policy of providing free parking to State workers encourages greater car use</p>	<p>Institute parking cash-out program, safe &amp; secure storage for bicycles, shower and locker facilities, and on-site repair stations</p> <p>Create an employer tax benefit for people who bike to work</p>	Statewide Planning
RIPTA Folding Bicycle Policy	Added clarity	<p>Make it clear to both customers and drivers that folding bicycles, while folded, are to be treated as customer baggage</p> <p>Amtrak and the MBTA both have clear language on this matter that RIPTA may wish to simply adopt and post to <a href="http://RIPTA.com">RIPTA.com</a></p>	RIPTA
Commuter Rail Bicycle Policy	Full-size bikes not permitted on MBTA trains south of Providence during peak hours, even as ridership is very low	Peak-time bicycle restrictions on MBTA trains should be eliminated on the Providence MBTA line until such time that ridership levels are high enough that storage of bicycles on the coaches becomes a safety hazard	MBTA
Park and Pedal RI	Lack of programs encouraging/enabling bicycle commuting	<p>Create program modeled after the Metro Boston "Park &amp; Pedal" program where car commuters are encouraged to drive (with their bicycles in their cars) to specific free parking lots outside of downtown Providence, from where they can bike to their downtown destinations on low-stress routes</p> <p>Reference <a href="https://www.parkandpedal.org/">https://www.parkandpedal.org/</a></p>	RIDOT, RIBike, local jurisdictions

## ENGINEERING

POLICY OR PROGRAM	NEED FOR REVISION	RECOMMENDATION	KEY INFLUENCING ENTITIES
Maintenance of Bicycle Facilities	The key actions for this BMP involves addressing bike path maintenance and condition, prioritizing facilities that are deficient	Continue to advance RIDOT's Asset Management Inventory of Bike Path Conditions	RIDOT
Project Development and Scoping Process	Bicycle facilities are not considered as part of the standard RIDOT project development process	<p>Adopt a policy requiring that improvements for bicyclists be considered as part of the project development process by default with justification required when they are not considered</p> <p>RIDOT's scoping process should be used to identify opportunities to install bicycle related improvements on candidate roadways identified in this plan and through RIDOT's bike planning group</p> <p>There may be opportunities to modify the scoping document so consideration is always taken, no matter the project</p>	RIDOT



ENGINEERING (continued)

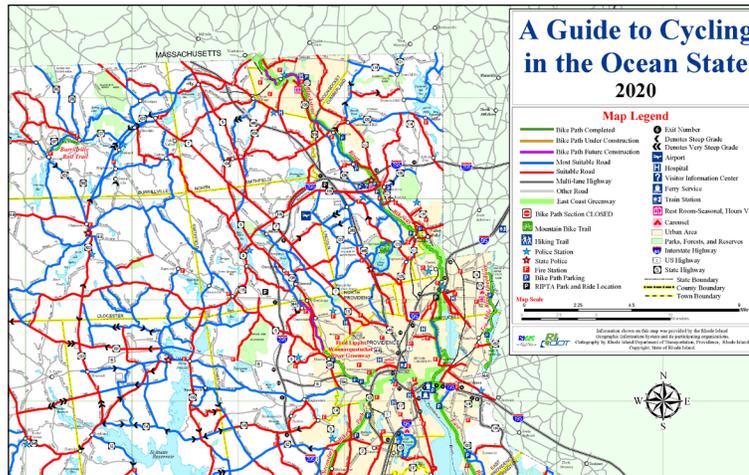
POLICY OR PROGRAM	NEED FOR REVISION	RECOMMENDATION	KEY INFLUENCING ENTITIES
Assessment of Road Bicycle-Friendliness	For state-funded roadway projects, motor vehicle Level of Service (LOS) is given too high a priority relative to bicycling conditions and is generally considered an outdated measure	Adopt the Bicycle Level of Traffic Stress (BLTS) analysis methodology and use for State-funded road projects alongside motor vehicle level of service (LOS) analysis	RIDOT
Pop-up Project Materials Lending Libraries	Local agencies don't necessarily have the proper materials on hand to set up temporary pop-up projects; such projects effectively communicate the benefits of proposed street design changes	<p>Create "lending libraries" of pop-up materials (flex posts, traffic cones, signs, etc.) to be used by public agencies to demonstrate bike lanes, pedestrian refuge islands, etc.</p> <p>Materials should be stored at each of RIDOT's seven maintenance facilities to make them more readily available to municipal agencies around the state</p>	RIDOT
State Complete Streets Law	Current law needs to be strengthened to promote better conditions for Vulnerable Road Users	<p>RIDOT should prepare a Design Policy Memo (DPM) outlining best practice design criteria for bicycle accommodation</p> <p>MassDOT's Engineering Directive E-14-001 provides such direction for projects in Massachusetts, and is a good model for a RIDOT DPM.</p>	RIDOT

EVALUATION

POLICY OR PROGRAM	NEED FOR REVISION	RECOMMENDATION	KEY INFLUENCING ENTITIES
Bicycle Counts	Bicycle counts in the state are irregular and few in number	Continue the statewide 21-count program initiated in September with both peak hour and 24-hour counts, and incorporate future count locations in additional areas such as low-income neighborhoods	RIDOT, local agencies
Bicycle Crashes	Data related to crashes involving bicyclists do not include the likely cause of the crash	Develop a new input on crash reports that provides the opportunity for local or state police to record the cause (e.g., hit from behind, right/left hook, dooring, etc.)	Statewide Planning, State and local police



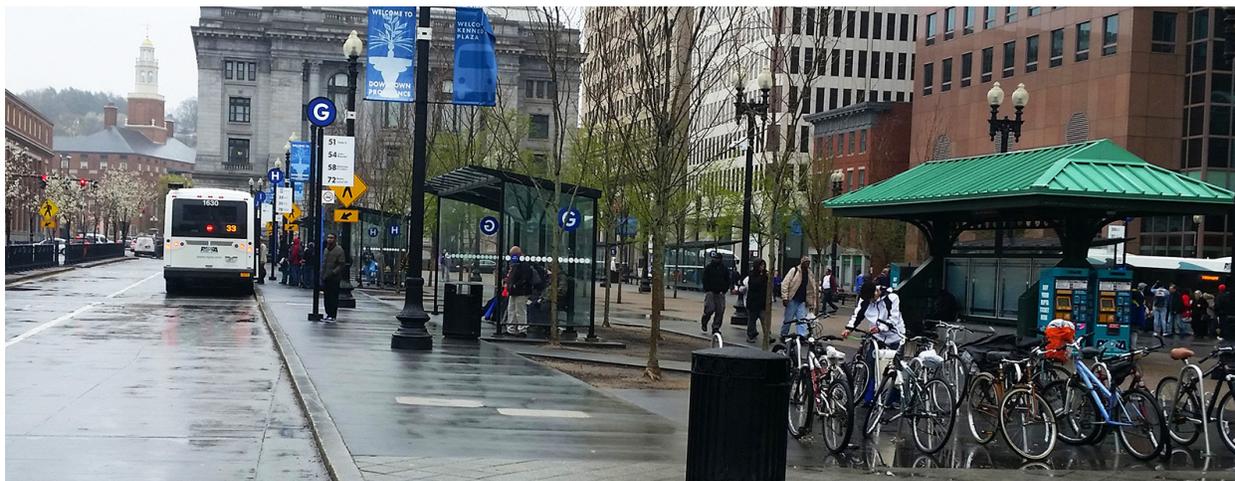
A web-based reference tool will help create consistent maintenance of bikeway facilities throughout Rhode Island



Changes to RIDOT's statewide bicycle map designations will clarify bicycling conditions along key roadways

## FUNDING

POLICY OR PROGRAM	NEED FOR REVISION	RECOMMENDATION	KEY INFLUENCING ENTITIES
State Transportation Improvement Program (STIP)	Many planning-level projects are overlooked because they are not "STIP ready"	State provides technical assistance on an annual basis to help communities develop recommendations in advance of STIP schedule	Statewide Planning, RIDOT
State Transportation Improvement Program (STIP)	Many high-quality bicycle projects for which funding is sought via the STIP process are turned down or delayed	Double the amount of funding allocated for bicycle projects derived from the Transportation Alternatives Program (TAP)	Statewide Planning, RIDOT
State Transportation Improvement Program (STIP)	Funding streams for bicycle projects—TAP and bond funds—aren't sufficient to build and maintain a proper bicycle route network  The STIP does not have a category relating to resurfacing or other roadway projects that offer an opportunity to create bicycle facilities at little or no cost	Create new policy that establishes that a minimum percentage of the state transportation budget is to be allocated for bicycle projects, augmenting other sources	RIDOT, Office of the Governor, Statewide Planning
STIP Cost Estimates	Cost estimates for STIP submissions are sometimes unreliable	Strongly encourage or require that a feasibility study and detailed cost estimate be completed as a prerequisite to submitting a STIP application for construction  Develop a standardized cost estimating template similar to MassDOT's template and provide training/assistance to municipalities  Provide template/model applications to improve consistency and ease of submission	Statewide Planning, RIDOT



Additional funding to the Commuter Resources RI Program will help develop more bicycle/transit multimodal opportunities



## LAWS RELATED TO BICYCLING

POLICY OR PROGRAM	NEED FOR REVISION	RECOMMENDATION	KEY INFLUENCING ENTITIES
RI's Complete Streets Law (statewide and municipal)	Current law should be strengthened with adjustments to the language in the statewide policy; more municipalities should consider drafting local policies	<p>§ 31-18-21 should be revised, details can be found in the appendix; Central Falls policy can be used as a template for other cities and towns</p> <p>The BMP recommends that Statewide Planning develop guidance for communities and encourage adoption of appropriate Complete Streets ordinances in municipalities</p> <p>Provide technical assistance to municipalities to develop and enact Complete Street action plans</p>	RIDOT, Statewide Planning, Local Agencies
Vulnerable Road User (VRU) law	<p>RI does not have a VRU law, which would provide additional protections for bicyclists, walkers, and others</p> <p>A Vulnerable Road User Bill (S596) already exists and is currently being held in RI Senate judicial committee</p> <p>Nine states have VRU laws, including three others in New England</p>	<p>Adopt a VRU law such as Bill S596 currently under review. Model language can be found at: <a href="http://bikeleague.org/sites/default/files/Model%20VRU%20Law.pdf">http://bikeleague.org/sites/default/files/Model%20VRU%20Law.pdf</a></p>	RIDOT
Safe Passing Law	<p>R.I. Gen. Laws § 31-15-18 is ambiguous and unenforceable unless the bicyclist has been hit, due to the definition of the term "safe passing" as "a distance sufficient to prevent contact with a bicyclist if he or she were to fall into the driver's lane of traffic"</p> <p>The law does not address speeds under 15 mph, features when in a bike lane, and when a bike is turning left</p>	<p>Change the law to emulate the safe passing components of the Bicycle Friendly Delaware Act, widely considered a model for the US; details can be seen here: <a href="http://legis.delaware.gov/BillDetail?legislationId=25819">http://legis.delaware.gov/BillDetail?legislationId=25819</a></p>	RIDOT
Regulation of E-bikes and E-assist Bikes	Inconsistent and often confusing bicycle-related definitions in RI state code (§ 31-1-3) makes regulation difficult to discern	<p>Adopt simpler, more clear cut language by starting with the "best practice" regulations supported by People for Bikes and the Bicycle Product Suppliers Association and modifying as needed to fit Rhode Island</p> <p>Consider regulation by speed (vs technology)</p>	RIDOT
Reduced Local Speeds	<p>While State law permits local authorities to reduce speed limits on streets in business or residential districts and at local intersections (§ 31-14-5), there is little evidence that the cities and towns are taking advantage</p> <p>For state roads, requires approval from State Traffic Commission</p>	<p>Review language of law and make edits if needed; make sure that all town planning directors understand that they have this tool</p> <p>Consider reducing speed limits on key roads in urban areas to 25 MPH</p>	Statewide Planning
E-Bikes Law	Current law is outdated, not reflecting recent advances in technology	Relevant laws and definitions of terms should be updated; see appendix for detailed recommendations	RIDOT

## SAFETY

POLICY OR PROGRAM	NEED FOR REVISION	RECOMMENDATION	KEY INFLUENCING ENTITIES
Safe Routes to School Program	Fewer than half of the state's municipalities have implemented Safe Routes to School (SRTS) projects	Obligate remaining funds while pursuing additional funds for the next round of awards	RIDOT
Vulnerable Road User (VRU) Safety Tracking	Currently there is no convenient way for the public to track/monitor VRU safety	Vulnerable Road Users are now included as a section within RIDOT's SHSP	RIDOT
Newport Waves and Rhode Island Waves	This public awareness campaign created by Bike Newport has shown success and should be replicated statewide	NHTSA, RIDOH, and RIDOT funding the Newport Program in 2015 and the statewide program in 2018; funding should increase and local partners should be identified to bring this program to other municipalities	Partnership: RIDOH, local partners
Toward Zero Deaths (TZD)	While the state adheres to Toward Zero Deaths principles, no municipalities have adopted similar policies	Encourage municipalities to adopt TZD action plans, including rural traffic calming recommendations (FHWA-HRT-08-067)	Statewide Planning

An evaluation of the policy and program recommendations made above is presented in Section 4.4 on the following pages. Like the evaluation of the candidate bicycle treatments, scoring is based on the BMP goals. Each individual score is based on the recommendation's potential impact on each goal (no impact, little impact, modest impact, moderate impact, or high impact).

A key component of the policy and program recommendations is EDUCATION! RI State Law § 31-19-6 outlines the rules and regulations for safe operation of a bicycle. This policy needs to be incorporated into licensing training so that both drivers and cyclists are equally aware of the rules of the road.



Source: Bike Newport



## 4.4 EVALUATION OF LOCAL AND STATEWIDE POLICIES AND PROGRAMS

How well a policy adjustment aligns with the goal



		CONNECTIVITY	MULTIMODAL	UTILITY	SAFETY	HEALTH	DEVELOPMENT	DENSITY	EQUITY	FEASIBILITY
STATE MANUALS	POLICY/PROGRAM									
	RI Driver's Manual	NO	LITTLE	LITTLE	MODEST	MODEST	NO	MODERATE	LITTLE	HIGH
	RIDOT Traffic Design Manual	LITTLE	LITTLE	MODERATE	MODEST	MODEST	NO	MODERATE	LITTLE	HIGH
	RIDOT Highway Design Manual	HIGH	LITTLE	MODERATE	MODEST	MODEST	NO	MODERATE	LITTLE	HIGH
EDUCATION	RI Driver Training	NO	LITTLE	LITTLE	MODEST	MODEST	NO	MODERATE	LITTLE	HIGH
	Public Safety Campaign	NO	LITTLE	MODERATE	MODEST	MODEST	NO	MODERATE	LITTLE	MODEST
EDUCATION & ENCOURAGEMENT	Section 405 Grant Program	NO	LITTLE	MODERATE	MODEST	MODEST	NO	MODERATE	LITTLE	MODEST
	Commuter Resource RI Program	MODERATE	HIGH	HIGH	LITTLE	MODEST	LITTLE	MODERATE	MODERATE	MODEST
	Health Equity Zone (HEZ) Program	NO	LITTLE	MODERATE	MODEST	MODEST	NO	MODERATE	HIGH	MODEST
	RIDOT's Bike RI Webpages	NO	LITTLE	LITTLE	MODEST	MODEST	NO	LITTLE	LITTLE	HIGH
	RI Tourism Website	NO	NO	NO	NO	NO	MODERATE	LITTLE	NO	HIGH
ENCOURAGEMENT	Bike Valet	NO	LITTLE	MODEST	NO	MODEST	MODERATE	MODERATE	NO	HIGH
	US Bicycle Route System	LITTLE	NO	NO	NO	LITTLE	MODERATE	LITTLE	NO	HIGH
	Bicycle Network Branding	LITTLE	NO	LITTLE	NO	LITTLE	NO	MODERATE	LITTLE	MODEST
	Messaging from the Governor's Office	NO	LITTLE	MODERATE	LITTLE	LITTLE	NO	MODERATE	LITTLE	HIGH
	Bicycle Parking	NO	MODERATE	MODEST	NO	MODEST	MODEST	MODERATE	LITTLE	MODEST
	RI Bicycle Routes Navigation App	LITTLE	LITTLE	LITTLE	NO	LITTLE	LITTLE	MODERATE	NO	MODEST

How well a policy adjustment aligns with the goal



		CONNECTIVITY	MULTIMODAL	UTILITY	SAFETY	HEALTH	DEVELOPMENT	DENSITY	EQUITY	FEASIBILITY
ENCOURAGEMENT	POLICY/PROGRAM									
	State Bike Map	MODERATE	LITTLE	LITTLE	MODERATE	MODERATE	LITTLE	MODERATE	NO	HIGH
	Bicycle Tourism	LITTLE	NO	NO	LITTLE	NO	MODERATE	LITTLE	NO	MODERATE
	Bicycle Delivery	NO	NO	MODERATE	NO	LITTLE	MODERATE	MODERATE	NO	LITTLE
ENGINEERING	Bicycle Commuting by State Employees	NO	LITTLE	MODERATE	NO	MODERATE	NO	LITTLE	NO	LITTLE
	Maintenance of Bicycle Facilities	NO	LITTLE	MODERATE	MODERATE	MODERATE	LITTLE	MODERATE	LITTLE	HIGH
EVALUATION	Project Development Process	HIGH	LITTLE	MODERATE	MODERATE	MODERATE	NO	MODERATE	LITTLE	HIGH
	Assessment of Road Bike-Friendliness	NO	NO	MODERATE	LITTLE	LITTLE	NO	MODERATE	NO	HIGH
	Bicycle Counts	LITTLE	LITTLE	LITTLE	NO	LITTLE	NO	MODERATE	MODERATE	LITTLE
FUNDING	Bicycle Crash Data Collection	NO	NO	MODERATE	NO	MODERATE	MODERATE	MODERATE	MODERATE	HIGH
	Transportation Improvement Program	HIGH	LITTLE	MODERATE	HIGH	LITTLE	MODERATE	MODERATE	MODERATE	LITTLE
SAFETY	STIP Cost Estimates	MODERATE	NO	MODERATE	NO	LITTLE	NO	MODERATE	NO	HIGH
	Safe Routes to School Program	MODERATE	LITTLE	MODERATE	MODERATE	MODERATE	NO	MODERATE	MODERATE	MODERATE
	VRU Safety Tracking	NO	NO	MODERATE	MODERATE	MODERATE	NO	MODERATE	LITTLE	HIGH
	Newport Waves and Rhode Island Waves	NO	LITTLE	MODERATE	MODERATE	MODERATE	LITTLE	MODERATE	MODERATE	HIGH
	Vision Zero	MODERATE	MODERATE	MODERATE	HIGH	MODERATE	LITTLE	MODERATE	MODERATE	LITTLE



How well a policy adjustment aligns with the goal



POLICY/PROGRAM	CONNECTIVITY	MULTIMODAL	UTILITY	SAFETY	HEALTH	DEVELOPMENT	DENSITY	EQUITY	FEASIBILITY
	<b>LAWS RELATED TO BICYCLING</b>								
Municipal Complete Streets Programs	MODERATE	HIGH	MODERATE	MODEST	MODEST	MODERATE	MODERATE	MODERATE	MODERATE
RI's Complete Streets Law	MODEST	MODEST	MODEST	MODEST	MODERATE	MODERATE	MODERATE	MODEST	HIGH
Vulnerable Road User (VRU) Law	NO	MODEST	MODEST	MODEST	MODEST	NO	MODERATE	MODERATE	MODERATE
Safe Passing Law	NO	NO	MODEST	MODEST	MODEST	NO	MODERATE	MODEST	MODERATE
Regulation of E-Bikes/E-Assist Bikes	NO	NO	MODEST	NO	MODEST	MODEST	MODERATE	MODEST	MODERATE
Reduced Local Speeds	NO	MODEST	MODEST	HIGH	MODEST	NO	MODERATE	MODEST	HIGH

After evaluation of the policies and programs (based on criteria consistent with the BMP goals), the top recommendations that could have the greatest impact on bicycling include revising the following:

- » Rhode Island Driver's Manual
- » RIDOT Traffic Design Manual
- » RIDOT Highway Design Manual
- » Project Development and Scoping Process
- » State Transportation Improvement Program
- » Municipal Complete Streets Program
- » Rhode Island Complete Streets Law

The State of Rhode Island should prioritize revising these policy documents in the short term, and over time consider all policy and program recommendations.

## 4.5 E-Bikes and Adaptive Bikes

Electric bikes (or e-bikes) have recently been introduced in Providence with the JUMP Bikes program launch. The launch is the result of a public-private partnership between Social Bicycles, the City of Providence, and the Rhode Island Public Transit Authority (RIPTA).

Electric bicycles are designed to be as safe as traditional bicycles, to not compromise consumer safety and benefit people who may be discouraged from riding a bicycle due to limited physical fitness, age, disability or convenience.

People for Bikes has developed model legislation for electric bicycles, legislation that is needed in the State. This section provides an overview of the People for Bikes legislation.

<https://wsd-pfb-sparkinfluence.s3.amazonaws.com/uploads/2018/06/Model-eBike-Legislation-06282018.pdf>

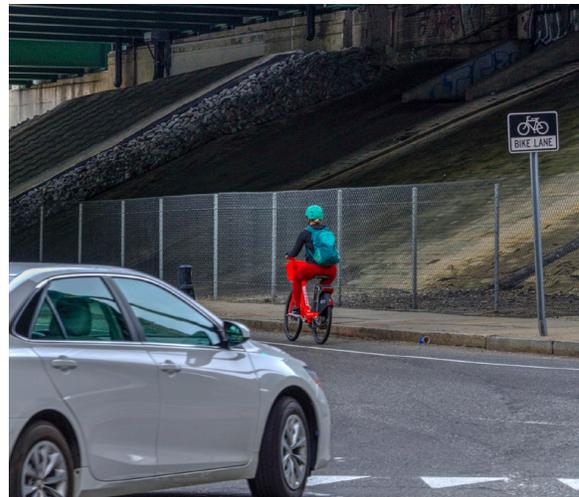
In general, the model legislation is intended to explicitly define what an electric bicycle is and explain the general rules pertaining to these vehicles. For the most part, laws as they apply to non-electric bicycles apply, but specific language is needed to make it clear that electric bicycles are not in the same category as motor vehicles or mopeds. The model legislation recommends clear labeling and restrictions against tampering with an electric bicycle to change its speed capability or method of engagement.

Class 3 electric bicycles merit special attention. These are bicycles that operate at speeds up to 28 mph with the assistive electric motor. The model legislation recommends that their use be restricted on shared use paths and that age restrictions and helmet requirements be considered. It also allows that speedometers be required with these faster vehicles.

Specific considerations may be required for electric mountain bicycles, though these pertain more to the rules of path or trail use rather than the bicycle.

### KEY ELEMENTS OF THE PEOPLE FOR BIKES MODEL E-BIKE LEGISLATION

- » **Definition of Electric Bicycle** – Class 1 (top speed 20 mph, assist only), 2 (20 mph, exclusive propulsion), 3 (28 mph, assist only) bicycles
- » **General Rules**
  - » *Rights/duties* – same as bicycles
  - » *Insurance/licensing/registration* – same as bicycles
  - » *Labeling requirements* – wattage and speed
  - » *Tampering restrictions* – no changes to speed capability or engagement
  - » Consumer Product Safety Commission Compliance
  - » *Path use* – the model legislation recommends that Class 3 electric bicycles not be allowed to use paths unless the governing jurisdiction explicitly grants use
- » **Other Rules Pertaining to Class 3 Electric Bicycles**
  - » *Age restrictions* – recommends 16+ for use of Class 3 e-bicycles unless as a passenger on a bicycle designed to carry passengers
  - » *Helmets* – recommends requiring helmets for Class 3 e-bicycles
  - » *Speedometer requirement*





### Various State and Federal Laws and Regulations

Connecticut is the only state in New England to have an E-Bike law, and People for Bikes considers it model legislation. It follows the model policy, except that helmets are required for all classes of e-bikes.

Some states prohibit the use of e-bikes on sidewalks (MD), Class 2 e-bikes from paths (CA, MI), and Class 3 e-bikes from protected bike lanes (CA). California allows Class 3 bikes to use designated bike lanes and bike routes.

For mountain biking, some state management agencies consider e-bicycles to be motorized bicycles, regulated similarly to dirt bikes. On federal land, e-bikes are considered motorized vehicles, giving them access to motorized trails not permitted for regular bicycles.

### Adaptive E-Bikes

Adaptive bicycles allow persons with disabilities to ride a bike for transportation and recreation. They help develop strength and allow for freedom of movement. Adaptive bicycles come in a wide variety of styles, from tricycles to hand-cycles. Electric adaptive bicycles offer some of the same benefits as other e-bikes while also being accessible to a broader number of people.

Legislation governing adaptive electric bicycles should be the same as for electric bicycles, generally. However, there may be a need to develop an additional caveat to allow Class 2 assistive e-bicycles to operate in all situations where bicycles are allowed, even if other Class 2 e-bicycles are restricted. This is because the exclusive propulsion may be beneficial to a person with a disability and allow access where pedal-assist type bicycling may not be possible.



Clarified regulations related to the definition of e-assist bicycles will be beneficial to the expansion of the bike share program in Providence. Source: EcoRI

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All on the move.  
All going places.  
Let's get there safely with a wave!  
#StopLookWave #DoTheWave

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Newport Waves is a popular program designed to promote safety among all roadway users (Source: Newport Waves)



Source: Bike-on







## CHAPTER 5

# MAKE IT HAPPEN







## CREATING A SUCCESSFUL IMPLEMENTATION PLAN

Rhode Island can only become the most bicycle-friendly state in New England with a strong implementation plan with effective funding strategies, performance measures, and identification of champions for the recommendations.

Chapter 5 describes to State policymakers, planners, and elected officials how to begin and sustain implementation of the Bicycle Mobility Plan.

### 5.1 Implementation

The implementation of the policies, programs, and projects outlined in Rhode Island's first Bicycle Mobility Plan (BMP) will require the commitment from a variety of stakeholders throughout the state. This begins with support from elected officials, including the Governor—who has already shown her keen interest in bicycle transportation—the State Legislature, Mayors, City/Town Councils, and Town Select Boards. Those in senior appointed positions must also take an active role to ensure support, funding, and state and local agency staffing are in place.

As authors of the BMP, the Rhode Island Division of Statewide Planning must take a lead role in overseeing much of the BMP's implementation. The next steps in the implementation of the BMP include:

- » Identifying easy to implement bicycle facility improvements that can be completed within one year
- » Maintaining outreach to key stakeholders and advocates, including the continuation of the Bicycle Mobility Plan Advisory Committee
- » Reaching out to individual communities to encourage them to use the BMP as a resource and perhaps inspiration for their own local bicycle plans
- » Advancing the aspirational Greenway Network plan to ensure all Rhode Islanders understand the enormous transportation, public health, and economic development benefits of such a vision
- » Leading BMP implementation and ensuring the various other stakeholders are gathering data and following through on commitments



Because riding a bicycle is an important element in Rhode Island's transportation system, leadership from the RIDOT will be critical. This includes oversight of the ten-year Work Plan and looking for opportunities to shift contingency funds to projects that provide new and expanded bicycle facilities and shared-use paths. RIDOT will also need to follow through on the recommended changes to their Traffic Design Manual and Highway Design Manual, as well as recommended new/enhanced policies that promote bicycle safety and infrastructure. RIDOT will also need to take a lead role in the development of the recommended Bicycle Facilities Design Manual as well.

The RIDEM is a critical stakeholder related to the ongoing development of shared-use paths in the state. This includes partnering with Statewide Planning to promote the visionary Greenway Network plan and consider opportunities to fold the evolving greenway network into their portfolio of parks and open spaces.

The trio of state agencies must also be supported by a number of other stakeholders including:

- » State and local police departments who will play an important role with enforcement of traffic laws to improve the roadway environment for bicyclists
- » Local government agencies who will be instrumental in implementing many of the candidate bicycle treatments
- » The tourism industry and business community leaders who could lend their support for investments in bicycle infrastructure to elected and appointed officials
- » Bicycle and environmental advocates who can plan an important role in building community support for investments in bicycle facilities and new policies

## 5.2 FUNDING STRATEGIES

In many states, including Rhode Island, finding new sources of funding for worthy initiatives can be a challenge. In the recent past, the state has relied on project funding through the State Transportation Improvement Program (STIP), primarily the Transportation Alternatives Program. In the state's 2018-2027 STIP, approximately 1.8% (\$155.9M) of the \$6.5 billion total is dedicated to bicycle, pedestrian, and path-related projects. Additional funds for bicycle projects are embedded in other roadway projects as well. The 2016 Green Economy Bond provided an additional boost with \$10M for on- and off-road bicycle projects.

### RECOMMENDATIONS

The funding recommendations listed below derive from discussions with State of Rhode Island officials, Statewide Planning staff planners, members of the Transportation Advisory Committee (TAC), and members of the BMP Advisory Committee:





- » Ensure that all contingency funds in the 2018-2027 STIP remain programmed into bicycle-related projects
- » Increase the overall share of funding committed to TAP projects in the state's current and future STIP
- » Work with the state legislature to pass a Green Economy Bond every two years with \$10M as a starting point for shared-use path and bicycle-related projects
- » Create a consistent and predictable funding stream for bicycle facility capital expenditures and maintenance
- » Incorporate bicycle improvements into existing projects involving resurfacing, which can often be accomplished for little or no additional cost

### FUNDING SOURCES

In order to reach a series of recommended funding sources for bicycle-related projects and programs, the State's planning team sought input from the general public at a series of community workshops held in January 2018. At the workshops, community members indicated changes they would like to see made to seven potential funding sources. Separately, the planning team sought input from the TAC as well. After carefully balancing comments from these two important sources, the BMP's featured recommendations include:

- » Dedicating a modest increase to the State's current \$0.34/gallon gasoline tax
- » Creating a new tax related to total vehicle miles traveled (being explored in other cities and states)
- » Consider altering the state law so that municipalities can establish local fees on ride-hailing services
- » Exploring potential fees from ride-hailing services and from motorists entering into congested areas during peak hours
- » Reserving a share of the revenue from future automated traffic enforcement
- » Reallocating existing transportation funding to create a dedicated source for bicycle projects

**Governor and General Assembly action is required for these funding sources.**

## 5.3 PERFORMANCE MEASURES

Critical to the success of the BMP is gauging progress over time using Performance Measures. These are annual data-driven benchmarks related to the building of new bicycle facilities, expanding ridership, improving safety, and increasing funding for bike infrastructure programs and projects. Performance Measures are typically data driven and therefore must be trackable over time, using data-collection methods such as GIS mapping, bicycle counts, and crash statistics.

The BMP's Performance Measures were not created in isolation and are tied to the goals and objectives laid out in Chapter 1. They outline where Rhode Island stands today, where the state will soon be—based on currently funded bicycle-related projects—and where the state aspires to be within five-year and ten-year target periods.

Appendix A8 to this report includes details on the performance measures for implementation, which include measures such as added miles of bicycle infrastructure, the percent of residents within ¼ mile of a bike facility, higher bicycle mode share, and reductions in crashes.



Source: Bike Newport